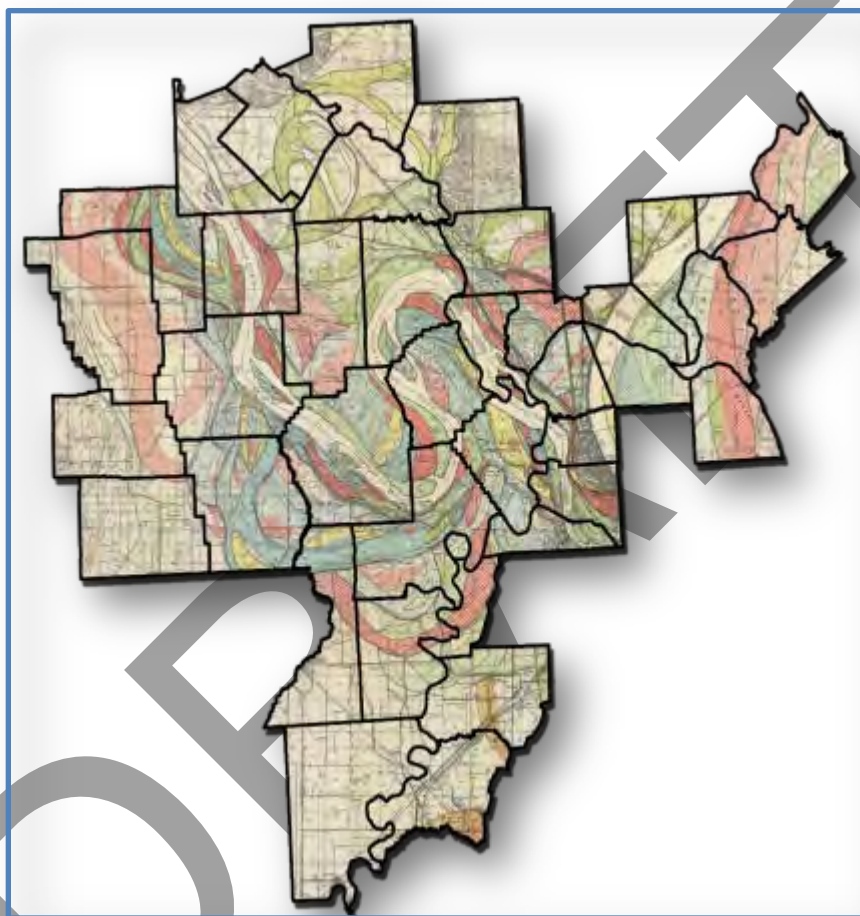


# U.S. Environmental Protection Agency Great Rivers Sub-Area Contingency Plan

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To report spills, call the:

**National Response Center**

United States Coast Guard Headquarters  
Washington, D.C.

**(800) 424-8802**

## State Emergency Contact Information:

**Arkansas**  **800-322-4012**

Arkansas Department of Emergency Management

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**Illinois**  **800-782-7860** (in Illinois)  
**217-782-7860** (out-of-state)

Illinois Emergency Management Agency

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**Kentucky**  **800-928-2380**  
**502-564-2380**

Kentucky Department for Environmental Protection

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**Missouri**  **573- 634-2436**

Missouri Department of Natural Resources –  
Environmental Emergency Response

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**Tennessee**  **(731) 422-3300**

Tennessee Emergency Management Agency – West Region

**Special Notice**

The Great Rivers Sub-Area Contingency Plan (GRSACP) is intended for broad dissemination. Questions regarding this plan should be addressed to:

Great Rivers Sub-Area On-Scene Coordinator  
U.S. Environmental Protection Agency  
SUPR/ERSB  
11201 Renner Blvd  
Lenexa, KS 66219

The latest version of this plan will be available on the internet at: [http:// www.epaosc.org/greatrivers](http://www.epaosc.org/greatrivers)

To request changes or special access to the plan, please contact:

**Heath Smith**  
**On-Scene Coordinator**  
**U.S. EPA – Region 7**  
**Superfund Division**  
[smith.heath@epa.gov](mailto:smith.heath@epa.gov)  
**11201 Renner Blvd**  
**Lenexa, KS 66219**  
**(913) 551-7903**

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## Preamble

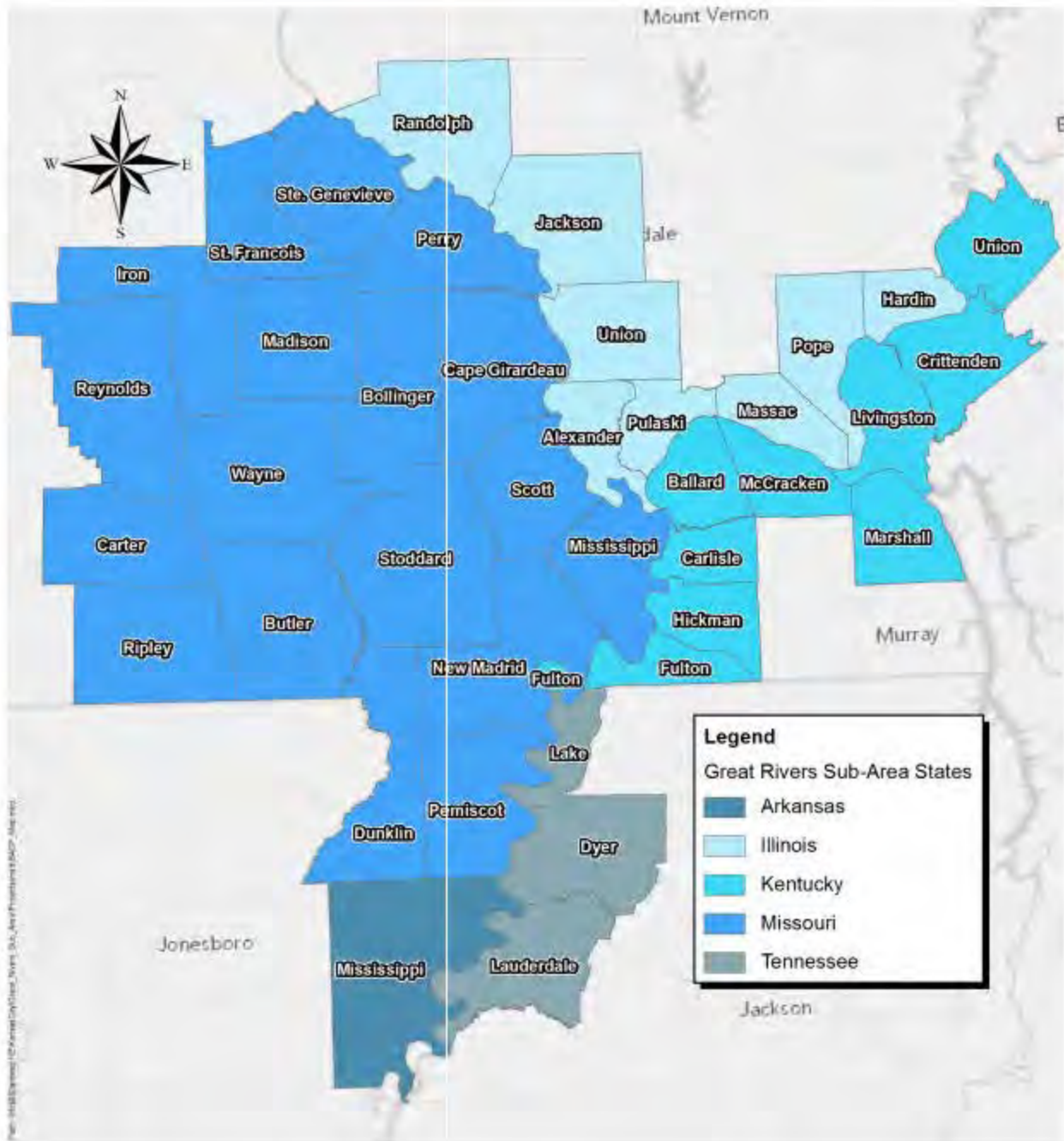
The Great Rivers Sub-Area Contingency Plan (GRSACP) is a collaborative effort of federal and state agencies, emergency managers, and local emergency responders from within the geographic area surrounding the confluence of the Mississippi and Ohio Rivers.

This Plan is not intended to supplant any local, state, regional, or national level response or contingency plan. Rather, it should be reviewed in conjunction with the relevant regional, state, and local plans. It is designed as a tool and source of information for first responders facing the unique physical conditions and blend of governmental jurisdictions within the Great Rivers Sub-Area. The Sub-Area includes the following counties:

- In Arkansas: Mississippi County
- In Illinois: Alexander, Hardin, Jackson, Massac, Pope, Pulaski, Randolph, and Union Counties
- In Kentucky: Ballard, Carlisle, Crittenden, Fulton, Hickman, Livingston, McCracken, Marshall, and Union Counties
- In Missouri: The Bootheel Local Emergency Planning District (LEPD) (Dunklin, Mississippi, New Madrid, Pemiscot, Scott, and Stoddard Counties); Southeast Missouri LEPD (Bollinger, Cape Girardeau, Madison, Iron, Perry, Saint Francois, and Sainte Genevieve Counties); and Ozark Foothills LEPD (Butler, Carter, Reynolds, Ripley, and Wayne Counties)
- In Tennessee: Lake, Dyer, and Lauderdale Counties.

A map of the Great Rivers Sub-Area is shown on Figure 1. This plan will be updated annually. More frequent revisions could occur if developments warrant. Corrections or suggestions may be submitted using the Corrections and Updates Form in Appendix I, or by e-mail to the contact(s) listed on Page i.

Figure 1: Map of the Great Rivers Sub-Area



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## **I. Introduction**

### **A. Purpose and Objective**

The purpose of the Great Rivers Sub-Area Contingency Plan (GRSACP) is to facilitate a timely, effective, and cooperative response by representatives of private, local, state, and federal agencies to a discharge of oil or release of hazardous substances within the Great Rivers Sub-Area (GRSA).

### **B. Sub-Area Statutory Authority**

The GRSACP was prepared under Section 311(j) of the Clean Water Act (CWA), as amended by the Oil Pollution Act of 1990 (OPA or OPA 90), 33 *United States Code* (U.S.C.) 1251 et seq., the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 *Code of Federal Regulations* (CFR) part 300, and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601, as amended.

### **C. Scope**

The GRSACP, in conjunction with the National Response Framework (NRF), the NCP, U.S. Environmental Protection Agency (EPA) Regions 4, 5, 6 and 7 Regional Contingency Plan (RCP)/Area Contingency Plans (ACP), and state and local plans, will apply to discharges of oil and/or releases of hazardous substances as defined in Section 300.3 of the NCP. The GRSACP is intended as a supplement to the respective regional EPA RCP/ACPs.

### **D. Updating**

The GRSACP will be updated annually unless more frequent updates become necessary because of changes in relevant regional or national plans or insights gained during responses. Response equipment, notifications lists, environmentally or economically sensitive area listings, and other relevant data may be updated or incorporated into the plan as these become available.



## II. Relationship to other Contingency Plans

### A. Private-sector Response Plans

Federal and state regulations require facility operators to maintain plans designed to prevent or mitigate releases or discharges to the environment. A particular facility may be subject to one or more of the following federal regulations (for a complete list of acronyms and abbreviations, see Appendix A):

- EPA's Oil Pollution Prevention Regulation (Spill Prevention Control and Countermeasures [SPCC] and Facility Response Plan [FRP] Requirements) – 40 CFR parts 112.7(d) and 112.20-21
- EPA's Emergency Planning and Community Right-to-know Act (EPCRA) – Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III)
- Bureau of Ocean Energy Management, Regulation and Enforcement (BOEM) Facility Response Plan Regulation – 30 CFR part 254
- Research and Special Programs Administration's (RSPA) Pipeline Response Plan Regulation – 49 CFR part 194
- United States Coast Guard's (USCG) Facility Response Plan Regulation – 33 CFR part 154, sub-part F
- EPA's Risk Management Programs Regulation – 40 CFR part 68
- Occupational and Health Administration's (OSHA) Emergency Action Plan Regulation – 29 CFR 1910.38(a)
- OSHA's Process Safety Standard – 29 CFR 1910.119
- OSHA's Hazardous Waste Operations and Emergency Response (HAZWOPER) Regulation – 29 CFR 1910.120, and EPA's Resource Conservation and Recovery Act (RCRA) Contingency Planning Requirements – 40 CFR part 264, Sub-part D; 40 CFR part 265, sub-part D; and 40 CFR 279.52
- Clean Air Act (CAA) – 40 CFR part 68.

The National Response Team's (NRT) Integrated Contingency Plan (ICP) Guidance was published in the *Federal Register* on June 5, 1996 (Vol. 61, No. 109, 28642-28664). The ICP provides a mechanism for consolidating multiple plans into one functional emergency response plan. It does not relieve facilities of their current emergency planning obligations, and adherence to the ICP guidance is not required in order to comply with federal regulatory requirements. Facilities are free to continue maintaining multiple plans in lieu of an ICP to demonstrate federal regulatory compliance. A brief discussion of facility emergency response plans, specifically those pertaining to the NCP, OPA 90, and CWA, follows. Section 300.211 of the NCP describes and cross references the regulations that implement section 311(j)(5) of the CWA. Owners of tank vessels, offshore facilities, and certain onshore facilities are required to prepare and submit FRPs for responding to an oil or hazardous substance worst-case discharge (WCD) or substantial threat of discharge. Regulations and requirements governing FRPs are specified in 40 CFR § 112 and 33 CFR § 154. Prior to approval, facility and vessel response plans shall be reviewed for consistency with any relevant ACP or RCP.

As defined in OPA 90, each responsible party (RP) for a vessel or a facility that discharges oil or poses a substantial threat of a discharge into or upon the navigable waters or adjoining shorelines or the

Exclusive Economic Zone is liable for removal costs and damages as specified in Section 311(f) of CWA, 33 U.S.C. § 311(f). Any removal activity undertaken by the RP must be consistent with the provisions of the NCP, the RCP, and the applicable response plan required by OPA 90. In addition, if directed by a Federal On-scene Coordinator (FOSC) at any time during removal activities, the RP must act accordingly. Section 311(j) (5)(c) of CWA requires that FRPs shall:

- (i) be consistent with the requirements of the NCP and ACP;
- (ii) identify the qualified individual having full authority to implement removal actions, and require immediate communication between that individual and the appropriate Federal official and the persons providing personnel and equipment pursuant to clause (iii);
- (iii) identify, and ensure by contract or other means approved by the President the availability of, private personnel and equipment necessary to remove to the maximum extent practicable a worst case discharge (including a discharge resulting from fire or explosion), and to mitigate or prevent a substantial threat of such a discharge;
- (iv) describe the training, equipment testing, periodic unannounced drills, and response actions of persons on the vessel or at the facility, to be carried out under the plan to ensure the safety of the vessel or the facility and to mitigate or prevent the discharge, or substantial threat of a discharge;
- (v) be updated periodically; and
- (vi) be resubmitted for approval of each significant change.

## B. Local Response Plans

Sections 301 and 303 of EPCRA, which is SARA Title III, provide for establishment of Local Emergency Planning Committees (LEPC) within districts to facilitate preparation and implementation of emergency plans.

## C. Area and Regional Contingency Plans

Section 300.210(b) of the NCP provides for establishment of Regional Response Teams (RRTs) and sets their role in the implementation of RCPs. The NCP, § 300.210(c), provides for establishment of Area Committees (ACs) and implementation of ACPs. Regions 4, 5, 6, and 7 have opted to integrate these requirements through creation of a Regional Integrated Contingency Plan (RICP). The RICPs also include elements of Emergency Support Function (ESF) 10 (Hazardous Materials) of the NRF and of the National Incident Management System (NIMS), published March 1, 2004. The NRF superseded corresponding sections of the National Response Plan (NRP) on March 28, 2008. The NRP was originally published in December 2004 and was revised in 2006.

### 1. Regional Response Teams

Team	Jurisdiction within the GRSA	RRT Website
R4 RRT	Kentucky and Tennessee	<a href="http://www.rrt4.nrt.org/">http://www.rrt4.nrt.org/</a>
R5 RRT	Illinois	<a href="http://www.rrt5.org/">http://www.rrt5.org/</a>
R6 RRT	Arkansas	<a href="http://www.epaosc.org/region6rrt">http://www.epaosc.org/region6rrt</a>
R7 RRT	Missouri	<a href="http://www.rrt7.nrt.org/">http://www.rrt7.nrt.org/</a>

## **2. Upper Mississippi River Basin Spill Response Plan (R5)**

The Upper Mississippi River Hazardous Spills Coordination Group has developed a specific response plan for the interstate Upper Mississippi River (UMR), called the Upper Mississippi River Spill Response Plan and Resource Manual. The plan includes notification protocols, response protocols, and a resource manual listing a variety of river resources critical to spill response. This plan is updated and maintained by the Spills Coordination Group in conjunction with Upper Mississippi River Basin Association (UMRBA).<sup>1</sup>

## **3. Ohio River Umbrella Plan (R4)**

The Ohio River Umbrella Plan includes a discussion of authorities, roles, and responsibilities of FOSCs pertaining to an inland river response. Under NCP, EPA is the lead federal agency, and provides the FOSC for an oil discharge or hazardous substance release within the Ohio River Basin, except where the discharge or release involves a commercial vessel, a commercial vessel transfer operation, or the marine-transportation related portion of a facility in accordance with the EPA/USCG Memorandums of Understanding (MOUs). The Umbrella Planning Document describes the geographic response boundaries along the Ohio River.<sup>2</sup>

## **D. National Plans**

### **1. National Oil and Hazardous Substances Pollution Contingency Plan**

Section 300.2 of the NCP lists the various federal statutes that provide for establishment of the NRT and implementation of the NCP.

### **2. National Response Framework**

Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-707, signed into law November 23, 1988; amended the Disaster Relief Act of 1974, PL 93-288. Subsequently, the NRP was developed. As required by Homeland Security Presidential Directive (HSPD)-5, the NRP provided a single, comprehensive approach to domestic incident management to prevent, prepare for, respond to, and recover from terrorist attacks, major disasters, and other emergencies. The NRP was an all-hazards plan built on the template of the NIMS. As a result of lessons learned during the response to Hurricane Katrina, the NRP was modified and given a new name, the National Response Framework (NRF). On March 28, 2008, the NRF became effective and superseded corresponding sections of the NRP. Neither the NRP nor the NRF supplanted the NCP. The NRF core document, along with the ESF Annexes and Support Annexes, is available on the Internet at the NRF Resource Center: <http://www.fema.gov/national-planning-frameworks>.

## **III. Description of Great Rivers Sub-Area**

### **A. Rationale for Sub-Area Creation**

Sub-Area plans represent a collaborative approach to coordinate responses by all levels of government. OPA 90 required the Federal Government to establish ACPs throughout the United States in order to provide more coordinated, efficient, and thorough responses by local, state, and federal agencies to releases of oil. The NCP incorporated hazardous substances into this process because of the advantages

<sup>1</sup> <http://www.umrba.org/spillplans.htm>

<sup>2</sup> [http://www.nrt.org/production/NRT/RRTHome.nsf/resources/RRTIVa/\\$File/OhioValleyUmbrellaPlan.pdf](http://www.nrt.org/production/NRT/RRTHome.nsf/resources/RRTIVa/$File/OhioValleyUmbrellaPlan.pdf)

of utilizing a single plan for spills of all types of hazardous materials (Hazmat). EPA Region 7 decided to create only one ACP, with its geography coincident with the four states of Region 7. EPA Regions 4, 5, and 6 adopted similar approaches for their inland areas. The RRTs, whose members also serve on the AC, later decided to consolidate their respective RCPs, ACPs, and applicable elements of the FRP into RICPs.

The respective ACs determined to create several Sub-Area plans within their regions. Initial emphasis focused on areas where multiple governmental jurisdictions are involved and areas with special environmental or economic qualities that necessitate a prompt response.

The GRSA was created to bridge the jurisdictional boundaries where the Great Ohio and Mississippi Rivers converge. The region is an important economic and ecological hub, and is particularly vulnerable because of the proximity of the New Madrid seismic zone. The Ohio and Mississippi River valleys are particularly important to commercial transportation due to the convergence of barge, highway, and rail corridors that traverse the area. They are also important ecologically as migratory bird flyways, and habitat for threatened and endangered species. Additionally, the area contains a high relative abundance of native species because of convergence of ecological zones including gulf coastal plain, ozark, appalachian, eastern tall grass prairie, and big river fauna. Earthquakes, flooding, or man-made accidental releases have high potential to expose human populations as well as fish and wildlife to hazardous substances, disrupting economic and ecological functions of the region.

## **B. Geography of the Sub-Area**

The Great Rivers Sub-Area is roughly centered near the town of Sikeston, Missouri. This Sub-Area includes the following counties: Mississippi county in Arkansas; Alexander, Hardin, Jackson, Massac, Pope, Pulaski, Randolph, and Union counties in Illinois; Ballard, Carlisle, Crittenden, Fulton, Hickman, Livingston, McCracken, Marshall, and Union counties in Kentucky; the Bootheel LEPD [Dunklin, Mississippi, New Madrid, Pemiscot, Scott, and Stoddard Counties], Southeast Missouri LEPD [Bollinger, Cape Girardeau, Madison, Iron, Perry, Saint Francois, and Sainte Genevieve Counties], and Ozark Foothills LEPD [Butler, Carter, Reynolds, Ripley, and Wayne Counties] in Missouri; and Lake, Dyer, and Lauderdale Counties in Tennessee.

The GRSA geographically coincides with the convergence of the Mississippi and Ohio Rivers. The system of geologic faults known as the New Madrid Seismic Zone lies within the GRSA. Strategically located, the GRSA includes counties from five states that border the Mississippi River in the area. Due to historical flooding and seismic events, the counties of this region share a common interest in preparedness. Flooding in the area is common during the spring months, attracting national attention since the early 20<sup>th</sup> Century.<sup>3</sup> The last major seismic activity was the infamous 1811-1812 New Madrid event.

The GRSA has a subtropical climate, with annual temperatures ranging from a mean low of 24 degrees Fahrenheit (°F) in January to a mean high of 90°F in July. Precipitation occurs throughout the year in this area, but is heaviest during the spring and summer months. Mean annual precipitation in the area is 50 inches. Winter months are usually driest, with mean January precipitation of 3.6 inches in the area, with annual snowfall between 8 and 12 inches. Severe weather in the area is a normal occurrence, with peak tornado, thunderstorm, and damaging hail activity between April and July of each year. Measurable precipitation occurs about 100 days a year—nearly half of these events are severe weather events.

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<sup>3</sup> [http://www.apfm.info/pdf/case\\_studies/cs\\_usa\\_mississippi.pdf](http://www.apfm.info/pdf/case_studies/cs_usa_mississippi.pdf)

Cape Girardeau, Missouri is the largest population center within the GRSA. With a population of 37,941<sup>4</sup>, Cape Girardeau is situated directly on the Mississippi River. Paducah, Kentucky also lies within the GRSA. Paducah is situated on the Ohio River and hosts a population of 25,135<sup>4</sup>. Large metropolitan areas exist just outside of the Sub-Area, including St. Louis to the north and Memphis to the south. With locations near the confluence of the Ohio and Mississippi Rivers, these cities and their surroundings are hubs of the shipping industry throughout the area. The Ohio and Mississippi Rivers also are transportation corridors.

## **IV. Roles and Authorities of Government Agencies**

### **A. Introduction and Assumptions**

NIMS was adopted as the standard for incident management on March 1, 2004. It is presumed that organizations or agencies responding to an incident within the GRSA will be familiar with the NIMS process and will be prepared to integrate themselves into the NIMS framework.

### **B. Local Governments**

#### **1. Roles and Responsibilities of Local First Responders**

During any fire or discharge of oil or hazardous substance, the local fire department with jurisdiction will respond and will initially provide an incident commander (IC) as the response begins and while threats to life and human safety continue. The local police department will be responsible for traffic and crowd control on public property. If terrorism is suspected or if there is any reason to suspect a crime has been committed, local law enforcement will secure the scene. Local law enforcement and all other first responders will assist state and federal law enforcement authorities in collection and preservation of potential evidence.

Municipal public works departments will provide assistance if it is necessary to divert or prevent the flow of contaminated materials through the stormwater or sewer system. Following Sub-Area Contingency Plan (SACP) notification guidelines (see Section VII A, Protocol) the IC may notify state agencies if special expertise is needed, if the incident threatens impact beyond the local jurisdiction, or if hazardous wastes might be generated. The fire department commander, State On-Scene Coordinators (SOSCs), the FOSC, and the RP—if one is identified and involved—may agree to establish a Unified Command System (UCS). (See Section IX. Incident Command.)

#### **2. Roles and Procedures of Local Emergency Management Agencies**

##### **a) Local Emergency Planning Committees**

LEPCs and Local Emergency Planning Districts (LEPDs) were set up as a result of SARA Title III. LEPCs/LEPDs may include representatives from local governmental agencies, emergency responders, environmental groups, and local industry. Several local emergency plans may exist within each district. The Local Emergency Response Plan (LERP), developed under Sections 301-303 of EPCRA, must include identities and locations of Hazmat, procedures for responding to a chemical accident, procedures for notifying the public of necessary actions, names of coordinators of involved or threatened industrial plants, and schedules for testing the plan. A State Emergency Response Commission (SERC) must review

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<sup>4</sup> 2010 US Census

each LERP. If a natural disaster produces an emergency, the county Emergency Management Agencies (EMAs) may utilize their general (All-hazards) plan along with portions of their LERP.

***b) Regional Emergency Management Agencies***

If an incident produces, or threatens to produce, an emergency that could affect large numbers of people or off-site environments, or otherwise appears beyond the capacity of the local responders, the EMA will become involved and may activate its Emergency Operations Center (EOC), initiate an evacuation, or take other steps to protect human health and the environment. Volunteers to assist with temporary housing or other aspects of the emergency will be called into the EOC as needed.

**C. States**

Under the NCP, 40 CFR § 300.180, each governor is asked to assign an office or agency to represent his/her state on the RRT. Each state's representative may participate fully in all facets of RRT activity and shall designate the appropriate element of the state government that would undertake direction of state-managed responses to releases of oil or hazardous substances. Each state RRT member also represents and coordinates RRT involvement of various other state, county, and municipal organizations

**D. Federal**

**1. National Response System (NRS) and Policies**

NRS is the mechanism for coordinating response actions by all levels of government in support of the On-Scene Coordinator (OSC)/Remedial Project Manager (RPM). The NRS is composed of the NRT, RRTs, OSC/RPM, Area Committees, and Special Teams and related support entities. The NCP § 300.105 describes the general organization of the federal agencies, the NRT, the RRT, the FOSC, and the AC. Sections 300.110 and 300.115 detail the structure of the NRT and the RRT. The NCP provides for an RRT whose agency membership would parallel that of the NRT, and for inclusion of state and local representation.

**2. Region 4 / 5 Jurisdictional Boundaries within the GRSA**

EPA Region 4 is responsible for responses to discharges or releases, or a substantial threat of discharges or releases of a pollutant from a source originating from EPA Region 4 into the Ohio River. Responsibility begins at the water line on the Right Descending Bank (RDB), extending to the south. The RDB is the right bank when traveling downstream toward the mouth of the river. Included are discharges or releases from unknown sources or those classified as “mystery spills.”

EPA Region 5 is responsible for responses to discharges or releases, or a substantial threat of discharges or releases of a pollutant from a source originating from EPA Region 5 onto the Ohio River. Responsibility begins at the water line on the RDB, extending to the north. If a discharge or release enters the water, EPA Region 5 will be responsible for the response effort.

The USCG is responsible for responses to discharges or releases that originate from a commercial vessel, a vessel transfer operation, or a marine-transportation related facility.

**3. Region 4 / 6 Jurisdictional Boundaries within the GRSA**

Responsibilities are divided as specified below regarding the boundaries common to the Lower Mississippi River Valley (LMRV), Arkansas, Mississippi, and Tennessee (LMRV Mile 828 to Mile 504), and boundaries shared between Regions 4 and 6.



EPA Region 4 is responsible for all response actions necessary and/or required to the water line on the RDB of the river or the levee of the RDB. All discharges or releases, or a substantial threat of such a discharge or release, of a pollutant originating east of the water line or levee of the RDB will be the responsibility of EPA Region 4.

Included are discharges or releases from unknown sources or those classified as “mystery spills.”

EPA Region 6 is responsible for responses to all discharges or releases, or a substantial threat of such a discharge or release, originating west of the water line or levee on the RDB. If a discharge or release reaches and/or enters the water, EPA Region 6 will be responsible for the response effort.

The USCG is responsible for responses to discharges or releases that originate from a commercial vessel, a vessel transfer operation, or a marine-transportation related facility.

#### **4. Region 4 / 7 Jurisdictional Boundaries within the GRSA**

EPA Region 4 is responsible for responses to discharges or releases, or the substantial threat of a discharge or release of pollutant from a source originating within EPA Region 4 into the LMRV. Responsibility begins at the water line or levee on the RDB, extending to the east. Included are discharges or releases from unknown sources or those classified as “mystery spills.”

EPA Region 7 is responsible for responses to discharges or releases, or a substantial threat of a discharge or release of a pollutant from a source originating within EPA Region 7 into the LMRV. Responsibility begins at the water line or levee on the RDB extending to the west. If a discharge or release enters the water, EPA Region 7 will be responsible for the response effort.

The USCG is responsible for responses to discharges or releases that originate from a commercial vessel, a vessel transfer operation, or a marine-transportation related facility.

#### **5. Region 5 / 7 Jurisdictional Boundaries within the GRSA**

EPA Region 7 will provide OSCs for investigating and responding to releases to the main stem of the UMR when either Iowa or Missouri is the principal first responding state. 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 would result in significant response by more than one state, or when which states should respond or are responding is uncertain, Region 7 will provide OSCs for such releases occurring between Cairo, Illinois, and Keokuk, Iowa (miles 0.0 to 354.5). Region 5 will provide OSCs for such releases 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.

The USCG is responsible for responses to discharges or releases that originate from a commercial vessel, a vessel transfer operation, or a marine-transportation related facility.

#### **6. USCG**

Under a MOU between the EPA and the USCG signed March 13, 1993, the USCG will assist the pre-designated EPA OSC to the fullest extent possible consistent with agency responsibilities and authorities.

If an incident involves a commercial vessel, a vessel transfer operation, or a marine-transportation-related facility, the USCG Captain of the Port (COTP) will provide the OSC and will carry out all of the FOSC’s responsibilities, including the decision to direct any necessary removal activity or access the Oil Spill Liability Trust Fund (OSLTF). If an incident originates from another or an unknown source, the USCG will assist the EPA/OSC to the fullest extent possible within the NCP or the RCP. Upon the request of the pre-designated EPA/OSC, the COTP may act upon the FOSC’s behalf.

The GRSA contains 3 COTP Zones: Sector Upper Mississippi River, Sector Lower Mississippi River, and Sector Ohio Valley/MSU Paducah. The COTP specific Area of Responsibility (AOR) is defined by river miles. Mile markers (MM) have been established along the navigable rivers to aid in navigation.

Sector Upper Mississippi River’s AOR runs from Upper Mississippi River MM 138 to MM 109.9. Sector Lower Mississippi River’s AOR runs from Lower Mississippi River MM 770 to 869. Sector Ohio Valley/MSU Paducah’s AOR runs from Upper Mississippi River MM 109.9 to MM 0, Lower Mississippi River MM 953.8-869, and Ohio River MM 981-867.3.

USCG Sector	Jurisdictional Boundaries along the Rivers
<b>Sector Upper Mississippi River</b>	UMR 138 to 109.9
<b>Sector Lower Mississippi River</b>	LMR 770 to 869
<b>Sector Ohio Valley/MSU Paducah</b>	UMR 109.0 to 0 LMR 953.8 to 869 Ohio 981 to 867.3

## 7. Roles and Responsibilities of the FOSC

The FOSC may direct response efforts and coordinate all other efforts at the scene of a discharge or release in accordance with the NCP. FOSCs shall be designated by the EPA Regional Administrator. The Department of Defense (DOD) and Department of Energy (DOE) shall designate a FOSC, according to NCP § 300.120(c) and (d), if their facilities or properties are involved in the discharge or release. Other federal agencies are responsible for **nonemergency** removals, as stated in NCP § 300.120(c)(2).

The FOSC will direct federal resources and coordinate all federal containment, removal, and disposal efforts during an incident. The FOSC is the point of contact between federal resources and other entities involved such as RPs, state responders, and local response communities. The FOSC may work within an established Incident Command structure or coordinate all agencies/parties into a UCS, and may direct the response activities of other parties in accordance with the NCP. In extreme circumstances, when it is evident that the RP is unwilling or unable to respond adequately to a spill or release, the FOSC can assume full authority over the cleanup, including funding through Superfund or the OSLTF—i.e., “federalize” the response. In such instances, notice will be provided to the RP in writing and efforts will be made to recover costs from the RP. The Regional RRT can be convened to provide guidance to the FOSC or help coordinate efforts during a major event.

Tasks such as air monitoring during the emergency phase of an incident can be provided by the FOSC responding with members of the Superfund Technical Assessment and Response Team (START). Such actions would be conducted within an ICS or UCS, with transfer of command responsibilities to the FOSC or the OSC of the affected state during the cleanup and recovery phase. FOSCs, to the extent



practicable, should ensure that their on-scene representatives are adequately trained and prepared to carry out actions under the NCP and the respective regional plans.

The normal sequence of actions a FOSC should take when a discharge of oil is reported are detailed in NCP § 300.320 as follows:

(a) When the OSC receives a report of a discharge, actions normally should be taken in the following sequence:

(1) Investigate the report to determine pertinent information such as the threat posed to public health or welfare of the United States or the environment, the type and quantity of polluting material, and the source of the discharge.

(2) Officially classify the size (i.e., minor, medium, major) and type (i.e., substantial threat to the public health or welfare of the United States, worst-case discharge) of the discharge and determine the course of action to be followed to ensure effective and immediate removal, mitigation, or prevention of the discharge. Some discharges that are classified as a substantial threat to the public health or welfare of the United States may be further classified as a spill of national significance by the Administrator of EPA or the Commandant of the USCG. The appropriate course of action may be prescribed in §§ 300.322, 300.323, and 300.324.

(i) When the reported discharge is an actual or potential major discharge, the OSC shall immediately notify the RRT and the NRC.

(ii) When the investigation shows that an actual or potential medium discharge exists, the OSC shall recommend activation of the RRT, if appropriate.

(iii) When the investigation shows that an actual or potential minor discharge exists, the OSC shall monitor the situation to ensure that proper removal action is being taken.

(3) If the OSC determines that effective and immediate removal, mitigation, or prevention of a discharge can be achieved by private party efforts, and where the discharge does not pose a substantial threat to the public health or welfare of the United States, determine whether the responsible party or other person is properly carrying out removal. Removal is being done properly when:

(i) The responsible party is applying the resources called for in its response plan to effectively and immediately remove, minimize, or mitigate threat(s) to public health and welfare and the environment; and

(ii) The removal efforts are in accordance with applicable regulations, including the NCP. Even if the OSC supplements responsible party resources with government resources, the spill response will not be considered improper, unless specifically determined by the OSC.

