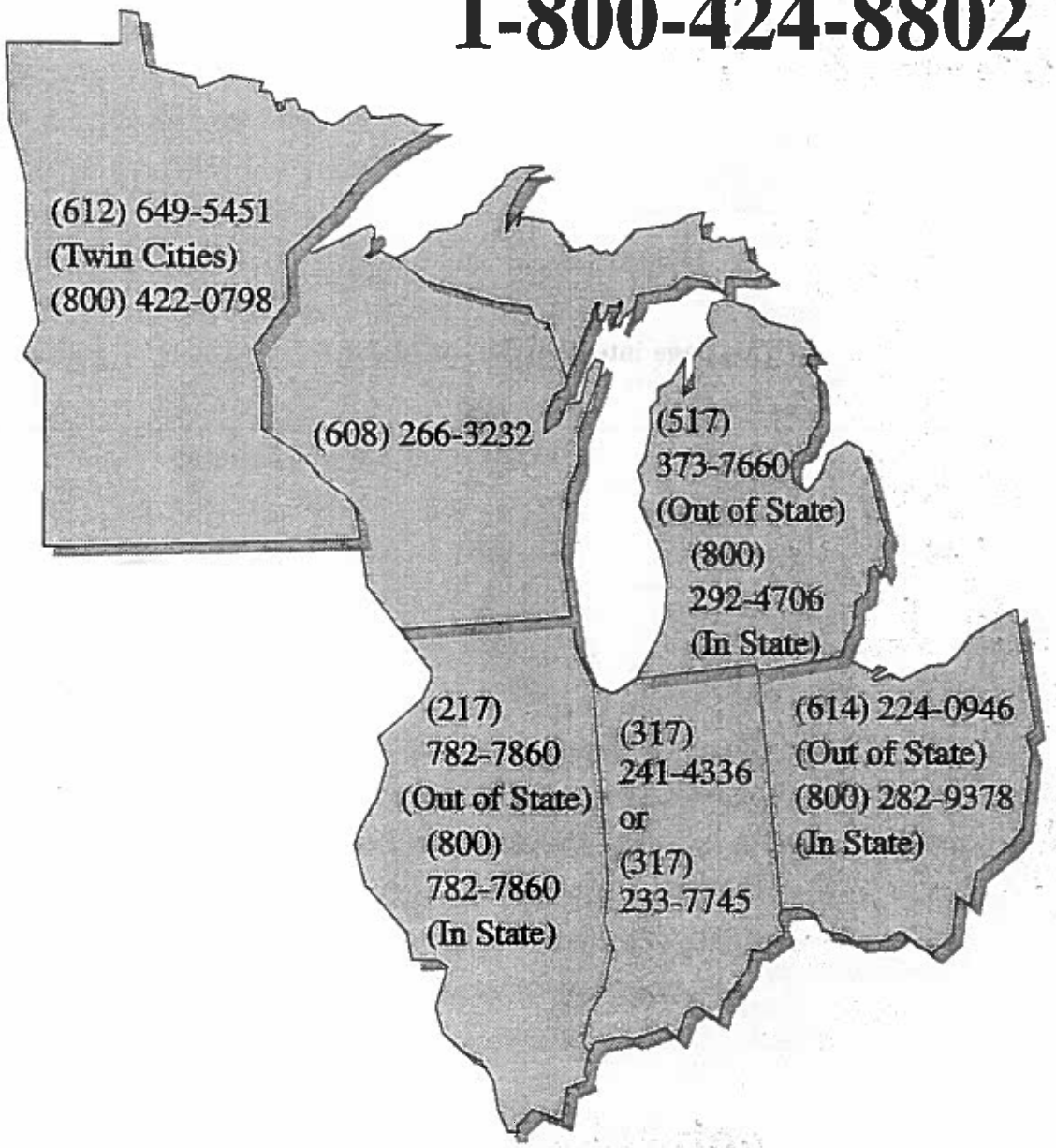
Report Oil or Chemical Spills to the

National Response Center

1-800-424-8802



24-hour Notification Numbers

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iii. DEFINITIONS

Area Committee: As provided for by Sections 311(a)(18) and (j)(4) of the Clean Water Act (CWA), means the entity appointed by the President consisting of members from qualified personnel of Federal, State, and local agencies with responsibilities that include preparing an Area Contingency Plan for the area designated by the President. The Area Committee may include ex-officio (i.e., non-voting) members (e.g., industry and local interest groups).

Area Contingency Plan: As provided for by Sections 311(a)(19) and (j)(4) of CWA, means the plan prepared by an Area Committee that is developed to be implemented in conjunction with the NCP and RCP, in part to address removal of a worst case discharge and to mitigate or prevent a substantial threat of such a discharge from a vessel, offshore facility, or onshore facility operating in or near an Area designated by the President.

coastal waters: As defined in the NCP, for the purposes of classifying the size of discharges, the waters of the coastal zone except for the Great Lakes and specified ports and harbors on inland rivers. Precise boundaries are identified in U.S. Coast Guard/U.S. Environmental Protection Agency agreements, Federal Regional Contingency Plans and Area Contingency Plans.

coastal zone: As defined in the NCP, all United States waters subject to the tide, United States waters of the Great Lakes, specified ports and harbors on inland rivers, waters of the contiguous zone, other waters of the high seas subject to the NCP, and the land surface or land substrata, ground waters, and ambient air proximal to those waters. The term coastal zone delineates an area of Federal responsibility for response action. Precise boundaries are determined by U.S. EPA/USCG agreements and identified in Federal Regional Contingency Plans. No ports or harbors are designated in Region 5.

discharge: As defined by Section 311(a)(2) of CWA, includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil, but excludes discharges in compliance with a permit under Section 402 of the CWA, discharges resulting from circumstances identified and reviewed and made a part of the public record with respect to a permit issued or modified under Section 402 of the CWA, and subject to a condition in such permit, or continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under Section 402 of the CWA, that are caused by events occurring within the scope of relevant operating or treatment systems. For purposes of the NCP, discharge also means substantial threat of discharge.

drinking water supply: As defined by Section 101(7) of CERCLA, means any raw or finished water source that is or may be used by a public water system (as defined in the Safe Drinking Water Act, 42 U.S.C. *et seq.*) or as drinking water by one or more individuals.

economically sensitive areas: Those areas of explicit economic importance to the public that due to their proximity to potential spill sources may require special protection and include, but are not limited to: public water supplies, publicly managed use areas, and Tribal use areas.

Emergency Planning and Community Right-to-Know Act (EPCRA): Title III Section 300. of SARA; created a system of State and local planning agencies for chemical emergencies and provided a way for communities to gain information about potential chemical hazards. EPCRA's mandates cover three main topics: emergency planning, emergency notification requirements, and requirements for reporting hazardous chemical inventories.

environmentally sensitive areas: Areas identified as a priority for protection and special attention during cleanup in the event of a pollution incident. Designations of types of areas considered to be sensitive can be found in 1) the U.S. Fish and Wildlife Annex (Appendix IX) and 2) the Guidance for Facility and Vessel Response Plans Fish and Wildlife and Sensitive Environments, published by Department of Commerce/National Oceanic and Atmospheric Administration. In addition to this definition, Area Committees may include any additional areas determined to be "sensitive." These areas are mapped in Region 5 and are available on paper and CD-ROM as a companion to this Plan. 4202.(a)(4)(B)(ii)

hazardous substance: As defined by section 101(14) of CERCLA, any substance designated pursuant to section 311(b)(2)(A) of the CWA; any element, compound, mixture, solution, or substance designated pursuant to section 102 of CERCLA; any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (but not including any waste the regulation of which under the Solid Waste Disposal Act [42 U.S. C. 6901 et seq.] has been suspended by Act of Congress); any toxic pollutant listed under section 307(a) of the CWA; any hazardous air pollutant listed under section 112 of the Clean Air Act; and any imminently hazardous chemical substance or mixture with respect to which the U.S. EPA Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act (TSCA). This term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or

designated as a hazardous substance in the first sentence of this paragraph, and does not include natural gas, natural gas liquids, liquified natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and synthetic gas).

inland waters: As defined in the NCP, for the purposes of classifying the size of discharges, means those waters of the United States in the inland zone, waters of the Great Lakes, and specified ports and harbors on inland rivers.

inland zone: As defined in the NCP, means the environment inland of the coastal zone excluding the Great Lakes and specified ports and harbors on inland rivers. The term inland zone delineates an area of Federal responsibility for response action. Precise boundaries are determined by U.S. EPA/USCG agreements and identified in Federal regional contingency plans.

Local Emergency Planning Committee (LEPC): A group of local representatives appointed by the State Emergency Response Commission (SERC) to prepare a comprehensive emergency plan for the local emergency planning district, as required by the Emergency Planning and Community Right-to-know Act (EPCRA), Title III Section 301(c) of SARA.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): As required by section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9605, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. L. 99-499, collectively called (CERCLA), and by section 311(d) of the Clean Water Act (CWA), 33 U.S.C. 1321(d), as amended by the Oil Pollution Act of 1990 (OPA), Pub. L. 101-380, the NCP provides nationwide organizational structure and procedures for responding to discharges of oil and releases of hazardous substances, pollutants and contaminants. In Executive Order (E.O.) 12777 (56 FR 54757, October 1991), the President delegated to the Environmental Protection Agency (EPA) the responsibility for the amendment of the NCP in coordination with members of the National Response Team (NRT) as well as the Federal Emergency Management Agency (FEMA) and the Nuclear Regulatory Commission to avoid inconsistent or duplicative requirements in the emergency planning responsibilities of those agencies.

National Pollution Fund Center (NPFC): As defined by Section 7 of Executive Order 12777, the NPFC is the entity established by the Secretary of the Department of Transportation whose function is the administration of the Oil Spill Liability Trust Fund (OSLTF). This includes access to the OSLTF by Federal Agencies, States, and designated trustees for removal actions and initiation of natural resource damage assessments, as well as claims for removal costs and damages.

Natural Resource Trustees: Officials representing State, Tribal, Federal, and foreign governments who are authorized to act pursuant to section 107(f) of CERCLA, section 311(f)(5) of the CWA, or section 10006 of the OPA when there is injury or threat to natural resources, including their supporting ecosystems, as a result of a release of a hazardous substance or a discharge of oil. Natural resources means land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources.

navigable waters: As defined by 40 CFR 110.1, the term navigable waters includes: (a) All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; (b) Interstate waters, including interstate wetlands; (c) All other waters such as intrastate lakes, rivers, streams, mudflats, sandflats, and wetlands, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters: (1) That are or could be used by interstate or foreign travelers for recreational or other purposes; (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; (3) That are used or could be used for industrial purposes by industries in interstate commerce; (d) All impoundments of waters otherwise defined as navigable waters under this Section; (e) Tributaries of waters identified in (a) through (d) of this definition, including adjacent wetlands; and (f) Wetlands adjacent to waters identified in (a) through (e) of this definition: Provided, that waste treatment systems (other than cooling ponds meeting the criteria of this paragraph) are not waters of the United States. Water of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal Agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with U.S. EPA.

oil: As defined by Section 311(a)(1) of CWA, means oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil. Oil, as defined by Section 1001 of OPA means oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged oil, but does not include petroleum, including crude oil or any fraction thereof, which is specifically listed or designated as a hazardous substance under paragraphs (A) through (F) of Section 101(14) of CERCLA (42 U.S.C. 9601) and which is subject to the provisions of that Act.

Oil Spill Liability Trust Fund (OSLTF): As defined by the NCP, means the fund established under Section 9509 of the Internal Revenue Code of 1986 (26 U.S.C. Section 9509).

On-Scene Coordinator (OSC): As defined by the NCP, means the Federal official predesignated by U.S. EPA or USCG to coordinate and direct responses, or the government official designated by the lead agency to coordinate and direct removal actions under the NCP. In certain site-specific situations, DOD or DOE may also act as OSC.

Region 5 Integrated Contingency Plan (ICP): Developed to fulfill the requirements of the NCP for both the RCP and Area Contingency Plans (ACP), as well as relevant portions of the Federal Response Plan (FRP), particularly Emergency Support Function #10 for Hazardous Materials (ESF #10)

Regional Oil and Hazardous Substances Pollution Contingency Plan (RCP): As provided for by Section 300.210 (b) of the NCP, and under the auspices of the Regional Response Team (RRT), the RCP is the mechanism for planning and coordinating regional preparedness and response actions for discharges of oil and releases of hazardous substances.

Regional Response Team (RRT): As defined in the NCP, the regional response organization (consisting of a representative from each State in the region and representatives from 15 Federal Agencies) which acts as a regional body responsible for regional planning and coordination of preparedness and response actions involving oil and hazardous materials. The RRT coordinates assistance and advice to the OSC in the event of a major or substantial spill.

State Emergency Response Commission (SERC): As provided in SARA Section 301.(a), an individual or group of officials appointed by the State governor to implement the provisions of EPCRA (see above). The SERC coordinates and supervises the work of the Local Emergency Planning Committees and reviews local emergency plans annually.

Tribal Emergency Response Commission (TERC): A group of officials appointed by Native American governing bodies to implement the provisions of Title III of SARA.

used oil: Any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities.

waste oil: For the purposes of this Plan waste oil is any oil that has been refined from crude oil, or any synthetic oil, that has been physically or chemically contaminated as a result of a spill.

wetlands: Those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs, and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds (40 CFR 112.2[y]).

worst case discharge: As defined by section 311(a)(24) of the CWA, means, in the case of a vessel, a discharge in adverse weather conditions of its entire cargo and, in the case of an offshore facility or onshore facility, the largest foreseeable discharge in adverse weather conditions.

iv. NCP CROSSWALK

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SECTION 1: INTRODUCTION

1.1. INTRODUCTION

This Region 5 Oil and Hazardous Substances Integrated Contingency Plan (ICP) is intended for use by local, Tribal, State, and Federal emergency response personnel as a tool for procuring resources to respond to an oil or hazardous materials incident. It outlines the response mechanisms that would be activated among the various levels of the response community in the event of an emergency situation. It is not intended to displace local emergency response plans, but rather it is intended to coordinate with local plans and build on the mechanisms set forth in State plans.

The Federal On-Scene Coordinator (OSC) is the link between local and State emergency response communities and Federal response efforts.

This ICP outlines:

(a) the types of assistance available to Federal OSCs from Regional Response Team (RRT) member agencies during response actions, and

(b) the cooperative response that should be carried out by OSCs during response actions.

The plan also includes resource information from governmental, commercial, and other sources that may be utilized during a response.

This plan has been organized to follow the structure of the Incident Command System (ICS), as outlined in the Integrated Contingency Plan guidance developed by the National Response Team (NRT), but this will be appended by reference in this plan.

This plan combines the response authorities relevant for both oil and hazardous materials. Although these releases and the related contingency planning are regulated separately under the Oil Pollution Act of 1990 (OPA) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), there is significant overlap in the type and scope of relevant information. In order to minimize confusion and maximize resources, the two plans are combined herein. In order to meet some of the requirements of OPA, subarea plans are being developed separately, but will be referenced in this ICP.

1.2. PURPOSE AND OBJECTIVE

The purpose of this combined ICP is to fulfill the requirements of Sections 300.210(b) and (c), of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and Section 311(j)(4) of the Clean Water Act (CWA) as well as relevant portions of the Federal Response Plan (FRP), particularly Emergency Support Function #10 Hazardous Materials (ESF #10). The ICP is designed to coordinate timely and effective response among

- local, Tribal, and State officials;
- private industry;
- OSCs;
- Remedial Project Managers (RPMs);
- various Federal Agencies; and
- other organizations

to minimize damage resulting from releases of oil or hazardous substances, pollutants, or contaminants.

The objective of this plan is to describe response protocols and assist in providing a coordinated response capability in the event of a release or spill that poses a threat to the environment or to human health and welfare. The initial actions taken by the OSC and/or other appropriate personnel should be to determine whether proper response actions have already been initiated.

In general, if the party or parties responsible for the release or spill do not take appropriate actions, or if the party or parties responsible for the release or spill are unknown, the local response community or State agencies will become involved. If Federal assistance is requested or required, the OSC shall respond, implement provisions of the NCP and applicable agency guidance, and coordinate activities as outlined in this ICP.

1.3. AUTHORITY

The RCP is developed pursuant to Section 300.210 of the NCP. The NCP is required by Section 105 of CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), by Section 311(d) of CWA, as amended by OPA. The ESF 10 components of this plan are required by the Robert T. Stafford Disaster Relief and Emergency Act (Public Law 93-288), as amended. The RCP is applicable to response actions taken pursuant to the authorities under CERCLA, Section 311 of CWA, and OPA. The NCP requires establishment of RRTs, which are responsible for Regional planning and preparedness activities before response actions, and for providing advice and support to the RRT when activated during a response.

The ACP is required by Section 311(j)(4) of CWA, and is written in conjunction with the NCP and CERCLA.

To accomplish the coordinated planning structure envisioned under OPA, Section 4202(a) of OPA requires the President to designate specific Areas for which Area Committees are established. Each Area Committee, under the direction of an OSC, must prepare and submit to the President for approval an ACP that, in conjunction with the NCP, is adequate to remove a worst case discharge from a vessel or facility operating in or near that Area.

Through Executive Order 12777, the President delegated to the Administrator of the United States Environmental Protection Agency (U.S. EPA) responsibility for designating the Areas and appointing the committees for the inland zone as designated in the NCP. The Administrator further delegated this authority to the U.S. EPA Regional Administrators, and designated the 10 pre-existing RRT areas as the Areas for OPA planning purposes. U.S. EPA Region 5, which consists of Illinois, Indiana, Minnesota, Michigan, Ohio, and Wisconsin, is one Area. Establishment of the Area Committee is required by Section 311(j)(4) of CWA.

1.4. SCOPE AND PROVISIONS

This ICP:

(a) expands upon planning and response requirements set forth in the NCP,

(b) augments coordination with local and State authorities, and

(c) integrates existing local, Tribal, State, and private sector plans for the Area.

The U.S. EPA Region 5 RCP/ACP has been developed in coordination with the NCP and the United States Coast Guard (USCG) area plans. The Ninth Coast Guard District is covered by eight area contingency plans, seven of which are in Region 5. Each plan covers the coastal zone of the corresponding Marine Safety Office (MSO). Each USCG area contingency plan is developed by an area committee chaired by the respective Coast Guard Captain-of-the-Port.

See Appendix I for coastal zone boundaries.

USCG's eight area contingency plans cover, in part, how to respond to an oil or hazardous substance spill in the coastal zone of the Great Lakes and the connecting channels. This includes the identification, prioritization, and cleanup strategies for sensitive areas; and identification of contractors and equipment. The plans also identify strategies for responding to a worst case discharge.

While U.S. EPA has chosen to combine its Area Contingency Plan for Region 5 into the existing Regional Contingency Plan to produce this joint document, the USCG's seven area contingency plans are separate documents, which are compatible with and may be used in conjunction with this ICP for spills which impact both the inland and coastal zones.

The ACP referred to in this Plan is the U.S. EPA Inland Plan unless otherwise stated. This plan applies to the Region 5 RRT (RRT5) member agencies and covers:

(a) discharge or threats of discharge of oil into or upon navigable waters of the United States and adjoining shorelines or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States;

(b) releases or substantial threats of release of hazardous substances into the environment; and

(c) releases or substantial threats of release of pollutants or contaminants that may present an imminent and substantial danger to public health or welfare in the States of Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin, and in the lands of the Federally recognized Native American Tribes in Region 5.

The ICP, when implemented in conjunction with other provisions of the NCP, shall be adequate to remove a worst case discharge and to mitigate or prevent a substantial threat of such a discharge.

The RCP portion of this plan covers response for all of Region 5. The ACP portion of this plan covers the inland portion only. Thus, when reading the plan, if the jurisdiction falls in the coastal zone, the spill will fall under the responsibility of the Coast Guard and will only be subject to the RCP components of this plan. If a jurisdiction is in the inland zone, both ACP and RCP components of this plan apply.

See Appendix I for the jurisdictions in Region 5.

Certain groups of counties have been or will be designated as sub areas of the ACP and will be appended to the plan. They are chosen based on criteria for threat (proximity to large bodies of fresh water, number of facilities) and need for greater jurisdictional coordination. They may also contain portions of

other adjacent areas to provide for a coordinated plan for spills affecting certain boundary locations.

1.5. UPDATING

Section 311(j)(4)(C)(viii) of CWA requires that the ACP be updated periodically by the Area Committee. For national consistency, it has been determined that the ACP will be updated annually for 5 years, starting January 1, 1995, and once every 5 years thereafter. The document may be updated more frequently, as policy changes require.

1.6. CONSISTENCY WITH STATE, TRIBAL, AND FEDERAL STATUTES

Planning and response protocols and decisions may be subject to existing statutes (e.g., radiological emergencies that involve response by various agencies; disposal restrictions for oiled debris; compliance with the Endangered Species Act; State, Tribal, and Federal authorities to protect cultural and historic resources). RRT representatives will assist the OSC by involving the appropriate regulatory staffs.

SECTION 2: COMMAND

2.1. INTRODUCTION

It is the policy of the RRT that response actions on non-Federal lands should be monitored or implemented by the most immediate level of government with authority and capability to conduct such activities. The first level of response will generally be the responsible party (RP), followed by local government agencies, followed by State agencies when local capabilities are exceeded. When incident response is beyond the capability of the State response, U.S. EPA or USCG is authorized to take response measures deemed necessary to protect the public health or welfare or the environment from discharges of oil or releases of hazardous substances, pollutants, or contaminants. The need for Federal response is based on evaluation by the Federal OSC.

2.1.1. Response to Public Safety and Property Threats Caused by Spills

When a spill poses public safety and property threats via potential fires, explosions, toxic clouds, or other means, local officials are usually in command of the incident. The party responsible for the incident is required to cooperate with and aid the local police and fire agencies. At some facilities, the responsible party conducts the response; at other facilities and in transportation incidents where the responsible party may not have the specialized capability to address an incident, public agencies direct the response. If highly specialized activities such as off-loading tank cars or repackaging hazardous chemicals are required, the responsible party may implement the actions under the general direction of the local public safety commander.

In most States, the role of State agencies in public safety response during the early stages of an incident is to provide technical advice to local commanders as soon as possible. During major incidents, State and Federal authorities may be able to provide additional assistance to the local commander at the spill scene by:

- conducting sampling and analysis of chemicals,
- providing specialized contractors or equipment, or
- providing detailed advice or other supporting functions.

Seldom will State or Federal authorities assume command from a local fire or police commander for short-term, on-site, public-safety-related issues.

2.1.2. Response to Environmental and Health Threats Caused by Spills

A number of State and Federal programs require parties who are responsible for a spill to investigate and remedy all related environmental and health threats. Often these actions include activities on properties owned by third parties or public agencies. The actions usually begin somewhat later than the public safety protection response, but can continue for a much longer period. The actions may include, but are not limited to:

- placing containment and recovery booms and pads,
- sampling runoff and rivers,
- excavating soil,
- sampling smoke,
- performing hydrogeological investigations,
- wildlife rescue and rehabilitation,
- closing drinking water intakes, and
- providing an alternate water supply.

Sometimes a responsible party is unable or unwilling to undertake adequately or quickly the environmental and health protection actions required by State

or Federal authorities. In those cases, State or Federal authorities can assume a more direct role. Usually this is done through investigation or cleanup contractors using governmental funds, such as State or Federal Superfunds or the Oil Spill Liability Trust Fund (OSLTF). The costs of these direct government actions will usually be recovered later from the responsible party. The decision to assume governmental control of environmental and health followup of an incident is dependent on:

- the ability and willingness of the responsible party to respond effectively,
- the severity of the incident,
- the cost and duration of required actions, and
- the resources available to the various levels of government.

2.2. INCIDENT COMMAND PROTOCOL/LIAISON

Federal law requires implementation of a site-specific incident command system by the senior emergency response official at all emergencies involving hazardous substances (29 CFR 1910.120 (q) and 40 CFR 311). The specific regulatory language suggests a seniority hierarchy increasing from local to State to Federal levels. Often the senior local or State official assumes command because they are most familiar with the resources immediately available. At the same time, it must be recognized that local, Tribal, State, and Federal responders are charged by law with specific authorities and responsibilities in certain emergency situations that cannot be subsumed. **This protocol does not commit any parties adopting it to do anything not already required by Federal law.**

An Incident Command System (ICS) shall be established at all incidents involving spills of oil or hazardous substances[1] by the senior on-scene official of the first response organization to arrive at an incident. The ICS should be based on the organization, terminology, and procedures recommended by the National Fire Academy[2] and applied in a broad sense to include all hazard control and mitigation response organizations, including responsible parties; private responders; and local, Tribal, State, and Federal Agencies. Each participating entity is required by Federal law to implement an intra-organizational ICS and integrate it with the overall ICS (29 CFR 1910.120, 40 CFR 311, or 30 CFR 154).

A Unified Command System (UCS) consisting of the responsible party and senior competent local, Tribal, State, and Federal emergency response officials at the site may be the preferred approach to integrating several levels of government into an ICS. A UCS is a type of ICS in which parties with jurisdiction command by agreeing on objective priorities and response strategies.

2.2.1. Single Jurisdictional Area Affected

When an incident involves and affects only a single geographical jurisdiction (e.g., within the boundaries of a city or county), the organizational structure of the ICS will be determined by the established local contingency plan. It may involve one or more agencies. **In all situations, one person shall act as either Incident Commander (IC) in sole charge of the ICS, or as Operations Chief to implement the action plan of a Unified Command.**

In such instances, responding State and Federal officials who might otherwise be considered the senior competent emergency response official at the site shall:

(1) identify themselves to the IC and integrate themselves into the established ICS per the IC's direction, usually as a technical specialist

[1] *The definition of hazardous substances used by the Occupational Safety and Health Administration (OSHA) is broader than the CERCLA definition used throughout this document.*

[2] *One set of common terminology and procedures is vital to the efficient functioning of an ICS in an emergency. The response management system recommended for use in the National Response Team (NRT) Integrated Contingency Plan (ICP) is the ICS of the National Interagency Incident Management System (NIIMS). NIIMS ICS is a nationally recognized system currently in use by numerous local, State, and Federal organizations. USCG has adopted this Unified Command System (UCS) protocol.*

to an operations group supervisor or as an operations group supervisor; or

(2) join the existing Unified Command or request that the IC establish a Unified Command; or

(3) assume the Incident Commander role:
- when required by Federal or State law, or
- when an existing IC agrees to such a transition, or
- when no ICS has been established.

The protocols for ICS transfer of command or initial assumption of command shall be used.

2.2.2. Multiple Jurisdictional Areas Affected
When the incident involves and affects multiple local geographical jurisdictions or areas not covered by local emergency response organizations, the State or Federal competent senior official at the site shall:

(1) **preferably** join an existing Incident Command or Unified Command as in subsection 2.2.1 (above); or

(2) establish a Unified Command as an encompassing ICS if none exists; or

(3) assume Incident Command and establish an ICS incorporating existing local efforts as operations section branches or as otherwise appropriate.

2.2.3. Local, Tribal, State, and Federal Interaction
When not specifically prescribed, a Unified Command consisting of senior competent local, Tribal, State, and Federal emergency response officials at the site shall be the preferred approach to integrating several levels of government into an ICS. Where State law specifies incident command assignment, it shall take precedence over this protocol with respect to those State and local organizations to which it applies. **Federal jurisdiction specified in CERCLA, OPA, or other sections of this RCP/ACP shall take precedence over this protocol.**

2.2.4. Seniority
For purposes of this plan, Seniority, as discussed in 29 CFR 1910.120(q)(3)(i)[3], is ranked according to competency and breadth of responsibility.

Competency will be determined by meeting the requirements of 29 CFR 1910.120 (q)(6)(v).[4] All officials meeting the competency criteria are senior to those who do not, unless specifically assigned overriding authority applicable to the specific incident situation by State or Federal law.

Breadth of responsibility will be considered to increase from the local to the State to the Federal level. **However, this protocol encourages the establishment of the ICS at the most local level practicable to assure the earliest implementation of a unified response strategy.**

[3] *29 CFR 1910.120 (q)(3)(i): "The senior emergency response official responding to an emergency shall become the individual in charge of a site-specific Incident Command System (ICS). All emergency responders and their communications shall be coordinated and controlled through the individual in charge of the ICS assisted by the senior official present for each employer.*

"NOTE to (q)(3)(i): The 'senior official' at an emergency response is the most senior official on the site who has the responsibility for controlling the operations at the site. Initially it is the senior officer on the first-due piece of responding emergency apparatus to arrive on the scene. As more senior officials arrive (e.g., battalion chief, fire chief, State law enforcement official, site coordinator), the position is passed up the line of authority which has been previously established."

[4] *29 CFR 1910.120 (q)(6)(v): "On-scene incident commander. Incident commanders, who will assume control of the incident scene beyond the first responder awareness level, shall receive at least 24 hours of training equal to the first responder awareness level and in addition have competency in the following areas and the employer shall so certify:*

(a) Know and be able to implement the employer's incident response system.
(b) Know how to implement the employer's incident response system.
(c) Know and understand the hazards and risks associated with employees working in chemical protective clothing.
(d) Know how to implement the local emergency response plan.
(e) Know of the State emergency response plan and of the Federal Regional Response Team.
(f) Know and understand the importance of decontamination procedures."

2.2.5. Post-Emergency Operations

This protocol is intended to apply only during the emergency phase of a response to which 29 CFR 1910.120(q) applies. However, use of an ICS throughout a response and cleanup is encouraged.

2.3. LOCAL RESPONSE

The focus of local responders is usually directed toward abating immediate public safety threats. The degree of local response will depend upon the training and capabilities of local responders relative to the needs of the specific emergency. In some cases this may be using hazard awareness training knowledge to identify the nature and scope of the hazard. This information is then passed on to State and Federal responders who are activated to address the situation with specific expertise and/or capabilities. Often local agencies take mitigating actions of a defensive nature to contain the incident and protect the public. In many instances, responsible parties or local agencies are capable of aggressive response and quick abatement of immediate hazards. Usually in these cases, local authorities rely on State and Federal responders to assure that cleanup is complete and remediation is technically sufficient.

A major role of local organizations during all emergency incidents is providing security for on-scene forces and equipment. For large incidents, help is often requested through State emergency management agencies. This includes establishing local liaison with hospital, emergency services, and police personnel, as well as restricting entrance to hazardous areas to only essential personnel.

2.4. STATE RESPONSE

The Governor of each State in Region 5 is requested to designate a lead agencythat will direct State-lead response operations. This agency is responsible for designating the lead State response actions and coordinating/communicating with any other State agencies,as appropriate (NCP 300.180). Each Governor will also designate a representative for the State on the RRT. Each State representative may participate fully in all activities of the RRT. The State RRT representatives are expected to coordinate with the State Emergency Response Commissions (SERCs—in Wisconsin, the State Emergency Response Board, or SERB) in their States in order to communicate and coordinate preparedness and preresponse planning activities between the State and the RRT. State and local government agencies are encouraged to coordinate with:

- State contingency planning efforts for response to oil and hazardous material events,
- this plan, and
- requirements of SARA Title III.

Section 311(j)(4) of CWA calls for inclusion of local, Tribal, and State representatives on the Area Committee. In U.S. EPA Region 5, this has been only partially accomplished through the designation of the RRT as the Area Committee.

Each State in Region 5 has a State disaster plan and laws that specify that State's authority and organization for a technical response to environmental emergencies. All States can provide technical expertise to assess environmental and public health threats and damage, as well as to advise local responders. In specific circumstances, States may provide additional response capabilities in the form of contractors and funding.

The following are summaries of emergency preparedness measures for lead agencies for each State in Region 5.

2.4.1. Illinois

2.4.1.1. EMERGENCY RESPONSE TO OIL SPILLS AND HAZARDOUS MATERIALS INCIDENTS

The Illinois Environmental Protection Agency (IEPA) provides the designated RRT member for Illinois. To prevent and abate environmental pollution, IEPA has various responsibilities for responding to environmental emergencies within the State or its adjoining waters. IEPA is the State's lead agency for developing plans and coordinating action before, during, and after certain emergency situations, including:

- emergencies involving waste management;
- emergencies involving public water supplies;
- spills of oil or hazardous materials upon waters or lands of the State; and
- releases of harmful quantities of toxic substances to the atmosphere.

The Ilinois 24-hour spill notification number is to the Illinois Emergency Management Agency 217-782-7860 (800-782-7860 in Illinois). The office hours phone is 217-782-3637. After office hours call IEMA to get our Duty Officer.

Within IEPA, the Emergency Response Unit (ERU) of the Office of Chemical Safety has the responsibility for coordinating the agency's response and ensuring appropriate cleanup of any subsequent environmental contamination. ERU collects information about environmental emergencies and responds directly and/or notifies other divisions within IEPA of needed action. Technical expertise is provided to first responders and public officials, addressing such issues as:

- the physical, chemical, and toxicological characteristics of the materials involved;
- effective response and treatment actions; and
- precautions to be taken to prevent further injury or damage to public health or the environment.

2.4.1.2. OTHER AGENCIES' RESPONSIBILITIES AND REQUIREMENTS

(a) Illinois Emergency Management Agency (IEMA): coordination and communications center for Illinois State agencies and is in overall command of emergency government efforts during major multi-jurisdictional disaster responses. IEMA is also the SERC designated pursuant to SARA Title III.

(b) Illinois Department of Nuclear Safety: incidents involving radioactivity, whether in transport or at nuclear power plants or other facilities.

(c) Illinois Department of Mines and Minerals: initial investigation of incidents involving crude oil and natural gas production sites, unless waters of the state are being impacted (then IEPA).

(d) Illinois State Fire Marshal: incidents involving underground storage tanks (USTs); this responsibility is shared with IEPA. Has the authority to require equipment inspection and testing.

(e) Illinois Commerce Commission: incidents involving railroad transport with respect to authority over the use, movement, and compliance of railroad equipment with U.S. Department of Transportation (DOT) regulations.

(f) Illinois State Police: transportation incidents involving DOT Hazardous Materials, enforcement of DOT shipping regulations, traffic control, and security.

(g) Illinois Department of Conservation: assessment of natural resource damage in incidents involving serious environmental injury, such as fish kills and oiled waterfowl.

Other agencies serve a secondary role and provide technical support and resources as needed; however, they do not generally maintain an emergency response capability for on-scene response: the Departments of Agriculture, Public Health, and Energy and Natural Resources; the Office of the Attorney General; and other human service agencies that might be involved with evacuees, should a prolonged incident occur requiring relocation of the general public.

2.4.2. Indiana

2.4.2.1. EMERGENCY RESPONSE TO OIL SPILLS AND HAZARDOUS MATERIALS INCIDENTS

Spills can be reported 24-hours-a-day at 888-233-7745.

The Indiana Department of Environmental Management (IDEM) provides the designated member of the RRT for Indiana and is the lead agency for the State in addressing spills, providing a 24-hour response capability. IDEM must provide technical assistance to the responsible party and the responding personnel and ensure compliance with the Indiana spill regulation and other pertinent State and Federal rules and regulations. Technical assistance takes the form of:

- chemical identification, handling, and hazard information;
- evaluation of the threat to environmental and public safety;
- personal protection recommendations;
- containment and cleanup methods; and
- resource identification and location.

On large spills, or where the spiller fails to respond adequately, IDEM staff respond on-site to assist in the response effort, assuming the role of State OSC if necessary.

During a response, staff of the Emergency Response Section (ERS) of IDEM assume the role of technical advisors and provide on-scene assistance to the responsible party, and to individuals or agencies involved in the response. On occasion, ERS staff have assumed a role that would appropriately be called OSC. However, if a structure (e.g., ICS) exists within a local or County jurisdiction that provides an OSC and that OSC is being utilized, ERS staff will provide assistance to that OSC.

Once the immediate threat to public health and the environment has been relieved, the incident is further stabilized and cleaned up under ERS supervision. Rule 327 IAC 2-6.1, *Spills: Reporting, Containment, and Response*, requires that the spiller report to IDEM and perform a spill response. A spill response means that a spill is contained and free material is removed or neutralized. Disposal of recovered material that is classified as waste is referred by ERS staff to appropriate personnel in the Office of Solid and Hazardous Waste Management. ERS staff may then conduct a followup investigation to ensure that material has been disposed of properly and the cleanup is acceptable.

2.4.2.2. OTHER AGENCIES' RESPONSIBILITIES AND REQUIREMENTS

The role of liaison between a spiller and the different program areas of

IDEM is perhaps the greatest benefit that ERS can provide to those involved in a spill. This role can also extend to other State agencies and other response organizations. State agencies include:

(a) State Emergency Management Agency (SEMA): SEMA is the lead planning agency for coordinating man-made and natural disasters. SEMA also provides an alternate member for the RRT.

(b) Office of the State Fire Marshal (OSFM): OSFM responds to fire and explosion hazards from hazardous materials incidents.

(c) Office of the Indiana State Chemist (OISC): OISC provides technical guidance regarding agricultural chemical incidents including fertilizers and pesticides. It also conducts investigations of improper application of regulated agricultural chemicals.

(d) Department of Natural Resources (DNR), Fish and Wildlife Division: DNR Conservation Officers conduct investigations to assess damages to natural resources such as fish kills.

(e) DNR, Oil and Gas Division (O & G): DNR O & G regulates oil production facilities, including operation, maintenance, construction, and abandonment of oil wells and associated equipment.

(f) Indiana State Police (ISP): ISP investigates transportation incidents involving DOT hazardous materials, enforces DOT shipping regulations, and provides traffic control and site security.

(g) Indiana State Department of Health (ISDH): ISDH is the lead agency for releases of radiological and etiological materials. They also provide technical guidance to IDEM regarding health issues and advisories.

(h) Indiana Department of Transportation (INDOT): INDOT usually provides traffic control for major transportation incidents involving releases of petroleum and hazardous materials. ERS also coordinates with other program areas within IDEM as well as local response agencies such as fire departments, hazardous materials teams, sheriffs' departments, local emergency planning committees (LEPCs), emergency management agencies, county health departments, and county highway departments.

2.4.3. Michigan

2.4.3.1. EMERGENCY RESPONSE TO OIL SPILLS AND HAZARDOUS MATERIALS INCIDENTS

Michigan's representation on RRT5 comes from the Michigan Department of Environmental Quality (MDEQ). MDEQ is the primary environmental emergency response agency in the State in all non-agricultural-related spills. Recent legislation has designated the Michigan Department of Agriculture (MDA) as the primary response organization, in close association with MDEQ, in spills involving agricultural chemicals.

Staff of MDEQ can be notified of oil and hazardous materials incidents via the Pollution Emergency Alert System (PEAS) at (800) 292-4706 (in-state) or (517) 373-7660.

MDEQ has approximately 19 full-time equivalent field positions available to respond to complaints and environmental emergencies. Most of these positions are located in the nine Field Operations Districts operated by MDEQ, which are situated throughout the State. The primary

response role of MDEQ is one of technical advisor. These personnel are responsible for complaint investigation and emergency spill response and generally oversee the environmental aspects of spill containment, control, and mitigation. Appropriately trained staff within MDEQ can provide hands-on response with absorbents and skirt boom if the situation requires this type of response. It is anticipated, however, that all "first responder" response will be conducted by local units of government and the various Hazardous Material Response Teams located throughout the State, although predominantly in the lower third of the peninsula.

Environmental mitigation associated with material spills will generally be conducted by the RP. If the RP cannot be identified or is reluctant to adequately address mitigation needs, the State can hire contractors to perform the mitigation. A limited amount of money is available through funds administered by the MDEQ Environmental Response Division. The State can also access the Federal fund administered under OPA in accordance with Federal guidelines and regulations.

Michigan has a responder immunity act.

MDEQ, in conjunction with the Department of Attorney General, is the designated Natural Resources Trustee for the State.

2.4.3.2. OTHER AGENCIES' RESPONSIBILITIES AND REQUIREMENTS

(a) Michigan State Police (MSP): The MSP Emergency Management Division (EMD) serves as the designated emergency/disaster response coordination agency for the State and as the primary State contact point in the event of a declared disaster resulting in the activation of the State Emergency Management Plan.

(b) Michigan Department of Agriculture (MDA): MDA is the lead agency in spill responses involving agricultural chemicals and/or fertilizers.

(c) Michigan Emergency Response Commission (MERC): MERC is the primary coordination agency and liaison with the local Emergency Planning Commissions throughout the state. MERC is co-chaired by MSP-EMD and MDEQ.

(d) Michigan Department of Natural Resources (MDNR): MDNR is the lead agency for the State in decisions involving fish and wildlife issues during a spill response working cooperatively with the MDEQ State OSC.

2.4.4. Minnesota

2.4.4.1. EMERGENCY RESPONSE TO OIL SPILLS AND HAZARDOUS MATERIALS INCIDENTS

The Minnesota Pollution Control Agency (MPCA) provides the designated member of RRT5 for Minnesota. MPCA is the primary State responder to spills and other emergencies involving hazardous materials (with the exception of incidents involving pesticides and fertilizers, which are under the jurisdiction of the Minnesota Department of Agriculture). All of the following information describing State emergency response therefore assumes MPCA actions for general hazardous materials inci-

Spills can be reported through the following telephone numbers:
651-649-5451
800-422-0798 (in-State long distance).

dents, but applies to the Department of Agriculture for all pesticide and fertilizer incidents.

MPCA's Emergency Response Team (ERT) includes eight full-time ERT members whose primary duty is to monitor the cleanup of spills and other emergency situations that pollute or threaten to pollute surface or ground water. By default, they also respond to reports of other environmental emergencies (e.g., air releases, illegal hazardous waste disposal, tire dump fires). In addition to receiving release reports, the ERT may perform field inspections at spill sites, provide technical assistance to responsible parties, or carry out enforcement actions for violation of State laws and rules.

If necessary, ERT staff will proceed to the site to provide coordination and assistance in handling the emergency. This may include taking charge of the response if the responsible party is unknown or unavailable. In situations where public safety is the primary consideration, the ERT member does not take charge of the incident, but assists the fire chief or other public safety officials at the scene. This assistance may include emergency waiver or suspension of State laws and rules (e.g., allowing emergency wastewater discharges or burning of a spilled product in order to minimize overall environmental damage). The assistance may also include activation of contractors using State funds.

Minnesota Statute Chapter 115E requires companies handling oil and hazardous substances to act to prevent releases and to be prepared for releases they may have. Chapter 115E requirements are similar to OPA but cover protection of the public's safety and the environment, and pollution of the land, air, and waters of the State. A facility operator is to notify the Emergency Response Commission when their plan is completed, and must supply a copy upon request. ERT staff actively inspect the prevention capabilities and preparedness of major facilities, and will assist facility owners if requested. They conduct enforcement if the preparedness of a facility is found to be inadequate, especially if it contributed to a release or poor response.

Both Minnesota Statute Chapter 115E and State Superfund Chapter 115B contain language providing immunity to those responding to oil or hazardous substance discharges.

2.4.4.2. OTHER AGENCIES' RESPONSIBILITIES AND REQUIREMENTS

The Department of Public Safety Division of Emergency Management (DEM) operates the 24-hour-per-day Duty Officer System to take incident reports for all State agencies. DEM also coordinates the actions of State agencies, including MPCA, Natural Resources, Transportation, Public Safety, and Health. DEM conducts training for State and local responders, and reviews County emergency plans. DEM and the State Fire Marshal contract with a number of local jurisdictions to provide hazardous materials assessment and response teams to the various regions of the State. The Emergency Response Commission conducts the Right-to-Know programs in the State.

2.4.5. Ohio

2.4.5.1. EMERGENCY RESPONSE TO OIL SPILLS AND HAZARDOUS MATERIALS INCIDENTS

Spills can be reported 24-hours-a-day at 800-282-9378.

The Ohio Environmental Protection Agency (OEPA) is the designated

representative of RRT5 for Ohio. OEPA is also the State agency charged with investigating releases of oil and hazardous substances from both fixed and mobile facilities. Ohio's spill response program is housed in the Emergency Response Unit (ERU), which is a part of the Division of Emergency and Remedial Response. This unit, which is responsible for receiving reports of releases to all environmental media, uses 15 spill responders to aid in chemical identification, containment, cleanup, public safety, and the identification of responsible parties. If a responsible party cannot be identified or is recalcitrant, the ERU can activate a level-of-effort contractor to initiate actions to contain or clean up the spill.

Ohio has enacted no laws specifically related to responder immunity in environmental emergencies but it has enacted both a Good Samaritan Statute and a "General Duty Clause" that applies to State employees.

2.4.5.2. OTHER AGENCIES' RESPONSIBILITIES AND REQUIREMENTS

Several different State agencies have areas of expertise to contribute during a spill, and in the case of such an event, operate under a cooperative agreement that outlines the activities of the signatory agencies when a spill occurs. These agencies are:

- the Ohio Emergency Management Agency,
- the State Fire Marshal,
- the Department of Highway Safety,
- the Public Utilities Commission,
- the Department of Transportation,
- the Department of Health,
- the Department of Agriculture,
- the Department of Natural Resources, and
- OEPA.

2.4.6. Wisconsin

2.4.6.1. EMERGENCY RESPONSE TO OIL SPILLS AND HAZARDOUS MATERIALS INCIDENTS

Spills can be reported to the WEM 24-hour emergency hotline at 1-800-943-0003

The primary agency representative to the RRT for Wisconsin is the Wisconsin Department of Natural Resources (WDNR) and alternate representative agency is from Wisconsin Emergency Management (WEM). WDNR is responsible for developing and updating a State Contingency Plan addressing spill response. The agency is responsible for: receiving notifications of releases; identifying the responsible party; and ensuring that appropriate measures are being taken by the responsible party to address public safety; and contain, clean up, and remediate a release. When a responsible party is unknown, or unable or unwilling to take appropriate actions, a WDNR representative may activate a Zone Contractor to take necessary actions.

WEM administers the Emergency Planning and Community Right-To-Know Act (EPCRA) in the State, and also administers eight Level A Regional Hazardous Materials Response Teams. This agency also coordinates resources for overall emergency management and provides hazardous materials training classes for all levels of responders. WEM operates a 24-hour emergency hotline that has a voice prompt directing spill calls to WDNR. WEM also serves as the lead State agency for consequence management of terrorism events.

2.4.6.2. OTHER AGENCIES' RESPONSIBILITIES AND REQUIREMENTS

(a) The Department of Health and Family Services (DHFS) is responsible for monitoring the effects of chemical spills on public health and for providing assistance to local public health authorities.

(b) The Department of Agriculture, Trade, and Consumer Protection (DATCP) responds to spills of agrichemicals and coordinates with WDNR on remediation issues.

(c) The Wisconsin State Patrol (WSP) enforces State hazardous materials transportation regulations and can be involved in the initial response to transportation-related spills.

2.5. NATIVE AMERICAN RESPONSE

The Tribe is the designated natural resource trustee for Native American communities. Response capabilities of Tribes in Region 5 vary. When a Tribal representative is not available or if it is unclear if there are any potential Tribal impacts, the Bureau of Indian Affairs (BIA) should be consulted. Contact with BIA can be facilitated by notifying the DOI RRT representative.

Appendix II contains a list of contacts for Federally recognized Tribes in Region 5.

2.6. FEDERAL RESPONSE

2.6.1. Statutory Authority

Section 104 of CERCLA as amended by SARA gives the Federal government the authority to respond to any hazardous substance released or to a substantial threat of a release into the environment or any pollutant or contaminant which may present an imminent and substantial danger to the public health or welfare and to remove or arrange to remove the hazardous substance, pollutant or contaminant or take any other response measure consistent with the NCP which is necessary.

Section 311 of CWA, 33 U.S.C. 1321, gives the Federal Government the authority to respond to a discharge or substantial threat of discharge of oil or a hazardous substance into or upon the navigable waters of the United States, adjoining shorelines, or the waters of the contiguous zone. It gives the President the authority to:

- remove or arrange for removal of a discharge and mitigate or prevent a substantial threat of a discharge at any time;
- direct or monitor all private, local, State, and Federal actions to remove a discharge; and
- if necessary, destroy by whatever means are available a vessel discharging, or threatening to discharge.

This authority is delegated to the Administrator of U.S. EPA, who has delegated it to the Regional Administrators of U.S. EPA, who then delegate that authority to OSCs. If a discharge or threat of discharge poses a substantial threat to public health or the welfare of the United States, the OSC shall direct all private, local, State, and Federal actions to remove the discharge or to mitigate or prevent the threat of discharge.

2.6.2. Federal OSC Responsibilities

The Federal OSC directs Federal response efforts and coordinates all other Federal efforts at the scene of a discharge or release. The OSC may monitor local, Tribal, State, or private actions to remove a discharge, and may pro-

vide technical assistance to local, Tribal, State, or responsible party response personnel.

If a response action is being conducted through local, Tribal, State, or responsible party efforts, the OSC will ensure adequate oversight. If local, Tribal, or State agencies or the responsible party cannot or will not initiate action to eliminate the threat, or if the removal is not being conducted properly, the OSC should advise the government agency or responsible party and take appropriate actions to mitigate or remove the threat or discharge.

When the OSC has determined that a discharge poses or may present a substantial threat to public health or welfare, he/she is authorized by the NCP to direct all private, State, or Federal actions to remove the discharge or to mitigate or prevent the threat of such a discharge. In addition, the OSC may remove or arrange for the removal of the discharge or mitigate or prevent the substantial threat of the discharge; and may remove and, if necessary, destroy by whatever means available a vessel discharging, or threatening to discharge, without regard for any other provision of law governing contracting procedures or employment of personnel by the Federal Government (40 CFR 300.322).

Upon receipt of notification of a discharge or release, the OSC is responsible for conducting a preliminary assessment to determine:

(a) threat to human health and the environment;

(b) the responsible party and its capability to conduct the removal; and

(c) feasibility of removal or the mitigation of impact.

OSC responsibilities in the event of a discharge or release include the following:

(a) Coordinate with appropriate Federal Agencies.

(b) Notify the appropriate State and Federal Agencies. OSC notification responsibilities are discussed in further detail in subsection 2.10 of this plan (p. 31).

(c) Determine whether proper response actions have been initiated. If the party responsible for the release or spill does not act promptly in accordance with the directions of the OSC or does not take appropriate actions, or if the party is unknown, the OSC shall respond in accordance with provisions of the NCP and agency guidance, and coordinate activities as outlined in this ICP.

(d) Collect information concerning the discharge or release:
- its source and cause;
- potentially responsible parties;
- the nature, amount, location, direction, and time of discharge;
- pathways to human and environmental exposure;
- potential impact on human health, welfare, and safety, and the environment;
- possible impact on natural resources and property;

- priorities for protecting human health and welfare and the environment; and
- estimated cost for the response.

(e) Coordinate his/her efforts with other appropriate Federal, State, and local agencies.

(f) Consult with and inform the RRT members of reported discharges and releases through Pollution Reports in Message Format (POLREPs). (See Figure 2-1, p. 34)

(g) Consult with the appropriate Regional or District office regarding situations potentially requiring temporary or permanent relocation. In the event of a declared Federal disaster, coordinate with the Federal Emergency Management Agency (FEMA) Federal Coordinating Officer (FCO) as appropriate.

(h) Implement appropriate community relations activities.

(i) Address worker health and safety issues prior to and during a response operation, and comply with all worker health and safety regulations.

(j) Coordinate with the Agency for Toxic Substances and Disease Registry (ATSDR), as deemed necessary, regarding possible public health threats.

(k) Coordinate with the U.S. EPA Office of Radiation and Indoor Air (ORIA) and the Department of Energy (DOE) in emergencies involving radiological hazards.

As requested by the NRT or RRT, the OSC shall submit to the RRT a complete report on the removal operation and the actions taken. The report shall record:

- the situation as it develops,
- the actions taken,
- the resources committed, and
- the problems encountered.

2.6.3. Regional Response Team (RRT)

The RRT is reponsible for regional planning and preparedness activities, as well as for coordination of assistance and advice to the OSC during site-specific incidents. The Co-Chairs of the Region 5 RRT are the Chief of the Emergency Response Branch, U.S. EPA Region 5; and the Chief of the Marine Safety Division, Ninth Coast Guard District. The RRT membership includes representatives from each State appointed by the Governor, and the designated regional representatives of the following Federal Agencies:

- the Department of Agriculture (USDA),
- the Department of Commerce (DOC),
- the Department of Defense (DOD),
- DOE,
- FEMA,
- the General Services Administration (GSA),
- the Department of Health and Human Services (HHS),
- the Department of the Interior (DOI),
- the Department of Justice (DOJ),
- the Department of Labor (DOL),

- the Nuclear Regulatory Commission,
- the Department of State (DOS),
- the Department of Transportation (DOT),
- USCG, and
- U.S. EPA.

Federal RRT member agencies have duties established by Statute or Executive Order that may apply to Federal response actions following or in prevention of a discharge of oil or a release or threat of release of a hazardous substance, pollutant, or contaminant. The RRT also functions as the Area Committee for Inland Region 5.

The principal components of the RRT are a standing RRT and incident-specific RRTs. The standing RRT consists of designated representatives from each participating Federal Agency listed above and each State. Each incident-specific RRT is formed from the standing team when the RRT is activated for a response, and consists of representatives of appropriate local governments, State agencies, and Federal Agencies.

Each member agency should designate one member and at least one alternate member to the standing RRT. Agencies whose regional subdivisions do not correspond to the standard Federal Regions may designate additional representatives to the standing RRT to ensure appropriate coverage of the standard Federal Region. Federally recognized Native American Tribal governments may arrange for representation on the RRT. Other interested parties may attend and observe RRT meetings. The usual process by which the RRT reaches its decisions is by consensus. However, in instances where a decision is reached by means of a vote, the voting capacity of each Federal member agency and other RRT member organizations is limited to one vote per member agency or organization.

A list of the current members of the Region 5 standing RRT is provided in Appendix III.

The first Federal official affiliated with an RRT agency to arrive at the scene of a discharge or release, provided they have the proper training, should coordinate activities under the NCP, this RCP/ACP, and agency guidance until the predesignated OSC is available. That Federal official should consult directly with the predesignated OSC regarding any necessary initial actions. Fund-financed operations must be authorized by the OSC prior to implementation.

2.6.3.1. STANDING RRT

The role of the standing RRT includes communications and procedures planning, coordination, training, evaluation of responses, preparedness, and related activities on a Region- and Area-wide basis. These activities include, but are not limited to the following:

(a) Providing resources, upon request, for response to major discharges or releases inside the Region or outside the Region;

(b) Providing technical assistance for preparedness and conducting and participating in as necessary training and exercises to encourage preparedness activities of the response community within the Region (Region 5 will participate in one exercise per year);

(c) Reviewing and updating the ICP;

(d) Discussing, modifying, and adopting procedures to enhance the

various aspects of response coordination between local, Tribal, State, Regional, and Federal response efforts;

(e) Reviewing and commenting, where practicable, on local emergency response plans (required by SARA, Title III). Such reviews are conducted upon the request of a Local Emergency Planning Commission (LEPC), forwarded to the RRT by a SERC. The standing RRT may also review and comment on other issues concerning the preparation or implementation of related response plans;

(f) Providing guidance to Area Committees, as appropriate, to ensure interarea consistency and consistency of individual ACPs with the RCP and NCP;

(g) Reviewing, evaluating, and commenting on Regional and local responses to discharges or releases, and recommending improvements, as appropriate;

(h) Encouraging the State and local response communities to improve preparedness for response;

(i) Planning for use of dispersants, surface collection agents, burning agents, biological additives, or other chemical agents, as appropriate; and, upon request, approving chemicals and techniques for response, following established procedures;

(j) Meeting three times annually, rotating meetings among States, to review response actions, address preparedness and pre-response activities, and consider changes to the RCP;

(k) Providing reports on RRT activities to the NRT twice a year, no later than January 31 and July 31;

(l) Integrating, to the extent possible, ongoing planning and preparedness activities with RRT preparedness initiatives, and all RRT agencies;

(m) Recommending revisions of the NCP to the NRT, based on observations of response operations;

(n) Evaluating the preparedness of the participating agencies and the effectiveness of Federal response to discharges and releases;

(o) Preparing an annual work plan to coordinate emergency response and preparedness activities; and

(p) Coordinating planning and preparedness with RRTs in adjacent Regions.

To carry out the preparedness and planning charge of the RRT, a steering committee, with representatives of Co-Chairs and volunteers from member agencies and States, has been established to identify and facilitate implementation of preparedness and pre-response responsibilities. Work groups will be established as projects and particular work efforts are identified. The necessity of the work groups shall be reevaluated annually.

2.6.3.2 INCIDENT-SPECIFIC RRT

An incident-specific RRT is formed from the standing team each time the RRT is activated for a response. It consists of representatives of local and Tribal governments and the appropriate State and Federal Agencies described in subsection 2.6.3.

An incident-specific RRT has one Chair, the Regional Co-Chair from the agency providing the Federal OSC/RPM for the response to the incident. The standing RRT Co-Chairs may designate other U.S. EPA and USCG employees to act as Co-Chair. The role of the incident-specific team is determined by the operational requirements of the response to a specific discharge or release. Participation is relative to the technical nature and geographic location of the discharge or release.

Appendix I contains a discussion of the U.S. EPA and USCG jurisdictions in Region 5.

The incident-specific RRT Chair coordinates with the RRT membership and the OSC/RPM for the incident to determine the appropriate level of RRT member activation. Member agencies and States participating with the RRT must ensure that designated representatives or alternates can function as resource personnel for the OSC/RPM during incident-specific events.

When activated, members of an incident-specific RRT may:

(a) Provide resources and special or technical expertise;

(b) Provide advice and recommend courses of action for consideration by the OSC;

(c) Advise the OSC/RPM on the duration and extent of Federal response and recommend to the OSC/RPM specific actions to respond to a discharge or release;

(d) Request other Federal, State, or local government or private agencies to provide resources under their existing authorities to respond to a discharge or release or to monitor response operations;

(e) Recommend a change of OSC/RPM to the RRT Co-Chairs, if circumstances warrant (e.g., substantial movement of the pollution into the predesignated area of another OSC lead agency);

(f) Ensure continual communication with the National Response Center (NRC) as significant developments occur; and

(g) Monitor and evaluate reports from the OSC/RPM.

2.6.3.3. ACTIVATION OF THE INCIDENT-SPECIFIC RRT

An incident-specific RRT will be activated during any discharge or release upon a request from the OSC or from any RRT representative to a Co-Chair of the RRT when a discharge or release:

(a) exceeds the response capabilities available to the OSC in the place where it occurs;

(b) transects State, Regional, or international boundaries;

(c) poses a substantial threat to public health, welfare, or to the environment, or to Regionally significant amounts of property; or

(d) is a worst case discharge.

Requests for RRT activation shall subsequently be confirmed in writing. Local requests for RRT activation must be made through the State RRT member. The various levels of activation can be found in the NCP. An incident-specific RRT activation may take place by telephone or by assembly.

Levels of activation are:

(1) Alert: Notification of RRT members that an incident has occurred.

(2) Standby: Notice to some or all RRT members that their services may be needed and that they are to assume a readiness posture and await further instructions. Notice may be given by phone.

(3) Partial: Notice to selected RRT members that their services are required in response to a pollution incident. The activation notice will specify the services requested and the services that will be required. The initial activation notice may be provided by telephone.

(4) Full: Notice to all RRT members (with the exception of representatives of nonaffected States) that their services are requested in response to a pollution incident. The activation notice will specify the services being requested from each RRT member. The services of some members may be limited to advising the OSC on general matters. The initial activation notice may be provided by telephone.

The RRT can be deactivated by the Chair, when the Chair determines that the OSC no longer requires RRT assistance. The time of deactivation shall be included in a POLREP.

2.6.4. Federal Agency Responsibilities

The Federal Agencies listed in this section have duties established by statute, executive order, or Presidential directive which may apply to Federal response actions following, or in prevention of, the discharge of oil or release of a hazardous substance, pollutant, or contaminant. Some of these agencies also have duties relating to the rehabilitation, restoration, or replacement of natural resources injured or lost as a result of such discharge or release. It is recognized that Native American authorities, responders, and communities are entitled to the same cooperation and protection arrangements as the States.

