

**U.S. Fish and Wildlife Service  
Region 1  
Environmental Contaminants Program  
Strategic Plan**

# The Environmental Contaminants Program Essential to the Mission of the U.S. Fish and Wildlife Service

## I. Introduction

The U.S. Fish and Wildlife Service (Service) is responsible for conserving, protecting and enhancing fish, wildlife, and plants and their habitats for the continuing benefit of the American people. These include migratory birds, federally listed species under the Endangered Species Act, Service-managed lands, fishes that migrate between freshwater and marine habitats, fish that are found in boundary waters, and some marine mammals. Congress has legislated broad, as well as specific, Service responsibilities and authorities (Appendix A). These statutes include authority to: evaluate and protect natural resources; conduct investigations necessary to determine the effects of contaminants on fish, wildlife, and their habitats, as well as to report and make recommendations to Congress; restore trust resources injured by petroleum and other hazardous materials spills or releases; and maintain the biological integrity, diversity, and environmental health of the National Wildlife Refuge System.

Environmental contamination is a significant cause of injury and impairment to many of our nation's fish and wildlife and their habitats. Media and scientific reports throughout the country regularly report on fish and bird consumption advisories, oil spills, hazardous waste sites, fish and wildlife die-offs, and other contaminant-related issues. The Environmental Contaminants (EC) Program strives to prevent, identify, and reduce contaminant impacts and works cooperatively with others to restore affected habitats.

## II. EC Program Mission

*"Conserve, protect, and enhance fish, wildlife and their habitats by identifying, preventing, and restoring the effects of contaminants through collaboration with other Federal, Tribal, State, and local agencies as well as our partners in the academia, industry, and the public."*



*EC program biologists working with the public to restore intertidal mudflats, saltmarsh, and a riparian habitats at the Squally Beach site in Commencement Bay, WA. Commencement Bay has been severely impacted by years of urbanization. Federal, State, and Tribal natural resource trustees have negotiated settlements with potentially responsible parties using the natural resource damage assessment process under the Superfund Law or CERCLA. These settlements are being used to restore affected habitats.*

## III. Region 1 EC Program Vision Statement

The Region 1 EC Program works with others to build a legacy of healthy fish and wildlife and their habitats free from adverse impacts of environmental contaminants. We emphasize the prevention of contamination

when possible; and then identify and remove threats of pre-existing and ongoing environmental contamination; and finally restore natural resources injured by contaminants in cooperation with our partners and co-trustees. We will ensure that our contributions and accomplishments are understood and supported by our managers, conservation partners, and the public through outreach efforts.



*Pacific Northwest sturgeon are being evaluated for contaminants by the EC Program and our partners, in the upper and lower Columbia River.*

A basic premise of the EC Program is to share expertise and work cooperatively with others. The EC Program is unique within the Department of the Interior (DOI) in focusing on fish and wildlife resource contaminant issues and ensuring the conservation of Trust resources. Our expertise complements that of the U.S. Environmental Protection Agency (EPA) and related State agencies whose primary concern is human health.

#### **IV. EC Sources and Threats**

##### **The Modern Chemical Revolution**

Throughout history, as human populations expand and develop new technologies, the quantity and diversity of waste materials and pollutants released to the environment has increased (Table 1). Contaminants such as mercury, radionuclides, and DDT are

persistent in the environment for decades to centuries.

As with other human activities, the use and disposal of toxic substances can have unintended consequences such as:

1. Pesticides can inadvertently harm non-target species, and repeated exposure increases pesticide resistance in target organisms;
2. Contaminants can lead to species declines, and contribute to the listing of threatened and endangered species;
3. Contamination of food and water supplies affect human consumption;
4. Releases of new chemicals into the environment without knowing the long term consequences can have a profound impact on natural resources;
5. Pollutants can cause indirect effects to fish and wildlife by diminishing the food supplies on which they depend;
6. Uptake of toxic chemicals through the food web can result in direct mortality and reduced reproduction causing population declines; and
7. Contaminants increase stress to fish and wildlife species making them more susceptible to disease and predation.

The EPA documented in 2006, more than four billion pounds of toxic substances were released to the land, water, and air in the United States. Additionally, more than five billion pounds of pesticides are used worldwide each year; with 1.2 billion pounds used annually in the United States alone.

Factors associated with climate change could cause some of these contaminant problems to increase, e.g., more intense storms may increase spills from ships, storage areas, or pipelines, and increasing sea levels may enhance erosion and/or leaching of contaminants from landfills/dumps.

### Table 1. Current Environmental Contaminant Challenges

- 77,000 known hazardous waste sites nationwide.
- 80 percent of known hazardous waste sites are in, adjacent to, or drain into wetlands.
- 34,000 oil and hazardous substance spills occurred in the US in 2004, and that figure is not atypical.
- 136 million pounds of toxic chemicals are discharged each year into waterways.
- 14 million acres of lakes and 846,000 miles of rivers and streams have fish consumption advisories.
- 41 Service management units (NWRs, Waterfowl production areas, and etc.) have consumption advisories for fish, shellfish, or wildlife.
- 67 million birds are estimated to die from pesticide poisoning each year.
- 20 percent of the Nation's endangered and threatened species are imperiled at least in part because of pollutants.
- Inter-sex characteristics and endocrine disruption is becoming common in fish and wildlife.

### V. Region 1 EC Program Organization

Region 1 is responsible for Service conservation efforts within the boundaries of Washington, Idaho, Oregon, Hawaii, and the U.S Pacific Trust Territories (Map 1 ).

The EC Program is present in Ecological Services Fish and Wildlife Offices (FWO) in Region 1, including:

*Lacey, Washington (Washington FWO and sub-office in Spokane, WA);*

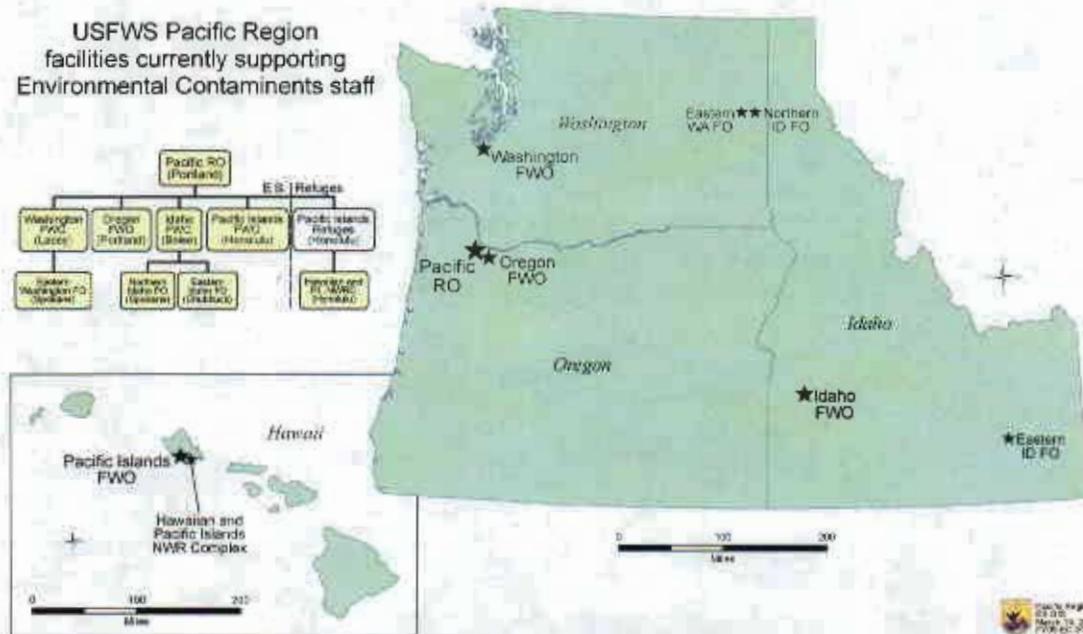
*Boise, Idaho (Idaho FWO and the sub-offices of Chubbuck, ID and Spokane, WA);*  
*Portland, Oregon (Oregon FWO);*

*Honolulu, Hawaii (Pacific Islands FWO and Hawaiian and Pacific Islands National Wildlife Refuge Complex Office); and the*

*Regional Office (RO) in Portland Oregon.*

The RO EC Program works closely in the RO with the Refuge Supervisors, Integrated Pest Management Coordinator, Realty; the

USFWS Pacific Region facilities currently supporting Environmental Contaminants staff



Regional Environmental Compliance Coordinator in the Division of Engineering, and the Division of Budget, as well as colleagues in Fisheries, Migratory Birds, Law Enforcement, and External Affairs.

In general, each field office and the RO have base funding to employ approximately one full-time equivalent (FTE). Additional capability is frequently garnered through reimbursable funding from Service funding sources, the DOI Natural Resource Damage Assessment (NRDA) Restoration Fund, and funding opportunities with partners and customers. The field offices generally conduct: on-the-ground investigations; review projects/permits; provide recommendations through technical assistance; conduct NRDA's in coordination/cooperation with co-trustees and responsible parties; and engage in outreach activities. The RO staff provides support for the field offices, inform and coordinate with RO managers about EC Program issues, develop regional guidance, and develop and allocate budgets.