(4) Where appropriate, determine whether a state or political subdivision thereof has the capability to carry out any or all removal actions. If so, the OSC may arrange funding to support these actions.

(5) Ensure prompt notification of the trustees of affected natural resources in accordance with the applicable RCP and ACP.

(6) Ensure that the notifications and actions required in 300.135, the Fish and

Wildlife Sensitive Environments Plan, have been performed. If they have not been performed, the OSC will perform those notifications and subsequent actions.

(7) When appropriate, activate federal response using the OSLTF for oil discharges or the CERCLA Hazardous Substances Response Trust Fund for hazardous substances releases.

(b) Removal shall be considered complete when so determined by the OSC in consultation with the governor or governors of the affected states. When the OSC considers removal complete, OSLTF removal funding shall end. This determination shall not preclude additional removal actions under applicable state law.

## **8. Responsibilities of the FOSC and the USFWS under the Endangered Species Act (ESA)**

The following is a summary of FOSC/IC and U.S. Fish and Wildlife Service (USFWS) responsibilities under the ESA, implementing regulations, and the Inter-agency Memorandum of Agreement (MOA) Regarding Oil Spill Planning and Response Activities under the Federal Water Pollution Control Act's National Oil and Hazardous Substances Pollution Contingency Plan and the Endangered Species Act.

### ***a) During Response***

(1) FOSC/IC responsibilities:

- i. If fish and wildlife resources may be affected by a discharge or release, notify federal and state natural resource trustees and managers, and consult with them on removal actions to be taken.
- ii. If listed species and/or critical habitat are or could be present, immediately contact USFWS to initiate emergency consultation pursuant to the ESA, implementing regulations, and the ESA MOA.
- iii. Keep USFWS and the DOI (Department of the Interior) RRT/AC Representative apprised of ongoing response actions.
- iv. Document any adverse effects (including incidental take) to listed species or their habitat.
- v. Maintain a record of all oral and written communications with the USFWS during the response.

(2) USFWS responsibilities:

- i. Provide the FOSC/IC timely recommendations on actions to avoid or minimize impacts to listed species and/or their habitats throughout the duration of the response.
- ii. Respond to requests for emergency consultation pursuant to the ESA, implementing regulations, and the ESA MOA.
- iii. If incidental take is anticipated, so advise the FOSC/IC.
- iv. Upon request, participate in the ICS/UCS.
- v. Maintain a record of all oral and written communications with the FOSC/IC during the response.

### ***b) Post Response***

(1) FOSC/IC responsibilities:

- i. If listed species or critical habitat have been adversely affected by response activities, initiate formal consultation with USFWS pursuant to the ESA, implementing regulations, and the ESA MOA.

(2) USFWS responsibilities:

- i. Respond to requests for formal consultation in accordance with the ESA, implementing regulations, and the ESA MOA.

## V. Technical Support Available to the FOSC

In addition to the support provided by the RRT, various sources of technical support are available to the FOSC either through telephone contact or actual dispatch of teams to the field. Support agencies and groups available to the FOSC include:

### 1. The USCG National Strike Force (NSF)

#### *a) The three USCG Strike Teams (Atlantic, Gulf and Pacific)*

USCG's Strike Teams' phones are answered 24 hours a day. If the Strike Team contacted is already committed, another Strike Team will be accessed. The three Strike Teams provide trained personnel and specialized equipment to assist the OSC in training for spill response, stabilizing and containing the spill, and monitoring or directing the response actions of the RPs and/or contractors. Within the GRSA, Missouri and Illinois are covered by the Atlantic Strike Team based out of Lakehurst, New Jersey. Kentucky, Tennessee, and Arkansas are covered by the Gulf Strike Team based out of Mobile, Alabama.

#### *b) The National Strike Force Coordination Center (NSFCC)*

The NSFCC is authorized as the National Response Unit required under OPA, with responsibility for administering the USCG Strike Teams, maintaining response equipment inventories and logistical networks, and conducting national exercise programs including pollution response exercises. The NSFCC offers the following: technical assistance and equipment for spill response, assistance in coordinating resources during oil discharge response, ACP or RCP review, coordination of spill response resources information, and inspection of district response equipment. The Strike Teams provide trained personnel and specialized equipment to assist the FOSC in training for spill response, stabilizing and containing the spill, and monitoring or directing the response actions of the RPs and/or contractors.

#### *c) Public Information Assist Team (PIAT)*

PIAT is an element of the NSFCC staff available to assist OSCs to meet the demands for public information during a response or exercise. Its use is encouraged any time the OSC requires outside public affairs support. Requests for PIAT assistance may be made through the NSFCC or National Response Center (NRC).

### 2. The EPA Environmental Response Team (ERT)

In the event of a continuing release or discharge, the FOSC has access to EPA's ERT based in Edison, New Jersey. The ERT provides Scientific Support Coordinators (SSCs) with expertise in treatment technology, biology, chemistry, hydrology, geology, and engineering. The ERT also has access to special decontamination equipment and can provide advice on a wide range of issues such as a multimedia sampling and analysis program, on-site safety (including development and implementation plans),

cleanup techniques and priorities, water supply decontamination and protection, application of dispersants, environmental assessment, degree of cleanup required, and disposal of contaminated material. The FOSC may designate an SSC as principal advisor on scientific issues and communication with the scientific community, and on assistance requests to state and federal agencies.

The ERT also provides both introductory and intermediate training courses to prepare response personnel. Requests for ERT support should be made to the EPA representative on the RRT or the appropriate EPA regional emergency coordinator.

### **3. The EPA Chemical, Biological, Radiological, and Nuclear (CBRN) Consequence Management Advisory Team (CMAT)**

The CBRN CMAT, present at five geographic locations, provides 24/7 scientific and technical expertise to the OSC or response customer for all phases of consequence management, including sampling, decontamination, and clearance. With a focus on operational preparedness, CBRN CMAT facilitates transition of the latest science and technology to the field response community in order to provide tactical options for screening, sampling, monitoring, decontamination, clearance, waste management, and toxicological/exposure assessment during decontamination of buildings or other structures following an incident involving releases of radiological, biological, or chemical contaminants. CBRN CMAT maintains critical partnerships with: (1) EPA's National Homeland Security Research Center and EPA's special teams; (2) other federal partners including the Department of Homeland Security (DHS), Federal Bureau of Investigation (FBI), DOD, and Centers for Disease Control and Prevention (CDC)/Department of Health and Human Services (HHS); and (3) international partners.

### **4. United States Navy Supervisor of Salvage (SUPSALV)**

SUPSALV has an extensive salvage/search and recovery equipment inventory with the requisite knowledge and expertise to support these operations, including specialized salvage, firefighting, and petroleum, oil, and lubricants offloading capability. SUPSALV can provide equipment for training exercises in support of national and regional contingency planning objectives. The OSC may request assistance directly from SUPSALV. Formal requests are routed through the Chief of Naval Operations (N312).

### **5. EPA Radiological Emergency Response Team (RERT)**

RERTs have been established by EPA's Office of Radiation Programs (ORP) to provide response and support during incidents or at 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 field analysis of samples, as well as fixed laboratories for radiochemical sampling and analyses. Request for support may be made 24 hours a day via the NRC or directly to the EPA Radiological Response Coordinator in the ORP.

### **6. USCG District Response Group (DRG)**

DRGs assist the OSC by providing technical assistance, personnel, and equipment, including pre-positioned equipment. Each DRG consists of all categories of USCG personnel and equipment, including marine firefighting equipment, additional pre-positioned equipment, and a District Response Advisory Team (DRAT) available to provide support to the OSC if a spill exceeds local response capabilities.

## **7. USCG National Pollution Funds Center (NPFC)**

The NPFC is responsible for implementing those portions of Title I of the OPA delegated to the Secretary of the department in which the Coast Guard is operating. The NPFC is responsible for addressing funding issues arising from actual and potential discharges of oil. Responsibilities of the NPFC include: (1) issuing Certificates of Financial Responsibility to owners and operators of vessels to pay for costs and damages incurred by their vessels as a result of oil discharges, (2) providing funding to various response organizations for timely abatement and removal actions related to oil discharges, (3) providing equitable compensation to claimants who sustain costs and damages from oil discharges when the RP fails to do so, (4) recovering monies from persons liable for costs and damages resulting from oil discharges to the full extent of liability under the law, and (5) providing funds to initiate natural resource damage assessments.

## **8. National Oceanic and Atmospheric Administration (NOAA)**

### ***a) National Weather Service***

The National Weather Service, a federal organization within NOAA, can provide various types of support to an IC in the Great Rivers area through its office in Paducah, Kentucky.

### ***b) Scientific Support Coordinators (SSCs)***

NOAA may provide information regarding various scientific and technical subject matters. As does the ERT, NOAA's SSCs offer a wide variety of expertise. NOAA has mathematicians and physicists who can do computer modeling and simulation studies; research and planning groups that can determine resources at risk and recommend techniques for cleanup; an environmental science group that can provide technical assistance on chemistry, gas chromatography/mass spectrometry fingerprinting, and degradation of oil; a biological assessment group that can perform long-term studies and planning; and an information management group that can produce computerized maps.

## **9. Department of the Interior**

DOI can provide information concerning lands and resources specifically under DOI jurisdiction, as well as technical expertise related to geology, hydrology, minerals, fish and wildlife, cultural resources, and recreation resources. DOI can also provide communications and other equipment in the event of an extended response.

## **10. Contractors**

Many RPs have contracts with Oil Spill Removal Organizations (OSROs) or Hazmat responders to handle spills that may occur. RPs are responsible for National Resource Damage Assessments (NRDAs) in conjunction with the natural resource trustee, and may retain contractors to conduct such assessments. EPA Regions 4, 5, 6, and 7 have region-specific START and Emergency and Rapid Response Services (ERRS) contractors to facilitate emergency responses and cleanups. Any contractor responding to a spill will answer to the agency providing its funding unless all parties agree to arrangements for supervision by other agencies.

## **11. Multi-Agency Response and Planning Groups**

### ***a) Regional Response Team and Area Committee***

The RRT's origin and reference to the NCP are briefly discussed in Sections II. C. and IV. C. 1. of this SACP. The role of the RRT has two principal components. One is as the standing team whose duties are

communications systems and procedures, planning, coordination, training, evaluation, preparedness, and related matters on a regionwide basis. The RRT also may assemble an incident-specific team, as determined by the operational requirements of a response to a specific discharge or release. The RRT has responsibility for developing an RCP and for assisting the FOSC if guidance, coordination, or resources are needed to provide an adequate response to an incident. The RRT includes a representative from each state within the federal region, and representatives from virtually any federal agency that could provide assistance or resources during such a response. EPA and the USCG co-chair the RRT, which does not respond directly to the scene, but instead responds to developments and requests from the FOSC in accordance with relevant contingency plans. In addition, members of the RRT serve as the AC, which has responsibility to produce ACPs within its area. Generally within the GRSA, the area and the region are coincident within each EPA Region. Typically, the AC is more planning oriented and aims to be more inclusive of industry and other nongovernmental entities as it undertakes planning. The RRT is more response oriented. Semiannual meetings of RRTs and ACs occur in spring and fall of each year.

## 12. Natural Resource Trustees

CERCLA and OPA authorize the United States, states, and Indian Tribes to act on behalf of the public as Natural Resource Trustees for natural resources under their respective trusteeship (CERCLA §107(f)(1); OPA §1006(c)). OPA also authorizes foreign governments to act as Trustees (OPA §1006(b)(5)).

Trustees often have information and technical expertise about the biological effects of hazardous substances, as well as locations of sensitive species and habitats, that can assist EPA in characterizing the nature and extent of site-related contamination and impacts. Coordination at the investigation and planning stages provides the Trustees early access to information they need to assess injury to natural resources. This assists Trustees in making early decisions about whether restoration is needed in light of the response actions, and should generally result in more efficient settlement negotiations and an opportunity to address all liabilities at the site concurrently (Office of Solid Waste and Emergency Response [OSWER] Directive 9200-4.22A; CERCLA Coordination with Natural Resource Trustees, 1997).

### *a) State Natural Resource Trustees*

State Trustees shall act on behalf of the public as Trustees for the natural resources within a state's boundaries or for resources belonging to, controlled by, or appertaining to a State (40 CFR §300.605). State official(s) are designated by the Governor of each state to act as Trustee for the State's Trust Resources, which include surface water and groundwater. The designated official is normally the head of an agency responsible for environmental protection or fish and wildlife management, although the Governor can delegate responsibility to any entity (OPA §1006(b)(3)). States may designate more than one Trustee agency.

State Trustees act on behalf of the public for natural resources—including groundwater and surface water, and the resources' supporting ecosystems—that are:

- Within the boundary of the State
- Belonging to, managed by, controlled by, or appertaining to the State.

Examples of resources under the trusteeship of individual state officials include:

- State forest lands
- State-owned minerals



- State parks and monuments
- State rare, threatened, and endangered species
- State wildlife refuges and fish hatcheries.

The office and/or group responsible for each of these resources varies among states.

***b) Tribal Natural Resource Trustees***

Tribal Chairmen (or heads of the governing bodies of Indian Tribes), or persons designated by Tribal officials, shall act as Tribal Trustees for natural resources belonging to, managed by, controlled by, or appertaining to the Indian Tribe, or held in trust for the benefit of such Indian Tribe, or belonging to a member of an Indian Tribe, if such resources are subject to a trust restriction on alienation (40 CFR §300.610). The Secretary of the Interior may act as Trustee on behalf of a Tribe at the Tribe's request. Indian Tribe Trustees act on behalf of the Indian Tribe for natural resources, including their supporting ecosystems, that fall into any of the following categories:

- Belong to, are managed by, are controlled by, or appertain to such Tribe
- Are held in trust for the benefit of the Tribe
- Belong to a member of the Tribe, if such resources are subject to a trust restriction on alienation.

Examples of resources under the trusteeship of Tribal groups include:

- Tribal-owned minerals
- Groundwater and surface water resources on Tribal lands
- Any other natural resources found on Tribal land.

***c) Federal Natural Resource Trustees***

CERCLA §107(f)(2)(A) requires the President to designate in the NCP federal officials to act on behalf of the public as Trustees for natural resources under federal trusteeship. Section 300.600 of the NCP designates the Secretaries of the following Cabinet Departments to act as Trustees for the natural resources, subject to their respective management or control:

***United States Department of Agriculture (USDA)***

Examples of resources under the trusteeship of the Secretary of the USDA include:

- Federal rangeland
- Federally managed fisheries
- Federally owned or managed farmland
- Land enrolled in the Wetlands Reserve Program
- National forest land.

The following offices within the USDA are responsible for management and/or protection of the resources listed above: Forest Service; Natural Resources Conservation Service; and Conservation Reserve Program.

***Department of Commerce (DOC)***

Examples of resources under the trusteeship of the Secretary of DOC include:

- Coastal environments, including salt marshes, tidal flats, estuaries, or other tidal wetlands
- Designated Estuarine Research Reserves or Marine Sanctuaries
- Endangered marine species
- Marine mammals
- Rivers or tributaries to rivers that historically support or presently support anadromous fish (fish that spend a portion of their lifetimes in both fresh and salt water [e.g., salmon]).

The DOC Secretary delegated Trustee responsibility to the Administrator of NOAA. The following offices or groups within NOAA have responsibilities that include protection and management of natural resources: National Marine Fisheries Service, Office of Ocean and Coastal Resource Management, Office of Oceanography and Marine Services, and the General Counsel. For cases involving resources in coastal waters and anadromous fish streams, DOC acts as a co-Trustee with the DOI.

### ***Department of Defense (DOD)***

The Secretary of DOD has trusteeship over the natural resources on all lands owned by DOD or the Army, Navy, Air Force, and Defense Logistics Agency. These lands include military bases and training facilities, research and development facilities, and munitions plants.

### ***Department of Energy (DOE)***

The Secretary of DOE has trusteeship over natural resources under its jurisdiction, custody, or control. DOE's land holdings include national research and development laboratories, facilities, and offices.

### ***Department of the Interior (DOI)***

Examples of resources under the trusteeship of the Secretary of DOI include:

- Certain anadromous fish
- Certain endangered species
- Certain marine mammals
- Federally owned minerals
- Migratory birds
- National Wildlife Refuges and Fish Hatcheries
- National Parks and Monuments
- Tribal resources, in cases where the U.S. acts on behalf of the Indian Tribe.

The following offices within DOI are responsible for management and protection of the resources listed above: Bureau of Indian Affairs, Bureau of Land Management, Bureau of Mines, Bureau of Reclamation, USFWS, Minerals Management Service, National Park Service, and United States Geological Survey (USGS).

Specific information about each Secretary's responsibilities can be found in the NCP at 40 CFR §300.600.

## **13. Natural Resource Damage Assessment (NRDA)**

Following a hazardous release or discharge, natural resource trustees may have responsibility for assessing injury to the environment as a result of the spill. NRDA is the process by which trustees collect, compile, and evaluate data to determine the extent of injury to natural resources. The information gathered is used to assess damages and determine the dollar amount necessary to restore



injured trust resources or compensate for lost use of resources and seek recovery of those damages from the RP. NRDA are typically initiated concurrent with response activities.

Initiation of an NRDA usually involves acquiring data both during and after a spill to document (1) oil or hazardous substances in water, sediments, soil, and organisms; (2) effects on fish, wildlife, and/or their habitat; (3) exposure pathways; and (4) measures taken to prevent or reduce immediate migration of oil or hazardous substances onto or into a trust resource. Because NRDA activities could duplicate those conducted as part of the response, all sampling and field work by natural resource trustees should be coordinated with the lead response agency.

If natural resources are injured by a discharge or release of a mixture of oil and hazardous substances, DOI regulations apply. NOAA regulations apply only in assessing damages that may result from discharges of oil. Additional details are included in Appendix G.

#### **14. State Historic Preservation Officers (SHPOs)**

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties and afford the Council a reasonable opportunity to comment on such undertakings. The procedures in this part define how federal agencies meet these statutory responsibilities. The Section 106 process seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, commencing at the early stages of project planning. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects, and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties.

#### **15. Tribal Historic Preservation Officers (THPOs)**

[RESERVED]

## **VI. Roles of Responsible Parties**

Under the CWA, RPs are required to immediately report to the NRC any discharge of oil producing a sheen on navigable water, adjoining shorelines, or the contiguous zone, as well as any release of a hazardous substance exceeding a reportable quantity as set forth in 40 CFR § 302.4. RPs may also be required to report these releases under various state and local statutes. OPA 90 § 1002 makes RPs responsible for removal costs and damages. (See Section II A for additional detail and planning requirements.) RPs are expected to cooperate with local public safety agencies during the emergency response phase of an incident, and to conduct any necessary response actions for which their personnel are trained and equipped. RP response actions may include turning off valves, plugging or containing leaking containers, evacuating employees, and firefighting by industrial fire brigades. All of these activities typically proceed under the direction of an IC from a local public safety agency.

While the RP has primary responsibility for cleanup of a discharge or release, the response shall be conducted in accordance with the NCP and the RP's applicable response plan. If necessary, EPA or USCG may direct the response activities of the RP. The FOSC also may "federalize" a response (see Section IV D7) if it becomes evident that (1) an adequate response is beyond the capability of the RP or (2) the RP indicates an unwillingness to accept responsibility or (3) the RP's identity is unknown. A UCS that

incorporates the command structures of the RP, local responders, and state and federal responders may be established to address simultaneous public safety and environmental concerns.

## **VII. Notification**

The discovery of a spill and notification procedures can follow a number of paths. RPs, private citizens, or the news media may notify local, state, or federal agencies by calling 911, or the state or EPA spill line, or the NRC. In some instances, notification by and of various agencies may occur as a matter of courtesy. The following sections describe notification procedures for those responsible for responding to oil or hazardous substance releases within the GRSA.

### **A. Protocol**

Prompt notification of all appropriate agencies is critical for an effective coordinated response. The organization first aware of a release is responsible for notifying other appropriate and potentially affected agencies. All initial notifications should be by voice telephone, not by facsimile copy or electronic mail. Each agency is to consider itself the first notified unless it has been notified according to protocol. When an agency is notified by another responding agency/organization, it must ascertain whether the agencies it is responsible for notifying have been contacted, and then notify those agencies that have not been contacted. The following criteria shall be used in determining whether to make notifications:

- (1) The release could affect the jurisdiction of another agency.
- (2) Assistance might be requested from another agency.

Although another agency might not be affected or requested to provide assistance, that agency will be notified out of courtesy if it likely will receive inquiries from other sources such as citizens, companies, or news media.

When an agency is notified of a spill, it should meet its statutory notification responsibilities before commencing notifications set forth in this protocol.

### **B. Notification of Natural Resource Trustees**

OSCs are responsible for notifying the appropriate natural resource trustee(s) if the release affects or threatens to affect environmentally sensitive areas, migratory waterfowl, or state or federally listed threatened or endangered species. SOSCs will notify their state's trustees, and FOSCs will notify USFWS. SOSCs and FOSCs will coordinate notifications when incidents threaten both state and federal resources.

### **C. Great Rivers Sub-area SACP Notifications**

Just as a discharge of oil or a release of hazardous substances can emanate from numerous sources, the discovery of a spill and initiation of notification procedures can proceed along a number of paths. As examples, RPs, private citizens or the news media may notify agencies at the local, state or federal level by calling 911, a state spill line, an EPA spill line, or the NRC. Depending upon the severity of a spill or discharge, notification may not only be required by statute, but may be essential to protecting human health and the environment. In other instances notification by and of various agencies may be done as a matter of courtesy. The following sections describe how notifications will be made among those responsible for responding to most releases of oil or discharges of hazardous substances in the GRSA.

## **1. Protocol**

Prompt notification is critical for an effective coordinated response among all organizations that might be involved during an incident. Each organization that first becomes aware of a release of oil or a hazardous substance in the GRSA has the responsibility to notify other appropriate and potentially affected agencies. All initial notifications should be by voice telephone, not by facsimile copy or email. Each organization is to consider itself the first agency aware of a release, if it has not previously been notified of the release according to this protocol. When an agency is notified by another responding organization, it must confirm that other agencies that it is responsible for notifying have been contacted, and then proceed to notify those agencies that have not yet been made aware of the release. The following criteria shall be used in determining whether to make these additional notifications:

1. The release has the potential to affect the jurisdiction of another agency.
2. Assistance might be requested from another agency.

## **2. Notification of Natural Resource Trustees**

The appropriate state and/or federal natural resource trustee(s) should be notified in the event of any discharge or release affecting or threatening to affect environmentally sensitive areas, migratory waterfowl or state or federally listed threatened or endangered species. Responsibility for notification will rest with the respective OSC, i.e., SOSCs will notify their state's trustees and FOSCs will notify the DOI RRT/trustee representative. SOSCs and FOSCs will coordinate notifications affecting state and federal resources.

## **3. Great Rivers SACP Notifications**

After making all appropriate notifications under internal plans, Emergency Managers and Incident Commanders, through their EMA or 911 Dispatch, are encouraged to notify any other agency with a potential interest in an incident. Neighboring, across-the-river and downstream jurisdictions, which might be contacted for mutual assistance or could be impacted by an incident, should be notified.

A Notification Flowchart and additional details on notifications and contact information are included in the Appendices of this document.

# **VIII. Great Rivers Response Protocol**

## **A. Incident Command and Jurisdiction**

The first responding local agency will establish an initial command post and an Incident Command System (ICS). If jurisdiction is unclear, the responding agencies will confer to determine which agency has jurisdiction. Once jurisdiction has been determined, the local agency having jurisdiction will either assume command or request that establishment of a UCS at the local level.

If jurisdiction is not determined, the initial responding local agency will either maintain command or request a UCS. When the SOSC and the FOSC arrive at the site, they will confer with the IC. By mutual agreement, they will determine whether the SOSC and FOSC will integrate into the local ICS, whether the SOSC or FOSC will take the lead, or whether they will jointly establish a UCS. If the responding agencies cannot agree on the issue of command, the FOSC has preemptive authority under the NCP.

## **B. Contractor Oversight**

If the RP is capable and willing to respond to the release, governmental officials will work with the RP to mitigate the spill while maintaining general oversight. If no Potentially Responsible Party (PRP) is identifiable or an RP is unwilling or incapable of responding, the IC and OSCs will pursue available options for using government funds to clean up the release. If a contractor responds to the spill, it will answer to the agency providing its funding unless all parties agree to supervision by other agencies.

## **C. Coordination**

Generally, the responding agencies will function within their normal roles, using their appropriate authorities, expertise, and resources while working as a team to provide the most efficient response possible. Each local, state, and federal lead agency will be responsible for making secondary notifications and for coordinating the assistance of its support agencies. The local IC, along with the SOSC and FOSC, will make major decisions in conference, with the RP's representative(s) included as appropriate.

## **D. Public Information**

The IC may appoint a Public Information Officer (PIO) responsible for developing and releasing information to the media and the public. The PIO will advise and represent the IC on all public information matters, gather incident data, obtain media information useful to operations and media planning, develop news releases or information for release to the public, and establish and operate a media center (when designated by the IC). PIO functions must be coordinated and integrated across jurisdictional and functional agencies (federal, state, local, tribal partners, private-sector, and nongovernmental organizations). The PIO will coordinate with the IC to establish a timeline for providing information updates to the media.

## **E. Termination**

When the IC terminates an incident, a notice of termination will be sent to all responding agencies. After the termination and to the extent feasible, the IC and the SOSC and FOSC will work together to coordinate the following: (1) issuance of their respective reports, (2) efforts to recover costs, and (3) a critique of the incident.

## **IX. Incident Command**

The senior on-scene official of the first response team to arrive at an oil or hazardous release incident shall establish an ICS. The ICS should be established in accordance with NIMS, adopted March 1, 2004. In accordance with NIMS procedures, Incident Command should transition toward a Unified Command when the incident is of sufficient magnitude to involve multiple agencies from various levels of government. Additional information on NIMS and its applications is available at <http://www.fema.gov/national-incident-management-system>

## X. Site Safety Plan

### A. Integration of Site Safety Plans

During a major incident involving hazardous substances, several Hazmat teams could participate in the response. These teams should consist of personnel trained to at least the technician level and should operate in complete compliance with OSHA's 1910.120 regulations. One of these requirements is a Site Safety Plan (SSP).

Hazmat teams that could be present during a response include teams from municipal fire departments, contractors for RPs, state or federal agencies, a USCG Strike Team, military teams, and industrial mutual aid teams. Because each team normally has its own SSP, conflict or confusion may ensue as the various teams arrive. To ensure the safety of the responders and the efficiency of the response, procedures for coordinating safety plans should be implemented as follows:

If a site has a single IC, that commander will appoint an Site Safety Officer (SSO) who will coordinate with the safety officers of all responding Hazmat teams. The SSO will ensure compatibility of the various SSPs with the overall SSP. If a UCS is in place, the Unified Commanders will appoint the SSO. Any safety officer who, after working with the SSO, disagrees with any portion of the SSP should communicate his/her concerns to his/her organization's senior on-site official. That official should discuss those concerns with the IC or UCS. The IC or Unified Commanders will bring the matter to the attention of the SSO for resolution. The IC, who is ultimately responsible for the safety of everyone on site, has final approval of the SSP.

### B. Requirements for Site Safety Plans

Site-specific safety plans are required of private employers of hazardous waste operations under the authority of 29 CFR 1910.120, and of governmental employers under the authority of 40 CFR 311. Both regulatory documents specify 11 categories that must be included in a site-specific safety plan. The required categories of an SSP are as follows:

- 1. Key Personnel and Hazards Communication:** Names of key personnel, such as: Project Manager, Field Operations Leader, Site Supervisor, and Site Health and Safety Officer. Identify communication procedures and provide for pre-activity briefings. (29 CFR 1910.120[b] [2])
- 2. Task Risk or Hazard Analysis:** Hazards or risks associated with each task to be performed, including identification of chemical contaminants; affected media; concentrations, if known; and potential routes of exposures. (29 CFR 1910.120[b] [4])
- 3. Employee Training Assignments:** Training required to enter the site (e.g., initial and annual health and safety training, first aid/cardiopulmonary resuscitation (CPR) training, emergency response training). (29 CFR 1910.120[e])
- 4. Medical Surveillance Requirements:** Baseline monitoring and site-specific medical monitoring required for all personnel entering the scene. (29 CFR 1910.120[f])
- 5. Personal Protective Equipment:** Personal Protective Equipment (PPE) to be used for each task. (29 CFR 1910.120[g])
- 6. Air and Personnel Monitoring:** Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and equipment to be used, including methods of maintenance and calibration for equipment and instruments. (29 CFR 1910.120[h])

7. **Site Control Measures:** Procedures to be used to minimize worker exposure to hazardous substances. These would include a site map, work zone definition, buddy system establishment, site communications, emergency alarm procedures, standard operating procedures for safe execution of tasks, and identification of nearest medical assistance. (29 CFR 1910.120[d])
8. **Spill Containment Procedures:** Procedures to contain and isolate entire volume of any hazardous substance spilled during site activities. (29 CFR 1910.120[j])
9. **Decontamination Procedures:** Procedures for decontaminating workers and equipment potentially exposed to Hazmat. This section should also include methods to minimize contact with Hazmat. (29 CFR 1910.120[k])
10. **Emergency Response Plan:** How anticipated emergencies will be handled and how risks associated with an emergency will be minimized. This plan must be developed prior to commencement of hazardous waste activities. (29 CFR 1910.120[l])
11. **Confined Space Entry Procedures:** If necessary, procedures for entering confined spaces. (29 CFR 1910.120[b][9])

## XI. Access to Oil Spill Liability Trust Fund and CERCLA Reimbursement

Current information on various aspects of the OSLTF is available through USCG's National Pollution Funds Center home page (<http://www.uscg.mil/npfc/>) and through the Oil Spill Liability Trust Fund home page ([http://www.uscg.mil/npfc/About\\_NPFC/osltf.asp](http://www.uscg.mil/npfc/About_NPFC/osltf.asp)).

### A. OSLTF funding Procedures

Local, state, tribal, or federal agencies may obtain funding for removal costs ***through, and with the prior approval of, the FOSC***—or by submitting a claim to the NPFC. Funding will be in accordance with EPA's "Guidance for Use of The Oil Spill Liability Trust Fund," (OSWER Dir. 9360.8-11) February 1997, and EPA's "Guidance For Use of Coast Guard Basic Ordering Agreements For Emergency Oil Spill Response Support," February 10, 1997.

### B. Federal Access to the OSLTF

To access the OSLTF, the Eighth Coast Guard District Office in New Orleans, Louisiana, must be contacted at (504) 589-6225 (24-hour number). The District Office will issue an eight-digit case number and authorize a spending ceiling. After receiving a number and ceiling from the District, the federal agency providing an FOSC must contact its contracting officer within 48 hours to issue a delivery order for services under the applicable Basic Ordering Agreements (BOAs).

### C. State Access to the OSLTF

In accordance with regulations in Section 1012(d) (1) of OPA, the President, upon request of the State's Governor, may obligate the OSLTF for payment in an amount not to exceed \$250,000 for removal costs consistent with the NCP that are required for immediate removal of a discharge or mitigation or prevention of a substantial threat of discharge of oil.

State access to the Fund provides an avenue for states to receive federal funds for immediate removal costs. The individual requesting access the OSLTF must:



- Indicate that the request is a state access request under 33 CFR Part 133.
- Provide the name, title, department, and state.
- Describe the incident in sufficient detail to allow a determination of jurisdiction, including the date of the incident, type of product discharged, estimated quantity of discharge, the navigable water involved, and the proposed removal actions for which the funds are being requested under Part 133.
- Indicate the amount of funds requested.

Further information is available through the USCG Technical Operating Procedures (TOPs) for state access under Section 1012(d) (1) of OPA, which can be accessed on-line at:

[http://www.uscg.mil/npfc/urg/urg\\_chapter\\_5.asp](http://www.uscg.mil/npfc/urg/urg_chapter_5.asp)

#### **D. Pollution Removal Funding Authorization**

State and local agencies and other federal agencies may perform removal actions ***under the direct supervision of an FOSC*** through a Pollution Removal Funding Authorization (PRFA). The PRFA is issued by the FOSC and commits the OSLTF to payment, via reimbursement, of costs incurred during pollution response activities undertaken by another government agency working for the FOSC. To ensure reimbursement, responding agencies should obtain a PRFA prior to incurring costs. State or local involvement in use of the OSLTF through a PRFA can be accomplished as follows:

The appropriate agency notifies the EPA of the spill immediately.

- An FOSC travels to the site and discusses with the state or local representative what actions should be taken. The FOSC and the representative reach an agreement and document the specific goods and services to be provided in the form of a scope of work, and provide a good-faith estimate of the total anticipated costs. A PRFA is prepared by the authorizing federal agency and signed by the FOSC to fund the State's actions.
- During the response, the state or local government must document costs and submit them to the FOSC daily for approval. The requesting agency is responsible for payment of invoices incurred by response contractors.

When the removal is complete, the requesting agency submits cost documentation to the NPFC via the FOSC for reimbursement. Reimbursement generally proceeds through a single check to the other agency from the USCG after completion of the cleanup.

More information is available in Chapter 10 of the Technical Operation Procedures for Resource Documentation at: <http://www.uscg.mil/npfc/Response/Cost%20Documentation/prfa.asp>

#### **E. Claims**

Section 1012(d) (1) of OPA 90 authorizes use of the Fund for “the payment of claims in accordance with Section 1013 for uncompensated removal costs determined by the President to be consistent with the NCP for uncompensated damages.” State or local government agencies may submit claims for uncompensated removal costs, including salaries, equipment, and administrative costs directly related to a specific incident. The claimant may submit claims even if the RP is unknown. To submit a claim against the OSLTF, the state or local agency must:

Submit a detailed description of the incident including what type of material was released or potentially released; what navigable water was impacted or potentially impacted; what response actions were taken to prevent, minimize, or mitigate the release, and whether those actions were consistent with the NCP.

- Include a detailed summary of monies spent during the response action, and provide backup documentation. The removal costs must have been incurred as a result of the response actions taken to prevent, minimize, or mitigate the effects of the incident.
- Submit the package to the USCG NPFC for approval. The NPFC will review the claim to determine whether the costs are reasonable and whether the actions taken were consistent with the NCP, which may include confirming that the response was an OPA-90 incident.

Additional information on Claims can be found in the NPFC's Claimant Information Guide at: <http://www.uscg.mil/npfc/Claims/default.asp>

## **F. CERCLA Local Governments Reimbursement Program**

Section 123 of CERCLA and Section 1002 (b) (2) (F) of OPA authorize EPA to reimburse local governments for some (and in rare cases, possibly all) expenses incurred during temporary emergency measures in response to hazardous substance threats or releases—if those measures were necessary to prevent or mitigate injury to human health or the environment.

This provision is meant to reduce significant financial burdens incurred by a city, county, municipality, parish, township, town, federally recognized Native American Tribe, or other local unit of government that engages in response activities required by hazardous substance threats. Traditional local responsibilities, such as routine firefighting, are not eligible for reimbursement. States are not eligible for this program and may not request reimbursement on their own behalf or on 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 will be considered:

- Response actions were consistent with CERCLA, NCP, and EPCRA.
- The request contains assurances that the response does not supplant local funds normally provided for such activities.
- The applicant must have first attempted to recover expenses from all known PRPs and any other possible sources of reimbursement (state funds, insurance companies, etc.). Sixty days must be allowed for the RP to respond by making payment, expressing intent to pay, or demonstrating willingness to negotiate payment.
- The request must be received by EPA within 1 year of the date the response was completed.