Federal Agencies should plan for emergencies and develop procedures for addressing oil discharges and releases of hazardous substances, pollutants, or contaminants from vessels and facilities under their jurisdiction, custody, or control. Appropriate Federal RRT members or their representatives should provide OSCs/RPMs with assistance from their respective agencies, commensurate with agency responsibilities, resources, and capabilities within the Region. During a response action, the members of the RRT should seek to make available the resources of their agencies to the OSC/RPM. Specifically, member Federal Agency responsibilities include the following:

(a) Informing the RRT of changes in the availability of their response resources;

(b) Reporting discharges and releases from facilities or vessels under their jurisdiction or control;

(c) Making necessary information available to the RRT and OSCs; and

(d) Providing representatives to the RRT and otherwise assisting RRT and OSCs in formulating RCPs.

Following is a list of Federal Agencies and their responsibilities and functions.

2.6.4.1. DEPARTMENT OF AGRICULTURE

The U.S. Forest Service is the designated USDA representative to the RRT. USDA maintains a Regional Emergency Team in each of the 10 Standard Federal Regions to provide liaison and coordination with Federal Agencies operating on a Regional basis. Regional Emergency Teams are composed of representatives of USDA agencies having essential emergency functions at the Regional level. These are:

Forest Services (FS): Responsible for prevention and control of fires in rural areas, in cooperation with State Foresters and appropriate Federal Agencies; and emergency production, availability, and utilization of timber and timber products in cooperation with the Department of Commerce. The agency has capabilities to provide emergency communications systems, specialized aircraft, and human support facilities for large groups of people, and has specially trained incident management teams.

Food and Nutrition Service (FNS): Through the Food Distribution Program, provides food as emergency assistance to disaster victims. In appropriate emergency situations, FNS will authorize State agencies to issue food stamps based on emergency procedure.

Food Safety and Inspection Service (FSIS): Tests meat and poultry products for the presence of violative drugs, chemical residues, and other adulterants.

Agricultural Stabilization and Conservation Service (ASCS): In cooperation with the Forest Service, Soil Conservation Service, and the U.S. Army Corps of Engineers, is responsible for emergency plans and preparedness programs for food processing, storage, and distribution through the wholesale level.

Animal and Plant Health Inspection Service (APHIS): Provides expertise on plant and animal diseases and health.

National Agricultural Statistics Service: Serves as a source of data on crops, livestock, poultry, dairy products, and labor. State Statistical Offices collect and publish local information on these topics.

2.6.4.2. DEPARTMENT OF COMMERCE

DOC, through the National Oceanic and Atmospheric Administration (NOAA), has three roles within Region 5:

Scientific Support Coordinator (SSC): In accordance with the NCP, the SSC provides scientific advice to support the Federal OSC in operational decisions that will protect the environment effectively, mitigate collateral harm, and facilitate environmental recovery. The SSC advises on other technical issues (as requested by the OSC) after consulting with the appropriate NOAA hazardous materials (HAZMAT) resources or other Federal, State, or academic networks. This includes considering advice from the trustee agencies (including the NOAA HAZMAT RRT member), and any divergent opinions.

National Resource Trustee: The Secretary of Commerce acts as trustee for natural resources managed or controlled by DOC, including their supporting ecosystems. 40 CFR 300.600(b), (b)(1). Pursuant to the Great Lakes Critical Programs Act of 1990, 33 USC 1268 (Great Lakes Act), and the Great Lakes Water Quality Agreement of 1978, as amended by the Water Quality Agreement of 1987 (Great Lakes Water Quality Agreement), the United States, in part through DOC, manages and/or controls the water and sediments of the Great Lakes System.

The Secretary of Commerce also acts as trustee for natural resources managed or controlled by other federal agencies that are found in, under, or using waters navigable by deep draft vessels, tidally influenced waters, or waters of the contiguous zone, the exclusive economic zone, and the outer continental shelf. Therefore, all federally managed or controlled resources that are found in those waters, such as water and sediments that form navigation channels and that are managed, controlled, and maintained by the Army Corps of Engineers, and the fisheries that are controlled by the Food and Drug Administration through derivation of action levels, fall within DOC trusteeship. Similarly, the water and sediment of the Great Lakes System are within the administrative jurisdiction of the United States, and are federally managed or controlled pursuant to the Great Lakes Act and the Great Lakes Water Quality Agreement.

The Secretary has delegated his authority to act as trustee to the Administrator of NOAA. Pursuant to these delegations, NOAA has trusteeship for the water, sediment, and the biological resources, of the Great Lakes and their supporting ecosystems. The NCP also cites as examples of DOC trusteeship the following natural resources and their supporting ecosystems: migratory birds, anadromous fish, and endangered species and marine mammals. 40 CFR 300.600(b)(1), (b)(2).

Under OPA and the NCP, NOAA has specific responsibilities as a natural resource trustee that include:

(a) Receiving notification of potential or actual spills threatening NOAA resources;

(b) Being consulted on the preparation of the fish and wildlife and sensitive environments annex (this includes concurring on specific countermeasures or removal actions during the contingency planning phase);

(c) Being consulted on removal actions during an incident; and

(d) Implementing damage assessment activities.

All of these activities are intended to minimize impacts and to restore the environment.

RRT Member: Has the primary goal to support the appropriate RRT Co-Chair who supports the Federal OSC by providing advice and resources that will protect the environment effectively, mitigate collateral harm, and facilitate environmental recovery. Carries out this goal by:

(a) serving as an access point to other DOC resources and expertise, usually outside NOAA HAZMAT, that have primary roles in carrying out NOAA's trusteeship role during spills;

(b) representing DOC in carrying out its policy responsibilities (such as trusteeship);

(c) helping the NOAA SSC provide technical assistance, if needed; and

(d) representing NOAA HAZMAT at meetings where the SSC cannot be present.

This member can provide:

- scientific expertise on living aquatic resources for which DOC is responsible;
- current and predicted meteorological, hydrologic, ice, and limnologic conditions;
- charts and maps; and
- communication services to the general public, various levels of government, and the media via its NOAA weather wire and NOAA weather radio systems.

These roles are the responsibility of all DOC representatives, whether from NOAA HAZMAT, NOAA National Marine Fisheries Service (NMFS), or NOAA National Weather Service (NWS).

2.6.4.3. DEPARTMENT OF DEFENSE

DOD, consistent with its operational requirements, may provide assistance in critical oil and hazardous materials incidents, in the maintenance of navigation channels, and in removal and salvage of navigation obstructions. DOD will provide the OSC and RRT Chair for releases occurring on DOD property or facilities.

U.S. Army Corps of Engineers (USACE): Has specialized equipment and personnel for maintaining navigation channels, for removing navigational obstructions, for accomplishing structural repairs, and for performing maintenance to hydropower electric generating equipment. USACE can also provide design services, perform construction, and provide contract writing and contract administration services for other Federal Agencies.

U.S. Navy Supervisor of Salvage (SUPSALV): Is knowledgeable and experienced in ship salvage, shipboard damage control, diving, and has equipment for salvage-related and open-sea pollution incidents.

2.6.4.4. DEPARTMENT OF ENERGY

DOE provides the designated OSC/RPM for responses to releases on or from any facility or vessel under its jurisdiction. DOE administers, imple-

ments, and coordinates the Federal Radiological Monitoring and Assessment Center (FRMAC). Under the Federal Radiological Emergency Response Plan (FRERP), DOE provides advice and assistance to the RRT regarding the identification of the source and extent of radioactive contamination, and removal and disposal of radioactive releases.

2.6.4.5. FEDERAL EMERGENCY MANAGEMENT AGENCY

FEMA requires the development, evaluation, and exercise of all-hazard contingency plans for all FEMA-funded jurisdictions at the State and local levels. SARA Title III plans are often annexes of the all-hazard plan. FEMA monitors and provides technical assistance regarding public sector emergency response training and planning for incidents involving hazardous materials. In a response, FEMA provides advice and assistance to the lead agency on coordinating relocation assistance and mitigation efforts with other Federal Agencies, State and local governments, and the private sector.

If the President declares a disaster or emergency, FEMA coordinates all Federal assistance, including temporary housing. The OSC coordinates with the Federal Coordinating Officer in situations where both authorities are active.

FEMA's National Emergency Support Team and Regional Emergency Response Teams provide coordination of Federal response in situations of unique national significance, such as commercial nuclear power plant or nuclear weapons accidents and catastrophic natural disasters.

2.6.4.6. GENERAL SERVICES ADMINISTRATION

GSA, upon request, provides expedited logistical and telecommunications support to Federal Agencies that are members of the NRT. The support includes, but is not limited to,

- provision of space,
- transportation,
- telecommunications,
- supplies, and
- procurement-related services.

Services may be furnished through GSA personnel who are located at the scene of the oil or hazardous material release, or at their regular duty stations, depending on the specific requirements of the Federal OSC or the emergency situation. Expenses incurred by GSA in providing requested assistance to other agencies must be reimbursed.

2.6.4.7. DEPARTMENT OF HEALTH AND HUMAN SERVICES

HHS assists with the assessment, preservation, and protection of human health and helps ensure the availability of essential human services. HHS provides technical and nontechnical assistance in the form of advice, guidance, and resources to other Federal Agencies, as well as to State and local governments.

The principal HHS response comes from the U.S. Public Health Service (PHS). Within PHS, the primary response to hazardous materials emergencies comes from ATSDR and the Centers for Disease Control (CDC). Both ATSDR and CDC have 24-hour emergency response capability whereby scientific and technical personnel are available to provide tech-

nical assistance to the lead Federal Agency and State and local response agencies on human health threat assessment and analysis, and exposure prevention and mitigation. Such assistance is used in situations requiring evacuation of affected areas, dealing with human exposure to hazardous materials, or advice on mitigation and prevention.

Agency for Toxic Substances and Disease Registry: ATSDR is the lead Federal public health agency for hazardous material incidents under CERCLA. Two ATSDR representatives are assigned to each U.S. EPA Region to assist in U.S. EPA/ATSDR communications. Regional representatives can also assist in emergency response events that involve RRT issues by coordinating with ATSDR headquarters Emergency Response and Consultation Branch and with the CDC RRT representative. Under CERCLA Section 104(i), ATSDR is required to:

(a) establish appropriate disease/exposure registries;

(b) provide medical care and testing of exposed individuals in public emergencies;

(c) develop, maintain, and provide information on health effects of toxic substances;

(d) conduct research to determine relationships between exposure to toxic substances and illness;

(e) develop guidelines, with U.S. EPA, for toxicological profiles for hazardous substances; and

(f) develop educational materials for health professionals related to health effects of toxic substances.

Additionally, ATSDR operates a 24-hour phone line to address public health issues.

Centers for Disease Control and Prevention: CDC takes the lead during oil releases regulated under CWA and OPA. PHS has designated the CDC representative to the RRT. This person is responsible for coordinating all public health responses on the Federal level and for coordinating all responses with State and local health agencies.

Other PHS agencies involved in support during hazardous materials incidents, either directly or through ATSDR/CDC, include the Food and Drug Administration (FDA), the Health Resources and Services Administration, the Indian Health Service, and the National Institutes of Health (NIH).

2.6.4.8. DEPARTMENT OF THE INTERIOR

DOI is a Federal Trustee for natural resources.

DOI can provide information concerning the lands and resources specifically under DOI jurisdiction, as well as offer technical expertise related to geology, hydrology, minerals, fish and wildlife, cultural resources, and recreation resources. Under Executive Order 12580, DOI is designated by the NCP as a Federal Trustee for Natural Resources.

DOI has direct jurisdiction for protection of resources on its own lands, as well as trustee responsibilities for certain natural resources, regardless of location. The DOI natural resource trusteeship that extends be-

yond DOI site boundaries includes migratory birds, anadromous fish, and endangered/threatened species and their critical habitat.

Bureaus may provide assistance in investigations to evaluate the magnitude and severity of discharges on or affecting facilities or resources under their jurisdiction, and may conduct activities as natural resource trustees as set forth in Subpart G of the NCP.

DOI Bureaus can be contacted through the Regional Environmental Officer.

Bureaus may also provide:

- advice to the OSC/RPM when response operations are being performed that affect land, facilities, or natural resources under their management authority;
- technical assistance in disposal activities; however, lands under the jurisdiction of DOI (including certain municipal landfills) may not be utilized as disposal sites; or
- air and ground transportation support, and maintainenance of communications support.

Within the Department, individual bureaus and offices have specific responsibilities and capabilities as follows:

Office of Environmental Policy and Compliance (OEPC): The Regional Environmental Officer (REO) represents DOI on the RRT, and is responsible for coordinating RRT/DOI activities. The Regional Environmental Assistant (REA) provides support to the REO in planning and emergency response and acts for the REO when unavailable. The Regional Coordinator (RC) provides planning and natural resource damage assessment (NRDA) coordination. OEPC provides a number of services, including:

- presenting the DOI position on chemical countermeasure and in situ burn decisions,
- facilitating technical assistance requests from the OSC,
- supplying administrative details to secure response cost reimbursement approval from the OSC,
- initiation of natural resource damage assessments (NRDAs), and
- coordinating response between DOI Bureaus.

U.S. Fish and Wildlife Service (USFWS): Can provide responders with information concerning migratory birds, Federally listed threatened and endangered species and their designated critical habitat, certain anadromous fish, and certain Federal lands (National Wildlife Refuges, Waterfowl Production Areas, and National Fish Hatcheries), as well as technical assistance concerning the effects of oil on these resources. In addition, it will help coordinate wildlife rescue and rehabilitation efforts in conjunction with State natural resource trustee(s). The Service is responsible for assessing damages to natural resources as a result of releases of oil or hazardous substances into the environment, and issues Federal Migratory Bird and Eagle Permits to qualified individuals and/or organizations conducting wildlife collection, rescue, and rehabilitation operations related to oil spill incidents

National Park Service (NPS): Provides expertise on historic, cultural, archeological, architectural, and recreational resources and sites on the National Register of Historic Places. NPS can also provide information on National Parks, National Recreation Areas, National Historic Sites,

National Trails, Lake Shores, National Monuments, and Wild and Scenic Rivers listed on the Nationwide Rivers Inventory (NRI).

U.S. Geological Survey (USGS): Provides advice and information concerning geohydrologic, geologic, and geochemical data; ground and surface water data; and maps. USGS maintains stream flow gauges in every State and can provide historical stream flow information, assist in predicting the time/travel/trajectory of spills, and can collect and analyze surface and groundwater samples.

The Biological Resources Division performs research in support of biological resource management; inventories, monitors, and reports on the status and trends in the nation's biologic resources; and transfers the information gained to resource managers and others concerned with the care, use, and conservation of the nation's natural resources.

Bureau of Indian Affairs (BIA): Responsible for protecting and improving the trust resources of Native American Tribes and facilitating an active role in planning and response for Tribal governments as requested. BIA coordinates activities affecting Native American Tribal lands, and can provide assistance to the OSC in identifying Native American Tribal government officials. BIA can also assist in obtaining access to Tribal land areas as needed for response action and will coordinate with the incident Public Information Office Director to ensure pertinent information is made available to appropriate Tribal authorities on a timely basis.

Bureau of Land Management (BLM): Has expertise in minerals, soils, vegetation, archeology, and wildlife habitat, and may provide advice on response affecting lands or minerals administered by BLM. May also provide advice in the field of oil and gas drilling, production, handling, and transportation by pipeline.

All bureaus of the Department of the Interior may be contacted through the Regional Environmental Officer, the designated member of the RRT.

2.6.4.9. DEPARTMENT OF JUSTICE

DOJ members of the RRT serve as representatives of the Department of Justice and not as legal counsel to the RRT or its member agencies. Although the DOJ representative to the RRT is not a substitute for member agencies' in-house counsel, the DOJ representative will be able to offer the advice, views, and expertise of the Department with respect to RRT's long-term planning and incident-specific functions.

As a consequence of DOJ's primary role as litigation counsel for the Federal Government and as legal counsel on enforcement and interagency matters, its participation in RRT activities will ordinarily focus on litigation concerns regarding response activities and interagency coordination. The DOJ representative might provide:

- general legal advice;
- review and comment on regional planning and procedural documents; and
- incident-specific assistance, including assigning staff attorneys when an incident may result in litigation or raise difficult issues of interagency coordination.

2.6.4.10. DEPARTMENT OF LABOR
DOL, through the Occupational Safety and Health Administration (OSHA):

(a) conducts safety and health inspections at hazardous waste sites and during emergencies to ensure that employees are being protected and to determine compliance with its regulations, and

(b) provides the OSC/RPM with advice, guidance, and assistance regarding hazards to persons involved in removal or control of oil or chemical spills, and the precautions necessary to protect such persons' health and safety.

2.6.4.11. NUCLEAR REGULATORY COMMISSION
The Nuclear Regulatory Commission (NRC) will:

(a) respond, as appropriate, to releases of radioactive materials by its licensees, in accordance with the NRC Incident Response Plan to monitor the actions of those licensees and assure that the public health and environment are protected and adequate recovery operations are instituted;

(b) keep U.S. EPA informed of any significant actual or potential releases in accordance with procedural agreements; and

(c) provide advice to the OSC/RPM when assistance is required in identifying the source or character of other hazardous substance releases where the NRC has licensing authority for activities utilizing radioactive materials.

2.6.4.12. DEPARTMENT OF STATE
DOS will:

(a) lead in developing joint international contingency plans;

(b) provide assistance in coordination when a pollution release crosses international boundaries or involves foreign flag vessels; and

(c) coordinate requests for assistance from the Government of Canada and U.S. proposals for conducting research at incidents that occur in Canadian waters.

2.6.4.13. DEPARTMENT OF TRANSPORTATION
DOT, through USCG, provides the Co-Chair of RRT5 and predesignated OSCs for the Great Lakes Coastal Zone and specified ports and harbors in Region 5. DOT also provides expertise regarding transportation of oil or hazardous materials. Through USCG, DOT:

(a) supplies expertise in the domestic/international fields of
- port safety and security;
- marine law enforcement, navigation, and construction; and
- manning, operation, and safety of vessels and marine facilities;

(b) maintains continuously manned facilities that are capable of command, control, and surveillance for oil or hazardous substances

releases occurring on the waters of the United States, and may provide these services to the OSC.

DOT, through the Research and Special Programs Administration (RSPA), establishes oil discharge contingency planning requirements for pipelines, transport by rail and containers, or bulk transport of oil.

2.6.4.14. U.S. ENVIRONMENTAL PROTECTION AGENCY

U.S. EPA provides the Co-Chair of RRT5 and provides OSCs for all inland areas for which an ACP is required under CWA Section 311(j) and for discharges and releases occurring in the inland zone. It also provides RPMs for remedial actions except as otherwise provided, and generally provides the Scientific Support Center for responses in the inland zone.

U.S. EPA is responsible for providing expertise regarding environmental effects of pollution and environmental pollution control techniques. U.S. EPA will also:

- assist USCG in hazardous materials incidents,
- advise the RRT and the OSC of the degree of hazard a particular release poses to public health and safety, and
- coordinate scientific support, including environmental assessment, in inland regions.

2.7. MULTIREGIONAL RESPONSES

The Federal OSC for a given incident is determined by the point of origin of the release. However, if a discharge or release affects areas covered by two or more RCPs/ACPs, the response mechanisms of both may be affected. In this case, response actions of all Regions concerned shall be fully coordinated as detailed in the RCPs.

There shall be only one OSC at any time during the course of a specific response operation. Should a discharge or release affect two or more areas, U.S. EPA, USCG, DOD, DOE, or other lead agency, as appropriate, shall give prime consideration to the area vulnerable to the greatest threat, in determining which agency should provide the OSC. The RRT shall designate the OSC if the RRT member agencies who have response authority within the affected area are unable to agree on the designation. The NRT shall designate the OSC if members of one RRT or two adjacent RRTs are unable to agree on the designation.

Where USCG has initially provided the OSC for response to a release from hazardous waste management facilities located in the coastal zone, responsibility for response shall shift to U.S. EPA or another Federal Agency, as appropriate.

The OSC/RPM shall be provided by the Region within which the release occurs, or according to preestablished protocols described in the interregional contingency plans and Section 3 of this ICP.

Several interregional agencies have been established that have interests within Region 5 and have roles in response and planning. The agencies vary considerably in their concerns and capabilities. The following is a list of these interregional organizations.

2.7.1. The Great Lakes Commission

The Great Lakes Commission (GLC) is an interstate compact commission

consisting of gubernatorially appointed and legislatively mandated representatives of the eight Great Lakes States (Minnesota, Wisconsin, Illinois, Michigan, Indiana, Ohio, Pennsylvania, and New York). The Commission was formed to promote the informed use, development, and protection of Great Lakes Basin land and water resources through regional coordination, policy development, and advocacy.

2.7.2. Ohio River Valley Water Sanitation Commission

The Ohio River Valley Water Sanitation Commission (ORSANCO) is an interstate water pollution control agency established in 1948, with membership consisting of representatives from the eight States in the Ohio River Valley (Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia, and West Virginia), and a representative from U.S. EPA. The Commission is responsible for operating several programs:

- water quality monitoring of the Ohio River and its major tributaries;
- regulation of wastewater discharge to the Ohio River; and
- investigation of particular water pollution problems.

***ORSANCO has developed a spill notification and response plan, which should be used as the operative plan for spills on the Ohio River, and the* ORSANCO Emergency Response Resource Manual.**

In addition, ORSANCO assists State environmental agencies, U.S. EPA, and USCG in emergency spill response and notification. ORSANCO maintains a spill notification database on the Ohio River and its tributaries. Specifically, in the event of a spill on the Ohio River or a major tributary, ORSANCO's role is to serve as an interstate communications center, assisting in emergency notification procedures and to coordinate emergency stream monitoring.

2.7.3. Upper Mississippi River Basin Association

The Upper Mississippi River Basin Association (UMRBA) is an interstate organization formed by the Governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin to maintain communication and cooperation among the States on matters related to water resources planning and management in the Upper Mississippi Basin. The five States are represented through gubernatorial appointees, and five Federal Agencies have advisory status. As part of its efforts to facilitate cooperative planning, the Association provides support to an ad-hoc Upper Mississippi Spills Coordination Group, which includes representatives of the five State response agencies, as well as U.S. EPA Regions 5 and 7, USCG, USFWS, NOAA, and USACE. The group meets periodically to discuss common problems and coordinate activities to respond to spills on the Upper Mississippi.

UMRBA and the member State and Federal Agencies of the Upper Mississippi Rivers Hazardous Spills Coordination Group have produced the* Upper Mississippi River Spills Response Plan and Resource Manual. *The manual functions as a working contingency plan, to supplement the appropriate State emergency response plans, RCPs, and the NCP. As such, themanual is consistent with the U.S. EPA Region 5 ICP and Region 7 RCP, is in compliance with requirements of the NCP, and should be used as the operative plan for spills on the Mississippi River.

2.8. NATIONAL RESPONSE

2.8.1. National Response Team

The NRT is responsible for oil and hazardous materials spill planning and coordination on the national level. The NRT is made up of representatives of each of 15 Federal Agencies, chaired by U.S. EPA and vice-chaired by USCG. The NRT's responsibilities include:

- evaluating methods of responding to discharges,
- maintaining national preparedness to respond to a major oil discharge, and
- developing procedures, in coordination with the National Strike Force Coordination Center (NSFCC), to ensure the coordination of Federal, State, and local governments.

2.8.2. Federal Radiological Emergency Response Plan

Response to radiological emergencies is coordinated under the FRERP. This

interagency agreement coordinates the response of various agencies, under a variety of statutes, to a large radiological accident. The lead Federal Agency, defined by the FRERP, activates the FRERP for any peacetime radiological emergency that, based upon the agency's professional judgment, is expected to have a significant radiological effect within the United States, its territories, possessions, or territorial waters; and that could require a response by several Federal Agencies.

2.8.3. Federal Response Plan

In the event of a declaration of a major disaster by the President, FEMA may activate the Federal Response Plan. An FCO, designated by the President, may implement the Federal Response Plan and coordinate and direct emergency assistance and disaster relief of impacted individuals, businesses, and public services under the Stafford Disaster Relief Act. Planning for disasters is coordinated by FEMA under the Federal Response Plan. The RCP is Emergency Support Function #10 under the Federal Response Plan, along with the FRMAP.

The Federal Response Plan was developed under the Disaster Relief Act of 1974, as amended by the Stafford Disaster Relief Act of 1988. The Federal Response Plan established a foundation for coordinating Federal assistance to supplement State and local response efforts to save lives, protect public health and safety, and protect property in the event of a natural disaster, catastrophic earthquake, or other incident declared a major disaster by the President.

The delivery of Federal assistance is facilitated through twelve annexes, or Emergency Support Functions (ESFs), which describe a single functional area of response activity: Transportation, Communications, Public Works and Engineering, Fire Fighting, Information and Planning, Mass Care, Resource Support, Health and Medical Services, Urban Search and Rescue, Hazardous Materials, Food, and Energy. The Hazardous Materials annex, ESF #10, addresses releases of oil and hazardous substances that occur as a result of a natural disaster or catastrophic event and incorporates preparedness and response actions carried out under the NCP. U.S. EPA serves as the Chair of ESF #10 and is responsible for oversight of all preparedness and response actions associated with ESF #10 activities, only if assigned it by FEMA. All NRT/RRT departments and agencies serve as support agencies to ESF #10.

2.9. INTERNATIONAL RESPONSE

2.9.1. International Joint Commission

The International Joint Commission (IJC) is a binational organization that was created under the Boundary Waters Treaty of 1909 to advise the governments of the United States and Canada on issues concerning water quality and quantity in the boundary waters between the two nations. The IJC monitors and assesses cleanup progress under the Treaty and advises governments on matters related to the quality of the boundary waters of the Great Lakes system. The Commission consists of six members, three appointed by the President of the United States, and three appointed by the Prime Minister of Canada.

2.9.2. Joint Contingency Plan

A Joint Contingency Plan is being developed with Canada for releases of oil

In the event of releases that impact or threaten the international border, the following Canadian government agencies should be notified:

Canadian Coast Guard
(519) 337-6360
Environment Canada
(416) 518-3221
Emergency Preparedness Canada
(613) 991-7000

Table 2-1: Size Classes of Discharges

TYPE OF SPILL	OIL	HAZARDOUS SUBSTANCE	REQUIRED NOTIFICATION ACTIONS
MINOR	< 1,000 gal.	< Reportable Quantity	If circumstances warrant, POLREPs to Regional Response Center, affected State, Federal, Native American, and foreign natural resource trustees, and to the pollution response agency for the impacted State or States
MEDIUM	1,000 - 10,000 gal.	> Reportable Quantity but does not meet criteria for a major or minor release	(a) The pollution response agency for the impacted State or States; (b) The DOI representative; (c) The HHS representative, if a public health emergency exists; (d) The Director of the Emergency Response Division (ERD), Headquarters, U.S. EPA; (e) The DOC RRT representative in the case of a release or threat of a release to the surface waters of the United States; (f) All affected State, Federal, Native American, and foreign natural resource trustees; (g) The appropriate USCG District office if the spill impacts navigable water; and (h) The Fund Manager. **In the event of a major spill**, notify Regional Response Center by the most rapid means available, providing all known information, even if it has not been confirmed by on-scene personnel. An Incident-Specific RRT will then be activated.
MAJOR	> 10,000 gal.	Amount that poses a substantial threat to human health, welfare, or the environment	
WORST CASE	A worst case involves **ANY** discharge or threat of a discharge, in significant quantities to impact public health, welfare or the environment, where the parties responsible for the threat or discharge are unwilling or unable to perform the required response actions.		

and hazardous substances. Several plans will cover the Great Lakes and the inland area.

2.10. COMMUNICATIONS

2.10.1. Discovery

It is the spiller's responsibility to report all spills. The spiller or responsible party is required to immediately report all releases of oil and hazardous substances into or on navigable water, adjoining shorelines, or the contiguous zone, to the National Response Center (NRC). The NRC will notify the appropriate OSC. If NRC notification is not practicable, the responsible party should notify the U.S. EPA or USCG predesignated OSC and the appropriate State environmental agency.

Notification should be made to the NRC duty officer at (800) 424-8802 or (202) 267-2675.

The U.S. EPA Region 5 predesignated OSC can be reached 24 hours a day at (312) 353-2318.

If U.S. EPA or USCG is the first to be notified of a release or discharge, U.S. EPA or USCG will notify the State and the NRC, the appropriate trustees for natural resources and other RRT members, as stated in Subsection 2.10.2 of this plan. OSC notification of trustees is accomplished through protocols developed via trustee-specific agreements. For spills of significance, if the State or other agency is the first to be notified, they shall notify the appropriate Federal Agencies.

The USCG predesignated OSC can be reached at (216) 522-3984 (Ninth District) or (504) 589-6225 (Eighth District).

2.10.2. OSC Notification Responsibilities

As used in this section, "notification" refers to the actions taken by the predesignated Federal OSC to immediately alert appropriate Federal and State agencies of a release. The purpose of this notification is to provide the best available summary of OSC observations and operations, and to allow the notified agency an opportunity to perform some on-scene program function. Usually, the OSC will notify agencies by telephone.

Appendix III provides communication information (including FAX numbers) for RRT members, OSCs, and other government entities that routinely participate in Federal response activities in Region 5.

Upon notification from the NRC, the OSC may investigate the report to determine the threat posed to the public health or welfare or to the environment. Notifications are based on the actual or potential size of the spill and the threat posed as outlined in Table 2-1.

OSCs should also ensure that all appropriate public and private interests are kept informed and their concerns considered.

If radioactive substances are present in a release, the U.S. EPA Region 5 Emergency Response Branch should be notified for evaluation and assistance, either directly or through the National Response Center.

2.10.3. Pollution Report Messages (POLREPs)

When conducting Federal removal actions, the OSC will submit POLREPs to the above-mentioned agencies, and include local entities as necessary. As changing conditions warrant, POLREP distribution may be expanded to include additional entities. In the case of an oil release, the OSC will submit a POLREP to the National Pollution Fund Center (NPFC).

Except as noted below, the designated OSC prepares POLREPs for each release occurring within the OSC's area of responsibility. The OSC submits POLREPs to the RRT as significant developments occur. For medium and major releases, these submittals will occur on a daily basis until, in the judgment of the OSC, the response operation and the impact of the release have stabilized. The standard POLREP format is presented as Figure 2-1.

FIGURE 2-1: Model Initial POLREP

U.S. ENVIRONMENTAL PROTECTION AGENCY POLLUTION REPORT

I. HEADING

Date:
Subject:
From:
To: _____, U.S. EPA, OSWER FAX: _____
_____, U.S. EPA ERB FAX: _____
_____, Chief, U.S. EPA Response Section __ FAX: _____
_____, Chief, U.S. EPA ESS FAX: _____
_____, U.S. EPA Office of Public Affairs FAX: _____
_____, U.S. EPA ORC FAX: _____
_____, U.S. EPA Enforcement Specialist FAX: _____
_____, State agency FAX: _____
_____, USCG, District __ FAX: _____
_____, U.S. DOI FAX: 215-597-9845
_____, County official FAX: _____

POLREP No.:

II. BACKGROUND

Site No.:
Delivery Order No.:
Response Authority:
ERNS No.:
CERCLIS No.:
NPL Status:
State Notification:
Action Memorandum Status:
Start Date:
Demobilization Date:
Completion Date:

III. SITE INFORMATION

A. Incident Category

B. Site Description

1. Site location

2. Description of threat

FIGURE 3-1: Model Initial POLREP (cont.)

C. Preliminary Assessment/Site Inspection Results

IV. RESPONSE INFORMATION

A. Situation

1. Current situation
2. Removal activities to date
3. Enforcement

B. Planned Removal Activities

C. Next Steps

D. Key Issues

V. COST INFORMATION

The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

VI. DISPOSITION OF WASTES

Wastestream	Medium	Quantity	Containment/ Migration Control	Treatment	Disposal

2.10.3.1. SPECIAL CASES

Fund Manager: In the event of a Federally funded oil cleanup, the OSC will submit a POLREP to the NPFC.

Worker Safety: If the pollutant is a hazardous substance and Federal or private sector personnel are participating in a "hands-on" removal, the OSC will include the Department of Labor RRT representative in the distribution of POLREPs. (Note: this provision does not extend to the activities of State and local government employees.)

Federal Land Manager: Consistent with spill notification guidelines, when a release impacts Federal lands, the OSC will include the RRT representative of the managing agency in the distribution of POLREPs.

Intrastate Distribution: The State office designated to receive POLREPs from Federal OSCs will perform any further distribution to other elements of government within that State.

2.10.3.2. MEANS OF TRANSMISSION

Facsimile (FAX) is the standard method of transmitting messages between member agencies of RRT5. However, individual agencies and a lead agency may agree to use other means of communication (e.g., E-mail, AUTODIN, TELEX). It is incumbent upon each agency to identify a reliable 24-hour means of receiving POLREPs. Where this has not been done, distribution will be by regular mail.

Where an incident generates substantial interest in the response community and the lead agency experiences a demand for POLREPs beyond the normal RRT distribution, the lead agency may elect to post POLREPs on a commonly accessible computer bulletin board in lieu of direct transmission to individual offices. In such an event, the Ninth Coast Guard District will employ the NOAA RRT System discussed in subsection 5.4.5 of this plan.

2.10.4. Public Information

In accordance with 40 CFR 300.415(n), the lead agency shall designate a spokesperson who shall:

- inform the community of actions taken,
- respond to inquiries, and
- provide information concerning the response action.

All news releases or statements made by participating agencies shall be jointly coordinated and released through a public information office. The spokesperson shall notify, at a minimum, immediately affected citizens, local and State officials and, when appropriate, emergency management agencies. OSCs may consider use of the RRT to assist in media relations and other community involvement activities. Also, responsible parties may implement community involvement activities.

For response actions lasting less than 30 days, the following apply:

(a) The administrative record file must be maintained at the U.S. EPA Regional Office;

(b) The administrative record must be made available to the public no later than 60 days after initiation of activity at the site, and U.S.

EPA must inform the public that it is available for public inspection by placing a notice in a major newspaper; and

(c) No public comment period on the administrative record is required when on-site activity lasts less than 30 days.

2.11. SAFETY

2.11.1. Worker Health and Safety

U.S. EPA Worker Protection Standards apply to employers of State and local governments whose employees are engaged in hazardous waste operations and emergency response. OSHA regulations apply directly to private and Federal employees and to those State and local government employees in States having OSHA-approved plans. OSHA and U.S. EPA worker protection standards (29 CFR 1910.120 and 40 CFR 11) implement Section 126 of SARA. U.S. EPA's worker protection regulations cover State and local government employees without OSHA-approved plans (reference 300.150 of the NCP).

An employer conducting a cleanup must comply with all the requirements in (b) through (o) of the OSHA standard. The requirements of (b) through (o) of the standard specify a minimum of 24 hours of off-site training. During emergency responses under 29 CFR 1910.120, the employer must comply with 1910.120 (q). If a post-emergency-response cleanup is done on plant property using plant or workplace employees, the employer must comply with the training requirements of 29 CFR 1910.38(a), 1910.134, 1910.120, and other appropriate training made necessary by the tasks they are expected to perform.

Based on experience with the standard (29 CFR 1910.120 [q][11][i]) during oil spills off the coasts of Texas, Alaska, and California, the hazards to employees vary widely in severity of potential injury or illness. For job duties and responsibilities with a low magnitude of risk, fewer than 24 hours of training may be appropriate for post-emergency cleanup workers. It is the expectation of OSHA that though the number of hours of training may vary, a minimum of 4 hours would be appropriate in most situations. Moreover, petroleum spills are unique in that many people who assist in the cleanup may not engage in this activity on a recurring basis. In addition, for maximum protection of the environment, petroleum spills dictate that cleanup must be completed as soon as possible (OSHA Instruction CPL 2-2.251). The DOL RRT representative is responsible for determining site-specific training requirements.

2.11.2. Safety and Environmental Health Officer

The Ninth and the Eighth Coast Guard District Offices each maintain a billet for a Safety and Environmental Health Officer (SEHO); District Industrial Hygienist). Primary responsibility of the incumbent is to provide occupational safety and health support for USCG Marine Safety personnel. This includes pollution response operations. The SEHO can provide USCG OSCs advice on safety and health matters and can assist on-scene in environmental and medical monitoring activities. Outside normal working hours, OSCs may request the SEHO's services through the District Operations Center.

2.11.3. Emotional Health Services

Emergency workers often experience delayed reactions to the death and destruction caused by explosion, fire, or oil and chemical releases. No one is

immune to the tragedy and mental stress. Responders should be debriefed within 1 week of their return home. It is each member agency's responsibility to ensure that its employees have this type of training. Contact FEMA for materials that address this aspect of emergency response.

SECTION 3: OPERATIONS

3.1. ASSESSMENT/CLASSIFICATION OF DISCHARGE

When the OSC receives a report of a discharge, initial actions include investigating the report to determine the threat posed to human health or welfare of the United States or the environment, the type and quantity of polluting material, and the source of the discharge. The OSC then officially classifies the size (i.e., minor, medium, major) and type (i.e., substantial threat, worst case discharge) of the discharge and determines the course of action to be followed. (See Table 2-1, p. 33)

3.1.1. Spill of National Significance

A Spill of National Significance (SONS) is a spill that due to:

- severity,
- size,
- location,
- actual or potential impact on the public health and welfare or the environment, or
- the necessary response effort,

is so complex that it requires extraordinary coordination of Federal, State, local, Tribal, and responsible party resources to contain and clean up the discharge.

A discharge may be classified as a SONS by the Administrator of U.S. EPA for discharges occurring in the inland zone and the Commandant of the USCG for discharges occurring in the coastal zone. For a SONS in the inland zone, the U.S. EPA Administrator may name a senior Agency official to assist the OSC in communicating with the affected parties and the public and coordinating Federal, State, local, Tribal, and international resources at the national level. This strategic coordination will involve, as appropriate, the NRT, RRT(s), the Governor(s) of affected State(s), and the mayor(s) or other chief executive(s) of local government(s).

3.1.2. Worst Case Discharge

CWA Section 311(d)(2)(J) requires the ACP to include procedures and standards for removing a worst case discharge of oil, and for mitigating or preventing a substantial threat of such a discharge. A "worst case" discharge for the purposes of this plan will be the catastrophic release as identified in Facility Response Plans (FRPs) submitted to U.S. EPA. Since this is a requirement of OPA, only oil scenarios will be listed.

Appendix IV presents a list of facilities by State, city, and name, and the worst case discharge and the water body threatened. Facilities are also cited on the Inland Sensitivity Maps.

3.2. OPERATIONAL RESPONSE OBJECTIVES

The priority response objective is protection of public health and safety, which includes response worker health and safety. Protection of the environment and public welfare (infrastructure) are also important response objectives, but are subordinate to public and worker safety.

3.3. DISCHARGE OR RELEASE CONTROL

3.3.1. Actions To Lessen Impact

Defensive actions should begin as soon as possible to prevent, minimize, or mitigate the threat to the public health or welfare or to the environment. Actions may include the following:

(a) Analysis of water samples to determine the source and spread of the contaminants;

(b) Control of the source of the discharge;

(c) Measurements and sampling;

(d) Placement of physical barriers to deter the spread of the oil or to protect sensitive environmental resources through coordination with resource agency specialists;

(e) Control of the water discharged from upstream impoundments; and

(f) If approved, the use of chemicals and other materials to restrain the spread of the oil and mitigate its effects, in accordance with the NCP. **Use of chemical agents is not pre-approved in Region 5.**

Use of chemical agents is discussed in Section 3.3.2. of this plan.

Appropriate actions should be taken to recover the oil or mitigate its effects. Of the numerous chemical or physical methods that may be used, the chosen methods should be the most consistent with protecting the public health and welfare and the environment. **Sinking agents shall not be used.**

3.3.1.1. GENERAL GUIDELINES FOR OIL SPILLS

Shoreline Cleanup Guideline Matrices have been developed for the U.S. EPA Region 5 Area by the RRT. These guidelines address the use of specific countermeasures on various shoreline habitats for four oil types. The shoreline types are listed in relative order of sensitivity. Habitat sensitivity is a function of a range of factors, including:

- degree of exposure to natural removal processes,
- biological productivity and ability to recover following oil exposure,
- human use of the habitat, and
- ease of oil removal.

These correlate directly with the rankings used in the Environmental Sensitivity Index (ESI) atlases published for the U.S. Great Lakes by NOAA.

Shoreline Cleanup Guideline Matrices are included in electronic form in Appendix V.

The classifications developed for these matrices indicate the relative environmental impact expected as a result of implementing the response techniques on a specific shoreline. The relative effectiveness of the technique also has been incorporated into the matrices, especially where use of the technique would result in longer application and thus greater ecological impacts, or leave higher oil residues in the habitat.

See Options for Minimizing Environmental Impacts of Freshwater Spill Response Actions *(American Petroleum Institute [API]/NOAA, 1994), included in electronic form in Appendix VI.*

3.3.1.2. OIL REMOVAL ACTIONS

Selection of appropriate oil spill protection, recovery, and cleanup techniques prior to and following an oil spill is a critical element affecting the spill's environmental impact. To choose techniques that most effectively prevent or minimize adverse ecological impact, it is important to identify techniques that have minimal intrinsic ecological impacts and also are effective in minimizing the impact of the oil. Furthermore, it is important that these response techniques be pre-

Refer to Section 3.8 of this plan for details on disposal of recovered oil and contaminated materials.

planned so that in the event of a spill, minimal time be spent preparing for the response.

As stated previously, the OSC directs response efforts and coordinates all other efforts at the scene of a discharge. As part of this effort, and following the required notifications, the OSC should:

The notifications required by the OSC are described in Section 2.10.2.

(a) collect information about the discharge including source and cause;

(b) identify responsible parties;

(c) obtain technical data including amount, exposure pathways, and time of travel;

(d) determine potential impact on human health and the environment;

(e) determine whether spill poses a substantial threat;

(f) assess impact on natural resources and other property;

(g) determine protection priorities; and

(h) document costs.

OSCs shall consult with the natural resource trustees and appropriate local, Tribal, State, and Federal response agencies on all removal actions. OSCs may designate capable persons from local, State, or Federal agencies to act as their on-scene representatives. FEMA should be notified of all potential major disaster situations.

See Appendix IX, Section 4.1.

Properly trained volunteers can be used for such duties during an incident as beach surveillance, logistical support, and bird and wildlife rehabilitation. Such use of volunteers must, however, be approved by the appropriate State, Federal, and Native American fish and wildlife officials. Unless specifically requested by the OSC, these volunteers generally should not be used for physical removal or mitigative activities. If, in the judgement of the OSC, dangerous conditions exist, these volunteers shall be restricted from on-scene operations.

The USFWS must approve responsible party or OSC requests to allow trained volunteers to capture oiled birds. Federally and State-licensed bird rehabilitators with USFWS oversight may employ properly trained volunteers for bird cleaning activities. Bird handlers should have current tetanus shots.

All response actions shall be conducted in accordance with the NCP. Oil recovered in cleanup operations and contaminated materials shall be disposed of in accordance with this ICP and local contingency plans.

3.3.2. Use of Chemical Agents

The OSC must choose the best method from the available response tools in any incident. The physical recovery and removal of oil is the preferred cleanup technique. Under certain conditions, however, chemical agents can be an effective tool. There are no pre-approved uses of chemical agents in Region 5. If chemical use is considered, the guidelines below are intended to aid the OSC in making a decision.

Physical recovery and removal of oil is preferred.

U.S. EPA has compiled the NCP Product Schedule, a list of dispersants and other chemicals which the OSC and/or PRP may consider for use during a spill emergency. The Product Schedule does not authorize or pre-

approve use of any of the listed products. The OSC may not authorize use of a product that is not listed on the Product Schedule.

Sinking agents shall not be used in U.S. EPA Region 5. U.S. EPA Region 5 does not promote the use of dispersants or other oil emulsifiers. The use of:

- surface collecting agents,
- biological additives,
- burning agents, or
- miscellaneous oil spill control agents

on surface waters, particularly near sensitive wetland or water supplies (fresh water systems) must be approved by State and/or Federal Agencies. Such use adds to the potential for serious impact of already released petroleum products. This stance is necessary to protect subsurface water intakes (potable and non-potable).

The Region does recognize, however, that as a last resort, such agents may have some limited applicability. An example of a situation in which chemical use might be considered for reasons other than protection of human life is during the migratory season, when significant migratory bird or endangered species populations are in danger of becoming oiled.

3.3.2.1. APPLICATION STEPS FOR USE OF CHEMICAL SPILL CONTROL AGENT

The OSC may authorize or is authorized to use any chemical product without requesting permission if its use is necessary to prevent or substantially reduce a hazard to human life. The RRT should be notified as soon as practicable. In situations where a human hazard is not present, the OSC must receive the concurrence of:

(a) the RRT Co-Chair, and

(b) the RRT representative(s) of the affected State(s), in consultation with

(c) the DOI RRT member (and, where the Great Lakes are affected, the DOC RRT member, where practicable)

before authorizing use of a listed product.

The OSC may consult with the NOAA or EPA Scientific Support Coordinator (SSC) prior to chemical agent application in U.S. EPA Region 5. The NOAA and EPA SSCs provide:

- oil spill modeling results,
- interpretation of ESI maps,
- location of sensitive areas,
- chemical effects, and
- environmental risks.

The OSC will request approval from the RRT to use chemicals on behalf of the spiller. Use of chemicals on a Regional boundary should include the appropriate RRT members of the bordering Region. The RRT shall be notified of any chemical use as soon as practicable.

3.3.2.2. CHEMICAL USE CHECKLIST

The OSC/RPM will supply the appropriate members of the RRT with the information contained in the checklist. The checklist provides

Refer to Appendix VII for the Chemical Use Checklist.

information concerning the circumstances of the spill, trajectories, environmental resources at risk, and available decision makers with the information necessary to make a decision on the use of chemical agents.

3.3.3. Use of In Situ Burning in U.S. EPA Region 5

In order to minimize the environmental impacts and facilitate effective cleanup of an oil spill, responders have a limited number of techniques available to them. These include mechanical methods, the use of certain chemical countermeasures, and in situ burning. Under certain specific conditions, in situ burning may offer a logistically simple, rapid, inexpensive, and relatively safe means for reducing the shoreline impacts of an oil spill. Moreover, because a large portion of the oil is converted to gaseous combustion products, the need for collection, storage, transport, and disposal of recovered material can be substantially reduced. In situ burning may be able to remove a large amount of spilled oil before spreading and drifting of the spill fouls shorelines and threatens wildlife. In certain circumstances, such as oil spilled in ice conditions, burning may be the only viable response technique. Authorization of in-situ burning is subject to consultation and concurrence from the State and DOI. Considerations for use should include an analysis of oil location and the potential impact of smoke on downwind populations.

The complete text of* In Situ Burning of Oil as a Response Tool in Region 5, Parts I and II *(January 1996) is presented as Appendix VIII of this Plan.

3.4. DECONTAMINATION

Personnel responding to hazardous substance incidents may become contaminated in a number of ways, including:

- contacting vapors, gases, or particulates in the air;
- being splashed by materials while sampling or opening containers;
- walking through puddles of liquids or on contaminated soil; or
- using contaminated instruments or equipment.

Decontamination consists of physically removing contaminants or changing their chemical nature to innocuous substances. The extent of decontamination depends on a number of factors, the most important being the type of contaminants involved.

The OSC is responsible for addressing worker health and safety concerns at a response scene in accordance with 40 CFR Section 300.150.

A decontamination plan should be developed as part of the safety plan for an emergency response. The initial decontamination plan is based on a worst-case situation or assumes no information is available about the incident. Specific conditions (e.g., type of contaminant, amount of contamination, levels of protection required, type of protective clothing worn) are then evaluated, and the initial decontamination plan is modified to adapt as new information about site conditions becomes available. All materials and equipment used for decontamination must be disposed of properly.

In addition to routine decontamination procedures, emergency decontamination procedures must be established. In an emergency, the primary concern is to prevent the loss of life or severe injury to site personnel. If immediate medical treatment is required to save a life, decontamination should be delayed until the victim is stabilized. If decontamination can be performed without interfering with essential lifesaving techniques or first aid, or if a worker has been contaminated with an extremely toxic or corrosive material that could cause severe injury or loss of life, decontamination must be performed immediately. During an emergency, provision must also be made for protecting medical personnel and disposing of contaminated clothing and equipment.

3.5. NONRESPONDER MEDICAL NEEDS

3.5.1. Population Protective Actions

Protective actions for human populations are shelter in place, evacuation, or some combination of the two (e.g., evacuate the general population but shelter bedridden patients, jail populations). Guidance is currently being developed by FEMA in conjunction with other Federal Agencies on the decision-making process between evacuation and in-place sheltering. Until that guidance is available, it should be noted that if no decision is made, by default people will be sheltered in place, albeit not as effectively.

Additional Information on shelter in place can be found at the following web sites:
http://www.fema.gov/library/hazmatf.htm;
http://www.fema.gov/pte/talkdiz/chemical.htm

3.5.2. Treatment of Exposed Population

The first priority of response personnel is to assess the health and welfare of individuals involved in the emergency incident. Immediate medical attention is given to seriously injured persons; the hospital is alerted and transportation is requested as necessary.

(a) An initial survey of the area should be performed to determine radiologically contaminated areas and, if possible, to identify an uncontaminated area to which any injured persons can be removed.

(b) Contamination monitoring of all injured persons should be performed in the clean area and appropriate decontamination performed, if necessary.

(c) Seriously injured individuals who cannot be completely decontaminated should be wrapped in blankets to prevent the spread of contamination during transport.

(d) Individuals not completely decontaminated should be tagged to alert medical personnel to their contaminated status. Each tag should include the name of the individual, the injuries identified, the date and time of the incident, suspected contaminants, and the locations and levels of contamination.

(e) Provisions for appropriate testing should be made in all cases of suspected internal contamination of affected individuals or response personnel.

3.6. WILDLIFE CONSERVATION

The contamination of wildlife by oil has a high public impact which must be recognized by the OSC and members of the RRT. Public interest, inquiries, criticism, and demands for the cleaning of affected wildlife can seriously hamper the OSC's ability to proceed with mitigation of the spill. Early inspection of impacted or potentially impacted areas known to be wildlife habitat should be made by the OSC, and at the first sign of wildlife involvement, the OSC/RPM should contact the DOI representative to RRT5 to request organization and supervision of the wildlife protection efforts. Funding for these efforts will be required either from a responsible party or the pollution fund.

The* U.S. EPA Region 5 Area Contingency Plan, Fish and Wildlife and Sensitive Environments, *appears as Appendix IX of this plan.

During response to a discharge or release, natural resource trustees and managers may provide technical assistance and expertise on potential effects on fish and wildlife and their habitats, or other sensitive environments that can be found in the affected area. They are familiar with the area or habitats affected

and may be able to provide recommendations on the best locations for staging areas, access points, or anchorage. The natural resource trustees and managers may recommend specific habitats where protective measures should be taken and offer advice on response actions. They may assist in the development of a response monitoring plan and subsequent collection of data. Finally, the USFWS and the state wildlife agency can be expected to direct or provide oversight for the protection, rescue, and/or rehabilitation of fish and wildlife.

A reference manual* Oiled Bird Rehabilitation: A Guide for Establishing and Operating a Treatment Facility for Oiled Birds *has been prepared by Tri-State Bird Rescue and Research, Inc., and is a valuable resource for learning more about all aspects of wildlife conservation. Contact Tri-State Bird Rescue and Research, Inc., at (302) 737-7241.

Protective measures may include one or more of the following:

- Preventing oil from reaching areas where migratory birds and other wildlife are located by either containing or recovering the oil, or
- Deterring birds or other wildlife from entering areas affected by oil by using wildlife hazing devices or other methods.

If exposure of birds and other wildlife to oil cannot be prevented, an immediate decision will need to be made regarding whether to capture and rehabilitate oiled birds and other wildlife. The DOI has statutory responsibilities for protecting migratory birds and Federally-listed threatened and endangered species. These responsibilities are delegated to the USFWS. If animals other than migratory birds or Federally-listed threatened or endangered species are found injured, the responsible agency would typically be the state wildlife agency. The decision to rescue and rehabilitate oiled wildlife must be made in consultation with the applicable state and Federal natural resource management agencies, since state and Federal permits are required by law. Any wildlife rescue and rehabilitation will be directed or overseen by the USFWS.

See Appendix IX for USFWS Regional Pollution Response Coordinator contact information.

Detailed information on procedures, permit requirements, and appropriate contacts is provided in Appendix IX, Fish and Wildlife Annex to the U.S. EPA Region 5 Integrated Contingency Plan.

Tri-State Bird Rescue and Research, Inc., of Wilmington, DE, and International Bird Research and Rehabilitation Center of Berkeley, CA, are the two nationally recognized centers that can assist in planned or emergency training and organization of wildlife conservation efforts. Several regional centers have experience with oiled wildlife. USFWS Regional Pollution Response Coordinators are sources of these and other contacts in the Region.

3.7. EVIDENCE FOR COST RECOVERY ACTIONS

3.7.1. Sample Collection Procedures

The OSC must observe precautions when collecting and handling liquid samples for analyses, as the character of the sample may be affected by a number of common conditions. Standard agency protocols are to be followed in the collection and shipment of all samples. Reports of laboratory analyses will be forwarded to the appropriate RRT Co-Chair for transmittal to counsel.

3.7.2. Photographic Records

Conditions should be photographed to show the source and the extent of oil or hazardous material, if possible using both color and black-and-white film. The following information should be recorded on the back of each photographic print:

(a) name and location of vessel or facility;

(b) date and time the photo was taken;

(c) names of the photographer and witnesses;

(d) shutter speed and lens opening; and

(e) type of film used and details of film processing.

3.7.3. Chain-of-Custody Record

All samples and other tangible evidence must be maintained in proper custody until orders have been received from competent authority directing their disposition. Precautions should be taken to protect the samples from breakage, fire, altering, and tampering. It is important that a chain-of-custody of the samples be properly maintained and recorded from the time the samples are collected until ultimate use at the trial of the case. In this regard, a record of time, place, and name and title of the person collecting the sample, and each person handling same thereafter, must be maintained and forwarded with the sample. Form No. I-EPA-3500-5-1 may be used. U.S. EPA Regional procedures for sample collection, transport and custody are to be used for all samples submitted to the Central Regional Laboratory.

3.8. WASTE MANAGEMENT

3.8.1. State Disposal and Management

Although the 1992 40 CFR Part 279 rules are not all immediately applicable Region-wide, individual States can enforce the rules as a matter of State law. Illinois, for example, has already promulgated equivalent regulations to 40 CFR Part 279. In addition, some States (e.g., Wisconsin) may prohibit the land disposal of oils.

3.8.1.1. ILLINOIS

The Illinois Environmental Protection Agency (IEPA) expedites spill residue disposal permitting through its Emergency Action Center in Springfield. Permits are required for open burning and may be prescribed in some cases. Spill residues are considered Special Wastes in Illinois and require permit authorization numbers from IEPA for acceptance for disposal in a landfill. The procedural aspects of such permits can be expedited by IEPA but the technical requirements must be met (i.e., characterizations of the waste and its suitability for acceptance by a particular facility). IEPA maintains a current list of hazardous materials remediation contractors and disposal/treatment facilities, as well as a list of licensed waste haulers.

Contact the IEPA Duty Officer at:
(217) 782-3637 (office) or
(217) 782-7860
(both 24-hour numbers).

During office hours, IEPA can issue emergency generator identification numbers (both State and Federal). During non-office hours, IEPA may issue exemptions for procedural requirements when necessary to prevent additional damage to the environment. Out-of-state wastes may require additional review time.

3.8.1.2. INDIANA

The Indiana Department of Environmental Management (IDEM) Emergency Response Section (ERS) facilitates issues related to waste management and disposal. The Indiana Code under Title 13 and Indiana Administrative Code includes laws related to these issues.

For questions regarding treatment, disposal, or permit issues related to cleanups, call:
(888) 233-7745 (within Indiana), or
(317) 233-3656 (office).

(a) Treatment and Disposal of Solid and Hazardous Waste. The Office of Solid and Hazardous Waste Management (OSHWM) is responsible for approving disposal of wastes from spill clean-ups. Approval for disposal depends on the material spilled and the contaminated media. Disposal of non-hazardous wastes in Indiana landfills requires prior approval by submitting an application to the Special Waste Section of OSHWM. Several landfills have been pre-approved to receive soil, debris, booms, etc., contaminated with virgin petroleum products. Approval must be obtained from the landfill. Disposal of Resource Conservation and Recovery Act (RCRA) hazardous wastes is subject to State and Federal requirements. IDEM has no specific laws regarding bioremediation or land-farming of contaminated soil. The Underground Storage Tank Guidance manual contains guidance. Generally, decisions are made on a case-by-case basis.

(b) Explosives. ERS Responder is authorized to approve emergency detonation of explosives. RCRA Subpart X Permits for detonation of explosives must be obtained from U.S. EPA Region 5.

(c) Open Burning. ERS Responder is authorized to approve open burning of spilled petroleum products when all reasonable efforts to recover the spilled material have been made and failure to burn would result in an imminent fire hazard or water pollution problem.

General information regarding open burning can be obtained from the Office of Air Management at (317) 233-0178.

(d) Hazardous Waste Generator Identification Numbers. Emergency identification numbers are obtained from OSHWM during normal business hours. ERS Responders are authorized to approve transport of hazardous waste during a spill when the waste cannot be left on site.

During normal business hours, OSHWM phone number is (317) 615-7956.

(e) Hazardous Materials Transporters. The Indiana State Police Motor Carrier Division inspects and regulates the transport of DOT hazardous materials. General information can be obtained during normal business hours.

General information can be obtained at (317) 615-7373.

(f) Treatment and Disposal of Wastewater. Wastewater from a spill can be discharged into a sanitary sewer with the approval of the wastewater treatment facility. To discharge treated water to surface water, the responsible party must obtain a permit from the Office of Water Management. General information can be obtained during normal business hours.

General information can be obtained at (317) 615-8670.

3.8.1.3. MICHIGAN

To be written.

3.8.1.4. MINNESOTA

In Minnesota, disposal options for waste generated from a spill vary, depending on the contaminant and waste media. The Minnesota Pollution Control Agency (MPCA) Emergency Response Team members can assist the responsible party and expedite the necessary approvals for disposal of wastes generated from spills. In some emergency situ-

The 24-hour contact numbers for the MPCA Emergency Response Team are (612) 649-5451 and (800) 442-0798.

ations, the Team members may grant approval directly. Waste generated from oil spills can be disposed as follows:

(a) Oil-contaminated Water. After removal of free oil, the contaminated water can be stored for later treatment or disposed by discharge with approval to a local wastewater treatment plant, surface water, or on land. In some cases, the water may require carbon filtration and/or air stripping before discharge.

(b) Oil-contaminated Soil. There are several options—land applying or land farming, composting, and thermal treatment. The MPCA has developed guidance for these options.

(c) Oil-contaminated Debris. Possible options are co-incineration with municipal or industrial solid waste, open burning (permit required), or landfill deposition, depending on the volume, level of contamination, and location of the waste.

(d) Oil-contaminated Sorbent. For heavily saturated sorbent, incineration at a permitted solid waste facility is the only option. In some cases where little waste is generated and the sorbent has little contamination, the material can be wrung out, dried, and landfilled.

(e) Burning Oil Spills. The MPCA ERT is authorized to approve the burning of oil spills with the concurrence of local authorities and the Department of Natural Resources.

All disposal options must be approved by MPCA staff prior to disposal.

3.8.1.5. OHIO

The Division of Emergency and Remedial Response OSCs facilitate disposal of soils, spilled product, and contaminated water with the appropriate staff of other Ohio Environmental Protection Agency (OEPA) divisions. The Ohio Revised Code and Administrative Code provide emergency permitting for open burning, recovery, and injection wells, and assigns explosives and hazardous waste emergency generator identification numbers.

(a) Explosives. Under emergency conditions, the OEPA Emergency Response Duty Officer or OSC may grant verbal approval to local officials to detonate explosives. During business hours the responsible party must complete an application with the Central Office Division of Hazardous Waste Management.

The Central Office Division of Hazardous Waste Management can be contacted at (614) 644-2917.

(b) Open Burning. The OSC may authorize open burning of hydrocarbons and associated debris if the material and spill site meet established criteria. Any open burning is corrdinated with the local fire department, local health departments (air), and the OEPA Division of Air Pollution Control through the district offices. Requests are handled on a case-by-case basis.

(c) Hazardous Waste Generator Identification Numbers. Emergency Hazardous Waste Generator Identification Numbers are now assigned by the OEPA Division of Hazardous Waste Management during business hours. The Duty Officer and OSC may facilitate

The OEPA Division of Hazardous Waste Management can be reached during normal business hours at (614) 728-3778.

this process and help identify possible sites for waste storage and disposal.