#### **A. Prioritization of Our Work**

Throughout the region the EC Program selects actions to pursue based on application of two qualitative tiers of criteria:

1. **Threshold criteria** to determine if a potential action should be considered further, and
2. **Prioritization factors** to determine if the action should be pursued relative to other on-going and potential activities.

**Threshold Criteria:** EC Program actions address one or more of the following threshold criteria:

1. **Trust Resources:** Does the potential action address the needs of Service lands;

threatened or endangered species; migratory birds; priority fish, wildlife, and plant species for Region 1; or supporting habitats that have a direct and substantive connection to trust resources?

2. **Statutory Mandate:** Is the potential action supported or required by Federal statute, regulation, or policy?
3. **Tribal Trust Responsibility:** Does the potential action facilitate the DOI's fiduciary and other responsibilities to assist tribal fish and wildlife resource management?

Potential actions that do not address any of these threshold criteria are not necessarily precluded and may be addressed at the request of our partners or the public. However, those actions that address at least one of the threshold criteria are generally given greater consideration.

**Prioritization Factors:** When a potential EC Program action meets at least one of the threshold criteria, the priority of action relative to other actions are generally determined at the Field Office level based on the following prioritization factors:

1. **Prevention:** The extent to which the action contributes directly to prevention of future contaminant impacts.
2. **Resource Management and Regulatory Decisions/Value-Added:** The extent to which EC Program involvement influences the final management action or decision to benefit fish and wildlife resources.
3. **Cost Effectiveness:** Consider the benefit to trust resources and/or Service priorities relative to the investment (e.g., funding, staff time, etc.) necessary to implement the action.

Our capacity to address potential work based on our threshold criteria are dictated by the staff available in our field offices. There has always been more work than staff can accomplish, hence, if we are addressing at least one or more of the threshold criteria and have staff, available our priority work is weighted by:

1. Addressing on-going EC cases, which meet Service priorities and are supported by budget and current year funding;
2. We determine caseloads that involve our partners and interested agencies. For instance, our co-trustees have indicated that it is important to maintain the conservation partnerships that are formalized in our on-going NRDA and restoration cases. EC issues are often complex combining our efforts helps the EC program and our partners to be cost-effective, efficient, and successful in conserving natural resources.

Being a good intra- and interagency partner in our on-going resource management decisions requires visibility and credibility. We want to be visible and available for partner needs, especially those related to decisions that benefit fish and wildlife resources. This helps to anticipate and prevent contamination and future impacts to the trust resources.

### **B. Contaminant Source Maps**

To better focus our priority work, the R1 EC Program has developed a series of State maps for Water Contaminants Issues, Active and Inactive Mines, and Land and Air Contaminants Issues (Appendix B). We hope to build on this information for Pacific Island areas outside of Hawaii, such as American Samoa and Guam. These maps assist both our biologists and our partners to determine if

contaminants are a factor when conducting conservation actions. These maps will strategically focus efforts on areas where contaminants most likely co-occur with our trust resources and our partners' interests. The Service has several ongoing efforts to prioritize work in ecosystems of concern such as our concepts related to Strategic Habitat Conservation. The Region 1 EC program has chosen to be a source of information and technical assistance for other Service programs, and allows them to prioritize their work based on contaminant sources and effects together with other factors.

### **Contaminants Source Map Example: Oregon Chub Restoration**

There are cross-program efforts to restore listed Oregon chub populations in the Willamette Valley of Oregon. The contaminant source maps (Appendix B) indicate that there are fish consumption advisories and water quality problems in the Willamette River. The abandoned and active mining map indicates there is a cluster of mines in the headwaters of the coast fork of the Willamette River. By supplementing cross-program focused efforts to recover this species, EC-related information can be used to identify mercury as a potential contaminant of concern and help prioritize recovery and/or restoration efforts for the Oregon chub to maximize the likelihood of success. In this case, areas directly influenced by the coast fork of the Willamette River may be a less desirable recovery/restoration area than other sites in the Willamette Valley. Additionally, mines in the headwaters of the coast fork of the Willamette River may be areas to concentrate working with our Federal, State, and Tribal co-trustees to document injuries and determine damages for supporting another venue of habitat restoration.

## C. Goals, Objectives, and Strategies

Our guiding principles, priorities, and goals, objectives, and action strategies are used to help develop each office's Annual Work Plan. Individual staff work plans are based on our Program's mission, strategic plan, and priorities as part of the national DOI and FWS Operational Plans.

### Regional Collaboration

R1 EC biologists collaborated on regional goals and objectives for the strategic plan. We present goals with objectives and actions required to meet the intent of the strategic plan. Where possible, success measures for the next 5 years were also created to monitor our success in meeting these goals and objectives through our actions.



*Washington FWO's Environmental Contaminants biologist Cindy Schexnider is working with multiple partners on an off-refuge contaminants investigation. Here Cindy is conducting a swan health evaluation and attaching a radio collar to determine the source of lead shot contamination which is causing significant bird mortality events in Northwest Washington and southwest British Columbia.*

### GOAL 1. Prevention

**By preventing the release of contaminants, the considerable costs of investigation, cleanup, and restoration and associated**

**effects are avoided making prevention the most cost effective and effective option available.**

*"We can still alter our course. It is not too late. We still have options. We need the courage to change our values to the regeneration of our families, the life that surrounds us." ~Chief Oren Lyons*

### Identifying Priorities

The Region 1 EC Program and staff are committed to working with our partners in areas of geographic importance on work that has been carefully considered and focuses on our trust resources. We will use modern technology to convey information and successes with to a larger audience. Our level of communication will be amplified by our partners in a way that allows us to be

lible, efficient, and effective. We will use our skills, education, and experience to provide technical assistance that is useful for our partners and provides the best advice for our trust resources that may be impacted by contamination. We will use all possible tools, including regulatory authorities, to prevent contaminant-related impacts to fish, wildlife, and their habitats.

**Objective 1.1:** Identify and address local and regional environmental contaminant issues.

*Action 1.1.1* – Identify and prioritize contaminants of concern with known effects to species and their habitats, and identify emerging contaminant concerns such as PBDEs and endocrine disrupting chemicals for additional evaluation.

*Action 1.1.2* – Identify and coordinate with other Service Programs to target contaminant issues that could affect priority trust resources, such as documenting migratory bird nesting areas for oil spill response plans.

*Action 1.1.3* – Identify common interests and initiatives with other Federal, State, and Tribal agencies and public entities to achieve common goals. This includes conserving State species of concern, as well as restoration of key habitats, such as restoration of eelgrass beds in Puget Sound.

*Action 1.1.4* – Provide information and actions to the public and other agencies from Integrated Pest Management (IPM) and NRDAR EC databases managed by the Washington Office and post regional information on the intranet.

**Strategic Plan Success Measures**

1. Maintain or increase contaminant investigations related to emerging contaminants concerns.
2. Maintain or increase intra-agency partnerships to prevent contaminant issues from arising in trust species habitats.
3. Maintain or increase public awareness and information.

**Objective 1.2:** Communicate with Federal, Tribal, State, and local agencies with authorities for regulating contaminants to ensure they have the information they need to fully utilize their authority to protect fish, wildlife, and their habitats. Examples include coordinating with EPA on regional State water quality standards, exchanging interest in natural resource issues for hazardous waste sites with the States and EPA, and coordinating efforts with other agencies regarding reducing inputs of toxic materials in the Columbia basin.

*Action 1.2.1* – Proactively work with Federal and State regulatory agencies at the policy and regulatory review levels,

and on specific projects of common interest.

Sub-activity 1.2.1.1 Establish and maintain proactive coordination with stakeholders.

*Action 1.2.2* – Pursue opportunities using existing relationships.

**Strategic Plan Success Measure**

Develop a database documenting existing and new approaches with Federal, State, Tribal, and local agencies,

**Objective 1.3:** Work with other Service programs to prevent release of environmental contaminants and minimize the adverse effects of contaminants already in the environment on Service trust resources.

*Action 1.3.1* – Provide technical assistance to other Service programs, and Federal, State, Tribal, and other entities to prevent the release and minimize the adverse effects of contaminants on Service trust resources. This includes assistance on Federal projects including dredging activities, water quality issues, preacquisition surveys, and mining.

*Action 1.3.2* – Utilize and populate the national IPM and Pesticide Use Proposal (PUPs) database for contaminant concerns when requested by Refuges, National Fish Hatcheries, and other programs addressing pest control issues.

*Action 1.3.3* – Prevent and minimize the impacts of contaminants of concern by recommending Best Management Practices (BMPs) for storm water, pesticide use, and other issues on species of conservation concern, including pollinators and other non-target species.

### Strategic Plan Success Measure

Number of technical assistance requests responded to by contaminants staff in the region.

**Objective 1.4:** Develop and maintain a regional/local spill response network as well as spill response capabilities to foster partnerships and increase efficiencies in responding to large-scale spills and releases.

*Action 1.4.1* – Identify, secure, and maintain funding for a regional Spill Response Coordinator and for pre-planning efforts.