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

- Disposal of materials and supplies acquired and used specifically for the related response



- Employee compensation for response work that is not provided in the applicant's operating budget
- Rental or leasing of equipment
- Replacement costs of equipment contaminated to the extent that it is beyond reuse or repair
- Decontamination of equipment
- Special technical services needed for the response such as those provided by experts or specialists
- Other special services such as utilities
- Laboratory analysis costs related to the response
- 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, EPA's reimbursement official has the discretion to hold the request open for one-year reconsideration.

An application package can be obtained by contacting the Local Government Reimbursement (LGR) Helpline at 1-800-431-9209. The application package contains detailed, line-by-line instructions for completing the application.

**APPENDIX A. ACRONYMS AND ABBREVIATIONS**

§ Article  
 °F Degrees Fahrenheit

A

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AC	Area Committee
ACP	Area Contingency Plan
ADEM	Arkansas Department of Emergency Management
ADEQ	Arkansas Department of Environmental Quality
AOR	Area of Responsibility
ARAR	Applicable or Relevant and Appropriate Requirement
ATSDR	Agency for Toxic Substances and Disease Registry

B

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BOA	Basic Ordering Agreement
BOEM	Bureau of Ocean Energy Management

C

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CAA	Clean Air Act
CBRN	Chemical, Biological, Radiological, & Nuclear
CDC	Centers for Disease Control and Prevention
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	<i>Code of Federal Regulations</i>
CHEMTREC	Chemical Transportation Emergency Center
CHRIS	Chemical Hazard Response Information System
CIC	Community Involvement Coordinator
CIP	Community Involvement Plan
CMAT	Consequence Management Advisory Team
COE	United States Army Corps of Engineers
COTP	Captain of the Port
CPR	Cardiopulmonary resuscitation
CWA	Clean Water Act (Federal Water Pollution Control Act)

D

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DHS	Department of Homeland Security
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DOT	Department of Transportation
DRAT	District Response Advisory Team
DRG	District Response Group

E

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EER	Environmental Emergency Response Section
EHS	Extremely Hazardous Substance
EMA	Emergency Management Agency
EMAC	Emergency Management Assistance Compact
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right To Know Act (SARA Title III)
ER&R	Emergency Response and Removals
ERRS	Emergency and Rapid Response Services (EPA contract)
ERT	Environmental Response Team
ESA	Endangered Species Act
ESF	Emergency Support Function

F

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FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FOSC	Federal On-scene Coordinator
FRP	Federal Response Plan
FWPCA	Federal Water Pollution Control Act

G

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GIS	Geographic Information System
GRSA	Great Rivers Sub-Area
GRSACP	Great Rivers Sub-Area Area Contingency Plan
GSA	General Services Administration

H

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Hazmat	Hazardous Materials
HAZWOPER	Hazardous Waste Operations and Emergency Response
HHS	Department of Health and Human Services
HSERP	Hazardous Substance Emergency Response Plan
HSPD	Homeland Security Presidential Directive

I

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IC	Incident Commander
ICP	Integrated Contingency Plan
ICS	Incident Command System
IDNR	Illinois Department of Natural Resources
IEMA	Illinois Emergency Management Agency
IEPA	Illinois Environmental Protection Agency

J

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JFO	Joint Field Office
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K

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KDEP Kentucky Department for Environmental Protection  
 KYEM Kentucky Emergency Management

L

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LDB Left Descending Bank  
 LEOP Local Emergency Operations Plan  
 LEPC Local Emergency Planning Committee  
 LEPD Local Emergency Planning District  
 LERP Local Emergency Response Plan  
 LFA Lead Federal Agency  
 LGR Local Governments Reimbursement  
 LMRV Lower Mississippi River Valley

M

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MAA Mutual Aid Agreement  
 MDNR Missouri Department of Natural Resources  
 MERC Missouri Emergency Response Commission  
 MHz Megahertz  
 MMS Minerals Management Service  
 MOA Memorandum of Agreement Regarding Oil Spill Planning and Response Activities Under the Federal Water Pollution Control Act's National Oil and Hazardous Substances Pollution Contingency Plan and the Endangered Species Act  
 MOU Memorandum of Understanding  
 MSD Marine Safety Detachment  
 MSDS Material Safety Data Sheet

N

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NCP National Oil and Hazardous Substances Pollution Contingency Plan  
 NIMS National Incident Management System  
 NIOSH National Institute for Occupational Safety and Health  
 NOAA National Oceanic and Atmospheric Administration  
 NPDES National Pollutant Discharge Elimination System  
 NPFC National Pollution Funds Center  
 NPL National Priorities List  
 NRC National Response Center  
 NRCS Natural Resources Conservation Service  
 NRDA Natural Resource Damage Assessment  
 NRF National Response Framework  
 NRP National Response Plan  
 NRS National Response System  
 NRT National Response Team  
 NSF National Strike Force  
 NSFCC National Strike Force Coordination Center

O

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ODP Office of Domestic Preparedness  
 OEM Office of Emergency Management

OER	Office of Emergency Response
OHMTADS	Oil & Hazardous Materials Technical Assistance Data System (EPA)
OPA 90	Oil Pollution Act of 1990
OPA	Oil Pollution Act
OPS	Office of Pipeline Safety
ORP	Office of Radiation Programs
ORSANCO	Ohio River Valley Water Sanitation Commission
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
OSLTF	Oil Spill Liability Trust Fund
OSRO	Oil Spill Removal Organization
OSWER	Office of Solid Waste and Emergency Response

P

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PFO	Principal Federal Official
PIAT	Public Information Assist Team
PIO	Public Information Officer
POLREP	Pollution Report in Message Format
POTW	Publicly Owned Treatment Works
PPE	Personal Protective Equipment
PREP	National Preparedness for Response Exercise Program
PRFA	Pollution Removal Funding Authorization
PRP	Potentially Responsible Party

Q

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QARG	Quick Action Response Guide
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R

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RA	Regional Administrator
RACES	Radio Amateur Civil Emergency Services
RAT	Radiological Assistance Team
RDB	Right Descending Bank
RCP	Regional Contingency Plan
RCRA	Resource Conservation and Recovery Act
REO	Regional Environmental Officer
RERT	Radiological Emergency Response Team (Region 7)
RICP	Regional Integrated Contingency Plan
RMP	Risk Management Plan
RP	Responsible Party
RPM	Remedial Project Manager
RRC	Regional Response Center
RRT	Regional Response Team
RSMo	Revisited Statutes of Missouri
RSPA	Research and Special Programs Administration

S

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SACP	Sub-Area Contingency Plan
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SARA Title III	Title III of the Superfund Amendments and Reauthorization Act of 1986
SARA	Superfund Amendments and Reauthorization Act of 1986
SEMA	State Emergency Management Agency
SEOC	State Emergency Operations Center
SERC	State Emergency Response Commission
SHPO	State Historic Preservation Officer
SKIM	Spill Cleanup Inventory System
SMOA	Superfund Memorandum of Agreement
SONS	Spills of National Significance
SOSC	State On-Scene Coordinator
SPCC	Spill Prevention Control and Countermeasures
SSC	Scientific Support Coordinator
SSO	Site Safety Officer
SSP	Site Safety Plan
START	Superfund Technical Assessment and Response Team
SUPSALV	Supervisor of Salvage and Diving

T

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TEMA	Tennessee Emergency Management Agency
TEMP	Tennessee Emergency Management Plan
TERC	Tribal Emergency Response Committee
THPO	Tribal Historic Preservation Officer
TNC	The Nature Conservancy
TOP	Technical Operating Procedure
TVA	Tennessee Valley Authority

U

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U.S.C.	<i>United States Code</i>
UCS	Unified Command System
UHF	Ultra high frequency
UMR	Upper Mississippi River
UMRBA	Upper Mississippi River Basin Association
URL	Uniform Resource Location (on the Internet)
USCG	United States Coast Guard
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

V

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VHF	Very high frequency
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W

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WCD	Worst-case discharge
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## APPENDIX B. DEFINITIONS

*(Appendix B provides definitions for words or phrases that might be encountered during a response. Inclusion of definitions for various materials or treatment techniques should not be interpreted as endorsement or approval of their use. )*

**Activation** means notification by telephone or other expeditious manner or, when required, assembly of some or all appropriate members of the RRT or NRT.

**Area Committee (AC)**, as provided for by CWA sections 311(a)(18) and (j)(4), 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 an area designated by the President.

**Area Contingency Plan (ACP)**, as provided for by CWA sections 311(a)(19) and (j)(4), means the plan prepared by an AC 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.

**Bioremediation agents** means microbiological cultures, enzyme additives, or nutrient additives deliberately introduced into an oil discharge, and that will significantly increase the rate of biodegradation to mitigate effects of the discharge.

**CERCLA** is the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA).

**Chemical Agents** means those elements, compounds, or mixtures that coagulate, disperse, dissolve, emulsify, foam, neutralize, precipitate, reduce, solubilize, oxidize, concentrate, congeal, entrap, fix, make the pollutant mass more rigid or viscous, or otherwise facilitate mitigation of deleterious effects or removal of the pollutant from water. Chemical agents include biological additives, dispersants, sinking agents, miscellaneous oil spill control agents, and burning agents, but do not include sorbents.

**Claim**, for purposes of a release under CERCLA, means a demand in writing for a sum certain; for purposes of a discharge under CWA, it means a request, made in writing for a sum certain, for compensation for damages or removal costs resulting from an incident.

**Discharge**, as defined by section 311(a)(2) of the 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.

**Dispersants** means those chemical agents that emulsify, disperse, or solubilize oil into the water column or promote the surface spreading of oil slicks to facilitate dispersal of the oil into the water column.



**Environment**, as defined by section 101(8) of CERCLA, means the navigable waters, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Magnuson Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.); and any other surface water, groundwater, drinking water supply, land surface or subsurface strata, or ambient air within the United States or under the jurisdiction of the United States.

**Facility**, as defined by section 101(9) of CERCLA, means any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or any site or area, where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel. As defined by section 1001 of the OPA, it means any structure, group of structures, equipment, or device (other than a vessel) which is used for one or more of the following purposes: exploring for, drilling for, producing, storing, handling, transferring, processing, or transporting oil. This term includes any motor vehicle, rolling stock, or pipeline used for one or more of these purposes.

**Federal Response Plan (FRP)** means the agreement signed by 27 federal departments and agencies in April 1987 and developed under the authorities of the Earthquake Hazards Reduction Act of 1977 (42 U.S.C. 7701 et seq.), and the Disaster Relief Act of 1974 (42 U.S.C. 3231 et seq.), as amended by the Stafford Disaster Relief Act of 1988.

**First Federal Official** means the first federal representative of a participating agency of the NRT to arrive at the scene of a discharge or a release. This official coordinates activities under the NCP and may initiate, in consultation with the OSC, any necessary actions until the arrival of the predesignated OSC. A state with primary jurisdiction over a site covered by a cooperative agreement will act in the stead of the First Federal Official for any incident at the site.

**Fund or Trust Fund** means the Hazardous Substance Superfund established by section 9507 of the Internal Revenue Code of 1986.

**Groundwater**, as defined by section 101(12) of CERCLA, means water in a saturated zone or stratum beneath the surface of land or water.

**Hazardous substance**, as defined by section 101(14) of CERCLA, means: 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 CAA (42 U.S.C. 7521 et seq.); and any imminently hazardous chemical substance or mixture with respect to which the EPA Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act (15 U.S.C. 2601 et seq.). The 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 the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

**Inland waters**, 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.

**Joint Field Office (JFO)** means a temporary federal facility established locally to provide a central point for federal, state, local, and tribal executives with responsibility for incident oversight, direction, and/or assistance to effectively coordinate protection, prevention, preparedness, response and recovery actions. The JFO combines the traditional functions of the Joint Operations Center, the Federal Emergency Management Agency's (FEMA) Disaster Field Office, and the Joint Information Center within a single federal facility.

**Lead Administrative Trustee** means a natural resource trustee who is designated on an incident-by-incident basis for the purpose of pre-assessment and damage assessment, and chosen by the other trustees whose natural resources are affected by the incident. The lead administrative trustee facilitates effective and efficient communication during response operations between the OSC and the other natural resource trustees conducting activities associated with damage assessment, and is responsible for applying to the OSC for access to response operations resources on behalf of all trustees for initiation of a damage assessment.

**Lead agency** means the agency that provides the OSC/RPM to plan and implement response actions under the NCP. EPA, the USCG, another federal agency, or a state (or political subdivision of a state) operating pursuant to a contract or cooperative agreement executed pursuant to section 104(d)(1) of CERCLA, or designated pursuant to a Superfund Memorandum of Agreement (SMOA) entered into pursuant to subpart F of the NCP or other agreements may be the lead agency for a response action. In the case of a release of a hazardous substance, pollutant, or contaminant, where the release is on, or the sole source of the release is from, any facility or vessel under the jurisdiction, custody, or control of DOD or DOE, then DOD or DOE will be the lead agency. Where the release is on, or the sole source of the release is from, any facility or vessel under the jurisdiction, custody or control of a federal agency other than EPA, the USCG, DOD, or DOE, then that agency will be the lead agency for remedial actions and removal actions other than emergencies. The federal agency maintains its lead agency responsibilities whether the remedy is selected by the federal agency for non-NPL sites or by EPA and the federal agency or by EPA alone under CERCLA section 120. The lead agency will consult with the support agency, if one exists, throughout the response process.

**Management of migration** means actions that are taken to minimize and mitigate the migration of hazardous substances or pollutants or contaminants, and the effects of such migration. Measures may include, but are not limited to, management of a plume of contamination, restoration of a drinking water aquifer, or surface water restoration.

**Miscellaneous oil spill control agent** is any product, other than a dispersant, sinking agent, surface washing agent, surface collecting agent, bioremediation agent, burning agent, or sorbent, that can be used to enhance oil spill cleanup, removal, treatment, or mitigation.

**National Incident Management System (NIMS)** is a system mandated by Presidential Homeland Security Policy Directive-5 that provides a consistent, nationwide approach for federal, state, local, and tribal governments; the private sector; and Nongovernmental Organizations to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents regardless of cause, size, or complexity. To provide for interoperability and compatibility among federal, state, local, and tribal

capabilities, the NIMS includes a core set of concepts, principles, and terminology. HSPD-5 identifies these as the ICS; multi-agency coordination systems; training; identification and management of resources (including systems for classifying types of resources); qualification and certification; and collection, tracking, and reporting of incident information and incident resources.

**National Pollution Funds Center (NPFC)** means the entity established by the Secretary of Transportation whose function is administration of the OSLTF. Among the NPFC's duties are: providing appropriate access to the OSLTF for federal agencies and states for removal actions, and for federal trustees to initiate the assessment of natural resource damages; providing appropriate access to the OSLTF for claims; and coordinating cost recovery efforts.

**National Response Framework (NRF)** presents the guiding principles that enable responders to prepare for and provide a unified national response to disasters and emergencies ranging from the smallest incident to the largest catastrophe. The NRF establishes a comprehensive, national, all-hazards approach to domestic response. It defines the key principles, roles, and structures that will lead to an organized response. It describes how communities, tribes, states, the Federal Government, and private-sector and nongovernmental partners apply those principles for a coordinated, effective, national response. The NRF identifies special circumstances under which the Federal Government exercises a larger role, including incidents involving federal interests and catastrophic incidents requiring significant support for a state.

**National Response Plan (NRP)** is an all-discipline, all-hazards plan that established a single, comprehensive framework for management of domestic incidents. The NRP, approved in 2004 and revised in 2006, provided the structure and mechanisms for coordination of federal support to state, local, and tribal incident managers, and for exercising direct federal authorities and responsibilities. Portions of the NRP were superseded when the NRF became official on March 28, 2008.

**National Response System (NRS)** is the mechanism for coordinating response actions by all levels of government in support of the OSC/RPM. The NRS is composed of the NRT, RRTs, OSC/RPM, Area Committees, and Special Teams and related support entities. The NRS is capable of expanding or contracting to accommodate the response effort required by the size or complexity of the discharge or release.

**National Strike Force (NSF)** is a special team established by USCG, including the three USCG Strike Teams, the PIAT, and the NSFCC. The NSF is available to assist OSCs/ RPMs in their preparedness and response duties.

**National Strike Force Coordination Center (NSFCC)**, authorized as the National Response Unit by CWA sections 311 (a)(23) and (j)(2), means the entity established by the Secretary of the department in which the USCG is operating at Elizabeth City, North Carolina, with responsibilities that include administration of the USCG Strike Teams, maintenance of response equipment inventories and logistic networks, and conducting a national exercise program.

**Natural resources** 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 (including the resources of the exclusive economic zone defined by the Magnuson Fishery Conservation and Management Act of 1976); any state or local government; any

foreign government; any Indian tribe; or, if such resources are subject to a trust restriction on alienation, any member of an Indian tribe.

**Navigable waters**, as defined by 40 CFR 110.1, means the waters of the United States, including the territorial seas. The term includes:

- (1) 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.
- (2) Interstate waters, including interstate wetlands.
- (3) All other waters such as intrastate lakes, rivers, streams (including intermittent 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;
  - (i) That are or could be used by interstate or foreign travelers for recreational or other purposes;
  - (ii) From which fish or shellfish are or could be taken and sold in interstate or for commerce;
  - (iii) That are used or could be used for industrial purposes by industries in interstate commerce;
- (4) All impoundments of waters otherwise defined as navigable waters under this section;
- (5) Tributaries of waters identified in paragraphs (1) through (4) of this definition, including adjacent wetlands; and
- (6) Wetlands adjacent to waters identified in paragraphs (1) through (5) 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.
- (7) Waters 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 EPA.

**Oil**, as defined by section 311(a)(1) of the 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 the 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 spoil, but does not include petroleum, including crude oil or any fraction thereof, which is specifically listed or designated as a hazardous substance under subparagraphs (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)** means the fund established under section 9509 of the Internal Revenue Code of 1986 (26 U.S.C. 9509).

**On-Scene Coordinator (OSC)** means the federal official predesignated by EPA or the USCG to coordinate and direct responses under subpart D, or the government official designated by the lead agency to coordinate and direct removal actions under subpart E of the NCP.

**Onshore facility**, as defined by section 101(18) of CERCLA, means any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under any land or non-navigable waters within the United States; and, as defined by section 311(a)(10) of the CWA, means any facility

(including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under any land within the United States other than submerged land.

**On-site** means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action.

**Person**, as defined by section 101(21) of CERCLA, means an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, United States government, state, municipality, commission, political subdivision of a state, or any interstate body. As defined by section 1001 of the OPA, “person” means an individual, corporation, partnership, association, state, municipality, commission, or political subdivision of a state, or any interstate body.

**Principal Federal Official (PFO)** is the federal official designated by the Secretary of Homeland Security to act as his/her representative locally to oversee, coordinate, and execute the Secretary’s incident management responsibilities under HSPD-5 for Incidents of National Significance.

**Pollutant or contaminant**, as defined by section 101(33) of CERCLA, shall include, but not be limited to, any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring. The term does not include petroleum, including crude oil or any fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance under section 101(14)(A) through (F) of CERCLA; nor does it include natural gas, liquefied natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas). For purposes of the NCP, the term pollutant or contaminant means any pollutant or contaminant that may present an imminent and substantial danger to public health or welfare of the United States.

**Public vessel**, as defined by section 311(a)(4) of the CWA, means a vessel owned or bareboat-chartered and operated by the United States, or by a state or political subdivision thereof, or by a foreign nation, except when such vessel is engaged in commerce.

**Remove or removal**, as defined by section 311(a)(8) of the CWA, refers to containment and removal of oil or hazardous substances from the water and shorelines or the taking of such other actions as may be necessary to minimize or mitigate damage to the public health or welfare of the United States (including, but not limited to, fish, shellfish, wildlife, public and private property, and shorelines and beaches) or to the environment. For the purpose of the NCP, the term also includes monitoring of action to remove a discharge. As defined by section 101(23) of CERCLA, remove or removal means the cleanup or removal of released hazardous substances from the environment; such actions as may be necessary taken in the event of the threat of release of hazardous substances into the environment; such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances; the disposal of removed material; or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare of the United States or to the environment, which may otherwise result from a release or threat of release. The term includes, in addition, without being limited to, security fencing or other measures to limit access, provision of alternative water supplies, temporary evacuation and housing of threatened individuals not otherwise provided for, action taken under section 104(b) of CERCLA, post-removal site control, where

appropriate, and any emergency assistance which may be provided under the Disaster Relief Act of 1974. For the purpose of the NCP, the term also includes enforcement activities related thereto.

**Removal costs**, as defined by section 1001 of the OPA, means the costs of removal that are incurred after a discharge of oil has occurred, or in any case in which there is a substantial threat of a discharge of oil, the costs to prevent, minimize, or mitigate oil pollution from such an incident.

**Respond or response**, as defined by section 101(25) of CERCLA, means remove, removal, remedy, or remedial action, including enforcement activities related thereto.

**Responsible party**, as defined by section 1001 of the OPA, means the following:

- (1) Vessels—In the case of a vessel, any person owning, operating, or demise chartering the vessel.
- (2) Onshore Facilities—In the case of an onshore facility (other than a pipeline), any person owning or operating the facility, except a federal agency, state, municipality, commission, or political subdivision of a state, or any interstate body that as the owner transfers possession and right to use the property to another person by lease, assignment, or permit.
- (3) Offshore Facilities—In the case of an offshore facility (other than a pipeline or a deepwater port licensed under the Deepwater Port Act of 1974 (33 U.S.C. 1501 et seq.)), the lessee or permittee of the area in which the facility is located or the holder of a right of use and easement granted under applicable state law or the Outer Continental Shelf Lands Act (43 U.S.C. 1301-1356) for the area in which the facility is located (if the holder is a different person than the lessee or permittee), except a federal agency, state, municipality, commission, or political subdivision of a state, or any interstate body that as owner transfers possession and right to use the property to another person by lease, assignment, or permit.
- (4) Deepwater Ports—In the case of a deepwater port licensed under the Deepwater Port Act of 1974 (33 U.S.C. 1501-1524), the licensee.
- (5) Pipelines—In the case of a pipeline, any person owning or operating the pipeline.
- (6) Abandonment—In the case of an abandoned vessel, onshore facility, deepwater port, pipeline, or offshore facility, the person who would have been responsible parties immediately prior to the abandonment of the vessel or facility.

**SARA** is the Superfund Amendments and Reauthorization Act of 1986. In addition to certain free-standing provisions of law, it includes amendments to CERCLA, the Solid Waste Disposal Act, and the Internal Revenue Code. Among the free-standing provisions of law is Title III of SARA, also known as the "Emergency Planning and Community Right-to-Know Act of 1986" and Title IV of SARA, also known as the "Radon Gas and Indoor Air Quality Research Act of 1986." Title V of SARA amending the Internal Revenue Code is also known as the "Superfund Revenue Act of 1986."

**Size classes** of discharges refers to the following size classes of oil discharges which are provided as guidance to the OSC and serve as the criteria for the actions delineated in subpart D of the NCP. They are not meant to imply associated degrees of hazard to public health or welfare of the United States, nor are they a measure of environmental injury. Any oil discharge that poses a substantial threat to public health or welfare of the United States or the environment, or results in significant public concern shall be classified as a major discharge regardless of the following quantitative measures:

- (1) Minor discharge means a discharge to the inland waters of less than 1,000 gallons of oil or a discharge to the coastal waters of less than 10,000 gallons of oil.
- (2) Medium discharge means a discharge of 1,000 to 10,000 gallons of oil to the inland waters or a discharge of 10,000 to 100,000 gallons of oil to the coastal waters.
- (3) Major discharge means a discharge of more than 10,000 gallons of oil to the inland waters or more than 100,000 gallons of oil to the coastal waters.

**Size classes** of releases refers to the following size classifications that are provided as guidance to the OSC for meeting pollution reporting requirements in subpart B of the NCP. The final determination of the appropriated classification of a release will be made by the OSC based on consideration of the particular release (e.g., size, location, impact, etc.):

- (1) Minor release means a release of a quantity of hazardous substance(s), pollutant(s), or contaminant(s) that poses minimal threat to public health or welfare of the United States or the environment.
- (2) Medium release means a release not meeting the criteria for classification as a minor or major release.
- (3) Major release means a release of any quantity of hazardous substance(s), pollutant(s), or contaminant(s) that poses a substantial threat to public health or welfare of the United States or the environment or results in significant public concern.

**Sorbents** means essentially inert and insoluble materials that are used to remove oil and hazardous substances from water through adsorption, in which the oil or hazardous substance is attracted to the sorbent surface and then adheres to it; absorption, in which the oil or hazardous substance penetrates the pores of the sorbent material; or a combination of the two. Sorbents are generally manufactured in particulate form for spreading over an oil slick or as sheets, rolls, pillows, or booms. The sorbent material may consist of, but is not limited to, the following materials:

- (1) Organic Products --
  - (i) Peat moss or straw;
  - (ii) Cellulose fibers or cork;
  - (iii) Corn cobs;
  - (iv) Chicken, duck, or other bird feathers.
- (2) Mineral compounds --
  - (i) Volcanic ash or perlite;
  - (ii) Vermiculite or zeolite.
- (3) Synthetic products --
  - (i) Polypropylene;
  - (ii) Polyethylene;
  - (iii) Polyurethane;
  - (iv) Polyester.

**Source control** action is construction or installation and start-up of those actions necessary to prevent the continued release of hazardous substances or pollutants or contaminants (primarily from a source on top of or within the ground, or in buildings or other structures) into the environment.

**Source control maintenance measures** are those measures intended to maintain the effectiveness of source control actions once such actions are operating and functioning properly, such as the maintenance of landfill caps and leachate collection systems.

**Spill of National Significance (SONS)** means a spill that due to its 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, and RP resources to contain and clean up the discharge.

**State** means the several states of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Commonwealth of the Northern Marianas, and any other territory or possession over which the United States has jurisdiction. For purposes of the NCP, the term includes Indian tribes as defined in the NCP except where specifically noted. Section 126 of CERCLA provides that the governing body of an Indian tribe shall be afforded substantially the same treatment as a state with respect to certain provisions of CERCLA. Section 300.515(b) of the NCP describes the requirements pertaining to Indian tribes that wish to be treated as states under CERCLA.

**Support agency** means the agency or agencies that provide the support agency coordinator to furnish necessary data to the lead agency, review response data and documents, and provide other assistance as requested by the OSC or RPM. EPA, USCG, another federal agency, or a state may be support agencies for a response action if operating pursuant to a contract executed under section 104(d)(1) of CERCLA or designated pursuant to a Superfund MOA entered into pursuant to subpart F of the NCP or other agreement. The support agency may also concur on decision documents.

**Surface collecting agents** means those chemical agents that form a surface film to control the layer thickness of oil.

**Surface washing agent** is any product that removes oil from solid surfaces, such as beaches and rocks, through a detergency mechanism and does not involve dispersing or solubilizing the oil into the water column.

**Tank vessel** as defined by section 1001 of the OPA means a vessel constructed or adapted to carry, or that carries oil or hazardous material in bulk as cargo or cargo residue, and that:

- (1) is a vessel of the United States;
- (2) operates on the navigable waters; or
- (3) transfers oil or hazardous materials in a place subject to the jurisdiction of the United States.

**Threat of discharge or release.** See definitions of discharge and release.

**Threat of release.** See definition of release.



**Trustee** means an official of a federal natural resources management agency designated in subpart G of the NCP or a designated state official or Indian tribe or, in the case of discharges covered by the OPA, a foreign government official, who may pursue claims for damages under section 107(f) of CERCLA or section 1006 of the OPA.

**United States**, when used in relation to section 311(a)(5) of the CWA, means the states, the District of Columbia, the Commonwealth of Puerto Rico, the Northern Mariana Islands, Guam, American Samoa, the United States Virgin Islands, and the Pacific Island Governments. United States, when used in relation to section 101(27) of CERCLA and section 1001(36) of the OPA, includes the several states of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Commonwealth of the Northern Marianas, and any other territory or possession over which the United States has jurisdiction.

**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.

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**APPENDIX C. INDUSTRY AND AGENCY CONTACTS**

**Agency**

NOTE: Contacting any one of these organizations does not relieve a PRP of the requirement to make all required notifications of hazardous substance releases. These numbers are provided for the convenience of PRPs and are not to be considered an all-inclusive list of required notifications.

To report spills, call the:

**National Response Center**

United States Coast Guard Headquarters  
Washington, D.C.

**(800) 424-8802**

**U.S. Environmental Protection Agency**

<b>24 Hour US EPA Emergency Response Duty Officer</b>			
Region 4	Region 5	Region 6	Region 7
<b>(404) 562-8700</b>	<b>(312) 353-2318</b>	<b>(270) 442-1621</b>	<b>(913) 281-0991</b>

**U.S Coast Guard**

<b>24 Hour USCG Duty Officer</b>		
USCG Sector Ohio Valley Marine Safety Unit MSU Paducah, KY	Lower Mississippi River Memphis, TN	Sector Upper Mississippi River St. Louis, MO
<b>(270) 442-1621</b>	<b>(901) 521-4747</b>	<b>(314) 269-2540</b>

**State Response Agencies**

<b>State Spill Response Numbers</b>				
Arkansas	Illinois	Kentucky	Missouri	Tennessee
<b>ADEQ – Emergency Response</b>	<b>IEMA</b>	<b>KDEP Environmental Emergencies</b>	<b>MDNR Emergency Response</b>	<b>TEMA</b>
<b>(800) 322-4012</b>	<b>(217) 782-7860</b>	<b>(502) 564-2380</b>	<b>(573) 634-2436</b>	<b>(731) 422-3300</b>

**Local Emergency Planning Committees**

**Missouri**

Bootheel LEPC 911 or Coordinator: (800) 609-1559	Southeast Missouri LEPC 911 or Coordinator: (573) 547-8357	Ozarks Foothills LEPC 911 or Coordinator: (573) 785-6402
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**Illinois**

<b>Alexander County LEPC</b> 618-734-3452	<b>Pope County LEPC</b> 618-683-4321
<b>Hardin County LEPC</b> 618-285-6090	<b>Pulaski County LEPC</b> 618-748-9437
<b>Jackson County LEPC</b> 618-684-3137	<b>Randolph County LEPC</b> 618-826-5000 x 227
<b>Massac County LEPC</b> 618-524-2002	<b>Union County LEPC</b> 618-697-0760

**Kentucky**

<b>Ballard County LEPC</b> (270) 665-9928	<b>Livingston County LEPC</b> (270) 928-3177
<b>Carlisle County LEPC</b> (270) 628-3355	<b>McCracken County LEPC</b> (270) 444-1333
<b>Fulton County LEPC</b> (270) 236-3480	<b>Marshall County LEPC</b> (270) 527-4739
<b>Hickman County LEPC</b> (270) 653-5871	<b>Union County LEPC</b> (270) 333-4006

**Tennessee**

<b>Dyer County LEPC</b> (731) 286-7831	<b>Lake County LEPC</b> (731) 986-1936
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**Arkansas**

<b>Mississippi County Local Emergency Planning                  Committee (LEPC)</b> Joseph Richmond (870) 563-1309	
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**Natural Resource Trustees**

Federal Natural Resource Trustee U.S. Department of the Interior			
Arkansas	Illinois	Kentucky/Tennessee	Missouri
Office of Environmental Policy and Compliance Albuquerque Region 1001 Indian School Road, NW, Suite 348 Albuquerque, New Mexico 87104 Phone: (505) 563-3572 Fax: (505) 563-3066	Office of Environmental Policy and Compliance Philadelphia Region Custom House, Room 244 200 Chestnut Street Philadelphia, PA 19106 Telephone: (215) 597-5378 Fax: (215) 597-9845	Office of Environmental Policy and Compliance Atlanta Region Suite 1144 75 Spring Street, S.W. Atlanta, GA 30303 Telephone: (404) 331-4524 Fax: (404) 331-1736	Denver Region P.O. Box 25007 (D-108) Denver Federal Center Denver, CO 80225-0007 (located in Building 67, Room 118) Telephone: (303) 445-2500 Fax: (303) 445-6320

State Natural Resource Trustees				
Arkansas	Illinois	Kentucky	Missouri	Tennessee
[Reserved]	[Reserved]	KDEP 300 Fair Oaks Lane Frankfort, KY 40601 (502) 564-0323	MDNR P.O. Box 176 Jefferson City, MO 65102 Staff Contact: NRD Coordinator Telephone 573-526-3353, Fax 573-751-9277	TDEC 401 Church Street, L&C Annex, 1st Floor Nashville, TN 37243 (615) 532-0109

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**State Historic Preservation Officers**

<b>State Historic Preservation Office</b>	
<b>Arkansas</b>	<b>Arkansas Historic Preservation Program</b> 323 Center Street, Suite 1500 - Little Rock, Arkansas 72201 Phone: (501) 324-9880 - Fax: (501) 324-9184 – E-Mail: <a href="mailto:info@arkansaspreservation.org">info@arkansaspreservation.org</a> <a href="http://www.arkansaspreservation.com/">http://www.arkansaspreservation.com/</a>
<b>Illinois</b>	<b>Illinois Historic Preservation Agency</b> Preservation Services #1 Old State Capitol Plaza Springfield IL 62701-1507 <a href="http://www.state.il.us/hpa/ps/">http://www.state.il.us/hpa/ps/</a>
<b>Kentucky</b>	<b>Kentucky Heritage Council / State Historic Preservation Office</b> 300 Washington Street Frankfort, KY 40601 (502) 564-7005 office (502) 564-5820 fax <a href="http://heritage.ky.gov/">http://heritage.ky.gov/</a>
<b>Missouri</b>	<b>Missouri State Historic Preservation Office</b> P.O. Box 176 Jefferson City, MO 65102 800-361-4827 573-751-7858 E-mail: <a href="mailto:mshpo@dnr.mo.gov">mshpo@dnr.mo.gov</a> <a href="http://www.dnr.mo.gov/shpo/">http://www.dnr.mo.gov/shpo/</a>
<b>Tennessee</b>	<b>Tennessee State Historic Preservation Office</b> 2941 Lebanon Road Nashville, TN 37243-0442 Overnight shipping of packages use 37214 615-532-1550 <a href="http://www.tennessee.gov/environment/hist/">http://www.tennessee.gov/environment/hist/</a>

## FRP Facilities

FRP Facilities					
Facility Name	Address	City	State	Zip	County
Trans-Montaigne - Cape Girardeau Terminal	1400 South Giboney Street	Cape Girardeau	MO	63703	Cape Girardeau
Heartland Asphalt Materials	297 South Hwy 61	New Madrid	MO	63869	New Madrid
Enterprise Products - Cape Girardeau District, Scott City Terminal	10653 State Hwy N	Scott City	MO	63780	Scott
Bunge North America Inc	203 34th St.	Cairo	IL	62914	Alexander
Marathon Ashland Petroleum LLC	201 Ashland Rd	Paducah	KY	42003	McCracken
Paducah Terminal	233 Elizabeth Street	Paducah	KY	42003	McCracken
TransMontaigne Terminal	1350 S 3rd St	Paducah	KY	42003	McCracken
Midwest Terminal Inc	725 North 5th Street	Paducah	KY	42001	McCracken
US Doe Paducah Gas Diffusion Plant	5600 Hobbs Road	Paducah	KY	42001	McCracken