(d) Hazardous Material Transporters. The Public Utilities Commission of Ohio (PUCO) registers Hazardous Material Transporters for OEPA. Over 500 companies are registered by the State of Ohio. The PUCO Transportation Division also enforces U.S. DOT's motor carrier safety laws.

The PUCO Transportation Division can be contacted at (614) 466-0351.

(e) Groundwater/Wastewater Discharges. The Division of Public Drinking Water oversees the construction standards for wells. Enhanced recovery, involving shallow injection wells, requires a permit. Recovery wells, which result in a discharge to waters of the State, require best available treatment standards to be met. Recovery systems may require the owner/operator to apply for a permit to install. Typically, activated carbon is used on oil/water separation recovery systems before discharge to waters of the State is allowed. Permit applications are handled by the district office staff.

(f) Other. Treatment options such as on-site treatment or vapor recovery are handled on a case-by-case basis by the OSC.

3.8.1.6. WISCONSIN

The Wisconsin Department of Natural Resources rule series , "Investigation and Remediation of Environmental Contamination," includes specific rules on immediate and interim actions (NR 708); management of solid wastes excavated during response actions (NR 718); soil cleanup standards (NR 720); standards for selecting remedial actions (NR 722); remedial and interim action design, implementation, operation, maintenance and monitoring requirements (NR 724); and case closure (NR 726). The cleanup program is decentralized making staff available in the five regional offices for technical assistance. Each regional office has a Spill Coordinator to assist in spill-related technical issues.

3.8.2. Federal Disposal—Hazardous Materials

In order to ensure proper treatment and disposal of hazardous substances recovered from CERCLA emergency response or removal sites, Section 300.65 of the NCP requires that off-site transport of hazardous substances use only facilities operating under appropriate Federal or State permits or authorization. Hazardous substances removed from such sites may be transferred only to facilities that are operating in compliance with RCRA, TSCA, and all applicable State requirements. These requirements also preclude the use of disposal units that have releases of hazardous wastes or hazardous constituents, or of disposal facilities that have releases which have not been addressed by corrective action.

U.S. EPA issued policies and procedures related to these requirements on November 13, 1987, entitled *Revised Procedures for Implementing Off-site Response Actions* (Office of Solid Waste and Emergency Response [OSWER] Directive 9834.11). Specific OSC roles and responsibilities for implementing the requirements can be found in Section IV of the *Superfund Removal Procedures Manual*, dated February 1988 (OSWER Directive 9360.03B).

The OSC should coordinate closely with the Regional RCRA Off-site Coordinator (RROC), and/or TSCA personnel and the State, as appropriate.

3.8.3. Federal Management—Oil

The NCP, Appendix E to Part 300, Oil Spill Response, Section 5.4, states that oil recovered in cleanup operations shall be disposed of in accordance with the RCP, ACP, and any applicable laws, regulations, or requirements. RRT and ACP guidelines may identify the disposal plans to be followed during an oil spill response and may address:

- sampling, testing, and classifying of recovered oil and oiled debris;
- segregation and stockpiling of recovered oil and oiled debris
- prior State disposal approvals and permits; and
- routes, methods (e.g., recycle/reuse, on-site burning, incineration, landfilling, etc.), and sites for the disposal of collected oil, oiled debris, and animal carcasses.

For answers to spill cleanup questions, call the RCRA Hotline at (800) 424-9346.

The Solid Waste Disposal Act as amended by the Used Oil Recycling Act (1980) and the Hazardous and Solid Waste Amendments (1984) provide the statutory authority for RCRA, as amended regulations applying to recovered oils and oily wastes. In 1992, U.S. EPA promulgated new used oil regulations at 40 CFR Part 279; these regulations incorporate the old used oil fuel requirements formerly codified at 40 CFR 266, Subpart E (1986–1992 CFRs).

The new used oil management standards at 40 CFR Part 279 apply only to "used oil," defined as any oil that has been refined from crude oil, used, and, as a result of such use, contaminated by physical and chemical impurities. If used oil is destined for disposal, the 40 CFR Part 279 regulations reference the RCRA hazardous waste management standards. Mixtures of waste oil (i.e., spilled, unused product oils) and used oil are regulated as used oil.

Waste oil and oily wastes are subject to the hazardous waste management regulations at 40 CFR Parts 124, 260-266, 268, and 270. Non-hazardous used oil may be disposed of in an industrial or a municipal solid waste landfill (each State may have additional, more stringent requirements), in accordance with 40 CFR 257 and 258.

It is Federal policy to recycle waste and used oils rather than dispose of them. Under the pre-1992 used oil regulations, used oil destined for recycling (in any way other than burning for energy recovery) is exempt from regulation as hazardous waste. The 1992 used oil management standards do address all recycling activities. Recycling waste oils and oily wastes is addressed by applicable hazardous waste management regulations.

Determining which used oil regulations apply to a particular spill is complicated by U.S. EPA's use of different statutory authority for the pre-1992 used oil fuel regulations than for the September 10, 1992, used oil management standards. The pre-1992 used oil regulations are Federally enforceable requirements in all U.S. EPA Region 5 States. The 1992 used oil management standards will become Federally enforceable requirements as the individual States promulgate regulations and become authorized for them. The relationship between 40 CFR 266 Subpart E and 40 CFR Part 279 was clarified in a May 3, 1993 *Federal Register* final rule (58 FR 26420-26426).

SECTION 4: PLANNING

4.1. RESOURCE PROTECTION

Mitigation and cleanup of spills requires a knowledge of resources at risk. Because many source locations and pollution paths are possible, strict prioritization of protection strategies is difficult. However, identification of resources potentially at risk before an incident and discussion of their relative importance are useful processes, both technically and from communications and human standpoints.

Sources of resource information are provided in this section. Planning is the preferred means to identify protection strategies as it reduces time required to implement effective protective measures and improves coordination through prior personal contact between responsible agencies. Where planning has not been completed, early notification and coordination with the appropriate agencies is critical. This section identifies types of resources to be considered for protection.

Additional contacts for resource information are provided in Appendix IX.

4.1.1. Cultural Sites

Identification of culturally sensitive sites in the vicinity of a spill can be accomplished by contacting the State Historic Preservation Officer (SHPO). This individual is generally associated with the State Historical Preservation Office or Society, which may or may not be within a department of State government. Additionally, NPS has responsibility for sites located on Federal lands within the Region and can serve as a liaison to request NPS assistance concerning these resources. Specific procedures and Federal OSC responsibilities are set forth in the *Programmatic Agreement on Protection of Historic Properties During Emergency Response Under the National Oil and Hazardous Substances Contingency Plan*.

A list of cultural site preservation contacts for U.S. EPA Region 5 is provided in Appendix X. These contacts are generally available during business hours only.

4.1.2. Drinking Water Intakes

One of the major differences between coastal marine spills and freshwater spills (to Great Lakes and inland surface waters) is the potential impact on drinking water supplies. In many cases, users of surface waters do not have an alternate source of supply, nor do they have treatment or monitoring facilities for oil or chemical contamination.

Identification of drinking water intakes may be found in the Inland Sensitivity Maps, USCG local Contingency Plans, State Health Departments, and locally in Emergency Management Plans.

4.1.3. Environmentally and Economically Sensitive Areas

Environmentally and Economically Sensitive Areas are identified in the Inland Sensitivity Atlases. Information mapped includes:

- species data including Federal and State threatened and endangered species,
- Federal, State, Regional, and privately-owned and managed natural resource areas,
- Tribal Lands,
- Federal, State, Regional, and private designations of natural resource areas (no ownership),
- drinking water intakes,
- inndustrial water intakes,
- locks and dams,
- marinas and boat accesses, and
- oil storage above 42,000 gallons and oil pipelines.

Owners/operators, in the preparation of their FRPs, should also incorporate locally managed environmentally and economically sensitive area information for inclusion in the FRP.

Appendix IX, the Fish and Wildlife Annex to the U.S. EPA Region 5 ICP, identifies and establishes priorities for fish and wildlife resources and their habitats and other important sensitive areas requiring protection from discharges. It provides mechanisms for timely identification of protection priorities during a spill response.

4.1.3.1. FISH, WILDLIFE, AND PLANTS

USFWS Field Response Coordinators are the primary Federal contact for information about migratory birds, endangered and threatened species, and fish and wildlife at risk as a result of spills in the inland and coastal zones.

The list of current USFWS personnel and their geographic areas of expertise and/or responsibility is provided in Appendix IX.

Each State has fisheries and wildlife biologists, who may be assigned to a Department of Natural Resources or other State agency. These personnel are assigned to geographic areas within a State (district or region) and are listed in Appendix IX. They can also be identified through State emergency response agencies or USFWS Pollution Response Coordinators.

Each State has a Natural Heritage or Natural Features Inventory in computer format. These databases were initiated by The Nature Conservancy and have been turned over to States for management. These inventories incorporate observations of endangered, threatened, and otherwise specially designated species of fish, wildlife, and plants. Some inventories are in computer format; others are hard copy only. Data can be faxed in an emergency. The inventory is generally housed in the State Department of Natural Resources.

Following is a list of locations of Nature Conservancy-sponsored inventories of "species of concern." The staff are not response personnel and are available during business hours only:

Indiana: Indianapolis (317) 232-4052

Minnesota: St. Paul (612) 331-0750

Ohio: Columbus (614) 265-6453

Wisconsin: Madison (608) 266-0924

Michigan: Lansing (517) 373-1552/ 9338

In Illinois, the Illinois Department of Natural Resources maintains a natural heritage inventory system. At present, the location information consists of hand-labeled topographical maps. Efforts are underway to input this information to a GIS system so that publication-quality maps can be more readily reproduced. Emergency contact: IEPA (217) 782-3637.

The Great Lakes Indian Fish and Wildlife Commission (GLIFWC) can be a source of technical assistance in understanding Native American fish and wildlife management and cultural values. Another source of valuable information is the National Animal Poison Control Center.

The National Animal Poison Control Center can be contacted at: 888-426-4435

Sea Grant Universities and Extension Agents may be a source of local knowledge outside the public sector. These agents have contact with local scientists, fishermen, environmental groups, and other sources that may supplement information provided by regulatory agencies. They can be contacted through the NOAA SSC.

4.1.3.2. PROTECTED HABITAT

Updated information on protected habitat and economically and environmentally sensitive environments is provided in this plan in three separate indices, one for each of the three drainage basins in Region 5: the Great Lakes Basin, the Mississippi River Basin, and the Ohio River Basin. Each index contains detailed information, in digital format, regarding the environmentally and economically sensitive areas, and Tribal interests. Descriptive information, maps, and emergency contact lists are also included. The text in the indices provides further instructions on accessing the data available on the disks.

The Great Lakes Basin, the Mississippi River Basin, and the Ohio River Basin indices are contained in Appendix XI.

A variety of protected areas such as forests, parks, preserves, reserves, and management areas are managed by public or private organizations such as The Nature Conservancy/Heritage Foundation. Additional sources of this information include Federal or State land management agencies, which include the Departments of the Interior,

See Appendix IX for listings of protected areas.

Agriculture, and Commerce at the Federal level and their counterparts at the State and local levels.

4.2. TRUSTEES FOR NATURAL RESOURCES

CERCLA, CWA, and OPA require the designation of certain Federal, State, and Native American Tribal officials to act on behalf of the public as trustees for natural resources that they manage or protect. Natural resources, as defined in CERCLA Section 101(16) and OPA 1001(20) means land, fish, wildlife, biota, air, water, groundwater, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States, any state or local government, or Indian Tribe.

For U.S. EPA Region 5, the DOI Office of Environmental Policy and Compliance contact is located in Philadelphia, PA, at (215) 597-5378.

See Appendix IX for detailed discussion of trustee responsibilities.

Natural resource(s) trustees are responsible for assessing damages to resources under their jurisdictions resulting from oil spills or release of hazardous substances. Also, agencies are responsible for seeking recovery for losses from responsible parties and for devising and carrying out rehabilitation, restoration, and replacement of injured natural resources. Where more than one natural resource(s) trustee has jurisdiction over a resource, agencies will coordinate and cooperate in carrying out the activities described above (reference NCP 300.600). Damage assessment is controlled by the designated natural resource(s) trustees and not response; however, it is important for natural resource(s) trustees to work with the OSC/RPM to coordinate activities as necessary.

To minimize impacts to natural resources and assist trustees in carrying out their responsibilities, the OSC is required to:

(1) Promptly report actual or potential discharges or releases to those federal, state, and tribal agencies designated as trustees for natural resources;

Contact U.S. EPA Emergency Response Team (ERT) at (908) 906-6825 (business hours).

(2) Consult with trustees and other natural resource managers in determining such impacts and appropriate protective actions;

(3) Coordinate all response activities with trustees and other natural resource managers;

(4) Make available to trustees, documentation and information that can assist the trustees in determining actual or potential natural resource injuries; and

(5) Consult with USFWS on all incidents and response activities that may affect federally-listed threatened or endangered species, or their habitats.

The trustees and other natural resource managers, consistent with procedures specified in the *Fish and Wildlife Annex* (Appendix IX), may provide timely advice on recommended actions concerning resources that are potentially affected by a discharge of oil or release of hazardous substances. This could include providing assistance to the OSC/RPM in identifying and recommending pre-approved response techniques and in predesignating shoreline types and areas.

The trustees are authorized to assess monetary damages for resources injured, lost, or destroyed as a result of discharge of oil or releases of hazardous substances. In addition, the trustees are authorized to seek damages from the responsible person(s), and to devise and carry out restoration, rehabilitation and replacement of natural resources. Where more than one trustee has jurisdiction over a resource, these agencies should coordinate and cooperate in carrying out their activities. RRT representatives from trustee agencies serve as contact points.

4.2.1. Federal Trustees

Unless delegated to an Authorized Official, the Secretary of the Interior is the natural resource trustee for the natural resources managed or controlled by the following DOI Bureaus:

NPS: National parks, national monuments, national historic sites, national recreation areas, and wild and scenic rivers;

USFWS: National wildlife refuges, national fish hatcheries, waterfowl production areas, migratory birds, threatened and endangered species, and anadromous fish.

BLM: Public lands and federally owned minerals (underlying private as well as public lands).

BIA: In cases where the United States acts on behalf of a Native American Tribe, the Secretary of the Interior also acts as trustee for natural resources for which the tribe would otherwise act as trustee, i.e., reservations and other lands or natural resources held in trust for the tribe including off-reservation natural resources).

The Secretary of Agriculture is trustee for the national forests and national grasslands.

The Secretary of Commerce, through the National Oceanic and Atmospheric Administration (NOAA), is trustee for lands under their administration; certain federally listed species; marine mammals; and marine, anadromous, and some Great Lakes fishes.

The Secretary of Defense is trustee for military lands and USACE project lands.

The Secretary of Energy is trustee for DOE lands and facilities.

4.2.2. State Trustees

The governor of each state has designated state officials to act on behalf of the public as trustees for natural resources. Natural resources under state jurisdiction include all fish, wildlife, and biota including a shared trusteeship with the federal government for certain plants and animals, air, surface water, groundwater, and land.

State trustees for natural resources within Region 5 are listed in Annex 1 to Appendix IX.

4.2.3. Native American Tribal Trustees

The tribal chairman or head of the tribal governing body, or person designated by tribal officials, acts as trustee of natural resources under Native American tribal trusteeship including lands and other natural resources belonging to, managed by, controlled by, or otherwise appertaining to the

tribe; or held in trust for the tribe; or belonging to a member of the tribe if subject to a trust restriction on alienation.

4.2.4. Functions of Trustees

The DOI Office of Environmental Policy and Compliance manages oil spills,and releases of hazardous substances. This includes supervision of DOI's participation in contingency planning, response activities, technical assistance, and training exercises. In this regard it represents the Department in the NCP, the FRERP, and other Federal response plans for natural and technological hazards on national and regional response teams.

The DOI Office of Environmental Policy and Compliance is the initial contact for notification and for overall coordination of its trustee activities. USFWS is the program manager for endangered species, anadromous fish, and the lands in the National Wildlife Refuge system, and will be among those involved for DOI in spill incidents because of its responsibility for these resources. The Department of the Interior, Department of Defense, Department of Energy, Department of Agriculture, U.S. National Forest Service, National Oceanic and Atmospheric Administration, and Native American Tribes may serve as trustees or co-trustees.

At the time of a spill, the Federal trustees and trustees of affected Stateand Tribal communities will meet and select one agency to act as Lead Administrative Trustee (LAT). They will convene a trustee group to ensure the best possible coordination of natural resource trustee activities such as data gathering, damage assessment, and negotiations with responsible parties.

The trustees may initiate a natural resource damage assessment. The Federal damage assessment regulations for oil discharges mandated under OPA were developed by NOAA and are now final. The regulations developed by DOI under CERCLA and CWA authorities apply to releases of hazardous substances and are in effect and available for trustee guidance and use. The NOAA SSC can serve as the liaison between the OSC and the trustees conducting damage assessment data collection efforts.

Specific natural resource trustee activities which may be expected to begin during a response include, but are not limited to:

(a) convening the trustee group;

(b) developing and implementing initial sampling plans;

(c) establishing the lead administrative trustee;

(d) developing NRDA initiation requests to the OSLTF;

(e) selecting appropriate assessment strategies;

(f) implementing longer-term assessment studies; and

(g) planning and implementing natural resource restoration.

4.3. FIELD SURVEY TECHNIQUES

4.3.1. Remote Sensing

A variety of land-based remote sensing methods exist which have been

successfully used and are commercially available through contractors. Contact U.S. EPA for details and access its contracted resources.

Aerial remote sensing, primarily used for locating pollutants in water, is in its early stages of development. Technologies are similar to land-based systems; however, data acquisition and interpretation are costly and of limited value. The agencies listed below have capabilities and experts that can be consulted regarding the use of these techniques.

EPA Environmental Photographic Interpretation Center (EPIC)
Reston, Virginia
(703) 648-4284; fax: (708) 648-4290

NOAA Satellite Services Division
(301) 763-8051 (business hours); (301) 763-8142, x 124

Environment Canada (Emergency Science Division)
(613) 998-9622

4.3.2. Underwater Response

4.3.2.1. UNDERWATER SURVEY EQUIPMENT
The following underwater survey equipment is available to the Region through the U.S. EPA Emergency Response Team (ERT):

Remote-Operated Vehicle (ROV): For use in observing underwater objects from shore or boat (1,000-foot depth limit).

Mesotech Sonar: Mounted on ROV to locate any object above bottom sediments. ROV directed to potential drums by sonar.

Proton Magnetometer: Locates metal objects underwater. Towed behind a boat.

Sediment and Water Sampling Equipment: Provides ability to sample water and sediments at any depth. Analyses performed at ERT's laboratory facilities, Edison, NJ.

20-foot Boston Whaler: Trailerable boat specially designed for underwater electronic surveys and diving operations.

Side-Scan Sonar Survey Equipment: Accurately maps bottom.

4.3.2.2. DIVING CAPABILITIES
ERT Diving Team: Three U.S. EPA-certified divers with Level B-equivalent diving gear.

Commercial (Contract) Divers: For long-term underwater removals, Region 5 uses private diving firms that comply with U.S. EPA's Chapter 10 Diving Safety Regulations.

Various Diving Equipment: Available from any of U.S. EPA's five diving units.

Contact ERT's Unit Dive Officer: 908-906-6825 (business hours). For a list of qualified diving contractors and required equipment modifications, contact Unit Dive Officer, U.S. EPA Region 5 (312-886-4466).

4.3.3. Field Services Section

The Field Services Section, Superfund Division, Region 5, has the ability to perform limited field surveys at hazardous waste sites. The Section has staff and equipment to provide the following services using various techniques and field equipment:

The Field Services Section, Superfund Division, Region 5 can be contacted at (312) 886-3011.

(a) Surface geophysical surveys: using ground-penetrating radar, electromagnetic surveys, magnetometers, seismic refraction, and resistivity measures.

(b) Subsurface geophysical surveys: using seismic tomography, electromagnetic surveys, natural gamma detection, single-point resistivity, spontaneous potential measures, fluid resistivity, and various borehole measures.

(c) Soil/Groundwater samples: using a Geoprobe or similar equipment.

(d) Aerial photography: using a remote control helicopter for low level flights.

4.4. WEATHER INFORMATION

NOAA's NWS forecast offices are operated 24 hours a day and primarily provide weather forecasts and warnings. In addition, many can provide hydrological information.

The NWS Forecast Office in Cleveland houses a computer weather product database called DMWDS. A password that can be obtained through the Cleveland office allows access to forecasts for all the Great Lakes and raw data (e.g., wind speed and direction) from many reporting stations, including NOAA data buoys throughout the Great Lakes. The NWS offices on the inland rivers provide river velocity information, as well as weather forecasts, warnings, and observations.

The offices listed below are Forecast Offices at which forecasts are prepared. Other NWS offices located throughout the region have access to the same data and can be useful resources.

Cleveland, OH	(216) 265-2374
Pittsburgh, PA	(412) 262-1988
Charleston, WV	(304) 746-0188/89
Romeoville, IL	(815) 834-0651
Detroit/Pontiac, MI	(810) 625-4139
Minneapolis, MN	(612) 361-6671
Milwaukee, WI	(414) 965-5063
Indianapolis, IN	(317) 856-0360
Marquette, MI	(906) 475-5213
Duluth, MN	(218) 729-6572
Green Bay, WI	(414) 497-9177

4.5. MODELS

4.5.1. Water

4.5.1.1. NOAA GREAT LAKES ENVIRONMENTAL RESEARCH LABORATORY (Great Lakes open water)

Surface water models exist for the Great Lakes and interconnecting channels. The open water model for all of the Lakes was produced by NOAA's Great Lakes Environmental Research Laboratory (GLERL) and is housed on their VAX.

The open water model for all of the Lakes is accessible to anyone with a modem by contacting (313) 741-2244.

Models of near-shore areas and tributaries to the Great Lakes have various levels of detail. Contact with Sea Grant Institutions or USGS is suggested.

4.5.1.2. ReachScan Model

A model for the Mississippi River or Illinois Waterway was developed for U.S. EPA by Versar, Inc., in 1986. The model is called ReachScan, and is also on PC GEMS, a widely used U.S. EPA modeling program. Contact SSC for 24-hour information on pollutant movement in surface waters.

4.5.1.3. NOAA HAZMAT MODELING AND SIMULATION STUDIES BRANCH (MASS)

MASS can provide spill trajectories and information on

- weather,
- currents,
- water levels, and
- oil fate and behavior.

Contact MASS at (206) 526-6317 or via the NOAA SSC for the Great Lakes and Inland Rivers (216) 522-7760).

MASS maintains and operates the On-Scene Spill Model (OSSM) for marine spills and can run other available models (such as GLERL's) for the Great Lakes and Inland Rivers.

4.5.1.4. USACE COLD REGIONS RESEARCH ENGINEERING LABORATORY (CRREL) (RIVERS: GENERAL, AND ST. MARY'S, DETROIT—ST. CLAIR, AND OHIO RIVERS SPECIFICALLY); AND ST. LAWRENCE SEAWAY DEVELOPMENT CORPORATION (SLSDC)

Interconnecting channel models have been produced by the USACE CRREL. SLSDC also has a model for the St. Lawrence River. These models are available through USACE and operate on an MS-DOS PC. Noncomputerized hydraulic information, which can be used to calculate travel times along the Great Lakes interconnecting channels, is provided in CANUSLAK.

The contact number for CRREL is (603) 646-4100; the contact number for SLSDC is (315) 764-3265.

4.5.1.5.ORSANCO (OHIO RIVER, MAIN STEM ONLY)

Time-of-travel estimations for the main stem of the Ohio River have been modeled by ORSANCO (model does not include the Monongahela and Allegheny tributaries). The model can be run on a MS-DOS PC and is available through ORSANCO.

The contact number for ORSANCO is (513) 231-7719.

4.5.1.6. USACE DISTRICTS

USACE Districts are a source of information concerning water levels and velocities on the interconnecting channels to the Great Lakes and on the inland rivers.

(a) USACE's Detroit Office is capable of running trajectory models for the St. Mary's and the Detroit-St. Clair River Systems.

Detroit (Detroit River/Lake St. Clair/St. Mary's River) (313) 226-6413

(b) USACE's Buffalo office houses the St. Lawrence River model.

Buffalo (St. Lawrence Riv.) (716) 879-4200

(c) The Rock Island District and the St. Louis District can provide projections of flow on the Mississippi River from Minneapolis to St. Louis and the Illinois Waterway.

Rock Island (Upper Mississippi River, and the Illinois River) (309) 794-5272; (319) 627-4138 (24 hours).

St. Louis (St. Louis to Cairo and lower Illinois) (314) 331-8000

(d) The Pittsburgh Office and the Cincinnati Division can provide river flow data and river stage data for the Ohio River.

Pittsburgh (Pittsburgh area to Wheeling, WV) (412) 644-6802; Cincinnati (entire Ohio River) (513) 684-3002

(e) The Chicago Office can provide river flow information for waterways in the Chicago Metropolitan area: the Chicago, Fox, DuPage, Little Calumet, and Kankakee Rivers.

Chicago (Illinois River, defer to Rock Island) (312) 353-8884

(f) The St. Paul District's Riverine Emergency Management Model (REMM) can compute travel time between any two points on a river system and optionally can compute the fate of a chemical spill on the system. REMM is a generic program whose data set has been modeled on the Mississippi River headwaters.

REMM (612) 290-5402

4.5.1.7. NWS FORECAST OFFICES

These are secondary sources of river flow information, which can convert flows to velocities at select locations along rivers.

Ohio River—Cincinnati, OH (513) 383-0527

Lower Mississippi River—Slidell, LA (504) 641-4343

North Central—Minneapolis, MN (612) 361-6660

National Ocean Service (NOS), Silver Spring, MD (Water Levels) (301) 713-2902; (301) 713-2902 (business hours)

4.5.2. Air Dispersion

A variety of air dispersion models are available, some of which are personal-computer-based and some of which require a mainframe computer. Computer-based models are quite useful in response planning; however, their results should be applied with caution. Discussion of output with experts is critical to correct interpretation and limitations. ARCHIE (developed by FEMA, U.S. EPA, and DOT), and NOAA's ALOHA (part of CAMEO), are examples of simple, computer-based planning models.

Agencies that can run air dispersion models, interpret the output, and provide expert advice during a response include: NOAA MASS (206) 526-6317; U.S. EPA ERT (908) 321-6660; ATSDR (404) 639-0615; Environment Canada (416) 346-1971; Ontario Ministry of the Environment, Spills Action Center (416) 325-3000.

SECTION 5: LOGISTICS

5.1. SITE SECURITY

Generally, local law enforcement or the responsible party provide site security at the scene of a response. However, the OSC has the authority to provide for site security as necessary.

5.2. COMMUNICATIONS

5.2.1. Computer Bulletin Boards

Access by other staff to the computer bulletin boards listed below may be arranged through the appropriate RRT member.

5.2.1.1. FIRSTCLASS E-MAIL(NOAA RRT SYSTEM)

NOAA's FirstClass E-mail is an electronic communication network. Through this system, e-mail can be exchanged between RRT and NRT members, contractors, and State and Federal spill response agencies with accounts on the system. Although the capability exists, the effort has been directed at establishing support for the NRT members and the RRT Co-chairs. NRT members and RRT Co-chairs can contact the NRT FirstClass Administrator for information on obtaining an account.

For further information, see the* NOAA HAZMAT FirstClass User's Manual, *dated June 1994, or contact (202) 267-4497.

5.2.1.2. ORSANCO

ORSANCO operates an electronic bulletin board, which is available to provide water quality information during spill events in the Ohio River basin. The system is resident on a personal computer and employs Mustang's Wildcat Bulletin Board software. In addition to spill-related information, ORSANCO posts daily flow data and seasonal water quality data on the Board. There is no charge or formal registration procedure to use the system. Anyone can call and obtain immediate access to whatever is on file.

For information concerning procedures for logging onto the system and for reading reports, contact ORSANCO at (513) 231-7719.

5.2.2. NRC Teleconference Service

The National Response Center is capable of establishing a teleconference of up to 60 participants. The system is intended for use in support of emergency response operations, but can be made available on a limited basis for routine matters.

Federal OSCs and RRT chairmen may request a teleconference by contacting the NRC Duty Officer. They may request emergency conferences at any time, but should provide 1-day advance notice whenever possible.

In addition, both FEMA and GSA has a dedicated teleconference system capable of handling 10 participants.

5.3. TRANSPORTATION (AIR, LAND, WATER)

Generally, government and/or personal vehicles or commercial airlines are utilized as transportation during response incidents. If necessary, charter services may be contracted.

5.4. SPECIAL TEAMS AND OTHER ASSISTANCE AVAILABLE TO OSCS/RPMS

Different Federal Agencies can provide special forces that an OSC/RPM can call upon for assistance during an oil spill or hazardous substance release. These special forces are described below. They can be requested through the agency's RRT member.

5.4.1. National Strike Team

The National Strike Team consists of the three USCG Strike Teams, the Public Information Assist Team (PIAT), and the NSFCC, and is available to assist OSCs in both preparedness and response. The Strike Team provides trained personnel and specialized equipment to assist the OSC in training, spill stabilization and containment, and monitoring or directing response actions. The NSFCC can provide coordination support to the OSC and assist in locating spill response resources.

The NSFCC's contact number is (919) 331-6000.

5.4.1.1. ATLANTIC STRIKE TEAM (AST)

AST is a pollution control team equipped and trained to assist in the response to oil or chemical incidents. The AST has personnel on standby to respond to incidents occurring in the Great Lakes and eastern United States. Services available from the AST include:

- technical expertise;
- supervisory assistance;
- cost documentation;
- deployment of salvage and pollution control equipment; and
- training in pollution response techniques.

The Atlantic Strike Team's contact number is (609) 724-0008.

5.4.2. U.S. EPA Scientific Support Center

5.4.2.1. U.S. EPA ENVIRONMENTAL RESPONSE TEAM (ERT)

The ERT provides access to special response equipment including decontamination, sampling,, and air monitoring equipment. The ERT has expertise in treatment technology, biology, chemistry, hydrology, geology, and engineering, and can advise the OSC in:

- hazard evaluation and risk assessment,
- multimedia sampling and analysis,
- water supply decontamination and protection,
- safety,
- cleanup techniques and priorities,
- dispersant application, and
- training.

The ERT's contact number is (908) 321-6740.

5.4.2.2. RADIOLOGICAL EMERGENCY RESPONSE TEAMS (RERTS)

have been established by U.S. EPA ORIA to provide response and support for incidents or sites containing radiological hazards. Expertise is available in:

- radiation monitoring,
- radionuclide analysis,
- radiation health physics, and
- risk assessment.

RERTs can provide on-site support, including mobile monitoring laboratories for radiochemical sampling and analysis. Requests for support may be made 24 hours a day via the National Response Center or directly to the Regional U.S. EPA Radiation Program Manager in

The contact number for the NRC's Radiological Emergency Response Team is (800) 424-8802.

the Air and Radiation Division. Assistance is also available from the Nuclear Regulatory Commission, DOE, and other Federal Agencies.

5.4.3. ATSDR/CDC

The ATSDR/CDC contact number is (404) 639-0615.

ATSDR, the lead Federal Agency for hazardous materials incidents, can provide the following experts for consultation and advice:

(1) Within 10 minutes: an emergency response coordinator;

(2) Within 20 minutes: a preliminary assessment team consisting of a toxicologist, chemist, environmental health scientist, physician, and other health personnel as required;

(3) Within 8 hours: an on-site response team (if the incident warrants).

5.4.4. Navy Supervisor of Salvage

The contact number for SUPSALV is (703) 602-7527 [(703) 607-2578 for 24-hour emergency activation].

The Navy Supervisor of Salvage and Diving, Office of the Director of Ocean Engineering (SUPSALV), maintains special equipment and trained teams for response to salvage-related oil and hazardous substance incidents. SUPSALV maintains an extensive inventory of oil pollution abatement equipment located primarily at Williamsburg, VA, and Stockton, CA, which is containerized for immediate deployment by air or truck.

5.4.5. NOAA Scientific Support Coordinator

NOAA SSC contact numbers are:
Business hours: (216) 522-7760
24-hour: (206) 526-6317
FAX: (216) 522-7759

The NOAA SSC provides scientific support in

- environmental chemistry,
- oil spill trajectories,
- natural resources at risk,
- environmental tradeoffs of countermeasures and cleanup, and
- information management.

OSC requests for SSC support can be made directly to the assigned area SSC, the NOAA HAZMAT program office in Seattle, or the DOC RRT representative.

The SSC may, at the request of the OSC, lead the scientific team and be responsible for providing scientific support for operational decisions and for coordinating on-scene scientific activity. The SSC may also facilitate the OSC's work with the lead administrative trustee for natural resources to ensure coordination between damage assessment data collection efforts and data collected in support of response operations. The SSC can also support RRTs and Area Committees in preparing Regional and area contingency plans and in conducting spill training.

The NOAA SSC serving the Ninth Coast Guard District is located at District Headquarters in Cleveland, Ohio. The NOAA SSC can provide:

- weather forecasts, water levels, and currents;
- spill trajectory forecasts;
- oil observations and overflight maps;
- information management;
- natural resources at risk;
- coordination of the natural resource trustee agencies;
- environmental tradeoffs of countermeasures and cleanup;
- environmental chemistry, including oil fingerprinting;
- health and safety;
- support to RRTs and Area Committees in preparing regional and

area contingency plans and conducting spill training and exercises.

5.4.6. USCG District Response Group

The USCG District Response Groups (DRGs) provide the OSC with technical assistance, personnel, and equipment. The DRG comprises USCG personnel and equipment in the district, and an advisory team that coordinates movement of USCG resources.

District 9 Marine Safety Office contact number is (216) 902-6047/8.

District 8 Marine Safety Division contact number is (504) 589-6225.

5.4.7. Office of Pipeline Safety

The DOT Office of Pipeline Safety is another resource available to OSCs.

The Office of Pipeline Safety contact number is (202) 366-4595.

5.5. NON-FEDERAL CHEMICAL EXPERTISE

Technical and scientific information generated by the local community, along with information from Federal, State, and local governments, should be used to assist the OSC in devising response strategies where effective standard techniques are unavailable. Additional support is available from the organizations listed below.

5.5.1. Chemical Transportation Emergency Center

The Chemical Transportation Emergency Center (CHEMTREC), a service of the Chemical Manufacturers' Association, provides technical data, coordination of chemical manufacturers, and emergency response information on chemical spills.

The CHEMTREC 24-hour emergency number is (800) 424-9300.

5.5.2. American Petroleum Institute

The American Petroleum Institute (API), 2100 L Street, NW, Washington, DC 20037, is an organization consisting of representatives of the petroleum industry. Technical and operational expertise is available.

The contact number for API is (202) 682-8000 (business hours only).

5.5.3. National Pesticide Telecommunication Network

The National Pesticide Telecommunication Network provides information on pesticide-related health/toxicity/minor cleanup to physicians, veterinarians, fire departments, government agencies, and the general public.

The contact number for the National Pesticide Telecommunication Network is (800) 858-7378.

5.5.4. Canadian Transport Emergency Center

For dealing with Canadian shipments, the Canadian Transport Emergency Center (CANUTEC) has technical experts on duty 24 hours for chemical guidance.

The 24-hour number for CANUTEC is (613) 996-6666.

5.5.5. Association of Railroads, Bureau of Explosives

The Bureau of Explosives of the Association of Railroads, Washington, DC, can provide assistance in:

- accident assessment,
- classification of materials,
- environmental impacts,
- methods of cleanup, and
- mechanical evaluations

for incidents involving railroad trains.

The Bureau of Explosives can be contacted at (202) 639-2222 during normal business hours; 24-hour response is available through CHEMTREC/Bureau of Explosives at (800) 424-9300.

5.6. STATE ORGANIZATIONS

For services listed in this section, contact the appropriate State representative to the RRT.

5.6.1. Illinois

IEPA has six chemists on its emergency response staff and immediate access to four toxicologists and one certified industrial hygienist. Explosive disposal expertise is available commercially in the Chicago area or through the Illinois Secretary of State's Police Bomb Squad, based in Springfield. IEPA and the Indiana Department of Public Health (IDPH) have human and environmental toxicologists. The University of Illinois supports a 24-hour veterinary toxicology hotline. Computer databases for physical, chemical, toxicological, and environmental data are available through government and commercial sources to both IEPA and IDPH.

5.6.2. Indiana

IDEM has access to the Chemistry Section Chief 24 hours per day for technical advice about hazardous materials releases. In addition, IDEM has access to ISDH staff toxicologists to provide toxicological information and to assess the impact of spills on ingestion, inhalation, or direct contact, and to make recommendations on human health advisories 24 hours per day.

5.6.3. Michigan

To be written.

5.6.4. Minnesota

The on-call staff of MPCA are trained in chemical emergency hazards. MPCA toxicologist and Health Risk Assessment staff of the Department of Health can consult on hazards, but are not on call. The State's Duty Officer can reach and activate several local bomb squads throughout the State. MPCA's emergency contractor has staff trained in chemical hazards and industrial hygiene.

5.6.5. Ohio

In consultation with the Ohio Department of Health Epidemiology Section, toxicological information can be provided and recommendations can be made on human health advisories concerning spills that may impact water supplies, the food chain, or result in public exposure.

5.6.6. Wisconsin

The Department of Health and Family Services provides coordination of emergency public health and human services. Emergency public health activities includes technical assistance for hazardous material releases, disease outbreaks, radiological monitoring, natural disasters, and other health emergencies. The Division of Health employs a large number of environmental health professionals, including physicians, toxicologists, environmental health specialists, epidemiologists, public health nurses and public health educators who can be involved as a situation and their expertise warrants.

5.7. BASIC ORDERING AGREEMENT (BOA) CONTRACTORS

USCG has established Basic Ordering Agreements with a number of commercial environmental remediation contractors. The list of current contractors is available on the following web sites:

- **http://www.uscg.mil/mlclant/fdiv/8thdistrict.htm**
- **http://www.uscg.mil/mlclant/fdiv/9thdistrict.htm**

SECTION 6: FINANCE

6.1. GENERAL

The person or persons responsible for discharges or releases are liable for costs of cleanup. The OSC shall attempt to have the party responsible for the discharge or release voluntarily assume responsibility for containment, removal, and disposal operations. If the OSC determines that the responsible party has caused the discharge of oil or release of hazardous substances, he/she may initiate appropriate response actions established by OPA, CWA, or CERCLA. Action will be initiated by the agency administering the funding mechanism to recover such expenditures from the party responsible for the discharge, if known. The OSC may also issue an Administrative Order, either by consent or unilaterally, to require financially viable responsible parties to conduct the removal action.

Until new guidance is published, all incidents requiring funding must be screened by category:

(a) CWA Section 311(k) for oil only, and

(b) CERCLA for any release or threat of release of a hazardous material as defined by CERCLA.

A U.S. EPA and USCG Headquarters agreement states that response to any potentially hazardous oil and hazardous materials mixture shall be CERCLA-funded. This section addresses U.S. EPA and State access to OPA and CERCLA funding. USCG procedures can be found in USCG ACPs.

6.2. CERCLA-FUNDED RESPONSES

Two mechanisms exist for funding a response and response-related activities of another Federal Agency other than U.S. EPA:

(a) an agency's Superfund budget, and

(b) an interagency agreement (IAG) authorizing access to the CERCLA Superfund account.

Response operations for hazardous substances or mixture of hazardous materials and oil may be funded from the CERCLA Superfund account. Removal actions shall not continue after $2 million has been obligated or twelve months have elapsed from the date of the initial response, unless U.S. EPA grants an exemption in accordance with Section 104(c)(1) CERCLA, as amended. Additionally, CERCLA-funded action may not be taken in response to a release or threat of a release:

(a) Of a naturally occurring substance in its unaltered form or altered solely through naturally occurring processes or phenomena, from a location where it is naturally found;

(b) From products which are part of the structure of, and result in exposure within, residential buildings or business or community structures;

(c) Into public or private drinking water supplies as a result of system deterioration through ordinary use.

However, U.S. EPA may respond to any release or threat of release if it is determined that it constitutes a public health or environmental emergency and no other person with the authority and capability to respond to the emergency will do so in a timely manner.

The U.S. EPA Superfund Division has been delegated authority to approve actions costing up to $2 million. State and local governments are not authorized to take actions that involve expenditure of CERCLA funds, unless an appropriate contract or cooperative agreement has been established.

The OSC is responsible for identifying whether technical assistance from another agency is necessary, and for making arrangements for that assistance. In addition, OSCs are responsible for initiating and processing any site-specific IAGs necessary for reimbursing Federal Agency participation.

U.S. EPA OSCs may develop, negotiate terms, and award IAGs for site-specific, U.S. EPA-led actions. For these IAGs, the OSC:

(a) defines the scope of work to be performed;
(b) outlines the responsibilities of each agency;
(c) determines the performance period;
(d) identifies primary contacts in each agency;
(e) names contractors and the dollar amounts of any contracts, if applicable;
(f) determines the overall reporting, invoicing, and amendment requirements
(g) prepares four copies of the Interagency Agreement/Amendment (EPA Form 1610-1), and
(h) prepares the commitment notice and the transmittal/decision memorandum.

The OSC then monitors accomplishment of work in accordance with the IAG scope of work.

6.3. OPA-FUNDED RESPONSES

6.3.1. National Pollution Fund Center (NPFC)

OPA established the Oil Spill Liability Trust Fund (OSLTF) to pay for oil spill cleanups and damages in cases where the responsible party cannot or will not pay for the cleanup. The NPFC currently administers the disbursement of OSLTF money. The NPFC has several responsibilities, including:

The NPFC can be contacted at (703) 235-4700. Its mailing address is 4200 Wilson Blvd., Ste. 1000 Arlington, VA 22203-1804

(a) providing funding to permit timely removal actions;

(b) initiating Natural Resource Damage Assessments for oil spills;

(c) compensating claimants for damages caused by oil pollution;

(d) recovering costs owed by the responsible parties for oil pollution damages; and

(e) certifying the financial responsibility of vessel owners and operators.

OPA effectively permits other Federal Agencies, the States and Native American Tribes access to the OSLTF for a variety of purposes. The OSLTF can

be used following an incident for removal actions and actions necessary to minimize or mitigate damage to the public health or welfare, and natural resources. Access to the OSLTF is partially governed by Section 6002 of OPA, 33 U.S.C. Section 2753. Federal, State, local, or Tribal agencies may get funding for removal costs through the OSC or by submitting a claim to the NPFC.

6.3.2. U.S. EPA Access to OSLTF
Following spill notification, the OSC should:

(a) Contact the appropriate USCG District Office to obtain a Federal Project Number (FPN) for the response;

(b) Obtain approval for the project expenditure ceiling from USCG;

(c) Contact U.S. EPA Region 5 Budget Office in Cincinnati and obtain an account number;

(d) If necessary, initiate proper contracting mechanisms (such as ERCS, BOA, START) to assist in the cleanup effort; and

(e) If necessary, utilize Federal support structure as defined in the NCP. An OSC may obtain assistance from USCG/Strike Teams, NOAA, ERT, etc.

During the actual response, the OSC should:

(a) Document progress through POLREPs, including costs (copies to NPFC, Marine Logistics Command [MLC], District); and

(b) Track costs using U.S. EPA Removal Cost Management System or USCG paperwork.

In the case of a cleanup that lasts 30 days or less, the OSC must submit a cost documentation package within 30 days of cleanup completion.

For cleanups that extend beyond 30 days, the OSC must submit a cost documentation package every 45 days.

The documents to be included in cost documentation package are listed below:

(a) Summary letter,

(b) Personnel costs,

(c) Personnel travel costs,

(d) Other U.S. EPA costs, including U.S. EPA vehicles and equipment,

(e) U.S. EPA contractor costs,

(f) USCG Basic Ordering Agreements (BOAs), and

(g) Other government agency costs (local, State, or Federal).

When the cleanup has been completed, the OSC should write a completion report, which should be sent to the NPFC and to the ERD Division Director. The report should be similar to the OSC report developed at the end of

a CERCLA response. The final POLREP for the response can serve as the completion report, unless the RRT requests a formal report. The report should include:

(a) a summary of the response events, including:
- spill location,
- cause,
- responsible party actions, and
- beginning and ending dates;

(b) an appraisal of the effectiveness of the removal actions taken by:
- the responsible parties,
- Federal Agencies,
- contractors,
- private groups, and
- volunteers; and

(c) recommendations for prevention of future incidents.

6.3.3. State Access to OSLTF

States can access the OSLTF in three ways:

(a) Direct Access. States must request direct access through the FOSC. State access must be approved by the FOSC. The request must come only from the official designated by the Governor.

A proposal must be submitted to the FOSC and include anticipated funding and scope of work to be taken at the site. Ceiling increases and changes in the scope of work must be approved by the FOSC.

(b) Pollution Removal Funding Authorization (PRFA). The State acts as a contractor to the FOSC on site and can oversee site activities. The State can oversee Federal contractors under a PRFA.

The FOSC will prepare cost documentation and submit to the NPFC. State and other agency rates can be developed in conjunction with the NPFC.

Each agency involved in the spill must have a separate PRFA.

(c) Claims. Costs for spill cleanup can be submitted to the NPFC after the incident if direct access or a PRFA was not used. An FOSC is not involved in the claims process.

The NPFC will determine whether all actions taken at the site were consistent with the NCP.

In accordance with regulations promulgated under Section 1012(d)(1) of OPA, the President, upon the request of a Governor of a State or the individual designated by the Governor, may obligate the OSLTF through the NPFC for payment in an amount not to exceed $250,000 for removal costs consistent with the NCP required for the immediate removal of a discharge, or the mitigation or prevention of a substantial threat of a discharge, of oil. Requests for access to the OSLTF must be made to the OSC by telephone or other rapid means.

The list of current State designees to request OSLTF funds is contained in Appendix XIII, Section 7.

In making a request to access the OSLTF, the person making the request must do the following:

(a) Indicate that the request is a State access request under 33 CFR Part 133;

(b) Give their name, title, department, and State;

(c) Describe the incident in sufficient detail to allow a determination of jurisdiction, including at a minimum:
- the date of the occurrence,
- type of product discharged,
- estimated quantity of the discharge,
- body of water involved, and
- proposed removal actions for which funds are being requested under this part; and

(d) Indicate the amount of funds being requested.

For further information, refer to the USCG Technical Operating Procedures (TOPs) for State Access Under Section 1012 (d)(1) of OPA (NPFC Instruction 16451.1, November 1992), and the Flow Chart, State Access to OSLTF Under Section 1012(d)(1) of OPA, 33 U.S.C. Section 2712. These documents are available through the NPFC.

6.3.4. Trustee Access to OSLTF

Trustees must obtain OSC approval prior to obtaining reimbursement of removal costs incurred while responding to an oil and/or hazardous substance discharge under the direction of the OSC. If a trustee believes that a Federal response action is necessary to protect natural resources, whether or not the response action has been Federalized, the trustee must notify the OSC in order to assure that any response action taken is authorized and in accordance with the requirements of the NCP, located at 40 CFR Part 300. If natural resource trustees wish to access the OSLTF in order to initiate a natural resource damages assessment, they must work directly with the NPFC, through the Federal Lead Administrative Trustee. In addition, the trustees may submit claims for natural resource damages to the NPFC for payment from the OSLTF.

6.3.5. Reimbursable Expenses

OPA authorizes payment of "Removal Costs, including the costs of monitoring removal actions, consistent with the National Contingency Plan." This allows payment of incident-specific costs authorized by a Federal OSC, including costs of monitoring a responsible party's cleanup, as well as actual Federal cleanup activities. The fund may pay:

(a) costs of containment and removal of oil from water and shorelines;

(b) costs to prevent, minimize, or mitigate oil pollution where there is a substantial threat of discharge of oil; and

(c) costs of taking other related actions necessary to minimize or mitigate damage to the public health or welfare, including, but not limited to, damage to:

- fish,
- shellfish,
- wildlife,
- public and private property,
- shorelines, and
- beaches.

Examples of incident-specific Federal removal costs payable from the fund include:

- out-of-pocket expenses (e.g. per diem, travel, vehicle mileage costs; replication, transmission, and delivery of reports; rental cars; and field consumable costs),
- contracted costs,
- costs of U.S. EPA technical assistance teams,
- specific salary costs for temporary government employees hired or activated for the duration of the spill response, and
- specific salary costs for Federal employees not ordinarily available for oil spill response.

6.3.6. Procedures for Reimbursement

To seek reimbursement from the Federal Pollution Fund:

(1) Federal Agencies must submit their reimbursable expenses on Form SF 1080, "Voucher for Transfer between Appropriations and/or Funds," to the OSC for certification.

(2) The OSC will submit certified requests for reimbursements to NPFC within 60 days after completion of the cleanup action (33 CFR 153.417).

(3) The USCG will effect transfer of funds to the agency requesting reimbursement, and prepare a billing for the discharger from information on recoverable expenditures on the USCG form, "Personnel Vehicle and Miscellaneous Cost Accounting Sheet" (available from USCG).

State agencies that do not have a formal agreement must submit a letter to the OSC requesting reimbursement. This letter must include a detailed itemized statement of reimbursable expenditures. Refer to the USCG Marine Safety Manual for additional information.

6.3.7. Cost Recovery Action

All agencies participating in a Federal response must submit an itemized account of all recoverable costs to the OSC within 60 days of the completion of a cleanup operation.

6.3.8. Recoverable Costs

The discharger incurs liability up to the discharger's legal limit of liability for all actual costs associated with Federal removal following Federal assumption of response activities. Recoverable costs include:

(a) direct expenditures from the fund (i.e., payment of contractors or vendors);

(b) all reimbursable agency expenses;

(c) all personnel costs, including salaries of response personnel;

(d) equipment costs, including depreciation and maintenance;

(e) administrative overhead; and

(f) pollution removal damage claims.

6.3.9. Liability Limits

OPA sets limits of liability which apply to all removal costs and damages sought under the act. The limits may be adjusted for inflation every 3 years, based upon the consumer price index. The limits set by OPA are as follows:

(a) Tank vessels: $1,200 per gross ton; $10 million if 3,000 gross tons or greater; $2 million if less than 3,000 gross tons.

(b) Any other vessel: $600 per gross ton or $500,000.

(c) Offshore facility except Deep Water Ports: $75,000,000.

(d) Onshore facility and Deep Water Port: $350,000,000.

There are certain exceptions to these liability limits. The limits do not apply:

(a) if the incident was caused by gross negligence or willful misconduct;

(b) if the incident was a result of a violation of applicable Federal safety, construction, or operating regulations; or

(c) if the responsible party fails to report the incident, provide all reasonable cooperation and assistance required by a response official, or comply with an order issued by the Federal OSC.

In addition, OPA does not preempt State laws regarding liability, so in areas where State law places a higher limit, compensation for damages up to the liability limit established by the State law may be pursued.

6.4. REIMBURSEMENT TO LOCAL GOVERNMENTS FOR EMERGENCY RESPONSE TO SUBSTANCE RELEASES

Section 123 of CERCLA and Section 1002 (b)(2)(F) of OPA authorize U.S. EPA to reimburse local governments for some and (in rare cases) possibly all of the expenses incurred in carrying out temporary emergency measures in response to hazardous substance threats or releases. These measures or operations are necessary to prevent or mitigate injury to human health or the environment.

An application package can be obtained by contacting the RCRA/ Superfund Hotline at U.S. EPA Headquarters at (800) 424-9346. The application package contains detailed, line-by-line instructions for completing the application.

The intent of the CERCLA reimbursement provision is to reduce any significant financial burden that may have been incurred by a local government (city, county, municipality, parish, township, town, Federally recognized Native American Tribe, or other official political subdivisions designated by a particular State) that takes the above measures in response to hazardous substance threats. Traditional local responsibilities, such as routine fire fighting, are not eligible for reimbursement. States are not eligible for this program and may not

request reimbursement on their own behalf or on the behalf of a political subdivision within a given State (40 CFR Parts 310.20 and 310.30).

The following criteria must be met before a request for reimbursement is to be considered:

(a) local government must have had a Title III plan by October 1, 1988.

(b) Response occurred after the effective date of this rule (October 17, 1986).

(c) local government informed U.S. EPA or the NRC as soon as possible, but not more than 24 hours after initiating response.

(d) Response actions were consistent with CERCLA, the NCP, and EPCRA.

(e) The request contains assurances that the response reimbursement does not supplant local funds normally provided for such activities.

(f) The applicant must have first attempted to recover the costs from all known potentially responsible parties (PRPs) and any other possible sources of reimbursement (State funds, insurance companies, etc.). Sixty (60) days must be allowed for the above responsible party to respond by making payment, expressing an intent to pay, or demonstrating willingness to negotiate payment.

CERCLA limits the amount of reimbursement to $25,000 per single response. If several agencies or departments are involved in a response, they must determine among themselves which agency will submit the request for reimbursement. Any request must be received by U.S. EPA within 6 months of the related response action.

Some of the allowable costs may include, but are not limited to, the following:

(a) Disposable materials and supplies acquired and used specifically for the related response.

(b) Employee compensation for response work that is not provided in the applicant's operating budget.

(c) Rental or leasing of equipment.

(d) Replacement costs of equipment contaminated to the extent that it is beyond reuse or repair.

(e) Decontamination of equipment.

(f) Special technical services needed for the response, such as those provided by experts or specialists.

(g) Other special services, such as utilities.

(h) Laboratory analysis costs related to the response.

(i) Costs associated with supplies, services, and equipment procured for a specific evaluation.

A review panel will evaluate each request and will rank the requests on the basis of financial burden. Financial burden is based on the ratio of eligible response costs to the locality's per capita income adjusted for population. If a request is not reimbursed during the review period for which it is submitted, the U.S. EPA reimbursement official has the discretion to hold the request open for a 1-year reconsideration.

6.5. DOCUMENTATION FOR ENFORCEMENT AND COST RECOVERY

6.5.1. Introduction

The OSC in charge at the scene of a release may be from any one of several agencies. It is necessary, therefore, to establish uniform procedures for notification of counsel and for collection of samples and information consistent with the several phases in Federal response situations. Necessary information and sample collection must be performed at the proper times during Federal involvement in a spill for the purpose of later use in identifying the party responsible for cost recovery.

Detailed guidance on preferred procedures can be found in* Enforcement Considerations for Evaluations of Uncontrolled Hazardous Waste Disposal Sites by Contractors, *U.S. EPA, National Enforcement Investigation Center, April 1980.

Time is of great importance, as wind, tide, and current may disperse or remove the evidence and witnesses may no longer be available. Thus, during the response phases, the OSC must take the necessary action to ensure that information, records, and samples adequate for legal and research purposes are obtained and safeguarded for future use.

Section 300.335 of the NCP outlines the types of funds which may be available to address certain oil and hazardous substances discharges. For releases of oil or a hazardous substance, pollutant, or contaminant, the following provisions apply:

(a) During all phases of response, the lead agency shall complete and maintain documentation to support all actions taken under the ACP and to form the basis for cost recovery. In general, documentation shall be sufficient to provide the source and circumstances of release; identity of responsible parties; response action taken; accurate accounting of Federal, State, or private party costs incurred for response actions; and impacts and potential impacts to public health and welfare and the environment. Where applicable, documentation shall state when the NRC received notification of release of a reportable quantity.

(b) The information and reports obtained by the lead agency for OSLTF-financed response actions shall, as appropriate, be transmitted to the NPFC. Copies can then be forwarded to the NRT, members of the RRT, and others as appropriate.

6.5.2. Notification

The OSC is responsible for coordinating with counsel in his/her agency. Counsel for the RRT member furnishing the OSC is responsible for notifying other RRT member counsel, as appropriate, of potential enforcement or cost recovery matters related to an incident. The OSC and his/her counsel are responsible, following review and consultation with other RRT members involved in an incident, for notifying a responsible party of any determination under the CWA or CERCLA that the party is not properly accomplishing any response action.

The information and reports obtained by the OSC are to be transmitted to the applicable RRT Co-chair. Copies will then be forwarded to members of

the RRT and others, as appropriate. The representative of the agency on the RRT having cost recovery authority will then refer copies of the oil or hazardous materials reports to that agency's respective counsel.

6.5.3. Legal Notice to Suspected Releaser

The owner, operator, or other appropriate responsible person shall be notified of Federal interest and potential action in an oil or hazardous materials release by the agency furnishing the OSC. This notice shall include:

(a) advice of the owner or operator's potential liability for proper response to the release;

(b) the need to perform removal in accordance with existing Federal and State statutes and regulations, this Plan, and the NCP; and

(c) identification of the OSC.

6.5.4. Oil or Hazardous Materials Release Report

The appropriate information for each oil or hazardous material release should be obtained by the OSC and reported in the appropriate format established by the Emergency Response Division, Washington, DC. The OSC will retain:

- statements of witnesses,
- photographs,
- analyses of samples, and
- related documentation

for possible use in enforcement actions. In all major spills, the oil or hazardous material incident report should be completed and forwarded to the RRT Chair.

APPENDIX I: JURISDICTIONS IN REGION 5

1. REGIONAL AREAS

Region 5 has been divided into two operational areas, inland and coastal, which correspond to the areas in which U.S. EPA and USCG are responsible respectively for providing OSCs. The coastal operational area consists of the open waters of the Great Lakes, including Lake St. Clair, the interconnecting rivers, major bays, ports, and harbors of the Region 5 States; and the land surface, land substrata, ground water, and ambient air proximal to those waters. The inland operational area includes all other land territory of the six States of Region 5, including each State's inland lakes and rivers. Numerous Native American community reservations and treaty rights areas are also delineated within Region 5.

Two Coast Guard Districts share Federal Region 5. The Ninth Coast Guard District, headquartered in Cleveland, serves the Great Lakes drainage basin. The Eighth Coast Guard District, headquartered in New Orleans, serves the drainage basins of the upper Mississippi and the Ohio Rivers.

Within the Great Lakes coastal zone, the appropriate Captain of the Port (COTP) functions as the predesignated OSC for all oil and hazardous substance releases, subject to a DOT/U.S. EPA redelegation of certain CERCLA response authorities. U.S. EPA performs the following two categories of response actions within the coastal zone: 1) remedial actions for releases originating from facilities, and 2) all response actions for releases originating from hazardous waste management facilities.

The scope of the Eighth Coast Guard District response role is defined by a revised Memorandum of Understanding (MOU), between that District and U.S. EPA Region 5, signed by the Regional Administrator on April 12, 1993. The revised MOU assigned U.S. EPA as the predesignated OSC for the entire inland zone, including the inland river system within the Eighth Coast Guard District for responding to all discharges of oil and hazardous substances. The USCG would respond for spills from commercial vessels only.

DOD or DOE provides OSCs for all response actions for releases of hazardous substances, pollutants, or contaminants which originate on any facility or vessel under the jurisdiction, custody, or control of DOD or DOE. In the case of a Federal agency other than U.S. EPA, USCG, DOD, or DOE, such agency shall provide OSCs for all removal actions necessitated by releases originating on any facility or vessel under its jurisdiction that are not emergencies.

U.S. EPA or USCG OSCs may be requested to provide technical assistance to the lead agency OSC who is responding to the release or threatened release. In the event of an emergency on Federal agency property, other than DOD or DOE, U.S. EPA or USCG retains response authority and U.S. EPA OSCs may respond and later initiate cost recovery actions against the potentially responsible party.

Definitions of the boundaries of OSC jurisdictions for Region 5 are provided in the following subsections. Where highways are used to delineate the boundary, the roadbed right-of-ways of the highway are included in the inland (U.S. EPA) zone.

2. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY OSC BOUNDARIES

2.1. U.S. EPA Region 3 OSC Boundaries

U.S. EPA Region 3 will provide OSCs for investigating and responding to releases to the main stem of the Ohio River from the Ohio-Pennsylvania boundary, mile 40.1, to the Kentucky-West Virginia boundary, mile 317.2.

All releases in the above-named stretch of the Ohio River emanating from sources in West Virginia will be handled by U.S. EPA Region 3 personnel; those from sources in Region 5 will be handled by personnel from Region 5.

If either RRT is activated, the Eighth USCG District would be involved along the entire stretch of the Ohio River.

2.2. U.S. EPA Region 4 OSC Boundaries

U.S. EPA Region 4 will provide OSCs for investigating and responding to releases of oil or hazardous materials to the main stem of the Ohio River from the Kentucky-West Virginia boundary, mile 317.2, to its junction with the Mississippi River, mile 981.2.