*Action 1.4.2* – Designate and train regional and field office personnel in spill response and the Incident Command System for a regional Response Team.

*Action 1.4.3* – Develop contingency plans and training for refuges, hatcheries, and other Federal lands.

### Strategic Plan Success Measures

Focus on contaminant issues related to areas in the region, which are important to Service divisions and our other partners.

Number of technical assistance requests by intra and inter-agencies responded to.

Number of responses to chemical and oil spills in Region 1, including responses for training and preparedness.

## GOAL 2. Restoration

### Restoring injured trust resources and their habitats

*“When we see land as a community to which we belong, we may begin to use it with love and respect.” ~Aldo Leopold*



*When the New Carissa foundered off Oregon shores, dispersing oil, EC and other staff from the Oregon FWO worked effectively and efficiently with the Coast Guard and other agencies to provide accurate injury data for trust resources, such as the marbled murrelet and snowy plover in 1999. This oil spill occurred in our coastal focal area. Assessment led to settlement. Ongoing restoration has led to partnerships with the Siletz Tribe and the Oregon Coast NWR Complex.*



*Photo courtesy of NOAA.*

## **Natural Resource Damage Assessment and Restoration (NRDAR)**

As identified in Objective 1.4, EC biologists are the Service's lead responders when spills or other releases of oil or hazardous substances occur. They provide the biological and technical expertise to prevent additional injuries to natural resources. After response and cleanup actions are started, injuries are assessed and through the NRDA process restoration of injured fish and wildlife resources can occur. The NRDA regulations promulgated under CERCLA (43 CFR 11) and OPA (15 CFR 990) and the Clean Water Act (CWA) set the criteria for determining injuries and damages when contaminants or oil have been released into the environment. Work on these activities is conducted in coordination, collaboration, and communication with other Federal, Tribal, and State trustees, and the private sector.

### **Regional Alignment with National Goals**

The National EC Program has prioritized achieving results through restoration from NRDAR activities for the national strategic plan. Region 1 is aligned in this goal through three categories of actions including:

1. Identifying restoration actions for injured species and their habitats with Service partners and co-trustees;
2. Identification and implementation of restoration activities through the process of assessment, settlement, and restoration; and
3. Facilitating the restoration process by working with other Service Programs that are directly responsible for the resource (e.g., Refuges, Migratory Bird Management, Endangered Species,

Coastal Program, Partners for Fish and Wildlife Program, and Fisheries Resource Offices).

### **Restoration Success**

The NRDAR process often leads to significant restoration of trust resources and rewarding partnerships across the country. EC biologists focus on viable restoration options when engaging in a natural resource damage assessment. After assessing the injury and a settlement is achieved, the next step is to restore the damaged resource(s). Our Strategic Plan for Region 1 focuses on:

1. Planning and implementing restoration activities on current cases;
2. Completing and monitoring the restoration projects associated with settled cases; and
3. Pursuing new cases involving injury to Service trust resources.

**Objective 2.1:** Identify opportunities for restoration of fish and wildlife and their habitats through the Natural Resource Damage Assessment and Restoration (NRDAR) process.

*Action 2.1.1* – Increase collaboration, coordination, and communication with co-trustees, other partners, and the public to identify potential restoration opportunities, during the initiation of the NRDAR process.

*Action 2.1.2* – Prioritize restoration and recovery efforts, according to the Region's geographic focus areas and species identified by other Service programs where appropriate.

*Action 2.1.3* – Develop larger-scale restoration projects incrementally by combining smaller NRDAR settlements where feasible and appropriate.

*Action 2.1.4* – Provide focus area information to the Washington Office (WO) Division of Environmental Quality (DEQ) to be published in a national internal database.

**Strategic Plan Success Measures:**

1. Identify and describe the restoration needs associated with each NRDAR project.
2. Prioritize, and conduct restoration projects identified.
3. Publish Regional prioritization of restoration projects on the national internal database.

**Objective 2.2:** Restore and recover trust resources, using NRDAR settlement funds resulting from cases associated with CERCLA, CWA, and OPA.

*Action 2.2.1* – Provide input to DEQ to develop criteria for milestones in the NRDAR process to be measured in a nationally standardized manner and documented on an annual basis.

*Action 2.2.2* – Use effective communication and collaborative processes to resolve restoration issues and to expedite the implementation of restoration projects.

*Action 2.2.3* – Contribute to the development of a national directory of environmental contaminants and restoration experts to expedite planning and implementation of NRDAR.

*Action 2.2.4* – Coordinate with other Service programs in the development and implementation of NRDAR-related restoration projects to ensure the most important habitats and species are restored.

*Action 2.2.5* - Develop a restoration database that is accessible for our field offices, partners, and the public.

**Strategic Plan Success Measures:**

1. Develop regional budget milestones to show NRDAR accomplishments on an annual basis.
2. Identify and categorize NRDA restoration projects successfully implemented each year in the database.
3. Identify and publish a Directory of Contaminant Experts for use in field contaminant operations.

**Objective 2.3:** Identify and integrate restoration and recovery opportunities in collaboration with external partners and other Fish and Wildlife Service programs.

*Action 2.3.1* – Collaborate with Federal, State, and local agencies, Tribes, other partners, and the public to identify potential non-NRDA restoration and recovery opportunities, authorized under various Acts, laws, rules and regulations including FWCA, FWPCA, ESA, MBTA, MMPA, RCRA, and FIFRA.

*Action 2.3.2* – Collaborate with EPA to identify potential restoration and recovery opportunities authorized under various acts and laws such as CERCLA, FWPCA, ESA, RCRA, and FIFRA.



*The Coeur d'Alene natural resource damage assessment of our trust resources, led to a successful partnership with the Environmental Protection Agency and the public in ecological remediation of contaminated areas that affected tundra swans and other trust resources. We are now in the process of restoring areas such as the Schlepp property featured above to provide refuge and clean wetlands for this species.*

*Action 2.3.3* – Provide technical assistance to our internal and external partners leading to the restoration and recovery of the highest priority trust resources and their habitats.

*Action 2.3.4* – Prioritize geographic focus areas and species identified by other Service programs, as appropriate, to restore and recover Federal trust resources.

#### **Strategic Plan Success Measures:**

1. Record the following information on an annual basis in budget reports:
2. Total area of potential restoration and recovery actions identified.
3. Total area of restoration and recovery projects completed with the technical assistance of the EC Program.
4. Number of consultations and technical expertise provided to other Service programs.
5. Number of consultations and technical expertise provided to other Service programs that lead to restoration and recovery actions.

6. Number of problems related to identified contaminants and their potential to cause adverse biological effects on fish and wildlife and their habitats.
7. Number of investigations which identify contaminants effects on fish and wildlife, leading to restoration and recovery.
8. Prioritize Regional restoration projects with clear delineation of the criteria for prioritization.
9. Provide annual data synthesis of NRDAR activities.
9. Publish data synthesis results in national NRDAR database.

#### **GOAL 3 Science**

**Producing and using high-quality scientific data to make management decisions.**

*“Science is simply common sense at its best that is rigidly accurate in observation and merciless to fallacy of logic.” ~ Thomas Huxley*

### **Data Analyses and Peer Review**

EC biologists conduct investigations, evaluate contaminant injuries, and provide direct technical assistance in support of management actions throughout the Service. By conducting field and laboratory investigations, the Service maintains its high technical expertise and ability to collect timely and reliable scientific data on contaminant threats and effects, as they arise.

The EC Program collects, analyzes and reviews scientific data under a strict peer review process, using standard operating procedures and QA/QC measures. Many of these investigative studies are used to develop natural resource damage assessments and to support restoration efforts. Scientifically-credible data are readily available for decision-makers and fish and wildlife managers. Investigations provide EC Biologists early detection of on-going injury to fish and wildlife habitats, resulting in their ability to recognize adverse changes such as those caused by contaminants. It is a priority in this strategic plan to continue developing the ecological benchmarks and thresholds for our trust species and their habitats, in order to provide logical and infallible analyses that can hold up under the scrutiny of litigation when these resources are injured.

### **Our Unique Collaborative Approach**

We do not create solutions in a vacuum. Environmental contaminants investigations place the EC biologist in direct contact with land managers, land owners, resource users, partners, other stakeholders and the public out "in the field" ensuring a collaborative approach when developing solutions to fish and wildlife management problems. The complexity and scope of issues related to environmental contaminants require EC Biologists, in partnership with other agencies

and organizations, to conduct in-depth scientific investigations.

Integrated Science Example-DOI National Irrigation Water Quality Program Monitoring.

#### **Example:**

From 1985 to 2004, the Service participated in DOI's National Irrigation Water Quality Program and worked with the U.S. Bureau of Reclamation, U.S. Bureau of Indian Affairs, and the U.S. Geological Survey to investigate and address irrigation-induced contaminant problems on National Wildlife Refuges and other migratory bird and endangered species management areas in the Western United States. Throughout this effort, the EC Program provided nationally-recognized expertise in contaminants associated with irrigation water, such as selenium and other trace elements.

**Objective 3.1:** Develop and use the EC Program's expertise to acquire and collect data that are legally defensible and scientifically credible.