## RCRA Facilities

RCRA Facilities				
Facility Name	Address	City	State	Zip
Nucor Corporation	7301 East County Road 142	Blytheville	AR	72315
Nucor Yamato Steel	5929 E. State Hwy. 18	Blytheville	AR	72316
Maverick Tube LP Blythev L	4950 N. County Rd. 967	Blytheville	AR	72315
Cyro Industries	1500 Richard Prewitt Dr.	Osceola	AR	72370
American Greetings	1400 Ohlendorf Rd.	Osceola	AR	72370
Clark Oil 1843	162 E Vienna St	Anna	IL	62906
Southern Illinois University	1400 Poultry Center Drive	Carbondale	IL	62901
Central Products Co	2200 North Mccoy Drive	Carbondale	IL	62901
IL Central Mgmt Serv Dept Of Vehicles	Rte 13 W	Carbondale	IL	62901
Beazer East Inc	1555 N Marion St	Carbondale	IL	62901
Ameren Cips - Grand Tower	1820 Power Plant Road	Grand Tower	IL	62942

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RCRA Facilities				
Facility Name	Address	City	State	Zip
Honeywell International Inc	2768 Us Highway 45 North	Metropolis	IL	62960
American Minerals Inc	Depot & Ferrell	Rosiclare	IL	62982
Street J D & Co Inc	Hwy 51 North	Urbandale	IL	62914
Dyno Nobel Inc.	5570 State Rte. 3 N.	Wolf Lake	IL	62998
Alcan Composites USA Inc	208 West 5th Street	Benton	KY	42025
Texas Gas Transmission Corporation	93 Texas Gas Lane	Benton	KY	42025
Air Products & Chemicals/Draffens Whse	119 N Main St	Calvert City	KY	42029
BF Goodrich Company	Kentucky Highway 1523	Calvert City	KY	42029
American Environmental Services Inc	1689 Shar-Cal Road	Calvert City	KY	42029
Atofina Chemicals Incorporated	4444 Industrial Parkway	Calvert City	KY	42029
Air Products & Chemicals Incorporated	412 North Main Street	Calvert City	KY	42029
Estron Chemical Incorporated	Highway 95 409 North Main	Calvert City	KY	42029
International Specialty Products Chemicals Incorporated	Hwy. 95	Calvert City	KY	42029
Noveon, Inc.	2468 Industrial Parkway	Calvert City	KY	42029
Celanese Limited	408 North Main Street	Calvert City	KY	42029
Rail Services	640 Gary Johnson Lane	Calvert City	KY	42029
General Environmental Services LLC	2475 Industrial Parkway	Calvert City	KY	42029
Westalake Pvc Corporation	230 Johnson Riley Road	Calvert City	KY	42029
Degussa Corporation	5150 Gilbertville Highway	Calvert City	KY	42029
Rayloc	3710 Highway 60 North	Morganfield	KY	42437
Dawson Manufacturing Morganfield Plant	3564 U.S. Highway 60 East	Morganfield	KY	42437
Browns Plating Service Incorporated	1010 Krebs Station Rd.	Paducah	KY	42003
Trinity Marine Products Incorporated	700 Terrace Lane	Paducah	KY	42003
Vmv Enterprises Incorporated	1300 Kentucky Avenue	Paducah	KY	42003
Us Doe Paducah Gas Diffusion Plt	5600 Hobbs Road	Paducah	KY	42001
United States Enrichment Corporation	5600 A Hobbs Road	Paducah	KY	42001
Lone Star Industries Incorporated	2524 South Sprigg Street	Cape Girardeau	MO	63701
Trinity Caruthersville	265 County Highway 346	Caruthersville	MO	63830

## RCRA Facilities

Facility Name	Address	City	State	Zip
Trinity Marine Barge Cover Fabrication	County Road 337	Caruthersville	MO	63830
Arvinmeritor	1207 Arvin Road	Dexter	MO	63841
W W Wood Products Inc	12140 Main St	Dudley	MO	63936
Loxreen Company Incorporated	Highway 84 West	Hayti	MO	63851
Nordenia Usa Incorporated	14591 State Highway 177	Jackson	MO	63755
Noranda Aluminum Incorporated	391 Saint Jude Industrial Park	New Madrid	MO	63869
Alloy Research Incorporated	1 Hope Way	New Madrid	MO	63869
C P S Trailer Co	500 Rosati St	Oran	MO	63771
T G Missouri Corporation	2200 Platin Road	Perryville	MO	63775
Sabreliner Corporation	1390 Highway H	Perryville	MO	63775
Tnt Plastics Incorporated	701 Industrial Drive	Perryville	MO	63775
Briggs & Stratton	731 Highway 142	Poplar Bluff	MO	63901
Caseys General Store 1142	1995 S Broadway	Poplar Bluff	MO	63901
Plastene Supply Division Of Siegel Robert	101 Meatte Street Suite A	Portageville	MO	63873
Cutmart Transportation Shop	3365 Oakshire Dr	Scott City	MO	63780
Bekaert Corporation	1 Bekaert Rd. Industrial Park	Dyersburg	TN	38024
Quebecor World - Dyersburg Div	2030 Sylvan Road	Dyersburg	TN	38024
Returns Distribution Specialists Rds LI	175 Pressler Road	Dyersburg	TN	38024
Heco Realty Inc	2005A Forrest Street	Dyersburg	TN	38024
Siegel Robert Automotive - Newbern	100 Fabrite Road	Newbern	TN	38059
Pac Tec Incorporated Ray O Lite Division	635 S. Washington St.	Ripley	TN	38063
Sr Of Tennessee	2483 Highway 209 North	Ripley	TN	38063

## Risk Management Plan (RMP) Facilities

## RMP Facilities

Facility	Address	City	County	State	Zip	Phone
AG DISTRIBUTORS INCORPORATED - DEERING, MISSOURI	6325 STATE HIGHWAY J	DEERING	PEMISCOT	MO	63840	573-757-6253



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RMP Facilities						
Facility	Address	City	County	State	Zip	Phone
AG DISTRIBUTORS INCORPORATED - KENNETT, MISSOURI	19303 STATE HIGHWAY 25 NORTH	KENNETT	DUNKLIN	MO	63857	573-888-5361
AG DISTRIBUTORS INCORPORATED - PORTAGEVILLE, MISSOURI	122 STATE HIGHWAY T	PORTAGEVILLE	PEMISCOT	MO	63873	573-379-5421
AGRICHEM INCORPORATED DOING BUSINESS AS FARMERS GIN	245 FARMERS GIN ROAD	CLINTON	HICKMAN	KY	42031	270-653-2731
AGRI-CHEM, INCORPORATED - BARDWELL	2351 UNITED STATES HIGHWAY 51 NORTH	BARDWELL	CARLISLE	KY	42023	270-628-3311
AIR PRODUCTS AND CHEMICALS, INCORPORATED - MAIN PLANT	412 NORTH MAIN STREET	CALVERT CITY	MARSHALL	KY	42029	270-395-2254
AIR PRODUCTS AND CHEMICALS, INCORPORATED - VAM DISTRIBUTION	STATE HIGHWAY 1523	CALVERT CITY	MARSHALL	KY	42029	270-395-2254
ARKEMA INCORPORATED - CALVERT CITY PLANT	4444 INDUSTRIAL PARKWAY	CALVERT CITY	MARSHALL	KY	42029	270-395-7121
ASSOCIATED ELECTRIC - NEW MADRID POWER PLANT	41 SAINT JUDE INDUSTRIAL PARK ROAD	MARSTON	NEW MADRID	MO	63866	573-643-2211
ATLAS COLD STORAGE	2500 ROSE PARKWAY	SIKESTON	SCOTT	MO	63801	573-471-7727
BALLARD COUNTY COOPERATIVE	BROADWAY	LACENTER	BALLARD	KY	42056	270-665-5101
BANDANA AG INCORPORATED	100 NEEDMORE ROAD	BANDANA	BALLARD	KY	42022	270-224-2134
BIOKYOWA INCORPORATED	5469 NASH ROAD	CAPE GIRARDEAU	CAPE GIRARDEAU	MO	63701	573-335-4849
BRENNTAG MID-SOUTH INCORPORATED	4510 GILBERTSVILLE HIGHWAY	CALVERT CITY	MARSHALL	KY	42029	270-395-8395
CAPE ROCK TREATMENT PLANT 1	20 EAST CAPE ROCK DRIVE	CAPE GIRARDEAU	CAPE GIRARDEAU	MO	63701	573-874-8080
CELANESE CORPORATION - CALVERT CITY PLANT	246 JOHNSON AND RILEY ROAD	CALVERT CITY	MARSHALL	KY	42029	270-395-8546
CITY OF DYERSBURG WASTEWATER PLANT	HONEYDEW LANE	DYERSBURG	DYER	TN	38024	
CONAGRA FOOD MILLS	101 WATER STREET	CHESTER	RANDOLPH	IL	62233	618-826-2371
COOPERATIVE SERVICE CENTER	166 MAIN STREET	MCBRIDE	PERRY	MO	63776	573-547-2561
COOPERATIVE SERVICE CENTER INCORPORATED	8759 STATE HIGHWAY A	WHITWATER	CAPE GIRARDEAU	MO	63785	573-794-2211
COOPERATIVE SERVICE CENTER INCORPORATED	506 EAST WASHINGTON STREET	JACKSON	CAPE GIRARDEAU	MO	63755	573-243-3563
COUNTY LINE AG SERVICES DOING BUSINESS AS KELSO MILLING COMPANY	1205 MAIN STREET	SCOTT CITY	SCOTT	MO	63780	573-264-4002
CROP PRODUCTION SERVICES	4770 UNITED STATES HIGHWAY 60 WEST	MORGANFIELD	UNION	KY	42437	270-389-0268
CROP PRODUCTION SERVICES - MARISSA	11300 STATE ROUTE 4	MARISSA	RANDOLPH	IL	62257	618-587-7411

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RMP Facilities						
Facility	Address	City	County	State	Zip	Phone
CROP PRODUCTION SERVICES - RUMA SATELLITE	8290 SAINT LEO'S ROAD	EVANSVILLE	RANDOLPH	IL	62242	618-282-2741
CROP PRODUCTION SERVICES - WAVERLY	4630 UNITED STATES HIGHWAY 60 EAST	WAVERLY	UNION	KY	42462	270-389-0400
CROP PRODUCTION SERVICES - WINE HILL	12100 WINE HILL ROAD	STEELEVILLE	RANDOLPH	IL	62288	618-965-3454
CROP PRODUCTION SERVICES INCORPORATED - HARDIN	1266 BREWERS HIGHWAY	HARDIN	MARSHALL	KY	42048	270-437-4000
DELTA GROWERS ASSOCIATION	313 SOUTH STATE HIGHWAY 105	CHARLESTON	MISSISSIPPI	MO	63834	573-649-3036
DELTA SUPPLY INCORPORATED	STATE HIGHWAY 25 WEST	DELTA	CAPE GIRARDEAU	MO	63744	573-794-2222
DYNEGY MIDWEST GENERATION	10901 BALDWIN ROAD	BALDWIN	RANDOLPH	IL	62217	618-785-2294
FLEXIBLE FOAM PRODUCTS. INCORPORATED - CAIRO PLANT	3600 SYCAMORE STREET	CAIRO	ALEXANDER	IL	62914	618-734-3911
GATEWAY FS, INCORPORATED	6990 BLUFF ROAD	PRAIRIE DU ROCHER	RANDOLPH	IL	62277	618-284-7200
GATEWAY FS, INCORPORATED - PERCY (NH3)	207 ALMOND STREET	PERCY	RANDOLPH	IL	62272	618-497-2135
GATEWAY FS, INCORPORATED - RED BUD (NH3)	201 POWER STREET	RED BUD	RANDOLPH	IL	62278	618-282-2646
GATEWAY FS, INCORPORATED - SPARTA (NH3)	1395 WEST BROADWAY STREET	SPARTA	RANDOLPH	IL	62286	618-443-2181
GOOD HUMOR / BREYERS - SIKESTON NORTH	2400 ROSE PARKWAY	SIKESTON	SCOTT	MO	63801	573-472-8100
GOOD HUMOR CORPORATION - SIKESTON SOUTH	1010 COUNTY LINE ROAD	SIKESTON	NEW MADRID	MO	63801	573-471-7051
HONEYWELL INTERNATIONAL - METROPOLIS WORKS	2768 NORTH UNITED STATES HIGHWAY 45 ROAD	METROPOLIS	MASSAC	IL	62960	618-524-6201
ILLINOIS AMERICAN WATER - CAIRO TREATMENT PLANT	4100 OHIO STREET	CAIRO	ALEXANDER	IL	62914	618-734-4671
INTERNATIONAL SPECIALTY PRODUCTS CHEMICALS INCORPORATED	455 NORTH MAIN STREET	CALVERT CITY	MARSHALL	KY	42029	270-395-4165
J. P. ROSS COTTON COMPANY, INCORPORATED	200 CLAY STREET	ESSEX	STODDARD	MO	63846	573-283-5313
KAGOME CREATIVE FOODS, INCORPORATED	710 NORTH PEARL STREET	OSCEOLA	MISSISSIPPI	AR	72370	870-563-2601
KINDER MORGAN OPERATING LIMITED PARTNERSHIP	6162 EAST STATE HIGHWAY 18	BLYTHEVILLE	MISSISSIPPI	AR	72315	870-763-0800
KINKAID AREA WATER SYSTEM	1763 WATER PLANT ROAD	MURPHYSBORO	JACKSON	IL	62966	
LOIDA AG SERVICE LIMITED LIABILITY COMPANY	23860 BOURBON ROAD	SAINTE GENEVIEVE	STE GENEVIEVE	MO	63670	573-883-3552
MEADWESTVACO CORPORATION - WICKLIFFE CARBON PLANT	2025 BEECH GROVE ROAD	WICKLIFFE	BALLARD	KY	42087	270-335-4800
MISSOURI FARMERS ASSOCIATION AGRI SERVICE - ADVANCE	104 EAST SOUTH STREET	ADVANCE	STODDARD	MO	63730	573-722-3541

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RMP Facilities						
Facility	Address	City	County	State	Zip	Phone
MISSOURI FARMERS ASSOCIATION AGRI SERVICE - BENTON	11 MFA ROAD	BENTON	SCOTT	MO	63736	573-545-3939
MISSOURI FARMERS ASSOCIATION AGRI SERVICE - BERNIE	311 NORTH DRAKE STREET	BERNIE	STODDARD	MO	63822	573-293-5311
MISSOURI FARMERS ASSOCIATION AGRI SERVICE - CHAFFEE	1980 CUMMINS DRIVE	CHAFFEE	SCOTT	MO	63740	573-887-3568
MISSOURI FARMERS ASSOCIATION AGRI SERVICE - JACKSON	1770 LEE AVENUE	JACKSON	CAPE GIRARDEAU	MO	63755	573-243-3549
MISSOURI FARMERS ASSOCIATION AGRI SERVICE - SAINTE GENEVIEVE	10940 INDUSTRIAL DRIVE	SAINTE GENEVIEVE	STE GENEVIEVE	MO	63670	573-883-3538
MISSOURI FARMERS ASSOCIATION ANHYDROUS PLANT - PERRYVILLE	3501 SOUTH UNITED STATES HIGHWAY 61	PERRYVILLE	PERRY	MO	63775	573-547-5622
MISSOURI FARMERS ASSOCIATION ANHYDROUS PLANT - SAINTE GENEVIEVE	8970 LITTLE ROCK ROAD	SAINTE GENEVIEVE	STE GENEVIEVE	MO	63670	573-883-3538
MRM AG SERVICES INCORPORATED	3468 WEST STATE HIGHWAY 80	EAST PRAIRIE	MISSISSIPPI	MO	63845	573-649-3533
NEWPAGE CORPORATION	1724 WESTVACO ROAD	WICKLIFFE	BALLARD	KY	42087	270-335-4000
PADUCAH GASEOUS DIFFUSION PLANT	5600 HOBBS ROAD	PADUCAH	MCCRACKEN	KY	42001	301-564-3200
PADUCAH WATER WORKS	1800 NORTH 8TH STREET	PADUCAH	MCCRACKEN	KY	42001	
PEACH ORCHARD GIN COMPANY	1522 STATE HIGHWAY EE	GIDEON	PEMISCOT	MO	63848	573-448-3888
POPLAR BLUFF WATER TREATMENT PLANT	108 JOHNSON DRIVE	POPLAR BLUFF	BUTLER	MO	63901	
SARA LEE FOODS - NEWBERN	2000 BIFFLE ROAD	NEWBERN	DYER	TN	38059	731-627-3271
SEMSTREAM LIMITED PARTNERSHIP - DEXTER TERMINAL	19905 STATE HIGHWAY 114	DEXTER	STODDARD	MO	63841	573-624-8127
SOUTHEAST COOPERATIVE SERVICE COMPANY INCORPORATED	25564 COUNTY ROAD 326	ORAN	STODDARD	MO	63771	573-733-4242
SOUTHERN FS, INCORPORATED - JACOB (NH3) SITE	21 BUFFALO LANE	JACOB	JACKSON	IL	62950	618-763-4654
SOUTHERN FS, INCORPORATED - JONESBORO	400 SOUTH MAIN STREET	JONESBORO	UNION	IL	62952	618-833-2494
SOUTHERN FS, INCORPORATED - METROPOLIS (NH3) SITE	STATE HIGHWAY 145 SOUTH	GRANTSBURG	POPE	IL	62943	618-949-3857
SOUTHERN FS, INCORPORATED - MURPHYSBORO (NH3) SITE	17950 STATE HIGHWAY 127	MURPHYSBORO	JACKSON	IL	62966	618-687-3032
SOUTHERN FS, INCORPORATED - ULLIN (NH3) SITE	285 EAST CACHE AVENUE	ULLIN	PULASKI	IL	62992	618-845-3333
SOUTHERN FS, INCORPORATED - WARE (NH3) SITE	4630 STATE ROUTE 3 NORTH	WOLF LAKE	UNION	IL	62998	618-833-3276
SOUTHERN STATES COOPERATIVE INCORPORATED / HENDERSON COOPERATIVE - MORGANFIELD BRANCH	304 NORTH TOWNSEND STREET	MORGANFIELD	UNION	KY	42437	270-389-1656
SPEED AG SERVICES LIMITED LIABILITY COMPANY	345 STATE HIGHWAY 166 WEST	HICKMAN	FULTON	KY	42050	270-883-0000

RMP Facilities						
Facility	Address	City	County	State	Zip	Phone
TARGA RESOURCES LIMITED PARTNERSHIP - CALVERT CITY TERMINAL	2337 INDUSTRIAL PARKWAY	CALVERT CITY	MARSHALL	KY	42029	270-395-4570
THE DOE RUN COMPANY - BRUSHY CREEK FACILITY	STATE HIGHWAY KK	BUNKER	REYNOLDS	MO	63629	573-689-2228
THE DOE RUN COMPANY - FLETCHER FACILITY	STATE HIGHWAY TT	BUNKER	REYNOLDS	MO	63629	573-689-2251
TYSON FOODS INCORPORATED - DEXTER	1001 EAST STODDARD STREET	DEXTER	STODDARD	MO	63841	573-624-4548
VISKASE CORPORATION	2221 EAST STATE HIGHWAY 198	OSCEOLA	MISSISSIPPI	AR	72370	865-458-2071
WESTLAKE PVC CORPORATION	230 JOHNSON AND RILEY ROAD	CALVERT CITY	MARSHALL	KY	42029	270-395-4860
WESTLAKE VINYL INCORPORATED	2672 INDUSTRIAL PARKWAY	CALVERT CITY	MARSHALL	KY	42029	270-395-4151

### Pipeline Operators

OPERATOR NAME	SYSTEM NAME	DIA.	COMMODITY CATEGORY	PERSON TO CONTACT	CONTACT ADDRESS	PHONE/FAX/EMAIL
ENTERPRISE PRODUCTS OPERATING LLC	TEPPCO MAINLINE	20	Liquefied Petroleum Gas	Michael McLaughlin (Manager, Public Awareness & Damage Prevention)	PO Box 4735, , Houston TX 77210	Phone: (713) 381-2802 Fax: Email: MMclaughlin@eprod.com
SHELL PIPELINE CO., L.P.	CAPLINE CRUDE (CRD - TER)	40	Crude Oil	Deborah Price (Senior Associate Engineer)	777 Walker Street, , Houston TX 77002	Phone: (713) 241-2035 Fax: Email: deborah.price@shell.com
EXXONMOBIL PIPELINE CO	PATOKA-CORSICANA CRUDE	20	Crude Oil	Patrick Henretty	P. O. Box 2220, , Houston TX 77252	Phone: (713) 656-5431 Fax: (713) 656-9579 Email: Patrick.b.henretty@exxonmobil.com
ANR PIPELINE CO	ANR	36	Natural Gas		5250 Corporate Drive, , Troy MI 48098	Phone: (248) 205-7596 Fax: Email: us_crossings@transcanada.com
CENTERPOINT ENERGY - MISSISSIPPI RIVER GAS TRANSMISSION CORP	ML1	0	Natural Gas	Alicia Dixon (Manager Operations Media Relations)	P.O. Box 1700, HOUSTON TX 77252	Phone: (713) 207-5885 Fax: (713) 207-9996 Email: alicia.dixon@CenterPointEnergy.com

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Pipeline Operators

OPERATOR NAME	SYSTEM NAME	DIA.	COMMODITY CATEGORY	PERSON TO CONTACT	CONTACT ADDRESS	PHONE/FAX/EMAIL
CENTERPOINT ENERGY GAS TRANSMISSION	JM-16	0	Natural Gas	Alicia Dixon (Manager Operations Media Relations)	P.O. Box 1700, HOUSTON TX 77252	Phone: (713) 207-5885 Fax: (713) 207-9996 Email: alicia.dixon@CenterPointEnergy.com
NATURAL GAS PIPELINE CO OF AMERICA (KMI)	NORTH REGION	3	Natural Gas	Joe McLaughlin (Director North Region)	23725 W COUNTY FARM RD, SHOREWOOD IL 60431	Phone: (815) 272-9104 Fax: (303) 984-3220 Email: Joe_McLaughlin@kindermorgan.com
OZARK GAS TRANSMISSION SYSTEM	SROC-EOLN	11	Natural Gas	Dwayne Teschendorf (Principal Engineer)	5400 Westheimer Court, Houston TX 77056	Phone: (713) 627-5573 Fax: (713) 386-4468 Email: deteschendorf@spectraenergy.com
TEXAS EASTERN TRANSMISSION LP (SPECTRA ENERGY CORP)	LICK-NORC	24	Natural Gas	Dwayne Teschendorf (Principal Engineer)	5400 Westheimer Ct, Houston TX 77056	Phone: (713) 627-5573 Fax: Email: none
TEXAS GAS TRANSMISSION LLC	MAIN LINE SYSTEM [20-1 ]	0	Natural Gas		P.O. Box 20008, 3800 Frederica Street, Owensboro KY 42301	Phone: (270) 688-6800 Fax: Email: Mike.K.Nance@txgt.com
TRUNKLINE GAS CO	DYERSBURG DISCHARGE	36	Natural Gas	Eric Amundsen (Vice President)	5444 Westheimer Ct., Suite 922, Houston TX 77056	Phone: (713) 989-7460 Fax: (713) 989-1188 Email: eric.amundsen@sug.com
WESTLAKE PVC CORPORATION	NATURAL GAS TO MONOMERS	6	Natural Gas	Bob Gold (Supervisor-Transportation)	2468 Industrial Parkway, Box 1027, Calvert City KY 42029	Phone: (270) 395-3441 Fax: (270) 395-4001 Email: bgold@westlake.com
MARATHON PIPE LINE LLC	BEAUMONT - CREAL SPRINGS 24IN-26IN PROD*	26	Non-HVL Product	Craig Potts (Public Awareness Coordinator)	539 South Main Street, Findlay OH 45840	Phone: (419) 421-3260 Fax: Email: capotts@marathonpetroleum.com
ATMOS ENERGY CORPORATION - KY/MID-STATES (KENTUCKY)	MID-STATES TRANSMISSION	4	Natural Gas	Roger Mullins (Manager, Engineering Services)	810 Crescent Centre Drive, Suite 600, Franklin TN 37067	Phone: (615) 771-8466 Fax: Email: roger.mullins@atmosenergy.com
ATMOS ENERGY CORPORATION - KY/MID-STATES (MID-STATES)	MID-STATES TRANSMISSION	6	Natural Gas	Roger Mullins (Manager, Engineering Services)	810 Crescent Centre Dr, Suite 600, Franklin TN 37067	Phone: (615) 771-8466 Fax: (615) 771-8302 Email:

### Pipeline Operators

OPERATOR NAME	SYSTEM NAME	DIA.	COMMODITY CATEGORY	PERSON TO CONTACT	CONTACT ADDRESS	PHONE/FAX/EMAIL
						Roger.Mullins@AtmosEnergy.com
COMPRESSED ENERGY SYSTEMS, INC	GRAYSON HILL ENERGY	4.3	Natural Gas	Darin Houchin (Vice President U.S.D.I., P.E.)	1927 Miller Drive, Olney IL 62450	Phone: (618) 392-5502 Fax: (618) 392-2261 Email: darin@usdi.us
DTE METHANE RESOURCES, LLC	DTE METHANE RESOURCES	6	Natural Gas	Mark Benefield (Facility Manager)	20227 Thorn Road, Thompsonville IL 62890	Phone: (618) 982-9710 Fax: (618) 928-2696 Email: benefieldm@dteenergy.com
PADUCAH POWER SYSTEM	PADUCAH POWER	13	Natural Gas	Michael Wendling (Gas Engineer)	1927 Miller Drive, P.O. Box 276, Olney IL 62450	Phone: (618) 392-5502 Fax: (618) 392-2261 Email: mwending@usdi.us
SOLD	GENESIS	4	Natural Gas			Phone: (703) 317-6294 Fax: Email: npms-nr@mbakercorp.com
SOUTHERN ILLINOIS POWER COOPERATIVE	SOUTHERN ILLINOIS POWER COOPERATIVE	8.6	Natural Gas	Darin Houchin (Vice President U.S.D.I., P.E.)	1927 Miller Drive, Olney IL 62450	Phone: (618) 392-5502 Fax: (618) 392-2261 Email: darin@usdi.us

**APPENDIX D. FIRE DEPARTMENTS / HAZMAT TEAMS WITHIN THE GREAT RIVERS SUB-AREA**

**Missouri**

**Southeast Missouri HazMat  
Jackson, Sikeston and Cape Girardeau**

Chief Drew Juden 573-471-6200  
[drewj@sikeston.org](mailto:drewj@sikeston.org)  
Sikeston DPS  
215 N. New Madrid  
Sikeston, MO 63801

Ken Dicus 573-471-6200  
[kend@sikeston.org](mailto:kend@sikeston.org)  
Sikeston DPS  
215 N. New Madrid  
Sikeston, MO 63801

**Kennett Fire Department HazMat**

John Mallott 573-888-6575 (home)  
[kfd@clgw.net](mailto:kfd@clgw.net)  
Kennett Fire Dept 573-888-5337 (work)  
200 Cedar Street 573-717-6442 (cell)  
Kennett, MO 63857

**Ozark Regional Homeland Security Team**

Bob Fredwell 573-718-3244  
[bfredwell@imsinternet.net](mailto:bfredwell@imsinternet.net)  
Poplar Bluff, MO

Jackson Bostic 573-619-1407  
[jackson.bostic@dnr.mo.gov](mailto:jackson.bostic@dnr.mo.gov)  
Poplar Bluff, MO

**Kentucky**

**Hazmat Response Team 1:  
Class A Trailer**

Steve Kyle 270-519-8919  
[skyle@ci.paducah.ky.us](mailto:skyle@ci.paducah.ky.us)

**Hazmat Response Team 2:  
Class B Trailer**

Brent Francis 270-365-2022

ARKANSAS

[RESERVED]

ILLINOIS

[RESERVED]

KENTUCKY

[RESERVED]

TENNESSEE

[RESERVED]

DRAFT



**APPENDIX E. SENSITIVE SPECIES OF THE GRSA**

<b>Sub Area Sensitive Species</b>		
<b>Species Scientific Name</b>	<b>Species Category</b>	<b>Counties in which Located</b>
Acaulon muticum	Mosses	St Francois MO
Accipiter cooperii	Birds	Wayne MO, Ste Genevieve MO, Bollinger MO, Butler MO, Carter MO, Reynolds MO
Accipiter striatus	Birds	Ste Genevieve MO, Carter MO, Reynolds MO, McCracken KY
Acipenser fulvescens	Fishes	Mississippi MO, Alexander IL, Hardin IL, Pulaski IL, Randolph IL, Union IL, Ballard KY, Fulton KY, Hickman KY, Pope IL, Cape Girardeau MO, Perry MO, Scott MO, Livingston KY, McCracken KY, Union KY
Acmella oppositifolia	Flowering Plants	Lake TN
Actaea rubifolia	Flowering Plants	Hardin IL, Jackson IL, Massac IL, Pope IL, Livingston KY
Actinonaias ligamentina	Mollusks	Livingston KY
Aesculus pavia	Flowering Plants	Carlisle KY, Hickman KY, McCracken KY
Agalinis auriculata	Flowering Plants	Jackson IL, Carter MO, Reynolds MO
Agalinis heterophylla	Flowering Plants	Bollinger MO, Dunklin MO
Agalinis purpurea	Flowering Plants	Stoddard MO, Ste Genevieve MO, Butler MO, Carter MO, Reynolds MO, Ripley MO
Agalinis skinneriana	Flowering Plants	Ste Genevieve MO, Union IL, St Francois MO
Agalinis viridis	Flowering Plants	Stoddard MO, Dunklin MO, Butler MO
Agrimonia gryposepala	Flowering Plants	Marshall KY
Alasmidonta marginata	Mollusks	Wayne MO, Bollinger MO, Butler MO, Carter MO, Madison MO
Alliaria petiolata	Flowering Plants	Jackson IL, Perry MO
Allium burdickii	Flowering Plants	Ste Genevieve MO, St Francois MO
Allocapnia pygmaea	Insects	Carter MO, Reynolds MO
Alopecurus aequalis	Flowering Plants	Bollinger MO, Carter MO, Reynolds MO
Alosa alabamae	Fishes	Randolph IL, Fulton KY, New Madrid MO, Perry MO, Livingston KY, Marshall KY
Ambystoma annulatum	Amphibians	Ste Genevieve MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Ambystoma talpoideum</i>	Amphibians	Stoddard MO, Fulton KY, Bollinger MO, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Ripley MO
<i>Ambystoma tigrinum</i>	Amphibians	Carter MO, Perry MO
<i>Ambystoma tigrinum tigrinum</i>	Amphibians	Carter MO, Perry MO
<i>Ameiurus nebulosus</i>	Fishes	Wayne MO, Stoddard MO, Bollinger MO, Cape Girardeau MO, New Madrid MO, Pemiscot MO
<i>Amianthium muscitoxicum</i>	Flowering Plants	Wayne MO, Butler MO, Carter MO, Madison MO, Reynolds MO, Ripley MO
<i>Ammocrypta clara</i>	Fishes	Wayne MO, Stoddard MO, Ste Genevieve MO, Jackson IL, Randolph IL, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Perry MO
<i>Ammocrypta vivax</i>	Fishes	Wayne MO, Stoddard MO, Bollinger MO, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Scott MO, Marshall KY
<i>Ammodramus henslowii</i>	Birds	Ste Genevieve MO, Randolph IL, Pope IL, Livingston KY, McCracken KY, Marshall KY
<i>Amorpha nitens</i>	Flowering Plants	Pope IL
<i>Amphiagrion saucium</i>	Insects	Ballard KY
<i>Amphiuma tridactylum</i>	Amphibians	Wayne MO, Stoddard MO, Mississippi MO, Fulton KY, Hickman KY, Bollinger MO, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO, Scott MO, Lake TN
<i>Anas discors</i>	Birds	Fulton KY, Union KY
<i>Anax longipes</i>	Insects	Wayne MO, Reynolds MO, Ripley MO
<i>Anhinga anhinga</i>	Birds	Pemiscot MO, Lake TN
<i>Anodonta suborbiculata</i>	Mollusks	Wayne MO, Stoddard MO, Mississippi MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Scott MO
<i>Apalone mutica</i>	Turtles	Mississippi MO, Jackson IL, Massac IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Livingston KY, McCracken KY, Marshall KY, Union KY

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Apalone mutica mutica</i>	Turtles	Mississippi MO, Massac IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Livingston KY, McCracken KY, Marshall KY, Union KY
<i>Apios priceana</i>	Flowering Plants	Hardin IL, Livingston KY, Marshall KY
<i>Arabis glabra</i>	Flowering Plants	Jackson IL, Perry MO
<i>Arabis hirsuta</i>	Flowering Plants	Livingston KY
<i>Arcidens confragosus</i>	Mollusks	Wayne MO, Stoddard MO, Mississippi MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO
<i>Ardea alba</i>	Birds	Mississippi MO, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Mississippi AR, Pemiscot MO, Livingston KY, Marshall KY, Union KY, Dyer TN, Lake TN
<i>Ardea herodias</i>	Birds	Wayne MO, Ste Genevieve MO, Mississippi MO, Union IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Cape Girardeau MO, New Madrid MO, Carter MO, Madison MO, Reynolds MO, Perry MO, Ripley MO, Scott MO, St Francois MO, Livingston KY, McCracken KY, Marshall KY, Union KY
<i>Arigomphus maxwelli</i>	Insects	Carlisle KY, Hickman KY
<i>Aristida desmantha</i>	Flowering Plants	Scott MO
<i>Aristida lanosa</i>	Flowering Plants	Stoddard MO, Dunklin MO, Scott MO
<i>Aristolochia serpentaria</i>	Flowering Plants	Alexander IL, Massac IL, Pulaski IL, Union IL
<i>Armoracia lacustris</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Pulaski IL, Ballard KY, Fulton KY, Bollinger MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Livingston KY, McCracken KY, Union KY, Lake TN
<i>Asclepias meadii</i>	Flowering Plants	Reynolds MO
<i>Asio flammeus</i>	Birds	Randolph IL
<i>Asplenium bradleyi</i>	Ferns and relatives	Jackson IL, Randolph IL, Union IL
<i>Asplenium resiliens</i>	Ferns and relatives	Union IL