Releases in the above-named stretch of the Ohio River emanating from shoreline sources in U.S. EPA Region 4 will be handled by personnel of Region 4; those spills from shoreline sources in Ohio, Indiana, and Illinois will be handled by personnel from Region 5.

Region 4 will have the responsibility for ensuring notification of water users downstream of the location of the release, including coordination with ORSANCO, the USCG Eighth District, and COE when a release occurs on the south shoreline or in the main stream of the Ohio River;

Region 5 has a like responsibility, including coordination with ORSANCO, the USCG Eighth District, and COE when a release occurs on the north shoreline of the river.

Either Region, when requested by the other, may assume the functional OSC role for a particular incident. The decision to accept this responsibility will rest with the Re-

gion being requested on an incident-specific basis. Boundary lines do not preclude mutual assistance between the two agencies.

2.3. U.S. EPA Region 7 OSC Boundaries

U.S. EPA Region 7 will provide OSCs for investigating and responding to releases to the main stem of the Upper Mississippi River (UMR) when either Iowa or Missouri is the principal first responding State.

U.S. EPA Region 5 will have jurisdiction for such releases within the State of Minnesota and where Minnesota, Wisconsin, or Illinois is the first principal responding State.

When releases to the UMR main stem will result in significant response by more than one State, or when there is uncertainty as to the responding States, Region 7 will provide OSCs for such releases occurring between Cairo, Illinois, and Keokuk, Iowa (miles 0.0 to 354.5), and Region 5 above that point.

For spills from shore facilities and non-waterborne sources, OSCs will be provided by the Region in which the source is located.

2.4. U.S. EPA Region 8 OSC Boundaries

U.S. EPA Region 5 will provide OSCs for investigating and responding to releases to the main stem of the Red River of the North from its origin in Lake Traverse near Browns Valley, Minnesota, to the Canadian border. All spills to the above-named stretch of the Red River emanating from sources in North Dakota and South Dakota will be handled by Region 8 personnel.

South of the Browns Valley area, the boundary between South Dakota and Minnesota involves the headwaters of the Minnesota River flowing southward. Region 5 Spill Response personnel will respond to releases to the main stem of the Little Minnesota River and Big Stone Lake southward to Ortonville, Minnesota.

All releases to the above-named headwaters of the Minnesota River emanating from sources in South Dakota will be handled by Region 8 personnel; releases from sources in Minnesota will be handled by Region 5 personnel.

U.S. EPA Region 8 will provide communications as necessary with the Canadian Province of Manitoba concerning all releases occurring in waters flowing into Canada, including those emanating from Region 5.

3. NINTH COAST GUARD DISTRICT OSC BOUNDARIES

Eight USCG units provide OSCs for releases occurring within the coastal zone, each serving a specific geographic area. These geographic areas are defined as: the international boundary with Canada, the boundaries between the units (described at 33 CFR 3.45), and the boundary between the inland zone and the coastal zone. In most locations, the boundary between inland and coastal zones follows the near shore areas adjoining the Great Lakes and the interconnecting rivers.

The following subsections detail, for each of the eight units, which tributaries fall within the coastal zone and where a geographic feature, such as a highway, serves as the boundary.

3.1. Marine Safety Office, Chicago, IL

1. Lake Michigan: within limits of COTP Chicago.
2. North Point Marina (Winthrop Harbor, Illinois): Entire marina.
3. Waukegan Harbor: Entire harbor.
4. Wilmette Harbor: From the entrance to the sluice gate.
5. Montrose Harbor (Chicago, Illinois): Entire harbor.
6. Belmont Harbor (Chicago, Illinois): Entire harbor.
7. Diversey Harbor (Chicago, Illinois): Entire harbor.
8. Chicago River: The outer harbor, limited to the waters outside the Chicago Lock and retaining walls, including the waters inside the lock gates.
9. Burnham Park Harbor (Chicago, Illinois): Entire harbor.
10. 59th Street Harbor (Chicago, Illinois): Entire harbor.
11. Jackson Park Harbor (Chicago, Illinois): Entire harbor.
12. Calumet Harbor and River (Chicago, Illinois): From the mouth of the Calumet River south to the north side of O'Brien Lock and Dam, including the waters inside the lock gates. From "The Forks" west to the temporary dike at the south boundary of Lake Calumet.
13. Hammond Marina: Entire marina.
14. Indiana Harbor (East Chicago, Indiana): Upstream to Conrail Railroad Bridge.
15. Pastrick Marina (East Chicago, Indiana): Entire marina.
16. Buffington Harbor (Gary, Indiana): Entire harbor.
17. Gary Harbor (Gary, Indiana): Entire harbor.
18. Burns Harbor (Burns Harbor, Indiana): From the entrance to the south end of deep draft slip.
19. Michigan City Harbor: Entrance to Bascule Bridge.
20. Betsie Lake (Frankfort): Entire lake throughout up to and including the mouth of the Betsie River to Highway M-22 bridge.
21. Arcadia Lake: Entire lake.
22. Portage Lake: Entire lake.
23. Manistee Lake (Manistee): Entire lake throughout up to and including the mouth of the Manistee River to Highway M-55 bridge.
24. Pere Marquette Lake (Ludington): Entire lake throughout up to and including the mouth of the Pere

Marquette River to Old U.S. 31 bridge.
25. Pentwater Lake: Entire lake.
26. White Lake: Entire lake.
27. Muskegon/Bear Lake (Muskegon, Michigan): Entire lake throughout up to and including the Muskegon River to the U.S. 31 bridges.
28. Mona Lake: Entire lake.
29. Spring Lake: Entire lake.
30. Grand River: From the mouth to the end of the dredged channel at Buoy #78 (in Ottawa County approximately 17 miles upstream).
31. Pigeon Lake: Entire lake up to the fixed bridge in the intake channel of the J.H. Campbell power plant and on the eastern end up to the fixed bridge of Lakeshore Avenue.
32. Lake Macatawa: Entire lake to the end of the dredged channel marked by buoys #25 and #26 (eastern end of the lake in Holland).
33. Kalamazoo Lake (Douglas/Saugatuck): Entire lake up to and including the Kalamazoo River to the CSX Railroad bridge, approximately 11 miles upstream.
34. Black River (South Haven): From the mouth to the U.S. 31 bridge, approximately 2.6 miles upstream.
35. St. Joseph River (St. Joseph): From the mouth to the Somerleyton bridge, approximately 6.6 miles upstream.
36. Paw Paw River (Benton Harbor): From the mouth to the CSX Railroad bridge, approximately 3.2 miles upstream.
37. Galien River: from the mouth to the Highway 12 bridge, approximately 2 miles upstream.

3.2. Marine Safety Office, Cleveland, OH
1. Ashtabula River (Ashtabula, Ohio): Upstream to East 5th Street.
2. Black River (Lorain, Ohio): Upstream to the turning basin at the National Tube Division of U.S. Steel (river mile 3.0).
3. Conneaut River (Conneaut, Ohio): Upstream to the Bessemer and Lake Erie Railroad Swing Bridge at Pittsburg & Conneaut Dock Comp. (river mile 0.75).
4. Cuyahoga River (Cleveland, Ohio): Upstream to the mouth of Big Creek in the Metropolitan Parks (river mile 7.5).
5. Grand River (Fairport Harbor, Ohio): Upstream to the turning basin at Osborn Concrete and Tank Company.

In addition to the river miles mentioned above, the coastal/inland zone demarcation shall be defined by the boundary on the highway created by State Route 2 from Vermilion to North Perry and then U.S. Route 20 from North Perry to the Ohio/Pennsylvania border. The costal zone being all waters and adjacent shoreline north of this boundary, any incident on the above-mentioned highways will be the responsibility of U.S. EPA but it should be noted that the COTP may be requested to respond as First Federal Official on scene until a U.S. EPA OSC can respond.

3.3. Marine Safety Office, Detroit, MI
1. Lake Huron: From Latitude 44-43' south and east to international boundary.
2. Saginaw Bay: The entire Saginaw Bay.
3. St. Clair River: East to international boundary.
4. Lake St. Clair: East to international boundary.
5. Detroit River: South to Detroit River Light and east to international boundary.
6. Au Gres River (Au Gres, Michigan): Upstream to U.S. 23 Bridge.
7. Au Sable River (Oscoda, Michigan): Upstream to Mill Street Bridge.
8. Bird Creek (Port Austin, Michigan): Upstream to Spring Street Bridge.
9. Belle River (Port Huron, Michigan): Upstream to M-29 Broadway Bridge.
10. Black River (Port Huron, Michigan): Upstream to and including Black River Canal.
11. Clinton River (Harrison Township, Michigan): Up to and including Clinton River Spillway.
12. Ecorse River (Ecorse, Michigan): Upstream to Jefferson Avenue Bridge.
13. Huron River (Rockwood, Michigan): Dixie Highway Bridge 1.8 miles above mouth of rive.
14. Milk River (St. Clair Shores, Michigan): Up to Jefferson Avenue Bridge.
15. Pigeon River (Caseville, Michigan): Upstream to M-25 Bridge.
16. Pine River (St. Clair, Michigan): Upstream to CSX Railroad Bridge.
17. River Rouge (Saginaw and Bay City, Michigan): Upstream to .5 mile above Center Street Bridge in Saginaw.
18. Salt River (Chesterfield Township, Michigan): Upstream to Callens Road Bridge.
19. Sebewaing River (Sebewaing, Michigan): Upstream to M-25 Bridge.

3.4. Marine Safety Office, Duluth, MN
Within Duluth/Superior Harbor, COTP Duluth will assume the responsibility for providing FOSCs in Duluth/Superior Harbor to the mouths of all small tributary rivers and creeks entering into the harbor, plus the St. Louis River serviced by existing patrols and aids to navigation up to the Highway Bridge on Route 23 at Fond du Lac, Minnesota, and the waters of Lake Superior within COTP Duluth.

3.5. Marine Safety Office, Milwaukee, WI
1. All waters of Lake Michigan within COTP Milwaukee's zone.
2. Pike Creek (Kenosha): To the Sixth Avenue Bridge.

3. Root River (Racine): To the Main Street Bridge.
4. Oak Creek (Milwaukee): To its mouth.
5. Kinnickkinnic River (Milwaukee): To the South Kinnickkinnic Avenue Bridge.
6. Menominee River (Milwaukee): To mile 2 (25th Street Bridge)
7. Milwaukee River (Milwaukee): To the North Humboldt Avenue Bridge.
8. Sauk Creek (Port Washingtom): To the Wisconsin Street Bridge.
9. Sheboygan River (Sheboygan): To the Pennsylvania Avenue Bridge.
10. Manitowac River (Manitowac): To the C&NW Railroad Bridge.
11. West Twin River (Two Rivers): To the 16th and Madison Streets Bridge.
12. East Twin River (Two Rivers): To the 22nd Street Bridge.
13. Kewaunee River (Kewaunee): To the Park Street Bridge.
14. Ahnapee River (Algoma): To the 2nd Street Bridge.
15. Fox River (Green Bay): To the State Route 172 Bridge.
16. East River (Green Bay): To the Monroe Avenue Bridge.
17. Oconto River (Oconto): To the turning basin.
18. Menominee River (Marinette, Wisconsin to Menominee, Michigan): To the Dunlap Avenue (Highway 41) Bridge.

3.6. Marine Safety Office, Sault Ste. Marie, MI

1. Lake Superior: The waters, bays, tributaries, and adjoining shoreline of Lake Superior within U.S. territory, eastward from the westernmost boundary of the Area of Operations (AOR) to a line between Point Iroquois running northeast to Gros Cap Reef Light on the International Boundary.
2. St. Mary's River: The waters, bays, tributaries, and adjoining shoreline of the St. Mary's River within U.S. territory, from a line between Point Iroquois and Gros Cap Reef Light southward to a line between Detour Reef Light and Crab Island Shoal Light, including the waters of Potagannissing Bay.
3. Lake Huron: The waters, bays, tributaries, and adjoining shoreline of Lake Huron within U.S. territory, northward from the southernmost boundary of the AOR, west to the Straits of Mackinaw Bridge.
4. Lake Michigan: The waters, bays, tributaries, and adjoining shoreline of Lake Michigan, eastward from the westernmost boundary of the AOR, to the Straits of Mackinaw Bridge.

3.7. Marine Safety Office, Toledo, OH

1. River Raisin (Monroe, Michigan): Upstream to the turning basin (river mile 1.5).
2. Maumee River (Toledo, Ohio): Upstream to the I-75 Bridge.
3. Portage River (Port Clinton, Ohio): Upstream to Highway 163.
4. Sandusky Bay (Sandusky, Ohio): Upstream to Highway 2.
5. Huron River (Huron, Ohio): Upstream to turning basin (mile .5).
6. Lake Erie: The open waters, bays, harbors, and mouths of tributaries within the COTP Toledo zone.

3.8. Ninth Coast Guard District Responses in the Inland Zone

Ordinarily, the Ninth Coast Guard District will not provide the OSC for a release occurring in the inland zone. However, where a Marine Safety Officer responds in the inland zone to a marine casualty or other incident pursuant to USCG port safety and commercial vessel safety responsibilities, that officer will serve as the First Federal Official On Scene, pending arrival of the predesignated U.S. EPA OSC. In this capacity, that officer will manage any cleanup actions performed by the responsible party and, if necessary, will initiate a Federal removal.

The U.S. EPA Region 5 office may request that the Ninth Coast Guard District provide the OSC for a release in the inland zone, regardless of source, because of the particular circumstances of the incident.

4. EIGHTH COAST GUARD DISTRICT OSC BOUNDARIES

Agency responsibilities have been reassigned to more clearly reflect the inland and coastal zone delineation. The revised MOU assigns the U.S. EPA as the predesignated OSC for the entire inland zone, including the inland river system within the Eighth District. The previous agreement designating specified ports and harbors as portions of the Coastal Zone is no longer applicable.

If the incident involves a commercial vessel, a transfer operation, or a marine transportation related facility, the USCG will provide the OSC. The Eighth District will assist the predesignated U.S. EPA OSC where there is a discharge or release of oil or hazardous substances, or a threat of such a discharge or release, into or on navigable waters. Upon request by the U.S. EPA OSC, the USCG may act on behalf of U.S. EPA, assuming the functional role and responsibilities of the OSC. If the USCG is the first Federal official on-scene, the USCG will notify the U.S. EPA OSC and act as the OSC until such time as the U.S. EPA OSC arrives.

APPENDIX II: FEDERALLY RECOGNIZED NATIVE AMERICAN TRIBES IN REGION 5

MICHIGAN TRIBAL CONTACTS

Bay Mills Executive Council
Jeff Parker, Chairman
Route #1
Brimley, MI 49715

Bay Mills Indian Community
Ken Gebhardt, Fisheries Biologist
Route 1
Brimley, MI 49715

Grand Traverse Band of Ottawa & Chippewa
Joseph Raphael, Chairman
2605 NW Bayshore Road
Suttons Bay, MI 49862

Grand Traverse Band of Ottawa & Chippewa
Christine Mitchell, Biological Services Director
Route #1, Box 135
Suttons Bay, MI 49682

Hannahville Indian Community
Jeff Pecotte, Health Administrator
N14911 Hannahville Road
Wilson, MI 49896-7454

Hannahville Tribal Council
Kenneth Meshigaud, Chairman
N14911 Hannahville Bl. Rd.
Wilson, MI 49896-9728

Keweenaw Bay Indian Community
William Beaver, Environmental Specialist
795 Michigan Avenue
Baraga, MI 49908

Keweenaw Bay Tribal Council
Fred Dakota, President
795 Michigan Avenue
Baraga, MI 49908

Lac Vieux Desert Tribal Council
John McGeshick, Chairman
P.O. Box 446
Watersmeet, MI 49969

Lake Superior Chippewa, Lac Vieux Desert Band
George Beck, Environmental Specialist
P.O. Box 446
Watersmeet, MI 49969

Little River Band of Ottawa Indians
Daniel Bailey, Chairman
409 Water Street
Manistee, MI 49660

Little Traverse Band of Odawa Indians
Frank Ettawageshik, Chairman
1345 US Route 31 North
P.O. Box 246
Petosky, MI 49770

Pokaogon Band of Potawatomi
Joseph Winchester, Chairman
714 N. Front Street
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APPENDIX IV: WORST-CASE DISCHARGES IN REGION 5

APPENDIX V: SHORELINE CLEANUP GUIDELINE MATRICES

(TO BE INCLUDED ON DISK)

APPENDIX VI: OPTIONS FOR MINIMIZING ENVIRONMENTAL IMPACTS OF FRESHWATER SPILL RESPONSE ACTIONS

APPENDIX VII: CHEMICAL USE CHECKLIST

A. COMPILE DATA

_____ 1. Spill Data

Circumstances:

Time/date of incident:

Location:

Type of oil product:

Volume of product released:

Total potential of release:

Type of release (instantaneous, continuous, etc.):

_____ 2. Characteristics of Spilled Oils

Specific gravity:

Viscosity:

_____ 3. Weather and Water Conditions/Forecasts

Air temperature:

Wind

Speed:

Direction:

Water

Conditions:

Temperature:

Depth:

4. Oil Trajectory Information

48-hour surface oil trajectory forecast

Surface area of slick:

Expected conditions of landfall:

48-hour dispersed or chemically treated oil trajectory forecast

Oil movement in water column:

Surface oil movement and expected landfall:

Concentration of the dispersant/oil mixture in the water column:

5. Chemical Characteristics and Application Equipment

CHEMICAL CHARACTERISTICS

	Product 1	Product 2	Product 3
Chemical Name Trade Name Manufacturer When Available Location Characteristics: - toxicity - effectiveness - reactions - applicability - flash point Amount Available Type of Containers Application Methods Benefits to Problem (e.g. reduce vapor, increase viscosity)			

TRANSPORTATION AND EQUIPMENT

	Company 1	Company 2	Company 3
Name Location Equipment Available Transportation of Equipment			

_____ 6. Comparison of the Effectiveness of Conventional Clean Methods vs. Use of Chemicals

- Containment at the source
- Burning
- Shoreline protection strategies
- Shoreline cleanup strategies
- Time necessary to execute response

_____ 7. Habitats and Resources at Risk

- Shoreline habitat type and area of impact
- Resources
  - endangered/threatened species
  - critical habitat for the above species
  - waterfowl use
  - shellfish
  - finfish
  - commercial use
  - public use areas
  - other resources of significance

_____ 8. Other Users of the Water: Nearby and Downstream

- Water supply, potable
- Water supply, industrial

B. RECOMMENDATIONS

_____ 1. Options

- Do not use chemicals
- Use chemicals on a trial basis
- Disperse or chemically treat in limited defined areas
- Disperse or chemically treat to maximum extent possible with accepted methods and available equipment

_____ 2. Other Recommendations/Rationale

C. EVALUATION OF DECISION

_____ 1. Will application remove a significant amount of the slick from the surface water?

_____ 2. Can the extent or location of shoreline impacts be altered in a positive manner?

_____ 3. Can the damage to endangered/threatened species, mammals, and waterfowl be lessened?

_____ 4. Will the damage to habitats and resources resulting from the chemical use be less than those resulting without the use?

_____ 5. If recreational, economic, and aesthetic considerations are a higher priority than natural resource considerations, what is the most effective means of their protection?

D. MONITORING OF CHEMICAL USE

_____ 1. Records

Chemical brand:

Equipment and methods used in application:

Dilution of chemical prior to application, if any:

Rate of application

Times and area of application

Wind and wave conditions during application:

_____ 2. Effectiveness - visual and photographic documentation

- Oil before and after chemical application
- Resurfacing of dispersed or chemically treated oil
- Sampling of the water beneath the oil slick and the oil/chemical combination to determine the level of petroleum hydrocarbons in the water

_____ 3. Environmental Impacts - visual and photographic surveys

- Extent of shoreline impact by chemically treated and untreated oil
- Mortality or abnormal behavior of fish, birds, or mammals
- Comparison of shoreline areas impacted by oil and oil/chemical mixtures
- Analysis of oil concentrations in sediments under chemically treated oil
- Investigation of water column organisms for signs of adverse impact due to chemically treated oil
- Collection and analysis of birds affected by chemicals or oil/chemical mixture

_____ 4. Public Health

Sampling water supplies for petroleum and chemical constituents

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APPENDIX VIII: IN SITU BURNING OF OIL AS A RESPONSE TOOL IN REGION 5 — GUIDANCE FOR APPROVING PROPOSALS TO BURN OIL

Prepared for
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PART I

INTRODUCTION

In order to minimize the environmental impacts and facilitate effective cleanup of an oil spill, responders have a limited number of techniques available to them. These include:

- mechanical methods,
- the use of certain chemical countermeasures, and
- in situ burning.

Under certain specific conditions, in situ burning may offer a logistically simple, rapid, inexpensive, and relatively safe means for reducing the shoreline impacts of an oil spill. Moreover, because a large portion of the oil is converted to gaseous combustion products, the need for collection, storage, transport, and disposal of recovered material can be substantially reduced.

In situ burning may be able to remove large amounts of spilled oil before spreading and drifting of the spill fouls shorelines and threatens wildlife. In certain circumstances, such as oil spilled in ice conditions, burning may be the only viable response technique. For these and other reasons, in situ burning is gaining attention and favor as a potential oil spill response technique.

In situ burning must be evaluated in conjunction with other containment and cleanup alternatives. Specific spill conditions will often dictate the response techniques used and selection always involves tradeoffs. For example, a potentially ecologically damaging but efficient cleanup technique could be used to meet site-specific response goals. Also, techniques may be used early in response simply because they can be implemented immediately, rather than waiting until ones with lower impact can be mobilized. In situ burning, which might have a significant short-term impact, may actually produce the lowest long-term impact because it removes the oil quickly.

This policy document contains the background information and guidance necessary to aid the Federal and State OSC, the appropriate RRT members, and Area Committees in their consideration of whether to allow the use of in situ burning as an oil spill countermeasure.

1. RRT 5 POLICY FOR USING IN SITU BURNING AS AN OIL SPILL RESPONSE TOOL

RRT5 strongly recommends that in situ oil burning be considered as a means to avert potential oil spill impacts to the region's beaches, wetland environments, and

Great Lakes and inland resources. In situ burning should augment, not replace, other oil spill response techniques such as mechanical removal or chemical countermeasures. Where and when appropriate, in situ burning can be used as a first-strike option for defensive purposes (e.g., open water burning and burning in ice conditions), and as a cleanup technique (e.g., burning of wetlands to remove spilled oil).

Since the use of in situ burning is being encouraged, education of the public and the response community is also necessary to reduce misconceptions and anxieties. This should be accomplished by outreach to public forums and in the area planning/committee process.

The RRT has adopted this policy applicable to spill responses under the direct oversight of a Federal On-Scene Coordinator (FOSC). This policy authorizes the FOSC to use in situ burning as a response countermeasure to an oil discharge when he or she believes it is appropriate after key members of the RRT have been consulted and concur. In some circumstances this policy is overridden by State laws and in the case of the use of burning agents during in situ burning by the NCP (40 CFR 300.910). To the extent that this policy applies, the following summarizes the appropriate situations where concurrence and consultation should take place:

(a) **The requirements of this policy apply only to responses under the direct oversight of an FOSC, but its general application is strongly encouraged.**

(b) **The appropriate State's approval is always required.** In Region 5, the use of in situ burning as a response tool will always be within State waters and inland areas and consequently be subject to State law and policy. When burning agents are used this is a requirement of the law (the NCP).

(c) **The U.S. Environmental Protection Agency (U.S. EPA) must concur** with the Federal OSC's recommendation to authorize the use of in situ burning. When burning agents are used this is a requirement of the law (the NCP).

(d) **The U.S. Department of Interior (DOI) must also concur with the decision to burn during a spill response overseen by a Federal OSC.** The responsibility of concurrence is given to DOI because of its authorities, and potential assistance to the Federal OSC, regarding the Endangered Species Act and potential representation of Federally recognized Native American communities. Furthermore, DOI has significant responsibilities as a Federal natural resource trustee.

(e) **As a natural resource trustee, the Department of Commerce (DOC/National Oceanic and Atmospheric Administration (NOAA) should be consulted when considering an in situ burn.** Notification should be from the RRT Co-Chairs via the DOC RRT member.

(f) **Native American community official(s) must be consulted** on any decision to use in situ burning when a burn would reasonably be expected to impact those designated areas of Native American interests.

(g) **Finally, this approval must also be in concert with Canadian Federal Government officials, adjoining States and/or provinces, and local officials with approving jurisdictions,** where deemed appropriate or necessary.

Special Note on Notification: ***Once notified by the RRT Co-Chairs, DOI must develop its position on the burn in a limited timeframe consistent with the incident-specific conditions and response limitations. Typically this would be on the order of hours. Significant efforts will be made to contact DOI; however, if no contact can be made within a reasonable timeframe, a decision to burn will be made without DOI concurrence. The Co-Chairs will establish this incident-specific time frame and provide DOI with the spill information and Federal OSC justification for conducting the burn.***

Additionally, the NOAA Scientific Support Coordinator (SSC) should be contacted to assist in the decision-making process.

The use of in situ burning for response will follow the Region 5 approved guidelines and procedures established to allow the State and Federal On-Scene Coordinator the safe and effective use of this response tool. This includes, but is not limited to, the RRT 5 Cleanup Guidelines.

***An additional source of information about applicable habitats in which to conduct in situ burning is the joint NOAA/American Petroleum Institute document,* Options for Minimizing Environmental Impacts of Freshwater Spill Response.**

1.1. Authority

Section 300.115 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) states that the RRT is responsible for regional planning and coordinating preparedness and response actions. The NCP further states, "...[The RRT] provides the appropriate regional mechanism for development and coordination of preparedness activities before a response action is taken and for coordination and advice to the OSC/RPM during such response actions...."

Section 4201 of the Oil Pollution Act (OPA; P.L. 101-380) amended the Clean Water Act, which gives the general removal authority to "...ensure effective and immediate removal of a discharge, and mitigation ...of oil..." This same section requires the contents of the NCP to contain "...procedures ad techniques to be employed in identifying, containing, dispersing, and removing oil...."

Finally Section 7001 of OPA supports the concept of developing innovative technologies that are effective "...in preventing or mitigating oil discharges and which protect the environment...."

2. IN SITU BURNING AS A RESPONSE TOOL—AN OVERVIEW

2.1. Definition

In situ burning, for the purposes of this guidance, is defined as the use of an ignition source to initiate the combustion of spilled oil that will burn due to its intrinsic properties and does not include the adding of a burning agent to sustain the burn.

The use of in situ burning in these guidelines is not for disposal purposes; rather, it is a response technique to be employed when an oil slick is virtually uncontrolled with the potential to spread and contaminate additional areas. It is also considered as a cleanup technique for oiled shoreline habitats such as wetlands, where it is used in conjunction with other cleanup methods.

2.2. Potential Effectiveness

Although in situ burning is a relatively simple technique, its effectiveness can be limited by spill circumstances. Whether and how oil burns is the result of the interplay among a number of physical factors related to the oil itself and the extent to which the oil has been exposed to the environment. Critical factors, including:

- oil thickness,
- degree of weathering, and
- extent of emulsification

generally change with the passage of time, and the changes that occur make it more difficult to burn the oil. As a consequence, in situ burning is most easily and effectively implemented during the early stages of a spill.

The efficiency of in situ burning is highly dependent on a number of physical factors. Test burns and actual spill situations suggest it can be very effective in

removing large quantities of oil from the water. Burn efficiencies of 50 to 90 percent can be expected, making this response method more efficient than other methods. In comparison, mechanical removal (such as skimming) typically has an efficiency of 10 to 20 percent.

Additional information about effectiveness can be found in **Part II - Technical and Background Information.**

In situ burning is most considered and tested with crude oil spills. However, its feasibility with other types of refined oil products (e.g., diesel and Bunker C fuel oil) has been demonstrated. Difficulties with establishing and maintaining necessary slick thicknesses (in the case of lighter oils) and ignition (for heavier oils) make in situ combustion a slightly less viable alternative for those materials than for crude oils.

2.3. Relationship to Mechanical and Other Response Methods

Spill prevention is the first line of defense in spill response planning; however, acceptance of the probability that a spill can and will occur is essential to successful preparedness. Burning will be considered as a possible response only when mechanical containment and recovery response methods are incapable of controlling the spill alone.

While physical containment and mechanical removal of spilled oil is the primary objective of any response, prudent planning dictates the consideration of alternative countermeasures.

2.4. Byproducts of In Situ Burning

Byproducts of in situ burning exist because no combustion is completely efficient in oxidizing a given source material. Besides the normal results of burning, CO_2, H_2O, and an assortment of other sulfur and nitrogen residues, a wide range of intermediate combustion products are generated. Although the exact mix of burn residues varies, byproducts can be categorized into three groups: unburned oil, airborne components, and combustion residues. Each of these is discussed in greater detail in Part II of this guidance document.

3. SAFETY AND HUMAN HEALTH CONSIDERATIONS OF IN SITU BURNING

3.1. Safety of Response Personnel

The safety of personnel during both ignition and burn phases of large amounts of combustible liquids on the surface of the water presents some unique safety concerns for workers and response personnel. Many of these concerns are addressed in greater detail in operationally oriented references and include, but are not limited to, the following:

(a) **Fire Hazard**: Care must be taken that the burn be controlled at all times to ensure the safety of personnel and property. This precludes burning ar sources such as tankers, ships, or tank farms unless means are taken to ensure that the flame cannot propagate from the burn location to the source.

(b) **Ignition Hazard**: Personnel and equipment involved in ignition of the oil slick must be well coordinated. Weather and sea conditions need to be kept in mind and adequate safety distances be kept at all times. Specialized ignition equipment, unknown fire behavior, and uncertain flash points introduce safety risks.

(c) **Vessel Safety**: Burning at sea may involve the use of several vessels operating in close proximity, perhaps at night or in conditions of poor

visibility. These conditions are hazardous by nature and generally require training and close coordination. Maneuverability while towing boom or positioning other containment equipment will require skilled personnel.

(d) **Training:** Training of personnel to operate equipment for in situ burning should be developed to minimize the risk of injury and accident. Training should meet all applicable OSHA regulations and guidelines.

Response personnel working in close proximity to the burn may be exposed to levels of gases and particulates that may require the use of personal protective equipment. Training for burn personnel should include proper use of personal protective equipment that may be used to minimize inhalation of and skin contact with combustion byproducts. Exposure limits such as OSHA's Permissible Exposure Limits (PELs) are applicable to this group of typically healthy adults.

Other hazards can include the exposure of personnel to extreme heat conditions, smoke, and fumes. Work also may be done under time constraints or for extended periods of time. Personnel involved with burning operations must be well briefed on the plan of operations, with safety stressed, and must be notified of all changes from the approved burn plan. The need for burning must be constantly evaluated and should be reconsidered if conditions (e.g., weather, operations, equipment) pose a threat or danger to human health and safety, or facilities. As more knowledge is gained from burning, it is most likely that additional safety concerns will be identified.

3.2. General Public Health Considerations

Burning oil produces a visible smoke plume containing smoke particulates, combustion gases, unburned hydrocarbons, residue left at the burn site, and other products of combustion. It also results in the evaporation and release of volatile compounds from the oil. Public health concerns relate to the chemical content of the smoke plume and the downwind deposition of particulates. It should be noted that not burning an oil spill also introduces its own air quality concerns. Analysis of the physical behavior of spilled oil has shown that 50 percent of a light crude oil spill can evaporate fairly readily, and it is the acutely toxic lighter fractions of a crude oil mix that quickly move into the atmosphere.

Results of recent burn tests indicate that in situ burning does not yield significant emissions above those expected for similar types of combustion such as forest fires. Many human health experts believe that the most significant human health risk resulting from in situ burning is inhalation of the fine particulate material that is a major constituent of the smoke produced. An early assessment of health concerns attributable to the Kuwaiti oil fires identified the less than 10-micron particulate matter as representing the greatest health hazard in that situation. The extent to which these particles present a health risk during an in situ burn depends on the concentration and duration of the exposure. It is important to remember that particulates in these concentrations are so small that they do not settle readily. They will be carried by the prevailing wind over large distances, over which their concentrations will rapidly decline.

Polynuclear aromatic hydrocarbons (PAHs) are a group of hydrocarbons produced during in situ burning. They are found in oil and oil smoke, where their relative concentration in the latter tend to be higher than in the oil itself. Possible carcinogenicity of some members make this group a serious health concern, although it is generally long-term exposure to the higher molecular-weight

PAHs that is the basis for concern. Sulfur dioxide (SO_2) and nitrogen dioxide (NO_2) are eye and respiratory tract irritants that are produced by oil combustion. Concentrations of PAHs decline downwind as smoke from the fire is diluted by clean air. The concentrations of other byproducts of burning oil (i.e., combustible gases) also decline downwind.

Burning should not be allowed if downwind human populations are at risk. The downwind extent of human risk has not been empirically determined, although it its an area of very active research. There are no exposure standards for respirable particles generated by a burn that could be applied directly to determine safe downwind distances. Atmospheric dispersion models, if available for the specific area, could be utilized to help refine potential downwind exposures. If models are not available, whenever possible, a small pilot burn could be conducted before a larger burn in order to gauge the effectiveness of the ambient conditions to disperse the smoke and gases resultant from the burned material. Because wind direction meanders under most circumstances, no population should be within a 45-degree arc to either side of the wind direction. Local wind and weather events (air stability class, lake breezes, and frontal passages, for example) must be considered when determining downwind directions.

***Additional information about worker and general public health and safety can be found in* Part II - Technical and Background Information.**

3.3. Public Notification

Notification of the public of an impending burn is critical to the overall success of an in situ burn effort. The notification, coordinated through the joint information center, should focus on conveying the following messages:

- Burning is a simple, well-understood, and controlled practice;
- Strict health and environmental criteria are being used in deciding whether or not to burn;
- Burning is being conducted because it presents the opportunity for greater health and environmental protection than could be achieved by other spill response methods or no response;
- Health and environmental precautions will accompany burning;
- The burns will be carried out by specially trained personnel and will be closely monitored;
- The public will be notified of each burn before or as it begins.

Public notification can be initiated through radio/TV broadcasts and broadcasts to mariners. If necessary, local government and State emergency service personnel with access to established public warning systems and authority to use them can facilitate this notification.

Materials to educate the public and media about burning, its risks, and tradeoffs with other countermeasures, should be developed ahead of time and available for dissemination during the burn. This material would cover the tradeoffs involved in choosing response countermeasures, and relate the risks of in situ burning to better known risks (e.g., forest fires). Distribution of this information can be though the agencies' public affairs offices prior to a spill and through a joint information center established during a spill.

4. ECOLOGICAL CONSIDERATIONS OF IN SITU BURNING

4.1. Open Water In Situ Burning

Potential ecological impacts of open water in situ burning have not been extensively discussed or studied. Conclusions are based on documented physical effects observed in the laboratory and at limited test burns.

The surface area affected by in situ burning is likely to be small relative to the total surface area and depth of a given body of water. This does not necessarily preclude adverse ecological impacts, particularly if rare or sensitive species use the waters in question. Organisms that may be affected by in situ burning include those that use the uppermost layers of the water column, those that might come into contact with residual material, and possibly some benthic (bottom-dwelling) plants and animals.

4.2. Direct Temperature Effects

Burning oil on the surface of the water could adversely affect those organisms at or near the interface between oil and water, although the area affected would presumably be relatively small. Observations during large-scale burns using towed containment boom did not indicate a temperature impact on surface waters. Thermocouple probes known to be in the water during the Newfoundland burn showed no increase in water temperatures during the burn (NOBE Facts, January 1994). It appears that the length of time the burning layer resides over a given water surface may be too brief to change the temperature due to the fact that the ambient-temperature water is continually being supplied below the oil layer as the boom is towed.

4.3. Surface Microlayer

4.3.1. ROLE AND IMPORTANCE OF THE SURFACE MICROLAYER

The surface of the water represents a unique ecological niche called the "surface microlayer," which has been the subject of many recent biological and chemical studies. Although most studies of the microlayer have been conducted in the marine environment, the results can also be applied to the freshwater environment. The microlayer, variously defined but often considered to be the upper millimeter or less of the water surface, is a habitat for many sensitive life stages of aquatic organisms, including eggs and larval stages of fish and crustaceans, and reproductive stages of other plants and animals. The microlayer also is a substrate for microorganisms and, as such, is often an area of elevated microbial population levels and metabolic activity.

4.3.2. POTENTIAL EFFECTS OF BURNING ON THE SURFACE MICROLAYER

The ecological importance of the surface microlayer and the potential impacts to it from burning activities have been discussed in the different, but related, context of ocean incineration. The Office of Technology Assessment (1986) noted in an evaluation of the technique:

"... given the intermittent nature of ocean incineration, the relatively small size of the affected area, and the high renewal rate of the surface microlayer resulting from new growth and replenishment from adjacent areas, the long-term net loss of biomass would probably be small or non-existent."

Despite the obvious differences between shipboard incineration of hazardous wastes and surface burning of spilled oil, the above rationale is applicable to in situ burning. Accordingly, potential impacts to the ecologically important surface microlayer are, to some extent, offset by the presumably short-lived nature of the burn and its associated residual material.

4.4. In Situ Burning in Wetland Habitats

There are few studies on the relative effects of burning oiled wetlands compared to other techniques or natural recovery and most of the experience is

derived from estuarine habitats. However, in situ burning in wetlands can be effective since it can remove a large quantity of oil with a minimum of physical disturbance. The type of wetland vegetation and the season of the year, along with many other factors, will dictate whether burning is feasible in a particular wetland.

Part II of this document contains summary of published case studies where the burning of marshes was used as a response tool.

Refuge managers have historically conducted prescribed burns of wetlands to:

- rejuvenate wetlands that have accumulated high litter loads,
- generate green vegetation or open spaces to attract wildlife,
- release nutrients for recycling, and
- restore habitats in areas that were historically subject to frequent wildfires to their natural conditions.

The presence of oil in a wetland may have two important effects:

(a) the high Btu of the oil may increase the temperature and heat penetration of the burn, and

(b) there is often an oil residue which can cause toxicity.

However, the experiences of fire ecologists and practitioners can greatly contribute to the development of guidelines for burning wetlands as a spill response strategy. Guidance is being developed for specific types of wetlands such as:

- wooded swamps
- fresh-to-brackish impoundment marshes
- Great Lakes coastal marshes
- Upper Mississippi River marshes (lock and dam pools)
- riparian wetlands
- inland freshwater marshes
- potholes

For now, based on discussions with refuge staff with fire management duties, the following general considerations for use were developed:

(a) Pros

- Where access is limited or mechanical/manual removal has the potential to cause more damage by equipment and trampling, burning can rapidly remove oil from sensitive areas.
- It provides a response option when no others are acceptable, or where likely oil residues will be unacceptably high with other options, including natural recovery.
- It rapidly removes oil from the habitat when there is a time-critical element, such as a short-term change in the physical conditions which will likely cause loss of containment and further spreading, or a seasonal increase in wildlife use, such as arrival of large numbers of migratory waterfowl.

(b) Cons

- Burning can cause substantial initial plant damage because the aboveground vegetation is removed.
- Burning can cause long-term impacts to vegetation, especially if the fire is so hot that the below-ground plant parts are killed.
- There is a potential for burning to increase oil penetration into the substrate, when there is no standing water.

- Any animals present and unable to escape (such as gastropods on clean vegetation above the oiled area) will be killed.

4.5. Environmental Toxicological Considerations

Although many studies to define the physical and chemical characteristics that result from in situ burning have been performed, there has been little research on potential ecological effects. To address some of these information shortfalls, Environment Canada coordinated a series of studies to determine if in situ burning resulted in water column toxicity beyond that attributable to allowing the slick to remain on the surface of the water. While these studies centered on the Newfoundland in situ burn field trials conducted in August 1993, they also included laboratory tests to investigate potential effects in a more controlled environment.

Toxic effects were evaluated using three standard marine test organisms: sand dollar, oyster, and fish. In both the laboratory and the field experiments, sensitive toxic endpoints in these organisms were studied in the three situations of no oil, no burning; oil on water, no burning; and oil on water, burned. Results from the laboratory and field studies indicated that although toxicity increased in water samples collected below burning oil on water, this increase was generally no greater than that caused by the presence of an unburned slick on water. Chemical analyses performed in conjunction with the biological tests reflected low hydrocarbon levels in the water samples. In addition to water column samples, the residues remaining after the laboratory and Newfoundland field burns will be subjected to aquatic toxicity testing.

Beyond the direct impacts caused by high temperatures, the byproducts of in situ burning may be toxicologically significant. Although analysis of water samples collected from the upper 20 cm of the water column immediately following a burn of crude oil yielded relatively low concentrations of total petroleum hydrocarbons (1.5 ppm), compounds that have low water solubility or that associate with floatable particulate material tend to concentrate at the air-water interface (U.S. EPA 1986). Strand and Andren (1980) noted that aromatic hydrocarbons in aerosols originate from combustion associated with human activities, and that these compounds accumulate in the surface microlayer until absorption and sedimentation remove them.

Burn residues could be ingested by fish, birds, mammals, and other organisms, and may also be a source for fouling of gills, feathers, and fur. However, these impacts would be expected to be much less severe than those manifested through exposure to a large, uncontained oil spill. Contamination is likely to be local in scale, affecting certain unique populations and organisms that use surface layers of the water column at certain times to spawn or feed. In crafting an effective and protective response strategy, these effects should be weighed against effects resulting from alternative actions.

5. OPERATIONAL CONSIDERATIONS FOR CONDUCTING IN SITU BURNING

5.1. Open Water Burning

An open water in situ burning technique most likely to be used would involve the use of boats towing fire-resistant booms that could be used to contain the spilled oil and keep it from spreading. The boom, attached to the boats by towing lines, would be towed such that it forms a "U" shape. The open end of the U is maneuvered through the oil slick, and a "boomfull" of oil is collected. The boom is towed away from the main slick and the oil is ignited. During the

burning, the boom is pulled in such a way as to slowly advance ahead to ensure that the oil is concentrated at the back end of the boom and to maintain maximum thickness. A burn can be terminated by letting the oil layer thin out by releasing one end of the boom. After the oil is consumed, the process is repeated. Other techniques may include containing the oil continuously spilling from a burning oil rig, or placing fire boom around a tanker that caught fire.

5.2. Burning in Other Inland Environments

Although it is widely held that in situ burning does take place in the inland zone, little technical information exists on techniques and impacts of burning in environments other than open water. In most cases, these involve burning in ice conditions and in wetlands and the results are varied and anecdotal.

5.2.1. IN SITU BURNING IN ICE/WINTER CONDITIONS

Containment is almost always required to maintain the minimum 2- to 3-cm thickness necessary to burn oil. Ice edges can act as natural barriers, and as long as the oil is of sufficient thickness, combustion is possible. However, wind and/or low currents may be necessary to herd the oil into sufficient thickness along the edge. Oil trapped under the ice may also accumulate in sufficient thicknesses along leads in broken ice, resulting in favorable conditions for burning. Test burns in a 1986 Esso wave basin showed burning efficiencies of up to 90% where moderate winds herded the oil into long narrow leads. Burning in other lead geometries and along brash ice resulted in less efficient burns. Arctic studies have also shown that it is possible to ignite and burn fresh, weathered, and emulsified oil at temperatures as low as -35 degrees Celsius. It is important to note that an in situ burn in broken ice is not easily extinguished once ignited.

Burning oil in snow conditions is similar to burning oil on water since as the snow melts during the burn it can form a meltwater pool upon which the oil continues to burn. Certain conditions such as wind, snow properties, and concentration of the oil in the snow all can impact the success of the burn. Burn efficiencies of 90 to 99 percent have been shown during field studies and actual spills. Oil/snow mixtures of up to 75 percent can be ignited with a diesel or gasoline-soaked rag (from *Detection of Oil in Ice and Burning Oil Spills in Winter Conditions*, PROSCARAC, Inc., March 1992).

5.2.2. IN SITU BURNING IN WETLANDS AND MARSHES

Based on very limited data on effectiveness and effects of burning on oiled marshes, the following guidelines are suggested:

(a) Make sure that it is possible to contain and control the fire; it is not as easy to put out a fire in vegetation as it is with oil contained in a fireproof boom.

(b) Impacts to below-ground vegetation are likely to be lower if there is a water layer between the oil and the substrate.

(c) A standing water layer of just a few inches may get hot enough to kill the roots anyway; however, little information is available regarding this effect.

(d) Burning of oiled woody wetland vegetation (compared to grasses and sedges) should not be considered.

(e) Not enough is known about seasonal effects on the ability of burned, oiled vegetation to recover, yet burning in late fall to early spring, when the vegetation is dormant and before production of new growth, seems to be the best time.

(f) If it can be done with minimal impacts, heavy accumulations of oil should be removed using other methods, to reduce the amount of burn residues, which may cause long-term impacts to both vegetation and animals returning to the habitat.

(g) Light fuels oils and crudes burn more efficiently and generate less residues, which should reduce the potential for long-term impacts.

(h) Burning of oil trapped in ice appears to have the least environmental impact because the burn area is contained, the plants are dormant, and the above-ground vegetation is dead.

(i) There is some concern that burning of muddy substrate could alter their physical properties (i.e., make them hard), thus degrading their biological productivity.

(j) Every wetland is different in terms of the type of wetland, the species growing there, the condition (optimal or marginal for species use), and the known or estimated tolerances of that type of system to physical and chemical disturbances. Biologists or botanists should be consulted prior to the use of burning as a cleanup technique in a wetland.

5.3. Fire Resistant Boom

The application of in situ burning requires the physical collection and containment of oil to maximize the efficiency of the burning process and to provide a means to control the burn. Generally, this is accomplished by the use of a fire boom or some type of fire resistant containment. If fire boom or other fire containment device is not available and/or the equipment to deploy the boom is unavailable or inadequate, approval for use of in situ burning may be denied.

***Further information on the efficacy of fire-resistant booms can be found in* Part II - Technical and Background Information.**

5.4. Ignition

Heavy oils require longer heating times and a hotter flame to ignite compared to lighter oils. Many ignition sources can supply sufficient heat. These include pyrotechnic igniters, laser ignition systems, and aerial ignition systems. Pyrotechnic devices have been successfully used to ignite floating oil slicks under a range of environmental conditions. Disadvantages to their use are associated with safety, shelf life, availability, speed of deployment, and cost (Spiltec, 1987). Laser ignition, while a promising technique, remains experimental in nature with drawbacks associated with difficulties in beam focusing from the air, wind effects during oil preheating, energy requirements, and cost. Aerial ignition systems using gelled gasoline dropped from helicopters appear to be a more viable technique applicable in a range of environmental conditions. Whichever method is used, considerations of safety and efficiency must enter into the decision process.

***Further information on burn ignition can be found in* Part II - Technical and Background Information.**

5.5. Oil Thickness

In general, oil slicks can be effectively burned if they are consistently 2 to 3 mm thick. This number can vary with oil viscosity and degree of weathering

with more viscous and more weathered oils requiring a considerably thicker layer of oil (estimated to be nearly 10 mm). Also, burn efficiencies increase as thickness of the slick increases. This consideration, therefore, implies that spilled oil must be contained by some means (fire resistant boom, ice, etc.) in order to prevent oil spreading and the resultant thinning of surface layers.

5.6. Effects of Weathering

Weathered oil requires a longer ignition time and higher ignition temperatures. However, igniting weathered oil is generally not a problem with most ignition sources because they have sufficient temperature and burn time to ignite most oils. Weathering, as it affects the ability to burn oil, is currently under study in laboratory and field experiments.

5.7. Effects of Emulsification

The effect of water content on oil ignition is believed to be similar to that of weathering, in that it decreases ignitability and combustibility. However, oil containing some water can be ignited and burned. The controlling factor in the combustion of emulsions is the removal of water, which is accomplished either through the boiling of the water out of the emulsion, or by breaking the emulsion thermally or chemically. The effect of emulsions on the ability to burn oil is currently under study in laboratory and field experiments.

5.8. Unburned Oil and Solid Burn Residues

Although in situ burning has the potential for removing a large proportion of the mass of an oil spill from the water surface, some of the source material will not be consumed and will remain as a concern. Similarly, combustion residues, described as stiff, taffy-like material, will remain after the burn. Provisions for the removal of these materials must be made as the potential exists for undefined levels of shoreline impacts even with a successful burn.

Although sinking of burn residues has seldom been observed in test burns, a slight increase in density relative to the original oil has been observed. In the 1991 explosion and burning of the tanker *Haven* off Genoa, Italy, burn residues were thought to have sunk. Reliable estimates of the amount of oil actually burned were not possible, but the tanker was laden with 141,000 tons of Iranian heavy crude, and very little remained in the wreck following the accident and fire. It was reported that several surveys during 1991 confirmed that there was sunken oil offshore and along the coast. The sunken oil is now thought to have resulted from the extraordinary heating of the contained product inside the cargo holds of the vessel. This oil basically underwent a crude distillation, in which lighter components were driven off and a denser—and in this case, heavier than sea water—material remained.

It should be emphasized that the circumstance specific to this situation should not be used as the basis for generalization in all burning scenarios.

6. SUMMARY OF POTENTIAL TRADEOFFS RELEVANT TO BURNING

As is the case with all response methods, the environmental tradeoffs associated with in situ burning are situation dependent and cannot be considered independently from operational tradeoffs. In situ burning can offer important advantages over other response methods in specific cases, and may not be advisable in others, depending on the overall mix of circumstances.

6.1. Advantages

(a) In certain areas where other techniques may not be possible or advisable due to the physical environment (e.g., ice conditions or wetlands) or the remoteness of the region, burning may represent one of the few viable response choices besides no action;

(b) In situ burning may prevent or significantly reduce the extent of shoreline impacts, including exposure of sensitive biological resources, wildlife habitats, and the oiling of high value recreational or commercial beaches;

(c) The magnitude of a spill may overwhelm the containment and storage equipment deployed or available for a region, necessitating the consideration of other methods in an overall response strategy;

(d) Burning can rapidly remove a large volume of oil from the surface of the water, reducing the magnitude of subsequent environmental impacts of stranded oil.

6.2. Disadvantages

(a) Large quantities of highly visible black smoke are generated that may adversely affect human and other exposed populations downwind;

(b) There may be the potential for mortalities and other adverse biological impacts from localized temperature elevations at the water surface. Although these could be expected to occur in a relatively small area, in specific bodies of water at specific times of the year, affected populations may be large enough or important enough to present reasons for not considering burning as a cleanup technique;

(c) The longer-term effects of burn residues on exposed biological populations have not been investigated. It is not known whether these materials represent a significant source of toxicity;

(d) In situ burning must be carefully controlled in order to maintain worker safety and to prevent unintended environmental impacts;

(e) There is a relatively short window of opportunity to use burning after a spill occurs prior to the oil weathering and losing its flammable characteristics.

7. MONITORING

The primary operational purpose in monitoring the burning of spilled oil is to determine whether burning requirements and objectives are met. Although the current body of knowledge about burning is limited, each operational use provides an opportunity to gather further information. Operational monitoring must occur during a response involving the use of in situ burning and must be accompanied by a detailed monitoring plan. More information regarding specific monitoring procedures and standards can be found in the Technical Appendices.

Operational monitoring should include such parameters as:

- type and amount of oil spilled;
- weather and sea conditions;

- trajectory of the slick and smoke plume;
- estimated volume of oil to be burned;
- estimated volume of oil burned and remaining;
- the effectiveness of residual material collection;
- adverse effects to natural resources (e.g., number of dead organisms).

In an effort to gather more data about in situ burning, spill-of-opportunity research possibilities involving a broad range of physical, biological, and chemical issues, are encouraged. Research monitoring might involve:

- collection of oil sample prior to burning for analysis;
- observations of residual material behavior and fate;
- collection of residual material for analysis;
- upwind and downwind air sampling;
- number and location of sampling stations;
- compounds (PAHs, particulates) to be monitored
- species and numbers of biota (e.g., waterfowl, aquatic organisms, vegetation) in the area.

PART II — Technical and Background Information

1. BURN EFFICIENCY

The efficiency of an in situ burn is usually expressed as the percent reduction in original oil weight following combustion. Researchers have found that oil thickness, degree of weathering, and degree of emulsification are among the most important factors affecting the efficiency with which oil will burn. The interaction among these parameters will determine the amount oil that is actually removed from the surface of the water during a burn.

Although the efficiency of in situ burning is highly dependent on a number of physical factors, test burns and applications in actual spill situations suggest that it can effectively remove ;large quantities of crude oil from the water. For example, Benner *et al.* (1990) found that 54 to 83 percent of an Alberta Sweet crude oil sample was burned in laboratory tests of in situ burning (the range in efficiencies correlated with oil layer thicknesses from 2 to 10 mm). Brown and Goodman (1986) measured burn efficiencies for Norman Wells crude in simulated ice floe conditions ranging from 67 to 90 percent (the higher efficiencies resulted when thicker layers of oil were burned).

In 1989, a test burn in the first days of the *Exxon Valdez* spill in Prince William Sound, Alaska, burned approximately 15,000 to 30,000 gallons of Prudhoe Bay crude oil, at an estimated efficiency of 98 percent or better (Allen 1990; Evans *et al.* 1990).

These removal efficiencies refer to the amount of oil burned once it is contained within a boom. It does not include the inefficiencies associated with collecting and containing the oil itself. Fingas *et al.* (1989) found that chemical dispersants could, in some cases, be very effective in removing crude oils from the water surface. They also determined that some oil-dispersant combinations had no effect. Solsberg *et al.* (1976) evaluated the effectiveness of seven skimmer-type oil recovery devices, and found a wide range of efficiencies in picking up spilled oil and in the amount of oil recovered relative to the amount of water recovered. With its consistently high efficiency in oil removal, in situ burning compares favorably with the best performances of these more familiar response techniques.

In situ burning has been tested most often with crude oil spills. Its feasibility with other kinds of products (e.g., marine diesel fuel and Bunker C fuel) has also been demonstrated (Twardus 1980), although inherent characteristics of the non-crude oils make them less amenable to the technique. That is, in situ burning is more effective in removing crude oil than other types of oil because of difficulties in establishing and maintaining necessary slick thicknesses (in the case of lighter, lower-viscosity oils) and difficulties with ignition (for heavier, less volatile oils).

A 1991 U.S. EPA summary noted the variant in burn efficiency with slick thickness: with a slick of 10 mm thickness, approximately 80 to 90 percent of the oil is burned; with a slick of 100 mm thickness, approximately 98 to 99 percent is burned (U.S. EPA 1991).

Alyeska (1992) commented that the effects of emulsification on burn efficiency are similar to, but more pronounced than, those for weathering. Similarly, Buist (1989) determined that oil burning efficiency also declined with increasing emulsification as shown below. Similar results were obtained by Bech *et al.* (1992). These observations again imply that two separate ignitions may be necessary for efficient product removal when the oil has emulsified. The first ignition would vaporize water

form the slick, while the second ignition (after collection of the oil to thicken it) would burn off the oil. During spills, burn efficiency will also depend on wind speed, currents and ability to deploy and maneuver equipment.

Summary Table (Buist 1989)

Type of Emulsion	Burn Efficiency (percent)
Unemulsified Hibernia Crude	85 - 90
25% water-in-oil	70 - 80
50% water-in-oil Hibernia B-27	70 - 75
75% water-in-oil Hibernia B-27	5 - 35
≥ 50% water-in-oil Hibernia C-96	0

2. AIRBORNE COMPONENTS OF IN SITU COMBUSTION

Most of the oil in an in situ burn will be converted to carbon dioxide and water. Particulates, mostly soot, comprise 10 to 15 percent of the smoke plume. Small amounts of toxic gases are emitted as well. These include sulfur dioxide, nitrogen dioxide, and carbon monoxide. In addition, small amounts of polynuclear aromatic hydrocarbons (PAHs) are emitted from the fire, mostly as residues attached to the particulates. These combustion byproducts are discussed below.

2.1. Sulfur dioxide (SO_2)

Sulfur dioxide is a gas formed when sulfur in the oil oxidizes during the combustion process. This gas is toxic and irritates the eyes and respiratory tract by forming sulfuric acid on these moist surfaces (Amdur 1986).

The concentration of SO_2 in the smoke plume depends on the sulfur content of the oil. Average SO_2 level measured in experimental burns have been below 2 ppm in the plume 100 to 200 meters downwind of the burn (Fingas *et al.* 1993). Several miles downwind, sulfur dioxide from in situ burning is expected to be much below the level of concern for the general population.

Table 1. Major in situ burning pollutants and their exposure standards

Pollutant	OSHA PEL*	NAAQS
SO_2	2 ppm	0.14 ppm/24 hr
NO_2	1 ppm	0.05 ppm
PAH	0.2 (volatile)	–
CO	35 ppm	9 ppm
PM-10	5 mg/m^3	0.15 mg/m^3

*Time-weighted average concentration over 8 hours

2.2. Nitrogen dioxide (NO_2)

Nitrogen dioxide is another gaseous byproduct of oil combustion. Like SO_2, it is reactive, toxic, and a strong irritant to the eyes and respiratory tract. NO_2 is less soluble that SO_2 and therefore may reach the deep portions of the lungs (the critical gas exchange area of the lungs) so that even low concentrations may cause pulmonary edema, which may be delayed (Amdur 1986).

Sampling results to date indicate that the concentration of nitrogen dioxide in the plume several miles downwind of the burn does not exceed several parts per billion. Therefore, it is not expected to pose a threat to the general public several miles downwind of the burn.

2.3. Polynuclear aromatic hydrocarbons (PAHs)

PAHs are a group of hydrocarbons characterized by multiple benzene rings attached together. These compounds have very low vapor pressures and are not very flammable (compared to other compounds found in crude oils). PAHs are found in the unburned oil as well as the smoke plume. Some PAHs are known or suspected to be carcinogens. Target organs may include the skin (from chronic skin contact with oils) or the lungs from inhalation of aerosol. Based on data from NOBE and previous burns, most PAHs are burned in the fire, and their concentration in the oil residue is higher than in the smoke plume. Considering the low level of PAHs detected in these past burns, it is felt that they present only a small exposure hazard.

2.4. Carbon monoxide (CO)

Carbon monoxide is a common byproduct of incomplete combustion. The toxicity of CO is acute and stems from its high affinity to the hemoglobin molecule in red blood cells. CO will chemically displace oxygen from the blood and cause oxygen deprivation in the cells of the body. In experimental burns the average level of CO in the smoke plume over the duration of the burns (15 to 30 minutes) was found to be 1 to 5 ppm 150 meters downwind of the burns.

2.5. Particulates

Particulates in the smoke plume are considered by most health professionals to be the main combustion product to investigate and monitor. Therefore, particulates will be discussed in more detail.

Particulates are small pieces of solid materials (dusts, soot, fumes) or liquid material (mists, fogs, sprays) that remain suspended in the air long enough to be inhaled. During in situ burning, elemental carbon (soot) and hydrocarbons are emitted. Since these particles absorb light to a high degree, the smoke plume is usually black.

Particulate concentration is measured in several ways. A relatively accurate method involves sampling with an air pump that draws air through a filter. Depending on pore size, the filter may collect more than 99.9 percent of the particulates in the air. Real-time instruments that can measure particulate concentration at the time of measurement are also available; some are quite sensitive and accurate. They must be calibrated to the particulates of concern, and may be affected by other aerosols such as water vapor.

Since 10 micrometers (μm) in diameter is the size below which particulates may reach the deep portion of the lungs and become a burden on the respiratory system, most scientists tend to divide the particulate mass into "total" particulates, which include any size measurable, and "PM-10," which is the fraction of particulates smaller than 10 μm in diameter.

Particulate size also plays a crucial role in determining how long they will be suspended in the air. Larger particulates (tens of μm in diameter) would precipitate rather quickly close to the burning site. Smaller particulates (ranging from a fraction of a μm to several μm in diameter) would stay suspended in the air for a long time and be carried over long distances by the prevailing winds. Particulates small enough to be inhaled (PM-10) are also the ones to remain suspended. A practical implication is that if those particulates do not descend to ground level (where people are) they will not threaten the population downwind.