*Action 3.1.1* – When available and applicable, use standardized environmental contaminants protocols, QA/QC, and standard operating procedures (SOPs) to support the collection and analysis of legally and scientifically credible data.

*Action 3.1.2* – When appropriate, develop or adopt scientifically valid procedures for data collection.

*Action 3.1.3* – Apply appropriate data quality objectives and ensure that they are met by the laboratory.

*Action 3.1.4* – When applicable, use the Analytical Control Facility (ACF) to provide high quality and reliable analytical services for the EC Program.

### Strategic Plan Success Measures

1. Publish regional ACF guidance, SOPs, etc. on the Service intranet.
2. Publish regional EC data quality guidance on the Service intranet.

**Objective 3.2:** Complete environmental contaminants investigation data interpretation and reports to ensure that scientific information is available for management decisions.

*Action 3.2.1* – Work with managers (project leaders) to prioritize workload to facilitate prompt completion of EC reports.

*Action 3.2.2* – Convey scientific information to decision-makers as appropriate throughout the investigation process so management actions can be taken in a timely manner.

*Action 3.2.3* – Develop recommendations for ecological benchmarks and contaminant effects thresholds used by the EC Program

*Action 3.2.4* – Conduct independent scientific peer review of environmental contaminants investigation reports.

*Action 3.2.5* – Update peer review process for investigation reports as needed.

*Action 3.2.6* – Use information from scientific investigations for follow-up efforts to protect trust resources.

*Action 3.2.7* – Maintain an electronic database of regional EC investigation reports.

### Strategic Plan Success Measures

1. Post updated scientific protocol for peer review on intranet.

2. Identify screening ecological benchmarks and thresholds for scientific investigations conducted by EC Program staff.

**Objective 3.3:** Provide technical assistance and/or the collection and interpretation of scientific information to support specific management needs or actions.

*Action 3.3.1* – Apply one or more of the following criteria in order to determine relevance of technical assistance requests and/or investigations:

**Trust Resources:** addresses needs of Service lands; federally threatened and endangered species (Endangered Species Act); migratory birds (Migratory Bird Treaty Act); interjurisdictional fisheries; Regional resource conservation priorities (RRCPs) or conservation focus areas – priority fish, wildlife, and plant species; or indicator (or surrogate) species that will have a direct and substantive connection to trust resources and/or RRCPs.

**Tribal Trust Responsibility:** facilitates the DOI's fiduciary responsibility to assist tribal fish and wildlife resource management.

**Statutory Mandate:** required by Federal statute, regulation, or policy (e.g. Fish and Wildlife Coordination Act 16 U.S.C. §§ 661-667e, March 10, 1934, as amended).

**Management Action:** scientific information is needed to prevent contaminant impacts or restore impacted resources.

*Note: Technical assistance and/or investigations that do not address any of these criteria may still be important and are not automatically precluded. However, when faced with the choice of addressing several requests, emphasis is to be placed on those that meet these criteria.*

*Action 3.3.2* - Clearly communicate scientific results to management in a way that relates directly to trust resource effects and management objectives, enabling them to make effective management decisions.

*Action 3.3.3* - Clearly communicate to stakeholders how contaminants affect

FWS trust resources, to inform the stakeholder decision making process.

*Action 3.3.4* - Seek opportunities to collaborate with other FWS programs to identify EC issues as they affect listed species, recovery actions, migratory birds, fisheries, NWR lands, and restoration efforts.



*Staff from the WWFOW collaborate with community partners to help restore Elliot Bay/Duwamish River restoration projects.*

#### **Strategic Plan Success Measures**

1. Percent of environmental contaminant investigations with data and initial interpretation provided to decision-makers per year.
2. Percent of environmental contaminant investigations with final reports completed or published and provided to decision-makers per year.
3. Identify and publish a directory of environment contaminants experts for use

field contaminant operations (See Objective 2.2).

4. Number of episodic fish and wildlife die-offs investigated per year that lead to restoration and recovery.
5. Develop a protocol for posting documents.
6. Post published EC Program investigation reports on the Service's intranet.
7. Upgrade ECDMS.
8. Add bioassays, non-routine analyses, and other toxicological methods to ACF capability.

#### **GOAL 4. Outreach**

##### **Increase the visibility and credibility with our partners and the public**

*"Coming together is a beginning. Keeping together is progress. Working together is success." ~Henry Ford*

The RI EC Program is a service-oriented program. We are committed to increasing the visibility of the EC Program and training our employees as stewardship leaders for the Service and our communities. Our EC leaders will increase their visibility inside and outside the Service. We will lead contaminants issues by collaborating with partners, listening to their needs, and provide thoughtful feedback and ideas for efficiency and effectiveness.

**Objective 4.1:** Develop and implement performance measures to determine EC program efficiency and effectiveness.

*Action 4.1.1* -Review and recommend revisions to FWS operational plan performance standards.

*Action 4.1.2* - Annually monitor and evaluate regional and FWO progress.

*Action 4.1.3* -Manage EC funding to maximize performance.

*Action 4.1.4* -Provide recommendations and feedback to WO for budget decisions.

*Action 4.1.5* -Develop clear, concise, and consistent definitions of performance measures.

### **Strategic Plan Success Measures**

1. Formulate new performance measures indicate EC program is efficient and effective.
2. Increased the number of recommendations are utilized by WO.
3. Field offices are able to complete a higher number of accomplishments.

**Objective 4.2:** Develop and improve long-term partnerships with agencies, Tribes, NGOs, industry, and FWS programs to foster collaborative strategies.

*Action 4.2.1* -Work with FWS programs and other partners to leverage funding/partnerships/expertise to attain conservation goals.

*Action 4.2.2* -Identify and participate in local, regional, and national conservation-focused efforts and events.

### **Strategic Plan Success Measures**

1. Increase and maintain long-term partnerships with agencies, Tribes, NGOs, industry, and Service programs increase.
2. Increase number of collaborative restoration projects.

**Objective 4.3:** Collaborate and share information with our internal and external partners.

*Action 4.3.1* -Identify and use regional EC program Outreach Coordinators to disseminate EC materials.

*Action 4.3.2* -Develop EC outreach techniques/tool using FWO Information and Education to help develop and disseminate EC materials on the web/ internet.



*Staff from the Snake River FWO work with girl scouts to monitor snail populations at 1000 Springs, Idaho.*

*Action 4.3.3* -Develop outreach for RO and FWO.

*Action 4.3.4* -Educate other FWS programs and senior management about EC importance and accomplishments.

*Action 4.3.5* -Develop and post a regional internet list of EC investigation reports and NRDA outcomes.

*Action 4.3.6* -Establish outreach materials that are accessible to multiple users.

*Action 4.3.7* -In coordination with external affairs, brief congressional staff of EC program.

*Action 4.3.8* - Develop outreach partnerships to highlight the link between healthy habitats, people, and the economy through the "Connecting People to Nature Initiative."

*Action 4.3.9* -Work with other Service programs to integrate EC activities.

#### **Strategic Plan Success Measures**

1. Increase in funding from Congress for Region 1.
2. Openness and acceptance of the Regional Environmental Contaminants program.
3. Development of new partnerships for NRDA and restoration.
4. Development of partnerships that link people and children to nature.
5. Region develops internet and intranet pages for R1 EC program.

#### **GOAL 5. Workforce**

##### **Maintain and support an adequately-sized, technically capable workforce.**

*"If facts are the seeds that later produce knowledge and wisdom, then the emotions and the impressions of the senses are the fertile soil in which the seeds must grow."* ~Rachel Carson

#### **Qualified Workforce**

The EC Program will continue to optimize its human resources capability by aligning itself with the Service's and DOI's strategic goals, balancing workforce components and

workloads, and maintaining workforce competencies. To fully meet its potential for protecting trust resources, the EC Program relies on a broad range of professionals with varying degrees of skills and expertise in environmental ecology, physiology, zoology, and toxicology. Our strategic goals can only be realized with a highly qualified, diverse, and capable workforce.

#### **Maintaining a Trained Workforce**

The field of environmental contaminants is technical and complex. EC biologists must be trained, equipped, and supported in order to perform their jobs competently and safely, often under demanding physical conditions, and to keep current with the constantly expanding science of environmental contaminants.

##### **Objective 5.1: Staff field offices at adequate levels to effectively meet the EC Program's and Service's goals and objectives in fish and wildlife conservation.**

*Action 5.1.1* – Increase regional support for the EC Program's by illustrating values added to each of the Service programs and our mission.

Region 1 EC Program will identify and pursue funding to support adequate staffing levels, training, investigations, prevention efforts, and restoration projects.

*Action 5.1.2* –Region 1 will participate in national funding justification requests to incorporate into budget initiatives to DOI and Congress.

*Action 5.1.3* – Explore and implement reimbursable funding opportunities to meet Field Office funding needs.

*Action 5.1.4* – Develop regional workplan in relation to Regional Office and Field Office activities.

*Action 5.1.5* – Develop Field Office staffing needs for EC program performance targets to meet program and Service goals and objectives.