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Atractosteus spatula</i>	Fishes	Mississippi MO, Alexander IL, Massac IL, Randolph IL, Ballard KY, Carlisle KY, Fulton KY, Cape Girardeau MO, Butler MO, Perry MO, Livingston KY, McCracken KY, Dyer TN, Lake TN
<i>Baetisca obesa</i>	Insects	Mississippi MO, New Madrid MO, Dunklin MO
<i>Baptisia bracteata</i>	Flowering Plants	Livingston KY, McCracken KY, Marshall KY
<i>Bartonia paniculata</i>	Flowering Plants	Stoddard MO, Pope IL
<i>Bartonia virginica</i>	Flowering Plants	Ste Genevieve MO
<i>Bazzania trilobata</i>	Liverworts	Ste Genevieve MO
<i>Berberis canadensis</i>	Flowering Plants	Jackson IL
<i>Berchemia scandens</i>	Flowering Plants	Fulton KY, Hickman KY, Pope IL
<i>Bidens laevis</i>	Flowering Plants	Dunklin MO, Ripley MO
<i>Boltonia decurrens</i>	Flowering Plants	Alexander IL, Union IL, Cape Girardeau MO, Dunklin MO, Scott MO
<i>Botaurus lentiginosus</i>	Birds	Wayne MO, Scott MO
<i>Botrychium biternatum</i>	Ferns and relatives	Wayne MO, Stoddard MO, Jackson IL, Pope IL, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Perry MO, Ripley MO
<i>Bouteloua gracilis</i>	Flowering Plants	Dunklin MO
<i>Bromus latiglumis</i>	Flowering Plants	Wayne MO, Ste Genevieve MO, Reynolds MO, St Francois MO
<i>Bromus nottowayanus</i>	Flowering Plants	Wayne MO, Bollinger MO, Carter MO, Madison MO, Reynolds MO, Perry MO, St Francois MO
<i>Bryoxiphium norvegicum</i>	Mosses	Ste Genevieve MO
<i>Bubulcus ibis</i>	Birds	Fulton KY, New Madrid MO
<i>Buteo lineatus</i>	Birds	Alexander IL, Hardin IL, Jackson IL, Massac IL, Pulaski IL, Pope IL, Butler MO, Carter MO, Reynolds MO, Ripley MO, McCracken KY, Union KY
<i>Buteo platypterus</i>	Birds	New Madrid MO, Reynolds MO
<i>Cabomba caroliniana</i>	Flowering Plants	Ballard KY, Carlisle KY, Fulton KY, Marshall KY
<i>Calamagrostis canadensis</i> var. <i>macouniana</i>	Flowering Plants	Pulaski IL, Ballard KY
<i>Calamagrostis porteri</i>	Flowering Plants	Pope IL, St Francois MO
<i>Calamagrostis porteri</i> ssp. <i>insperata</i>	Flowering Plants	Pope IL, St Francois MO
<i>Calamagrostis stricta</i>	Flowering Plants	Ripley MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Calamagrostis stricta</i> ssp. <i>inexpansa</i>	Flowering Plants	Ripley MO
<i>Calephelis muticum</i>	Insects	Wayne MO, Carter MO, St Francois MO
<i>Callicarpa americana</i>	Flowering Plants	Ripley MO
<i>Calliergonella cuspidata</i>	Mosses	Reynolds MO, Ripley MO
<i>Callirhoe triangulata</i>	Flowering Plants	Mississippi MO, Alexander IL, Scott MO
<i>Calopogon tuberosus</i>	Flowering Plants	Carter MO, Reynolds MO, St Francois MO
<i>Calyocarpum lyonii</i>	Flowering Plants	Union KY
<i>Calyophus serrulatus</i>	Flowering Plants	Fulton KY, Lake TN
<i>Cambarellus puer</i>	Crustaceans	McCracken KY
<i>Cambarellus shufeldtii</i>	Crustaceans	Mississippi MO, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, New Madrid MO, Lake TN
<i>Cambarus hubrichti</i>	Crustaceans	Carter MO, Ripley MO
<i>Campylium radicale</i>	Mosses	Bollinger MO, Carter MO
<i>Campylium stellatum</i>	Mosses	Ste Genevieve MO, Reynolds MO
<i>Carex abscondita</i>	Flowering Plants	Dunklin MO, Ripley MO
<i>Carex alata</i>	Flowering Plants	Wayne MO, Stoddard MO, Pope IL, Butler MO, Reynolds MO, Ripley MO, Scott MO
<i>Carex albicans</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Jackson IL, Randolph IL, Union IL, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Carter MO, Madison MO, Reynolds MO, Pemiscot MO, Ripley MO, St Francois MO
<i>Carex albicans</i> var. <i>australis</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Jackson IL, Randolph IL, Union IL, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Carter MO, Madison MO, Reynolds MO, Pemiscot MO, Ripley MO, St Francois MO
<i>Carex albolutescens</i>	Flowering Plants	Wayne MO, Stoddard MO, Bollinger MO, Dunklin MO, Butler MO, Carter MO, Ripley MO
<i>Carex arkansana</i>	Flowering Plants	Stoddard MO, Dunklin MO
<i>Carex atlantica</i>	Flowering Plants	Wayne MO, Stoddard MO, Pope IL, Madison MO
<i>Carex atlantica</i> ssp. <i>atlantica</i>	Flowering Plants	Wayne MO, Stoddard MO, Madison MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Carex bromoides</i>	Flowering Plants	Wayne MO, Pope IL, Bollinger MO, Butler MO, Madison MO, Reynolds MO, Ripley MO
<i>Carex buxbaumii</i>	Flowering Plants	Wayne MO, Stoddard MO, Pulaski IL, Ballard KY, Dunklin MO, Butler MO, Carter MO, Reynolds MO, Ripley MO
<i>Carex cherokeensis</i>	Flowering Plants	Wayne MO, Stoddard MO, Dunklin MO, Butler MO, Carter MO, Ripley MO
<i>Carex communis</i>	Flowering Plants	Stoddard MO, Pope IL, Reynolds MO
<i>Carex comosa</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Cape Girardeau MO, Dunklin MO, Butler MO, Carter MO, Madison MO, Reynolds MO, Ripley MO, Scott MO, Lake TN
<i>Carex debilis</i>	Flowering Plants	Wayne MO, Stoddard MO, Ripley MO, St Francois MO
<i>Carex decomposita</i>	Flowering Plants	Pulaski IL, Union IL, Carlisle KY, Hickman KY, Pope IL, Bollinger MO, Dunklin MO, Carter MO, Reynolds MO, Ripley MO, Marshall KY
<i>Carex flaccosperma</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Fulton KY, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Scott MO, Lake TN
<i>Carex floridana</i>	Flowering Plants	Stoddard MO, Butler MO, Carter MO
<i>Carex gigantea</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Alexander IL, Massac IL, Pulaski IL, Union IL, Ballard KY, Fulton KY, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Carter MO, Ripley MO, Scott MO, Lake TN
<i>Carex gracillima</i>	Flowering Plants	Reynolds MO
<i>Carex hyalina</i>	Flowering Plants	Dyer TN
<i>Carex hystericina</i>	Flowering Plants	McCracken KY, Marshall KY
<i>Carex intumescens</i>	Flowering Plants	Alexander IL, Pulaski IL, Pope IL
<i>Carex jorii</i>	Flowering Plants	Dunklin MO, Butler MO
<i>Carex lacustris</i>	Flowering Plants	Mississippi MO, Alexander IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, New Madrid MO, Scott MO, Dyer TN

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Carex laevivaginata</i>	Flowering Plants	Stoddard MO, Carter MO, St Francois MO
<i>Carex laxiculmis</i>	Flowering Plants	Wayne MO, Stoddard MO, Ste Genevieve MO, Alexander IL, Union IL, Bollinger MO, Cape Girardeau MO, Butler MO, Carter MO, Madison MO, Reynolds MO, Ripley MO, Scott MO
<i>Carex laxiflora</i>	Flowering Plants	Cape Girardeau MO
<i>Carex laxiflora</i> var. <i>laxiflora</i>	Flowering Plants	Cape Girardeau MO
<i>Carex microdonta</i>	Flowering Plants	Reynolds MO
<i>Carex molestiformis</i>	Flowering Plants	Reynolds MO
<i>Carex nigromarginata</i>	Flowering Plants	Wayne MO, Stoddard MO, Ste Genevieve MO, Hardin IL, Union IL, Dunklin MO, Butler MO, Carter MO, Reynolds MO, Ripley MO
<i>Carex normalis</i>	Flowering Plants	Mississippi AR
<i>Carex oklahomensis</i>	Flowering Plants	Stoddard MO, Dunklin MO, Butler MO, Carter MO, Scott MO
<i>Carex oxylepis</i>	Flowering Plants	Stoddard MO, Alexander IL, Hardin IL, Union IL, Pope IL, Bollinger MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Carter MO, Pemiscot MO, Ripley MO, Scott MO, Union KY
<i>Carex pellita</i>	Flowering Plants	Pulaski IL, Ballard KY
<i>Carex plantaginea</i>	Flowering Plants	Jackson IL
<i>Carex prasina</i>	Flowering Plants	Stoddard MO, Pope IL, Scott MO
<i>Carex reniformis</i>	Flowering Plants	Stoddard MO, Massac IL, Dunklin MO
<i>Carex socialis</i>	Flowering Plants	Stoddard MO, Mississippi MO, Alexander IL, Union IL, Bollinger MO, Cape Girardeau MO, Dunklin MO, Butler MO, Pemiscot MO, Perry MO, Scott MO
<i>Carex sterilis</i>	Flowering Plants	Ste Genevieve MO, Madison MO, Reynolds MO, Ripley MO, St Francois MO
<i>Carex stricta</i>	Flowering Plants	Wayne MO, Butler MO, Carter MO, Reynolds MO, St Francois MO
<i>Carex swanii</i>	Flowering Plants	Stoddard MO, New Madrid MO, Dunklin MO, Butler MO, Ripley MO, Scott MO
<i>Carex tetanica</i>	Flowering Plants	Wayne MO, Ripley MO, St Francois MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Carex texensis</i>	Flowering Plants	Wayne MO, Stoddard MO, Bollinger MO, Cape Girardeau MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Reynolds MO, Pemiscot MO, Scott MO
<i>Carex tonsa</i> var. <i>rugosperma</i>	Flowering Plants	Reynolds MO
<i>Carex tonsa</i> var. <i>tonsa</i>	Flowering Plants	Ste Genevieve MO
<i>Carex triangularis</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Scott MO, St Francois MO
<i>Carex trichocarpa</i>	Flowering Plants	Carter MO, Reynolds MO
<i>Carex vesicaria</i>	Flowering Plants	Butler MO, Reynolds MO
<i>Carex virescens</i>	Flowering Plants	Stoddard MO, Ste Genevieve MO, Cape Girardeau MO, Madison MO, Reynolds MO, St Francois MO
<i>Carex willdenowii</i>	Flowering Plants	Hardin IL, Jackson IL, Union IL, Pope IL, Reynolds MO
<i>Carpoides velifer</i>	Fishes	Wayne MO, Stoddard MO, Hickman KY, Dunklin MO, Pemiscot MO, Ripley MO
<i>Carya aquatica</i>	Flowering Plants	Alexander IL, Pulaski IL, Union IL, Ballard KY, Livingston KY, McCracken KY, Marshall KY
<i>Carya pallida</i>	Flowering Plants	Stoddard MO, Alexander IL, Union IL, Scott MO
<i>Catocala marmorata</i>	Insects	Stoddard MO
<i>Catocala pretiosa</i>	Insects	Wayne MO, Stoddard MO, Bollinger MO
<i>Catocala pretiosa texarkana</i>	Insects	Wayne MO, Stoddard MO, Bollinger MO
<i>Cayaponia quinqueloba</i>	Flowering Plants	Stoddard MO, Mississippi MO, Fulton KY, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Scott MO, Livingston KY, McCracken KY, Lake TN
<i>Celithemis verna</i>	Insects	Mississippi MO, Alexander IL, Pulaski IL, Ballard KY, Carlisle KY, McCracken KY
<i>Cemophora coccinea</i>	Reptiles	Scott MO
<i>Cemophora coccinea copei</i>	Reptiles	Scott MO
<i>Centaurea americana</i>	Flowering Plants	Stoddard MO, Ste Genevieve MO, New Madrid MO, Dunklin MO, St Francois MO



Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Centrarchus macropterus</i>	Fishes	Wayne MO, Stoddard MO, Mississippi MO, Bollinger MO, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO
<i>Centrosema virginianum</i>	Flowering Plants	Carter MO, Reynolds MO
<i>Ceratophyllum echinatum</i>	Flowering Plants	Butler MO
<i>Certhia americana</i>	Birds	Ballard KY, Marshall KY, Union KY
<i>Chalybion zimmermanni</i>	Insects	Wayne MO
<i>Chalybion zimmermanni zimmermanni</i>	Insects	Wayne MO
<i>Chamaelirium luteum</i>	Flowering Plants	Hardin IL, Massac IL, Pope IL
<i>Chamaesyce geyeri</i>	Flowering Plants	Scott MO
<i>Chamaesyce geyeri var. geyeri</i>	Flowering Plants	Scott MO
<i>Chasmanthium laxum</i>	Flowering Plants	Butler MO, Ripley MO
<i>Cheilanthes alabamensis</i>	Ferns and relatives	Ste Genevieve MO
<i>Chelone obliqua</i>	Flowering Plants	Wayne MO, Carlisle KY, Hickman KY, Dunklin MO, Butler MO, Livingston KY, McCracken KY, Marshall KY, Union KY
<i>Chelone obliqua var. speciosa</i>	Flowering Plants	Carlisle KY, Hickman KY, Livingston KY, McCracken KY, Marshall KY, Union KY
<i>Chimaphila maculata</i>	Flowering Plants	Hardin IL, Pope IL
<i>Chionanthus virginicus</i>	Flowering Plants	Cape Girardeau MO
<i>Chondestes grammacus</i>	Birds	Mississippi MO, Hardin IL, Carlisle KY, Fulton KY, Hickman KY, New Madrid MO, Livingston KY, Union KY, Lake TN
<i>Chrysemys dorsalis</i>	Turtles	Carlisle KY, Fulton KY, Hickman KY
<i>Circus cyaneus</i>	Birds	Randolph IL, Pope IL
<i>Cirsium undulatum</i>	Flowering Plants	Wayne MO
<i>Cistothorus platensis</i>	Birds	Ballard KY, Fulton KY, Hickman KY, Ripley MO, Livingston KY, Union KY
<i>Cladonia leporina</i>	Lichens	Carter MO
<i>Cladrastis kentukea</i>	Flowering Plants	Wayne MO, Alexander IL
<i>Clematis crispa</i>	Flowering Plants	Mississippi MO, Alexander IL, Pulaski IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY
<i>Clematis viorna</i>	Flowering Plants	Wayne MO, Bollinger MO, New Madrid MO, Scott MO
<i>Coelorachis cylindrica</i>	Flowering Plants	Stoddard MO, Mississippi MO, New Madrid MO, Dunklin MO
<i>Conyza canadensis</i>	Flowering Plants	Stoddard MO, Butler MO, Ripley MO, Scott MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Conyza canadensis</i> var. <i>pusilla</i>	Flowering Plants	Stoddard MO, Butler MO, Ripley MO, Scott MO
<i>Coreopsis pubescens</i>	Flowering Plants	McCracken KY
<i>Corispermum pallasii</i>	Flowering Plants	Jackson IL, Perry MO
<i>Corvus ossifragus</i>	Birds	Mississippi MO, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Pope IL, New Madrid MO, Livingston KY, McCracken KY, Marshall KY, Union KY
<i>Corydalis micrantha</i>	Flowering Plants	Mississippi MO, Bollinger MO, New Madrid MO, Dunklin MO, Butler MO, Scott MO
<i>Corydalis micrantha</i> ssp. <i>australis</i>	Flowering Plants	Mississippi MO, Bollinger MO, New Madrid MO, Dunklin MO, Butler MO, Scott MO
<i>Corynorhinus rafinesquii</i>	Mammals	Alexander IL, Jackson IL, Pulaski IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Pope IL, Dyer TN
<i>Cottus</i> sp. 8	Fishes	Perry MO
<i>Crangonyx anomalus</i>	Crustaceans	Pope IL
<i>Crangonyx packardii</i>	Crustaceans	Hardin IL, Union IL, Pope IL
<i>Crataegus harbisonii</i>	Flowering Plants	Lake TN
<i>Crataegus marshallii</i>	Flowering Plants	Wayne MO, Stoddard MO, Dunklin MO, Butler MO, Carter MO, Ripley MO
<i>Crotalus horridus</i>	Reptiles	Alexander IL, Hardin IL, Jackson IL, Randolph IL, Union IL, Pope IL
<i>Crotaphytus collaris</i>	Reptiles	Ste Genevieve MO, Carter MO, Madison MO, Reynolds MO, Perry MO, St Francois MO
<i>Croton michauxii</i>	Flowering Plants	Scott MO
<i>Cryptobranchus alleganiensis</i>	Amphibians	Carter MO, Ripley MO, Marshall KY
<i>Cryptobranchus alleganiensis alleganiensis</i>	Amphibians	Marshall KY
<i>Cryptobranchus alleganiensis bishopi</i>	Amphibians	Carter MO, Ripley MO
<i>Crystallaria asprella</i>	Fishes	Wayne MO, Stoddard MO, Alexander IL, Union IL, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Perry MO
<i>Cumberlandia monodonta</i>	Mollusks	Massac IL, Livingston KY, McCracken KY, Marshall KY

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Cycleptus elongatus</i>	Fishes	Wayne MO, Stoddard MO, Ste Genevieve MO, Mississippi MO, Alexander IL, Jackson IL, Randolph IL, Fulton KY, Hickman KY, Cape Girardeau MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Carter MO, Pemiscot MO, Perry MO, Ripley MO, Scott MO, Dyer TN
<i>Cyclonaias tuberculata</i>	Mollusks	Massac IL, Pulaski IL, Ballard KY, McCracken KY
<i>Cynosciadium digitatum</i>	Flowering Plants	Stoddard MO, Mississippi MO, Jackson IL, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO
<i>Cyperus compressus</i>	Flowering Plants	Stoddard MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Scott MO
<i>Cyperus croceus</i>	Flowering Plants	Stoddard MO, New Madrid MO, Dunklin MO, Scott MO
<i>Cyperus diandrus</i>	Flowering Plants	Butler MO
<i>Cyperus flavicomus</i>	Flowering Plants	Stoddard MO, Ripley MO
<i>Cyperus grayoides</i>	Flowering Plants	Stoddard MO, Mississippi MO, New Madrid MO, Scott MO
<i>Cyperus hystriacus</i>	Flowering Plants	Stoddard MO, Scott MO
<i>Cyperus lancastris</i>	Flowering Plants	Massac IL, Pulaski IL, Ballard KY, Pope IL
<i>Cyperus odoratus</i>	Flowering Plants	Dunklin MO
<i>Cyperus plukenetii</i>	Flowering Plants	Stoddard MO, Bollinger MO, New Madrid MO, Dunklin MO, Carter MO, Ripley MO, Scott MO
<i>Cyperus polystachyos</i>	Flowering Plants	Stoddard MO, New Madrid MO, Dunklin MO, Scott MO
<i>Cyperus polystachyos var. texensis</i>	Flowering Plants	Stoddard MO, New Madrid MO, Dunklin MO, Scott MO
<i>Cyperus retroflexus</i>	Flowering Plants	Mississippi MO, New Madrid MO, Dunklin MO, Butler MO, Scott MO
<i>Cyperus retrofractus</i>	Flowering Plants	Stoddard MO, Mississippi MO, Alexander IL, New Madrid MO, Dunklin MO, Butler MO, Scott MO
<i>Cyperus retrorsus</i>	Flowering Plants	Dunklin MO
<i>Cyprinella venusta</i>	Fishes	Mississippi MO, Massac IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, New Madrid MO, McCracken KY
<i>Cypripedium candidum</i>	Flowering Plants	Carter MO, Reynolds MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Cypripedium reginae</i>	Flowering Plants	Carter MO, Reynolds MO
<i>Cyprogenia aberti</i>	Mollusks	Wayne MO, Stoddard MO, Bollinger MO, Butler MO, Madison MO, Ripley MO
<i>Cyprogenia stegaria</i>	Mollusks	Livingston KY
<i>Cystopteris tenuis</i>	Ferns and relatives	Ste Genevieve MO
<i>Decodon verticillatus</i>	Flowering Plants	Stoddard MO, Mississippi MO, Bollinger MO, Reynolds MO
<i>Deirochelys reticularia</i>	Turtles	Wayne MO, Stoddard MO, New Madrid MO, Dunklin MO, Butler MO, Ripley MO
<i>Deirochelys reticularia miaria</i>	Turtles	Wayne MO, Stoddard MO, New Madrid MO, Dunklin MO, Butler MO, Ripley MO
<i>Dendroica cerulea</i>	Birds	Wayne MO, Jackson IL, Union IL, Mississippi AR, Carter MO, Reynolds MO
<i>Dennstaedtia punctilobula</i>	Ferns and relatives	Ste Genevieve MO, Pope IL, Madison MO, St Francois MO
<i>Descurainia pinnata</i>	Flowering Plants	Stoddard MO, Mississippi MO, Fulton KY, New Madrid MO, Dunklin MO, Pemiscot MO, Scott MO, Lake TN
<i>Desmodium nuttallii</i>	Flowering Plants	Wayne MO, Stoddard MO, Ste Genevieve MO, Bollinger MO, Cape Girardeau MO, Carter MO, Madison MO, Reynolds MO, Perry MO, Ripley MO, St Francois MO
<i>Desmodium ochroleucum</i>	Flowering Plants	Stoddard MO, New Madrid MO, Dunklin MO
<i>Desmodium strictum</i>	Flowering Plants	Stoddard MO, Scott MO
<i>Desmodium viridiflorum</i>	Flowering Plants	Stoddard MO, New Madrid MO, Dunklin MO
<i>Desmognathus conanti</i>	Amphibians	Pulaski IL, Ballard KY
<i>Diarrhena americana</i>	Flowering Plants	Butler MO
<i>Dichanthelium boreale</i>	Flowering Plants	Ripley MO
<i>Dichanthelium leibergii</i>	Flowering Plants	Carter MO, Reynolds MO
<i>Dichanthelium ravenelii</i>	Flowering Plants	Hardin IL
<i>Dichondra carolinensis</i>	Flowering Plants	Pemiscot MO
<i>Didiplis diandra</i>	Flowering Plants	Ballard KY, Carlisle KY, Hickman KY, Dyer TN
<i>Dioclea multiflora</i>	Flowering Plants	Massac IL
<i>Dodecatheon frenchii</i>	Flowering Plants	Ste Genevieve MO, Hardin IL, Jackson IL, Union IL, Pope IL, Livingston KY
<i>Draba aprica</i>	Flowering Plants	Ste Genevieve MO, Madison MO, Reynolds MO, St Francois MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Draba cuneifolia</i>	Flowering Plants	Randolph IL
<i>Dreissena polymorpha</i>	Mollusks	Scott MO
<i>Dromus dromas</i>	Mollusks	Livingston KY
<i>Dryopteris carthusiana</i>	Ferns and relatives	Stoddard MO, Hickman KY, Butler MO, Madison MO, Scott MO, St Francois MO
<i>Dryopteris celsa</i>	Ferns and relatives	Carter MO
<i>Dryopteris goldiana</i>	Ferns and relatives	Jackson IL, Bollinger MO, Madison MO, Perry MO
<i>Dryopteris intermedia</i>	Ferns and relatives	Ste Genevieve MO
<i>Echinacea angustifolia</i>	Flowering Plants	Alexander IL, Union IL, Cape Girardeau MO
<i>Echinodorus berteroi</i>	Flowering Plants	Fulton KY
<i>Egretta caerulea</i>	Birds	Mississippi MO, Alexander IL, Mississippi AR, Pemiscot MO, Scott MO, Dyer TN
<i>Egretta thula</i>	Birds	Mississippi MO, Pemiscot MO, Scott MO
<i>Egretta tricolor</i>	Birds	Mississippi AR
<i>Elassoma zonatum</i>	Fishes	Wayne MO, Stoddard MO, Mississippi MO, Bollinger MO, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Ripley MO, Scott MO
<i>Eleocharis atropurpurea</i>	Flowering Plants	Scott MO
<i>Eleocharis lanceolata</i>	Flowering Plants	Wayne MO, Butler MO, Carter MO, Reynolds MO, Ripley MO
<i>Eleocharis wolfii</i>	Flowering Plants	Stoddard MO, Bollinger MO
<i>Ellipsaria lineolata</i>	Mollusks	Massac IL, Pulaski IL, Ballard KY, Livingston KY, McCracken KY
<i>Elliptio crassidens</i>	Mollusks	Wayne MO, Massac IL, Pulaski IL, Ballard KY, Bollinger MO, Butler MO, Ripley MO, McCracken KY
<i>Elodea canadensis</i>	Flowering Plants	Wayne MO, Carter MO, Ripley MO
<i>Elodea nuttallii</i>	Flowering Plants	Lake TN
<i>Empidonax minimus</i>	Birds	Dyer TN
<i>Ephemerum serratum</i>	Mosses	Scott MO
<i>Epifagus virginiana</i>	Flowering Plants	Stoddard MO, Union IL, Bollinger MO, Cape Girardeau MO, Perry MO, Scott MO
<i>Epioblasma florentina</i>	Mollusks	Wayne MO, Bollinger MO, Ripley MO
<i>Epioblasma florentina curtisi</i>	Mollusks	Wayne MO, Bollinger MO, Ripley MO
<i>Epioblasma triquetra</i>	Mollusks	Wayne MO, Bollinger MO, Ripley MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Eragrostis glomerata</i>	Flowering Plants	Dunklin MO, Butler MO
<i>Erimyzon sucetta</i>	Fishes	Wayne MO, Stoddard MO, Mississippi MO, Massac IL, Ballard KY, Fulton KY, Hickman KY, Bollinger MO, Cape Girardeau MO, New Madrid MO, Dunklin MO, Carter MO, Madison MO, Pemiscot MO, Scott MO, Livingston KY, McCracken KY
<i>Eriogonum longifolium</i> var. <i>longifolium</i>	Flowering Plants	Ripley MO
<i>Eryngium prostratum</i>	Flowering Plants	Alexander IL, Massac IL, Pope IL
<i>Esox niger</i>	Fishes	Massac IL, Pulaski IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Pope IL, Livingston KY, McCracken KY, Marshall KY
<i>Etheostoma chienense</i>	Fishes	Fulton KY, Hickman KY
<i>Etheostoma euzonum</i>	Fishes	Carter MO, Ripley MO
<i>Etheostoma euzonum erizonum</i>	Fishes	Carter MO, Ripley MO
<i>Etheostoma fusiforme</i>	Fishes	Fulton KY, Hickman KY, Butler MO
<i>Etheostoma histrio</i>	Fishes	Stoddard MO, Mississippi MO, Bollinger MO, New Madrid MO, Dunklin MO, Butler MO, Ripley MO, Scott MO, Union KY
<i>Etheostoma microperca</i>	Fishes	Mississippi MO
<i>Etheostoma parvipinne</i>	Fishes	Stoddard MO, Butler MO
<i>Etheostoma proeliare</i>	Fishes	Pulaski IL, Ballard KY, Fulton KY, Hickman KY, Livingston KY, McCracken KY, Marshall KY
<i>Euonymus americanus</i>	Flowering Plants	Stoddard MO, Hardin IL, Pulaski IL, Pope IL, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO
<i>Eupatorium hyssopifolium</i> var. <i>calcaratum</i>	Flowering Plants	Wayne MO, Butler MO, Carter MO, Reynolds MO, Ripley MO
<i>Eupatorium incarnatum</i>	Flowering Plants	Alexander IL, Massac IL, Pulaski IL, Union IL, Pope IL
<i>Eupatorium rotundifolium</i>	Flowering Plants	Wayne MO, Butler MO, Carter MO, Ripley MO
<i>Eupatorium semiserratum</i>	Flowering Plants	Stoddard MO, Dunklin MO, Butler MO, Carter MO, Ripley MO, Scott MO
<i>Euphyes dukesi</i>	Insects	Stoddard MO, Ballard KY, Fulton KY, Butler MO, McCracken KY, Marshall KY, Union KY
<i>Eurybia furcata</i>	Flowering Plants	Ste Genevieve MO, Madison MO, St Francois MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Eurybia macrophylla</i>	Flowering Plants	Madison MO
<i>Eurycea spelaea</i>	Amphibians	Wayne MO, Carter MO
<i>Falco peregrinus</i>	Birds	Lake TN
<i>Fallicambarus fodiens</i>	Crustaceans	Wayne MO, Stoddard MO, Bollinger MO, Reynolds MO, Ripley MO
<i>Fallicambarus hortonii</i>	Crustaceans	Dyer TN
<i>Farancia abacura</i>	Reptiles	Wayne MO, Stoddard MO, Mississippi MO, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Bollinger MO, New Madrid MO, Dunklin MO, Butler MO, Carter MO, Pemiscot MO, Ripley MO, Scott MO, Livingston KY, McCracken KY, Marshall KY
<i>Farancia abacura reinwardtii</i>	Reptiles	Wayne MO, Stoddard MO, Mississippi MO, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Bollinger MO, New Madrid MO, Dunklin MO, Butler MO, Carter MO, Pemiscot MO, Ripley MO, Scott MO, Livingston KY, McCracken KY, Marshall KY
<i>Faxonella clypeata</i>	Crustaceans	Stoddard MO, Butler MO, Ripley MO
<i>Filipendula rubra</i>	Flowering Plants	Reynolds MO, St Francois MO
<i>Fimbristylis littoralis</i>	Flowering Plants	Wayne MO, Stoddard MO
<i>Fimbristylis puberula</i>	Flowering Plants	Livingston KY
<i>Fontigens antroecetes</i>	Mollusks	Perry MO
<i>Forbesichthys agassizii</i>	Fishes	Cape Girardeau MO, Scott MO
<i>Fulica americana</i>	Birds	Union KY
<i>Fundulus chrysotus</i>	Fishes	Mississippi MO, Fulton KY, Lake TN
<i>Fundulus dispar</i>	Fishes	Wayne MO, Stoddard MO, Mississippi MO, Union IL, Fulton KY, Hickman KY, Bollinger MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Scott MO, Lake TN
<i>Fusconaia ebena</i>	Mollusks	Wayne MO, Hardin IL, Massac IL, Pulaski IL, Ballard KY, Pope IL, Butler MO, Ripley MO, Livingston KY, McCracken KY, Union KY
<i>Fusconaia subrotunda</i>	Mollusks	Livingston KY, McCracken KY, Marshall KY
<i>Gaillardia aestivalis</i>	Flowering Plants	Stoddard MO, New Madrid MO, Dunklin MO, Scott MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Gallinula chloropus</i>	Birds	Wayne MO, Jackson IL, Massac IL, Randolph IL, Union IL, Bollinger MO, Union KY, Lake TN
<i>Gammarus bousfieldi</i>	Crustaceans	Hardin IL, Massac IL, Pulaski IL, Ballard KY, McCracken KY
<i>Gastrophryne carolinensis</i>	Amphibians	Hardin IL, Jackson IL, Randolph IL, Union IL, Pope IL, Perry MO
<i>Gaylussacia baccata</i>	Flowering Plants	Ste Genevieve MO, Jackson IL, Union IL, Cape Girardeau MO, Perry MO
<i>Gentiana andrewsii</i>	Flowering Plants	Ste Genevieve MO
<i>Gentiana andrewsii</i> var. <i>andrewsii</i>	Flowering Plants	Ste Genevieve MO
<i>Gentiana saponaria</i>	Flowering Plants	Dunklin MO
<i>Geococcyx californianus</i>	Birds	Madison MO, Ripley MO
<i>Geum virginianum</i>	Flowering Plants	Wayne MO, Ste Genevieve MO, Reynolds MO
<i>Glandularia canadensis</i>	Flowering Plants	Fulton KY, Hickman KY
<i>Gleditsia aquatica</i>	Flowering Plants	Fulton KY, Hickman KY, Livingston KY, McCracken KY
<i>Glyceria acutiflora</i>	Flowering Plants	Wayne MO, Carter MO, Reynolds MO
<i>Glyceria arkansana</i>	Flowering Plants	Alexander IL, Jackson IL, Union IL
<i>Gomphus hybridus</i>	Insects	Hardin IL, Union KY
<i>Gomphus ozarkensis</i>	Insects	Wayne MO, Stoddard MO, Madison MO
<i>Grimmia olneyi</i>	Mosses	Carter MO, Madison MO
<i>Gryllotalpa major</i>	Insects	New Madrid MO, Pemiscot MO
<i>Gymnopogon ambiguus</i>	Flowering Plants	Marshall KY
<i>Halesia carolina</i>	Flowering Plants	Massac IL, Pulaski IL, Ballard KY
<i>Haliaeetus leucocephalus</i>	Birds	Wayne MO, Stoddard MO, Ste Genevieve MO, Mississippi MO, Alexander IL, Hardin IL, Jackson IL, Massac IL, Pulaski IL, Randolph IL, Union IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Pope IL, Bollinger MO, Cape Girardeau MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Madison MO, Pemiscot MO, Perry MO, Ripley MO, Scott MO, Livingston KY, Marshall KY, Union KY, Lake TN
<i>Hamamelis virginiana</i>	Flowering Plants	Wayne MO, Reynolds MO
<i>Hedeoma hispida</i>	Flowering Plants	Hickman KY, Marshall KY
<i>Helenium virginicum</i>	Flowering Plants	Cape Girardeau MO
<i>Helianthemum canadense</i>	Flowering Plants	Stoddard MO



Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Helianthus angustifolius</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Massac IL, Pope IL, Dunklin MO, Butler MO, Carter MO, Ripley MO, Scott MO
<i>Hemidactylium scutatum</i>	Amphibians	Wayne MO, Ste Genevieve MO, Carter MO, Madison MO, Reynolds MO, Ripley MO
<i>Hesperia metea</i>	Insects	Pope IL
<i>Hesperochernes occidentalis</i>	Spiders and Other Chelicerates	Carter MO, Madison MO
<i>Heteranthera limosa</i>	Flowering Plants	Ballard KY, Fulton KY, Marshall KY
<i>Heteranthera reniformis</i>	Flowering Plants	Alexander IL, Union IL, Pope IL
<i>Heterodon nasicus</i>	Reptiles	Mississippi MO, Scott MO
<i>Heterodon nasicus gloydi</i>	Reptiles	Mississippi MO, Scott MO
<i>Heuchera parviflora</i>	Flowering Plants	Wayne MO, Jackson IL, Carter MO, Madison MO, Reynolds MO, Perry MO
<i>Heuchera parviflora</i> var. <i>parviflora</i>	Flowering Plants	Wayne MO, Jackson IL, Carter MO, Madison MO, Reynolds MO, Perry MO
<i>Hexalectris spicata</i>	Flowering Plants	Hardin IL, Jackson IL, Randolph IL
<i>Hieracium longipilum</i>	Flowering Plants	Marshall KY
<i>Hiodon tergisus</i>	Fishes	Wayne MO, Randolph IL, Cape Girardeau MO, Butler MO, Pemiscot MO, Perry MO
<i>Hottonia inflata</i>	Flowering Plants	Wayne MO, Stoddard MO, Bollinger MO, Cape Girardeau MO, Dunklin MO, Butler MO, Carter MO, Reynolds MO, Ripley MO, Lake TN
<i>Huperzia porophila</i>	Ferns and relatives	Ste Genevieve MO, Jackson IL, Pope IL, Madison MO, St Francois MO
<i>Hybognathus argyritis</i>	Fishes	Perry MO, Scott MO
<i>Hybognathus hayi</i>	Fishes	Mississippi MO, Alexander IL, Pulaski IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Dunklin MO, Butler MO, Pemiscot MO, McCracken KY
<i>Hybognathus nuchalis</i>	Fishes	Wayne MO, Ste Genevieve MO, Mississippi MO, Randolph IL, Fulton KY, Bollinger MO, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Perry MO, Ripley MO, Scott MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
Hybognathus placitus	Fishes	Ste Genevieve MO, Mississippi MO, Alexander IL, Randolph IL, Union IL, Ballard KY, Fulton KY, Cape Girardeau MO, Mississippi AR, New Madrid MO, Pemiscot MO, Perry MO, Scott MO
Hybopsis amnis	Fishes	Stoddard MO, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO, Marshall KY
Hydrocotyle ranunculoides	Flowering Plants	Wayne MO, Stoddard MO, Alexander IL, Jackson IL, Union IL
Hydrolea ovata	Flowering Plants	Stoddard MO, New Madrid MO, Dunklin MO, Butler MO, Ripley MO, McCracken KY, Marshall KY
Hydrolea uniflora	Flowering Plants	Jackson IL, Pulaski IL, Union IL, Ballard KY, Carlisle KY, Livingston KY, McCracken KY
Hyla avivoca	Amphibians	Alexander IL, Jackson IL, Massac IL, Pulaski IL, Union IL, Ballard KY, Fulton KY, Hickman KY, Pope IL, Livingston KY, Marshall KY, Union KY
Hyla cinerea	Amphibians	Wayne MO, Stoddard MO, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Bollinger MO, Dunklin MO, Butler MO, Madison MO, Ripley MO, Livingston KY, McCracken KY, Marshall KY, Union KY
Hyla gratiosa	Amphibians	Livingston KY
Hylotelephium telephioides	Flowering Plants	Hardin IL, Fulton KY, Pope IL, Livingston KY
Hypericum adpressum	Flowering Plants	Mississippi MO, Alexander IL, Pulaski IL, Ballard KY, Carlisle KY, Scott MO, McCracken KY
Hypericum lobocarpum	Flowering Plants	Wayne MO, Stoddard MO, Dunklin MO, Butler MO, Carter MO, Ripley MO
Hypnum imponens	Mosses	Ste Genevieve MO, St Francois MO
Ichthyomyzon castaneus	Fishes	Mississippi MO, Alexander IL, Massac IL, Pulaski IL, Ballard KY, Fulton KY, Livingston KY, McCracken KY, Marshall KY, Union KY, Dyer TN
Ichthyomyzon fossor	Fishes	Dyer TN
Ichthyomyzon gagei	Fishes	Wayne MO, Carter MO, Madison MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Ichthyomyzon greeleyi</i>	Fishes	Massac IL, McCracken KY, Dyer TN
<i>Ictinia mississippiensis</i>	Birds	Wayne MO, Stoddard MO, Mississippi MO, Alexander IL, Jackson IL, Massac IL, Pulaski IL, Randolph IL, Union IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Cape Girardeau MO, New Madrid MO, Dunklin MO, Pemiscot MO, Perry MO, Scott MO, McCracken KY, Union KY, Dyer TN, Lake TN
<i>Ictiobus niger</i>	Fishes	Mississippi MO, Hardin IL, Massac IL, Pulaski IL, Ballard KY, Fulton KY, Hickman KY, Pope IL, Livingston KY, McCracken KY, Marshall KY, Union KY
<i>Ilex verticillata</i>	Flowering Plants	Madison MO
<i>Inscudderia taxodii</i>	Insects	Wayne MO, Stoddard MO, Mississippi MO, Bollinger MO, Scott MO
<i>Iresine rhizomatosa</i>	Flowering Plants	Massac IL
<i>Iris brevicaulis</i>	Flowering Plants	Hickman KY, Livingston KY, McCracken KY
<i>Iris fulva</i>	Flowering Plants	Mississippi MO, Fulton KY, New Madrid MO, Dyer TN, Lake TN
<i>Isolepis molestus</i>	Flowering Plants	Dunklin MO
<i>Isoperla burksi</i>	Insects	Ste Genevieve MO, Madison MO
<i>Isotria medeoloides</i>	Flowering Plants	Randolph IL, Bollinger MO
<i>Isotria verticillata</i>	Flowering Plants	Stoddard MO, Ste Genevieve MO, Pope IL, Butler MO, St Francois MO
<i>Ixobrychus exilis</i>	Birds	Jackson IL, Massac IL, Pulaski IL, Union IL, Ballard KY, Fulton KY, Union KY, Lake TN
<i>Juglans cinerea</i>	Flowering Plants	Wayne MO, Stoddard MO, Ste Genevieve MO, Bollinger MO, Cape Girardeau MO, Dunklin MO, Butler MO, Carter MO, Madison MO, Reynolds MO, St Francois MO, Livingston KY
<i>Juncus bufonius</i> var. <i>bufonius</i>	Flowering Plants	Stoddard MO, Madison MO, Ripley MO, St Francois MO
<i>Juncus debilis</i>	Flowering Plants	Ripley MO
<i>Juncus elliottii</i>	Flowering Plants	Pulaski IL, Ballard KY
<i>Juncus nodosus</i>	Flowering Plants	Wayne MO, Butler MO
<i>Juncus validus</i>	Flowering Plants	Wayne MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Justicia ovata</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Alexander IL, Pulaski IL, Fulton KY, New Madrid MO, Dunklin MO, Butler MO, Carter MO, Pemiscot MO, Ripley MO, Scott MO, Lake TN
<i>Justicia ovata</i> var. <i>lanceolata</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Fulton KY, New Madrid MO, Dunklin MO, Butler MO, Carter MO, Pemiscot MO, Ripley MO, Scott MO, Lake TN
<i>Koeleria macrantha</i>	Flowering Plants	Livingston KY
<i>Lactuca hirsuta</i>	Flowering Plants	Stoddard MO, Ste Genevieve MO, Mississippi MO, Alexander IL, Hardin IL, Jackson IL, Pope IL, Cape Girardeau MO, New Madrid MO, Madison MO, Reynolds MO, Scott MO
<i>Lampetra aepyptera</i>	Fishes	Hardin IL, Pope IL
<i>Lampetra appendix</i>	Fishes	Bollinger MO, Cape Girardeau MO, Butler MO, Carter MO, Ripley MO, Livingston KY, Marshall KY, Dyer TN
<i>Lampsilis abrupta</i>	Mollusks	Wayne MO, Massac IL, Hickman KY, Butler MO, Ripley MO, Livingston KY, McCracken KY, Marshall KY
<i>Lampsilis ovata</i>	Mollusks	Massac IL, Pulaski IL, Ballard KY, Pope IL, Livingston KY, McCracken KY, Marshall KY
<i>Lampsilis reeveiana</i>	Mollusks	Wayne MO, Butler MO, Madison MO, Reynolds MO, St Francois MO
<i>Lampsilis reeveiana brittsi</i>	Mollusks	Wayne MO, Butler MO, Madison MO, Reynolds MO, St Francois MO
<i>Lanius ludovicianus</i>	Birds	Alexander IL, Jackson IL, Massac IL, Pulaski IL, Randolph IL, Union IL, Pope IL
<i>Leitneria floridana</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Carter MO, Pemiscot MO, Ripley MO
<i>Lemna minuta</i>	Flowering Plants	Cape Girardeau MO, Reynolds MO
<i>Lemna obscura</i>	Flowering Plants	Stoddard MO, Mississippi MO, Dunklin MO, Butler MO
<i>Lemna trisulca</i>	Flowering Plants	Carter MO, Ripley MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Lepomis marginatus</i>	Fishes	Wayne MO, Stoddard MO, Fulton KY, Hickman KY, Bollinger MO, Butler MO, Ripley MO, McCracken KY, Marshall KY
<i>Lepomis miniatus</i>	Fishes	Mississippi MO, Hardin IL, Massac IL, Pulaski IL, Union IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, McCracken KY, Marshall KY
<i>Lepomis symmetricus</i>	Fishes	Wayne MO, Stoddard MO, Alexander IL, Pulaski IL, Union IL, Bollinger MO, Dunklin MO, Butler MO
<i>Leptochloa panicoides</i>	Flowering Plants	Fulton KY, New Madrid MO
<i>Leptoxis praerosa</i>	Mollusks	McCracken KY
<i>Lespedeza stuevei</i>	Flowering Plants	McCracken KY, Marshall KY
<i>Lethe appalachia</i>	Insects	Wayne MO, Stoddard MO, Bollinger MO, Dunklin MO, Butler MO
<i>Leucotrichia pictipes</i>	Insects	Cape Girardeau MO, Perry MO
<i>Liatris scariosa</i>	Flowering Plants	Reynolds MO, St Francois MO
<i>Liatris scariosa var. nieuwlandii</i>	Flowering Plants	Reynolds MO, St Francois MO
<i>Ligumia recta</i>	Mollusks	Wayne MO, Massac IL, Pulaski IL, Ballard KY, Bollinger MO, Butler MO, Carter MO, Madison MO, Ripley MO, McCracken KY
<i>Lilium superbum</i>	Flowering Plants	Carlisle KY, Bollinger MO, Cape Girardeau MO, Perry MO
<i>Limnobia spongia</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Ballard KY, Fulton KY, Bollinger MO, Cape Girardeau MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO
<i>Limnosciadium pinnatum</i>	Flowering Plants	Stoddard MO, Dunklin MO, Butler MO, Ripley MO
<i>Limnothlypis swainsonii</i>	Birds	Wayne MO, Mississippi MO, Alexander IL, Jackson IL, Pulaski IL, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Carter MO, Dyer TN, Lake TN
<i>Lindera melissifolia</i>	Flowering Plants	Butler MO, Ripley MO
<i>Lioplax sulculosa</i>	Mollusks	Massac IL, Livingston KY, McCracken KY
<i>Liparis loeselii</i>	Flowering Plants	Wayne MO, Bollinger MO, Butler MO, Carter MO, Madison MO
<i>Lipocarpha drummondii</i>	Flowering Plants	Mississippi MO, Perry MO, Scott MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Lithasia armigera</i>	Mollusks	Ballard KY, Carlisle KY, Pope IL, Livingston KY, Marshall KY, Union KY
<i>Lithasia geniculata</i>	Mollusks	Livingston KY, McCracken KY, Marshall KY
<i>Lithasia obovata</i>	Mollusks	Union KY
<i>Lithasia salebrosa</i>	Mollusks	Livingston KY
<i>Lithasia verrucosa</i>	Mollusks	Ballard KY, Carlisle KY, Pope IL, Livingston KY, McCracken KY, Marshall KY, Union KY
<i>Lithobates areolatus</i>	Amphibians	Ballard KY, Carlisle KY, Hickman KY, Dunklin MO, Livingston KY, McCracken KY, Marshall KY
<i>Lithobates areolatus circulosus</i>	Amphibians	Ballard KY, Carlisle KY, Hickman KY, Dunklin MO, Livingston KY, McCracken KY, Marshall KY
<i>Lithobates sylvaticus</i>	Amphibians	Ste Genevieve MO, Reynolds MO, Ripley MO
<i>Lobelia puberula</i>	Flowering Plants	Dunklin MO
<i>Lonicera flava</i>	Flowering Plants	Jackson IL, Randolph IL, Pope IL
<i>Lontra canadensis</i>	Mammals	Alexander IL, Jackson IL, Massac IL, Pulaski IL, Randolph IL, Union IL, Pope IL, Butler MO, Livingston KY, McCracken KY, Union KY
<i>Lophodytes cucullatus</i>	Birds	Ballard KY, Carlisle KY, Fulton KY, Mississippi AR, Livingston KY, McCracken KY, Union KY
<i>Lota lota</i>	Fishes	Massac IL, Livingston KY, McCracken KY
<i>Ludwigia leptocarpa</i>	Flowering Plants	Stoddard MO, Ste Genevieve MO, Mississippi MO, Alexander IL, Randolph IL, Union IL, Fulton KY, Bollinger MO, Cape Girardeau MO, New Madrid MO, Butler MO, Pemiscot MO, Scott MO, Dyer TN
<i>Ludwigia microcarpa</i>	Flowering Plants	Carter MO, Ripley MO
<i>Luxilus chrysocephalus</i>	Fishes	Bollinger MO, Cape Girardeau MO, Perry MO
<i>Lycopodium dendroideum</i>	Ferns and relatives	Ste Genevieve MO
<i>Lycopodium digitatum</i>	Ferns and relatives	Wayne MO, Bollinger MO, Cape Girardeau MO, Carter MO, Madison MO, Reynolds MO
<i>Lycopodium tristachyum</i>	Ferns and relatives	Ste Genevieve MO
<i>Lycopus uniflorus</i>	Flowering Plants	Ste Genevieve MO, Butler MO
<i>Lysimachia fraseri</i>	Flowering Plants	Pope IL, Marshall KY
<i>Lysimachia radicans</i>	Flowering Plants	Pulaski IL
<i>Lysimachia terrestris</i>	Flowering Plants	Ballard KY, Marshall KY

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Lythrum salicaria</i>	Flowering Plants	Mississippi MO, New Madrid MO, Pemiscot MO, Scott MO
<i>Lyttosia permagnaria</i>	Insects	Wayne MO
<i>Maccaffertium bednariki</i>	Insects	Ste Genevieve MO, Bollinger MO, Carter MO, Madison MO, Reynolds MO, Ripley MO
<i>Macrhybopsis gelida</i>	Fishes	Mississippi MO, Alexander IL, Jackson IL, Randolph IL, Ballard KY, Carlisle KY, Hickman KY, Cape Girardeau MO, Perry MO, Scott MO
<i>Macrhybopsis meeki</i>	Fishes	Mississippi MO, Alexander IL, Randolph IL, Union IL, Ballard KY, Carlisle KY, Hickman KY, Cape Girardeau MO, Mississippi AR, Pemiscot MO, Perry MO, Scott MO, Lake TN
<i>Macrhybopsis storeriana</i>	Fishes	Randolph IL, New Madrid MO, Perry MO
<i>Macrobrachium ohione</i>	Crustaceans	Alexander IL, Massac IL, Cape Girardeau MO, Livingston KY, Dyer TN
<i>Macrochelys temminckii</i>	Turtles	Wayne MO, Stoddard MO, Mississippi MO, Union IL, Ballard KY, Carlisle KY, Hickman KY, . Bollinger MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO, St Francois MO, . Livingston KY, McCracken KY, Marshall KY
<i>Macromia pacifica</i>	Insects	Wayne MO, Madison MO, Ripley MO, St Francois MO
<i>Magnolia pyramidata</i>	Flowering Plants	Fulton KY
<i>Malaxis unifolia</i>	Flowering Plants	Wayne MO, Ste Genevieve MO, Butler MO, Carter MO, Reynolds MO
<i>Malus angustifolia</i>	Flowering Plants	Stoddard MO, Pope IL, Bollinger MO, New Madrid MO, Dunklin MO, Scott MO, Livingston KY, McCracken KY, Marshall KY
<i>Malvastrum hispidum</i>	Flowering Plants	St Francois MO
<i>Masticophis flagellum</i>	Reptiles	Randolph IL
<i>Matelea decipiens</i>	Flowering Plants	Jackson IL, Union IL
<i>Matelea obliqua</i>	Flowering Plants	Hardin IL, Pope IL
<i>Mecardonia acuminata</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Alexander IL, Dunklin MO, Butler MO, Carter MO, Ripley MO, Scott MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Melanthera nivea</i>	Flowering Plants	Massac IL, Pulaski IL, Ballard KY, Carlisle KY, Hickman KY, McCracken KY
<i>Melanthium virginicum</i>	Flowering Plants	Jackson IL
<i>Melica mutica</i>	Flowering Plants	Massac IL
<i>Melothria pendula</i>	Flowering Plants	Alexander IL, Hardin IL, Jackson IL, Pulaski IL, Union IL, Pope IL
<i>Menidia beryllina</i>	Fishes	Mississippi MO, Alexander IL, Hardin IL, Massac IL, Pulaski IL, Ballard KY, Carlisle KY, Fulton KY, Pope IL, New Madrid MO, Livingston KY, McCracken KY, Marshall KY
<i>Mentha arvensis</i>	Flowering Plants	Mississippi AR
<i>Menyanthes trifoliata</i>	Flowering Plants	Reynolds MO
<i>Metaleptea brevicornis</i>	Insects	Wayne MO, St Francois MO
<i>Metzgeria conjugata</i>	Liverworts	Ste Genevieve MO
<i>Mimulus glabratus</i>	Flowering Plants	Ste Genevieve MO, Randolph IL
<i>Mirabilis albida</i>	Flowering Plants	Pulaski IL, Ballard KY
<i>Mitreola petiolata</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi AR, Dunklin MO, Butler MO, Ripley MO
<i>Monarda clinopodia</i>	Flowering Plants	Butler MO
<i>Monarda punctata</i>	Flowering Plants	Stoddard MO, Mississippi MO, New Madrid MO, Dunklin MO, Scott MO, Livingston KY, McCracken KY
<i>Monarda punctata</i> var. <i>villicaulis</i>	Flowering Plants	Stoddard MO, Mississippi MO, New Madrid MO, Dunklin MO, Scott MO
<i>Moxostoma anisurum</i>	Fishes	Ripley MO
<i>Muhlenbergia bushii</i>	Flowering Plants	Pulaski IL, Ballard KY
<i>Muhlenbergia glabrifloris</i>	Flowering Plants	McCracken KY
<i>Mustela frenata</i>	Mammals	Ste Genevieve MO, Bollinger MO, Cape Girardeau MO, Madison MO, Perry MO
<i>Myotis austroriparius</i>	Mammals	Wayne MO, Alexander IL, Hardin IL, Massac IL, Pulaski IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Pope IL, New Madrid MO, Livingston KY, McCracken KY, Marshall KY
<i>Myotis grisescens</i>	Mammals	Wayne MO, Alexander IL, Hardin IL, Jackson IL, Pulaski IL, Pope IL, Carter MO, Madison MO, Reynolds MO, Ripley MO, Livingston KY, Union KY



Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Myotis leibii</i>	Mammals	Carter MO, Madison MO, Reynolds MO
<i>Myotis septentrionalis</i>	Mammals	Wayne MO, Ste Genevieve MO, Butler MO, Carter MO, Madison MO, Reynolds MO
<i>Myotis sodalis</i>	Mammals	Wayne MO, Ste Genevieve MO, Alexander IL, Hardin IL, Jackson IL, Pulaski IL, Union IL, Ballard KY, Carlisle KY, Hickman KY, Pope IL, Madison MO, Reynolds MO, Livingston KY, McCracken KY, Union KY
<i>Myriophyllum heterophyllum</i>	Flowering Plants	Fulton KY, Livingston KY, McCracken KY
<i>Myriophyllum pinnatum</i>	Flowering Plants	Livingston KY
<i>Najas gracillima</i>	Flowering Plants	Wayne MO, Stoddard MO, Bollinger MO, Butler MO, Carter MO, Madison MO, Reynolds MO
<i>Nardia lescurii</i>	Liverworts	Ste Genevieve MO
<i>Necturus maculosus</i>	Amphibians	Wayne MO, Pulaski IL, Union IL, Ballard KY, Cape Girardeau MO, Dunklin MO, Butler MO, Madison MO, Reynolds MO, Perry MO, Ripley MO
<i>Necturus maculosus louisianensis</i>	Amphibians	Wayne MO, Cape Girardeau MO, Dunklin MO, Butler MO, Reynolds MO, Ripley MO
<i>Nemastylis geminiflora</i>	Flowering Plants	Ste Genevieve MO, Randolph IL, Madison MO, St Francois MO
<i>Nemophila aphylla</i>	Flowering Plants	Massac IL, Fulton KY, Hickman KY
<i>Neoconocephalus retusus</i>	Insects	Mississippi MO, St Francois MO
<i>Neotoma floridana</i>	Mammals	Wayne MO, Jackson IL, Union IL, Butler MO, Carter MO, St Francois MO
<i>Neotridactylus apicalis</i>	Insects	Mississippi MO
<i>Nerodia cyclopion</i>	Reptiles	Union IL, Fulton KY, Hickman KY, Mississippi AR, Dunklin MO, Butler MO, Lake TN
<i>Nerodia erythrogaster</i>	Reptiles	Massac IL, Pulaski IL, Pope IL, Livingston KY, Union KY
<i>Nerodia erythrogaster neglecta</i>	Reptiles	Massac IL, Pulaski IL, Pope IL, Livingston KY, Union KY
<i>Nerodia fasciata</i>	Reptiles	Massac IL, Fulton KY
<i>Nerodia fasciata confluens</i>	Reptiles	Fulton KY
<i>Neviusia alabamensis</i>	Flowering Plants	Butler MO
<i>Notropis boops</i>	Fishes	Alexander IL, Jackson IL, Randolph IL, Union IL, Perry MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Notropis buccatus</i>	Fishes	Wayne MO, Ste Genevieve MO, Bollinger MO, Cape Girardeau MO, Madison MO, Reynolds MO, Perry MO, Scott MO, St Francois MO
<i>Notropis buchmanani</i>	Fishes	Ste Genevieve MO, Randolph IL, Cape Girardeau MO, Perry MO, Scott MO
<i>Notropis chalybaeus</i>	Fishes	Mississippi MO, New Madrid MO, Dunklin MO, Pemiscot MO, Scott MO
<i>Notropis heterolepis</i>	Fishes	Madison MO
<i>Notropis hudsonius</i>	Fishes	Mississippi MO, Alexander IL, Ballard KY
<i>Notropis maculatus</i>	Fishes	Stoddard MO, Mississippi MO, Massac IL, Pulaski IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Bollinger MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, McCracken KY
<i>Notropis ozarcanus</i>	Fishes	Carter MO, Madison MO, Reynolds MO, Ripley MO
<i>Notropis sabiniae</i>	Fishes	Butler MO
<i>Notropis texanus</i>	Fishes	Wayne MO, Stoddard MO, Mississippi MO, Bollinger MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO, Scott MO
<i>Noturus eleutherus</i>	Fishes	Wayne MO, Butler MO
<i>Noturus flavater</i>	Fishes	Wayne MO, Carter MO, Ripley MO
<i>Noturus stigmosus</i>	Fishes	Massac IL, Pulaski IL, Ballard KY, McCracken KY
<i>Nyctanassa violacea</i>	Birds	Massac IL, Pulaski IL, Ballard KY, Hickman KY, Marshall KY, Union KY
<i>Nycticeius humeralis</i>	Mammals	Mississippi MO, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, McCracken KY, Marshall KY, Union KY
<i>Nycticorax nycticorax</i>	Birds	Mississippi MO, Pemiscot MO, Scott MO
<i>Nyssa biflora</i>	Flowering Plants	Stoddard MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Obolaria virginica</i>	Flowering Plants	Stoddard MO, Ste Genevieve MO, Alexander IL, Jackson IL, Union IL, Cape Girardeau MO, Madison MO, Perry MO, Scott MO, St Francois MO
<i>Obovaria jacksoniana</i>	Mollusks	Bollinger MO, Madison MO
<i>Obovaria olivaria</i>	Mollusks	Bollinger MO, Cape Girardeau MO, Dunklin MO
<i>Obovaria retusa</i>	Mollusks	Massac IL, Ballard KY, Livingston KY, McCracken KY, Marshall KY
<i>Ochrotomys nuttalli</i>	Mammals	Wayne MO, Stoddard MO, Alexander IL, Hardin IL, Jackson IL, Union IL, Pope IL, Bollinger MO, Cape Girardeau MO, Butler MO, Carter MO
<i>Oenothera fruticosa</i>	Flowering Plants	Carter MO, Reynolds MO
<i>Oenothera fruticosa</i> ssp. <i>glauca</i>	Flowering Plants	Carter MO, Reynolds MO
<i>Oenothera perennis</i>	Flowering Plants	Carter MO, Reynolds MO, Marshall KY
<i>Oenothera triloba</i>	Flowering Plants	Cape Girardeau MO, St Francois MO
<i>Oldenlandia boscii</i>	Flowering Plants	Dunklin MO, Butler MO, Carter MO, Ripley MO, Scott MO
<i>Oldenlandia uniflora</i>	Flowering Plants	Stoddard MO, Hickman KY, Dunklin MO, Scott MO, Marshall KY
<i>Oligoneuron riddellii</i>	Flowering Plants	Wayne MO, Bollinger MO, Madison MO, Reynolds MO
<i>Oncopodura hoffi</i>	Diplurans, Springtails and Proturans	Perry MO
<i>Onosmodium molle</i>	Flowering Plants	Livingston KY
<i>Onosmodium molle</i> ssp. <i>occidentale</i>	Flowering Plants	Livingston KY
<i>Ophioglossum petiolatum</i>	Ferns and relatives	Pemiscot MO
<i>Ophioglossum vulgatum</i>	Ferns and relatives	Wayne MO, Stoddard MO, Ste Genevieve MO, Randolph IL, Bollinger MO, Cape Girardeau MO, New Madrid MO, Butler MO, Carter MO, Madison MO, Pemiscot MO, Perry MO, Ripley MO, Scott MO, St Francois MO
<i>Ophiogomphus westfalli</i>	Insects	Carter MO, Madison MO, Reynolds MO, Ripley MO
<i>Opsopoeodus emiliae</i>	Fishes	Wayne MO, Stoddard MO, Mississippi MO, Randolph IL, Bollinger MO, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Perry MO, Ripley MO, Scott MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Opuntia macrorhiza</i>	Flowering Plants	Reynolds MO
<i>Orconectes harrisonii</i>	Crustaceans	Wayne MO, St Francois MO
<i>Orconectes indianensis</i>	Crustaceans	Hardin IL, Pope IL
<i>Orconectes kentuckiensis</i>	Crustaceans	Hardin IL
<i>Orconectes lancifer</i>	Crustaceans	Mississippi MO, Alexander IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Dunklin MO, Pemiscot MO, McCracken KY
<i>Orconectes luteus</i>	Crustaceans	Ste Genevieve MO, Randolph IL, Perry MO
<i>Orconectes margorectus</i>	Crustaceans	Livingston KY
<i>Orconectes palmeri palmeri</i>	Crustaceans	Ballard KY, Carlisle KY, Hickman KY, McCracken KY
<i>Orconectes pardalotus</i>	Crustaceans	Massac IL, Pulaski IL, Ballard KY, McCracken KY
<i>Orconectes peruncus</i>	Crustaceans	Wayne MO, Madison MO, St Francois MO
<i>Orconectes placidus</i>	Crustaceans	Hardin IL, Jackson IL, Massac IL, Pope IL, Perry MO, Livingston KY, McCracken KY
<i>Orconectes quadruncus</i>	Crustaceans	Wayne MO, Madison MO, St Francois MO
<i>Oryzomys palustris</i>	Mammals	Wayne MO, Stoddard MO, Alexander IL, Jackson IL, Massac IL, Pulaski IL, Union IL, Pope IL, Bollinger MO, Cape Girardeau MO, New Madrid MO
<i>Oxalis illinoensis</i>	Flowering Plants	Hardin IL, Jackson IL, Pope IL
<i>Pandion haliaetus</i>	Birds	Massac IL, Pulaski IL, Ballard KY, Mississippi AR, Carter MO, Livingston KY, McCracken KY, Marshall KY
<i>Panicum verrucosum</i>	Flowering Plants	Scott MO
<i>Panorpa braueri</i>	Insects	Carter MO
<i>Pantherophis emoryi</i>	Reptiles	Randolph IL
<i>Papaipema sp. 5</i>	Insects	Ballard KY, Carlisle KY, Hickman KY, McCracken KY, Marshall KY
<i>Paroxya hoosieri</i>	Insects	Stoddard MO, Mississippi MO, New Madrid MO, Dunklin MO, Butler MO
<i>Paspalum bifidum</i>	Flowering Plants	Stoddard MO, Scott MO
<i>Paspalum dissectum</i>	Flowering Plants	Dunklin MO, Butler MO
<i>Passerculus sandwichensis</i>	Birds	Livingston KY
<i>Pellaea glabella</i>	Ferns and relatives	Carter MO, Reynolds MO
<i>Pellaea glabella ssp. missouriensis</i>	Ferns and relatives	Carter MO, Reynolds MO
<i>Penstemon pallidus</i>	Flowering Plants	Pope IL

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Penstemon tubiflorus</i>	Flowering Plants	Alexander IL
<i>Percina copelandi</i>	Fishes	Carter MO
<i>Percina nasuta</i>	Fishes	Wayne MO, Stoddard MO, Butler MO, Madison MO
<i>Percina shumardi</i>	Fishes	Wayne MO, Stoddard MO, Ste Genevieve MO, Mississippi MO, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Perry MO, Scott MO
<i>Percina uranidea</i>	Fishes	Wayne MO, Butler MO, Ripley MO
<i>Percopsis omiscomaycus</i>	Fishes	Perry MO
<i>Perideridia americana</i>	Flowering Plants	Hardin IL, Carter MO, Reynolds MO, St Francois MO, Union KY
<i>Peromyscus gossypinus</i>	Mammals	Wayne MO, Stoddard MO, Carlisle KY, Bollinger MO, New Madrid MO, Dunklin MO, Pemiscot MO, Scott MO, McCracken KY
<i>Peucaea aestivalis</i>	Birds	Mississippi MO, Hardin IL, Carlisle KY, Fulton KY, Hickman KY, New Madrid MO, Madison MO, McCracken KY, Union KY, Lake TN
<i>Phacelia ranunculacea</i>	Flowering Plants	Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Lake TN
<i>Phaeophyscia leana</i>	Lichens	Hardin IL, Massac IL, Ballard KY, Pope IL, Livingston KY, McCracken KY, Union KY
<i>Phalacrocorax auritus</i>	Birds	Ballard KY, Fulton KY
<i>Philadelphus pubescens</i>	Flowering Plants	Livingston KY
<i>Phlox amplifolia</i>	Flowering Plants	Wayne MO, Reynolds MO
<i>Phlox bifida</i> ssp. <i>stellaria</i>	Flowering Plants	Cape Girardeau MO
<i>Phlox carolina</i>	Flowering Plants	Cape Girardeau MO, Carter MO, Ripley MO
<i>Phlox carolina</i> ssp. <i>angusta</i>	Flowering Plants	Ripley MO
<i>Phlox maculata</i>	Flowering Plants	Ste Genevieve MO, Carter MO, Reynolds MO, St Francois MO
<i>Phlox maculata</i> ssp. <i>pyramidalis</i>	Flowering Plants	Ste Genevieve MO, Carter MO, Reynolds MO, St Francois MO
<i>Photinia melanocarpa</i>	Flowering Plants	Stoddard MO
<i>Physcomitrella patens</i>	Mosses	Stoddard MO, Butler MO, Pemiscot MO
<i>Physostegia intermedia</i>	Flowering Plants	Mississippi MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO, St Francois MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Pimephales tenellus</i>	Fishes	Wayne MO, Stoddard MO, Bollinger MO, Butler MO, Madison MO
<i>Pimephales tenellus parviceps</i>	Fishes	Wayne MO, Bollinger MO, Butler MO, Madison MO
<i>Pimephales tenellus tenellus</i>	Fishes	Stoddard MO
<i>Pinus echinata</i>	Conifers and relatives	Jackson IL, Randolph IL, Union IL
<i>Piptatherum racemosum</i>	Flowering Plants	Carter MO, Reynolds MO
<i>Pituophis melanoleucus</i>	Reptiles	Marshall KY
<i>Pituophis melanoleucus melanoleucus</i>	Reptiles	Marshall KY
<i>Plagiothecium denticulatum</i>	Mosses	Ste Genevieve MO
<i>Planera aquatica</i>	Flowering Plants	Alexander IL, Massac IL, Pulaski IL, Pope IL
<i>Plantago cordata</i>	Flowering Plants	Wayne MO, Ste Genevieve MO, Jackson IL, Pope IL, Butler MO, Carter MO, Madison MO, Reynolds MO, Ripley MO, St Francois MO
<i>Plantago patagonica</i>	Flowering Plants	Wayne MO, Scott MO
<i>Platanthera ciliaris</i>	Flowering Plants	Wayne MO, Stoddard MO, Carter MO, Ripley MO, St Francois MO
<i>Platanthera clavellata</i>	Flowering Plants	Wayne MO, Stoddard MO, Pope IL, Bollinger MO, Dunklin MO, Butler MO, Carter MO, Madison MO, Ripley MO, St Francois MO
<i>Platanthera flava</i> var. <i>flava</i>	Flowering Plants	Wayne MO, Massac IL, Butler MO, Carter MO, Reynolds MO, Perry MO
<i>Platanthera flava</i> var. <i>herbiola</i>	Flowering Plants	Butler MO, Carter MO, Ripley MO, Scott MO, St Francois MO
<i>Platanthera leucophaea</i>	Flowering Plants	Carter MO
<i>Platanthera peramoena</i>	Flowering Plants	Wayne MO, Stoddard MO, Bollinger MO, Cape Girardeau MO, Dunklin MO, Butler MO, Reynolds MO, Ripley MO, St Francois MO
<i>Platygobio gracilis</i>	Fishes	Ste Genevieve MO, Mississippi MO, Alexander IL, Randolph IL, Union IL, Ballard KY, Fulton KY, Cape Girardeau MO, Pemiscot MO, Perry MO, Scott MO
<i>Platylomella lescurii</i>	Mosses	Ste Genevieve MO, Carter MO, Madison MO
<i>Plectomerus dombeyanus</i>	Mollusks	Wayne MO, Stoddard MO, Dunklin MO, Butler MO, Ripley MO
<i>Plethobasus cicatricosus</i>	Mollusks	Union KY

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Plethobasus cooperianus</i>	Mollusks	Massac IL, Pulaski IL, Ballard KY, Livingston KY, McCracken KY, Marshall KY, Union KY
<i>Plethobasus cyphus</i>	Mollusks	Massac IL, Pulaski IL, Ballard KY, Livingston KY, McCracken KY, Marshall KY, Union KY
<i>Pleurobema clava</i>	Mollusks	Pope IL, Livingston KY, Marshall KY
<i>Pleurobema cordatum</i>	Mollusks	Massac IL, Pulaski IL, Ballard KY, McCracken KY
<i>Pleurobema plenum</i>	Mollusks	Union KY
<i>Pleurobema rubrum</i>	Mollusks	Ballard KY, Pope IL, Dunklin MO, Livingston KY, McCracken KY, Marshall KY
<i>Pleurocera curta</i>	Mollusks	Livingston KY, Marshall KY
<i>Pluchea foetida</i> var. <i>foetida</i>	Flowering Plants	Butler MO
<i>Poa alsodes</i>	Flowering Plants	Jackson IL, Pope IL
<i>Poanes viator</i>	Insects	Fulton KY, Hickman KY
<i>Podilymbus podiceps</i>	Birds	Mississippi MO, Jackson IL, Pulaski IL, Union IL, Fulton KY, New Madrid MO, Union KY
<i>Pogonia ophioglossoides</i>	Flowering Plants	Reynolds MO
<i>Polygala incarnata</i>	Flowering Plants	Pope IL
<i>Polygonella americana</i>	Flowering Plants	Stoddard MO, New Madrid MO, Dunklin MO, Scott MO
<i>Polygonum arifolium</i>	Flowering Plants	Stoddard MO, Butler MO
<i>Polygonum densiflorum</i>	Flowering Plants	Stoddard MO, Dunklin MO
<i>Polygonum robustius</i>	Flowering Plants	New Madrid MO, Dunklin MO, Scott MO
<i>Polymnia laevigata</i>	Flowering Plants	Fulton KY, Hickman KY, Pemiscot MO
<i>Polyodon spathula</i>	Fishes	Wayne MO, Mississippi MO, Alexander IL, Jackson IL, Randolph IL, Union IL, Fulton KY, Hickman KY, Cape Girardeau MO, Mississippi AR, New Madrid MO, Pemiscot MO, Perry MO, Scott MO
<i>Polypremum procumbens</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, New Madrid MO, Dunklin MO, Butler MO, Ripley MO, Scott MO
<i>Pontederia cordata</i>	Flowering Plants	Fulton KY
<i>Poocetes gramineus</i>	Birds	Dyer TN