For most people, exposure to inert respirable particulates may become a problem at high concentrations (several milligrams of particulates per cubic meter of air). However, sensitive individuals may develop respiratory problems at levels much lower than that. Several recent studies (Schwartz 1992; Pope *et al.* 1992; Dockery *et al.* 1992) suggest that there is a correlation between particulate concentration in the air and daily mortality. these studies used measurements of air pollution and matched them to mortality and morbidity data in several cities in the U.S.: Philadelphia, Detroit, Provo, and Birmingham, Alabama. Higher levels of PM-10 were associated with increase in daily morbidity and mortality, especially among older people and people with allergies, respiratory problems, and cardiovascular diseases. An increase of 100 $\mu g/m^3$ of the measured daily particulate level was associated with 6 percent increase in mortality (Schwartz 1992). The biological mechanism has not been determined, but the possibility of such a correlation should dictate that in situ burning be conducted only when it does not pose a hazard to human health, and exposure to particulates should not exceed the applicable Federal or State standard.

Sampling conducted so far indicates that the populations downwind and even response personnel will be exposed to very low levels of gases and particulates. In the recent experimental in situ burn off the coast of Newfoundland, many particulates were tagged with sampling badges to assess their exposure to volatile organic compounds (VOCs). Initial analysis of those badges indicates that exposures in most cases were below the level of detection (LOD=0.001 mg per sample). The few detected VOC "hits" could be traced to fuel and solvents on the vessels rather that VOCs from the spilled or burning oil (Bowes 1994). Similarly, the level of respirable particulates (PM-10) was monitored by a University of Washington research aircraft. While concentration of PM-10 at or above 150 micrograms per cubic meters ($\mu g/m^3$) of air extended to a distance of approximately 6 miles in the plume itself, PM-10 concentration beneath the plume, 150 to 200 feet above the surface, did not exceed background levels of 30 to 40 $\mu g/m^3$ (Ferek personal communication). These data agreed well with previous measurements done in test burns in Mobile Bay, Alabama.

APPENDIX IX: FISH AND WILDLIFE ANNEX

FISH AND WILDLIFE
AND
SENSITIVE ENVIRONMENTS ANNEX

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1.0 PURPOSE

Oil or hazardous substances spilled into the environment can produce a wide range of ecological consequences. The severity of the consequences will vary, depending upon the nature and volume of the material spilled and the ability of the affected ecosystem to degrade or resist the spilled product. This Fish and Wildlife and Sensitive Environments Annex (FWSEA, also referred to as "Annex") has as its goal a reduction in the overall ecological impact of spill events, including the impacts associated with response activities.

The purpose of this Annex is to provide Federal On Scene Coordinators (FOSC) in U.S. EPA Region 5 with the information needed to (a) identify and protect fish and wildlife resources and sensitive environments, (b) contact natural resources trustees and managers, and (c) provide appropriate response strategies for minimizing the negative environmental effects of a spill. This Annex will also aid in the development of Facility Response Plans as required by 40 CFR 112.20. This Annex should be used in conjunction with Appendix 11: Environmentally and Economically Sensitive Area Indices.

2.0 SCOPE

This Annex will provide a general overview of sensitive areas in Region 5 and include additional information to assist the FOSC in the sensitive environment identification process. Deciding on response techniques before a spill occurs (preplanning for a response) can facilitate a more coordinated, immediate and effective response. However, the geographic range and sheer number of important fish and wildlife habitats and other sensitive environments in Region 5 precludes detailed preplanning for all potential spill scenarios. Information contained in this Annex should aid in the selection of appropriate spill protection, recovery and cleanup techniques to minimize the ecological impacts of a spill over a wide range of locations and circumstances.

This Annex also establishes procedures and policy for meeting the objectives set forth in Section 300.210(c)(4)(i) of the National Contingency Plan (NCP); and should be useful to responders and planners in evaluating and implementing response techniques for spills in various freshwater environments and shoreline habitats. This Annex will also aid the Area Committees in identifying special areas of concern. Those special areas of concern can then be examined in greater detail during Sub-Area planning phases of the Region 5 Integrated Contingency Plan (RV-ICP) development.

3.0 OBJECTIVES

The NCP at 40 CFR §300.210(c)(4)(ii) delineates nine objectives for fish and wildlife and sensitive environments annexes. This annex addresses each of the nine NCP objectives which have been collapsed into the following four subject areas for quick reference:

3.1 Identify and Establish Priorities for Resources at Risk

Fish and wildlife resources, other sensitive resources, and appropriate resource trustees and managers are identified. Agencies to be notified and consulted in establishing incident-specific priorities for the protection of these resources are provided. Fish and wildlife and sensitive resources identified include threatened and endangered species and their habitat, environmentally sensitive lands, freshwater environments, and areas of economic significance (Section 4.0).

3.2 Determine Environmental Effects of Response and Countermeasures
The probable impacts of various response methods on general environments and habitats are provided. Methods for determining and approving the appropriate response techniques for specific environments and habitats, and for monitoring the effectiveness of response activities are outlined (Section 5.0).

3.3 Identify Fish and Wildlife Response Capabilities
State and Federal response capabilities and initial personnel contacts for spill response assistance and wildlife rescue and rehabilitation are outlined. Acquiring and pre-positioning of appropriate response equipment, personnel and mutual aid agreements and OSHA training requirements for volunteers assigned to fish and wildlife rescue and rehabilitation are also discussed (Section 6.0).

3.4 Evaluate the Interface of the RICP with Non-Federal Plans
The compatibility of this annex with non-Federal response plans on issues affecting fish, wildlife, their habitats and sensitive environments is evaluated (Section 7.0).

4.0 PRIORITIZATION OF RESOURCES AT RISK

To ensure that proper steps are taken to minimize the overall impacts of a release on ecological and economic resources, the FOSC or Responsible Party must be aware of sensitive environments and/or important resource areas in its path. Identifying sensitive areas should ideally be accomplished before a spill event occurs. Environmentally sensitive areas have been identified for this annex by the various Natural Resource Trustees and other natural resource management agencies. Response strategies will vary, depending upon the material spilled and the type of terrestrial or aquatic environments in its path. **Response personnel should understand that an immediate - but poorly considered - response may result in greater overall environmental impact than one delayed by consideration and implementation of measures protective of fish and wildlife and sensitive environments.**

4.1 Notification of Natural Resource Trustees and Natural Resource Managers
A threat to fish, wildlife, or important habitat may be reported by any Federal, State, Local agency, or individual with pertinent information. During a spill, the timely identification of protection priorities for fish, wildlife, and their habitats shall be accomplished through coordination between the representatives of the U.S. Fish and Wildlife Service (USFWS), the State agency with responsibility for fish and wildlife resources, and the OSC or their representative. This coordination shall be initiated by the party that first becomes aware of a threat or potential threat to sensitive natural resources.

Following notification of a spill with the potential to cause significant adverse affects to natural resources, the State or Federal OSC should notify the relevant Federal, State, or Tribal natural resource trustees and managers listed below. Prompt notification of, and consultation with, natural resource trustee contacts and other natural resource management agencies is imperative so that their expertise can be utilized in identifying and protecting sensitive environments. Only one contact per agency should be necessary, as the persons initially contacted should notify other critical personnel within their respective agencies. Natural Resource trustees and managers will provide the OSC with information concerning the presence of trust or important natural resources, as well as technical assistance concerning impacts or potential impacts to those resources.

Pursuant to Subpart G of the NCP, the following officials and agencies have been designated trustees for natural resources and their supporting ecosystems in EPA Region 5: Secretary of Commerce; Secretary of the Interior; Secretaries for land

managing agencies; Heads of authorized agencies; State Trustees; Native American Tribes; and Foreign Trustees. They are authorized to act pursuant to section 107(f) of CERCLA, section 311(f)(5) of the CWA, or section 1006 of the OPA when there is injury to, destruction of, loss of, or threat to natural resources, including their supporting ecosystems, as a result of a release of a hazardous substance or a discharge of oil. **The notification and consultation flowchart in Figure 1 provides a quick reference for an OSC to use in identifying appropriate natural resource trustee agencies and natural resource managers.**

Federal Natural Resource Trustees and/or Managers:

See Attachment 1 for Natural Resources and/or Manager points of contact.

Secretary of Commerce
U.S. Department of Commerce (DOC)
- National Oceanic and Atmospheric Administration (NOAA)

Secretary of the Interior
U.S. Department of the Interior (DOI)
- Office of Environmental Policy and Compliance (OEPC/Point of Contact)
- U.S. Fish and Wildlife Service (USFWS)
- National Park Service (NPS)
- Bureau of Indian Affairs (BIA)
- Bureau of Land Management (BLM)

See Appendix III for a roster of current members of the standing Regional Response Team (RRT).

Secretary of Agriculture
U.S. Department of Agriculture (USDA)
- U.S. Forest Service (USFS)

Secretary of Defense
U.S. Department of Defense (DOD)

Secretary of Energy
U.S. Department of Energy (DOE)

Tribal Natural Resource Trustees and/or Managers:

Tribal chairmen or heads of the governing bodies or a person designated by tribal officials.

See Appendix II for Federally recognized Tribal contacts.

State Natural Resource Trustees and/or Managers:

Heads of authorized agencies:

Illinois
- Illinois Environmental Protection Agency
- Illinois Department of Natural Resources

Indiana
- Indiana Department of Environmental Management
- Indiana Department of Natural Resources

Michigan
- Michigan Department of Natural Resources
- Michigan Department of Environmental Quality
- Michigan Attorney General

Minnesota
- Minnesota Department of Natural Resources
- Minnesota Pollution Control Agency

Ohio
- Ohio Environmental Protection Agency
- Ohio Department of Natural Resources - Division of Wildlife
  - Central Ohio
  - Northeast Ohio
  - Southeast Ohio
  - Northwest Ohio
  - Southwest Ohio

Wisconsin
- Wisconsin Department of Natural Resources

Foreign Natural Resource Trustees and/or Managers:

Environment Canada
- Protection and Conservation Branch

4.2 Consultation with Natural Resource Trustees and Natural Resource Managers

When a spill occurs, impacts to the ecosystem are usually unavoidable. However, such impacts can be minimized through proper planning and coordination with State, Federal, Tribal, and/or Foreign natural resource trustees and managers both before and during a spill. Consultation and coordination with natural resource trustees and managers during the pre-spill planning phase aids in identifying and understanding potential natural resource concerns and issues as a result of spills in general. Consultation and coordination during a spill is also essential to ensure that site-specific resource concerns are addressed. In addition to the designated natural resource trustees, there are numerous Federal and State agencies and Tribal organizations with land and resource management responsibilities and/or expertise which need to be consulted regarding removal actions. For example, the USFWS can provide responders with information concerning the presence of natural resources held in Federal Trust, as well as technical assistance concerning the effects of contaminants on these resources. The USFWS will generally help coordinate wildlife recovery and rehabilitation efforts in conjunction with the State fish and wildlife agencies or Tribal natural resources managers. Figure 1 contains a Notification and Consultation Flow Chart to help facilitate identifying the appropriate natural resources trustees and managers.

4.3 Regional Description and Sensitive Areas

There are many Federal and State wildlife refuges and hatcheries, wild and scenic river reaches, Federal Waterfowl Production Areas, State Wildlife Management Areas, National and State parks, monuments, preserves, recreational areas, primitive archaeological and historical sites, heritage program areas and other important resources located on or near the rivers and lakes of Region 5. Appendix 1 of the Region 5 ICP describes the jurisdictions in Region 5 which have been divided into two operational areas - inland and coastal.

Some natural resources that, at any given time or location, may warrant a high level of protection include the following categories of lands and species:

a. Federally listed endangered and threatened species, their designated critical habitat, and other habitats known to be utilized by these species;

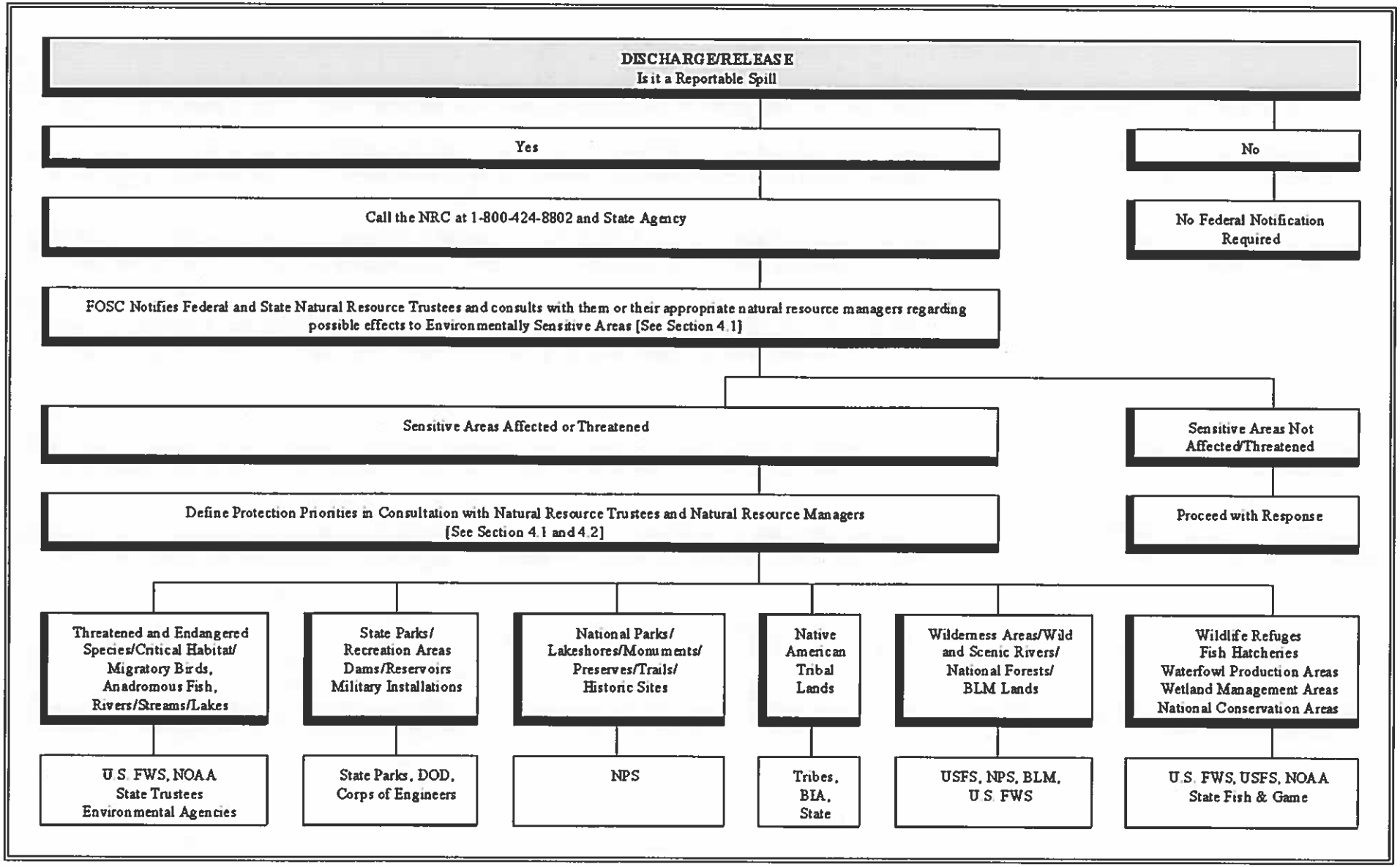

Figure 1

NOTIFICATION AND CONSULTATION FLOW CHART

b. migratory birds including waterfowl, wading birds, shorebirds, raptors, and songbirds;

c. State listed endangered and threatened species and their habitats;

d. designated areas of high quality fish and wildlife habitat such as Federal and State wildlife refuges and wildlife management areas, State and Federal fish hatcheries, natural area preserves, parks, and forests;

e. surface waters in general including rivers and streams, ponds and lakes, and wetlands; and

f. other species of fish and wildlife (game and non-game) and their associated habitats.

4.3.1 Prioritization

Because of the diversity and extent of sensitive natural resources in the region, it is important to reach a consensus, to the extent possible, on the highest resource priorities in order to provide for time-sensitive, coordinated, and effective protection, rescue, and restoration. Although prioritization is difficult, several criteria that may be used in making this determination have been identified:

- relative abundance or scarcity of a particular resource;
- relative diversity and abundance of resources at a particular site;
- fecundity (productivity) of biological resources;
- vulnerability to spills;
- sensitivity to the product discharged;
- amenability to restoration or remediation;
- protection by Federal and State laws; and
- economic importance.

4.3.2 Categories for Resource Protection Prioritization

In general, natural resources are most at risk from spills when:

(1) large numbers of individuals are concentrated in a relatively small area, such as bays where rafts of waterfowl concentrate during migration and overwintering;

(2) areas important to specific life stages or migration patterns, such as foraging and overwintering sites;

(3) the species are threatened or endangered;

(4) early life stages of birds and anadromous fish are present in somewhat restricted areas;

(5) specific areas are known to be vital sources for propagation, such as shellfish beds;

(6) a significant percentage of the population is likely to be exposed to the release; and

(7) wildlife come ashore for resting, molting, or birthing.

The above factors lead to categories of natural resources that should be considered of high priority for protection and remediation:

Priority 1
Federally listed or proposed Endangered and Threatened Species and their Designated Critical Habitat (DOI/FWS/NPS)

Priority 2
Migratory birds (waterfowl, wading birds, shorebirds, raptorsdiving birds, songbirds) and their habitats (DOI/FWS)

- Migratory Bird Nesting Sites (DOI/FWS)
- Colonial Waterbird Nesting Sites (DOI/FWS)
- Migratory Concentration Areas for Migratory Birds (DOI/FWS)
- Seasonal Concentration Areas for Migratory Birds (DOI/FWS)

Anadromous Fish Spawning Areas (DOI/FWS; NOAA)

National and State Protected Areas:

- National Wildlife Refuges and Waterfowl Production Areas (DOI/FWS)
- National Wilderness Areas (DOI/FWS/NPS; USDA/FS)
- National Parks (DOI/NPS)
- National Wild and Scenic Rivers (DOI/NPS; USDA\FS)
- National Preserves (DOI/NPS)
- National Forests (USDA/FS)
- National Fish Hatcheries (DOI/FWS; NOAA/NMFS)
- Clean Lakes Program Critical Areas (U.S. EPA)
- Tribal Lands (appropriate Tribal Contact)
- State Parks
- State Refuges
- State Wildlife Management Areas
- State Forests

State-listed or proposed endangered and threatened species

High quality freshwater wetlands (other than included above) identified by Local, State, regional, or Federal levels of Government (U.S. EPA; COE; DOI/FWS/NPS; USDA/FS; State water quality agencies)

Federal and State species of concern (DOI/FWS/NPS; States)

Outstanding National Resource Waters/Outstanding Resource Value Waters (if not listed above):

- Critical areas under the Clean Lakes Program (U.S. EPA; States)
- Sites within Joint Venture Project Areas under the North American Waterfowl Management Plan (DOI/FWS)
- Sites under RAMSAR Treaty on Wetlands of International Importance (DOI/FWS)
- State Scientific and Natural Areas
- Calcareous Fens
- State Wild and Scenic Rivers
- Trout streams

Priority 3
Sensitive Recreation Areas

- Heritage Program Sites
- Cultural Sites (Archeological, Historical, Monuments)
- Recreational Areas (Boating, Fishing, Swimming)

NOTE: Fish and wildlife agency concerns relative to these species and specified areas intensify at specific times of the year (e.g., breeding and migration season). Should a spill occur within these designated areas, the USFWS and State(s) natural resource agencies should be contacted immediately to assist in determining the routing direction of the spill as well as other aspects of the cleanup effort.

Information about the location of these environmentally sensitive areas will be developed by the Area Committee as part of the spill planning process. Knowledge of these areas may need to be refined or augmented during an actual spill.

Sources of information about environmentally sensitive areas may include commercially available Local maps and State atlases, National Wetland Inventory maps, U.S. Geological Survey quadrangle maps, maps developed by the Area Committee, maps and information developed as part of facilities plans, maps and information developed by various government agencies, and computer GIS information. Detailed computerized GIS maps of sensitive areas that could be accessible from the field using laptop computers would be beneficial to response personnel.

4.3.3 Threatened and Endangered Species

Threatened and endangered (T&E) species inhabit or are located near, almost every major body of water in Region 5. USFWS Field Offices are required to update their Federal T&E species, by county, on an annual basis but often update their list when new species are added or removed. Such information is made available to other agencies and the public.

Tables 2 through7 in Attachment 3 provide State and County lists of Federally Threatened, Endangered, and Proposed Species in EPA Region 5. Since the list is updated annually, it should be verified by USFWS personnel at the time of a spill as species may be added or removed between updates.

Natural Resource Trustees, managers, or other contacts are identified in Attachment 1, which also contains the phone numbers for contacts who should be notified and consulted.

4.3.4 Freshwater Environments

Freshwater environments can be divided into three broad categories: **lakes and ponds; flowing water**, which includes streams and rivers; and **wetlands**. Appendix 6 in the Region 5 ICP contains options for minimizing environmental impacts of freshwater spill response actions.

Attachment 3 also contains a synopsis of the Endangered Species Act of 1973, which can be used as a quick reference by emergency response personnel.

a. Lakes and ponds. The near shore areas of standing freshwater environments usually support abundant animal and plant life. In these environments, spilled oil tends to not be dispersed appreciably by wind, waves or currents. Lakes, ponds and their dependent populations are, therefore, more vulnerable (through prolonged exposure) to spills of oil and hazardous materials than are freshwater environments that are constantly moving, such as streams and rivers.

b. Streams and Rivers. Oil entering a stream or river typically moves downstream. Oil entering slower flowing streams tends to remain on the surface while oil discharged to a high velocity, turbulent stream disperses throughout the entire stream water column. As a result of the turbulent agitation, oil may become trapped in sediment along the stream bed, resulting in increased mortality to benthic organisms. Stream reaches can be subdivided into three categories: low gradient; moderate gradient; and high gradient.

- **Low gradient** portions of a stream are characterized by: meandering channels; moderate currents; wide zones of associated riparian vegetation; sand bars; intermediate oil residence time; numerous collection sites; and restricted mixing into the water column.

- **Moderate gradient** portions of a stream are characterized by: intermittent rapids; moderately wide channels; associated riparian vegetation; brisk currents; sand and gravel bars; short oil residence time; few collection sites; and significant mixing into the water column.

- **High gradient** portions of a stream are characterized by: numerous rapids; narrow associated riparian vegetation; strong currents; coarse gravel sedi-

ments; short oil residence time; no collection sites; and intense mixing into the water column.

c. Wetlands. Wetlands such as freshwater swamps, marshes, prairie potholes and floodplain forests act as natural hatcheries, nesting areas, food sources, and watering areas for terrestrial and aquatic wildlife. Therefore, they are crucial areas for wildlife support. Due to their typically shallow nature and lack of currents, wetlands are highly sensitive to oil spills.

The Region's seasonal weather conditions can superimpose many considerations on planning and preparation for a response. Ice and snow in the winter, fluctuations of river and stream water levels, and the seasonal patterns of fish and wildlife dependence upon certain critical areas may need to be addressed.

The classification of environmentally sensitive areas, their administering agencies and the statutory authority include, but are not limited to:

- **Critical Areas under the Clean Lakes Program** [EPA, States, section 314 Clean Water Act, (33 USC §1324)];
- **Critical Habitats for Federal Designated Endangered or Threatened Species** [USFWS, Endangered Species ACT, (16 USC §1531, *et seq.*; 50 CFR 424.02)];
- **Designated Federal Wilderness Areas** [BLM, USFS, NPS, USFWS, National Wilderness Preservation Act (16 USC §1131, *et seq.*)];
- **Federal Designated or Proposed Endangered or Threatened Species** [USFWS, Endangered Species Act (16 USC §1531, *et seq.*; 50 CFR 424.02)]
- **Federal and State Designated Wild and Scenic Rivers** [BLM, USFS, NPS, USFWS, States, National Wild and Scenic Rivers Act, (16 USC §§1271-1287)];
- **National Conservation Areas** [USFWS, Refuge Recreation Act, (16 USC § 460k, *et seq.*)];
- **National Wildlife Refuges** [USFWS, National Wildlife Refuge Administration Act of 1966 (16 USC §§ 668dd-668ee, as amended) or comparable State law];
- **National Parks, National Monuments, National Lakeshore Recreational Areas** [NPS, Act of August 25, 1916 (16 USC §1, *et seq.*)];
- **Waterfowl Management Areas** are designated for the protection of habitat important to waterfowl and are designated within a States' **Wildlife Management Areas;**

Other areas of concern are wetlands which generally include swamps, marshes, bogs and similar areas. Wetlands are defined in 40 CFR 230.3 and by USFWS. **Waterfowl Production Areas** administered by the USFWS are crucial habitats for waterfowl production.

[Relevant State statutes to be added by State personnel as appropriate]

4.4 Areas of Economic Significance

Responders need to identify and protect areas of economic importance. Public drinking water intakes, industrial water users, aquaculture sites and agricultural water users could be adversely impacted by a discharge of oil or other hazardous materials. Water intakes in shallow lakes and rivers are at greatest risk to an oil spill. Timely response procedures which identify water users and notify them of an oncoming spill is imperative. With prompt notification, water intakes/diversions can be shut down or boomed off.

Appendix XI contains economically and environmentally sensitive area indices.

Tourism and recreation are also of importance, with numerous important fishing streams, boating and canoeing areas, and other recreational amenities (eg., marinas, boat launch sites) associated with the Region's rivers and lakes. Identifying and protecting these economic resources is critical to response considerations.

5.0 DETERMINING THE ENVIRONMENTAL EFFECTS OF RESPONSE AND COUNTERMEASURES

Section 300.210 (c)(4)(ii)(B-D) of the NCP mandates that the Fish and Wildlife and Sensitive Environments Annex provide a mechanism for expeditious evaluation and appropriate consultations on the effects to fish and wildlife, their habitat, and other sensitive environments from the application of various countermeasures.

Among other considerations, decisions regarding appropriate countermeasures should take into account the relative impact of various response methods on fish and wildlife and sensitive environments. Informed decisions can be made on the deployment of appropriate countermeasures through consulting with the appropriate natural resource agency for sensitive area information and by utilizing the spill response and sensitive environments guidance in contingency plans. When deciding on an appropriate response method, the most important considerations are the efficient removal of the oil threat and the effective protection of essential habitats. The advantages and disadvantages of various removal or countermeasure techniques should be carefully evaluated to ensure the achievement of a net environmental benefit.

The OSC and/or responsible party **must** consult the appropriate Federal and State natural resource trustees and land management agencies in regard to the following concerns:

(a) physical disturbance of wildlife, their habitat, and other sensitive areas;

(b) illegal or inadvertent taking of live fish and wildlife or disturbance of carcasses by response personnel;

(c) the use of cleaning or bioremediation agents in fish and wildlife habitat and environmentally sensitive areas;

(d) the movement of oiled debris into fish and wildlife habitat and other sensitive environments.

Many of the issues dealing with appropriate response methods should be addressed in detail during Sub-Area Planning. Response sections of Sub-Area plans will include:

- Identifying specific areas of concern throughout the region and pre-planning for the products most commonly spilled and the locations where spills most commonly occur;

- Response methods for habitats and sensitive areas using the API/NOAA guidance, *Options for Minimizing the Environmental Impacts of Freshwater Spill Response*;

- Pre-approving appropriate removal actions including the use of chemicals and dispersants per 40 CFR Subpart J - Use of Dispersant and Other Chemicals, §300.910.

- Locating access points, staging areas and boom anchor locations.

5.1 Impacts of Response Methods on Sensitive Environments and Habitats

The following is a brief description of adverse effects of various physical response methods associated with oil spill cleanup:

Countermeasure/Response	Potential Adverse Effects
1) No removal	a) oil would remain in habitat indefinitely b) oil may be naturally weathered, but may be toxic to biota and would cause habitat degradation
2) Protective/sorbent boom deployment	a) residual oil would remain in habitat indefinitely b) residual oil may be naturally weathered, but may be toxic to biota and would cause habitat degradation
3) Protective/sorbent boom deployment + mechanical pumping/skimming	a) potential physical disturbance to habitat b) resuspension/dispersion of oiled sediments c) disturbance to biota in the area
4) In-situ burning	a) smoke plume air quality concerns; b) riparian wildlife nesting, denning and feeding habitat may be permanently or temporarily damaged
5) Mechanical pumping/ skimming	a) potential physical disturbance of habitat/ biota; b) resuspension/dispersion of oiled sediments c) disturbance to biota

Note: Federal law prohibits the use of a chemical to control oil on water, unless specifically authorized by a Federal OSC (FOSC). The FOSC may authorize use of any chemical product if its use is necessary to prevent or substantially reduce a hazard to human life. In situations where a human hazard is not present, the OSC must receive the concurrence of the RRT co-chair and the RRT representative(s) of the affected State(s) before authorizing the use of a chemical product to control oil on water.

Based on the above, the following generally applicable prioritized countermeasure and removal actions may be recommended:

Countermeasure	Potential Adverse Effect(s) Minimized
1) booms	a) physical disturbance of sensitive areas/ habitats b) disturbance, illegal taking of fish and wildlife c) limited wildlife contact with cleaning/ bioremediation agents
2) mechanical pumping	a) physical disturbance of sensitive areas/ habitats b) limited wildlife contact with cleaning/ bioremediation agents

3) mechanical skimming agents	a) limited wildlife contact with cleaning/ bioremediation
4) in-situ burning	a) physical disturbance of sensitive areas/ habitats b) limited wildlife contact with cleaning/ bioremediation agents

Movement/transport of oiled debris to the following habitats may pose a substantial threat to fish and wildlife and sensitive environments. To reduce risk to sensitive resources, oiled debris should not be placed in the following habitats:

- riverine backwaters
- wetlands
- fish/shellfish spawning/nursery areas
- waterfowl/migratory bird foraging/breeding areas

5.2 Appropriate Response for Specific Sensitive Environments and Habitats

The American Petroleum Institute and the National Oceanic and Atmospheric Administration (API/NOAA) collaborated on a study for Inland Oil Spills and finalized their findings in May of 1994. This is the first comprehensive guidance on responding to freshwater inland spills. API/NOAA classified specific oil response methods and their relative impacts on given environments and habitats. Physical, chemical and biological response methods are discussed and response impacts on the environment are classified as low impact, moderate impact, high impact and ineffective or inapplicable.

Table 1, taken from the API/NOAA document, includes the findings for response method impacts on water environments and shoreline habitats.

5.3 Monitoring Response Effectiveness - Monitoring Plans

A spill is dynamic and cleanup efforts must adjust to changes in conditions. Over time, the spilled product will typically spread, move downstream and weather. Climatic and geographic conditions may also change. Efforts to control, contain and clean up the release can involve any of a number of containment and recovery methods, including booms, barriers, skimmers, sorbents, chemical agents, burning, and manual recovery. A continuous monitoring program to ensure the maximum removal of spilled product and protection of the environment throughout the duration of the cleanup is essential.

5.3.1 Monitoring Response Effectiveness

The OSC, in consultation with the natural resource trustee contacts, managers, and the responsible party, will monitor the effectiveness of response activities in protecting sensitive habitats and removing discharges of oil or releases of hazardous substances. The OSC will consult with natural resource trustees and natural resource agency managers regarding the need for, and methods to be employed in, an incident-specific long-term monitoring plan. As each of these methods has limitations associated with them, continued monitoring is necessary to ensure a successful cleanup. Monitoring will also be necessary to ensure that the selected response actions do not cause more harm than good. Monitoring activities may include visual observation, sampling, data collection and evaluation, and replacement of saturated or defective materials. Specific monitoring plans to evaluate the effectiveness of different countermeasures or removal actions on wildlife may be already have been developed in relevant sub-area plans.

The assessment of aquatic biota health and abundance will, in some instances, be left to the State environmental agency or State fish and wildlife agency. Evaluation of

Source: API/NOAA 1994

RESPONSE METHOD	WATER ENVIRONMENT				SHORELINE HABITAT							
	Open Water	Small Lakes/ Ponds	Large Rivers	Small Rivers/ Streams	Bedrock	Man-made	Sand	Vegetated Shores	Sand and Gravel	Gravel	Mud	Wetlands
PHYSICAL RESPONSE METHODS												
Natural Recovery	-	-	-	-	-	-	-	-	-	-	-	-
Booming	L	L	L	L	-	-	-	-	-	-	-	-
Skimming	L	L	L	L	-	-	-	-	-	-	-	-
Barriers/Berms	-	-	-	H	-	-	-	-	-	-	-	-
Physical Herding	L	L	L	L	-	-	-	-	-	-	-	-
Manual Oil Removal/Cleaning	L	H	L	M	L	L	L	H	M	M	H	H
Mechanical Removal	L	H	H	H	-	M	M	H	M	M	H	H
Sorbents	L	L	L	L	L	L	L	L	L	L	M	M
Vacuum	L	L	L	L	L	L	L	M	L	L	H	M
Debris Removal	-	L	L	L	L	L	L	L	L	L	M	M
Sediment Reworking	-	H	-	H	-	-	M	H	M	M	H	H
Vegetation Removal	L	H	M	H	-	-	-	H	-	-	-	H
In-situ Burning	L	M	L	M	L	L	M	M	M	M	H	M
Flooding	-	-	-	-	L	L	L	L	M	L	L	L
Low-Pressure, Cold-Water Flushing	-	-	-	-	L	L	M	L	L	M	H	L
High-Pressure, Cold-Water Flushing	-	-	-	-	L	L	H	H	H	H	H	H
Low-Pressure Hot-Water Flushing	-	-	-	-	M	L	H	H	M	M	H	H
High Pressure, Hot-Water Flushing	-	-	-	-	M	L	H	H	H	H	H	H
Steam Cleaning	-	-	-	-	M	L	H	H	M	M	H	H
Sand Blasting	-	-	-	-	H	M	-	-	-	-	-	-
CHEMICAL RESPONSE METHODS												
Dispersants	L	H	L	H	-	-	-	-	-	-	-	-
Demulsifiers	L	L	L	M	-	-	-	-	-	-	-	-
Visco-Elastic Agents	L	M	L	L	-	-	-	-	-	-	-	-
Herding Agents	L	M	L	H	-	-	-	-	-	-	-	-
Solidifiers	L	L	L	L	L	L	M	M	M	L	M	M
Chemical Shoreline Pretreatment	-	-	-	-	I	I	I	I	I	I	I	I
Shoreline Cleaners	-	-	-	-	M	L	M	I	M	M	M	I
BIOLOGICAL RESPONSE METHODS												
Nutrient Enrichment	L	M	L	L	L	L	L	L	L	L	L	L
Natural Microbe Seeding	I	I	I	I	I	I	I	I	I	I	I	I

L = Low; M = Moderate; H = High; I = Incomplete Information; "-" = Ineffective or Inapplicable or Habitat.

Table 1

RELATIVE IMPACT OF RESPONSE METHODS IN THE ABSENCE OF OIL

spill effects on fish and wildlife, during and after cleanup, will be the responsibility of both the trustees and the State fish and wildlife agency. The effects of specific removal actions or countermeasures, with regard to wildlife, will be judged on the basis of the status of fish and wildlife populations remaining in the affected area after cleanup. When no new animals are becoming fouled with oil or otherwise being injured by the spill or countermeasures, the cleanup will be judged to have been successfully completed.

5.3.2 Monitoring Plan Design

Section 300.210(E) of the NCP requires that the FWSEA provide monitoring plan(s) to evaluate the effectiveness of different countermeasures or removal actions in protecting the environment. Following is an outline for such plans. Specific plans for each response need to be developed in consultation with natural resource trustees and natural resource agency managers.

(a) **Monitoring Intensity Levels.** The intensity of monitoring efforts may be adjusted to the intensity of the response. Field activities consisting of reconnaissance, environmental parameters assessment, sampling and documentation efforts, and laboratory activities should be conducted on a scale appropriate to the response.

(b) **Selection of Treated and Untreated Sites.** Treated and untreated (or reference) sites should exhibit similar chemical and physical characteristics to support their comparability. The following criteria should be considered: (1) environmental parameters, (2) physical habitat and geological morphology, and (3) degree of contamination by the released product and probability of further contamination.

(c) **Monitoring Parameters and Collection Frequency.** Sampling at each site, water depth (as appropriate), and time should be performed in triplicate. The size of samples collected should be based on the requirements of the analytical methods to be used for their analysis.

(d) **Data Quality Requirements and Assessments.** All data collection activities must be planned and conducted to produce data of known and acceptable quality. To help ensure that these objectives are met, all contractors performing work as part of the monitoring effort must submit a quality assurance plan. Parameters for defining data quality include appropriateness of analytes, detection limits, precision, accuracy, representativeness, comparability, and completeness. Representativeness and comparability should be designed into the monitoring plan through provisions for replicate sampling from remediated and reference sites and the use of standard methods for environmental sampling and laboratory analyses.

(e) **Sample Custody Procedures.** Accurate identification and proper management of samples is necessary to ensure their legal acceptability and institutional usefulness. Having standard sample tracking and chain-of-custody procedures is particularly critical when individuals performing the sample collections may change over time and when individuals collecting samples will not be the ones analyzing those samples. If the monitoring program is to be conducted by a contractor, that contractor must designate a sample custodian who will ensure that proper sample tracking and chain-of-custody procedures are followed.

(f) **Sampling and Analytical Methods.** All media to be sampled, sampling methods, and laboratory analyses to be performed should be arrived at following consultation with natural resource trustees and natural resource managers and should follow EPA or other approved methods unless otherwise stipulated or requested by the OSC. Any variations from EPA or other approved methods should be documented and noted as such.

(g) **Response Organization and Resource Requirements.** The decision to implement a monitoring plan is made in accordance with the NCP and the Region V-ICP. A project manager, under the direction of the OSC, is responsible for implementing the plan.

- Project Manager
  Specific responsibilities of the project manager include: obtaining approval from the OSC for the monitoring plan, assembling teams to perform observations and/or sampling as appropriate, coordinating activities with the OSC to ensure operations do not interfere with response operations, naming a sample custodian to handle sample transfers and chain of custody concerns, ensuring representation from each RRT member agency that wishes to participate, ensuring consultation with the natural resource trustees and natural resource managers, ensuring and documenting data quality, and ensuring the preparation and submission of all required reports. Other personnel required will be dependent on the size of the spill and/or the monitoring effort.

- Equipment Requirements
  Equipment requirements will be determined by the scope of the monitoring effort. However, sufficient equipment to complete required sampling and photo documentation must be available. Equipment deficiencies should be immediately identified and communicated to the Project Manager. Equipment and logistics support may also be obtained from the Responsible Party (RP) through coordination with the Planning, Logistics, and/or Operations sections of the Incident Command System (ICS).

(h) **Data Validation.** All data will be subject to a thorough check by the OSC and the monitoring Project Manager, or their designated representative, for errors in transcription, calculation, or computer input. In addition, the Project Manager will review all incident logs, sample logs, and data forms to ensure that requirements for documentation and data quality assessment have been met.

(i) **Performance and System Audits.** To help ensure that work being performed - whether by contractor, EPA, or state personnel - is progressing in accordance with the monitoring plan and specified objectives and procedures, the OSC, through the monitoring Project Manager, maintains the right to conduct performance or system audits of field and laboratory collection activities. The categories of audits are described below:

- Management System Reviews evaluate the Quality Assurance Program of an organization, such as a firm contracted to conduct a monitoring project or a laboratory sample analyses. The purpose of this review is to verify whether the quality assurance management procedures stated by the contractor are in place prior to a contract award.

- Data Quality Audits evaluate a data set, or all data sets, of a particular project, by comparing the data set against specified data quality requirements for that data set.

- Technical System Audits evaluate the actual environmental measurement data-collection systems and their associated quality control systems. These audits involve on-site auditing of field sampling activities, field measurement activities, and laboratory analytical procedures.

- Performance Audits evaluate analytical methods and procedures of a laboratory. These audits are conducted by submitting performance evaluation samples to a laboratory for analysis. The samples should contain specific pollutants in known matrices whose concentration and identity are unknown to the testing laboratory.

(j) **Documentation and Reporting.** During the course of response activities and accompanying monitoring efforts, the following reports should be prepared and submitted to the OSC:

- Activity reports provide descriptions of the response activity area, weather, unique observations, and activities undertaken, as well as the names, affiliations and signatures of persons on site. Activity reports should be prepared whenever activities on a site are undertaken.

- Analytical reports provide laboratory analysis results of environmental and control samples. Analytical reports should be prepared and submitted by the analytical lab within 10 days after receipt of environmental samples for analysis.

- After action report provides a description of the overall remediation activity and accompanying monitoring effort, including results of both field and laboratory activities.

(k) **Revising Plans and Procedures.** Monitoring plans should include provisions for modifications, including additional consultation with natural resource trustees and natural resource managers as necessary.

6.0 FISH AND WILDLIFE RESPONSE CAPABILITIES

Consultation with natural resource trustees and other natural resource management agencies during spill events having the potential for trust resource injuries is essential. Fish and wildlife response capabilities include:

6.1 Technical Expertise and Assistance

During a response, natural resource trustee contacts and managers will provide technical assistance and expertise on potential effects of oil on fish and wildlife, their habitats and/or other sensitive environments that can be found in the impacted and potentially impacted zone. They are usually familiar with the area or habitats affected and are able to provide recommendations on the best locations for equipment staging areas, boat access points, or boom anchor locations, and can recommend and prioritize sensitive environments where specific oil exclusion measures should be taken. They can also assist in the development of a monitoring plan and subsequent collection of data. Finally, the U.S. Fish and Wildlife Service and the State wildlife agency will participate in, direct, or provide oversight for the protection, rescue, and rehabilitation of fisheries and wildlife.

Attachment 1 provides a list of Federal and State wildlife agency contacts.

6.2 Wildlife Protection

When a spill of significance to natural resources occurs, natural resource trustees and managers will provide timely advice on the necessary measures to protect wildlife from exposure to spilled product and the priority and timing of such measures. Protective measures may include all or a combination of :

- **preventing** the spill from reaching areas where migratory birds and other wildlife are located by either containing, deflecting or recovering the material, or

- **deterring** birds or other wildlife from entering areas already affected by contamination by using wildlife hazing devices or methods.

Wildlife hazing devices or methods are generally grouped into visual or auditory, or a combination of both. In an emergency, the USFWS, State wildlife agency, or local USDA Wildlife Services office may be able to locate and provide limited amounts of this equipment.

6.2.1 Acquisition and Utilization of Fish and Wildlife Response Capabilities

The USFWS and State natural resource agency are responsible for overseeing spill response activities relative to their effects on fish and wildlife resources. These oversight responsibilities are to be coordinated with the OSC. In some instances, the Federal and State agencies will participate in activities such as hazing, capture, relocation, and release of wildlife. **Those natural resource agencies, however, typically do not conduct treatment or rehabilitation of injured trust resources. However, all wildlife rescue and rehabilitation efforts will be directed by the USFWS and/or the State wildlife agency, including the approval of a qualified wildlife rehabilitator (QWR).** The USFWS and State natural resource agencies will usually recommend that the responsible party(ies) or OSC (in the case of an unknown or uncooperative responsible party) enter into a contract with a QWR. In all cases where a QWR is utilized, the USFWS and State natural resource agencies will remain in an oversight role. Oversight responsiblities include, but are not limited to, the identification and certification of a QWR; the supervision/oversight of injured wildlife collection, handling, cleaning and associated veterinary care; the release of successfully rehabilitated wildlife to the wild; and/or the disposition of carcasses to labs and evidence storage.

The types of equipment used and sources for their acquisition can be found in Attachment 2.

An effective wildlife rehabilitation effort for contaminated wildlife requires participation by persons with demonstrated field experience in spill response. It requires expert knowledge and experience in the areas of volunteer and staff training, human health hazard recognition, liability issues, disposal of wastewater, and media relations. Wildlife rehabilitation also requires specialized medical expertise and stockpiles of specially designed equipment.

6.2.2 Guidelines for Selection of a Qualified Wildlife Rehabilitator (QWR)

The following criteria will be used by the USFWS and State wildlife agencies in selecting or recommending a QWR:

(a) rehabilitator must have, or be qualified to obtain, the appropriate Federal and State permits and licenses to collect, possess, treat, and band migratory birds, resident wildlife or threatened and endangered species.

(b) rehabilitator must demonstrate high standards of practice, treatment, conduct, and ethics as reflected by organization such as the National Wildlife Rehabilitator Association, the American Veterinarian Association and the American Society for Prevention of Cruelty to Animals.

(c) rehabilitator must have adequate liability insurance to protect both staff and volunteers.

(d) rehabilitator should have a proven record and experience in rescue and rehabilitation of oiled wildlife.

(e) rehabilitator must comply with all applicable Federal (Occupational Safety and Health Administration, etc.) and state safety regulations to protect staff and volunteers.

6.2.3. Recognized Professional Rehabilitators

Two organizations, ***Tri-State Bird Rescue and Research, Inc.*** and ***International Bird Rescue***, have become recognized experts in oiled bird rehabilitation:

Tri-State Bird Rescue and Research, Inc.
110 Possum Hollow Road
Newark, Delaware 19711
Telephone: 302-737-7241
Fax: 302-737-9562
24-hour: 800-710-0695 or 0696

International Bird Rescue Research Center
699 Potter Street
Berkeley, California 94710
Telephone: 510-841-9086
Fax: 510-841-9089

Both organizations have extensive national and international experience in bird rescue and rehabilitation and have worked with both government and industry. Other local bird rehabilitation organizations may have similar capabilities.

6.2.4 Volunteers

While most wildlife rehabilitators and veterinarians cannot make the commitment of time needed to develop the resources to respond to major spills, many rehabilitators, veterinarians, and staff and volunteers from environmental organizations may be able to make significant contributions to spill-related wildlife rehabilitation efforts. The QWR should be able to identify each person's or organization's strengths and incorporate them into the rehabilitation effort. Volunteers must be appropriately trained, precisely scheduled for suitable tasks, and must be supervised at all times. During the early- to mid-1990's, the USFWS sponsored a series of apprenticeship workshops in EPA Region 5 for wildlife rehabilitators, veterinarians, and biologists. The one-day workshops provided participants an introduction to rehabilitation procedures, allowing them to offer their future services (as volunteers or part-time staff) to a QWR during a spill involving wildlife.

6.3 Wildlife Rescue and Rehabilitation

If exposure of birds and other wildlife to oil occurs, an immediate decision must be made as to whether to capture and rehabilitate oiled birds and other wildlife. That decision must be made in consultation with the applicable State and Federal natural resource agencies, because State and Federal permits are required for such activities. The Department of the Interior (DOI) has statutory responsibilities (delegated to the USFWS) for the protection of migratory birds and Federally-listed threatened and endangered species. If wildlife other than migratory birds or Federally-listed threatened or endangered species are found injured, the responsible agency would typically be the State wildlife agency.

6.3.1 Federal Permits

Federal and State permits generally allow the permit holder to collect, transport, possess, rehabilitate, euthanize, release, or band migratory birds. Some permit holders also have authority to handle threatened and endangered species under separate Federal permits. Each of these permits may encompass more than one species. If a bird were considered to be migratory, but also threatened or endangered, it must be covered under a threatened and endangered species permit. If rescue and rehabilitation efforts are deemed to be necessary and worthwhile, the following Federal permits may apply:

Migratory Bird:

Banding or Marking: 50 CFR 21.22. A permit is required before any migratory bird is captured for the purpose of banding or marking. Official bands are issued by the U.S. Geological Survey, Biological Resources Division Bird Banding Laboratory for this purpose. Any rehabilitation group that participates in wildlife response activities and bands migratory birds is required to possess this permit.

Special Purpose: 50 CFR 21.27. May be issued for special purpose activities related to migratory birds, their parts, nests, or eggs. During oil spills and discharges, it is expected that the initial cleaning, emergency care, and triage of animals will be done by contracted experts under a Special Purpose Permit. Unless authorized by the USFWS, no individual rehabilitator or rehabilitation group will be designated as "in charge" of rehabilitation efforts, but will work with the cleanup team under Regional guidelines. Off site rehabilitation of any migratory bird will be done only by Federally licensed rehabilitators. The licensed rehabilitator must notify the USFWS within 48 hours of acquiring an injured bird. The USFWS provides disposition guidance at that time. A Special Purpose permit does not authorize the use of recovering sick or injured migratory birds for display or educational purposes.

Eagle Permits:

50 CFR 22. These permits authorize the taking, possession, or transportation of bald eagles or golden eagles, or their parts, nests, or eggs for scientific or exhibition purposes. They may be required for the possession of such birds during rehabilitation. The USFWS must be notified within 48 hours of acquisition of any Bald and/or Golden Eagles. Directions will be given at that time regarding disposition and/or continued treatment.

Endangered Species:

50 CFR 17.22 and17.32. Permits are for scientific purposes, enhancement of propagation or survival, or for incidental take. There is normally a 30-day comment period for this type of permit, which may be waived by the USFWS Director during emergency conditions where the life and health of a specimen is threatened and there is no alternative available. Rehabilitators participating in wildlife responses that include endangered species must be authorized to handle endangered species. In the case of migratory birds, the rehabilitator must have a valid Special Purpose Permit that includes endangered species.

It is important to note that the Federal Regulations for the Endangered Species Act include provisions that allow for handling of sick, injured and orphaned wildlife specimens by certain individuals. 50 CFR 17.21(c)(3) & (4) describe this authority for endangered wildlife and 50 CFR 17.31(b) describes the authority available for threatened wildlife. In this section of the regulations, certain employees of the USFWS, other Federal land management agencies, National Marine Fisheries Service, and State conservation agencies are given the authority to aid wildlife species and are given specific steps that must subsequently be followed regarding disposition of these specimens.

Authorities for Permits:
Specific Federal laws and regulations requiring the above permits are as follows:

(a) **Migratory Bird Treaty Act of 1918, as amended (16 U.S.C.703 et seq.).** This law stipulates that no person shall take, possess, import, export, transport, sell, purchase or barter, any migratory bird, or the parts, nests, or eggs of such bird except as permitted by Federal regulations in 50 CFR. A valid permit, issued by the provisions of 50 CFR Part 21 and 50 CFR Part 13 is required for the collection, salvage, and possession of any migratory bird. Enforcement authority and penalties for violations are provided.

(b) **Bald Eagle Protection Act of 1940, as amended (16 U.S.C. 668 et seq.).** This law stipulates that no person shall take, possess, or transport any bald eagle or any golden eagle, or the parts, nests, or eggs of such birds except as permitted under the terms of a valid permit issued by the USFWS pursuant to 50 CFR 22 and 50 CFR 13. The Act was amended in 1962 to include Golden eagles. Enforcement authority and penalties for violations are provided.

(c) **Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).** This law makes it unlawful for any person to commit, attempt to commit, solicit another to commit, or cause to be committed, the import or export, taking, possession of illegally taken species, sale or offering for sale in interstate commerce any endangered or threatened species except as permitted under the terms of a valid permit issued by the USFWS pursuant to 50 CFR 17. Enforcement authority and penalties for violations are provided. See Attachment 4 for a summary of pertinent sections of the Act.

Sources of Federal Permits:
Inquiries regarding Federal Migratory Bird permits and criteria for qualified wildlife rehabilitators are to be directed to:

Migratory Bird Permit Office
U.S. Fish and Wildlife Service
1 Federal Drive
Fort Snelling, MN 55111-4056
(612)713-5436

Inquiries regarding Federal Endangered Species permits may be directed to:

Ecological Services Operations
U.S. Fish and Wildlife Service
1 Federal Drive
Fort Snelling, MN 55111-4056
(612)713-5350

In a spill situation, response and rehabilitation permit needs for endangered species will be determined by the USFWS on an emergency case-by-case basis administered under 50 CFR 17.21, 22, 31, and 32. Specific information with regard to obtaining a Federal permit for endangered species rehabilitation can be obtained through the USFWS Region 3 Ecological Services Operations Office (see Section 6.3 above for address and phone number.)

USFWS personnel will handle all Federal permit activities through the Ecological Services Field Office responsible for the area where the spill occurs. The Field Office will coordinate Migratory Bird and Endangered Species permit needs with appropriate Regional Office staff.

6.3.2 State Permits
The State laws and regulations that require such permits are as follows:

[to be provided by the States]

State wildlife permits may be obtained through the applicable State agency office listed below:

Illinois Department of Natural Resources	217/782-6384
Indiana Department of Natural Resources	317/232-8160
Michigan Department of Natural Resources	517/373-9329
Minnesota Department of Natural Resources	651/296-3344
Ohio Department of Natural Resources	614/264-6046
Wisconsin Department of Natural Resources	608/266-2193

6.3.3 Health and Safety Concerns in Wildlife Rescue and Rehabilitation
Personnel health and safety concerns relating to wildlife rescue and rehabilitation should be considered in all plans and actions when dealing with contaminated wildlife. Attachment 5 (Wildlife Rehabilitation Facilities, Equipment, and Requirements contains additional information on safety and training and the potential risks associated with wildlife rescue and rehabilitation.

Two Occupational Safety and Health Administration (OSHA) regulations cover the majority of occupational health and safety issues encountered during wildlife rescue and rehabilitation.

(1) The Hazardous Wastes Operations and Emergency Response rule (29 CFR 1910.120) regulates organizations or individuals involved in wildlife retrieval and rehabilitation efforts. Because each state may also have its own worker safety requirements; coordination with the appropriate state agency should also be conducted to ensure those requirements are met.

Rehabilitation organizations are legally required to educate and protect all employees, including volunteers. Individuals working with impacted animals need information concerning all potential hazards associated with the handling of those animals. The following minimum requirements should be applied to wildlife rescue and rehabilitation personnel, including volunteers:

- Wildlife rescue and rehabilitation management personnel - this is the core team of certified rehabilitators who will direct operations. These people must have 24 hours of classroom training in hazardous waste operations and emergency response.

- Rehabilitation facility volunteers - these volunteers work at the rehabilitation facility (typically located well away from the spill site) under the direction of the facility management team. They are not allowed on-scene (within the response center and staging areas), nor in the **"hot zone"** (impacted area) unless additional training is provided. Volunteers working in this category must receive a minimum of four hours of training in the Hazard Communication Program before they can begin work.

- Retrieval volunteers - these volunteers work under the direction of the search and rescue management team and may be allowed on-scene, but not in the "hot zone". Volunteers working in this category must receive 4 to 8

hours of training in the Hazard Communication Program before they can begin work.

- "Hot zone" wildlife retrieval and capture activities - these must be performed by personnel having a minimum of 40 hours of classroom safety training meeting OSHA guidelines for hazardous waste workers, including eight hour annual refresher training.

The OSC, in consultation with OSHA's representative to the Regional Response Team, has responsibility for making assessments when training requirements are in question.

The NCP at 300.210 (c) II (H) states that the fish and wildlife annex will identify and secure the means of providing, if needed, the minimum required OSHA and EPA training for volunteers, including those who assist with injured wildlife. Following are minimum guidelines for communicating the potential hazards to individuals involved in assisting injured wildlife:

(2) The Hazard Communication Standard (29 CFR 1910.1200), also known as "Right to Know Law" or "HazCom" requires that all chemicals in the work place be fully evaluated for possible physical or health hazards and that all information relating to these hazards be made available to all workers. HazCom applies to wildlife rehabilitation organizations because petroleum and hazardous chemicals are considered a human health hazard. A **Hazard Communication Program** should contain all of the following elements:

- the nature of oil and how its composition may change with the effect of weathering,
- the nature of other hazardous chemicals that may be contacted during rehabilitation efforts,
- routes of entry of these chemicals,
- signs and symptoms of chemical exposure,
- protective measures, including work practices and personal protective equipment (PPE, with training on how to properly use),
- environmental monitoring equipment,
- importance of personal hygiene,
- how to read a Material Safety Data Sheet and know what it means,
- first aid protocols and identification of medically trained personnel and first aid stations,
- storage and disposal of hazardous waste, including medical waste and PPE,
- training records addressing the written curriculum, date and hours of instruction, instructor and student names.

Besides chemical hazards, other hazards such as mechanical, physical and biological hazards are also present during rescue and rehabilitation activities. Workers must be trained on these hazards as well. Such training elements may include:

Facility concerns:

- behavior of impacted birds
- proper animal restraint
- personal protective equipment and clothing to protect from blood-borne pathogens and zoonoses
- proper heavy lifting techniques
- safe working practices, e.g. no slippery or messy floors
- electrical safety

Field concerns (in addition to the above):

- climatic conditions (e.g. cold, heat)
- terrain
- proper retrieval methods
- vehicle safety (4-WD vehicle, boat)
- water hazards
- response operations hazards

Other safety concerns may occur at the spill site or the rehabilitation facility. These concerns should be addressed on a site-specific basis.

6.4 Other Roles and Responsibilities of Natural Resource Trustees

In the event of a spill, it may be appropriate for natural resource trustee contacts and managers to initiate an assessment of injury to State and Federal trust resources resulting from the spill. The Natural Resource Damage Assessment (NRDA) is the process followed by trustees to collect, compile and evaluate data, information and statistics in order to quantify such injury. This information is used to calculate damages (the dollar amount necessary to restore injured natural resources and compensate for lost use as a result of the injury), and to seek recovery of those damages from the responsible party. NRDA activities may be initiated during the period in which oil removal and wildlife rescue and rehabilitation activities are ongoing. NRDA-related field sampling activities are typically initiated to acquire data and evidence that might otherwise be lost if not collected during or immediately after a spill has occurred.

In very specific circumstances, a natural resource trustee may also undertake emergency restoration efforts to prevent or reduce the immediate migration of oil onto or into a trust resource. Emergency restoration is only undertaken if the responsible party or U.S. EPA cannot, or does not, conduct response actions within the time frame that natural resource trustees deem necessary to protect trust resources.

6.4.1 Natural Resource Damage Assessment (NRDA)

NRDA is authorized by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund), the Clean Water Act (CWA), and the OPA. To facilitate compliance with OPA, the Department of Commerce (DOC) promulgated 15 CFR Part 990 - *Natural Resource Damage Assessment Regulations*. The final rule for these regulations was published in the Federal Register on January 5, 1996 with February 5, 1996 as the effective date of the final rule.

NRDA regulations presume trustees will seek economic damages from responsible parties for injuries to natural resources from discharges. Trustees include Federal landowners, Federal natural resource managers, States, Indian tribes, and foreign governments. Damages collected must be used to restore, replace, or acquire natural resources equivalent to injured natural resources and to reimburse trustee assessment costs.

Under OPA, natural resource trustees may initiate NRDA activities during the spill response phase. NRDA initiation activities constitute a preliminary assessment, or preassessment, of spill-related natural resource injuries. Because preassessment activities may occur concurrently with removal actions as part of the response, sampling and field work conducted by the natural resource trustees must be coordinated with the lead response agency so as to minimize any interference with response operations and to avoid duplication of sampling and data collection efforts. **While prior OSC approval is required for OSLTF-reimbursable trustee removal activities, approval for reimbursement of trustee preassessment costs must come in advance from the Pollution Funds Center.** Thus, it is important for natural resource trustees to distinguish between the two types of activities.

6.4.2 Natural Resource Trustees - NRDA Roles and Responsibilities

Section 1006(b) of OPA provides for the designation of Federal, State, Indian Tribe, and foreign natural resource trustees to determine whether injury to, destruction of, loss of, or loss of use of natural resources and services has resulted from an incident, to assess damages for those injuries, to present a claim for damages (including the reasonable costs of assessing these damages), to recover damages, and to develop and implement a plan for the restoration, replacement, or acquisition of the equivalent of the injured natural resources and services under their trusteeship.

The DOI is the Federal trustee for migratory birds, certain anadromous fish, endangered species, and DOI-managed lands such as National Parks and Recreation Areas and National Wildlife Refuges. The DOI Office of Environmental Policy and Compliance (OEPC) is the initial contact for notification and for overall coordination of Bureau activities. The USFWS, the DOI bureau with program management responsibility for migratory birds, endangered species, anadromous fish, and lands in the National Wildlife Refuge System, will likely be among those involved in spill-related pre assessments. In instances where other Federal agency lands or resources are involved, those agencies (e.g., Department of Defense, U.S. Department of Agriculture, National Oceanic and Atmospheric Administration [NOAA]) may serve as trustees. At the time of a spill, the applicable Federal trustees will agree upon one agency to act as Federal lead administrative trustee (FLAT), and will convene a trustee group in cooperation with State, Indian, and foreign trustees, as appropriate, to ensure the best possible coordination of natural resource trustee activities (to include coordination of collective trustee funding needs, data gathering, damage assessment, and negotiations with the responsible parties).