1. National training attended every other year and regional training provided and attended in alternate years.
2. Develop regional EC blog and index.
3. Maintain and improve employee skills through training and development.
4. Support staff membership in professional societies and attendance to professional meetings and workshops.

**Strategic Plan Success Measures:**

1. At least one budget initiative related to our needs will be developed each fiscal year.
2. Develop one or more possible alternative funding structures for reimbursable projects.

**Objective 5.2: Provide employees with opportunities to maintain technical and scientific competencies needed to maintain and improve professional achievement, advancement, and recognition.**

*Action 5.2.1* – Support attendance at national and regional EC and NRDAR programs, workshops, and classes to provide training and technical information exchange.

*Action 5.2.2* – Provide staff opportunities for cross-training.

*Action 5.2.3* – Participate and communicate with NCTC on EC Program needs.

*Action 5.2.4* – Support staff membership, sponsorship, and attendance at professional meetings and workshops.

*Action 5.2.5* – Create a Regional EC blog with a search engine for past topics.

**Strategic Plan Success Measures:**

## Appendix A: Environmental Contaminants Mandates

The Nation's major conservation laws (e.g., the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, the Endangered Species Act, the Fish and Wildlife Act of 1956, the Fish and Wildlife Coordination Act of 1958, and the National Wildlife Refuge Administration Act) provide for the Service's authority to evaluate and to conserve our natural resources. The National Wildlife Refuge Improvement Act of 1997 requires that the Secretary of the Interior maintain the biological integrity, diversity, and environmental health of the Refuge System. The EC Program supports these goals in many ways; conducting on-refuge contaminants investigations, through refuge cleanup projects, overseeing remedial efforts conducted by responsible parties on Service lands, conducting refuge-scale contaminants evaluations using the Contaminant Assessment Process (CAP), by conducting pre-acquisition surveys, by responding to spills on Service lands, and by providing integrated pest management expertise to the Refuge System.

The Fish and Wildlife Coordination Act (Section 665) authorizes the Service to conduct investigations necessary to determine the effects of pollution on fish and wildlife and their habitats and to report and make recommendations to the Congress. The Federal Water Pollution Act of 1972 (Clean Water Act), the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA, or "Superfund"), and the Oil Pollution Act of 1990 (OPA) identify the Service's trust responsibilities when conducting emergency response activities and subsequent environmental restoration. These laws authorize the restoration of trust resources that have been injured by petroleum or hazardous material releases. The EC Program leads the Service's spill response efforts, represents the Service at Superfund site cleanups, and takes the lead in environmental restoration efforts through the Natural Resources Damage Assessment and Restoration (NRDAR) Program. Departmental and Service regulations and policies describe implementation of various aspects of the EC Program including NRDAR, pesticide use and pre-acquisition surveys. The Service clearly has ample authority to support the mission of the EC Program.

In summary, our country has developed laws, regulations, and policies to protect the air, water, land, plants and animals that we depend on for our livelihood. The Service is the principal Federal agency charged with protecting fish and wildlife resources and, works cooperatively with many other government and public/private entities to ensure fish and wildlife and people can coexist in an environment that maintains a balance of quality as well as quantity of habitats.

The following statutes provide authority for the FWS to participate in various contaminant-related issues.

**Anadromous Fish Conservation Act** – authorizes Service studies, with recommendations to EPA, concerning measures for eliminating or reducing polluting substances detrimental to fish and wildlife in interstate or navigable waters or their tributaries.

**Clean Air Act** – provides for protection and improvement of U.S. air quality. The Service must comply with standards for sulphur dioxide and particulate matter in 21 wilderness areas.

**Clean Water Act as amended** – enacted to restore and maintain the chemical, physical, and biological integrity of U.S. waters, including regulating pollutant discharges. A major goal is attaining water quality which protects fish and wildlife resources and includes the authority to

conduct natural resource damage assessments. Primary sections of the Act including Service involvement are:

- 119 – State non-point source management plans
- 303 – Water quality standards
- 311 – Oil and other hazardous substance discharges;  
National Contingency Plan (NCP)
- 401 – State water quality certifications
- 402 – National Pollutant Discharge Elimination System (NPDES) permit system
- 404 – Corps permits for dredged or fill material discharges

**Comprehensive Environmental Response, Compensation and Liability Act**

(Superfund) –, the Service as a natural resource trustee provides technical assistance to EPA and States to address remediation of sites, this may include sampling surface water, sediment and biota in and around hazardous waste sites; the Service in coordination with our co-trustees assess injuries and damages from contamination to trust resources and negotiate settlements to restore trust resources; and provide expert witnesses to testify concerning contaminant effects to natural resources at waste sites.

**Endangered Species Act** – requires the conservation of threatened and endangered species and the ecosystems upon which such species depend.

**Federal Insecticide, Fungicide and Rodenticide Act** – regulates the production, marketing and use of pesticides. The Service provides technical assistance and Endangered Species Act section 7 consultation concerning pesticide use proposals and registrations.

**Fish and Wildlife Act of 1956** - allows for Service contaminant research and information transfer activities.

**Fish and Wildlife Coordination Act** – authorizes the Service to investigate and determine the effects of domestic sewage, mine, petroleum, and industrial wastes, erosion, silt, and other polluting substances on wildlife (includes plants, fish, and all other animals). Authorized investigations include determining water quality standards for maintaining wildlife, studying methods for preventing and abating pollution and distributing data on the investigation.

**Food, Agriculture, Conservation and Trade Act** – requires Department of Agriculture and Service consultation regarding eligibility of farmlands for water quality protection.

**Marine Mammal Protection Act** – establishes responsibility for conservation of the sea otter, walrus, polar bear, dugong and manatee with the Service and whales, dolphins, porpoise, seals and sea lions with NOAA.

**Marine Protection, Research, and Sanctuaries Act** – regulates dumping of materials in the ocean. The Service reviews ocean dumping permits, and coordinates with NOAA on long range pollution effects on ocean ecosystems and on monitoring shellfish for contaminants.

**Migratory Bird Treaty Act** – authorizes the preservation and restoration of migratory bird populations, including Service authority to protect migratory birds. The 1976 Treaty with the Soviet Union, under this Act, indicates that Nations shall take measures to protect identified ecosystems of special importance to migratory birds against pollution, detrimental alteration and other environmental degradation.

**National Wildlife Refuge System Administration Act and National Wildlife Refuge System Improvement Act of 1997 (Improvement Act)** – establishes a system for protecting and managing lands for fish and wildlife resource conservation. The Improvement Act specifically states that the Service will ensure that the biological integrity, diversity, and environmental health of the system are maintained, and that adequate water quantity and water quality will be maintained to fulfill the mission of the refuge system.

**National Environmental Policy Act of 1969 as amended** – permits the Service to comment on contaminant-related issues associated with proposed Federal or federally-permitted actions.

**Oil Pollution Act of 1990** – requires Service consultation to develop a fish and wildlife response plan for the NCP, input to Area Contingency Plans, review of Facility and Tank Vessel Contingency Plans, and to conduct natural resource damage assessments connected with oil spills.

**Resource Conservation and Recovery Act (RCRA)** – regulates the treatment, transportation, storage, and disposal of hazardous wastes. This requires Service compliance with standards for any hazardous wastes generated at Service facilities.

**River and Harbor Act** – prohibits the unauthorized obstruction or alteration of navigable waters by fills or construction of outfalls, piers, levees, and similar structures. Service concerns focus on Corps section 10 permit proposals, including contaminated sediments associated with dredge or fill projects in navigable waters.

**Surface Mining Control and Reclamation Act** – regulates surface mining activities. The Service comments on surface mining permits concerning contaminant issues.