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Potamilus capax</i>	Mollusks	Mississippi MO, Hardin IL, Massac IL, Carlisle KY, Pope IL, Mississippi AR, Dunklin MO, Livingston KY, McCracken KY, Marshall KY, Union KY
<i>Potamilus purpuratus</i>	Mollusks	Wayne MO, Stoddard MO, Mississippi MO, Massac IL, Pulaski IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Bollinger MO, Butler MO, Madison MO, Ripley MO, St Francois MO, McCracken KY
<i>Potamogeton epihydrus</i>	Flowering Plants	Reynolds MO
<i>Potamogeton illinoensis</i>	Flowering Plants	Ballard KY
<i>Potamogeton pulcher</i>	Flowering Plants	Wayne MO, Bollinger MO, Butler MO, Carter MO, Reynolds MO, Ripley MO, McCracken KY
<i>Potamogeton pusillus</i> ssp. <i>pusillus</i>	Flowering Plants	Wayne MO, Ste Genevieve MO, Jackson IL, Randolph IL, Union IL, Bollinger MO, Cape Girardeau MO, Butler MO, Madison MO, Perry MO, Scott MO, St Francois MO
<i>Prenanthes aspera</i>	Flowering Plants	Livingston KY, McCracken KY
<i>Procambarus viaeviridis</i>	Crustaceans	Ballard KY, Fulton KY, Hickman KY, Livingston KY, Marshall KY
<i>Prostoia completa</i>	Insects	Union IL
<i>Prostoia similis</i>	Insects	Reynolds MO
<i>Pseudacris streckeri</i>	Amphibians	Stoddard MO, Mississippi MO, New Madrid MO, Dunklin MO, Pemiscot MO, Scott MO
<i>Pseudacris streckeri illinoensis</i>	Amphibians	Stoddard MO, Mississippi MO, New Madrid MO, Dunklin MO, Pemiscot MO, Scott MO
<i>Pseudemys concinna</i>	Turtles	Alexander IL, McCracken KY, Union KY
<i>Pseudemys concinna concinna</i>	Turtles	Union KY
<i>Pseudotaxiphyllum distichaceum</i>	Mosses	Madison MO
<i>Psinidia fenestralis</i>	Insects	Scott MO
<i>Pteronotropis hubbsi</i>	Fishes	Union IL
<i>Ptilimnium capillaceum</i>	Flowering Plants	Hickman KY, St Francois MO, Marshall KY
<i>Ptilimnium costatum</i>	Flowering Plants	Livingston KY
<i>Ptilimnium nuttallii</i>	Flowering Plants	Jackson IL, Randolph IL, Hickman KY, Marshall KY
<i>Ptychobranthus occidentalis</i>	Mollusks	Wayne MO, Bollinger MO, Butler MO, Carter MO, Madison MO, Ripley MO



Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Pueraria montana</i>	Flowering Plants	Wayne MO, Stoddard MO, Bollinger MO, Cape Girardeau MO, Dunklin MO, Butler MO, Carter MO, Madison MO, Reynolds MO, Ripley MO, Scott MO
<i>Pycnanthemum albescens</i>	Flowering Plants	Union IL
<i>Pycnanthemum muticum</i>	Flowering Plants	Stoddard MO, New Madrid MO, Dunklin MO, Butler MO, Ripley MO
<i>Pycnanthemum torrei</i>	Flowering Plants	Stoddard MO, Pope IL, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO
<i>Pyganodon grandis</i>	Mollusks	Wayne MO, Stoddard MO
<i>Pyganodon grandis corpulenta</i>	Mollusks	Wayne MO, Stoddard MO
<i>Quadrula cylindrica</i>	Mollusks	Wayne MO, Stoddard MO, Massac IL, Pulaski IL, Ballard KY, Butler MO, Madison MO, Livingston KY, McCracken KY, Marshall KY
<i>Quadrula nodulata</i>	Mollusks	Stoddard MO, Mississippi MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO
<i>Quercus nigra</i>	Flowering Plants	Dunklin MO, Butler MO, Ripley MO
<i>Quercus phellos</i>	Flowering Plants	Alexander IL, Massac IL, Pulaski IL, Union IL
<i>Quercus prinus</i>	Flowering Plants	Alexander IL, Hardin IL, Jackson IL, Union IL
<i>Quercus texana</i>	Flowering Plants	Alexander IL, Pulaski IL, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Ripley MO, Scott MO
<i>Rallus elegans</i>	Birds	Fulton KY
<i>Ramalina intermedia</i>	Lichens	Ste Genevieve MO
<i>Ranunculus flabellaris</i>	Flowering Plants	Lake TN
<i>Ranunculus laxicaulis</i>	Flowering Plants	Union KY
<i>Regina grahamii</i>	Reptiles	Mississippi AR
<i>Reithrodontomys humulis</i>	Mammals	Mississippi AR
<i>Rhexia mariana</i>	Flowering Plants	Jackson IL, Massac IL, Pope IL
<i>Rhynchosia difformis</i>	Flowering Plants	Dunklin MO, Scott MO
<i>Rhynchospora glomerata</i>	Flowering Plants	Pope IL
<i>Rhynchospora harveyi</i>	Flowering Plants	Dunklin MO, Pemiscot MO
<i>Riccardia multifida</i>	Liverworts	Ste Genevieve MO, Carter MO
<i>Riccia sullivantii</i>	Liverworts	Bollinger MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Riparia riparia</i>	Birds	Ballard KY, Fulton KY, Hickman KY, Livingston KY, McCracken KY, Union KY, Dyer TN
<i>Rosa virginiana</i>	Flowering Plants	Lake TN
<i>Rubus alumnus</i>	Flowering Plants	Union KY
<i>Rudbeckia missouriensis</i>	Flowering Plants	Randolph IL
<i>Rudbeckia subtomentosa</i>	Flowering Plants	Ballard KY, McCracken KY
<i>Sabatia brachiata</i>	Flowering Plants	Butler MO
<i>Saccharum giganteum</i>	Flowering Plants	Wayne MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO
<i>Sacciolepis striata</i>	Flowering Plants	Mississippi MO, Scott MO
<i>Sagittaria australis</i>	Flowering Plants	Pope IL
<i>Sagittaria graminea</i>	Flowering Plants	Fulton KY, Lake TN
<i>Sagittaria platyphylla</i>	Flowering Plants	Fulton KY, Cape Girardeau MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO, Scott MO, Lake TN
<i>Salix amygdaloides</i>	Flowering Plants	Mississippi MO, Ballard KY, Carlisle KY
<i>Sanicula smallii</i>	Flowering Plants	Hardin IL, Ripley MO
<i>Satyrrium favonius</i>	Insects	McCracken KY
<i>Satyrrium favonius ontario</i>	Insects	McCracken KY
<i>Saxifraga virginiana</i>	Flowering Plants	Hardin IL
<i>Scaphiopus holbrookii</i>	Amphibians	Mississippi MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Scott MO
<i>Scaphirhynchus albus</i>	Fishes	Ste Genevieve MO, Mississippi MO, Alexander IL, Randolph IL, Union IL, Ballard KY, Fulton KY, Hickman KY, Cape Girardeau MO, New Madrid MO, Pemiscot MO, Perry MO, Scott MO, Dyer TN, Lake TN
<i>Schoenoplectus americanus</i>	Flowering Plants	Ste Genevieve MO, St Francois MO
<i>Schoenoplectus californicus</i>	Flowering Plants	Reynolds MO
<i>Schoenoplectus fluviatilis</i>	Flowering Plants	Ballard KY, Fulton KY
<i>Schoenoplectus hallii</i>	Flowering Plants	Alexander IL, Scott MO
<i>Schoenoplectus purshianus</i>	Flowering Plants	Carter MO
<i>Schoenoplectus subterminalis</i>	Flowering Plants	Bollinger MO
Scientific Name	Species Group (Broad)	Pope IL
<i>Scirpus divaricatus</i>	Flowering Plants	New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Scirpus polyphyllus</i>	Flowering Plants	Wayne MO, Stoddard MO, Hardin IL, Pope IL, Bollinger MO, Carter MO, Madison MO, Reynolds MO, Ripley MO
<i>Scleria ciliata</i>	Flowering Plants	Marshall KY
<i>Scleria pauciflora</i>	Flowering Plants	Hardin IL, Randolph IL, Union IL, Pope IL
<i>Scleria verticillata</i>	Flowering Plants	Carter MO, Reynolds MO, Ripley MO
<i>Scutellaria elliptica</i>	Flowering Plants	Ste Genevieve MO, Cape Girardeau MO, St Francois MO
<i>Sedum ternatum</i>	Flowering Plants	Butler MO, Madison MO, Reynolds MO, St Francois MO
<i>Serratella frisoni</i>	Insects	Reynolds MO, St Francois MO
<i>Sida elliotii</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Alexander IL, Bollinger MO, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Ripley MO, Scott MO
<i>Sideroxylon lycioides</i>	Flowering Plants	Mississippi AR, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO, Lake TN
<i>Sigara mathesoni</i>	Insects	Carter MO
<i>Silene ovata</i>	Flowering Plants	Hardin IL, Union KY
<i>Silene regia</i>	Flowering Plants	Ste Genevieve MO, Jackson IL, Randolph IL, Union IL, Bollinger MO, Cape Girardeau MO, Madison MO, Perry MO, St Francois MO
<i>Silphium laciniatum</i> var. <i>robinsonii</i>	Flowering Plants	Ballard KY, McCracken KY
<i>Simpsonaias ambigua</i>	Mollusks	Pope IL, Livingston KY
<i>Sistrurus miliarius</i>	Reptiles	Wayne MO, Butler MO, Carter MO, Madison MO, Reynolds MO
<i>Sistrurus miliarius streckeri</i>	Reptiles	Wayne MO, Butler MO, Carter MO, Madison MO, Reynolds MO
<i>Sisyrinchium atlanticum</i>	Flowering Plants	Stoddard MO, Mississippi MO, Fulton KY, Bollinger MO, New Madrid MO, Dunklin MO, Butler MO, Ripley MO, Scott MO
<i>Smallanthus uvedalius</i>	Flowering Plants	Wayne MO, Stoddard MO, Ste Genevieve MO, Alexander IL, Randolph IL, Union IL, Bollinger MO, Cape Girardeau MO, New Madrid MO, Butler MO, Carter MO, Reynolds MO, Pemiscot MO, Scott MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Solidago buckleyi</i>	Flowering Plants	Livingston KY, McCracken KY, Marshall KY
<i>Somatochlora hineana</i>	Insects	Wayne MO, Reynolds MO, Ripley MO, St Francois MO
<i>Somatochlora ozarkensis</i>	Insects	Reynolds MO
<i>Sorex cinereus</i>	Mammals	Union KY
<i>Sorex longirostris</i>	Mammals	Lake TN
<i>Spermolepis divaricata</i>	Flowering Plants	New Madrid MO, Dunklin MO, Scott MO
<i>Sphagnum affine</i>	Mosses	Stoddard MO
<i>Sphagnum angustifolium</i>	Mosses	Carter MO
<i>Sphagnum bartlettianum</i>	Mosses	Ste Genevieve MO
<i>Sphagnum capillifolium</i>	Mosses	Ste Genevieve MO, Carter MO
<i>Sphagnum compactum</i>	Mosses	Ste Genevieve MO
<i>Sphagnum fimbriatum</i>	Mosses	Stoddard MO
<i>Sphagnum henryense</i>	Mosses	Ste Genevieve MO
<i>Sphenopholis pensylvanica</i>	Flowering Plants	Stoddard MO
<i>Spilogale putorius</i>	Mammals	Bollinger MO, Carter MO, Madison MO, Reynolds MO, Ripley MO, St Francois MO
<i>Spilogale putorius interrupta</i>	Mammals	Bollinger MO, Carter MO, Madison MO, Reynolds MO, Ripley MO, St Francois MO
<i>Spiraea alba</i> var. <i>alba</i>	Flowering Plants	Scott MO
<i>Spiraea tomentosa</i>	Flowering Plants	Stoddard MO, New Madrid MO, Dunklin MO, Madison MO
<i>Spiranthes lacera</i>	Flowering Plants	Carter MO, Reynolds MO
<i>Spiranthes lucida</i>	Flowering Plants	Ste Genevieve MO, Carter MO, Reynolds MO, Ripley MO, St Francois MO
<i>Spiranthes ovalis</i> var. <i>erostellata</i>	Flowering Plants	Wayne MO, Mississippi MO, Fulton KY, New Madrid MO, Dunklin MO, Butler MO, Madison MO, Reynolds MO, St Francois MO
<i>Spiranthes vernalis</i>	Flowering Plants	Jackson IL, Pope IL
<i>Sporobolus clandestinus</i>	Flowering Plants	Livingston KY
<i>Sporobolus heterolepis</i>	Flowering Plants	Livingston KY
<i>Steinchisma hians</i>	Flowering Plants	Wayne MO, Stoddard MO, Bollinger MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO
<i>Stellaria longifolia</i>	Flowering Plants	Marshall KY
<i>Stellaria pubera</i>	Flowering Plants	Hardin IL, Pope IL
<i>Stenanthium gramineum</i>	Flowering Plants	Pulaski IL, Pope IL

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Sternula antillarum</i>	Birds	Mississippi MO, Alexander IL, Massac IL, Pulaski IL, Randolph IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Pope IL, Cape Girardeau MO, Mississippi AR, New Madrid MO, Pemiscot MO, Perry MO, Scott MO, Livingston KY, McCracken KY, Marshall KY, Union KY, Dyer TN, Lake TN
<i>Sternula antillarum athalassos</i>	Birds	Mississippi MO, Alexander IL, Massac IL, Pulaski IL, Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Pope IL, Cape Girardeau MO, Mississippi AR, New Madrid MO, Pemiscot MO, Perry MO, Scott MO, Livingston KY, McCracken KY, Marshall KY, Union KY, Dyer TN, Lake TN
<i>Stygobromus heteropodus</i>	Crustaceans	Ste Genevieve MO
<i>Stylisma pickeringii</i>	Flowering Plants	Scott MO
<i>Stylisma pickeringii</i> var. <i>pattersonii</i>	Flowering Plants	Scott MO
<i>Styrax americanus</i>	Flowering Plants	Alexander IL, Massac IL, Pulaski IL, Union IL, Pope IL, Union KY
<i>Styrax grandifolius</i>	Flowering Plants	Alexander IL
<i>Sylvilagus aquaticus</i>	Mammals	Wayne MO, Stoddard MO, Mississippi MO, Carlisle KY, Hickman KY, Bollinger MO, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Carter MO, Pemiscot MO, Ripley MO, Scott MO
<i>Symphyotrichum divaricatum</i>	Flowering Plants	Stoddard MO, Alexander IL, Union IL, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Scott MO
<i>Symphyotrichum dumosum</i>	Flowering Plants	Wayne MO, Cape Girardeau MO, Butler MO, Reynolds MO, Ripley MO
<i>Symphyotrichum dumosum</i> var. <i>strictior</i>	Flowering Plants	Wayne MO, Cape Girardeau MO, Butler MO, Reynolds MO, Ripley MO
<i>Symphyotrichum puniceum</i>	Flowering Plants	Carter MO, Reynolds MO, St Francois MO
<i>Synandra hispidula</i>	Flowering Plants	Jackson IL
<i>Syrrhodon texanus</i>	Mosses	Ste Genevieve MO

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Tachopteryx thoreyi</i>	Insects	Wayne MO, Ste Genevieve MO, Butler MO, Carter MO, Madison MO, Reynolds MO, Ripley MO, St Francois MO
<i>Tachycineta bicolor</i>	Birds	Mississippi AR
<i>Talinum calycinum</i>	Flowering Plants	Randolph IL
<i>Talinum parviflorum</i>	Flowering Plants	Massac IL, Union IL, Pope IL
<i>Tantilla gracilis</i>	Reptiles	Randolph IL, Union IL
<i>Taxodium distichum</i>	Conifers and relatives	Union KY
<i>Terrapene ornata</i>	Turtles	Randolph IL
<i>Tettigidea armata</i>	Insects	Stoddard MO, Ripley MO
<i>Thalia dealbata</i>	Flowering Plants	Stoddard MO, Mississippi MO, Alexander IL, Cape Girardeau MO, New Madrid MO, Butler MO, Ripley MO, Scott MO
<i>Thalictrum pubescens</i>	Flowering Plants	Union KY
<i>Thamnobryum alleghaniense</i>	Mosses	Ste Genevieve MO
<i>Thamnophis proximus</i>	Reptiles	Ballard KY, Fulton KY
<i>Thamnophis sauritus</i>	Reptiles	Massac IL, Pulaski IL, Carlisle KY, Fulton KY, Hickman KY, Pope IL, McCracken KY, Marshall KY
<i>Thelypteris noveboracensis</i>	Ferns and relatives	Pope IL
<i>Thryomanes bewickii</i>	Birds	Pope IL, Marshall KY, Lake TN
<i>Tilia americana</i>	Flowering Plants	Hardin IL, Massac IL, Pulaski IL
<i>Tilia americana</i> var. <i>heterophylla</i>	Flowering Plants	Hardin IL, Massac IL, Pulaski IL
<i>Tipularia discolor</i>	Flowering Plants	Wayne MO, Stoddard MO, Bollinger MO, Butler MO, Carter MO, Madison MO
<i>Torreyochloa pallida</i>	Flowering Plants	Wayne MO, Stoddard MO, Mississippi MO, Alexander IL, Jackson IL, Union IL, Ballard KY, Bollinger MO, Cape Girardeau MO, New Madrid MO, Butler MO, Reynolds MO, Ripley MO, Scott MO, Livingston KY, McCracken KY
<i>Toxicodendron pubescens</i>	Flowering Plants	Mississippi MO, Carter MO, Scott MO
<i>Toxolasma lividum</i>	Mollusks	Wayne MO, Pope IL, Bollinger MO, Butler MO, Madison MO, Ripley MO, St Francois MO, McCracken KY
<i>Toxolasma texasense</i>	Mollusks	Mississippi MO, Carlisle KY, Fulton KY, Hickman KY, New Madrid MO, Dunklin MO, Marshall KY, Union KY

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Trepocarpus aethusae</i>	Flowering Plants	Mississippi MO, Fulton KY, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Scott MO, McCracken KY, Marshall KY, Lake TN
<i>Triadenum tubulosum</i>	Flowering Plants	Wayne MO, Stoddard MO, Bollinger MO, Cape Girardeau MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Ripley MO
<i>Trichomanes boschianum</i>	Ferns and relatives	Hardin IL, Pope IL
<i>Trichophorum planifolium</i>	Flowering Plants	Alexander IL, Bollinger MO, Carter MO, Madison MO, Reynolds MO
<i>Trichostema setaceum</i>	Flowering Plants	Stoddard MO, Scott MO
<i>Trifolium reflexum</i>	Flowering Plants	Wayne MO, Ste Genevieve MO, Hardin IL, Jackson IL, Massac IL, Union IL, Pope IL, Bollinger MO, Cape Girardeau MO, Butler MO, Carter MO, Madison MO, Reynolds MO, Ripley MO, St Francois MO, Livingston KY, McCracken KY, Marshall KY
<i>Trifolium stoloniferum</i>	Flowering Plants	Wayne MO, Dunklin MO, Butler MO, Carter MO, Madison MO
<i>Trillium viride</i>	Flowering Plants	Union IL
<i>Triplasis purpurea</i>	Flowering Plants	Pulaski IL, Ballard KY, Fulton KY
<i>Typhlichthys subterraneus</i>	Fishes	Wayne MO, Carter MO, Ripley MO
<i>Tyto alba</i>	Birds	Stoddard MO, Jackson IL, Massac IL, Pulaski IL, Randolph IL, Union IL, Carlisle KY, Hickman KY, Pope IL, Cape Girardeau MO, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO, Perry MO, Scott MO, Livingston KY, McCracken KY, Marshall KY
<i>Ulmus crassifolia</i>	Flowering Plants	Mississippi AR, Dunklin MO, Butler MO
<i>Ulmus thomasii</i>	Flowering Plants	Butler MO
<i>Umbra limi</i>	Fishes	Fulton KY, Hickman KY, New Madrid MO, McCracken KY, Marshall KY, Lake TN
<i>Urtica chamaedryoides</i>	Flowering Plants	Mississippi MO, Alexander IL, Union IL, Bollinger MO, New Madrid MO, Perry MO
<i>Utricularia macrorhiza</i>	Flowering Plants	Carlisle KY, Fulton KY, Hickman KY

Sub Area Sensitive Species		
Species Scientific Name	Species Category	Counties in which Located
<i>Utricularia subulata</i>	Flowering Plants	Reynolds MO, Ripley MO
<i>Vaccinium stamineum</i>	Flowering Plants	Hardin IL, Pope IL
<i>Valerianella ozarkana</i>	Flowering Plants	Madison MO
<i>Vermivora bachmanii</i>	Birds	Mississippi AR
<i>Vertigo gouldii</i>	Mollusks	Carter MO
<i>Viburnum recognitum</i>	Flowering Plants	Madison MO, St Francois MO
<i>Villosa lienosa</i>	Mollusks	Wayne MO, Stoddard MO, Union IL, Fulton KY, Hickman KY, Pope IL, Bollinger MO, Butler MO, Madison MO, Ripley MO, St Francois MO
<i>Viola cucullata</i>	Flowering Plants	Wayne MO, Stoddard MO, Carter MO, Reynolds MO, Ripley MO
<i>Viola macloskeyi</i> ssp. <i>pallens</i>	Flowering Plants	Ste Genevieve MO
<i>Viola pedatifida</i>	Flowering Plants	Dunklin MO
<i>Vireo bellii</i>	Birds	Livingston KY, McCracken KY, Union KY
<i>Vitis rotundifolia</i>	Flowering Plants	Stoddard MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO
<i>Vitis rotundifolia</i> var. <i>rotundifolia</i>	Flowering Plants	Stoddard MO, Mississippi AR, New Madrid MO, Dunklin MO, Butler MO, Pemiscot MO
<i>Waldsteinia fragarioides</i>	Flowering Plants	Pope IL
<i>Webbhelix multilineata</i>	Mollusks	Ballard KY, Carlisle KY, Fulton KY, Hickman KY, Union KY, Dyer TN, Lake TN
<i>Wolffia columbiana</i>	Flowering Plants	Stoddard MO, Bollinger MO, Dunklin MO, Butler MO
<i>Wolffiella gladiata</i>	Flowering Plants	Wayne MO, Stoddard MO, Bollinger MO, Dunklin MO
<i>Woodwardia areolata</i>	Ferns and relatives	Stoddard MO, Bollinger MO, Butler MO, Carter MO, Ripley MO
<i>Xyris jupicai</i>	Flowering Plants	Scott MO
<i>Xyris torta</i>	Flowering Plants	Ripley MO
<i>Zanthoxylum americanum</i>	Flowering Plants	Dyer TN
<i>Zapus hudsonius</i>	Mammals	Reynolds MO, Lake TN
<i>Zizania palustris</i>	Flowering Plants	New Madrid MO
<i>Zizania palustris</i> var. <i>interior</i>	Flowering Plants	New Madrid MO
<i>Zizaniopsis miliacea</i>	Flowering Plants	Fulton KY, Hickman KY
<i>Zosteractis interminata</i>	Millipedes and Centipedes	Madison MO



**APPENDIX F. SENSITIVE HABITATS**

<b>Sensitive Habitats</b>			
<b>Location Name</b>	<b>Owning Agency/Organization</b>	<b>Habitat Type</b>	<b>State</b>
Eaker Air Force Base (Closed)	Department of Defense (DOD)	Military Land	Arkansas
Hampson- Archeological Museum State Park	State Park & Recreation	State Park	Arkansas
Big Lake National Wildlife Refuge	Fish and Wildlife Service (USFWS)	National Wildlife Refuge	Arkansas
St. Francis Sunken Lands	State Fish and Wildlife	Habitat or Species Management Area	Arkansas
Big Lake	State Fish and Wildlife	Habitat or Species Management Area	Arkansas
Wayside Park	State Department of Transportation	State Other	Arkansas
Big Lake Wilderness	Fish and Wildlife Service (USFWS)	Wilderness Area	Arkansas
Sparta	Department of Defense (DOD)	Military Land	Illinois
Round Pond Fee	The Nature Conservancy (TNC)	Private Conservation Land	Illinois
Lower Cache River Macrosite Fee	The Nature Conservancy (TNC)	Private Conservation Land	Illinois
Larue/Trail Of Tears Fee	The Nature Conservancy (TNC)	Private Conservation Land	Illinois
Cache River Wetlands Fee	The Nature Conservancy (TNC)	Private Conservation Land	Illinois
Shawnee National Forest	Forest Service (USFS)	National Forest- National Grassland	Illinois
Ozark Hill Prairie Early Rna	Forest Service (USFS)	Research Natural Area	Illinois
Turkey Bluffs	Other State Land	Habitat or Species Management Area	Illinois
Keeling Hill	Forest Service (USFS)	Protective Management Area	Illinois
Klondike Spring	Forest Service (USFS)	Protective Management Area	Illinois
Horseshoe Lake-Alexander	Other State Land	Protective Management Area	Illinois
Crab Orchard National Wildlife Refuge	Fish and Wildlife Service (USFWS)	National Wildlife Refuge	Illinois
Cypress Creek National Wildlife Refuge	Fish and Wildlife Service (USFWS)	National Wildlife Refuge	Illinois
Union County	Other State Land	Protective Management Area	Illinois
Barker Bluff	Forest Service (USFS)	Protective Management Area	Illinois
Bell Smith Springs	Forest Service (USFS)	Protective Management Area	Illinois

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Big Brushy Ridge	Forest Service (USFS)	Protective Management Area	Illinois
Devil'S Island	Other State Land	Habitat or Species Management Area	Illinois
Cave Spring Cave System	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Conant Sites	Fish and Wildlife Service (USFWS)	Protective Management Area	Illinois
Golconda Marina	Other State Land	Recreation Management Area	Illinois
Lovets Pond Nature Preserve	Other State Land	Protective Management Area	Illinois
Atwood Ridge	Forest Service (USFS)	Research Natural Area	Illinois
Ava Cave	Forest Service (USFS)	Protective Management Area	Illinois
Bald Knob Geological Area	Forest Service (USFS)	Protective Management Area	Illinois
Atwood Ridge Early Rna	Forest Service (USFS)	Research Natural Area	Illinois
Middle Mississippi River National Wildlife Refuge	Fish and Wildlife Service (USFWS)	National Wildlife Refuge	Illinois
Dixon Springs	Other State Land	State Park	Illinois
World Shooting Complex	Other State Land	Recreation Management Area	Illinois
Wolf Creek Area	Forest Service (USFS)	Protective Management Area	Illinois
Campbell Lake	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Bald Knob Wilderness Nwa	Forest Service (USFS)	Wilderness Area	Illinois
Bay Creek Wilderness Nwa	Forest Service (USFS)	Wilderness Area	Illinois
Burden Falls Wilderness Nwa	Forest Service (USFS)	Wilderness Area	Illinois
Clear Springs Wilderness Nwa	Forest Service (USFS)	Wilderness Area	Illinois
Garden Of The Gods Wilderness Nwa	Forest Service (USFS)	Wilderness Area	Illinois
Lusk Creek Wilderness Nwa	Forest Service (USFS)	Wilderness Area	Illinois
Panther Den Wilderness Nwa	Forest Service (USFS)	Wilderness Area	Illinois
Cave-In-Rock	Other State Land	State Park	Illinois
Mermet Lake	Other State Land	Protective Management Area	Illinois
Horseshoe Forest	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Kaskaskia Woods	Forest Service (USFS)	Protective Management Area	Illinois
Kickasola Cemetery Barrens And Seeps	Forest Service (USFS)	Protective Management Area	Illinois
Britten Spring	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Frailey'S Landing Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Berryville Shale Glade Nature Preserve	Other State Land	Protective Management Area	Illinois
Brown Barrens Nature Preserve	Other State Land	Protective Management Area	Illinois
Spivey'S Valley Glade Nature Preserve	Forest Service (USFS)	Protective Management Area	Illinois
Badlands Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Big Creek	Forest Service (USFS)	Protective Management Area	Illinois
Big Grand Pierre Creek	Forest Service (USFS)	Protective Management Area	Illinois
Big Grand Pierre Land And Water Reserve	Forest Service (USFS)	Protective Management Area	Illinois
Bake Oven - Backbone North Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Massac Tower Springs	Forest Service (USFS)	Protective Management Area	Illinois
Metropolis North Geological Area	Forest Service (USFS)	Protective Management Area	Illinois
Abbot Geological Area	Forest Service (USFS)	Protective Management Area	Illinois
Mounds West Geological Area	Fish and Wildlife Service (USFWS)	Protective Management Area	Illinois
Barker Bluff Early Rna	Forest Service (USFS)	Research Natural Area	Illinois
Whoopie Cat Mountain	Forest Service (USFS)	Protective Management Area	Illinois
Larue Swamp Nature Preserve	Forest Service (USFS)	Protective Management Area	Illinois
Panther Hollow Early Rna	Forest Service (USFS)	Research Natural Area	Illinois
Whoopie Cat Early Rna	Forest Service (USFS)	Research Natural Area	Illinois
Gibbons Creek Barrens	Other State Land	State Other	Illinois
Randolph County	Other State Land	Protective Management Area	Illinois
Reeds Creek Canyon North	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Reily Lake Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Kaskaskia River	Other State Land	Habitat or Species Management Area	Illinois
Kinkaid Lake	Other State Land	Habitat or Species Management Area	Illinois
Chestnut Hills	Other State Land	Protective Management Area	Illinois
Cache River	Other State Land	Protective Management Area	Illinois
Jackson Hole	Forest Service (USFS)	Protective Management Area	Illinois

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Jackson Hollow	Forest Service (USFS)	Protective Management Area	Illinois
Larue - Pine Hills Research Natural Area	Forest Service (USFS)	Protective Management Area	Illinois
Little Grand Canyon - Cedar Creek	Forest Service (USFS)	Protective Management Area	Illinois
Lovets Pond	Other State Land	Protective Management Area	Illinois
Lower Cache River Swamp	Other State Land	Protective Management Area	Illinois
Lusk Creek Canyon	Other State Land	Protective Management Area	Illinois
Section 8 Woods Nature Preserve	Other State Land	Protective Management Area	Illinois
Millstone Bluff	Forest Service (USFS)	Protective Management Area	Illinois
Brown'S Bar	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Trail Of Tears	Other State Land	State Forest	Illinois
Union State Tree Nursery	Other State Land	State Other	Illinois
Route 127 South	Forest Service (USFS)	Protective Management Area	Illinois
Sw Kinkaid Route 3	Forest Service (USFS)	Protective Management Area	Illinois
Sand Cave	Forest Service (USFS)	Protective Management Area	Illinois
Horseshoe Lake Nature Preserve	Other State Land	Protective Management Area	Illinois
Clear Creek Swamp	Forest Service (USFS)	Protective Management Area	Illinois
Massac Forest Nature Preserve	Other State Land	Protective Management Area	Illinois
Lake Murphysboro	Other State Land	State Park	Illinois
Cape Bend	Other State Land	Habitat or Species Management Area	Illinois
Spivey*S Bluff Natural Heritage Landmark	Forest Service (USFS)	Historic / Cultural Area	Illinois
Guthrie Cave	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Cave Spring Cave	Forest Service (USFS)	Protective Management Area	Illinois
Bennet Hills - Robbs Tract Natural Heritage Landmark	Forest Service (USFS)	Historic / Cultural Area	Illinois
Cave Spring Cave Natural Heritage Landmark	Forest Service (USFS)	Historic / Cultural Area	Illinois
Cedar/Draper'S Bluff Land And Water Reserve	Forest Service (USFS)	Protective Management Area	Illinois
Giant City	Other State Land	State Park	Illinois

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Collier Limestone Glade	Other State Land	State Other	Illinois
Cypress Pond	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Guthrie Cave Land And Water Reserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Fort Massac	Other State Land	Protective Management Area	Illinois
Pounds Hollow	Forest Service (USFS)	Protective Management Area	Illinois
Provo Cemetery Barrens	Forest Service (USFS)	Protective Management Area	Illinois
Bumgard Island	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Burnham Island	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Big Grand Pierre Site	Forest Service (USFS)	Protective Management Area	Illinois
Burke Branch	Forest Service (USFS)	Protective Management Area	Illinois
Degognia Canyon	Forest Service (USFS)	Protective Management Area	Illinois
Swayne Hollow	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Cypress Pond Land And Water Reserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Degognia Canyon Land And Water Reserve	Forest Service (USFS)	Protective Management Area	Illinois
Dog Creek Barrens	Forest Service (USFS)	Protective Management Area	Illinois
Double Branch Hole	Forest Service (USFS)	Protective Management Area	Illinois
Dutch Creek Chert Woodlands	Forest Service (USFS)	Protective Management Area	Illinois
Ozark Hills Nature Preserve	Other State Land	Protective Management Area	Illinois
Gyp Williams Hollow	Forest Service (USFS)	Protective Management Area	Illinois
Hayes Creek Sites	Forest Service (USFS)	Protective Management Area	Illinois
Herman Hill Site	Forest Service (USFS)	Protective Management Area	Illinois
Ozark Hill Prairies	Forest Service (USFS)	Protective Management Area	Illinois
Panther Hollow	Forest Service (USFS)	Protective Management Area	Illinois
Pine Hollow	Forest Service (USFS)	Protective Management Area	Illinois