6.4.3 NRDA Process

The NRDA process includes 3 phases; preassessment, restoration planning, and restoration implementation.

6.4.3.1 Preassessment Phase

When notified of a spill or release incident, trustees must first develop threshold criteria that determine their interests in beginning a NRDA, such as applicability of OPA, CERCLA or the CWA and the relative risks to natural resources under their trusteeship. Based on early available information, trustees make a preliminary determination whether natural resources or services under their authorities have been, or are likely to be, injured. Through coordination with response agencies, trustees next determine whether response actions will eliminate the threat of ongoing and future injuries. If injuries have occurred and/or are expected to continue, and feasible restoration alternatives exist to address such injuries, trustees may decide to proceed with the preassessment.

Preassessment phase activities will likely be conducted simultaneously with removal/response activities. The intent of the preassessment phase activities is generally to acquire data and materials that might otherwise be lost if not collected during or immediately after a spill has occurred. Such field sampling and data collection is generally limited to:

(1) Samples necessary to preserve perishable materials likely to have been affected or to contain evidence of the release. These samples will generally consist of biological material that is either dead or which has been visibly affected by the contaminant.

(2) Samples of other materials which exhibit ephemeral conditions, such as surface water, sediments, soil, or the product itself, which are necessary for identification of released product and measurement of concentrations. If

not collected immediately, such information could otherwise be lost due to product dilution, movement, decomposition, or leaching.

(3) Counts of dead or visibly injured organisms which, if delayed, may not be possible due to factors such as decomposition, scavenging, sinking, or movement from the spill site by currents.

(4) Site characterization and identification of pathways, exposed areas, and potentially affected resources.

Because certain NRDA activities (e.g. collection of water and sediment samples) may be identical to those conducted by others as part of the response, all sampling and field work conducted by the natural resource trustees should be coordinated with the lead response agency so as to minimize duplication of sampling and data collection efforts. Work performed for NRDA preassessment is eligible for reimbursement by the OSLTF.

6.4.3.2 Restoration Planning Phase

The purpose of the Restoration Planning Phase is to evaluate potential injuries to natural resources and services, and to use that information to determine the need for and scale of restoration activities. The Restoration Planning Phase provides the link between injury and restoration. The Restoration Planning Phase has two basic components; injury assessment and restoration selection.

6.4.3.2.1 Injury Assessment

The purpose of injury assessment is to determine the nature and extent of injuries to natural resources and the services they provide, thus providing a technical basis for evaluating the need for, type of, and scale of restoration actions. Under the final rule, *injury is defined as an observable or measurable adverse change in a natural resource or impairment of a natural resource service.* Trustees must determine that there is: 1) a pathway, exposure, and an adverse change to a natural resource or service resulting from an actual discharge; or 2) an injury to a natural resource or service as a result of response actions or a substantial threat of a discharge. Trustees must also quantify the degree and spatial and temporal extent of such injuries. Injuries are quantified by comparing the condition of the injured natural resources or services to the baseline condition, where the latter can be determined.

6.4.3.2.2 Restoration Selection

Once injury assessment is complete, trustees must develop a plan for restoring the injured natural resources and services. Acceptable restoration actions may include any of the actions authorized under OPA, CERCLA and the CWA (restoration, rehabilitation, replacement, or acquisition of the equivalent), or some combination thereof.

6.4.3.3 Restoration Implementation Phase

The Final Restoration Plan is presented to the responsible party(s) to implement, or to fund the trustees' costs of its implementation, thus providing the opportunity for settlement of damages claims without litigation. Should responsible parties decline to settle a claim, OPA, CERCLA and the CWA authorize the trustees to bring a civil action for damages in Federal court or to seek an appropriation from the OSLTF for such damages.

7.0 EVALUATING THE INTERFACE OF THE RICP WITH NON-FEDERAL PLANS

Section 300.210(c)(4)(i) of the NCP mandates that the Fish and Wildlife Annex to each Area Contingency Plan define the requirements for evaluating compatibility

between itself and non-Federal response plans on issues affecting fish and wildlife, their habitat, and sensitive environments.

The final rule on Oil Pollution Prevention for Non-Transportation-Related Onshore Facilities, 40 CFR Part 112, requires facilities with a total oil storage capacity greater than or equal to one million gallons to submit response plans if located at a distance such that a discharge of oil could cause injury (as defined at 40 CFR 112.2) to fish, wildlife, sensitive environments and public water intakes.

Facility owners or operators must determine the maximum distance at which a worst case oil spill from their facility could cause injury to fish and wildlife and sensitive environments and develop a plan for mitigating that discharge's potential adverse effects. Facility plans must be consistent with the requirements of the NCP, RICP, and this Annex.

EPA will review and approve Facility Response Plans for compatibility with this Annex. Pipeline plans in the Region will be reviewed and approved by the U.S. Department of Transportation. Participation by facilities in the Area and Subarea Committees is encouraged. Joint exercises will be conducted to test facility plans and their interface with this Annex.

ATTACHMENT 1:

CONTACTS FOR NATURAL RESOURCES TRUSTEES AND NATURAL RESOURCES MANAGERS

International Natural Resource Trustee Contact:

Environment Canada
Environment Canada - Ontario Region
Steve W. Clement - Head, Environmental Emergencies Section
Environmental Protection Branch
4905 Dufferin Street
Toronto, Ontario M3H 5T4
Office hours: (416) 739-5908
24-hr: (416) 346-1971
Alt: (416) 518-3221 Duty Officer
Fax: (416) 739-4953

Federal Natural Resource Trustee Contacts:

U.S. Department of the Interior
Office of Environmental Policy and Compliance (OEPC)
Michael T. Chezik - Regional Environmental Officer
Custom House, Room 244
200 Chestnut Street
Philadelphia, Pennsylvania 19106-2094
Office hours: (215) 597-5378
24-hr: (800) 759-8352/Mail box 1168849
Cell: (215) 266-5155
Fax: (215) 597-9845

Alternate:
Office of Environmental Policy and Compliance (OEPC)
Darrell R. Robertson - Regional Environmental Assistant
408 Atlantic Avenue, Room 142
Boston, Massachusetts 02210-3334
Office hours: (617) 223-8565
24-hr: (888) 525-4683
Cell: (617) 593-6855
Fax: (617) 223-8569

U.S. Fish and Wildlife Service
Regional Office - Region 3
Regional Spill Response Coordinator
Bishop Henry Whipple Federal Building
Fort Snelling, MN 55111-4056
Office hours: (612) 713-5350
24-hr: (800) 800-5923; leave message for pager # (612) 660-9062
FAX: (612) 713-5292

Local U.S. Fish and Wildlife Service Contacts:

* Bloomington Indiana Field Office - Ecological Services
620 South Walker Street
Bloomington, Indiana 47403-2121
Office hours: (812) 334-4261
Fax: (812) 334-4273

* East Lansing Field Office - Ecological Services
2651 Coolidge Road
East Lansing, Michigan 48823
Office hours: (517) 351-2555
Fax: (517) 351-1443

* Twin Cities Field Office - Ecological Services
4101 East 80th Street
Bloomington, Minnesota 55425-1665
Office hours: (612) 725-3548
Fax: (612) 725-3609

* Fish and Wildlife Service Reynoldsburg Ohio Field Office - Ecological Services
6950-H Americana Parkway
Reynoldsburg, Ohio 43068
Office hours: (614) 469-6923
Fax: (614) 469-6919

* Green Bay Field Office - Ecological Services
1015 Challenger Court
Green Bay, Wisconsin 54331-8331
Office hours: (920) 465-7440
Fax: (920) 465-7410

U.S. Department of Commerce
National Oceanic and Atmospheric Administration

U.S. Department of Agriculture
U.S. Forest Service

U.S. Department of Defense

U.S. Department of Energy

State Natural Resources Managers

Illinois:

Illinois Environmental Protection Agency
Emergency Response Unit Phone:
(217) 782-3637
24 hr: (800) 782-7860 (in-State)
(217) 782-3637 (out of State)
Fax: (217) 782-1431

Illinois Department of Natural Resources
(To Be Provided by State)

Illinois (other than Greater Chicago Metropolitan Area)
Fish and Wildlife Service
Rock Island Illinois Field Office - Ecological Services
4469 48th Avenue Court
Rock Island, Illinois 61201
(Mississippi River -left and right banks)
Office hours: (309) 793-5800
Fax: (309) 793-5804.

Illinois (Greater Chicago Metropolitan Area)
Fish and Wildlife Service
Barrington Field Office - Ecological Services
1000 Hart Road, Suite 180
Barrington, Illinois 60010
Office hours: (847) 381-2253
Fax: (847) 381-2285

Indiana:

Indiana Department of Environmental Management
Emergency Response Unit
100 North Senate Avenue
Indianapolis, IN 46206
24 hr: (317) 233-7745
Toll Free (in-State): (888) 233-7745
Fax: (317) 308-3063

Indiana Department of Natural Resources
Division of Law Enforcement
Environmental Section
Phone: (317) 232-4020
24 hr: (not available)
Fax: (317) 233-6358

Michigan:

Michigan Department of Environmental Quality
Emergency Mgt. Coordinator
Low Level Radioactive Waste Auth
Phone: (517) 335-0430
24 hr: (517) 373-7660
Fax: (517) 373-0578

Michigan Attorney General's Office
Phone: (517) 373-1113

Michigan Department of Natural Resources
(To Be Provided by State)

Minnesota:

Minnesota Pollution Control Agency
Emergency Response Unit
24 hr: (651) 649-5451
Toll free (in state): (800) 422-0798
Fax: (651) 297-8676

Minnesota Department of Natural Resources
Ecological Services Section
24 hr: (651) 649-5451
Toll free (in state): (800) 422-0798
Fax:

Ohio:

Ohio Environmental Protection Agency
Emergency Response Unit
Phone: (614) 644-2080
24 hr: (800) 282-9378
Fax: (614) 644-3250

Ohio Department of Natural Resources
Division of Wildlife:

Central Ohio
Steve Jacks, Manager
District One
1500 Dublin Rd.
Columbus, Ohio 43215
Phone: (614) 644-3925
Fax: (614) 644-3931

Northwest Ohio
Dean Scott, Manager
District Two
952 Lima Ave., Box A
Findlay, Ohio 45840
Phone: (419) 424-5000
Fax: (419) 422-4875

Northeast Ohio
(manager vacant)
District Three
912 Portage Lakes Dr.
Akron, Ohio 44319
Phone: (216) 644-2293
FAX: (216) 644-8403

Southeast Ohio
John Marshall, Manager
District Four
360 E. State St.
Athens, Ohio 45701
Phone: (614) 594-2211
FAX: (614) 592-1626

Southeast Ohio
Dave Graham, Manager
District Five
1076 Old Springfield Pike
Xenia, Ohio 45385-1238
Phone: (513) 372-9261
Fax: (513) 376-3011

Wisconsin:

Wisconsin Department of Natural Resources
Bureau of Law Enforcement
Phone: (608) 266-2598
24 hr: (800) 943-0003
Fax: (608) 266-3696

ATTACHMENT 2:

WILDLIFE DAMAGE MANAGEMENT EQUIPMENT SUPPLIERS
(VERIFY CONTACTS)

Repellents

Electronic Alarm and Recorded Bird Repellents

Evert Achterberg
P.O. Box 123
Escalon, CA 95320
(Double John Purivox Bird Scarer)

Adams Dominion, Inc.
1212 Weible Road
Crestwood, KY 40014
(502) 241-0241
(Animal Detection)

Air Birdstrike Prevention
15 Edgewood St.
Worcester, MA 01602
(301) 963-9270
(Radio-controlled planes)

Arkansas Electronic Consultants
800 Stanton Road
Little Rock, AR 72209

Av-Alarm Corp.
675-D Conger St.
Eugene, OR 97402
(503) 342-1271

Coleman Equipment, Inc.
342 Madison Ave.
New York, NY 10017
(212) 687-2154
(vigil-andy)

Electronic Game Calls
210 W. Grand Ave.
Wisconsin Rapids, WI 54495

Falcon Safety Products Inc.
1065 Bristol Road
Mountainside, NJ 07092
(201) 233-5000
(air horn)

Jennings Industries, Inc.
2730 Chanticleer Ave.
San Cruz, CA 95060
(408) 475-8311

Margo Horticultural Supplies Ltd.
RR 6 Site 8, Box 2
Calgary, Alberta T2M 4L5
Canada
(403) 285-9731
(microwave motion detector)

Reed-Joseph International Co.
P.O. Box 894
Greenville, MS 38702
(800) 647-5554

Signal Broadcasting Co.
2314 Broadway St.
Denver, CO 80205
(303) 295-0479
(distress call tapes)

Rt. 58, RD #2
P.O. Box 937-A
Riverhead, NY 11901
(516) 727-3932
("clapper" device with timer)

Wrightman Electronics, Inc.
P.O. Box 989
Easton, MD 21601

Propane Exploders

Alexander-Tagg Inc.
395 Jacksonville Rd.
Warminster, PA 18974
(215) 675-7200

Coleman Equipment Inc.
342 Madison Ave.
New York, NY 10017
(212) 687-2154
(vigil andy)

M. J. Flynn Inc.
Syracuse, NY
(315) 437-6536
(Zon gun)

C. Frensch Ltd.
168 Main St. E.
Box 67
Grimsby, Ontario L3M 1G4
Canada
(416) 945-3817

Pete Konzak
Box 20
Minnewaukan, ND 58351
(701) 473-5646
(jump-up scarecrow)

B.M. Lawrence & Co.
Tomko Enterprises Inc.
233 Sansome St.
San Francisco, CA 94104
(415) 981-3650
(Zon gun)

McKinzie Scientific
P.O. Box 1077
1340 Kerr Ave.
Lancaster, OH 43130
(614) 687-4617

Pisces Ind.
P.O. Box 6407
Modesto, CA 95355
(209) 578-5502

Reed-Joseph International Co.
P.O. Box 894
Greenville, MS 38702
(800) 647-5554

Smith-Roles
1367 S. Anna St.
Wichita, KS 67209
(316) 945-0295

Spring Ledge Farms
RD 3
Dundee, NY 14837

Teiso Kasei Co. Ltd.
350 S. Figueroa St., Suite 350
Los Angeles, CA 90071
(213) 680-4349

USDA, APHIS, S&T, DWRC
P.O. Box 25266, Building 16
Denver Federal Center
Denver, CO15 80225-0266
(303) 236-7877
(farmer fred)

Pyrotechnic Devices

The Bullseye Gunshop
1081 Huntingdon Ave.
Waterbury, CT 06704
(203) 755-1055

California Seal Control Corp.
P.O. Box 949
San Pedro, CA 90733
(310) 833-2681
(underwater explosives)

Colonial Fireworks
5956 Ivanhoe
Ipsilanti, MI 48197
(313) 482-3272

New Jersey Fireworks Co.
Box 118
Vineland, NJ 08360
(609) 692-8030
(rope firecrackers)

O.C. Ag. Supply
1328 Allec St.
Anaheim, CA 92805
(714) 991-0960

Reed-Joseph International Co.
P.O. Box 894
Greenville, MS 38702
(800) 647-5554

Stoneco Inc.
P.O. Box 187
Dacono, CO 80514
(303) 833-2376

Sutton Ag. Ent.
1081 Harkins Rd.
Salinas, CA 93901
(408) 422-9693

Wald & Co.
208 Broadway
Kansas City, MO 64105
(816) 842-9299
(rope firecrackers)

Western Fireworks Co.
2542 SE 13th Ave.
Canby, OR 97103
(503) 266-7770

Visual Bird Repellents

Atmospheric Instrumentation Research (AIR) Inc.
1880 S. Flatiron Ct., Suite A
Boulder, CO 80301
(301) 433-7187
(balloons, kites)

Bird-X
325 W. Huron St.
Chicago, IL 60610
(312) 642-6871
(Raptor effigies, lights)

Coleman Equipment, Inc.
342 Madison Ave.
New York, NY 10017
(212) 687-2154
(vigil-andy)

R.E. Deitz Co.
225 Wilkinson St.
Syracuse, NY 13201
(315) 424-7400
(strobe lights)

Edmund Scientific Company
7977 EDSCORP Building
Barrington, NJ 08007
(609) 547-3488
(3' balloons)

The Huge Co.
7625 Page Blvd.
St. Louis, MO 63133
(800) 325-3371
(Raptor effigies, lights)

Kite City
1201 Front St.
Old Sacramento, CA 95814
(Hawk Kite)

Pete Konzak
Box 20
Minnewaukan, ND 58351
(701) 473-5646
(jump-up scarecrow)

Mellingers
2310 W. South Range Rd.
N. Lima, OH 44452
(800) 321-7444
(scarecrow)

Nishizawa (USA) Ltd.
112 W. 9th St., Suite 903
Los Angeles, CA 90015
(213) 627-7491
(Mylar balloons, flash tape)

Offshore Sourcing Development
1240 Josephine Road
Roseville, MN 55113
(612) 633-2384
(balloons)

Orchard Equipment & Supply Co.
P.O. Box 540
Conway, MA 01341
(413) 369-4335
(balloons)

Pest Management Supply, Inc.
P.O. Box 938
Amherst, MA 01004
(413) 253-3747
(balloons, flash tape)

Raven Ind. Inc.
P.O. Box 1007
Sioux Falls, SD 57117
(605) 336-2750
(balloons)

ATTACHMENT 3:

STATE AND COUNTY LISTING OF FEDERALLY THREATENED (T), ENDANGERED (E), AND PROPOSED (P) SPECIES IN EPA REGION 5

TABLE 2: ILLINOIS
County Occurrences of Federally Listed Species and Their Habitats

County	Species	Status	Habitat
Adams	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
	Higgins' eye pearlymussel *(Lampsilis higginsi)*	E	Mississippi River; Rock River to Steel Dam
Alexander	Gray bat *(Myotis grisescens)*	E	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
	Least Tern *(Sterna antillarum)*	E	Bare alluvial and dredged spoil islands
	Pallid Sturgeon *(Scaphirynchus albus)*	E	Mississippi River
	Pink Mucket pearlymussel *(Lampsilis orbiculata) (=Plethobasis abrupta)*	E	Ohio River
	Orange-footed pearlymussel *(Plethobasis cooperianus) (=P. striatus)*	E	Ohio River below confluence with Cumberland River
Bond	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
Brown	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
Bureau	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
Calhoun	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
Carroll	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
	Karner blue butterfly *(Lycaeides melissa samuelis)*	E	EXTIRPATED; Potential habitat in pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis)*, the only known food plant of the larvae
	Higgins' eye pearlymussel *(Lampsilis higginsi)*	E	Mississippi River; Rock River to Steel Dam

County	Species	Status	Habitat
Cass	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering; county with night roosts
Christian	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
Clark	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	White warty-back pearlymussel *(Plethobasis cicatricosus)*	E	EXTIRPATED; potential habitat in rivers
Clinton	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
Cook	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Piping Plover *(Charadrius melodus)*		Has been extirpated - potential habitat along lakeshore beaches
	Hines emerald dragonfly *(Somatochlora hineana)*	E	Spring fed wetlands, wet meadows and marshes
	Prairie bush clover *(Lespedeza leptostachya)*	T	Dry to mesic prairies with gravelly soil
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	T	Mesic to wet prairies
	Pitcher's thistle *(Cirsium pitcheri)*	T	Lakeshore dunes
Crawford	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
De Witt	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
Du Page	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Hines emerald dragonfly *(Somatochlora hineana)*	E	Spring fed wetlands, wet meadows and marshes
	Prairie bush clover *(Lespedeza leptostachya)*	T	Dry to mesic prairies with gravelly soil
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	T	Mesic to wet prairies
Fayette	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
Ford	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Mead's milkweed *(Asclepias meadii)*	T	Virgin prairies
Franklin	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
Fulton	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering: county with night roosts
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils

County	Species	Status	Habitat
Gallatin	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least Tern *(Sterna antillarum)*	E	Bare alluvial and dredged spoil islands
	Fanshell mussel *(Cyprogenia stegaria) (=C. irrorata)*	E	Wabash River
	Fat pocketbook pearlymussel *(Potamilis capax)*	E	Wabash and Little Wabash Rivers
	Pink Mucket pearlymussel *(Lampsilis orbiculata) (=Plethobasis abrupta)*	E	Ohio River
	White warty-back pearlymussel *(Plethobasis cicatricosus)*	E	EXTIRPATED; potential habitat in rivers
Greene	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
Grundy	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	T	Mesic to wet prairies
Hancock	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
	Higgins' eye pearlymussel *(Lampsilis higginsi)*	E	Mississippi River; Rock River to Steel Dam
	Fat pocketbook pearlymussel *(Potamilis capax)*	E	Mississippi Rivers
Hardin	Gray bat *(Myotis grisescens)*	E	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least Tern *(Sterna antillarum)*	E	Bare alluvial and dredged spoil islands
	Pink Mucket pearlymussel *(Lampsilis orbiculata) (=Plethobasis abrupta)*	E	Ohio River
Henderson	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering; county with night roosts
	Higgins' eye pearlymussel *(Lampsilis higginsi)*	E	Mississippi River; Rock River to Steel Dam
Henry	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	T	Mesic to wet prairies
Iriquois	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Karner blue butterfly *(Lycaeides melissa samuelis)*	E	EXTIRPATED; Potential habitat in pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis*), the only known food plant of the larvae
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	T	Mesic to wet prairies
Jackson	Gray bat *(Myotis grisescens)*	E	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)

County	Species	Status	Habitat
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
	Least Tern *(Sterna antillarum)*	E	Bare alluvial and dredged spoil islands
	Pallid Sturgeon *(Scaphirynchus albus)*	E	Mississippi River
Jasper	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
Jefferson	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
Jersey	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering; county with night roosts
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
Jo Daviess	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
	Karner blue butterfly *(Lycaeides melissa samuelis)*	E	EXTIRPATED; Potential habitat in pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis)*, the only known food plant of the larvae
	Iowa pleistocene snail *(Discus macclintocki)*	E	North-facing algific talus slopes of the driftless area
	Higgins' eye pearlymussel *(Lampsilis higginsi)*	E	Mississippi River; Rock River to Steel Dam
Johnson	Gray bat *(Myotis grisescens)*	E	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
Kane	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	T	Mesic to wet prairies
Kankakee	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Karner blue butterfly *(Lycaeides melissa samuelis)*	E	EXTIRPATED; Potential habitat in pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis)*, the only known food plant of the larvae
Lake	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Piping Plover *(Charadrius melodus)*		Has been extirpated - potential habitat along lakeshore beaches
	Karner blue butterfly *(Lycaeides melissa samuelis)*	E	EXTIRPATED; Potential habitat in pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis)*, the only known food plant of the larvae
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	T	Mesic to wet prairies
LaSalle	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging) Critical Habitat: Blackball Mine, LaSalle County
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering

County	Species	Status	Habitat
Lawrence	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Fat pocketbook pearlymussel *(Potamilis capax)*	E	Wabash and Little Wabash Rivers
Lee	Indiana bat *(Myotis sodalis)*		Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Karner blue butterfly *(Lycaeides melissa samuelis)*	E	EXTIRPATED; Potential habitat in pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis)*, the only known food plant of the larvae
	Prairie bush clover *(Lespedeza leptostachya)*	T	Dry to mesic prairies with gravelly soil
Madison	Gray bat *(Myotis grisescens)*	E	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Least Tern *(Sterna antillarum)*	E	Bare alluvial and dredged spoil islands; Mississippi River
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
Macoupin	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Marshall	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
Mason	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
Massac	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Least Tern *(Sterna antillarum)*	E	Bare alluvial and dredged spoil islands
	Fat pocketbook pearlymussel *(Potamilis capax)*	E	Ohio River
	Pink Mucket pearlymussel *(Lampsilis orbiculata) (=Plethobasis abrupta)*	E	Ohio River
	Orange-footed pearlymussel *(Plethobasis cooperianus) (=P. striatus)*	E	Ohio River below confluence with Cumberland River
McDonough	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
McHenry	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Prairie bush clover *(Lespedeza leptostachya)*	T	Dry to mesic prairies with gravelly soil
	Eastern prairie fringed orchid *(Platanthaera leucophaea)*	T	Mesic to wet prairies
Menard	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering

County	Species	Status	Habitat
Mercer	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering; county with night roosts
	Higgins' eye pearlymussel *(Lampsilis higginsi)*	E	Mississippi River; Rock River to Steel Dam
Monroe	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Pallid Sturgeon *(Scaphirynchus albus)*	E	Mississippi River
	Illinois cave amphipod *(Gammarus acherondytes)*	E	Cave streams in Illinois sinkhole plain
Morgan	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering; county with night roosts
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
Moultrie	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
Ogle	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Karner blue butterfly *(Lycaeides melissa samuelis)*	E	EXTIRPATED; Potential habitat in pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis)*, the only known food plant of the larvae
	Prairie bush clover *(Lespedeza leptostachya)*	T	Dry to mesic prairies with gravelly soil
Peoria	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
Perry	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Pike	Gray bat *(Myotis grisescens)*	E	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
	Higgins' eye pearlymussel *(Lampsilis higginsi)*	E	Mississippi River; Rock River to Steel Dam
	Fat pocketbook pearlymussel *(Potamilis capax)*	E	Mississippi River
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
Pope	Gray bat *(Myotis grisescens)*	E	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Least Tern *(Sterna antillarum)*	E	Bare alluvial and dredged spoil islands; Mississippi and Ohio Rivers

County	Species	Status	Habitat
	Fat pocketbook pearlymussel *(Potamilis capax)*	E	Ohio Rivers
	Pink Mucket pearlymussel *(Lampsilis orbiculata) (=Plethobasis abrupta)*	E	Ohio River
	Orange-footed pearlymussel *(Plethobasis cooperianus) (=P. striatus)*	E	Ohio River below confluence with Cumberland River
Pulaski	Gray bat *(Myotis grisescens)*	E	Caves and mines; rivers & reservoirs adjacent to forests
	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Least Tern *(Sterna antillarum)*	E	Bare alluvial and dredged spoil islands; Ohio River
	Pink Mucket pearlymussel *(Lampsilis orbiculata) (=Plethobasis abrupta)*	E	Ohio River
	Orange-footed pearlymussel *(Plethobasis cooperianus) (=P. striatus)*	E	Ohio River below confluence with Cumberland River
Putnam	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering; county with night roosts
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
Randolph	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
	Pallid Sturgeon *(Scaphirynchus albus)*	E	Mississippi River
	Small whorled pogonia *(Isotria medeoloides)*	T	Dry woodlands
Rock Island	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering; county with night roosts
	Higgins' eye pearlymussel *(Lampsilis higginsi)*	E	Mississippi River; Rock River to Steel Dam Essential Habitat: Sylvan Slough at Rock Island
St. Clair	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
	Pallid Sturgeon *(Scaphirynchus albus)*	E	Mississippi River
	Illinois cave amphipod *(Gammarus acherondytes)*	E	Cave streams in Illinois sinkhole plain
Saline	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Mead's milkweed *(Asclepias meadii)*	T	Virgin prairies
Sangamon	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
Schuyler	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering; county with night roosts

County	Species	Status	Habitat
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
Scott	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
Shelby	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
Tazewell	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Lakeside daisy *(Hymenopsis herbacea)*	T	Dry, rocky prairies
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils
Union	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
Vermillion	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Clubshell *(Pleurobema clava)*	E	EXTIRPATED; Potential habitat in N. Fork Vermillion River
Wabash	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Least Tern *(Sterna antillarum)*	E	Bare alluvial and dredged spoil islands
	Fat pocketbook pearlymussel *(Potamilis capax)*	E	Wabash and Little Wabash Rivers
White	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Least Tern *(Sterna antillarum)*	E	Bare alluvial and dredged spoil islands; Wabash River
	Fanshell mussel *(Cyprogenia stegaria) (=C. irrorata)*	E	Wabash River
	White warty-back pearlymussel *(Plethobasis cicatricosus)*	E	EXTIRPATED; potential habitat in rivers
Whiteside	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering; county with night roosts
	Higgins' eye pearlymussel *(Lampsilis higginsi)*	E	Mississippi River; Rock River to Steel Dam
	Fat pocketbook pearlymussel *(Potamilis capax)*	E	Wabash and Little Wabash Rivers
Will	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)

County	Species	Status	Habitat
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Hines emerald dragonfly *(Somatochlora hineana)*	E	Spring fed wetlands, wet meadows and marshes
	Mead's milkweed *(Asclepias meadii)*	T	Virgin prairies
	Lakeside daisy *(Hymenopsis herbacea)*	T	Dry, rocky prairies
	Leafy prairie clover *(Dalea foliosa)*	E	Prairie remnants on thin soil over limestone; Des Plains River floodplain
Williamson	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
Winnebago	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and wintering
	Karner blue butterfly *(Lycaeides melissa samuelis)*	E	EXTIRPATED; Potential habitat in pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis)*, the only known food plant of the larvae
	Prairie bush clover *(Lespedeza leptostachya)*	T	Dry to mesic prairies with gravelly soil
Woodford	Indiana bat *(Myotis sodalis)*	E	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)
	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Decurrent false aster *(Boltonia decurrens)*	T	Disturbed alluvial soils

TABLE 3: INDIANA
County Occurrences of Federally Listed Species and Their Habitats

County	Species	Status	Habitat
Allen	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Bartholomew	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Blackford	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Boone	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Brown	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Carroll	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Clubshell (*Pleurobema clava*)	E	Rivers
	Fanshell pearly mussel (*Cyprogenia stegaria*)	E	Rivers
	Rough pigtoe (*Pleurobema plenum*)	E	Rivers
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Cass	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Clark	Gray bat (*Myotis grisescens*)	E	Caves
	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Clay	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Clinton	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Crawford	Gray bat (*Myotis grisescens*)	E	Caves
	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering

County	Species	Status	Habitat
De Kalb	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Clubshell (*Pleurobema clava*)	E	Rivers
	Northern riffleshell (*Epioblasma torulosa rangiana*)	E	Rivers
	White cat's paw pearlymussel (*Epioblasma obliquata perobliqua*)	E	Rivers
Dearborn	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Running buffalo clover (*Trifolium stoloniferum*)	E	Disturbed bottomland meadows
Delaware	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Dubois	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Elkhart	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Floyd	Gray bat (*Myotis grisescens*)	E	Caves
	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Fountain	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Ring Pink (*Obovaria retusa*)	E	Rivers
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Fulton	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Clubshell (*Pleurobema clava*)	E	Rivers
	Rough pigtoe (*Pleurobema plenum*)	E	Rivers
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Gibson	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Least Tern; interior population (*Sterna antillarum athalassos*)	E	

County	Species	Status	Habitat
	Fat pocketbook (*Potamilus capax*)	E	Rivers
	Ring Pink (*Obovaria retusa*)	E	Rivers
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Greene	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Hamilton	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Hancock	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Harrison	Gray bat (*Myotis grisescens*)	E	Caves
	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Hendricks	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Henry	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Howard	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Huntington	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Jackson	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Jasper	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Jay	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Jefferson	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering

County	Species	Status	Habitat
Jennings	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Johnson	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Knox	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Fat pocketbook (*Potamilus capax*)	E	Rivers
	Ring Pink (*Obovaria retusa*)	E	Rivers
	Rough pigtoe (*Pleurobema plenum*)	E	Rivers
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Kosciusko	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Copperbelly water snake (*Nerodia erythrogaster neglecta*)	T	Wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods
	Clubshell (*Pleurobema clava*)	E	Rivers
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
La Porte	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*)	E	Fens
Lagrange	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*)	E	Fens
Lake	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Karner blue butterfly (*Lycaeides melissa samuelis*)	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
	Pitcher's thistle (*Cirsium pitcheri*)	T	Lakeshores; stabilized dunes and blowout areas
	Mead's milkweed (*Asclepias meadii*)	T	Prairies
Lawrence	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Ring Pink (*Obovaria retusa*)	E	Rivers

County	Species	Status	Habitat
Madison	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Marion	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Marshall	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Clubshell (*Pleurobema clava*)	E	Rivers
Martin	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Fanshell pearly mussel (*Cyprogenia stegaria*)	E	Rivers
	Rough pigtoe (*Pleurobema plenum*)	E	Rivers
Miami	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Monroe	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Montgomery	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Morgan	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Noble	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Ohio	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Running buffalo clover (*Trifolium stoloniferum*)	E	Disturbed bottomland meadows
Orange	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Owen	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Parke	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering

County	Species	Status	Habitat
Pike	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Porter	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Karner blue butterfly (*Lycaeides melissa samuelis*)	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
	Pitcher's thistle (*Cirsium pitcheri*)	T	Lakeshores; stabilized dunes and blowout areas
Posey	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Fat pocketbook (*Potamilus capax*)	E	Rivers
	Pink mucket (*Lampsilis abrupta*)	E	Rivers
	Ring Pink (*Obovaria retusa*)	E	Rivers
	Rough pigtoe (*Pleurobema plenum*)	E	Rivers
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Pulaski	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Clubshell (*Pleurobema clava*)	E	Rivers
	Northern rifffleshell (*Epioblasma torulosa rangiana*)	E	Rivers
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Putnam	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Randolph	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	Y	Wintering
Ripley	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Running buffalo clover (*Trifolium stoloniferum*)	E	Disturbed bottomland meadow
Rush	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Shelby	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests

County	Species	Status	Habitat
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
St. Joseph	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Copperbelly water snake (*Nerodia erythrogaster neglecta*)	T	Wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods
Starke	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
Steuben	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Copperbelly water snake (*Nerodia erythrogaster neglecta*)	T	Wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods
Sullivan	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Fanshell pearly mussel (*Cyprogenia stegaria*)	E	Rivers
	Ring Pink (*Obovaria retusa*)	E	Rivers
	Rough pigtoe (*Pleurobema plenum*)	E	Rivers
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Switzerland	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Running buffalo clover (*Trifolium stoloniferum*)	E	Disturbed bottomland meadow
Tippecanoe	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Clubshell (*Pleurobema clava*)	E	Rivers
	Fanshell pearlymussel (*Cyprogenia stegaria*)	E	Rivers
	Ring pink (*Obovaria retusa*)	E	Rivers
	Rough pigtoe (*Pleurobema plenum*)	E	Rivers
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Vermillion	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Ring Pink (*Obovaria retusa*)	E	Rivers

County	Species	Status	Habitat
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Vigo	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	E	Rivers
	Ring Pink (*Obovaria retusa*)	E	Rivers
	Rough pigtoe (*Pleurobema plenum*)	E	Rivers
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Wabash	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Fanshell pearlymussel (*Cyprogenia stegaria*)	E	Rivers
Warren	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Ring Pink (*Obovaria retusa*)	E	Rivers
	Rough pigtoe (*Pleurobema plenum*)	E	Rivers
	Tubercled-blossom pearlymussel (*Epioblasma torulosa torulosa*)	E; possibly extirpated	Rivers
Washington	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Rivers
Wayne	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Rivers
Wells	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Rivers
White	Indiana bat (*Myotis sodalis*)	E	Hibernaria = Caves and mines; Maternity/foraging habitat = small stream corridors w/well developed riparian woods; upland forests
	Bald eagle (*Haliaeetus leucocephalus*)	T	Wintering
	Clubshell (*Pleurobema clava*)	E	Rivers
	Fanshell pearlymussel (*Cyprogenia stegaria*)	E	Rivers

TABLE 4: MICHIGAN
County Occurrences of Federally Listed Species and Their Habitats

County	Species	Status	Habitat
Alcona	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
Alger	Gray wolf (*Canis lupus*)		Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Piping plover (*Charadrius melodus*)	E	Beaches along shorelines of the Great Lakes
	American burying beetle (*Nicrophorus americanus*)	E	
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Allegan	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Karner blue butterfly (*Lycaeides melissa samuelis*)	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Alpena	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Hine's emerald dragonfly *Somatochlora hineana*	E	Spring fed wetlands, wet meadows and marshes; calcareous streams & associated wetlands overlying dolomite bedrock
	Dwarf lake iris (*Iris lacustris*)	T	Partially shaded sandy-gravelly soils on lakeshores
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Antrim	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Arenac	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	American burying beetle (*Nicrophorus americanus*)	E	
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Baraga	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
Barry	Indiana bat (*Myotis sodalis*)	E	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
	Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*)	E	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs
Bay	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Prairie fringed orchid (*Plantathera leucophaea*)	T	Mesic to wet prairies and meadows
Benzie	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Michigan monkey-flower (*Mimulus glabratus* var. *michiganensis*)	E	Soils saturated with cold flowing spring water; found along seepages, streams and lakeshores
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas

County	Species	Status	Habitat
Berrien	Piping plover (*Charadrius melodus*)	E	Beaches along shorelines of the Great Lakes
	American burying beetle (*Nicrophorus americanus*)	E	
	Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*)	E	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
	Small whorled pogonia (*Isotria medeoloides*)	T	Dry woodland; upland sites in mixed forests (second or third growth stage)
Branch	Indiana bat (*Myotis sodalis*)	E	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
	Copperbelly water snake (*Nerodia erythrogaster neglecta*)	T	Wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods
	Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*)	E	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs
Calhoun	Indiana bat (*Myotis sodalis*)	E	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
Cass	Copperbelly water snake (*Nerodia erythrogaster neglecta*)	T	Wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods
	Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*)	E	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs
Charlevoix	Piping plover (*Charadrius melodus*)	E	Beaches along shorelines of the Great Lakes
	Dwarf lake iris (*Iris lacustris*)	T	Partially shaded sandy-gravelly soils on lakeshores
	Houghton's goldenrod (*Solidago houghtonii*)	T	Sandy flats along Great Lakes shores
	Michigan monkey-flower (*Mimulus glabratus* var. *michiganensis*)	E	Soils saturated with cold flowing spring water; found along seepages, streams and lakeshores
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Cheboygan	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Piping plover (*Charadrius melodus*)	E	Beaches along shorelines of the Great Lakes
	Dwarf lake iris (*Iris lacustris*)	T	Partially shaded sandy-gravelly soils on lakeshores
	Houghton's goldenrod (*Solidago houghtonii*)	T	Sandy flats along Great Lakes shores
	Michigan monkey-flower (*Mimulus glabratus* var. *michiganensis*)	E	Soils saturated with cold flowing spring water; found along seepages, streams and lakeshores
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Chippewa	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Piping plover (*Charadrius melodus*)	E	Beaches along shorelines of the Great Lakes
	American hart's tongue fern (*Pyllitis scolopendrium var. americana*)	T	Cool limestone sinkholes in mature hardwood forest
	Dwarf lake iris (*Iris lacustris*)	T	Partially shaded sandy-gravelly soils on lakeshores
	Houghton's goldenrod (*Solidago houghtonii*)	T	Sandy flats along Great Lakes shores

County	Species	Status	Habitat
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Clinton	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
Clare	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
Crawford	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
	Houghton's goldenrod (*Solidago houghtonii*)	T	Sandy flats along Great Lakes shores
Delta	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
	Dwarf lake iris (*Iris lacustris*)	T	Partially shaded sandy-gravelly soils on lakeshores
	Houghton's goldenrod (*Solidago houghtonii*)	T	Sandy flats along Great Lakes shores
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Dickinson	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
Eaton	Indiana bat (*Myotis sodalis*)	E	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
Emmett	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Piping plover (*Charadrius melodus*)	E	Beaches along shorelines of the Great Lakes
	Hungerford's crawling water beetle (*Brychius hungerfordi*)	E	Cool riffles of clean, slightly alkaline streams; known to occur in only 3 isolated locations
	Dwarf lake iris (*Iris lacustris*)	T	Partially shaded sandy-gravelly soils on lakeshores
	Houghton's goldenrod (*Solidago houghtonii*)	T	Sandy flats along Great Lakes shores
	Michigan monkey-flower (*Mimulus glabratus* var. *michiganensis*)	E	Soils saturated with cold flowing spring water; found along seepages, streams and lakeshores
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Genesee	Prairie fringed orchid (*Plantathera leucophaea*)	T	Mesic to wet prairies and meadows
Gladwin	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
Gogebic	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
Grand Traverse	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water

County	Species	Status	Habitat
Hillsdale	Indiana bat (*Myotis sodalis*)	E	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
	Copperbelly water snake (*Nerodia erythrogaster neglecta*)	T	Wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods
	Clubshell (*Pleurobema clava*)	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
Houghton	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
Huron	Piping plover (*Charadrius melodus*)	E	Beaches along shorelines of the Great Lakes
	Prairie fringed orchid (*Plantathera leucophaea*)	T	Mesic to wet prairies and meadows
Ingham	Indiana bat (*Myotis sodalis*)	E	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
Ionia	Karner blue butterfly (*Lycaeides melissa samuelis*)	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
Iosco	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Iron	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
Jackson	Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*)	E	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs
Kalamazoo	American burying beetle (*Nicrophorus americanus*)	E	
	Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*)	E	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs
Kalkaska	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
Keweenaw	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
Lake	Karner blue butterfly (*Lycaeides melissa samuelis*)	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
Leelanau	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Piping plover (*Charadrius melodus*)	E	Beaches along shorelines of the Great Lakes
	Michigan monkey-flower (*Mimulus glabratus* var. *michiganensis*)	E	Soils saturated with cold flowing spring water; found along seepages, streams and lakeshores
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Lenawee	Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*) E	E	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs

County	Species	Status	Habitat
Livingston	Indiana bat (*Myotis sodalis*)	E	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
	Prairie fringed orchid (*Plantathera leucophaea*)	T	Mesic to wet prairies and meadows
Luce	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Piping plover (*Charadrius melodus*)	E	Beaches along shorelines of the Great Lakes
Mackinac	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Piping plover (*Charadrius melodus*)	E	Beaches along shorelines of the Great Lakes
	Hine's emerald dragonfly (*Somatochlora hineana*)	E	Spring fed wetlands, wet meadows and marshes; calcareous streams & associated wetlands overlying dolomite bedrock
	American hart's tongue fern (*Pyllitis scolopendrium var. americana*)	T	Cool limestone sinkholes in mature hardwood forest
	Dwarf lake iris (*Iris lacustris*)	T	Partially shaded sandy-gravelly soils on lakeshores
	Houghton's goldenrod (*Solidago houghtonii*) E	T	Sandy flats along Great Lakes shores
	Lakeside daisy (*Hymenoxys herbacea*)	T	Dry gravelly or sandy thin-soiled fields and alvars with dolomitic or limestone bedrock at or near the surface
	Michigan monkey-flower (*Mimulus glabratus* var. *michiganensis*)	E	Soils saturated with cold flowing spring water; found along seepages, streams and lakeshores
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Manistee	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Marquette	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
Mason	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Mecosta	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
Menominee	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	American burying beetle (*Nicrophorus americanus*)	E	
	Dwarf lake iris (*Iris lacustris*)	T	Partially shaded sandy-gravelly soils on lakeshores
Missaukee	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
Monroe	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water

County	Species	Status	Habitat
	Karner blue butterfly (*Lycaeides melissa samuelis*)	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
	Northern riffleshell (*Dysnomia torulosa rangiana*)	E	Large streams and small rivers in firm sand of riffle areas; also occurs in Lake Erie
	Prairie fringed orchid (*Plantathera leucophaea*)	T	Mesic to wet prairies and meadows
Montcalm	Karner blue butterfly (*Lycaeides melissa samuelis*)	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
Montmorency	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
	Hungerford's crawling water beetle (*Brychius hungerfordi)*	E	Cool riffles of clean, slightly alkaline streams; known to occur in only 3 isolated locations
Muskegon	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Piping plover (*Charadrius melodus*)	E	Beaches along shorelines of the Great Lakes
	Karner blue butterfly (*Lycaeides melissa samuelis*)	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Newaygo	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Karner blue butterfly (*Lycaeides melissa samuelis*)	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
Oakland	American burying beetle (*Nicrophorus americanus*)	E	
Oceana	Karner blue butterfly (*Lycaeides melissa samuelis*)	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Ogenaw	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
Ontonagon	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
Oscoda	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
Otsego	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
Ottawa	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Presque Isle	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Hine's emerald dragonfly *Somatochlora hineana*	E	Spring fed wetlands, wet meadows and marshes; calcareous streams & associated wetlands overlying dolomite bedrock
	Dwarf lake iris (*Iris lacustris*)	T	Partially shaded sandy-gravelly soils on lakeshores

County	Species	Status	Habitat
	Houghton's goldenrod (*Solidago houghtonii*)	T	Sandy flats along Great Lakes shores
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Roscommon	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
Saginaw	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Prairie fringed orchid (*Plantathera leucophaea*)	T	Mesic to wet prairies and meadows
Sanilac	Karner blue butterfly (*Lycaeides melissa samuelis*)	E	Pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis*), the only known food plant of larvae.
	Northern riffleshell (*Dysnomia torulosa rangiana*)	E	Large streams and small rivers in firm sand of riffle areas; also occurs in Lake Erie
Schoolcraft	Gray wolf (*Canis lupus*)	E	Northern forested areas
	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Kirtland's warbler (*Dendroica kirtlandii*)	E	Nests in young stands of jack pine
	Dwarf lake iris (*Iris lacustris*)	T	Partially shaded sandy-gravelly soils on lakeshores
	Houghton's goldenrod (*Solidago houghtonii*)	T	Sandy flats along Great Lakes shores
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
St. Clair	Bald eagle (*Haliaeetus leucocephalus*)	T	Mature forest near water
	Prairie fringed orchid (*Plantathera leucophaea*)	T	Mesic to wet prairies and meadows
St. Joseph	Indiana bat (*Myotis sodalis*)	E	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
	Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*)	E	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs
	Prairie fringed orchid (*Plantathera leucophaea*)	T	Mesic to wet prairies and meadows
Tuscola	Prairie fringed orchid (*Plantathera leucophaea*)	T	Mesic to wet prairies and meadows
Van Buren	Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*)	E	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs
	Pitcher's thistle (*Cirsium pitcheri*)	T	Stabilized dunes and blowout areas
Washtenaw	Indiana bat (*Myotis sodalis*)	E	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
	American burying beetle (*Nicrophorus americanus*)	E	
	Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*)	E	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs
	Prairie fringed orchid (*Plantathera leucophaea*)	T	Mesic to wet prairies and meadows
Wayne	Karner blue butterfly (*Lycaeides melissa samuelis*)	E	Pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis*), the only known food plant of larvae.
	Northern riffleshell (*Dysnomia torulosa rangiana*)	E	Large streams and small rivers in firm sand of riffle areas; also occurs in Lake Erie
	Prairie fringed orchid (*Plantathera leucophaea*)	T	Mesic to wet prairies and meadows

TABLE 5: MINNESOTA
County Occurrences of Federally Listed Species and Their Habitats

County	Species	Status	Habitat
Aitkin	Gray wolf (Canis lupus)	T	Northern forested areas
	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Anoka	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Karner Blue *(Lycaeides melissa samuelis)*	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
Becker	Gray wolf (Canis lupus)	T	Northern forested areas
	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Beltrami	Canada lynx *(Lynx canadensis)*	PT	Northern forest
	Gray wolf (Canis lupus)	T	Northern forested areas
	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Benton	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Blue Earth	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Brown	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Prairie Bush Clover *(Lespedeza leptostachya)*	T	Gravelly soil, dry to mesic prairie
Carlton	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Canada lynx *(Lynx canadensis)*	PT	Northern forest
	Gray wolf (Canis lupus)	T	Northern forested areas
Carver	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Cass	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Gray wolf (Canis lupus)	T	Northern forested areas
Chippewa	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Chisago	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Higgins' Eye Pearlymussel *(Lampsilis higginsi)*	E	St. Croix River
	Winged Mapleleaf Mussel *(Quadrula fragosa)*	E	St. Croix River
Clay	Western Prairie Fringed Orchid *(Platanthera praeclara)*	T	Wet prairies and sedge meadow
Clearwater	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Gray wolf (Canis lupus)	T	Northern forested areas
Cook	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Canada lynx *(Lynx canadensis)*	PT	Northern forest
	Gray wolf (Canis lupus)	T	Northern forested areas

County	Species	Status	Habitat
Crow Wing	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Gray wolf (Canis lupus)	T	Northern forested areas
Dakota	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Prairie Bush Clover *(Lespedeza leptostachya)*	T	Gravelly soil in dry to mesic prairies
Dodge	Prairie Bush Clover *(Lespedeza leptostachya)*	T	Gravelly soil in dry to mesic prairies
	Western Prairie Fringed Orchid *(Platanthera praeclara)*	T	Wet prairies and sedge meadows
Douglas	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Fillmore	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Leedy's Roseroot *(Sedum integrifolium ssp. leedyi)*	T	Cool, wet groundwater-fed limestone cliffs
Goodhue	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Dwarf Trout Lily *(Erythronium propullans)*	E	North facing slopes and floodplains in deciduous forests
	Higgins' Eye Pearlymussel *(Lampsilis higginsi)*	E	Mississippi River
	Prairie Bush Clover *(Lespedeza leptostachya)*	T	Gravelly soil in dry to mesic prairies
Grant	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Hennepin	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Houston	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Higgins' Eye Pearlymussel *(Lampsilis higginsi)*	E	Mississippi River
	Prairie Bush Clover *(Lespedeza leptostachya)*	T	Gravelly soil in dry to mesic prairies
Hubbard	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Gray wolf (Canis lupus)	T	Northern forested areas
Isanti	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Itasca	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Canada lynx *(Lynx canadensis)*	PT	Northern forest
	Gray wolf (Canis lupus)	T	Northern forested areas
Jackson	Prairie Bush Clover *(Lespedeza leptostachya)*	T	Gravelly soil in dry to mesic prairies
	Topeka Shiner *(Notropis topeka)*	E	Prairie rivers and streams
Kanabec	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Kandiyohi	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Kittson	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Gray wolf (Canis lupus)	T	Northern forested areas

County	Species	Status	Habitat
	Western Prairie Fringed Orchid *(Platanthera praeclara)*	T	Wet prairies and sedge meadows
Koochiching	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Canada lynx *(Lynx canadensis)*	PT	Northern forest
	Gray wolf (Canis lupus)	T	Northern forested areas
Lake	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Canada lynx *(Lynx canadensis)*	PT	Northern forest
	Gray wolf (Canis lupus)	T	Northern forested areas
Lake of the Woods	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Canada lynx *(Lynx canadensis)*	PT	Northern forest
	Gray wolf (Canis lupus)	T	Northern forested areas
	Piping Plover *(Charadrius melodus)*	T	Sandy beaches, islands
Le Sueur	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Lincoln	Topeka Shiner *(Notropis topeka)*	E	Prairie rivers and streams
Mahnomen	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Gray wolf (Canis lupus)	T	Northern forested areas
Marshall	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Gray wolf (Canis lupus)	T	Northern forested areas
Mille Lacs	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Morrison	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Mower	Western Prairie Fringed Orchid *(Platanthera praeclara)*	T	Wet prairies and sedge meadows
Murray	Topeka Shiner *(Notropis topeka)*	E	Prairie rivers and streams
Nicollet	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Nobles	Topeka Shiner *(Notropis topeka)*	E	Prairie rivers and streams
Norman	Western Prairie Fringed Orchid *(Platanthera praeclara)*	T	Wet prairies and sedge meadows
Olmsted	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Leedy's Roseroot *(Sedum integrifolium ssp. leedyi)*	T	Cool, wet groundwater-fed limestone cliffs
	Prairie Bush Clover *(Lespedeza leptostachya)*	T	Gravelly soils in dry to mesic prairies
Otter Tail	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Pennington	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Gray wolf (Canis lupus)	T	Northern forested areas

County	Species	Status	Habitat
	Western Prairie Fringed Orchid *(Platanthera praeclara)*	T	Wet prairies and sedge meadows
Pine	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Gray wolf (Canis lupus)	T	Northern forested areas
Pipestone	Topeka Shiner *(Notropis topeka)*	E	Prairie rivers and streams
	Western Prairie Fringed Orchid *(Platanthera praeclara)*	T	Wet prairies and sedge meadows
Polk	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Gray wolf (Canis lupus)	T	Northern forested areas
	Western Prairie Fringed Orchid *(Platanthera praeclara)*	T	Wet prairies and sedge meadows
Pope	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Ramsey	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Red Lake	Gray wolf (Canis lupus)	T	Northern forested areas
Redwood	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Prairie Bush Clover *(Lespedeza leptostachya)*	T	Gravelly soil in dry to mesic prairies
Renville	Prairie Bush Clover *(Lespedeza leptostachya)*	T	Gravelly soil in dry to mesic prairies
Rice	Dwarf Trout Lily *(Erythronium propullans)*	E	North facing slopes and floodplains in deciduous forest
	Prairie Bush Clover *(Lespedeza leptostachya)*	T	Gravelly soil in dry to mesic prairies
Rock	Topeka Shiner *(Notropis topeka)*	E	Prairie rivers and streams
	Western Prairie Fringed Orchid *(Platanthera praeclara)*	T	Wet prairies and sedge meadows
Roseau	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Gray wolf (Canis lupus)	T	Northern forested areas
Scott	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Sherburne	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Sibley	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
St. Louis	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Canada lynx *(Lynx canadensis)*	PT	Northern forest
	Gray wolf (Canis lupus)	T	Northern forested areas
Stearns	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Steele	Dwarf Trout Lily *(Erythronium propullans)*	E	North facing slopes and floodplains in deciduous forests
Swift	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Todd	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water

County	Species	Status	Habitat
Wabasha	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Wadena	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Gray wolf (Canis lupus)	T	Northern forested areas
Washington	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Higgins' Eye Pearlymussel *(Lampsilis higginsi)*	E	Mississippi River
Winona	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Higgins' Eye Pearlymussel *(Lampsilis higginsi)*	E	Mississippi River
	Karner Blue *(Lycaeides melissa samuelis)*	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
Wright	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Yellow Medicine	Bald Eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water

TABLE 6: OHIO
County Occurrences of Federally Listed Species and Their Habitats

County	Species	Status	Habitat
Adams	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
Allen	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Ashland	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Ashtabula	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
	Piping plover *(Charadrius melodus)*	E	Beaches along shorelines of the Great Lakes
Athens	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	American burying beetle *(Nicrophorus americanus)*	E	
Auglaize	Indiana bat (Myotis sodalis)	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Belmont	Indiana bat (Myotis sodalis)	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Brown	Indiana bat (Myotis sodalis)	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Butler	Indiana bat (Myotis sodalis)	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Carroll	Indiana bat (Myotis sodalis)	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Champaign	Indiana bat (Myotis sodalis)	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Clark	Indiana bat (Myotis sodalis)	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Mesic to wet prairies and meadows
Clermont	Indiana bat (Myotis sodalis)	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Running buffalo clover *(Trifolium stoloniferum)*	E	Disturbed bottomland meadows; disturbed sites that have shade during part of each day
Clinton	Indiana bat (Myotis sodalis)	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Columbiana	Indiana bat (Myotis sodalis)	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests

County	Species	Status	Habitat
Coshocton	Indiana bat (Myotis sodalis)	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
	Fanshell mussel *(Cyprogenia stegaria)* (=C. irrorata)	E	Found in areas of packed sand and gravel at locations in a good current
	Purple cat's paw pearlymussel *(Epioblasma obliquata obliquata)*	E	Gravel riffles of medium to large rivers
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Crawford	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Cuyahoga	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Piping plover *(Charadrius melodus)*	E	Beaches along shorelines of the Great Lakes
Darke	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Defiance	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Copperbelly water snake *(Nerodia erythrogaster neglecta)*	T	Wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
Delaware	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
	Bald eagle *(Haliaeetus leucocephalus)*	T	Sandy beaches and shorelines
Erie	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Lake Erie water snake *(Nerodia sipedon insularum)*	T	Shorelines of islands in western Lake Erie
	Lakeside daisy *(Hymenoxys herbacea)* (Formerly *H. acaulis) var. glabra*)	T	Dry rocky prairies; limestone rock surfaces including outcrops and quarries
	Piping plover *(Charadrius melodus)*	E	Beaches along shorelines of the Great Lakes
Fairfield	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
Fayette	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Franklin	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Scioto madtom *(Noturus trautmani)*	E	Stream riffles of moderate flow over sandy gravel bottom

County	Species	Status	Habitat
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
	Northern rifflesheil mussel *(Epioblasma torulosa rangiana)*	E	Large streams and small rivers in firm sand of riffle areas; also occurs in Lake Erie
Fulton	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Gallia	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Pink mucket pearly mussel *(Lampsilis abrupta) (= L. orbiculata)*	E	The lower Ohio River and its larger tributaries
Geauga	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Greene	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
Guernsey	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Hamilton	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Running buffalo clover *(Trifolium stoloniferum)*	E	Disturbed bottomland meadows; disturbed sites that have shade during part of each day
Hancock	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
Hardin	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Copperbelly water snake *(Nerodia erythrogaster neglecta)*	T	Wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods
Harrison	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Henry	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Highland	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Hocking	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Northern monkshood *(Aconitum noveboracense)*	T	Cool, moist, shaded cliff faces or talus slopes in wooded ravines, near water seeps
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	American burying beetle *(Nicrophorus americanus)*	E	

County	Species	Status	Habitat
	Small whorled pogonia *(Isotria medeoloides)*	T	Dry woodland; upland sites in mixed forests (second or third growth stage)
Holmes	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Mesic to wet prairies and meadows
Huron	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Jackson	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Jefferson	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Knox	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Lake	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Piping plover *(Charadrius melodus)*	E	Beaches along shorelines of the Great Lakes
Lawrence	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Pink mucket pearly mussel *(Lampsilis abrupta)* *(= L. orbiculata)*	E	The lower Ohio River and its larger tributaries
	Running buffalo clover *(Trifolium stoloniferum)*	E	Disturbed bottomland meadows; disturbed sites that have shade during part of each day
Licking	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Logan	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Lorain	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Piping plover *(Charadrius melodus)*	E	Beaches along shorelines of the Great Lakes
Lucas	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Piping plover *(Charadrius melodus)*	E	Beaches along shorelines of the Great Lakes

County	Species	Status	Habitat
	Karner blue butterfly *(Lycaeides melissa samuelis)*	E	Pine barrens and oak savannas on sandy soils and containing wild lupines *(Lupinus perennis)*, the only known food plant of larvae.
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Mesic to wet prairies and meadows
Madison	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Scioto madtom *(Noturus trautmani)*	E	Stream riffles of moderate flow over sandy gravel bottom
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
	Northern riffleshell mussel *(Epioblasma torulosa rangiana)*	E	Large streams and small rivers in firm sand of riffle areas; also occurs in Lake Erie
Mahoning	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Marion	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Medina	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Meigs	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Pink mucket pearlymussel *(Lampsilis abrupta)* *(= L. orbiculata)*	E	The lower Ohio River and its larger tributaries
Mercer	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Miami	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Monroe	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Montgomery	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Morgan	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Fanshell mussel *(Cyprogenia stegaria)* (=C. irrorata)	E	Found in areas of packed sand and gravel at locations in a good current
	Pink mucket pearly mussel *(Lampsilis abrupta)* *(= L. orbiculata)*	E	The lower Ohio River and its larger tributaries
Morrow	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Muskingum	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water

County	Species	Status	Habitat
Noble	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Ottawa	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Piping plover *(Charadrius melodus)*	E	Beaches along shorelines of the Great Lakes
	Lake Erie water snake *(Nerodia sipedon insularum)*	T	Shorelines of islands in western Lake Erie
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Mesic to wet prairies and meadows
	Lakeside daisy *(Hymenoxys herbacea)* (Formerly *H. acaulis) var. glabra*)	T	Dry rocky prairies; limestone rock surfaces including outcrops and quarries
Paulding	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Perry	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Pickaway	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Scioto madtom *(Noturus trautmani)*	E	Stream riffles of moderate flow over sandy gravel bottom
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
	Northern riffleshell mussel *(Epioblasma torulosa rangiana*)	E	Large streams and small rivers in firm sand of riffle areas; also occurs in Lake Erie
Pike	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Portage	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Mitchell's satyr butterfly *(Neonympha mitchellii mitchellii)*	E	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs
	Northern monkshood *(Aconitum noveboracense)*	T	Cool, moist, shaded cliff faces or talus slopes in wooded ravines, near water seeps
Preble	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Putnam	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Richland	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Ross	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Sandusky	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests

County	Species	Status	Habitat
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Piping plover *(Charadrius melodus)*	E	Beaches along shorelines of the Great Lakes
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Mesic to wet prairies and meadows
Scioto	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Virginia spiraea *(Spirea virginiana)*	T	Streambanks and floodplains
	Small whorled pogonia *(Isotria medeoloides)*	T	Dry woodland; upland sites in mixed forests (second or third growth stage)
Seneca	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Shelby	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Stark	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Summit	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Northern monkshood *(Aconitum noveboracense)*	T	Cool, moist, shaded cliff faces or talus slopes in wooded ravines, near water seeps
Trumbull	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
Tuscarawas	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
Union	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Scioto madtom *(Noturus trautmani)*	E	Stream riffles of moderate flow over sandy gravel bottom
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
Van Wert	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
Vinton	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	American burying beetle *(Nicrophorus americanus)*	E	
Warren	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Running buffalo clover *(Trifolium stoloniferum)*	E	Disturbed bottomland meadows; disturbed sites that have shade during part of each day

County	Species	Status	Habitat
Washington	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Fanshell mussel *(Cyprogenia stegaria)* (=C. irrorata)	E	Found in areas of packed sand and gravel at locations in a good current
	Pink mucket pearly mussel *(Lampsilis abrupta)* *(= L. orbiculata)*	E	The lower Ohio River and its larger tributaries
Wayne	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Mesic to wet prairies and meadows
Williams	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Copperbelly water snake *(Nerodia erythrogaster neglecta)*	T	Wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods
	Clubshell mussel *(Pleurobema clava)*	E	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
	Northern riffleshell mussel *(Epioblasma torulosa rangiana)*	E	Large streams and small rivers in firm sand of riffle areas; also occurs in Lake Erie
	White cat's paw pearlymussel *(Epioblasma obliquata perobliqua)*	E	Firm sand or gravel riffles in small streams and medium to large rivers
Wood	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water
Wyandot	Indiana bat *(Myotis sodalis)*	E	Hibernaria = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Bald eagle *(Haliaeetus leucocephalus)*	T	Mature forest near water

TABLE 7: WISCONSIN
County Occurrences of Federally Listed Species and Their Habitats

County	Species	Status	Habitat
Adams	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Ashland	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
	Gray wolf *(Canis lupus)*	E	Northern forested areas
	Piping plover *(Charadrius melodus)*	E	Sandy beaches; bare alluvial and dredge spoil islands
Barron	Bald eagle *(Haliaeetus leucocephalus)*	E	Breeding
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Bayfield	Bald eagle *(Haliaeetus leucocephalus)*	E	Breeding
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
	Gray wolf *(Canis lupus)*	E	Northern forested areas
Brown	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Dwarf lake iris *(Iris lacustris)*	T	Partially shaded sandy-gravelly soils on lakeshores
Buffalo	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	Mississippi River
Burnett	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
	Gray wolf *(Canis lupus)*	E	Northern forested areas
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Calumet	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
Chippewa	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Clark	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Gray wolf *(Canis lupus)*	E	Northern forested areas
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Columbia	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
Crawford	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	Mississippi River

County	Species	Status	Habitat
Dane	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	Lower Wisconsin River
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Wet grasslands
	Prairie bush-clover *(Lespedeza leptostachya)*	T	Dry to mesic prairies with gravelly soil
Dodge	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
Door	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Hine's emerald dragonfly *(Somatochlora hineana)*	E	Calcareous streams & associated wetlands overlying dolomite bedrock
	Pitcher's thistle *(Cirsium pitcheri)*	T	Stabilized dunes, and blowout areas
	Dwarf lake iris *(Iris lacustris)*	T	Partially shaded sandy-gravelly soils on lakeshores
Douglas	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
	Gray wolf *(Canis lupus)*	E	Northern forested areas
	Kirtland's warbler *(Dendroica kirtlandii)*	E	Potential breeding in jack pine
	Piping plover *(Charadrius melodus)*	E	Sandy beaches; bare alluvial and dredge spoil islands
Dunn	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Eau Claire	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Gray wolf *(Canis lupus)*	E	Northern forested areas
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Florence	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
	Gray wolf *(Canis lupus)*	E	Northern forested areas
Forest	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
	Gray wolf *(Canis lupus)*	E	Northern forested areas
Grant	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	Lower Wisconsin and Mississippi Rivers
	Northern monkshood *(Aconitum noveboracense)*	T	North facing slopes
	Prairie bush-clover *(Lespedeza leptostachya)*	T	Dry to mesic prairies, with gravelly soil
Green	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Wet grasslands

County	Species	Status	Habitat
Green Lake	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Iowa	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	Lower Wisconsin Rivers
Iron	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
	Gray wolf *(Canis lupus)*	E	Northern forested areas
Jackson	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Gray wolf *(Canis lupus)*	E	Northern forested areas
	Kirtland's warbler *(Dendroica kirtlandii)*	E	Potential breeding in jack pine
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Jefferson	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Wet grasslands
Juneau	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Gray wolf *(Canis lupus)*	E	Northern forested areas
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Kenosha	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Wet grasslands
La Crosse	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	Mississippi Rivers
Langlade	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
Lincoln	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Gray wolf *(Canis lupus)*	E	Northern forested areas
Manitowoc	Pitcher's thistle *(Cirsium pitcheri)*	T	Stabilized dunes, and blowout areas
Marathon	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
Marinette	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Kirtland's warbler *(Dendroica kirtlandii)*	E	Potential breeding in jack pine
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
Marquette	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Menominee	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Monroe	Gray wolf *(Canis lupus)*	E	Northern forested areas

County	Species	Status	Habitat
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
	Northern monkshood *(Aconitum noveboracense)*	T	North facing slopes
Oconto	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Oneida	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
	Gray wolf *(Canis lupus)*	E	Northern forested areas
Outagamie	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Ozaukee	Hine's emerald dragonfly *(Somatochlora hineana)*	E	Calcareous streams & associated wetlands overlying dolomite bedrock
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Wet grasslands
Pepin	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
Pierce	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	Mississippi and St. Croix Rivers
	Prairie bush-clover *(Lespedeza leptostachya)*	T	Dry to mesic prairies with gravelly soil
Polk	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Gray wolf *(Canis lupus)*	E	Northern forested areas
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	St. Croix Rivers
	Winged mapleleaf mussel *(Quadrula fragosa)*	E	St. Croix Rivers
Portage	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
	Fassett's locoweed *(Oxytropis campestris var. chartacea)*	T	Open sandy lakeshores
Price	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
	Gray wolf *(Canis lupus)*	E	Northern forested areas
Racine	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Wet grasslands
Richland	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	Lower Wisconsin River
	Northern monkshood *(Aconitum noveboracense)*	T	North facing slopes

County	Species	Status	Habitat
Rock	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Wet grasslands
	Prairie bush-clover *(Lespedeza leptostachya)*	T	Dry to mesic prairies with gravelly soil
Rusk	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Gray wolf *(Canis lupus)*	E	Northern forested areas
St. Croix	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	St. Croix River
Sauk	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	St. Croix River
	Northern monkshood *(Aconitum noveboracense)*	T	North facing slopes
	Prairie bush-clover *(Lespedeza leptostachya)*	T	Dry to mesic prairies with gravelly soil
Sawyer	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
	Gray wolf *(Canis lupus)*	E	Northern forested areas
Shawano	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Sheboygan	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Wet grasslands
	Pitcher's thistle *(Cirsium pitcheri)*	T	Stabilized dunes, and blowout areas
Taylor	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Gray wolf *(Canis lupus)*	E	Northern forested areas
Trempealeau	Bald eagle *(Haliaeetus leucocephalus)*	T	Wintering
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	Mississippi River
Vernon	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Higgins' eye pearly mussel *(Lampsilis Higginsi)*	E	Mississippi River
	Northern monkshood *(Aconitum noveboracense)*	T	North facing slopes
Vilas	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
	Gray wolf *(Canis lupus)*	E	Northern forested areas
	Kirtland's warbler *(Dendroica kirtlandii)*	E	Potential breeding in jack pine
Walworth	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Wet grasslands

County	Species	Status	Habitat
Washburn	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Canada lynx *(Lynx canadensis)*	PT	Northern forested areas
	Gray wolf *(Canis lupus)*	E	Northern forested areas
	Kirtland's warbler *(Dendroica kirtlandii)*	E	Potential breeding in jack pine
Waukesha	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Wet grasslands
Waupaca	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
Waushara	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine
	Fassett's locoweed *(Oxytropis campestris var. chartacea)*	T	Open sandy lakeshores
Winnebago	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding and Wintering
	Eastern prairie fringed orchid *(Platanthera leucophaea)*	T	Wet grasslands
Wood	Bald eagle *(Haliaeetus leucocephalus)*	T	Breeding
	Gray wolf *(Canis lupus)*	E	Northern forested areas
	Karner blue butterfly *(Dendroica kirtlandii)*	E	Prairie, oak savanna, and jack pine areas with wild lupine

ATTACHMENT 4:

ENDANGERED SPECIES ACT OF 1973

The ESA requires Federal agencies whose actions may affect a listed species or their critical habitat to consult with the USFWS regarding the proposed action. OPA and CERCLA require the U.S. EPA to develop contingency plans for inland areas for accidental discharges of oil and other hazardous materials. Implementing these mandates incurs responsibility under the ESA because (1) development and approval of potential response activities is a Federal action subject to the consultation requirements of section 7(a)(2) of the ESA; and (2) if it is determined that actual spill control methods to be used during OPA/CERCLA-mandated activities may adversely affect Federally listed species, then appropriate actions to minimize such effects must be incorporated into Area Plans.

Section 2 - Purpose

Fish, wildlife, and plant species have aesthetic, ecological, educational, historical, recreational, and scientific value to the U.S.; some species have become extinct or are threatened with extinction. Section 2 of the ESA describes the purposes of the Act as:

1) providing a means to conserve the ecosystems upon which endangered and threatened species depend;

2) providing a program for the conservation of such species;

3) taking steps to achieve purposes of existing treaties and conventions affecting wildlife, fish, and plants.

Section 3 - Definitions

Section 3 of the ESA provides definitions for the purposes of the Act. Following are definitions that may be pertinent to this Fish and Wildlife Annex:

Action describes all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the U.S.

Biological Opinion is a document stating the opinion of the USFWS, as to whether or not a Federal action is likely to jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of its critical habitat.

Critical Habitat is habitat that has been determined to be critical to the conservation of the species. It has legal standing and is protected under the ESA just as the species is. This must be published in the Federal Register and is subject to public review.

Endangered Species means any species which is in danger of extinction throughout all or a significant portion of its range.

Essential Habitat is habitat needed by a species to survive or recover, however, it is not officially designated as "critical habitat". Essential habitat is not a synonym for critical habitat.

Fish or wildlife means any member of the animal kingdom, including without limitation any mammal, fish, bird, amphibian, reptile, mollusk, crustacean, arthropod or other invertebrate, and includes any body part, product, egg, or offspring thereof, or the dead body or parts thereof.

Plant is described as any member of the plant kingdom, including seeds, roots, and other parts.

Proposed species is any species of fish, wildlife, or plant that is proposed in the Federal Register to be listed under Section 4 of the ESA.

Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct".

Harass is further defined as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.

Harm is further defined as an act which actually kills or injures wildlife. Such acts may include significant habitat modification or degradation when it actually kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding or sheltering.

Threatened Species is any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Section 7 - Interagency Cooperation

Section 7(a)(1) requires Federal agencies to use their authorities to further the conservation of listed species. Section 7(a)(2) prohibits Federal agencies from undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or modify critical habitat.

See Attachment 6 for the USFWS Biological Opinion on the U.S. EPA Region 5 Area/Regional contingency plan for emergency response activities. (BIOLOGICAL OPINION MISSING)

Section 9 - Prohibited Acts

This section of the ESA prohibits take (see definitions, Part 1 Section 2.2.2) of listed threatened or endangered species or alteration of critical habitat. An incidental take statement provided for in Section 7 constitutes an exemption from the Section 9 prohibition against take. It applies to the Federal action agency as well as to the permit applicant.

Section 10 - Exceptions

Section 10 of the ESA provides for exceptions to the Section 9 prohibitions. The USFWS can issue permits to take listed species for scientific purposes, or to enhance the propagation or survival of listed species. The USFWS can also issue permits to take listed species or modify habitat that is incidental to otherwise legal activities, such as that provided through the Section 7 process.

ATTACHMENT 5:

WILDLIFE REHABILITATION FACILITIES, EQUIPMENT, AND REQUIREMENTS

[*This information was written for the USFWS Twin Cities Field Office in July 1995, by Tri-State Bird Rescue and Research, Inc.*]

Facility Requirements

Facility needs usually focus on the majority of species affected by a petroleum discharge, which are generally birds. Facility requirements can vary significantly, depending on: overall size of response, species and age of wildlife contaminated, the type of contaminant, the season/weather, the location of the spill, and the rehabilitation effort. The facility needed will vary according to the needs of the specific spill situation, and should be determined by a QWR experienced in oil spill response work.

Because facility requirements can vary significantly, a permanent facility is not always advisable, and may actually be an impediment in providing the appropriate facility design for the situation. A suitable facility must have a large open space on the ground floor that can easily be configured and reconfigured to accommodate the changing needs of this unique form of wildlife rehabilitation. All rehabilitation efforts should be accommodated under one roof. Experience has taught that multiple buildings or a tent situation are inefficient and unsuitable. A warehouse, armory, motor pool or convention hall that is accessible to a trained labor force, is within reasonable distance from hotel accommodations, and has adequate parking and exterior grounds could meet this requirement. If a facility is situated in a secure site, i.e., military installation or refinery, accommodations for a fluctuating volunteer work force need to be addressed. The facility may be located up to 3-4 hours from the spill site, provided that on-scene stabilization is administered prior to transport. An oil spill stabilization site can be located at the time of a spill.

It is recommended that a list be assembled of potential real estate within the identified high risk areas, and that the sites be physically reviewed by a representative of a wildlife response group with major spill response experience. Once acceptable facilities have been identified, all costs, availability, and contract information should be reviewed on a yearly basis.

The following list represents minimum facility needs <u>for rehabilitating 100-150 oiled wildlife.</u>

(1) Space Requirements

Front Desk/Admissions	300 sq. ft.
Operations Office	300 sq. ft.
Kitchen/Food Storage	300 sq. ft.
Husbandry Area (large central room)	2800 sq. ft.
Supplies/Storage	500 sq. ft.
Wildlife Cleaning Area 1	750 sq. ft.
Medical Treatment/Exam	300 sq. ft.
Pathology/Lab/Cold Storage	150 sq. ft.
Isolation Ward	300 sq. ft.
Volunteer/Worker Rest Area	300 sq. ft.
Bathrooms, Deacon, Changing	200 sq. ft.

Outside Pool Areas @ one 10' x 15' x 2' pool for 15 birds, access and maintenance space	3300 sq. ft.
Nonhazardous and regulated (medical and oily) trash	
Indoor	100 sq. ft.
Outside	400 sq. ft.
Outside area for oily wastewater	300 sq. ft.
Loading Dock/Parking for 50 (opposite side of building from outside cages)	5000 sq. ft.
Total interior sq. ft.	6300 sq. ft.
Total exterior sq. ft.	9000 sq. ft.
Total sq. ft.	**15,200 sq. ft.**

Note: If an existing wildlife rehabilitation center were to be used, it would require the above space <u>in addition to</u> the space allocated for any existing caseload. Animals impacted by an oil spill must be cared for separately from the in-house population.

(2) Hot/Cold Water Capacity

When selecting a wildlife response facility, it is important that the water supply not be contaminated by the oil spill. For preplanning purposes, potential facility locations should be selected in areas of low oil spill probability. All oily waste water must be collected and disposed of in accordance with Federal and municipal regulations, however, the large quantities of rinse, pool, and general use water is permissible for discharge to most municipal systems. It is therefore inadvisable to select a location that relies on a septic system to handle waste because this large volume of water can exceed the design capacity of most septic systems. Ideally there should be external access to cold water supplies for filling pools.

Due to the nature of wildlife rehabilitation, large amounts of water are used in many locations throughout the facility. It is therefore advisable that the facility has floors that can tolerate being wet, with drains at least in the areas dedicated to cleaning activities.

Cold Water Volume (pools and general use)	23,360 gal/day
Hot Water Volume (animal cleaning only)	450 gph @ 104 °F. (6750 gal/day @ 15 hrs)
Water Pressure (animal cleaning only)	50-60 psi
Water Hardness (animal cleaning only)	2.5-3.5 grains/gal

A suitable facility in terms of size, availability, and location should not be discounted due to hot water and hardness capacities. Provided that there is an adequate cold water supply, mobile hot water and treatment systems can be retrofitted into existing equipment without much difficulty.

(3) Electrical/Lighting

The electrical needs of a wildlife response facility are very similar to those of a conventional manufacturing/industrial operation in so far as there is a need for general and task lighting, with an adequate number of separately circuited outlets throughout the space capable of providing 20 amp protection. Because of potential risk of electrical shock in wet areas, the addition of GFI circuit breakers in those areas is desirable.

In addition to lighting and the HVAC system, electric power will be used for freezers, refrigerators, heat lamps, pet dryers, office and medical equipment, pool pumps and filters, power tools, etc.

200 amp, 120/240 volt, 3-wire single-phase service with minimum of ten (10) 20-amp circuits in addition to the lighting and HVAC needs, with the ability to expand.

(4) HVAC Systems

The three main concerns regarding air quality are:

1. Eliminating the thermal stress to debilitated animals by providing a stable, draft free inside air temperature between 70-80 °F.;

2. Minimizing human exposure to petroleum volatiles; and

3. Minimizing animal exposure to pathogenic organisms (bacterial and fungal).

Air within a wildlife response facility should be exchanged 6 times per hour within office areas, 10 times per hour within large open spaces involving animal care, and 20 times per hour within critical care and/or surgical areas.

Typical HVAC systems used in industrial space are often forced air or closed recirculating systems which by themselves will not meet the above requirements. These systems will need to be augmented with portable filtration (HEPA) and air exchange units. The design of these systems should be determined by the wildlife response group once the facility has been selected, and the particulars of the animal caseload is known.

Air quality in systems that employ return air filtration can be enhanced by replacing the existing filters with an electrostatic type. This will not, however, preclude the need for HEPA type filtration and regular air exchanges as outlined above.

(5) Communications

A minimum of three (3) telephone lines (public, private, fax/modem) are necessary with the ability to add more if needed.

Equipment, Training and Personnel Needed For Field Retrieval

(1) Equipment

- Boats
- Safety protection/floatation gear
- Personal protective clothing
- Different types of netting
- Transport containers (boxes, ventilated)
- Transport vehicles (to and from spill site)
- Adequate communication (cellular phones, etc.)
- If stabilization is necessary at spill site (prior to transportation to rehabilitation facility), need rehabilitators to have necessary training and equipment available for stabilization

(2) Training

- OSHA training
- Coast Guard boat training
- QWR wildlife rescue and rehabilitation training
- QWR wildlife handling training

(3) Personnel

- Natural resources trust agencies personnel
- QWR trained field retrieval personnel
- QWR trained rehabilitation personnel
- Enforcement personnel
- Boat handlers
- Rehabilitators trained by QWR (both aspects of rehabilitation and handling)
- Personnel to handle 1-800 # calls for potential oiled wildlife sightings

If wildlife retrieval must begin prior to the QWR arrival, there is a need to specify where the wildlife would be taken for rehabilitation and who would be handling them.

Drills and Exercises (NCP sec. 300.212)

The State natural resource agency, the USFWS, and the QWR should be incorporated into appropriate drills and/or exercises involving oil spill response situations which may potentially impact wildlife. By including these groups as part of the exercise, the OSC will fully understand and appreciate the vital role that wildlife rehabilitation plays in the overall success of the response strategy.

Since the majority of this work occurs during the first 24-36 hours of a spill incident, early involvement of the QWR in drills and exercises is imperative. The QWR should provide a daily end-of-day report to the incident commander, outlining all communication and response efforts made by the QWR. This information should be incorporated into the daily drill documents. The QWR participating in the drills/exercises should be included in the final critique of the drill/exercise to help ensure a complete and accurate assessment is made regarding the ability of all participants to respond to wildlife at risk.

SAFETY AND TRAINING (NCP sec. 300.210(c)(4)(ii)(H))

The minimum required Occupational Safety and Health Administration (OSHA) or U.S. EPA training for volunteers, including those who assist with injured wildlife is presented below. Training should precede actual work in hazardous environments.

Two OSHA regulations address most of the occupational health and safety issues encountered during wildlife rescue and rehabilitation:

1) The OSHA standard for Hazardous Waste Operations and Emergency Response (HAZWOPER) (29 CFR 1910.120) applies to organizations or individuals involved directly in retrieval or clean-up efforts. In addition, each State may have its own worker safety requirements. Coordination with the appropriate State agency should be conducted to ensure those requirements are also met.

2) The Hazard Communication Standard (29 CFR 1910.1200), also known as "Right-to-Know Law" or "HazCom", requires that all chemicals in the work place be fully evaluated for possible physical or health hazards and that all information relating to these hazards be made available to all workers. HazCom applies to rehabilitation organizations because petroleum is considered to be a hazard to human health.

Appropriate available training offered by U.S. EPA (through their Environmental Response Training Program in Cincinnati, Ohio) includes the following:

a) Hazardous Materials Incident Response Operations (165.5) 40hrs. (This course meets OSHA's requirement (29 CFR 1910.120) for a minimum of 40 hours of classroom safety training for hazardous waste site workers.)

b) Emergency Response to Hazardous Materials Incidents (165.15) 40hrs. (This course meets and exceeds OSHA's requirement (29 CFR 1910.120 paragraph q) for a minimum of 24 hours of training for a hazardous materials technician.)

Rehabilitation organizations are legally required to educate and protect all employees, including volunteers, in accordance with OSHA standards. Individuals working with oiled animals must receive information concerning all potential hazards associated with the handling of these animals. The following requirements should be applied to wildlife rescue and rehabilitation personnel, including volunteers:

Wildlife rescue and rehabilitation management personnel - This is the core team of rehabilitators who will direct operations. These people must have 24-hours of classroom training in hazardous waste operations and emergency response.

Rehabilitation facility volunteers - These volunteers work under the direction of the management team. Persons in this category must receive four hours of training at the HAZWOPER Awareness level, or have sufficient equivalent training or proven experience in specific competencies, before they can begin work. Additional training would be necessary before volunteers would be allowed on scene.

Retrieval volunteers - These volunteers work under the direction of the search and rescue management team and are allowed on-scene, but not in the hot zone. Volunteers working in this category must receive between four and eight hours of HAZWOPER training (Awareness level) and site safety training before they can begin work.

Wildlife Response Training

A contracted private source may be responsible for training volunteers on site. Additionally, USFWS may be interested in providing periodic training in preparation for spills.

Training Topics:

1) general overview of the external and internal effects of oil on wildlife;
2) current treatment protocols;
3) facility needs; and
4) human health and safety.

Training Goals:

1) clarify the duties and the responsibilities of the spiller, cleanup contractor, State and Federal agencies, volunteers and the general public;
2) improve the treatment and the release rates for affected wildlife;
3) enhance speed and quality of a response involving wildlife following an oil spill event;
4) reduce wildlife response costs by making efforts more cost-effective; and
5) help to insure the safety of all those working in a wildlife response.

Wildlife Risks

Specific human health and safety concerns in handling wildlife will vary with the species of animals involved, but the following safeguards apply universally:

1) Wearing gloves while cleaning animal cages and food bowls, washing hands with a disinfectant soap, wearing gloves and surgical mask while performing necropsies (post-mortem examinations), and providing for adequate room ventilation will help reduce the risk of contracting wildlife transmitted diseases.

2) Protective eyewear should be worn when working with birds having long, pointed beaks, and towels (for entire body control) or gloves should be used to restrain feet of all birds.

3) All individuals who will be handling oiled wildlife must be trained in proper capture and restraint techniques. The head (beak or teeth) and feet (talons or claws) of most animals can cause serious injuries if the handler has received improper or incomplete training.

4) Animals should be held at or below waist-height, away from human faces. At least two people should be present for any prolonged handling (examinations, washing, etc.). Aggressive mammals should be controlled with nets or snare poles, and should be sedated for any prolonged handling.

5) Any worker handling wildlife should have a current tetanus shot, and only individuals who have received prophylactic rabies vaccinations should handle wild mammals.

Diseases which can be transmitted from animals to humans pose a potential risk to oil/hazmat spill responders during the rescue, rehabilitation and release of wildlife. Although this list may not be inclusive, the following diseases are of particular concern:

Birds

Aspergillosis—a fungal disease causing respiratory problems in humans.
Chlamydiosis—a bacterial disease causing flu-like symptoms in people. Potentially fatal.
Salmonellosis—a bacterial disease causing diarrhea in humans.
Avian Tuberculosis—a bacterial disease causing skin lesions and occasionally respiratory problems in humans.
Histoplasmosis—a fungal disease causing pneumonia in humans.

Mammals:

Rabies—a viral disease causing central nervous system (CNS) disorder in humans. Fatal if untreated.
Giardia—a protozoal disease causing diarrhea.
Baylisascaris—a parasite causing CNS disorder & death in humans.
Campylobacteriosis—a bacteria causing diarrhea in humans.
Cryptosporidiosos—a protozoal disease causing diarrhea in humans.
Toxoplasmosis—a protozoal disease which may cause CNS disorder in humans.

If responders are likely to come into contact with captured wildlife during a spill event, the site safety officer (or a contracted veterinarian) should be consulted to determine appropriate prevention measures. Volunteers should contact medical professionals if they become ill during or after potential exposure to wildlife diseases. Medical professionals may also wish to consult the National Biological Survey, National Wildlife health Center in Madison, Wisconsin (608-271-4640; fax 608-264-5431), for wildlife disease diagnostic assistance.

Safety Equipment

Appropriate equipment is important for safe spill response activities. Necessary equipment will vary according to the particular situation, and may depend on such circumstances as the size of the spill and types of resources affected. For individuals not involved directly in on-site (hot zone) retrieval or cleanup efforts (exposed only to Level D hazards), personal protective equipment may include the following:

1) coveralls
2) gloves
3) boots/shoes, leather or chemical resistant, steel shank and toe
4) safety glasses or chemical splash goggles
5) hard hat with face shield
6) escape mask

Where sampling includes aquatic sites, personal protective equipment should include:

1) knee, hip, or chest waders in good condition
2) long rubber gloves

Life jackets are required for work in boats or over water. Safety equipment may also include specially designed respiratory equipment and/or ear protection.

Product Risks

Petroleum products in, on, and around wildlife may present a hazard to human health and safety. Various components in certain petroleum products can damage skin, conjunctivae of eyes, lungs, or the gastrointestinal tract (if inadvertently ingested). Chronic and/or prolonged exposure may cause damage to the central nervous system and some cancers, such as skin cancer and leukemia. Fetal defects have been documented in laboratory animals. Individual risk factors such as pregnancy or history of liver disease should be taken into consideration in allowing volunteers and staff to work in contaminated areas. Personal hygiene must be stressed during the decontamination process. Protective measures should always be taken to avoid and/or minimize oil exposure throughout spill response activities.

Watercraft Safety

Airboats or boats propelled by outboard motors are effective for hazing waterbirds and for searching for sick or injured wildlife. Small, noisy, shallow-draft aluminum boats are particularly effective for hazing, and can be used as platforms for shell crackers during the day and for propane exploders or bright lights at night. Although relatively ineffective for herding diving birds, boats may be used for herding young or molting waterfowl that are incapable of flight.

Response personnel will ensure that all watercraft operations are conducted in accordance with local laws and regulations of the U.S. Coast Guard and OSHA, as well as any applicable internal agency regulations.

Response leader responsibilities should include the following:

(1) Ensure that all workers who operate or work in watercraft have received first aid instruction in artificial respiration.

(2) Ensure that personnel who operate watercraft have completed a recognized boating or water safety course.

Each watercraft will be required to have personal protective equipment (personal flotation devices), firefighting equipment, and other safety equipment (distress signaling devices, bailing devices, and emergency position indicating radiobeacons, running lights, radio, fog horns, navigational aids, anchor and anchor line), and undergo periodic inspections as required by USCG and OSHA regulations.

Aircraft Safety

Aircraft, especially helicopters, are effective in hazing migratory birds from large areas because of the combination of loud noise and rapid approach from above. Helicopters may also be used to herd flightless birds (young and molting birds). Aircraft can also be utilized for reconnaissance and transportation of personnel, equipment, and accessing injured wildlife.

Aircraft are considered to be especially useful during the early stages of cleanup and hazing operations. They are more effective if used in combination with other devices such as shell crackers and propane exploders. Because of their maneuverability and noise, helicopters are more effective than fixed-wing aircraft.

Established aviation safety programs and aircraft accident prevention programs within each organization will be complied with at sites at which such response measures are anticipated.

APPENDIX X: STATE HISTORIC PRESERVATION OFFICERS IN REGION 5

1. INTRODUCTION

Each State, Territory, and the District of Columbia, has a State Historic Preservation Officer (SHPO). The SHPO can provide many important services to local governments and historic preservation commissions. The National Historic Preservation Act establishes certain SHPO responsibilities. These include the following:

(a) Ensuring comprehensive Statewide historic preservation planning;

(b) Conducting a Statewide survey to identify historic properties;

(c) Nominating properties to the National Register of Historic Places;

(d) Assisting local governments in developing historic preservation programs and in becoming certified to participate in the national program;

(e) Advising and assisting in Federal, State, and local historic preservation projects;

(f) Participating in review of Federal, State, and local undertakings that may affect historic properties; and

(g) Providing public information, education, training, and technical assistance in historic preservation.

Under National Park Service (NPS) regulations, SHPOs may also participate in NPS certification of properties and projects for historic preservation tax incentives.

In addition, SHPOs carry out duties under State laws, and seek to advance the interests of historic preservation generally in their States. For example, many SHPOs:

(a) Conduct preservation conferences and workshops;

(b) Distribute State grants and loans for preservation;

(c) Maintain and interpret State-owned historic properties;

(d) Conduct programs to acquire and administer historic preservation easements;

(e) Administer State legislation to protect historic properties from non-Federal construction and land-use projects;

(f) Administer State legislation relating to archeological resources, shipwrecks, and other special kinds of historic properties;

(g) Publish newsletters, scholarly publications, and popular books and brochures;

(h) Administer State history museums and conservation laboratories;

(i) Develop and support State and local preservation statutes;

(j) Help State and local authorities use preservation in primary and secondary curricula, and in public education generally; and

(k) Provide technical assistance to owners of historic properties.

The SHPO is designated by the Governor of each State. In some States, he or she serves directly in the Governor's cabinet or executive office. In other States, the SHPO may be an official in an archives and history office, a planning department, a conservation department, a parks and recreation department, a State historical society, or a State museum.

Under NPS regulations, each SHPO must be assisted by a staff of appropriate preservation officials, in most cases including historians, architectural historians, historical architects, and archaeologists. Many SHPOs are also assisted by academic institutions, historical and archeological societies, and other preservation-oriented groups through contracts or cooperative agreements.

Most SHPOs receive their primary funding from their State legislatures. In addition, NPS provides SHPOs with grants-in-aid from the Historic Preservation Fund (HPF), a special fund created by the National Historic Preservation Act. HPF grants must be matched with non-Federal funds or in-kind contributions.

2. SHPOs IN REGION 5

2.1. Illinois

William L. Wheeler, SHPO — 217-785-1153
Associate Director — FAX: 217-524-7525
Illinois Historic Preservation Agency
1 Old State Capitol Plaza
Springfield, Illinois 62701-1512

Theodore Hild, Deputy SHPO — 217-785-1153
Chief of Staff — FAX: 217-524-7525
Preservation Services Division
Illinois Historic Preservation Agency
1 Old State Capitol Plaza
Springfield, Illinois 62701-1512

2.2. Indiana

Patrick Ralston, SHPO — 317-232-4020
Director, Dep't. of Natural Resources — FAX: 317-232-8036
402 West Washington St., Room W256
Indianapolis, IN 46204

Daniel Fogerty, Deputy SHPO — 317-232-1646
Division of Historic Preservation — FAX: 317-232-8036
402 West Washington St., Room 274
Indianapolis, IN 46202

2.3. Michigan

Dr. Kathryn Eckert, SHPO — 517-373-6362
Department of State — FAX: 517-373-0511
717 W. Allegan Street
Lansing, MI 49818

2.4. Minnesota

Dr. Nina Archabel, SHPO — 612-296-2747
Director, Minnesota Historical Soc. — FAX: 612-296-1004
345 Kellogg Boulevard West
St. Paul, MN 55102-1906

2.5. Ohio

Dr. W. Ray Luce, SHPO — 614-297-2470
The Ohio Historical Society — FAX: 614-297-2411
Historic Preservation Division
1982 Velma Avenue
Columbus, OH 43211

2.6. Wisconsin

Jeff Dean, SHPO — 608-264-6500
Director, Historic Preservation Div. — FAX: 608-264-6404
State Historical Society of Wisconsin
816 State Street
Madison, WI 53706

APPENDIX XI: ECONOMICALLY AND ENVIRONMENTALLY SENSITIVE AREA INDICES

(ON DISK)

APPENDIX XII: CONTINGENCY PLANNING

1. INTRODUCTION

The responsibility for preventing spills and planning response to a spill generally lies with the party storing, transporting, or using the material. Often the conditions of storage, transport, and use are regulated by local, Tribal, State, or Federal programs. Some of the programs require permits or specify in detail the preventive measures and planning which are required of users, transporters, and storers. Some of these governmental programs include inspections to verify adequacy of preventive measures. Only in the most serious circumstances are any of the governmental agencies authorized to intervene to prevent a spill from occurring.

Coordination among the various levels of organization—private industry, local, Tribal, State, area, and Federal—occurs through the development of their independent contingency planning efforts and through their interaction during a response. In the event of a release, there is a hierarchical response and technical assistance structure. The roles and responsibilities of each response organization are laid out in the various contingency plans.

2. STATUTORY AUTHORITY

2.1. Emergency Planning

Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), also known as the Emegency Planning and Community Right-to-Know Act (EPCRA), created a system of State and local planning agencies for chemical emergencies and provided a way for communities to gain information about potential chemical hazards. The Act's mandates cover three main topics:

- emergency planning,
- emergency notification requirements, and
- requirements for reporting hazardous chemical inventories.

Regulations to implement the statute are found at 40 CFR Part 355. In Region 5, five States (Illinois, Indiana, Minnesota, Ohio, and Wisconsin) have their own legislation patterned after the Federal law.

Title III establishes two planning authorities for chemical emergencies: State Emergency Response Commissions (SERCs), and Local Ememgerncy Response Committees (LEPCs). SERCs establish LEPCs, and supervise and coordinate the LEPCs' activities. LEPCs develop contingency plans that include:

- identification of facilities covered by the law,
- designation of community and facility emergency coordinators,
- methods and procedures,
- information on emergency response equipment and facilities available in the community, and
- training and exercise programs.

These plans are reviewed by the SERCs.

Indian Tribes are designated as the implementing authority of Title III on all lands within Indian country. A Tribe may form its emergency planning organization as a Tribal Emergency Response Committee (TERC), as an LEPC, or by joining an off-reservation LEPC.

Emergency planning requirements cover facilities that have an extremely hazardous substance (listed at 40 CFR 355 Appendices A and B) present on-site

above a threshold quantity. Owners/operators of facilities subject to the law must identify themselves to the SERC and LEPC and develop a facility emergency plan. There are 458 local planning districts in Region 5.

The RRT will review, upon request of an LEPC, the local Title III plan. RRT5 will review plans that have been accepted by the SERC. The RRT will review no more than two plans per State per year because of the time involved for such reviews. RRT5 will use NRT-1A to review the plans.

2.2. Oil Pollution Act of 1990 (OPA)

To be written.

2.3. FEMA

To be written.

3. PRIVATE INDUSTRY

Section 311(j)(5) of the Clean Water Act (CWA), as amended by OPA, requires that owners and operators of facilities prepare and submit a Facility Response Plan (FRP) —a plan for responding, to the maximum extent practicable, to a worst case discharge, and to a substantial threat of such a discharge, of oil or a hazardous substance. This requirement applies to any facility that because of its location, could reasonably be expected to cause "substantial harm" to the environment by discharging into or on navigable waters, adjoining shorelines, or the exclusive economic zone.

4. LOCAL LEVEL

In the event of an emergency/disaster, police and fire services are ordinarily the first to respond. They initially assess the incident and determine its scope and magnitude. Additional agencies may become involved, depending on the nature of the incident. The local emergency management coordinator monitors and evaluates the incident.

If the emergency/disaster escalates to the point where coordination between several local agencies is necessary, the emergency management coordinator may recommend that the chief executive declare a local state of emergency, thereby activating the appropriate response and recovery aspect of local government.

Local response procedures are followed as stated in the local emergency response plans. If the emergency escalates beyond the capability of local government, the chief executive may request assistance from State government in accordance with State statutes.

Each LEPC is to prepare an emergency response plan in accordance with Section 303 of EPCRA. These plans are to be reviewed once a year, or more frequently as circumstances change in the community or as any subject facility may require. The Area Contingency Plan (ACP) should be coordinated with these LEPC plans through the applicable sub-area plans. Due to the size of U.S. EPA Region 5's area, coordination with LEPC plans will take place in the development of the sub-area plans. Sub-area planning is currently ongoing in the Detroit, Michigan and Minneapolis/St. Paul, Minnesota areas.

5. STATE LEVEL

To be written.

6. REGIONAL LEVEL

The RRT is responsible for the planning and coordination of contingency plans at the Regional level. Regional hazardous materials planning is performed through the joint efforts of various Federal Agencies with major environmental, transportation, emergency management, worker safety, and public health responsibilities. These agencies are responsible for coordinating Federal emergency preparedness and planning on a nationwide basis. The Federal Regional Contingency Plan provides for coordination of timely and effective response by the various agencies and other organizations to oil discharge and hazardous substance releases in order to protect public health, welfare, and the environment.

7. AREA LEVEL RESPONSE

The Area Committee is not a response organization and exists to augment the planning structure of the NRT and RRT.

The Area Contingency Plan (ACP) provides a coordinated and effective Federal, State, and local response to oil spills. The Plan shall, when implemented in conjunction with the provisions of the NCP, be adequate to remove a worst-case discharge, and to mitigate or prevent substantial threat of such a discharge. The ACP will address specific areas within the Region that have a high potential for a release of oil or that are of particular environmental or economic sensitivity to such a discharge. The ACP will ensure that a coordinated response structure is in place to mitigate the effects of a significant release in such areas. This process will involve extensive coordination with LEPC plans and Facility Response Plans (FRPs) to identify the areas of concern and develop an adequate response strategy involving Federal, State, local, Tribal, and private entities.

During a response, the FRP will initially be activated, followed by the LEPC, State, Regional, and National Contingency Plans as necessary, depending upon the magnitude of the spill. Coordination of the ACP with all other plans prior to and during the response is the responsibility of the Area OSC. The OSC shall meet with the other responding parties to coordinate and integrate this Plan with all other relevant plans including, but not limited to, Federal, State, local, Tribal, and private plans.

Section 311(j)(4)(B) of CWA, as amended by OPA, requires that the Area Committee under the direction of the Federal OSC for the Area be responsible for:

(a) Preparing an Area Contingency Plan for the Area, which includes all of U.S. EPA Region 5;

(b) Working with Federal, State, and local officials to enhance the contingency planning of those officials and to assure preplanning of joint response efforts, including appropriate procedures for:
- mechanical recovery,
- chemical spill control,
- shoreline cleanup,
- protection of sensitive environmental areas, and
- protection, rescue, and rehabilitation of fisheries and wildlife; and

(c) Working with Federal, State, and local officials to expedite decisions for the use of dispersants and other mitigating substances and devices.

8. NATIONAL LEVEL RESPONSE

8.1. NCP

To be written.

8.2. Federal Response Plan

To be written.

9. INTERNATIONAL LEVEL

A Joint Contingency Plan has been developed with Canada for releases of oil and hazardous substances. The International Joint Commission (IJC) monitors the quality of the boundary waters of the Great Lakes system (see Section 2.9.). DOS provides assistance in coordinating responses to releases that cross the U.S.-Canadian boundary.

10. TRAINING

RRT5 strongly supports Regional training activities. The RRT management group is a panel that reviews SARA Title III Section 305(a) training grants.

In order to extend training to the widest possible audience, the RRT maintains a video lending library of training materials concerning response and safety at the FEMA Region 5 office in Chicago, Illinois. When funds are available to the RRT, courses are offered that target special needs identified by the members of the RRT. From time to time the RRT may sponsor courses to train its own members, and encourages that exercises be conducted as a training tool.

11. EXERCISES

The National Preparedness for Response Exercise Program (PREP) was developed to establish a workable exercise program that meets the intent of OPA. PREP incorporates the exercise requirements of USCG, U.S. EPA, the Research and Special Program Administration (RSPA) of the Office of Pipeline Safety (OPS), and the Mineral Management Service (MMS).

PREP guidelines are not regulations. However, the four Federal Agencies have agreed that participation in PREP will satisfy all exercise requirements imposed by CWA. Although participation in PREP is voluntary, those choosing not to participate in PREP will be required to comply with the exercise requirements in the regulations imposed by each of the four regulatory agencies.

PREP is structured around a system of internal and external exercises. The internal exercises are conducted wholly within a plan holder's organization, testing the various components of a response plan to ensure the plan is adequate for the organization to respond to an oil or hazardous substance spill. Currently, the response plans and exercises only address oil response, but will eventually address hazardous substance response.

11.1. Internal Exercises

Internal exercises for industry include: 1) Qualified Individual Notification Drills;

2) Emergency Procedures Drills for vessels and barges; 3) Spill Management Team Tabletop Exercises; and 4) Unannounced Exercises.

The internal exercises will be self-certified and self-evaluated by the plan holder organization. Each planholder will be on a triennial cycle for exercises, which began January 1, 1994. Within this triennial cycle, each planholder must exercise the various components of the entire response plan. The PREP document contains a list of 15 core components. These are not all-inclusive; a plan may have more or fewer components, but these are generally what should be in the plan. The completion of the required internal exercises over the 3-year period will satisfy the regulatory requirements for exercising the entire plan once every 3 years.

11.2. External Exercises

The external exercises, or Area Exercises, test the interaction of the planholder with the entire response community in a specific Area. For the purpose of PREP, an Area is defined as that specific geographic area for which a separate and distinct ACP has been developed. The Area Exercises will exercise the government-industry interface for pollution response. The PREP goal is to conduct 20 Area Exercises per year throughout the country, with the Federal Government leading 6 exercises and industry leading the 14 other exercises. The Area Exercises will be realistic exercises, including equipment deployment. The exercises will be developed by a design team consisting of local, State, and Federal Government, and industry representatives. The Area Exercises will be scheduled by the National Scheduling Coordinating Committee (NSCC), which will receive input from the Area Committees and the RRT Co-Chairs. These various levels of input are designed to ensure all local, State, and Area concerns are taken into consideration when scheduling the exercises.

APPENDIX XIII: STATE EMERGENCY INFORMATION

1. ILLINOIS

The Emergency Response Unit (ERU) works within the State response system, in which the Illinois Emergency Management Agency (IEMA) serves as the central receiving and dispatching point for response to any emergency or disaster requiring State notification or involvement. IEPA responsibility involves response to:

(a) Oil and chemical spills on water or land;

(b) Releases of harmful quantities of toxic substances into the atmosphere;

(c) Emergencies involving public water supplies;

(d) Emergencies involving wastewater treatment systems;

(e) Emergencies involving solid waste disposal sites;

(f) Fish kills caused by pollutants;

(g) Emergency disposal or treatment of hazardous materials;

(h) Abandoned hazardous waste incidents posing immediate hazards;

(i) Transportation incidents involving hazardous materials which pose an immediate threat of a release.

ERU operates from IEPA's headquarters in Springfield, Illinois, during normal working hours, supplemented by an on-call duty officer to cover periods after normal working hours and during weekends and holidays. Incident coordination, management, and response personnel operate from the Springfield office, which is centrally located. In addition, ERU has full-time response personnel in IEPA's Maywood (Chicago-area) office and in its Collinsville (St. Louis East-area) office. After hours and during weekends and holidays, ERU maintains emergency response specialists on call from its Maywood, Springfield, and Collinsville offices to assist the Duty Officer and to provide on-scene response. In addition, personnel from IEPA's regional or district field offices representing one of IEPA's pollution control divisions (Air, Land, Water, or Public Water Supplies) are often called upon to conduct the necessary field response consistent with their capabilities.

ERU assistance consists of:

(a) Providing technical information regarding identification, chemical and physical properties, toxicity data, and potential dangers associated with a hazardous material.

(b) Monitoring or sampling air, water, soil, waste and containers.

(c) Serving in an advisory capacity concerning:
- containment of the material;
- restoration of the environment, including setting emergency cleanup objectives;
- evacuation recommendations; and

- disposal or treatment of hazardous material or debris resulting from the emergency.

(d) Providing oversight and ensuring completeness of cleanup actions taken by responsible parties.

(e) Acting as OSC during State-financed emergency cleanups.

(f) Providing notice to users of affected water and land. Such notices may be communicated through other State and local agencies involved.

(g) Providing professional and technical assistance, personnel, and equipment to directly assist public safety officials within the scope of IEPA's responsibilities and resources.

(h) Documenting violations of the Illinois Environmental Protection Act for potential legal action.

(i) Expediting the issuance of waste treatment, storage or disposal permits by and through IEPA's Land Pollution Control Division, usually in less than 24 hours; as well as authorizing emergency exemptions for the transportation, storage, and disposal of special wastes.

IEPA utilizes commercial response contractors when it uses State funds to mitigate and remediate incidents. The ability to use State funds is limited to situations involving CERCLA Hazardous Substances and does not include petroleum products (oil) unless the release is from a UST. IEPA currently has contracts annually with commercial response contractors for emergency response and mitigation (two contractors), emergency incident waste disposal (one contractor), emergency lab pack response (one contractor), and leaking UST response (four remediation and two oversight contractors). (Note: Contract data is for 1990–1991 and may vary.)

1.1. Notification Procedures

A release is usually defined as "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment" in the various laws and regulations which require immediate or expeditious reporting of releases. In general, it includes on-site loss of containment, as well as releases that go beyond facility boundaries. Following is a list of the sources of those reporting requirements and a brief description of what is to be reported, how soon, and to whom.

(a) CERCLA (42 U.S.C 9601, et seq.), Section 103(a) - any release equal to or greater than a reportable quantity of a "hazardous substance" (the CERCLA list, and also published in Table 302.4 of 40 CFR 302, dated July 1, 1987) from a vessel or an onshore or offshore facility, immediately to the National Response Center (NRC) at 1-800-424-8802).

(b) 40 CFR 110.9 (Oil Pollution) - any "discharge" (essentially defined as the "release") of oil from a vessel or an onshore or offshore facility into navigable waters of the United States, immediately to the NRC.

(c) SARA, Title III, Section 304 - any release equal to or greater than a reportable quantity of a "hazardous substance" or an "extremely hazardous substance" (Appendix A of CFR 355 dated April 22,

1987) from a facility, or related to transportation, immediately to 1) the State Emergency Response Commission, the Illinois Emergency Management Agency (IEMA) in Illinois, at 800-782-7860 or 217-782-7860; and 2) the community emergency coordinator of the Local Emergency Planning Committee (the designated person in each county and the City of Chicago who coordinates emergency response operations). Phone numbers may be obtained by calling IEMA at 217-524-6887 or 217-782-4694.

(d) 35 Ill. Adm. Code 723.130(c) (Illinois Hazardous Waste Regulations) - any "discharge" of a "hazardous waste" (the CERCLA list) by an air, rail, highway, or water transporter (no time frame given), to the NRC and IEMA.

(e) 29 Ill. Adm. Code part 430 (Emergency and Written Notification of an Incident or Accident Involving a Reportable Hazardous Substance) - Any release equal to or greater than a reportable quantity of a "hazardous substance," or an "extremely hazardous substance," immediately to IEMA and the community emergency coordinator of the local emergency planning committee and any incident or accident involving a "hazardous material" (any substance or material so designated pursuant to the Hazardous Materials Transportation Act, 49 U.S.C.A. 1801 et seq.) which results in: 1) death, hospitalization, or evacuation of a member or members of the general public, 2) overturn of a motor vehicle on a public highway, 3) fire, breakage, release, or suspected contamination involving an etiologic (disease-causing) agent, or 4) any release of oil which meets the reporting requirements in 40 CFR 110, immediately to IEMA.

The preceding list of reporting requirements is necessarily simplified. You are encouraged to refer to the documents cited for more detail. These documents are available upon request by writing or calling: Illinois EPA, Office of Chemical Safety, #29, 2200 Churchill Road, P.O. Box 19276, Springfield, Illinois 62794-9276; telephone (217) 785-0830.

1.2. Immediate Notification

The information to be reported is as follows:

(a) The chemical name or identity of any substance involved in the release;

(b) An indication of whether or not the substance is on the list of extremely hazardous substances;

(c) An estimate of the quantity in pounds of any substance that was released into the environment;

(d) The time and duration of the release;

(e) The specific location of the release;

(f) The medium or media (air, water, land) into which the release occurred;

(g) Proper precautions to take as a result of the release, including evacuation (unless such information is readily available to the community emergency coordinator pursuant to the emergency plan);

(h) Any known or anticipated acute or chronic health risks or public safety risks associated with the emergency and, where appropriate, advice regarding medical attention necessary for exposed individuals; and

(i) Name of the reporter and phone number where the reporter may be contacted, as well as the name and telephone numbers of a person or persons to be contacted for further information.

1.3. Written Followup Notification

As soon as practicable after the occurrence of the release, incident, or accident, the following shall be provided:

(a) An update of the information provided in the immediate notification; and

(b) Actions to be taken to respond to and contain any release.

2. INDIANA

The Indiana Department of Environmental Management (IDEM) is the lead agency for receiving and responding to spills and environmentally related emergencies. ERS responders are prepared to respond to reports 24 hours per day. Spill reports are made through the 24-hour spill line: (317) 233-7745 or (888) 233-7745 (toll-free in-state). Between 7:00 a.m. and 5:00 p.m., Monday through Friday, spill reports are received by ERS staff directly on the 24-hour number. During other times and days, including after hours, weekends and holidays, the 24-hour number is staffed by employees of the Indiana State Department of Health (ISDH). During those times, the initial spill report information is taken by the ISDH staff. The staff immediately notifies the ERS responder on-call with the information. The responder then returns the call to the person who made the spill report and obtains relevant information and, if necessary, initiates a response. Notification of a Title III releases through the 24-hour number fulfills the requirement for notifying the Indiana State Emergency Response Commission (SERC).

When making a spill report pursuant to the Indiana Spills Reporting, Containment, and Response Rule (327 IAC 2-6.1), Emergency Planning and Notification (IC 13-7-37), CERCLA as amended by SARA Title III (42 USC 9601 et seq. and 40 CFR 302.4), the responsible party shall immediately notify IDEM at the 24-hour number and provide the following information:

- name, address, and telephone number of the person making the spill report.
- name, address, and telephone number of a contact person, if different than above.
- location of the spill.
- time of the spill.
- identification of the substance spilled.
- approximate quantity of the substance that has been or may further be spilled.
- duration of the spill.
- source of the spill.

- name and location of the waters damaged, if any.
- identity of any spill response organization responding to the spill.
- measures that have been or will be undertaken to perform a spill response.
- any other information that may be significant to the response action.

Under the Spill Rule, the responsible party is also required to:

(a) Contain the spill to prevent it from entering waters of the State;

(b) Perform a spill response to recover and contain or neutralize the spilled material

(c) Notify downstream water users and affected property owners, and

(d) Submit written reports as required.

In addition to providing a Responder/OSC, ERS staff, with the occasional assistance of the four IDEM program offices (Air, Water, Solid and Hazardous Waste, and Environmental Response), can be expected to provide the following:

(a) 24-hour on-site investigation by staff who are trained in hazardous material spill containment and cleanup, stream monitoring, and hazardous waste disposal.

(b) Ensuring containment and cleanup by the spiller.

(c) Monitoring and determining the movements of pollutants in waters of the State.

(d) Information and advice on the chemical characteristics and known effects of spilled material.

(e) Notifying and advising downstream water users, particularly public surface water suppliers, including time of travel and duration.

(f) Field analytical capability for a limited range of chemicals and full laboratory capability for analysis of contaminants.

(g) Advising the spiller of availability of suitable disposal sites within the State for disposal of contaminated material, if available.

(h) Providing communications capabilities for agencies at the scene to meet and coordinate actions.

(i) Establishing, where possible, the cause and party responsible for a fish kill for purposes of recovering replacement costs for fish for the Department of Natural Resources.

(j) If the responsible party cannot be identified or is unwilling to conduct a cleanup and substantial danger to the public health and/or environment exists, IDEM can obtain funds to hire contractors to conduct a cleanup.

2.1. Emergency Burning Of Oil Spills

The following IDEM staff, in the order of contact, have permission to process emergency burning of oil spills:

- David Rice
- Herman Carney
- Woodard Smith

If these individuals are not present, the request should be forwarded to T. Method, Assistant Commissioner.

As in the past, input from the IDEM office that might be involved should be received and the appropriate form should be completed by the source, and returned to Mr. Rice. He should also receive a report from the individual who processes the request. Mr. Rice will supply the necessary form upon request.

3. MICHIGAN

In the event of an oil or other hazardous material incident, local government designates an incident commander, usually the highest ranking fire official at the scene. This person directs activities relating to the immediate incident response through a command post. If the incident escalates to a point where coordination of several local agencies is required, the local emergency management coordinator may recommend that the chief executive of the local jurisdiction declare a local state of emergency, thereby activating appropriate response capacities local government. The local emergency management coordinator then coordinates the overall local response.

In accordance with Act 207, P.A. 1941, as amended, the State Police representative, in conjunction with the local fire department, assesses the situation and jointly determines the emergency measures to be taken. The Department of State Police representative is the focal point for recordkeeping, communications, and coordination of all other State agencies. This person may work out of the local command post if minimal response is necessary.

DNR has established the Pollution Emergency Alerting System (PEAS) as a 24-hour answering service to facilitate reporting of releases to the department.

Response at the scene consists of division personnel providing technical advice as listed below. Department personnel are not expected to perform hands-on first responder activities to control the incident. DNR has an environmental response team, which can be activated by Regional or Deputy Directors or a team member. The team's primary purpose is to bring together all necessary expertise in appropriate divisions with technical expertise and it is headed by the departmental emergency management coordinator. DNR has a representative on the Federal RRT. This person represents State interests on the team and functions as a liaison between the Federal and State governments.

3.1. Michigan Department Of Natural Resources

DNR has authority to employ spill containment contractors under the Water Cleaning Emergency Fund. Local government may work directly with DNR in responding to the incident. DNR determines the emergency measures to be taken.

The following tasks are applicable to all types of oil or other hazardous material releases:

3.1.1. ENVIRONMENTAL RESPONSE DIVISION

The Environmental Response Division is designated as the lead division for discharges/releases which occur on land. The division will be responsible for the following tasks:

(a) Report to the scene to provide technical support and advice on the appropriate action to minimize the impact on the environment.

(b) Attempt to identify the party responsible for the release. Once identified, the actions of this party will be monitored to ensure that the party contains and cleans up the spill adequately and in a timely manner.

(c) If a responsible party is not identified or if the identified responsible party fails to take the appropriate actions in a timely manner, DNR may initiate actions to contain and clean up the spill. This is done under the authority of the Water Cleaning Emergency Fund or the Hazardous Waste Service Fund. Private contractors are generally hired to perform this service under the supervision of the Division. When these limited funding sources have been expended, the division shall notify the appropriate Federal Agency of the restricted response capability and defer containment and cleanup to the Federal Government.

(d) Collect samples of soil, water and other appropriate media for analysis to determine extent and concentration of contamination. The division shall be responsible for preservation, delivery, and chain of custody for the samples, according to divisional standard operating procedures. A copy of the results shall be provided to the departmental emergency management coordinator in a timely manner.

(e) Coordinate with the Federal OSC (U.S. EPA for Federally designated inland zone; USCG for Federally designated coastal zone), if involved, and with the Federal RRT, if activated. The chief of the Site Management Unit is the Michigan representative on the RRT, and may request the assistance of the RRT if it is deemed necessary. This person functions as a liaison between the Federal team and the Emergency Management Division of the Department of State Police.

(f) Provide for the reporting of releases through the Pollution Emergency Alerting System (PEAS) 24-hour hotline. Spill reports will be forwarded to the appropriate DNR district and division. Any notification of a hazardous materials-related emergency received by the PEAS hotline will be relayed immediately to the Department of State Police, Special Operations Section.

3.1.2. SURFACE WATER QUALITY DIVISION

The Surface Water Quality Division is the lead division for discharges/releases that occur on inland waters or enter the Great Lakes or connecting waterways. The Division will be responsible for the following tasks:

(a) Report to the scene to provide technical advice on the type of chemical involved (through sampling).

(b) Provide advice on appropriate measures to protect rivers, streams, and other bodies of water.

(c) Attempt to identify the party responsible for the release. Once identified, the actions of this party will be monitored to ensure that the party contains and cleans up the spill adequately and in a timely manner.

(d) Collect samples of surface water and other appropriate media for analysis to determine the extent and concentration of contamination. The divisions shall be responsible for the preservation, delivery, and chain of custody for the samples according to divisional standard operating procedures. A copy of the results shall be provided to the departmental emergency management coordinator in a timely manner.

(e) If a responsible party is not identified or the identified responsible party fails to take the appropriate actions in a timely manner, DNR may initiate actions to contain and clean up the spill. This is done under the authority of the Water Cleaning Emergency Fund or the Hazardous Waste Service Fund. Private contractors are generally hired to perform this service under the supervision of the Division. When these limited funding sources have been expended, the division shall notify the appropriate Federal Agency of the restricted response capability and defer containment and cleanup to the Federal Government.

3.1.3. AIR QUALITY DIVISION

The Division will be responsible for the following tasks:

(a) Provide advice on appropriate protective actions through the departmental emergency management coordinator.

(b) Oversee the emergency releasing and/or burning of material. Grant temporary permits or waivers as appropriate.

3.1.4. WILDLIFE DIVISION

The Division will be responsible for the following tasks:

(a) Provide advice on wildlife which may require protection from the effects of the incident through the departmental emergency management coordinator.

(b) Take action to protect wildlife, such as hazing, relocating, etc.

(c) Coordinate wildlife rehabilitation. Agreements are signed with various private wildlife rehabilitators within the State.

3.1.5. FISHERIES DIVISION

The Division will be responsible for the following tasks:

(a) The departmental emergency management coordinator provides advice on unique aquatic life that may require protection from effects of the incident.

(b) Obtain fish samples for laboratory analysis.

3.1.6. PARKS DIVISION

The Division will be responsible for the following tasks:

(a) When a State park is involved, take action to clear persons from the affected area and control access to the area.

(b) Direct parks personnel to assist in spill containment as coordinated by the departmental emergency management coordinator.

3.1.7. LAW ENFORCEMENT DIVISION
The Division will be responsible for the following tasks:

(a) The departmental emergency management coordinator is assigned to this division. This person coordinates all departmental activity when the situation is of a life-threatening nature and response is coordinated through the emergency management system, or when DNR Emergency Response Team is activated.

(b) Assist in clearing persons and boats from the affected area and control access to the area.

(c) Use watercraft to assist in boom deployment and material recovery.

(d) Maintain radio communications.

3.1.8. WASTE MANAGEMENT DIVISION
The Division will be responsible for the following tasks:

(a) Advise on suitable disposal sites for collected material.

(b) Take action to ensure timely and proper disposal of material.

3.2. Bureau of Public Health

3.2.1. BUREAU OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH

(a) Monitor public and private water supplies.

(b) Monitor public exposure to air contaminants. The Division of Occupational Health is responsible for monitoring public exposure to air contaminants and for recommending countermeasures and protective actions. The division is responsible for ensuring that all employees whose duties expose them to an actual or potential health hazard during the emergency response are afforded adequate protection as required by applicable occupational health standards, including 29 CFR 1910.120, the "Hazardous Waste Operations and Emergency Response" standard.

Teams of district industrial hygienists are dispatched, as appropriate and feasible, to monitor actual and potential exposure of citizens to airborne contaminants resulting from an emergency hazardous materials release. This may include real-time spot monitoring with direct reading devices, collection of spot samples for laboratory analysis, and assisting the Interagency Center on Health and Environmental Quality with dispersion estimates of ground-level airborne contaminant concentrations. Appropriate countermeasures and protective action guidelines are recommended to help citizens guard against the health hazards of airborne contaminants resulting from the release.