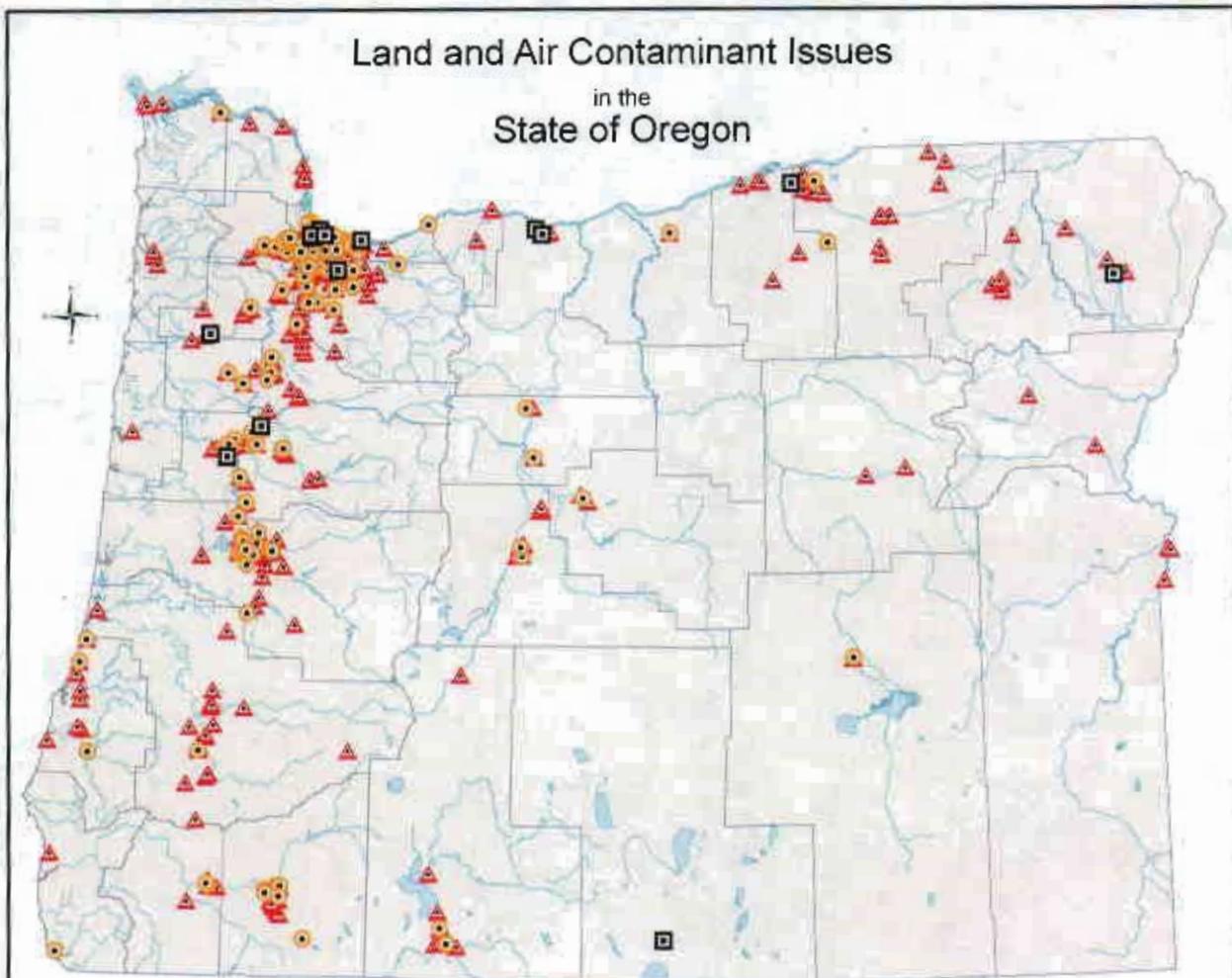
**Toxic Substances Control Act** – authorizes EPA to obtain data from industry on health and environmental effects of chemical substances and mixtures. If unreasonable risk or injury may occur, EPA may regulate the manufacture, processing, commercial distribution, use, and disposal of such chemicals and mixtures.

**Executive Order 11990, Protection of Wetlands** – requires Federal agencies to consider factors relevant to the effects a proposed action has on the survival and quality of wetlands, including water quality and pollution.

## Appendix B: Environmental Contaminants Source and Effects Maps

# Land and Air

## Land and Air Contaminant Issues in the State of Oregon



### EPA Geospatial Database\*

- Superfund - National Priority List (NPL)
- Resource Conservation and Recovery Act (RCRA)\*\*
- ▲ Toxic Release Inventory Program (TRI)

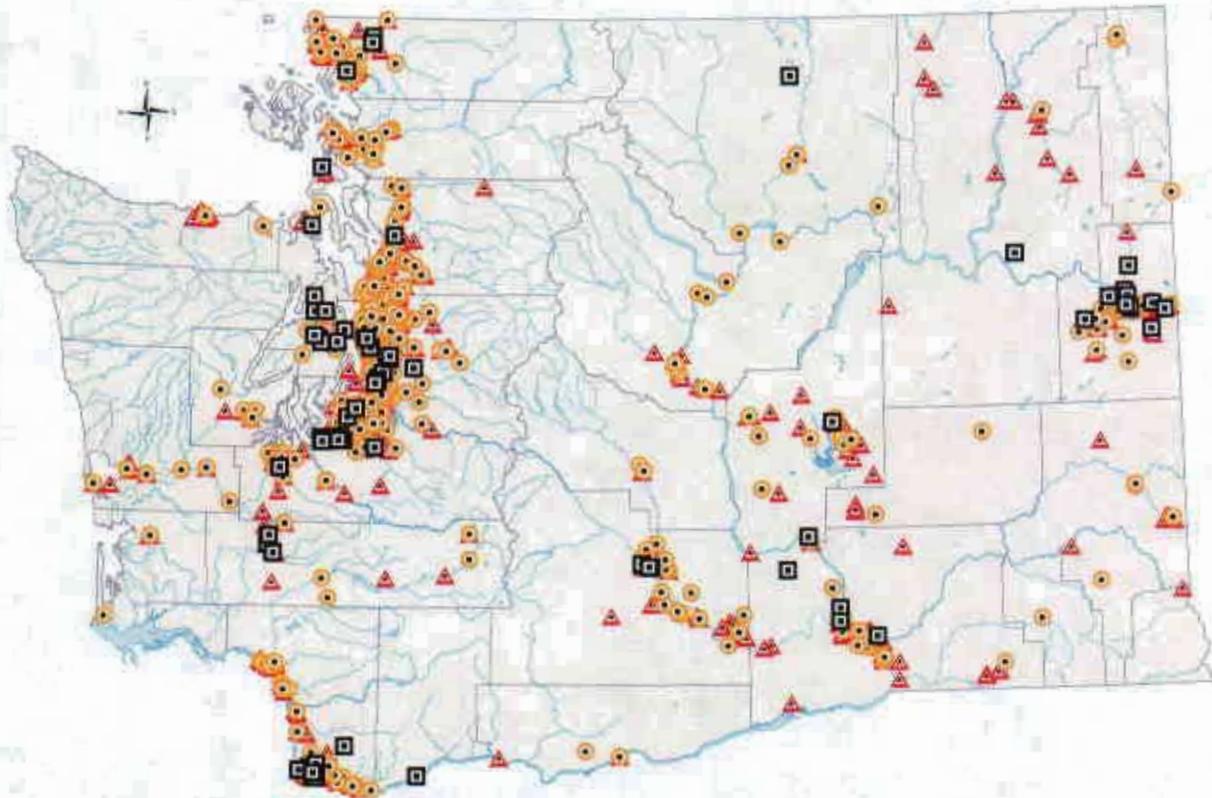
\*Data acquired from the US Environmental Protection Agency: Geospatial Data File (feature class) [GDF], Version 1.0, Revision C, dated January 4, 2008.

\*\*Includes both Treatment, Storage, Disposal facilities (TSD) and Large Quantity Generators (LQG)

### Other map symbols

- River
- Lake or reservoir
- County

# Land and Air Contaminant Issues in the State of Washington



## EPA Geospatial Database\*

-  Superfund - National Priority List (NPL)
-  Resource Conservation and Recovery Act (RCRA)\*\*
-  Toxic Release Inventory Program (TRI)

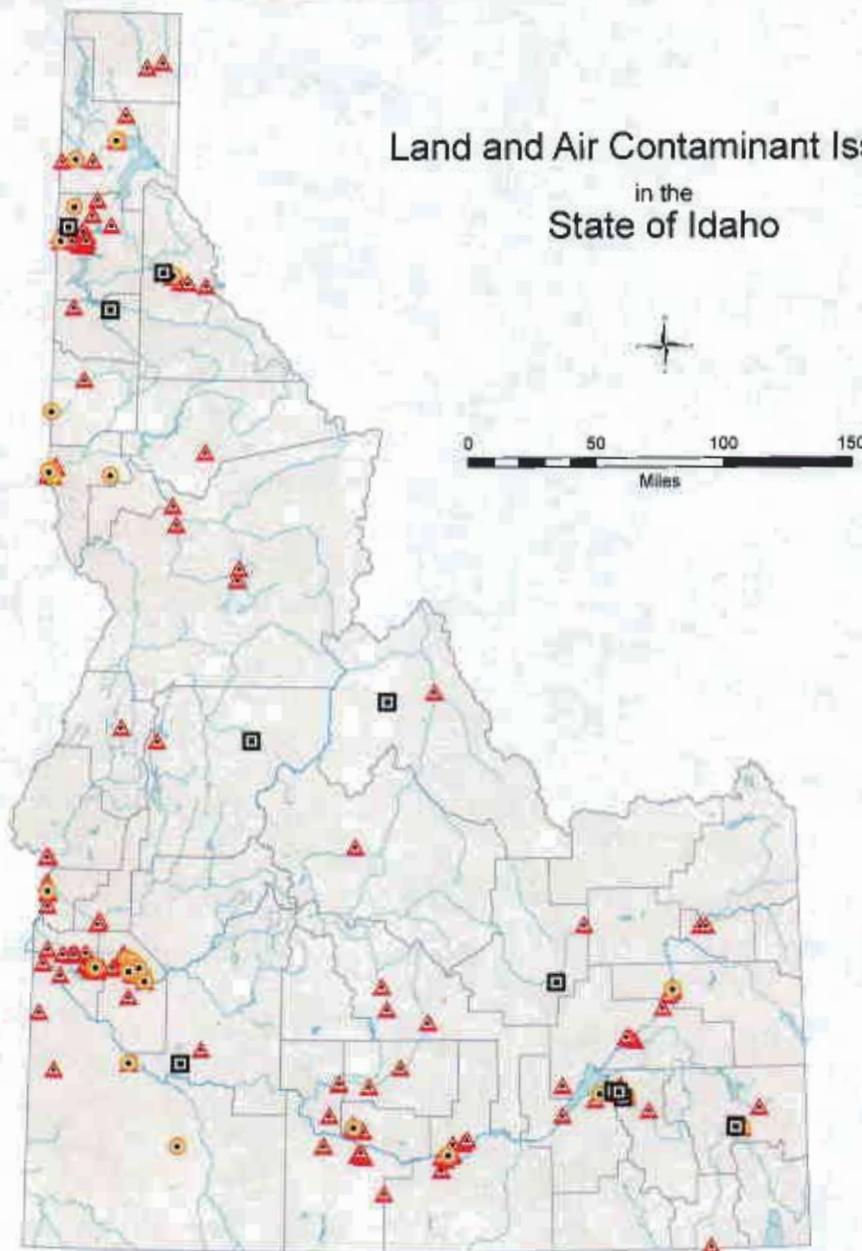
\*Data acquired from the US Environmental Protection Agency: Geospatial Data File (feature class) [GDF], Version 1.0, Revision C, dated January 4, 2008.