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Rich'S Cave System	Forest Service (USFS)	Protective Management Area	Illinois
Cache River Land And Water Reserve	Other State Land	Protective Management Area	Illinois
Draper'S Bluff	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Pyramid	Other State Land	State Park	Illinois
Layoff Cave	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Lewis Estate	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Cretaceous Hills	Other State Land	Protective Management Area	Illinois
Fort Massac Land And Water Reserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Lusk Creek Canyon Nature Preserve	Other State Land	Protective Management Area	Illinois
Campbell Lake Natural Heritage Landmark	Private Institution-Managed for Biodiversity	Historic / Cultural Area	Illinois
Chestnut Hills Nature Preserve	Other State Land	Protective Management Area	Illinois
Cretaceous Hills Nature Preserve	Other State Land	Protective Management Area	Illinois
Fern Rocks Nature Preserve	Other State Land	Protective Management Area	Illinois
Mcclure Shale Glade Nature Preserve	Other State Land	Protective Management Area	Illinois
Mermet Swamp Nature Preserve	Other State Land	Protective Management Area	Illinois
Piney Creek Ravine Nature Preserve	Other State Land	Protective Management Area	Illinois
Demint Prairie/Prairie Du Rocher Herpetological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Campbell Lake Land And Water Reserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Circle B Ranch Land And Water Reserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Devil'S Den	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Swayne Hollow Nature Preserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Post Creek Cutoff Site	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Mississippi River - Grand Tower	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Mermet Lake Flatwoods Land And Water Reserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Simmons Creek - Hurricane Hollow Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Horseshoe Lake State Conservation Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Mina Gurley Crawford Woods Natural Heritage Landmark	Private Institution-Managed for Biodiversity	Historic / Cultural Area	Illinois
Lake Murphysboro Hill Prairies Land And Water Reserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Lewis Estate North	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Rattlesnake Creek Natural Heritage Landmark	Private Institution-Managed for Biodiversity	Historic / Cultural Area	Illinois
Mississippi River - Mudds Landing	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Round Pond	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Sielbeck Forest Land And Water Reserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Union County State Conservation Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Thebes Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Reeds Creek Canyon East	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Buttonland Swamp Diehl Property Natural Heritage Landmark	Private Institution-Managed for Biodiversity	Historic / Cultural Area	Illinois
Mcclure Shale Glade	Other State Land	Protective Management Area	Illinois
Mermet Swamp	Other State Land	Protective Management Area	Illinois
Campbell Pond	Other State Land	Habitat or Species Management Area	Illinois
Hosick Creek	Forest Service (USFS)	Protective Management Area	Illinois
Lamb Site	Forest Service (USFS)	Protective Management Area	Illinois
Leisure City Glade	Forest Service (USFS)	Protective Management Area	Illinois
Lick Creek Geological Area	Forest Service (USFS)	Protective Management Area	Illinois
Little Saline River	Forest Service (USFS)	Protective Management Area	Illinois
Lusk Creek North	Forest Service (USFS)	Protective Management Area	Illinois
Magazine Mine Hollow	Forest Service (USFS)	Protective Management Area	Illinois
Manson Ford	Forest Service (USFS)	Protective Management Area	Illinois



Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Martha'S Woods Site	Forest Service (USFS)	Protective Management Area	Illinois
Miller Creek	Forest Service (USFS)	Protective Management Area	Illinois
Melcher Hill Limestone Glade	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
East Fork Botanical Area	Forest Service (USFS)	Protective Management Area	Illinois
Eddyville East Botanical Area	Forest Service (USFS)	Protective Management Area	Illinois
Frieze Cave	Forest Service (USFS)	Protective Management Area	Illinois
Gale North Geological Area	Forest Service (USFS)	Protective Management Area	Illinois
Spivey Valley Glade	Forest Service (USFS)	Protective Management Area	Illinois
Sulphur Springs Area	Forest Service (USFS)	Protective Management Area	Illinois
Teal Pond	Forest Service (USFS)	Protective Management Area	Illinois
Toothless Cave	Forest Service (USFS)	Protective Management Area	Illinois
Brownfield Bluff	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Ren-Dill Shale Glade Nature Preserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Robnett Creek Barrens	Forest Service (USFS)	Protective Management Area	Illinois
Rock Creek	Forest Service (USFS)	Protective Management Area	Illinois
Russell Cemetery Glade	Forest Service (USFS)	Protective Management Area	Illinois
Snow Springs	Forest Service (USFS)	Protective Management Area	Illinois
Clear Springs Geological Area	Forest Service (USFS)	Protective Management Area	Illinois
Cooper Creek Hollow Mine	Forest Service (USFS)	Protective Management Area	Illinois
Copperous Branch Hill Prairie	Forest Service (USFS)	Protective Management Area	Illinois
Crow Knob	Forest Service (USFS)	Protective Management Area	Illinois
Dean Cemetery East Barrens	Forest Service (USFS)	Protective Management Area	Illinois
Fort Massac Area	Other State Land	Protective Management Area	Illinois
Chester South Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois



Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Brown Barrens	Other State Land	Protective Management Area	Illinois
Blufftop Acres Land And Water Reserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Clear Lake	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Coles Mill Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Cane Creek Area	Forest Service (USFS)	Protective Management Area	Illinois
Caney Branch Glade	Forest Service (USFS)	Protective Management Area	Illinois
Halesia	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Griffith Cave	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Poco Cemetery Barrens East	Forest Service (USFS)	Protective Management Area	Illinois
Poco Cemetery Barrens North	Forest Service (USFS)	Protective Management Area	Illinois
Culley Barrens Land And Water Reserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Backbone South Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Reddick Hollow	Forest Service (USFS)	Protective Management Area	Illinois
Black Cave	Forest Service (USFS)	Protective Management Area	Illinois
Brown'S Hole Cave	Forest Service (USFS)	Protective Management Area	Illinois
Clear Creek	Forest Service (USFS)	Protective Management Area	Illinois
Goreville Interchange Geological Area	Forest Service (USFS)	Protective Management Area	Illinois
Haney Creek	Forest Service (USFS)	Protective Management Area	Illinois
Lusk Creek	Forest Service (USFS)	Protective Management Area	Illinois
Old Zion Cemetery Geological Area	Forest Service (USFS)	Protective Management Area	Illinois
Opossum Trot Trail	Forest Service (USFS)	Protective Management Area	Illinois
Peters Creek	Forest Service (USFS)	Protective Management Area	Illinois
Pleasant Valley Hill Prairie	Forest Service (USFS)	Protective Management Area	Illinois
Dongola Hollow Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Dongola North Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Gale Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Piney Creek Ravine	Other State Land	Protective Management Area	Illinois
Roaring Spring Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Sielbeck Forest	Other State Land	Protective Management Area	Illinois
Tunnel Hill	Other State Land	State Park	Illinois
Big Grand Pierre Glade	Other State Land	State Other	Illinois
Flick Hill	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Fountain Bluff Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Fountain Bluff North	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Ohio River - Hillerman	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Ozark Hills	Other State Land	Protective Management Area	Illinois
Hicks Dome Plug Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Hicks Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Saline Landing	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Faulkner-Franke Pioneer Railroad Prairie Nature Preserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Homberg Spring	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Black Powder Hollow Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Castle Rock - Randolph County	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Post Creek Cutoff Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Post Oak Glade	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Prairie Du Rocher - South	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Giant City State Park Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Lake Creek	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Kinkaid Bluff	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Mermet Lake Flatwoods	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Metropolis West Botanical Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Thornton Ravine	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Horseshoe Lake Botanical Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Horseshoe Lake South	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Lake Murphysboro Site	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Lewis Estate South	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Lino Laird Ravine	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Olmsted Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Open Pond	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Orr'S Landing Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Weaver'S Woods	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Modoc Northwest Geological Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Mermet Lake East	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Murphysboro Seep	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Prairie Of The Rock Overlook Land And Water Reserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Rockcastle Creek Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Sielbeck Forest Tract	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
South Tamms Marsh	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Soward Limestone Glade	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Unity Area	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Sparta Site	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Susan*S Glade Natural Heritage Landmark	Private Institution-Managed for Biodiversity	Historic / Cultural Area	Illinois
Halesia Nature Preserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Prairie Of The Rock Nature Preserve	Private Institution-Managed for Biodiversity	Protective Management Area	Illinois
Round Pond - Harris Tract Natural Heritage Landmark	Private Institution-Managed for Biodiversity	Historic / Cultural Area	Illinois
Clear Springs Wilderness	Forest Service (USFS)	Wilderness Area	Illinois
Crab Orchard Wilderness	Fish and Wildlife Service (USFWS)	Wilderness Area	Illinois
Lake Barkley	Department of Defense (DOD)	Military Land	Kentucky
Mantle Rock Fee	The Nature Conservancy (TNC)	Private Conservation Land	Kentucky
Cypress Creek Swamp Easement	Private Conservation Land	Private Conservation Land	Kentucky
Bald Knob Glade Fee	The Nature Conservancy (TNC)	Private Conservation Land	Kentucky
Mantle Rock Easement	Private Conservation Land	Private Conservation Land	Kentucky
Clarks River Nwr	Fish and Wildlife Service (USFWS)	National Wildlife Refuge	Kentucky
Kentucky Reservoir	Tennessee Valley Authority (TVA)	Not Designated	Kentucky
Boatwright Wma	State Fish and Wildlife	Habitat or Species Management Area	Kentucky
Reelfoot National Wildlife Refuge	Fish and Wildlife Service (USFWS)	National Wildlife Refuge	Kentucky
Obion Creek Wma	State Fish and Wildlife	Habitat or Species Management Area	Kentucky
Higginson-Henry Wma	State Fish and Wildlife	Habitat or Species Management Area	Kentucky
Metropolis Lake State Nature Preserve	State Cultural Affairs	Protective Management Area	Kentucky
Westvaco Wma	Private Conservation Land	Habitat or Species Management Area	Kentucky
Kentucky Lake Wma	Tennessee Valley Authority (TVA)	Habitat or Species Management Area	Kentucky
Columbus-Belmont Sp	State Park & Recreation	State Park	Kentucky
Newman'S Bluff State Natural Area	State Cultural Affairs	Protective Management Area	Kentucky
Bissell Bluff State Natural Area	State Cultural Affairs	Protective Management Area	Kentucky
West Kentucky Wma	State Fish and Wildlife	Habitat or Species Management Area	Kentucky
Ballard Wma	State Fish and Wildlife	Habitat or Species Management Area	Kentucky
Wickliffe Mounds Shs	State Park & Recreation	Historic / Cultural Area	Kentucky
Livingston County Wma	State Fish and Wildlife	Habitat or Species Management Area	Kentucky

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Kenlake Srp	State Park & Recreation	State Park	Kentucky
Sloughs Wma	State Fish and Wildlife	Habitat or Species Management Area	Kentucky
Winford Wma	State Fish and Wildlife	Habitat or Species Management Area	Kentucky
Kentucky Dam Village Srp	State Park & Recreation	State Park	Kentucky
Clearwater Lake	Department of Defense (DOD)	Military Land	Missouri
Wappapello Lake	Department of Defense (DOD)	Military Land	Missouri
Wappapello Training Site	Department of Defense (DOD)	Military Land	Missouri
Gayoso Bend Ca	State Department of Conservation	Protective Management Area	Missouri
Warbler Woods Ca	State Department of Conservation	Protective Management Area	Missouri
Cash (Ben) Mem Ca	State Department of Conservation	Protective Management Area	Missouri
Hornersville Swamp Ca	State Department of Conservation	Protective Management Area	Missouri
Cash Swamp Na	State Department of Conservation	Protective Management Area	Missouri
Black Island Ca	State Department of Conservation	Protective Management Area	Missouri
Cash (Ben) Mem Ca - Largent (S&L) Annex	State Department of Conservation	Protective Management Area	Missouri
Desoto Ca	State Department of Conservation	Protective Management Area	Missouri
Little River Ca	State Department of Conservation	Protective Management Area	Missouri
Reynolds (S. P.) Access	Private Institution-Managed for Biodiversity	Access Area	Missouri
Hornersville Access	State Department of Conservation	Protective Management Area	Missouri
Caruthersville Rookery Ca	State Department of Conservation	Protective Management Area	Missouri
Seventy-Six Ca	State Department of Conservation	Protective Management Area	Missouri
Trail Of Tears State Park	Other State Land	State Park	Missouri
Sank Ca	State Department of Conservation	Protective Management Area	Missouri
Mark Twain National Forest - Potosi-Salem Unit	Forest Service (USFS)	National Forest-National Grassland	Missouri
Aquilla Access	State Department of Conservation	Protective Management Area	Missouri
Donaldson Point Na	State Department of Conservation	Protective Management Area	Missouri

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Mark Twain National Forest - Poplar Bluff Unit	Forest Service (USFS)	National Forest-National Grassland	Missouri
University Forest Ca	State Department of Conservation	Protective Management Area	Missouri
Lon Sanders Canyon Ca	State Department of Conservation	Protective Management Area	Missouri
Sun (Stephen J.) Ca	State Department of Conservation	Protective Management Area	Missouri
Clearwater Ca	State Department of Conservation	Protective Management Area	Missouri
Lower Taum Sauk Lake	Private Institution-Managed for Biodiversity	Protective Management Area	Missouri
Sam A. Baker State Park	Other State Land	State Park	Missouri
Mark Twain National Forest - Fredericktown Unit	Forest Service (USFS)	National Forest-National Grassland	Missouri
Seven Island Ca	State Department of Conservation	Protective Management Area	Missouri
Big Cane Ca	State Department of Conservation	Protective Management Area	Missouri
Castor River Ca	State Department of Conservation	Protective Management Area	Missouri
Cape Lacroix Bluffs Ca	State Department of Conservation	Protective Management Area	Missouri
Carter Creek Ca	State Department of Conservation	Protective Management Area	Missouri
Coon Island Ca	State Department of Conservation	Protective Management Area	Missouri
Oak Ridge Ca	State Department of Conservation	Protective Management Area	Missouri
General Watkins Ca	State Department of Conservation	Protective Management Area	Missouri
Girvin (J. L. & G.) Ca	State Department of Conservation	Protective Management Area	Missouri
Ten Mile Pond Ca	State Department of Conservation	Protective Management Area	Missouri
Mingo National Wildlife Refuge	Fish and Wildlife Service (USFWS)	National Wildlife Refuge	Missouri
Mingo Wilderness	Fish and Wildlife Service (USFWS)	Wilderness Area	Missouri
Mark Twain National Forest - Eleven Point Unit	Forest Service (USFS)	National Forest-National Grassland	Missouri
Little Black Ca	State Department of Conservation	Protective Management Area	Missouri
Apple Creek Ca	State Department of Conservation	Protective Management Area	Missouri
Chalk Bluff Trail Access	State Department of Conservation	Protective Management Area	Missouri

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Rocky Creek Ca	State Department of Conservation	Protective Management Area	Missouri
Sweetgum Access	State Department of Conservation	Protective Management Area	Missouri
Swift Ditch Access	State Department of Conservation	Protective Management Area	Missouri
Bell Mountain National Wilderness Area - Mark Twain National Forest	Forest Service (USFS)	Wilderness Area	Missouri
Bald Hill Glade Na	Forest Service (USFS)	Protective Management Area	Missouri
Big Barren Creek Na	Forest Service (USFS)	Protective Management Area	Missouri
Perry County Cl	State Department of Conservation	Protective Management Area	Missouri
Peck Ranch Ca	State Department of Conservation	Protective Management Area	Missouri
Cupola Pond Na	Forest Service (USFS)	Protective Management Area	Missouri
Grasshopper Hollow Na	Forest Service (USFS)	Protective Management Area	Missouri
Corkwood Ca	State Department of Conservation	Protective Management Area	Missouri
Allred Lake Na	State Department of Conservation	Protective Management Area	Missouri
Sand Pond Ca - Altwater (N. B.) Addition	State Department of Conservation	Protective Management Area	Missouri
Sand Prairie Ca	State Department of Conservation	Protective Management Area	Missouri
Current River Ca	State Department of Conservation	Protective Management Area	Missouri
Flatwoods Ca	State Department of Conservation	Protective Management Area	Missouri
Frisbee Cutoff Access	State Department of Conservation	Protective Management Area	Missouri
Hammer (Bradley A) Mem Ca	State Department of Conservation	Protective Management Area	Missouri
Irish National Wilderness Area - Mark Twain National Forest	Forest Service (USFS)	Wilderness Area	Missouri
Logan Creek Ca	State Department of Conservation	Protective Management Area	Missouri
Magnolia Hollow Ca	State Department of Conservation	Protective Management Area	Missouri
Maintz Wildlife Preserve	State Department of Conservation	Protective Management Area	Missouri
Bradyville Na	State Department of Conservation	Protective Management Area	Missouri
Sand Pond Ca	State Department of Conservation	Protective Management Area	Missouri



Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Hemenway Ca	State Department of Conservation	Protective Management Area	Missouri
Fourche Creek Ca	State Department of Conservation	Protective Management Area	Missouri
Poplar Bluff Forest Na	State Department of Conservation	Protective Management Area	Missouri
Coldwater Ca	State Department of Conservation	Protective Management Area	Missouri
Taum Sauk Mountain State Park	Other State Land	State Park	Missouri
Delaney (Robert G.) Lake Ca	State Department of Conservation	Protective Management Area	Missouri
Duck Creek Ca	State Department of Conservation	Protective Management Area	Missouri
Holly Ridge Ca	State Department of Conservation	Protective Management Area	Missouri
Vancill Hollow Na	Other State Land	Protective Management Area	Missouri
Mud Creek Na	Forest Service (USFS)	Protective Management Area	Missouri
Tunnel Bluff Woods Na	Forest Service (USFS)	Protective Management Area	Missouri
Crowley'S Ridge Ca	State Department of Conservation	Protective Management Area	Missouri
Graves Mountain Ca	State Department of Conservation	Protective Management Area	Missouri
Towosahgy State Historic Site	Other State Land	Historic / Cultural Area	Missouri
Big Oak Tree Na	Other State Land	Protective Management Area	Missouri
Johnson'S Shut-Ins Na	Other State Land	Protective Management Area	Missouri
Amidon Memorial Ca	State Department of Conservation	Protective Management Area	Missouri
Dark Cypress Swamp Ca	State Department of Conservation	Protective Management Area	Missouri
Wilhelmina Ca	State Department of Conservation	Protective Management Area	Missouri
Clubb Creek Ca	State Department of Conservation	Protective Management Area	Missouri
Coldwater Access	State Department of Conservation	Protective Management Area	Missouri
Donaldson Point Ca	State Department of Conservation	Protective Management Area	Missouri
Lake Girardeau Ca	State Department of Conservation	Protective Management Area	Missouri
Mule Hollow Glade Na	State Department of Conservation	Protective Management Area	Missouri
Morris State Park	Other State Land	State Park	Missouri



Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Grandin Towersite	State Department of Conservation	Protective Management Area	Missouri
Castor River Shut-Ins Na	State Department of Conservation	Protective Management Area	Missouri
Iron Bridge Access	State Department of Conservation	Protective Management Area	Missouri
Riverside Ca	State Department of Conservation	Protective Management Area	Missouri
Mudpuppy Ca	State Department of Conservation	Protective Management Area	Missouri
Otter Slough Ca	State Department of Conservation	Protective Management Area	Missouri
Poplar Bluff Ca	State Department of Conservation	Protective Management Area	Missouri
Red Rock Landing Ca	State Department of Conservation	Protective Management Area	Missouri
Yokum School Ca	State Department of Conservation	Protective Management Area	Missouri
Tywappity Cl	State Department of Conservation	Protective Management Area	Missouri
Tywappity Towersite	State Department of Conservation	Protective Management Area	Missouri
Holly Ridge Na	State Department of Conservation	Protective Management Area	Missouri
Overcup Fen Na	State Department of Conservation	Protective Management Area	Missouri
Pickle Springs Na	State Department of Conservation	Protective Management Area	Missouri
Spiderlily Na	State Department of Conservation	Protective Management Area	Missouri
Stegall Mountain Na	State Department of Conservation	Protective Management Area	Missouri
Hawn State Park	Other State Land	State Park	Missouri
Johnson'S Shut-Ins State Park	Other State Land	State Park	Missouri
Lake Wappapello State Park	Other State Land	State Park	Missouri
Mudlick Mountain Na	Other State Land	Protective Management Area	Missouri
Orchid Valley Na	Other State Land	Protective Management Area	Missouri
St. Francois Mountains Na	Other State Land	Protective Management Area	Missouri
Hickory Canyons Na	Local Land Trust	Protective Management Area	Missouri
Wappapello Reservoir	Private Institution-Managed for Biodiversity	Protective Management Area	Missouri
St Mary Access	Private Institution-Managed for Biodiversity	Access Area	Missouri

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
St. John'S Bayou Access	Private Institution-Managed for Biodiversity	Access Area	Missouri
Beech Springs Na	State Department of Conservation	Protective Management Area	Missouri
Clearwater Dist Hq	State Department of Conservation	Protective Management Area	Missouri
Old Plantation Access	State Department of Conservation	Protective Management Area	Missouri
Cape Woods Ca	State Department of Conservation	Protective Management Area	Missouri
Carmichael (Mac & Zelma) Sf	State Department of Conservation	Protective Management Area	Missouri
Perry Towersite	State Department of Conservation	Protective Management Area	Missouri
Perryville Dist Hq	State Department of Conservation	Protective Management Area	Missouri
Gipsy Towersite	State Department of Conservation	Protective Management Area	Missouri
Harviell Access	State Department of Conservation	Protective Management Area	Missouri
Hawn Access	State Department of Conservation	Protective Management Area	Missouri
Felix Valle State Historic Site	Other State Land	Historic / Cultural Area	Missouri
Champion Springs Ca	State Department of Conservation	Protective Management Area	Missouri
Crane Roost Access	State Department of Conservation	Protective Management Area	Missouri
Johnson'S Shut-Ins Dolomite Glade Na	Other State Land	Protective Management Area	Missouri
Johnson'S Shut-Ins Fen Na	Other State Land	Protective Management Area	Missouri
Hunter Towersite	State Department of Conservation	Protective Management Area	Missouri
Centerville Access	State Department of Conservation	Protective Management Area	Missouri
Cowards Hollow Na	Forest Service (USFS)	Protective Management Area	Missouri
Juden Creek Ca	State Department of Conservation	Protective Management Area	Missouri
Blue Pond Na	State Department of Conservation	Protective Management Area	Missouri
Lesterville Access	State Department of Conservation	Protective Management Area	Missouri
Ringo Ford Access	Private Institution-Managed for Biodiversity	Access Area	Missouri
Seven Island Access	Private Institution-Managed for Biodiversity	Access Area	Missouri

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Sand Ponds Na	State Department of Conservation	Protective Management Area	Missouri
Commerce Access	State Department of Conservation	Protective Management Area	Missouri
Mudlick Towersite	Private Institution-Managed for Biodiversity	Protective Management Area	Missouri
Bollinger Mill State Historic Site	Other State Land	Historic / Cultural Area	Missouri
Red Star Access	State Department of Conservation	Protective Management Area	Missouri
Miller Cl	State Department of Conservation	Protective Management Area	Missouri
Southeast Regional Office	County Land	State Other	Missouri
Headwaters Access	County Land	Access Area	Missouri
Ball Mill Resurgence Na	Local Land Trust	Protective Management Area	Missouri
Haney Pond Na	Forest Service (USFS)	Protective Management Area	Missouri
Red Maple Pond Na	Forest Service (USFS)	Protective Management Area	Missouri
Wells Branch Fen Na	Forest Service (USFS)	Protective Management Area	Missouri
Greenville Ford Access	State Department of Conservation	Protective Management Area	Missouri
Botkins Pine Woods Na	Other State Land	Protective Management Area	Missouri
Lamotte Sandstone Barrens Na	Other State Land	Protective Management Area	Missouri
Bird'S Blue Hole	Private Institution-Managed for Biodiversity	Protective Management Area	Missouri
Big Oak Tree State Park	Other State Land	State Park	Missouri
Tower Rock Ca	State Department of Conservation	Protective Management Area	Missouri
Dan River Access	State Department of Conservation	Protective Management Area	Missouri
Doniphan Towersite	State Department of Conservation	Protective Management Area	Missouri
Dorena Access	State Department of Conservation	Protective Management Area	Missouri
Otter Slough Na	State Department of Conservation	Protective Management Area	Missouri
Twin Borrow Pits Ca	Private Institution-Managed for Biodiversity	Protective Management Area	Missouri
Grassy Towersite	State Department of Conservation	Protective Management Area	Missouri
James Clark Access	State Department of Conservation	Protective Management Area	Missouri

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Little Whitewater Ca	State Department of Conservation	Protective Management Area	Missouri
Maple Flats Access	State Department of Conservation	Protective Management Area	Missouri
Mussel Boat Landing Access	State Department of Conservation	Protective Management Area	Missouri
New Madrid Bend Access	State Department of Conservation	Protective Management Area	Missouri
New Madrid Forestry Office	State Department of Conservation	Protective Management Area	Missouri
Fisk Access	Private Institution-Managed for Biodiversity	Access Area	Missouri
Hilliard Access	Private Institution-Managed for Biodiversity	Access Area	Missouri
Moore (Jos Hunter) Access	Private Institution-Managed for Biodiversity	Access Area	Missouri
Wolf Bayou Ca	State Department of Conservation	Protective Management Area	Missouri
Golden Seal Na	State Department of Conservation	Protective Management Area	Missouri
Grassy Pond Na	State Department of Conservation	Protective Management Area	Missouri
Tower Rock Na	State Department of Conservation	Protective Management Area	Missouri
Kelso Sanctuary Na	State Land Board	Protective Management Area	Missouri
Hunter-Dawson State Historic Site	Other State Land	Historic / Cultural Area	Missouri
Pickle Creek Na	Other State Land	Protective Management Area	Missouri
Cape Girardeau Fairgrounds Facility	County Land	State Other	Missouri
Mingo National Wildlife Refuge - Bradley Unit	Private Conservation Land	Private Conservation Land	Missouri
Thirty-Four Corner Blue Hole	Private Institution-Managed for Biodiversity	Protective Management Area	Missouri
Trail Of Tears Radio Facility	Private Institution-Managed for Biodiversity	Access Area	Missouri
Husman Fen Na	Private Institution-Managed for Biodiversity	Protective Management Area	Missouri
Lily Pond Na	Private Institution-Managed for Biodiversity	Protective Management Area	Missouri
Block Hole Access	Private Institution-Managed for Biodiversity	Access Area	Missouri
Ozark National Scenic Riverway	Unknown	Wild and Scenic River	Missouri
Wolf Bayou Na	State Department of Conservation	Protective Management Area	Missouri
Lower Hatchie National Wildlife Refuge	Fish and Wildlife Service (USFWS)	National Wildlife Refuge	Tennessee

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Meeman-Shelby Forest Sna	State Cultural Affairs	Protective Management Area	Tennessee
Tumbleweed Wma	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Chickasaw National Wildlife Refuge	Fish and Wildlife Service (USFWS)	National Wildlife Refuge	Tennessee
Tigrett Wma	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
White Lake Refuge	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Whites Lake Wma	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Moss Island Refuge Wma	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Tigrett Wma - Jaquess	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Tigrett Wma - Mitigation 426	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Moss Island - Lecklitner	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
George L. Yarbro Wma	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Mav - Fullen	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Tigrett Wma - Mitigation 457	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Cold Creek	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Cold Creek Wma	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Sullivan - Chisholm Wetland	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Tigrett Wma - Mitigation 350	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Tigrett Wma - Mitigation 508	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Tigrett Wma - Mitigation 448	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Ernest Rice Wma	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Chickasaw-Carson	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Fort Pillow Shp	State Park & Recreation	Historic / Cultural Area	Tennessee
John Tully Wma	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Lake Lauderdale Refuge	State Fish and Wildlife	Habitat or Species Management Area	Tennessee

Sensitive Habitats			
Location Name	Owning Agency/Organization	Habitat Type	State
Lwcf07 - Blue	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Tigrett Wma - Mitigation 451	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Moss Island	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Sunk Lake Sna	State Cultural Affairs	Protective Management Area	Tennessee
Tigrett Wma - Mitigation	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Chickasaw	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Upper Mav	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Tigrett Wma - Mitigation 449	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Bogota Wma	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Tigrett - Mitigation 500	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Tigrett Wma - Mitigation 436	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Tigrett Wma - Mitigation 532	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Dot Transfer	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Reelfoot - West	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Reelfoot Spillway	State Fish and Wildlife	Recreation Management Area	Tennessee
Reelfoot - Phillipy Unit	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Ingram Tract	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Reelfoot - Black Bayou Refuge	State Fish and Wildlife	Habitat or Species Management Area	Tennessee
Reelfoot Nwr	State Fish and Wildlife	National Wildlife Refuge	Tennessee
Reelfoot Lake Sna & Wma	State Cultural Affairs	Protective Management Area	Tennessee
Lake Isom National Wildlife Refuge	Fish and Wildlife Service (USFWS)	National Wildlife Refuge	Tennessee

## APPENDIX G. NATURAL RESOURCE DAMAGE ASSESSMENT

### A. Introduction

This information is provided for EPA Regional staff and the general public as a reference tool to facilitate their understanding of the Natural Resource Damage Assessment (NRDA) process. [Natural Resource Trustees](#) conduct NRDA's to calculate the monetary cost of restoring injuries to natural resources that result from releases of hazardous substances or discharges of oil. Damages to natural resources are evaluated by identifying the functions or 'services' provided by the resources, determining the baseline level of the services provided by the injured resource(s), and quantifying the reduction in service levels as a result of the contamination. Regulations for assessing NRD have been promulgated under both CERCLA and OPA.

If natural resources are injured by a discharge or release of a mixture of oil and hazardous substances, DOI regulations apply. NOAA regulations apply only in assessing damages that may result from discharges of oil.

### B. DOI Regulations

Section 301(c) of CERCLA requires promulgation of regulations for the assessment of damages for injury to, destruction of, or loss of natural resources resulting from a discharge of oil or release of a hazardous substance. The responsibility for this rulemaking was delegated to the Department of the Interior (DOI) by the President in [Executive Order 12580](#) (January 23, 1987).

[DOI's regulations](#) provide a framework and standards for the NRDA process in coastal and marine environments (Type A) and other environments (Type B). The Type A process involves use of a computer model to assess damages, in a standard and simplified manner, that result from chemical or oil discharges in coastal and marine environments. The Type B process is used in situations that require an individual approach. Both Type A and Type B regulations call for the following four sequential phases in the assessment of damages [\[43 CFR 11\]](#):

**Phase 1: Pre-assessment Screen.** A pre-assessment screen is conducted to determine if additional action is warranted. Trustees must determine whether an injury has occurred and a pathway of exposure exists. The pre-assessment screen is a prerequisite to conducting a formal NRDA.

**Phase 2: Assessment Plan.** Trustees must confirm the exposure of [Trust Resources](#) and develop an Assessment Plan to identify how the potential damages will be evaluated. Type A Assessment Plans document that the conditions for use of the Type A procedures are met, provide the site-specific data inputs the Trustee will use to run the computer model, and provide the results of a preliminary application of the model. Type B Assessment Plans identify the site-specific studies the Trustees will conduct and quality control/assurance procedures. Draft Assessment Plans under both Type A and Type B procedures must be available for public review and comment.

**Phase 3: Assessment Implementation.** The purpose of the Assessment Implementation phase is to gather the data necessary to quantify the injuries and determine damages. The work consists of three steps: (1) injury determination, (2) quantification, and (3) damage determination. Under Type A, these steps are performed through a computer model. Under Type B, the steps are performed through laboratory and field studies. Trustees quantify injuries by identifying the functions or "services" provided by the resource, determining the baseline level of such services, and quantifying the reduction in service levels that result from the impacts.

**Phase 4: Post-Assessment.** Trustees prepare a Report of Assessment detailing the results of the Assessment Implementation phase. When Trustees use a Type A procedure, the Report will include the printed output of the final model application. A reasonable number of restoration alternatives including natural attenuation are usually proposed. A preferred alternative is selected based on several factors, including technical feasibility, relationship of costs to benefits, and consistency with response actions.

The regulations also require Trustees to coordinate the assessment efforts, including the pre-assessment screen, with the lead response agency in any situation where response activity is planned or underway at a particular site [40 CFR 11.23(f)]. The [Trustee Information and Query Report](#) provides information regarding activities underway at CERCLA sites.



## APPENDIX H. NOAA NRDA REGULATIONS

Section [1006\(e\)\(1\)](#) of OPA requires that the National Oceanic and Atmospheric Administration (NOAA) develop regulations for the assessment of NRD which may result from a discharge of oil (except for any part of oil defined as a "hazardous substance" by CERCLA).

[NOAA's regulations](#) provide a framework for conducting NRDA that achieve restoration under OPA. NOAA's natural resource damage assessment regulations include the following three phases [[15 CFR 990](#)]:

**Phase 1: Pre-assessment.** Trustees first determine whether they have jurisdiction under OPA. Then Trustees must determine whether to conduct restoration planning. Trustees determine if it is likely that the discharge has caused an injury, if response actions will adequately address the injuries, and if feasible restoration alternatives exist. If so, Trustees are to proceed with the NRDA.

**Phase 2: Restoration Planning.** This phase has two basic components: (1) injury assessment and (2) restoration selection. Injury assessment evaluates whether the discharge has resulted in an adverse change in natural resources and/or services. During the restoration selection stage, the Trustee determines the need for, and scale of, restoration actions. For injury assessments, Trustees quantify the degree and the spatial and temporal extent of the injuries in comparison to baseline conditions. Trustees must develop a Draft Restoration Plan that identifies a primary restoration action to return injured resources to baseline conditions and a compensatory restoration action to compensate for the interim loss of services pending return to baseline conditions. This involves evaluating the range of primary and compensatory restoration alternatives, selecting and justifying a preferred alternative, and preparing the plans. The regulation identifies six specific criteria that must be used to evaluate restoration alternatives. The public must be given the opportunity to comment on the Draft Restoration Plan.

**Phase 3: Restoration Implementation.** The Final Restoration Plan is presented to responsible parties for implementation, or to fund the Trustees' costs for implementation.

Trustees must coordinate their activities with other Trustees, response agencies, and responsible parties when operations are conducted concurrently [[15 CFR 990.14](#)]. Trustees may develop pre-incident memorandums of understanding (MOUs) to more efficiently coordinate their activities with response agencies [[15 CFR 990.14\(b\)](#)].

<http://www.epa.gov/superfund/programs/nrd/nrda2.htm>

**APPENDIX I. CORRECTIONS AND UPDATES FORM**

Corrections, updates or suggested additions to the Great Rivers Sub-Area Contingency Plan (GRSACP) should be provided to the EPA Region 7 Emergency Response and Removals (ER&R) program. Because the OSC responsible for this specific plan will change with the passage of time, written changes should be addressed to the address indicated below. If there are questions, the name of the current OSC for the Great Rivers Sub-Area can be obtained from the Chief of the ER&R program: 800-223-0425. Please complete the following information to effect a change in the Sub-Area plan:

Page # of the plan: \_\_\_\_\_

Section and subsection numbers of the paragraph to be changed: \_\_\_\_\_

Other description: (e.g., third sentence, in second full paragraph on page:) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Corrections or suggested changes: \_\_\_\_\_

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\_\_\_\_\_  
\_\_\_\_\_

Send to:

On-Scene Coordinator for the Great Rivers Sub-Area Contingency Plan  
Emergency Response & Removals Program  
U.S. Environmental Protection Agency  
11201 Renner Blvd  
Lenexa, KS 66219

Changes can also be emailed to EPA On-scene Coordinator (OSC) Heath Smith at [smith.heath@epa.gov](mailto:smith.heath@epa.gov); however, it is recommended that a particular OSC's involvement with the Sub-Area be verified before submitting corrections or additions to them, because responsibilities are subject to change.

**APPENDIX J GREAT RIVERS SUB-AREA SPILL NOTIFICATION**