(c) Coordinate food service inspection in shelters.

3.2.2. BUREAU OF HEALTH FACILITIES

(a) Ensure that health care facility emergency procedures are adequate. The Division of Health Facilities Licensing and Certification has the responsibility for ensuring that health care facility emergency procedures are adequate.

(b) Ensure that adequate patient treatment is available and being provided during an incident.

(c) Coordinate the use of the MEDCOM system.

3.2.3. DEPARTMENTAL EMERGENCY MANAGEMENT COORDINATOR

(a) Coordinate victim identification services.

(b) Provide liaison to Federal emergency public health/medical programs and services. During this type of incident, the departmental emergency management coordinator coordinates with the Council on Environmental Quality in seeking the advice and assistance of Federal agencies such as ATSDR. The departmental coordinator also may need to coordinate with the HHS representative to the RRT.

3.2.4. COUNCIL ON ENVIRONMENTAL QUALITY (TOXICOLOGICAL RESOURCE CENTER)

(a) Report to the scene for initial public health evaluation.

(b) Identify chemicals.

(c) Perform air, water, or ground dispersion modeling and provide information though the departmental emergency management coordinator.

(d) Provide information concerning the characteristics of chemicals and recommended population protective actions through the departmental emergency management coordinator.

(e) Provide information concerning the toxic health effects of the spill.

(f) Provide information to the public concerning health effects.

3.2.5. BUREAU OF LABORATORY AND EPIDEMIOLOGICAL SERVICES

(a) Perform laboratory analyses on the material to identify the type of chemical.

3.3. Department Of State Police

The local fire department that responds to an oil or other hazardous material incident is required to notify the Department of State Police, Fire Marshal Division. This reporting requirement is satisfied by notification of the nearest Department of State Police post, which relays the information to the Special Op-

erations Section at State Police headquarters. The Department of State Police is responsible for notifying other State agencies.

The Department of State Police has primary responsibility for responding to an incident through the Michigan Fire Prevention Act (Act 207, P.A. 1947, as amended). Official Order 50 clarifies the department's procedures in implementing this act. It states the following:

(a) If the incident occurs at a fixed site or involves rail transportation, the Fire Marshal Division has site coordination responsibilities.

(b) If the incident involves road transportation, the Motor Carrier division has site coordination responsibilities.

(c) If the incident is confined to a site area emergency, personnel from one of the two divisions are the focal point for recordkeeping, communications, and coordination with other State agencies. The Fire Marshal or Motor Carrier Division coordinates incident command in conjunction with local government. In the absence of either of these two divisions, the Emergency Management Division assumes first responder duties. In accordance with Act 207, Department of State Police personnel, in conjunction with the local fire department, determine the emergency measures to be taken.

In addition, Act 390, P.A. 1976, as amended, authorizes the department to coordinate all mitigation, preparedness, response, and recovery activities. This system is explained in the Michigan Emergency Management Plan. The emergency management system is used if the incident is of an immediate life-threatening nature requiring population protective actions or if the incident requires the coordination of State agencies.

In the event of a substantial release causing a community emergency that requires the assistance of several State agencies or population protective action, the Emergency Management Division coordinates the overall response. The division acts as liaison between State and local government. The Motor Carrier or Fire Marshal Division continues to coordinate the immediate site response. Department of State Police personnel are not expected to perform hands-on first responder activities to control the incident.

4. MINNESOTA

Minnesota law requires discharges to be reported to the State Duty Officer, who is on duty in the Capitol building 24 hours per day. The various laws requiring reports include discharges to the air, land, and water; cover oil, hazardous substances, pesticides, and fertilizers, and other materials that could cause pollution; and have no "reportable quantities" except for petroleum at 5 gallons. The Duty Officer numbers are (612) 649-5451 and (800) 422-0798.

Minnesota Statute Chapter 115E requires companies handling oil and hazardous substances to act to prevent releases and to be prepared for releases they may have. Chapter 115E requirements are similar to those of OPA, but cover protection of the public's safety and the environment, and cover pollution of the land, air, and waters of the State. A facility operator is to notify the Emergency Response Commission when their plan is completed, and must supply a copy upon request. MPCA ERT staff actively inspect the prevention and preparedness capabilities of major facilities,

and will assist facility owners if requested. They conduct enforcement if the preparedness of a facility is found to be inadequate, especially if it contributed to a release or poor response.

State agencies, including MPCA, Natural resources, Transportation, Public Safety, and Health, operate under ICS principles. In incidents threatening the public's safety, local commanders receive State support. In a major incident requiring Federal assistance, MPCA will generally be the liaison between State and Federal responders. DEM conducts incident command training for State, local, and private responders. DEM and the State Fire Marshal contract with a number of local jurisdictions to provide hazardous materials assessment and response teams to the various regions of the State. These teams are dispatched by DEM after the Duty Officer has received a request from a local incident commander stating that local capabilities are inadequate for the needed response.

5. OHIO

The Emergency Response Section of OEPA acts as the staff to the State Emergency Response Commission. This Community Right-to-Know Unit collects chemical inventories from facilities regulated by Title III. Grants are currently being provided to County LEPCs to develop and exercise emergency response plans. The facility identification forms collected by Ohio under Chapter 3750 of the Ohio Revised Code include the name and phone number of the facility emergency contact, and OEPA program permit numbers.

A toll-free number to receive spill reports and citizen complaints is answered 24 hours a day, seven days a week. Spill information is entered into a database for management.

Spills are responded to on a priority basis. Priority I spills are those requiring immediate response because of their volume (over 5,000 gallons of oil) or their toxicity. Priority II spills are responded to within 24 hours, and are smaller in volume (500 to 5,000 gallons) or of a toxicity that does not present an immediate threat to the public. Priority III spills make up the majority of spills.

When needed, OEPA may contract with Ohio Department of Transportation, Ohio Department of Natural Resources, Highway Safety, or the National Guard for air support in flying personnel to the scene of an emergency and samples to the laboratories.

When the spiller cannot be located or is uncooperative, OEPA is called in for containment and cleanup. The Immediate Removal Special Account is used for spills where a response is needed to provide containment of an actively spilling substance. OEPA also has two contractors under a $500,000 level-of-effort contract. This contract is used primarily for addressing small collections of abandoned drums of hazardous materials.

6. WISCONSIN

To be written.

7. STATE ACCESS TO THE OIL SPILL LIABILITY TRUST FUND

In accordance with regulations promulgated under Section 1012(d)(1) of OPA, the President, upon the request of a Governor of a State or the individual designated by

the Governor, may obligate the OSLTF through the NPFC for payment in an amount not to exceed $250,000 for removal costs consistent with the NCP required for the immediate removal of a discharge, or the mitigation or prevention of a substantial threat of a discharge, of oil.

The following persons are designated by their Governors to obligate OSLTF funds:

Illinois	James P. O'Brien, Manager, Office of Chemical Safety Illinois Environmental Protection Agency
Indiana	Greta Hawvermale, Commissioner Indiana Department of Environmental Management
	John Rose, Assistant Commissioner Indiana Department of Environmental Management
Michigan	Paul Blakeslee, Chief of Field Operations Michigan Department of Natural Resources
Minnesota	Steve Lee, Supervisor Minnesota Pollution Control Agency
Ohio	Timothy Hickin, Manager, Emergency Response Section Ohio Environmental Protection Agency
Wisconsin	Steven Bass, Division of Energy and Intergovernmental Affairs

APPENDIX XIV: ALTERNATIVE RESPONSE TOOL EVALUATION SYSTEM (ARTES)

(ON DISK)

APPENDIX XV: ACRONYMS

ACP	Area Contingency Plan
AOR	Area of Response
APHIS	Animal Plant and Health Inspection Service
API	American Petroleum Institute
ASCS	Agricultural Stabilization and Conservation Service
AST	Atlantic Strike Team
ATSDR	Agency for Toxic Substances and Disease Registry
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BOA	Basic Ordering Agreement
CANUSLAK	Canadian-U.S. Lakes
CANUTEC	Canadian Transportation Emergency Center
CDC	Centers for Disease Control
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Section 9601 *et seq.*, also known as Superfund
CHEMTREC	Chemical Transportation Emergency Center
COTP	Captain of the Port (USCG)
CRREL	Cold Region Research Engineering Laboratory
CWA	Clean Water Act, as amended by OPA, 33 U.S.C. Section 1251 *et seq.*
DEM	Department of Emergency Management
DNR	Department of Natural Resources
DOA	Department of Agriculture
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DOJ	Department of Justice
DOL	Department of Labor
DOS	Department of State
DOT	Department of Transportation
DRG	District Response Group (USCG)
DWRO	Director of Western Rivers Operations
EMD	Emergency Management Division
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986 (Title III of SARA)
EPIC	Environmental Photographic Interpretation Center
ERB	Emergency Response Branch
ERCS	Emergency Response Cleanup Services
ERD	Emergency Response Division
ERS	Emergency Response Section
ERT	Environmental Response Team
ERU	Emergency Response Unit
ESF	Emergency Support Function
ESI	Environmental Sensitivity Index
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
FNS	Food and Nutrition Service
FPN	Federal Project Number
FRERP	Federal Radiological Emergency Response Plan
FRMAP	Federal Radiological Monitoring and Assessment Plan
FRP	Facility Response Plan
FRP/ESF	Federal Response Plan/Emergency Support Function
FS	Feasibility Study
FSIS	Food Safety and Inspection Service

FWPCA	Federal Water Pollution Control Act
GLACIER	Great Lakes Area Computerized Inventory for Emergency Response
GLC	Great Lakes Commission
GLERL	Great Lakes Environmental Research Laboratory
GLIFWC	Great Lakes Indian Fish and Wildlife Commission
GSA	General Services Administration
HAZMAT	hazardous material(s)
HHS	Department of Health and Human Services
HMIX	Hazardous Materials Information Exchange
IAG	Interagency Agreement
IAPC	Inland Area Planning Committee
IC	Incident Commander
ICP	Incident Command Plan
ICS	Incident Command System
IDEM	Indiana Department of Environmental Management
IDPH	Indiana Department of Public Health
IEMA	Illinois Emergency Management Agency
IEPA	Illinois Environmental Protection Agency
IJC	International Joint Commission
INDOT	Indiana Department of Transportation
ISDH	Indiana State Department of Health
ISP	Indiana State Police
LAT	Lead Administrative Trustee
LEPC	Local Emergency Planning Committee
MASS	Modeling and Simulation Studies
MDA	Michigan Department of Agriculture
MDEQ	Michigan Department of Environmental Quality
MDPH	Michigan Department of Public Health
MERC	Michigan Emergency Response Commission
MLC	Marine Logistics Command
MMS	Mines and Minerals Service
MOU	Memorandum of Understanding
MPCA	Minnesota Pollution Control Agency
MSDS	Material Safety Data Sheet
MSO	Marine Safety Office
MSP	Michigan State Police
NCP	National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300
NFA	National Fire Academy
NIH	National Institutes of Health
NIIMS	National Interagency Incident Management System
NIOSH	National Institute for Occupational Safety and Health
NMFS	National Marine Fisheries Service
NPFC	National Pollution Fund Center
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRC	National Response Center or Nuclear Regulatory Commission
NRDA	Natural Resources Damage Assessment
NRT	National Response Team
NSF	National Strike Force
NSFCC	National Strike Force Coordination Center
NWS	National Weather Service
OEPA	Ohio Environmental Protection Agency
OEPC	Office of Environmental Policy and Compliance
OISC	Office of the Indiana State Chemist
OPA	Oil Pollution Act of 1990, 33 U.S.C. Section 2701 *et seq.*

OPS	Office of Pipeline Safety
ORIA	Office of Radiation and Indoor Air
ORSANCO	Ohio River Valley Water Sanitation Commission
OSC	On-Scene Coordinator
OSFM	Office of the State Fire Marshall
OSHA	Occupational Safety and Health Administration
OSHWM	Office of Solid and Hazardous Waste Management
OSLTF	Oil Spill Liability Trust Fund
OSRO	Oil Spill Removal Organization
OSSM	On-Scene Spill Model
OSWER	Office of Solid Waste and Emergency Response
PHS	Public Health Service
PIAT	Public Information Assistance Team
POLREP	Pollution Report Message
PREP	National Preparedness for Response Exercises Program
PRFA	Pollution Removal Funding Authorization
PRP	Potentially Responsible Party
PUCO	Public Utilities Commission of Ohio
RCP	Regional Contingency Plan
RCRA	Resource Conservation and Recovery Act
REMM	Riverine Emergency Management Model
RERT	Radiological Emergency Response Team
RP	Responsible Party
RPM	Remedial Project Manager
RQ	Reportable Quantity
RRC	Regional Response Center
RROC	Regional RCRA Off-Site Coordinator
RRT	Regional Response Team
RRT5	Region 5 Regional Response Team
RSPA	Research and Special Programs Administration
SARA	Superfund Amendments and Reauthorization Act of 1986
SEHO	Safety and Health Officer
SEMA	State Emergency Management Agency
SEOC	State Emergency Operations Center
SERC	State Emergency Response Commission
SHPO	State Historic Preservation Officer
SLSDC	St. Lawrence Seaway Development Corporation
SONS	Spill of National Significance
SSC	Scientific Support Coordinator
START	Superfund Technical Assessment Team
SUPSALV	Supervisor of Salvage
TERC	Tribal Emergency Response Commission
TSCA	Toxic Substances Control Act
UCS	Unified Command System
UMR	Upper Mississippi River
UMRBA	Upper Mississippi River Basin Association
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USDA	United States Department of Agriculture
U.S. EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WDNR	Wisconsin Department of Natural Resources

REGION 5

FIELD GUIDE

to the

OIL AND HAZARDOUS SUBSTANCES INTEGRATED CONTINGENCY PLAN

To Report Spills Call

National Response Center 24-Hour Emergency Number:
(800) 424-8802
National Response Center
United States Coast Guard Headquarters
Washington, DC

Regional Response Centers

Emergency Response 24-Hour Emergency Number: (312) 353-2318
United States Environmental Protection Agency
Region 5
Waste Management Division
Office of Superfund
Emergency and Enforcement Response Branch
77 West Jackson Boulevard
Chicago, IL 60604-3590

Emergency Response 24-Hour Emergency Number: (216) 902-6117/8
United States Coast Guard
Ninth Coast Guard District Office
1240 East Ninth Street
Cleveland, OH 44199-2060

Emergency Response 24-Hour Emergency Number: (504) 589-6225
United States Coast Guard
Eighth Coast Guard District Office
Director of Western Rivers Operations
501 Magazine Street
New Orleans, LA 70130-3396

EPA Region 5 Oil and Hazardous Substances Field Guide

i. Promulgation

Information in this Field Guide is taken from U.S. EPA REGION 5 *OIL AND HAZARDOUS SUBSTANCES POLLUTION INTEGRATED CONTINGENCY PLAN*. Its purpose is to provide a ready reference source of information for Federal On-Scene Commanders, Incident Commanders, and others charged with responsibilities by the ICP. Nothing is this guide shall absolve any individual from the responsibilities assigned by the ICP, which is the controlling document in any instances of disagreement. All instances of disagreement and any necessary revisions to this Guide shall be reported to U.S. EPA Region 5.

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CURRENT MEMBERS OF STANDING RRT

Department of Agriculture

Primary
Laura Samudio, Center Manager
Fire Operations Aviation & Fire Manage.
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24 hour: (414) 297-3690
FAX: (414) 297-3642
Email:wieac/r9@fs.fed.us

Department of Commerce

Primary
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NOAA, Office of Response & Restoration
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NOAA Hazmat Duty
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Scientific Support Coordinator
LCDR Jason Maddox
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Department of Defense

Primary
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Naval Training Center, Great Lakes
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Naval Training Center, Great Lakes
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Department of Energy

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Radiological Coordination Office
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Department of Health and Human Services

Primary
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U.S. Public Health Service, Region 5
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FAX: (312) 353-0718
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Alternate
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ATSDR
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24 hour: (708) 352-5566
FAX: (312) 886-6066
Pager: (888) 336-0727
Email: koher.clayton@epa.gov

Department of the Interior

Primary
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U.S. Department of the Interior
Off. of Environmental Policy and Compliance
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24 hour: 800-759-8352/Mailbox: 1168849
FAX: (215) 597-9845
NOAA Mail: R3DOI
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Alternate
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Department of Justice

Primary
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24 hour: (202) 514-2000
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Alternate
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24 hour: (202) 514-2000
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Department of Labor

Primary
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Ass't. Reg. Administrator/Technical Support
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Department of State (NRT/RRT Representative)

Primary
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24 hour: (202) 647-1512
FAX: (202) 647-9099
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Department of Transportation

United States Coast Guard, Ninth District

Primary/REGION 5 RRT CO-CHAIR
Captain Randolph Helland
Chief, Marine Safety Division
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24 hour: (800) 321-4400
FAX: (216) 902-6059
Email:rhelland@d9.uscg.mil

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Support
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24 Hour: (800) 321-4400
FAX: (216) 902-6059
Email: amangoni@d9.uscg.milU.S. Coast Guard, Ninth District

United States Coast Guard, Eighth District

Primary
CDR Ed Stanton
Marine Safety Division
Phone: (504) 589-6271 or 3656
24 hour: (504) 589-6225
FAX: (504) 589-4999
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United States Environmental Protection Agency, Reg. 5

Primary/REGION 5 RRT CO-CHAIR
Richard Karl, Chief
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Alternate
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Preparedness and Prevention
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Federal Emergency Management Agency

Primary
Mike Dombroski
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TBA
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General Services Administration

Primary
Ronald E. Rennhack
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General Services Administration

Alternate
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Leader, Business Service Center
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Nuclear Regulatory Commission

Primary
Thomas Ploski
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FAX: (630) 515-1259
24 Hour: (301) 816-5100
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Alternate
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State Liaison Officer
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Illinois

Primary
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Illinois

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Indiana

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IN State Emergency Management Agency
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Michigan

Primary
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Low Level Radioactive Waste Authority
Michigan Dept. of Environmental Quality
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24 Hour: (800) 292-4706
FAX: (517) 373-0578
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Michigan

Alternate
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Michigan Dept. of Environmental Quality
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Emergency Response Division
Michigan Dept. of Environmental Quality
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Minnesota

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Minnesota Pollution Control Agency
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Alternate

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Ohio

Primary
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Kevin Clouse
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Wisconsin

Primary
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Bureau of Law Enforcement
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24 hour: (800) 943-0003
FAX: (608) 266-3696
Email: woodbd@dnr.state.wi.us

Alternate
Mr. Jerry Haberl
Wisconsin Dept. of Emergency Management
Phone: (608) 242-3213
24 Hour: (608) 275-8029 (pager)
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Interested Parties

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Email: mcsayles@orsanco.org

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Ohio EPA
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Illinois Emergency Management Agency
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24 hour: (217) 782-7860
FAX: (217) 782-2589
Email: jwatts@pop.state.il.us

United States Coast Guard, Ninth District, Marine Safety Offices (MSO's)

MSO Buffalo
Commanding Officer
Phone: (716) 843-9570
FAX: (716) 843-9571

MSO Chicago
Commanding Officer
Phone: (630) 986-2155
FAX: (630) 986-2120

PMSO Cleveland
Commanding Officer
Phone: (216) 522-4405
FAX: (216) 522-3290

PMSO Detroit
Commanding Officer
Phone: (313) 568-9580
FAX: (313) 568-9581

United States Coast Guard, Ninth District, Marine Safety Offices (MSO's), cont'd.

PMSO Duluth
Commanding Officer
Phone: (218) 720-5286
FAX: (218) 720-5258

PMSO Milwaukee
Commanding Officer
Phone: (414) 747-7155
FAX: (414) 747-7890

PMSO/Group Sault Ste. Marie
Commanding Officer
Phone: (906) 635-3220
FAX: (906) 635-3344

PMSO Toledo
Commanding Officer
Phone: (419) 259-6372
FAX: (419) 259-6374

PRINCIPAL CONTACT NUMBERS

U.S. EPA Region 5 Predesignated OSC (312) 353-2318 (24 hours a day)

USCG Predesignated OSC (216) 522-3984 (Ninth District)
(504) 589-6225 (Eighth District)

INTERNATIONAL RESPONSE
Canadian Coast Guard (800) 265-0237
Environment Canada (416) 346-1971
Emergency Preparedness Canada (613) 991-7000

NRC Duty Officer (800) 424-8802 or (202) 267-2675

RCRA Hotline (800) 424-9346

DOI Office of Environmental Policy and Compliance (contact) (215) 597-5378
Philadelphia, Pennsylvania

National Pollution Fund Center (NPFC) (703) 235-4700

SPECIAL TEAMS AND OTHER ASSISTANCE AVAILABLE TO OSCS/RPMS

Atlantic Strike Team (609) 724-0008

National Strike Force Coordination Center (NSFCC) (919) 331-6000

U.S. EPA Environmental Response Team (ERT) (908) 321-6740

Radiological Emergency Response Team (RERT) (800) 424-8802 (NRC)

Agency for Toxic Substances and Disease Registry (ATSDR)/ Centers for Disease Control (CDC) (404) 639-0615

U.S. Navy Supervisor of Salvage (703) 602-7527
(703) 607-2578 (Emergency Activation, 24 hr.)

NOAA Scientific Support Coordinator (SSC) (206) 526-6317 (24 hr.)
[The NOAA SSC serving the Ninth Coast Guard District is located at USCG District 9 Headquarters]
(216) 522-7760 (Business hours)
(216) 522-7759 (FAX)

USCG District Response Groups
District 9 Marine Operations Group (216) 522-3968
District 8 Marine Safety Division (504) 589-6225
DOT Office of Pipeline Safety (202) 366-4595

TECHNICAL SUPPORT/OTHER CONTACTS

REMOTE SENSING

Land-Based Remote Sensing
Contact U.S. EPA Superfund Technical Assessment Team (START) or Emergency Response Cleanup Services (ERCS) contractors

Aerial Remote Sensing
EPA Environmental Photographic Interpretation Center (EPIC) (703) 648-4284;
Reston, Virginia (708) 648-4290 (fax)

NOAA Satellite Services Division (301) 763-8051 (business hours)

Environment Canada (Emergency Science Division) (613) 998-9622

UNDERWATER SURVEY EQUIPMENT

Emergency Response Team (Dr. David Charters) (908) 906-6825 (business hours);
(908) 321-6660 (residence)

DIVING CAPABILITIES

ERT Diving Team (Dr. David Charters, Unit Dive Officer) (908) 906-6825 (business hours)
Three U.S. EPA-certified divers w/Level B-equivalent diving gear (201) 321-6660 (residence)

Commercial (Contract) Divers Unit Dive Officer, U.S. EPA Region 5 (312) 886-4466

Various Diving Equipment is available from any of U.S. EPA's five diving units.

Field Services Section, Superfund Division, Region 5 (312) 886-3011
Has staff and equipment to perform surface geophysical surveys, subsurface geophysical surveys, and to collect soil and groundwater samples using a Geoprobe or similar equipment. Can also provide aerial photography using a remote control helicopter for low level flights.

WEATHER INFORMATION

NWS Forecast Offices

Cleveland, OH	(216) 265-2374
Pittsburgh, PA	(412) 262-1988
Charleston, WV	(304) 746-0188/89
Romeoville, IL	(815) 834-0651
Detroit/Pontiac, MI	(810) 625-4139
Minneapolis, MN	(612) 361-6671
Milwaukee, WI	(414) 965-5063
Indianapolis, IN	(317) 856-0360
Marquette, MI	(906) 475-5213
Duluth, MN	(218) 729-6572
Green Bay, WI	(414) 497-9177

MODELS

Water

NOAA Great Lakes Environmental Research Laboratory (313) 741-2244
(Great Lakes open water)

NOAA HAZMAT Modeling and Simulation Studies (MASS) Branch (206) 526-6317
[also via the **NOAA SSC for the Great Lakes and Inland Rivers** (216) 522-7760]

USACE Cold Regions Research Engineering Laboratory (CRREL) (603) 646-4100
[Rivers-General, and St. Mary's, Detroit—St. Clair, Ohio Rivers specifically]

St. Lawrence Seaway Development Corporation (SLSDC) (315) 764-3265

Ohio River Valley Water Sanitation Commission (ORSANCO) (513) 231-7719
[Ohio River, main stem only]

U.S. Army Corps of Engineers Districts
Detroit (Detroit River/Lake St. Clair/St. Mary's River) (313) 226-6413
Buffalo (St. Lawrence River) (716) 879-4200
Rock Island (Mississippi River from Minneapolis to St. Louis and the Illinois River) (309) 794-5272 (319) 627-4138 (24 hours)
St. Louis (St. Louis to Cairo and lower Illinois) (314) 331-8000
Pittsburgh (Pittsburgh area to Wheeling, WV) (412) 644-6802
Cincinnati (entire Ohio River) (513) 684-3002
Chicago (Illinois River, defer to Rock Island) (312) 353-8884
St. Paul District's Riverine Emergency Management Model (REMM) (612) 290-5402

NWS Forecast Offices (secondary sources of river flow information)
Ohio River – Cincinnati, OH (513) 383-0527
Lower Mississippi River – Slidell, LA (504) 641-4343
North Central – Minneapolis, MN (612) 361-6660
National Ocean Service (NOS) (Water Levels) (301) 713-2902
Silver Spring, MD (301) 713-2902 (business hours)

Air Dispersion

NOAA MASS (206) 526-6317
U.S. EPA ERT (908) 321-6660
ATSDR (404) 639-0615
Environment Canada (416) 346-1971
Ontario Ministry of the Environment, Spills Action Center (416) 325-3000

COMMUNICATIONS RESOURCES

First Class (NOAA RRT System) (202) 267-4497 (CDR Gerry Wheaton)

ORSANCO Electronic Bulletin Board (513) 231-7719

NON-FEDERAL CHEMICAL EXPERTISE

Chemical Transportation Emergency Center (CHEMTREC) (800) 424-9300 (24-hour emergency number)

American Petroleum Institute (API) (202) 682-8000 (business hours)

National Pesticide Telecommunication Network (800) 858-7378

Canadian Transport Emergency Center (CANUTEC) (613) 996-6666 (24-hour)

Association of Railroads, Bureau Of Explosives (202) 639-2222 (business hours)
(800) 424-9300 (24 hr. via CHEMTREC)

BASIC ORDERING AGREEMENT (BOA) CONTRACTORS

http://www.uscg.mil/mlclant/fdiv/8thdistrict.htm
http://www.uscg.mil/mlclant/fdiv/9thdistrict.htm

BIRDS, FISH, AND WILDLIFE

Tri-State Bird Rescue and Research, Inc. (302) 737-7241
Wilmington, DE

The National Animal Poison Control Center (888) 426-4435

ACCESS TO THE OIL SPILL LIABILITY TRUST FUND (OSLTF)

The NPFC can be contacted at (703) 235-4700. Its mailing address is 4200 Wilson Blvd., Ste. 1000 Arlington, VA 22203-1804

BY U.S. EPA

Following spill notification, the OSC should:

(a) Contact the appropriate USCG District Office to obtain a Federal Project Number (FPN) for the response;

(b) Obtain approval for the project expenditure ceiling from USCG;

(c) Contact U.S. EPA Region 5 Budget Office in Cincinnati and obtain an account number;

(d) If necessary, initiate proper contracting mechanisms (such as ERCS, BOA, START) to assist in the cleanup effort; and

(e) If necessary, utilize Federal support structure as defined in the NCP. An OSC may obtain assistance from USCG/Strike Teams, NOAA, ERT, etc.

During the actual response, the OSC should:

(a) Document progress through POLREPs, including costs (copies to National Pollution Funds Center [NPFC], Marine Logistics Command [MLC], District); and

(b) Track costs using U.S. EPA Removal Cost Management System or USCG paperwork.

In the case of a cleanup that lasts 30 days or less, the OSC must submit a cost documentation package within 30 days of cleanup completion.

For cleanups that extend beyond 30 days, the OSC must submit a cost documentation package every 45 days.

The documents to be included in cost documentation package are listed below:

(a) Summary letter,

(b) Personnel costs,

(c) Personnel travel costs,

(d) Other U.S. EPA costs, including U.S. EPA vehicles and equipment,

(e) U.S. EPA contractor costs,

(f) USCG Basic Ordering Agreements (BOAs), and

(g) Other government agency costs (local, State, or Federal).

TRUSTEE ACCESS

Trustees must obtain OSC approval prior to obtaining reimbursement of removal costs incurred while responding to an oil and/or hazardous substance discharge under the direction of the OSC. If a trustee believes that a Federal response action is necessary to protect natural resources, whether or not the response action has been Federalized, the trustee must notify the OSC in order to assure that any response action taken is authorized and in accordance with the requirements of the NCP, located at 40 CFR Part 300. If natural resource trustees wishes to access the OSLTF in order to initiate a natural resource damages assessment, they must work directly with the NPFC, through the Federal Lead Administrative Trustee. In addition, the trustees may submit claims for natural resource damages to the NPFC for payment from the OSLTF.

STATE CONTACTS

ILLINOIS

Illinois Environmental Protection Agency (IEPA) Duty Officer (217) 782-3637 (office)
(217) 782-7860 (24 hours)
During office hours, can issue emergency generator identification numbers (both State and Federal). During non-office hours, may issue exemptions for procedural requirements when necessary to prevent additional damage to the environment. Out-of-state wastes may require additional review time.

INDIANA

Office of Solid and Hazardous Waste Management (OSHWM) (317) 232-8603
Within Indiana – (800) 451-6027
Responsible for approving disposal of wastes from spill cleanups. Approval for disposal depends on the material spilled and the contaminated media. Disposal of non-hazardous wastes in Indiana landfills requires prior approval by submitting an application to the Special Waste Section of OSHWM.

Office of Air Management (317) 232-5672
Provides general information regarding open burning.

Office of Solid and Hazardous Waste Management (OSHWM) (317) 232-8925
Provides emergency Hazardous Waste Generator Identification Numbers during normal business hours.

Indiana State Police Motor Carrier Division (317) 233-6026 (normal business hours)
Inspects and regulates the transport of DOT hazardous materials

Office of Water Management (317) 232-8760 (normal business hours)
Issues permits to discharge treated water to surface water.

OHIO

Division of Hazardous Waste Management Central Office (614) 644-2917 (business hours)
Provide permission to detonate explosives. Under emergency conditions, the Ohio Environmental Protection Agency (OEPA) Emergency Response Duty Officer or OSC may grant verbal approval to local officials to detonate explosives.

OEPA Division of Hazardous Waste Management (614) 644-2977 (normal business hours)
Assigns Emergency Hazardous Waste Generator Identification Numbers. The OEPA Duty Officer and OSC may facilitate this process and help identify possible sites for waste storage and disposal.

Public Utilities Commission of Ohio (PUCO) (614) 466-3191
Registers Hazardous Material Transporters for OEPA.

NATURAL HERITAGE PROGRAMS

Indiana - Indianapolis	(317) 232-4052
Michigan - Lansing	(517) 373-1552/9338
Minnesota - St. Paul	(612) 331-0750
Ohio - Columbus	(614) 265-6453
Wisconsin - Madison	(608) 266-0924
Illinois - IEPA	(217) 782-3637

Nature Conservancy-sponsored inventories of "species of concern." Available during business hours only.

STATE HISTORICAL PRESERVATION OFFICERS (SHPOS)

Illinois
William L. Wheeler, SHPO
Associate Director
Illinois Historic Preservation Agency
(217) 785-1153
FAX: (217) 524-7525

Theodore Hild, Deputy SHPO
Chief of Staff
Preservation Services Division
Illinois Historic Preservation Agency
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FAX: (217) 524-7525

Indiana
Patrick Ralston, SHPO
Director, Dept.of Natural Resources
(317) 232-4020
FAX: (317) 232-8036

Daniel Fogerty, Deputy SHPO
Division of Historic Preservation
(317) 232-1646
FAX: (317) 232-8036

Michigan
Dr. Kathryn Eckert, SHPO
Department of State
(517) 373-6362
FAX: (517) 373-0511

Minnesota
Dr. Nina Archabel, SHPO
Director, Minnesota Historical Society
(612) 296-2747
FAX: (612) 296-1004

Ohio
Dr. W. Ray Luce, SHPO
The Ohio Historical Society
Historic Preservation Division
(614) 297-2470
FAX: (614) 297-2411

Wisconsin
Jeff Dean, SHPO
Director, Historic Preservation Division
State Historical Society of Wisconsin
(608) 264-6500
FAX: (608) 264-6404

STATE DEFINITIONS OF SPILLS

Illinois	Loss of any amount from primary containment which results in contamination of the environment.
Indiana	Any unexpected, unintended, abnormal, or unapproved loss, dumping, seepage, etc. of oil/hazmat into State waters.
Michigan	N/A
Minnesota	Discharge of anything which could cause water pollution; for petroleum 5 gallons. No legal definition of "spill."
New York	Any escape of petroleum from ordinary containers used in storage, transport, processing, or use which becomes a "discharge" when it reaches State waters/tributaries.
Ohio	A release under ORC 3750.01(L); a sheen on navigable waters, 25 gallons outside secondary containment.
Pennsylvania	Any pollutant discharge into surface or groundwater, including sewers, drains, and ditches. No minimum reportable quantity. (Oil: 5 gallons minimum recommended reported to Department of Environmental Protection.)
Wisconsin	(Not limited to) spilling, leaking, pumping, emitting, emptying, or dumping substances in quantities determined harmful to the environment, public health, safety, or property. No minimum reportable quantity.

STATE RESPONSE HIERARCHY

Illinois	Local responders—Illinois Pollution Control Board, Illinois Emergency Management Agency, Illinois DNR—Federal agencies. Authority: 35 IAC 750, 29 IAC 430, 415 ILCS 25, 415 ILCS 5.
Indiana	Local responders—Indiana Department of Environmental Management (State Fire Marshall/Police, Indiana DNR)—Federal agencies. Authority: SEMA/EO 89-12 and 89/18, Indiana Code 13-7, 327 Indiana Administrative Code 2-6 and 2-1.
Michigan	Local responders—Michigan State Police, Michigan Department of Natural Resources—Federal agencies. Authority:
Minnesota	Incident Command System: Local agencies—Minnesota Pollution Control Agency—Federal agencies. Authority: Minnesota Statute 115E
New York	Local responders (fire/police)—Department of Environmental Conservation, State Emergency Management Office—Federal agencies. Authority: 6 NYCRR 614 on Registry, Handling, Cleanup, Removal of Petroleum Products. See 6 NYCRR 595-599 on Hazmat procedures.
Ohio	Local fire department—Ohio EPA or State Fire Marshall (fire/explosion) or Emergency Management Agency (radiological)—Federal agencies. Authority: Ohio Statutes 3745, 3737.99
Pennsylvania	Local responders—Pennsylvania Department of Environment Protection/Pennsylvania Regional Emergency Response Manager—Federal agencies. Authority: Pennsylvania Hazardous Sites Cleanup Act, Pennsylvania Oil and Gas Act, Pennsylvania Safe Drinking Water Act.
Wisconsin	Lead decided through unified Command. Local responders—Wisconsin DNR—Federal agencies. Authority: Wisconsin Statues sections 144.76, 166.20, 166.215.

MODEL INITIAL U.S. EPA POLLUTION REPORT (POLREP)

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION REPORT

I. HEADING

Date:
Subject:
From:
To: E. Watkins, U.S. EPA, OSWER FAX: 703-603-9107
R. Karl, Chief, U.S. EPA ERB FAX: 312-353-9176
_____, Chief, U.S. EPA Response Section __ FAX: _____
B. Messenger, Chief, U.S. EPA ESS FAX: _____
T. Lesser, U.S. EPA Office of Public Affairs FAX: _____
_____, U.S. EPA ORC FAX: _____
_____, U.S. EPA Enforcement Specialist FAX: _____
_____, State agency FAX: _____
_____, USCG, District __ FAX: _____
U.S. Fish & Wildlife (State) FAX: _____
_____, County official FAX: _____

POLREP No.:

II. BACKGROUND

Site No.:
Delivery Order No.:
Response Authority:
ERNS No.:
CERCLIS No.:
NPL Status:
State Notification:
Action Memorandum Status:
Start Date:
Demobilization Date:
Completion Date:

III. SITE INFORMATION

A. Incident Category

B. Site Description

1. Site location
2. Description of threat

C. Preliminary Assessment/Site Inspection Results

IV. RESPONSE INFORMATION

A. Situation

1. Current situation
2. Removal activities to date
3. Enforcement

B. Planned Removal Activities

C. Next Steps

D. Key Issues

V. COST INFORMATION

The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

VI. DISPOSITION OF WASTES

Wastestream	Medium	Quantity	Containment/ Migration Control	Treatment	Disposal

SIZE CLASSES OF DISCHARGES

TYPE OF SPILL	OIL	HAZARDOUS SUBSTANCE	REQUIRED NOTIFICATION ACTIONS
MINOR	< 1,000 gal.	< Reportable Quantity	If circumstances warrant, POLREPs to Regional Response Center, the affected State, and appropriate Federal and State natural resources trustees
MEDIUM	1,000 – 10,000 gal.	> Reportable Quantity but does not meet criteria for a major or minor release	Same as for minor spills, except when response requirements exceed capabilities of OSC and local contractors, or when a potential exists for major environmental damage. Under these circumstances, initiate the notifications required for a major spill.
MAJOR	> 10,000 gal.	Amount that poses a substantial threat to human health, welfare, or the environment	Notify Regional Response Center by the most rapid means available, providing all known information, even if it has not been confirmed by on-scene personnel. An Incident-Specific RRT will then be activated.
WORST CASE	A worst case involves **ANY** discharge or threat of a discharge, in significant quantities to impact public health, welfare or the environment, where the parties responsible for the threat or discharge are unwilling or unable to perform the required response actions.		

USE OF IN SITU BURNING IN U.S. EPA REGION 5

Under certain specific conditions, in situ burning may offer a logistically simple, rapid, inexpensive, and relatively safe means for reducing the shoreline impacts of an oil spill. Moreover, because a large portion of the oil is converted to gaseous combustion products, the need for collection, storage, transport, and disposal of recovered material can be substantially reduced. In situ burning may be able to remove a large amount of spilled oil before spreading and drifting of the spill fouls shorelines and threatens wildlife. In certain circumstances, such as oil spilled in ice conditions, burning may be the only viable response technique. **Authorization of in-situ burning is subject to consultation and concurrence from the State and DOI.** Considerations for use should include an analysis of oil location and the potential impact of smoke on downwind populations.

Refer to Appendix VIII to the Region 5 Integrated Contingency Plan (ICP) for guidance for approving in situ burning of oil in Region 5.

USE OF CHEMICAL AGENTS

The OSC must choose the best method from the available response tools in any incident. The physical recovery and removal of oil is the preferred cleanup technique. Under certain conditions, however, chemical agents can be an effective tool. **There are no preapproved uses of chemical agents in Region 5.** If chemical use is considered, the guidelines below are intended to aid the OSC in making a decision.

U.S. EPA has compiled the NCP Product Schedule, a list of dispersants and other chemicals which the OSC and/or PRP may consider for use during a spill emergency. The Product Schedule does not authorize or preapprove use of any of the listed products. **The OSC may not authorize use of a product that is not listed on the Product Schedule.**

Application Steps for Use of Chemical Spill Control Agent

The OSC may consult with the NOAA or EPA Scientific Support Coordinator (SSC) prior to chemical agent application in U.S. EPA Region 5. The NOAA and EPA SSCs provide:

- oil spill modeling results,
- interpretation of ESI maps,
- location of sensitive areas,
- chemical effects, and
- environmental risks.

The OSC will request approval from the RRT to use chemicals on behalf of the spiller. Use of chemicals on a Regional boundary should include the appropriate RRT members of the bordering Region. The RRT shall be notified of any chemical use as soon as practicable.

The OSC may authorize or is authorized to use any chemical product without requesting permission if its use is necessary to prevent or substantially reduce a hazard to human life. The RRT should be notified as soon as practicable. In situations where a human hazard is not present, the OSC must receive the concurrence of:

(a) the RRT Co-Chair, and

(b) the RRT representative(s) of the affected State(s), in consultation with

(c) the DOI RRT member (and, where the Great Lakes are affected, the DOC RRT member, where practicable)

before authorizing use of a listed product.

Chemical Use Checklist

The OSC will supply the appropriate members of the RRT with the information contained in the checklist. The checklist provides information concerning the circumstances of the spill, trajectories, environmental resources at risk, and available decision-makers with the information necessary to make a decision on the use of chemical agents. The following Chemical Use Checklist is **Appendix VII** to the **Region 5 Integrated Contingency Plan (ICP)**:

CHEMICAL USE CHECKLIST

A. COMPILE DATA

_____ 1. Spill Data
Circumstances:

Time/date of incident:

Location:

Type of oil product:

Volume of product released:

Total potential of release:

Type of release (instantaneous, continuous, etc.):

_____ 2. Characteristics of Spilled Oils
Specific gravity:

Viscosity:

_____ 3. Weather and Water Conditions/Forecasts
Air temperature:

wind speed:

direction:

Water conditions:

temperature:

depth:

_____ 4. Oil Trajectory Information
48-hour surface oil trajectory forecast

Surface area of slick:

Expected conditions of landfall:

48-hour dispersed or chemically treated oil trajectory forecast

Oil movement in water column:

Surface oil movement and expected landfall:

Concentration of the dispersant/oil mixture in the water column:

5. Chemical Characteristics and Application Equipment

CHEMICAL CHARACTERISTICS

	Product 1	Product 2	Product 3
Chemical Name Trade Name Manufacturer When Available Location Characteristics: - toxicity - effectiveness - reactions - applicability - flash point Amount Available Type of Containers Application Methods Benefits to Problem (e.g. reduce vapor, increase viscosity)			

TRANSPORTATION AND EQUIPMENT

	Company 1	Company 2	Company 3
Name Location Equipment Available Transportation of Equipment			

6. Comparison of the Effectiveness of Conventional Clean Methods vs. Use of Chemicals

- Containment at the source
- Burning
- Shoreline protection strategies
- Shoreline cleanup strategies
- Time necessary to execute response

_____ 7. Habitats and Resources at Risk
Shoreline habitat type and area of impact
Resources
- Endangered/threatened species
- Critical habitat for the above species
- Waterfowl use
- Shellfish
- Finfish
- Commercial use
- Public use areas
- Other resources of significance

_____ 8. Other Users of the Water: Nearby and Downstream
- Water supply, potable
- Water supply, industrial

B. RECOMMENDATIONS

_____ 1. Options
- Do not use chemicals
- Use chemicals on a trial basis
- Disperse or chemically treat in limited defined areas
- Disperse or chemically treat to maximum extent possible with accepted methods and available equipment

_____ 2. Other Recommendations/Rationale:

C. EVALUATION OF DECISION

_____ 1. Will application remove a significant amount of the slick from the surface water?

_____ 2. Can the extent or location of shoreline impacts be altered in a positive manner?

_____ 3. Can the damage to endangered/threatened species, mammals, and waterfowl be lessened?

_____ 4. Will the damage to habitats and resources resulting from the chemical use be less than those resulting without the use?

_____ 5. If recreational, economic, and aesthetic considerations are a higher priority than natural resource considerations, what is the most effective means of their protection?

D. MONITORING OF CHEMICAL USE

_____ 1. Records
Chemical brand:

Equipment and methods used in application:

Dilution of chemical prior to application, if any:

Rate of application:

Times and area of application:

Wind and wave conditions during application:

_____ 2. Effectiveness—visual and photographic documentation
-Oil before and after chemical application
-Resurfacing of dispersed or chemically treated oil
-Sampling of the water beneath the oil slick and the oil/chemical combination to determine the level of petroleum hydrocarbons in the water

_____ 3. Environmental Impacts—visual and photographic surveys
-Extent of shoreline impact by chemically treated and untreated oil
-Mortality or abnormal behavior of fish, birds, or mammals
-Comparison of shoreline areas impacted by oil and oil/chemical mixtures
-Analysis of oil concentrations in sediments under chemically treated oil
-Investigation of water column organisms for signs of adverse impact due to chemically treated oil
-Collection and analysis of birds affected by chemicals or oil/chemical mixture

_____ 4. Public Health
-Sampling water supplies for petroleum and chemical constituents

REGIONAL OSC BOUNDARIES

U.S. EPA Region 3 OSC Boundaries
U.S. EPA Region 3 will provide OSCs for investigating and responding to releases to the main stem of the Ohio River from the Ohio-Pennsylvania boundary, mile 40.1, to the Kentucky-West Virginia boundary, mile 317.2.

All releases in the above-named stretch of the Ohio River emanating from sources in West Virginia will be handled by U.S. EPA Region 3 personnel; those from sources in Region 5 will be handled by personnel from Region 5.

If either RRT is activated, the Eighth USCG District would be involved along the entire stretch of the Ohio River.

U.S. EPA Region 4 OSC Boundaries
U.S. EPA Region 4 will provide OSCs for investigating and responding to releases of oil or hazardous materials to the main stem of the Ohio River from the Kentucky-West Virginia boundary, mile 317.2, to its junction with the Mississippi River, mile 981.2.

Releases in the above-named stretch of the Ohio River emanating from shoreline sources in U.S. EPA Region 4 will be handled by personnel of Region 4; those spills from shoreline sources in Ohio, Indiana, and Illinois will be handled by personnel from Region 5.

Region 4 will have the responsibility for ensuring notification of water users downstream of the location of the release, including coordination with ORSANCO, the USCG Eighth District, and COE when a release occurs on the south shoreline or in the main stream of the Ohio River;

Region 5 has a like responsibility, including coordination with ORSANCO, the USCG Eighth District, and COE when a release occurs on the north shoreline of the river.

Either Region, when requested by the other, may assume the functional OSC role for a particular incident. The decision to accept this responsibility will rest with the Region being requested on an incident-specific basis. Boundary lines do not preclude mutual assistance between the two agencies.

U.S. EPA Region 7 OSC Boundaries
U.S. EPA Region 7 will provide OSCs for investigating and responding to releases to the main stem of the Upper Mississippi River (UMR) when either Iowa or Missouri is the principal first responding State.

U.S. EPA Region 5 will have jurisdiction for such releases within the State of Minnesota and where Minnesota, Wisconsin, or Illinois is the first principal responding State.

When releases to the UMR main stem will result in significant response by more than one State, or when there is uncertainty as to the responding States, Region 7 will provide OSCs for such releases occurring between Cairo, Illinois, and Keokuk, Iowa (miles 0.0 to 354.5), and Region 5 above that point.

For spills from shore facilities and non-waterborne sources, OSCs will be provided by the Region in which the source is located.

U.S. EPA Region 8 OSC Boundaries
U.S. EPA Region 5 will provide OSCs for investigating and responding to releases to the main stem of the Red River of the North from its origin in Lake Traverse near Browns Valley, Minnesota, to the Canadian border. All spills to the above-named stretch of the Red River emanating from sources in North Dakota and South Dakota will be handled by Region 8 personnel.

South of the Browns Valley area, the boundary between South Dakota and Minnesota involves the headwaters of the Minnesota River flowing southward. Region 5 Spill Response personnel will respond to releases to the main stem of the Little Minnesota River and Big Stone Lake southward to Ortonville, Minnesota.

All releases to the above-named headwaters of the Minnesota River emanating from sources in South Dakota will be handled by Region 8 personnel; releases from sources in Minnesota will be handled by Region 5 personnel.

U.S. EPA Region 8 will provide communications as necessary with the Canadian Province of Manitoba concerning all releases occurring in waters flowing into Canada, including those emanating from Region 5.

Ninth Coast Guard District OSC Boundaries

Eight USCG units provide OSCs for releases occurring within the coastal zone, each serving a specific geographic area. These geographic areas are defined as: the international boundary with Canada, the boundaries between the units (described at 33 CFR 3.45), and the boundary between the inland zone and the coastal zone. In most locations, the boundary between inland and coastal zones follows the near shore areas adjoining the Great Lakes and the interconnecting rivers.

The following subsections detail, for each of the eight units, which tributaries fall within the coastal zone and where a geographic feature, such as a highway, serves as the boundary.

Marine Safety Office, Chicago, IL

1. Lake Michigan: within limits of COTP Chicago.
2. North Point Marina (Winthrop Harbor, Illinois): Entire marina.
3. Waukegan Harbor: Entire harbor.
4. Wilmette Harbor: From the entrance to the sluice gate.
5. Montrose Harbor (Chicago, Illinois): Entire harbor.
6. Belmont Harbor (Chicago, Illinois): Entire harbor.
7. Diversey Harbor (Chicago, Illinois): Entire harbor.
8. Chicago River: The outer harbor, limited to the waters outside the Chicago Lock and retaining walls, including the waters inside the lock gates.
9. Burnham Park Harbor (Chicago, Illinois): Entire harbor.
10. 59th Street Harbor (Chicago, Illinois): Entire harbor.
11. Jackson Park Harbor (Chicago, Illinois): Entire harbor.
12. Calumet Harbor and River (Chicago, Illinois): From the mouth of the Calumet River south to the north side of O'Brien Lock and Dam, including the waters inside the lock gates. From "The Forks" west to the temporary dike at the south boundary of Lake Calumet.
13. Hammond Marina: Entire marina.
14. Indiana Harbor (East Chicago, Indiana): Upstream to Conrail Railroad Bridge.
15. Pastrick Marina (East Chicago, Indiana): Entire marina.
16. Buffington Harbor (Gary, Indiana): Entire harbor.
17. Gary Harbor (Gary, Indiana): Entire harbor.
18. Burns Harbor (Burns Harbor, Indiana): From the entrance to the south end of deep draft slip.
19. Michigan City Harbor: Entrance to Bascule Bridge.
20. Betsie Lake (Frankfort): Entire lake throughout up to and including the mouth of the Betsie River to Highway M-22 bridge.
21. Arcadia Lake: Entire lake.
22. Portage Lake: Entire lake.
23. Manistee Lake (Manistee): Entire lake throughout up to and including the mouth of the Manistee River to Highway M-55 bridge.

24. Pere Marquette Lake (Ludington): Entire lake throughout up to and including the mouth of the Pere Marquette River to Old U.S. 31 bridge.
25. Pentwater Lake: Entire lake.
26. White Lake: Entire lake.
27. Muskegon/Bear Lake (Muskegon, Michigan): Entire lake throughout up to and including the Muskegon River to the U.S. 31 bridges.
28. Mona Lake: Entire lake.
29. Spring Lake: Entire lake.
30. Grand River: From the mouth to the end of the dredged channel at Buoy #78 (in Ottawa County approx.17 miles upstream).
31. Pigeon Lake: Entire lake up to the fixed bridge in the intake channel of the J.H. Campbell power plant and on the eastern end up to the fixed bridge of Lakeshore Avenue.
32. Lake Macatawa: Entire lake to the end of the dredged channel marked by buoys #25 and #26 (eastern end of the lake in Holland).
33. Kalamazoo Lake (Douglas/Saugatuck): Entire lake up to and including the Kalamazoo River to the CSX Railroad bridge, approximately 11 miles upstream.
34. Black River (South Haven): From the mouth to the U.S. 31 bridge, approximately 2.6 miles upstream.
35. St. Joseph River (St. Joseph): From the mouth to the Somerleyton bridge, approximately 6.6 miles upstream.
36. Paw Paw River (Benton Harbor): From the mouth to the CSX Railroad bridge, approximately 3.2 miles upstream.
37. Galien River: from the mouth to the Highway 12 bridge, approximately 2 miles upstream.

Marine Safety Office, Cleveland, OH
1. Ashtabula River (Ashtabula, Ohio): Upstream to East 5th Street.
2. Black River (Lorain, Ohio): Upstream to the turning basin at the National Tube Division of U.S. Steel (river mile 3.0).
3. Conneaut River (Conneaut, Ohio): Upstream to the Bessemer and Lake Erie Railroad Swing Bridge at Pittsburg & Conneaut Dock Comp. (river mile 0.75).
4. Cuyahoga River (Cleveland, Ohio): Upstream to the mouth of Big Creek in the Metropolitan Parks (river mile 7.5).
5. Grand River (Fairport Harbor, Ohio): Upstream to the turning basin at Osborn Concrete and Tank Company.

In addition to the river miles mentioned above, the coastal/inland zone demarcation shall be defined by the boundary on the highway created by State Route 2 from Vermilion to North Perry and then U.S. Route 20 from North Perry to the Ohio/Pennsylvania border. The costal zone being all waters and adjacent shoreline north of this boundary, any incident on the above-mentioned highways will be the responsibility of U.S. EPA but it should be noted that the COTP may be requested to respond as First Federal Official on scene until a U.S. EPA OSC can respond.

Marine Safety Office, Detroit, MI
1. Lake Huron: From Latitude 44-43' south and east to international boundary.
2. Saginaw Bay: The entire Saginaw Bay.
3. St. Clair River: East to international boundary.
4. Lake St. Clair: East to international boundary.
5. Detroit River: South to Detroit River Light and east to international boundary.
6. Au Gres River (Au Gres, Michigan): Upstream to U.S. 23 Bridge.
7. Au Sable River (Oscoda, Michigan): Upstream to Mill Street Bridge.
8. Bird Creek (Port Austin, Michigan): Upstream to Spring Street Bridge.
9. Belle River (Port Huron, Michigan): Upstream to M-29 Broadway Bridge.
10. Black River (Port Huron, Michigan): Upstream to and including Black River Canal.

11. Clinton River (Harrison Township, Michigan): Up to and including Clinton River Spillway.
12. Ecorse River (Ecorse, Michigan): Upstream to Jefferson Avenue Bridge.
13. Huron River (Rockwood, Michigan): Dixie Highway Bridge 1.8 miles above mouth of river.
14. Milk River (St. Clair Shores, Michigan): Up to Jefferson Avenue Bridge.
15. Pigeon River (Caseville, Michigan): Upstream to M-25 Bridge.
16. Pine River (St. Clair, Michigan): Upstream to CSX Railroad Bridge.
17. River Rouge (Saginaw and Bay City, Michigan): Upstream to .5 mile above Center Street Bridge in Saginaw.
18. Salt River (Chesterfield Township, Michigan): Upstream to Callens Road Bridge.
19. Sebewaing River (Sebewaing, Michigan): Upstream to M-25 Bridge.

Marine Safety Office, Duluth, MN
Within Duluth/Superior Harbor, COTP Duluth will assume the responsibility for providing FOSCs in Duluth/Superior Harbor to the mouths of all small tributary rivers and creeks entering into the harbor, plus the St. Louis River serviced by existing patrols and aids to navigation up to the Highway Bridge on Route 23 at Fond du Lac, Minnesota, and the waters of Lake Superior within COTP Duluth.

Marine Safety Office, Milwaukee, WI
1. All waters of Lake Michigan within COTP Milwaukee's zone.
2. Pike Creek (Kenosha): To the Sixth Avenue Bridge.
3. Root River (Racine): To the Main Street Bridge.
4. Oak Creek (Milwaukee): To its mouth.
5. Kinnickkinnic River (Milwaukee): To the South Kinnickkinnic Avenue Bridge.
6. Menominee River (Milwaukee): To mile 2 (25th Street Bridge)
7. Milwaukee River (Milwaukee): To the North Humboldt Avenue Bridge.
8. Sauk Creek (Port Washingtom): To the Wisconsin Street Bridge.
9. Sheboygan River (Sheboygan): To the Pennsylvania Avenue Bridge.
10. Manitowac River (Manitowac): To the C&NW Railroad Bridge.
11. West Twin River (Two Rivers): To the 16th and Madison Streets Bridge.
12. East Twin River (Two Rivers): To the 22nd Street Bridge.
13. Kewaunee River (Kewaunee): To the Park Street Bridge.
14. Ahnapee River (Algoma): To the 2nd Street Bridge.
15. Fox River (Green Bay): To the State Route 172 Bridge.
16. East River (Green Bay): To the Monroe Avenue Bridge.
17. Oconto River (Oconto): To the turning basin.
18. Menominee River (Marinette, Wisconsin to Menominee, Michigan): To the Dunlap Avenue (Highway 41) Bridge.

Marine Safety Office, Sault Ste. Marie, MI
1. Lake Superior: The waters, bays, tributaries, and adjoining shoreline of Lake Superior within U.S. territory, eastward from the westernmost boundary of the Area of Operations (AOR) to a line between Point Iroquois running northeast to Gros Cap Reef Light on the International Boundary.
2. St. Mary's River: The waters, bays, tributaries, and adjoining shoreline of the St. Mary's River within U.S. territory, from a line between Point Iroquois and Gros Cap Reef Light southward to a line between Detour Reef Light and Crab Island Shoal Light, including the waters of Potagannissing Bay.
3. Lake Huron: The waters, bays, tributaries, and adjoining shoreline of Lake Huron within U.S. territory, northward from the southernmost boundary of the AOR, west to the Straits of Mackinaw Bridge.

4. Lake Michigan: The waters, bays, tributaries, and adjoining shoreline of Lake Michigan, eastward from the westernmost boundary of the AOR, to the Straits of Mackinaw Bridge.

Marine Safety Office, Toledo, OH

1. River Raisin (Monroe, Michigan): Upstream to the turning basin (river mile 1.5).
2. Maumee River (Toledo, Ohio): Upstream to the I-75 Bridge.
3. Portage River (Port Clinton, Ohio): Upstream to Highway 163.
4. Sandusky Bay (Sandusky, Ohio): Upstream to Highway 2.
5. Huron River (Huron, Ohio): Upstream to turning basin (mile .5).
6. Lake Erie: The open waters, bays, harbors, and mouths of tributaries within the COTP Toledo zone.

Ninth Coast Guard District Responses in the Inland Zone

Ordinarily, the Ninth Coast Guard District will not provide the OSC for a release occurring in the inland zone. However, where a Marine Safety Officer responds in the inland zone to a marine casualty or other incident pursuant to USCG port safety and commercial vessel safety responsibilities, that officer will serve as the First Federal Official On Scene, pending arrival of the predesignated U.S. EPA OSC. In this capacity, that officer will manage any cleanup actions performed by the responsible party and, if necessary, will initiate a Federal removal.

The U.S. EPA Region 5 office may request that the Ninth Coast Guard District provide the OSC for a release in the inland zone, regardless of source, because of the particular circumstances of the incident.

Eighth Coast Guard District OSC Boundaries

Agency responsibilities have been reassigned to more clearly reflect the inland and coastal zone delineation. The revised MOU assigns the U.S. EPA as the predesignated OSC for the entire inland zone, including the inland river system within the Eighth District. The previous agreement designating specified ports and harbors as portions of the Coastal Zone is no longer applicable.

The Eighth District will assist the predesignated U.S. EPA OSC where there is a discharge or release of oil or hazardous substances, or a threat of such a discharge or release, into or on navigable waters. Upon request by the U.S. EPA OSC, the USCG may act on behalf of U.S. EPA, assuming the functional role and responsibilities of the OSC. If the USCG is the first Federal official on-scene, the USCG will notify the U.S. EPA OSC and act as the OSC until such time as the U.S. EPA OSC arrives. If the incident involves a commercial vessel, a transfer operation, or a marine transportation related facility, the USCG will provide the OSC.

SUB-AREAS IN REGION 5

Sub-Area	OSC	Description	Draft/ Final Plan	Update 11/9/99
Duluth	Jaster	1 county in w/USCG mtg 4x/yr 2 sub/sub		
Sault Ste. Marie	Borries	plan attached to 26 local plans	yes/yes	
Milwaukee	Vendl	mtg 4x/yr close to 1 county in w/USCG		
Chicago	Gebien/ Benning	UMRBA gathering data		
NW Indiana				
W Michigan	Micke			
Detroit	Durno	rewrite in 1 county in w/USCG	yes/yes	
Toledo	Augustyn	1 county in w/USCG	yes/yes	
Cleveland	Auker	1 county in w/USCG		
HERO (Upper Ohio River)	Fredle	1 county in w/USCG, Regions III, IV	yes	
Cincinnati	Renninger	draft will be ready this year		
Evansville	Turner	had one meeting in 1997		
St.Louis	Lee	joint w/Region VII mtg every 2 mos	yes	
Quad Cities	Lee	joint w/Region VII mtg 4x/yr	yes/yes	
Twin Cities	Lavis	mtg 2x/yr	yes/yes	
UMRBA	Faryan	mtg 2x/yr UMR spills group plan	yes/yes	
Peoria	Bollatino	working w/EMA		
Indianapolis	Vega			
Columbus	Stimple			
Red River	Micke	joint w/Region VIII		