\*\*Includes both Treatment, Storage, Disposal facilities (TSD) and Large Quantity Generators (LQG)

## Other map symbols

-  River
-  Lake or reservoir
-  County

# Land and Air Contaminant Issues in the State of Idaho



### EPA Geospatial Database\*

-  Superfund - National Priority List (NPL)
-  Resource Conservation and Recovery Act (RCRA)\*\*
-  Toxic Release Inventory Program (TRI)

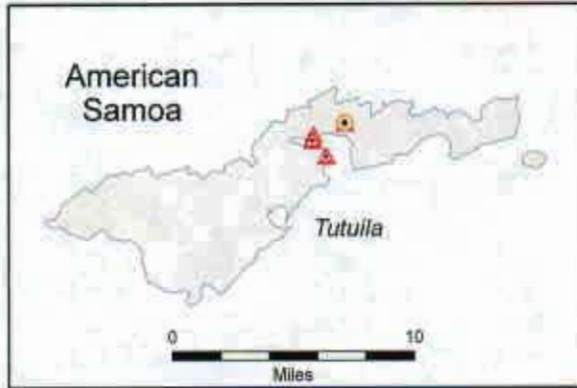
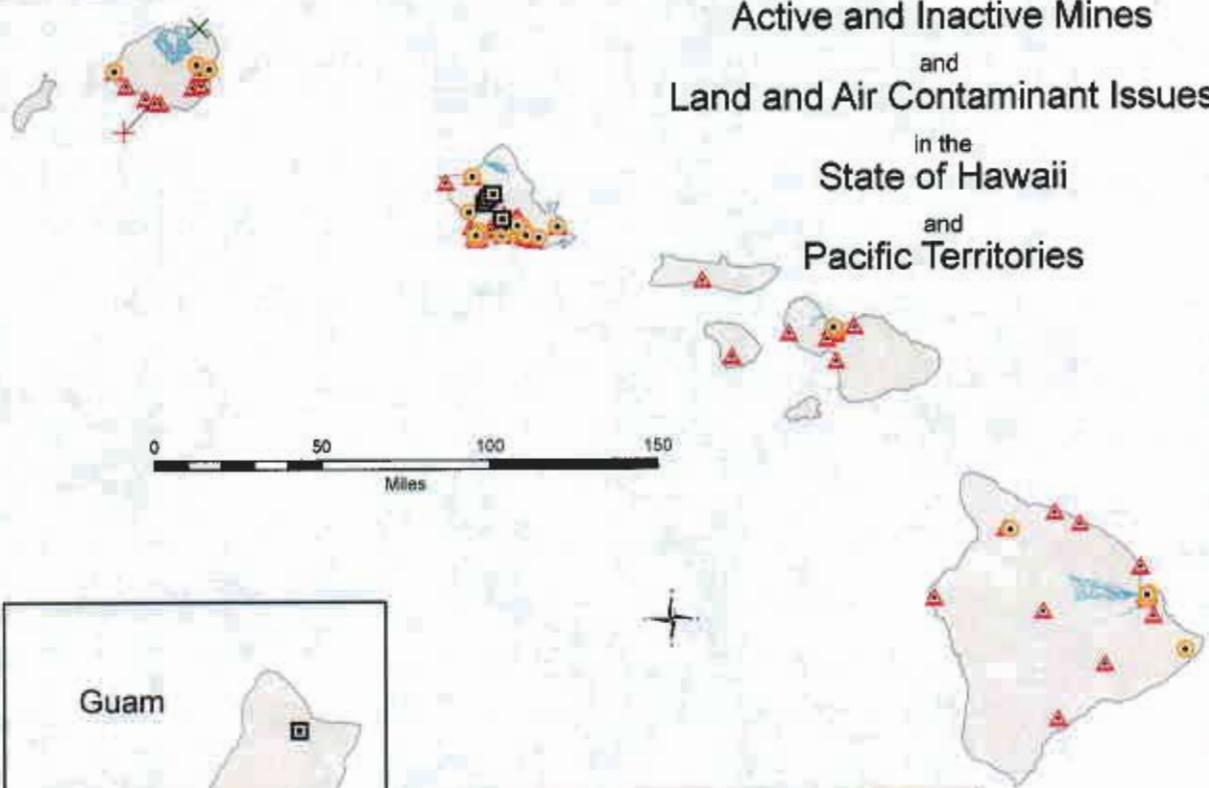
\*Data acquired from the US Environmental Protection Agency: Geospatial Data File (feature class) [GDF], Version 1.0, Revision C, dated January 4, 2008.

\*\*Includes both Treatment, Storage, Disposal facilities (TSD) and Large Quantity Generators (LQG)

### Other map symbols

-  River
-  Lake or reservoir
-  County

# Active and Inactive Mines and Land and Air Contaminant Issues in the State of Hawaii and Pacific Territories



### Mine Locations\*

- + Active (1)
- × Inactive (1)

\*Data acquired from the USFWS Environmental Conservation Online System (ECOS) in January 2008. No metadata was supplied with these data layers. It was indicated (by ECOS personnel) that the layers were several years old and most likely originally acquired from the Office of Surface Management, or its predecessor.

### EPA Geospatial Database\*

- ☐ Superfund - National Priority List (NPL)
- ⊙ Resource Conservation and Recovery Act (RCRA)\*\*
- ▲ Toxic Release Inventory Program (TRI)

\*Data acquired from the US Environmental Protection Agency: Geospatial Data File (feature class) [GDF], Version 1.0, Revision C, dated January 4, 2008.

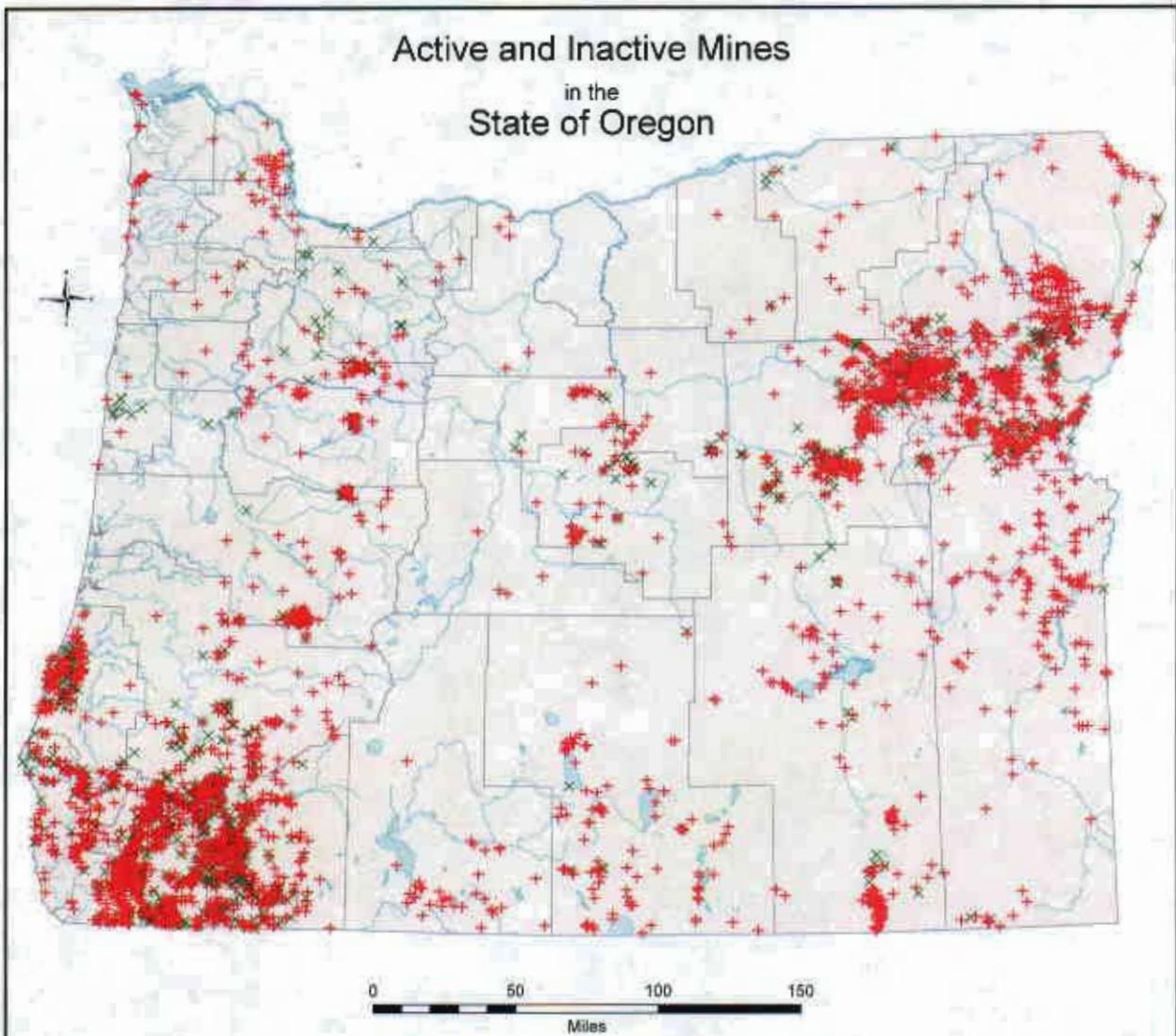
\*\*Includes both Treatment, Storage, Disposal facilities (TSD) and Large Quantity Generators (LQG)

### Other map symbols

- River

# Mines

## Active and Inactive Mines in the State of Oregon



### Mine Locations\*

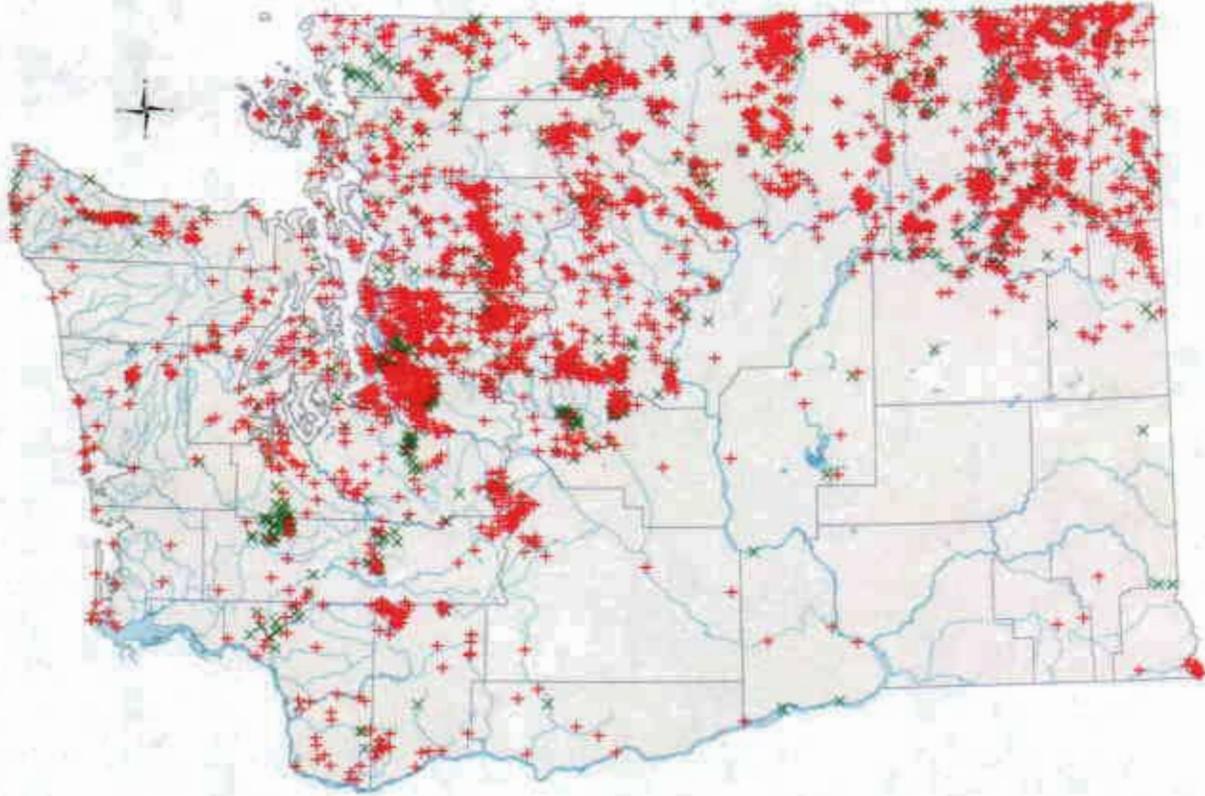
- + Active (3,155)
- x Inactive (1,232)

\*Data acquired from the USFWS Environmental Conservation Online System (ECOS) in January 2008. No metadata was supplied with these data layers. It was indicated (by ECOS personnel) that the layers were several years old and most likely originally acquired from the Office of Surface Management, or its predecessor.

### Other map symbols

- River
- Lake or reservoir
- County

# Active and Inactive Mines in the State of Washington



## Mine Locations\*

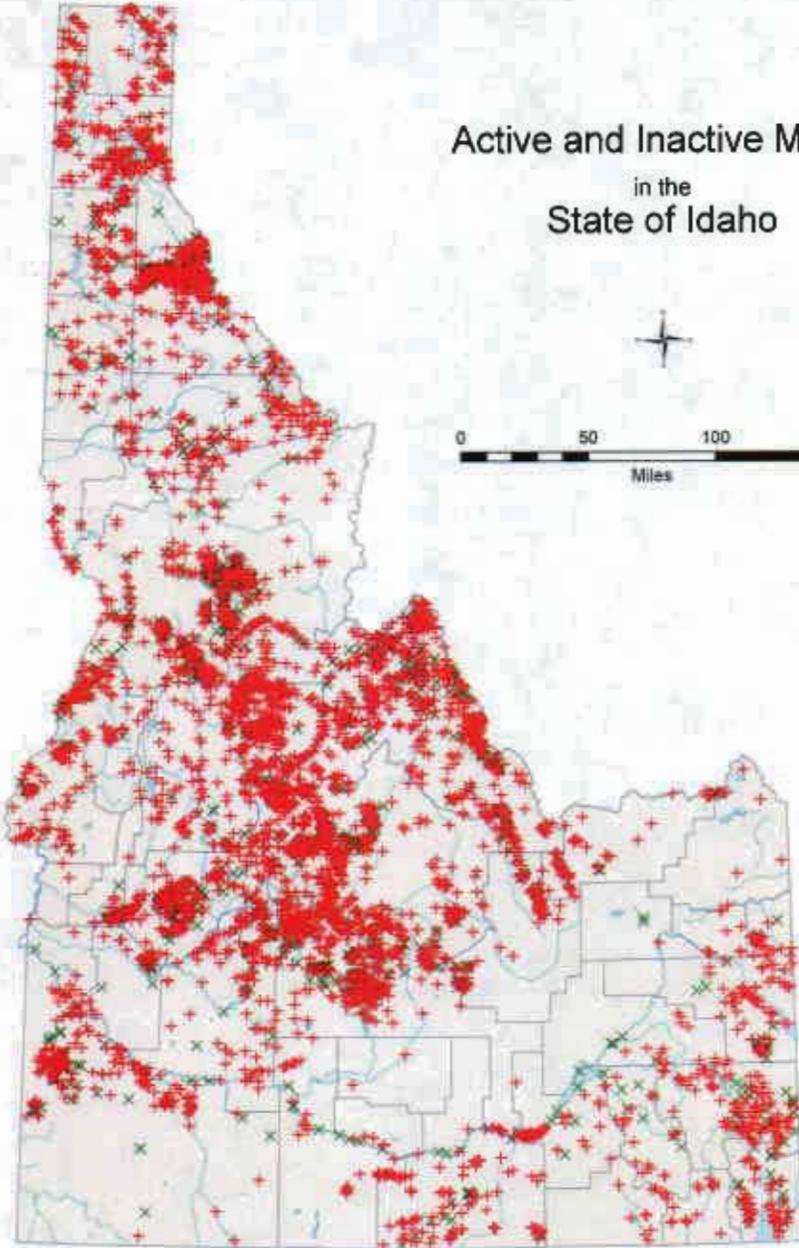
- + Active (4,114)
- x Inactive (923)

\*Data acquired from the USFWS Environmental Conservation Online System (ECOS) in January 2008. No metadata was supplied with these data layers. It was indicated (by ECOS personnel) that the layers were several years old and most likely originally acquired from the Office of Surface Management, or its predecessor.

## Other map symbols

- River
- Lake or reservoir
- County

# Active and Inactive Mines in the State of Idaho



### Mine Locations\*

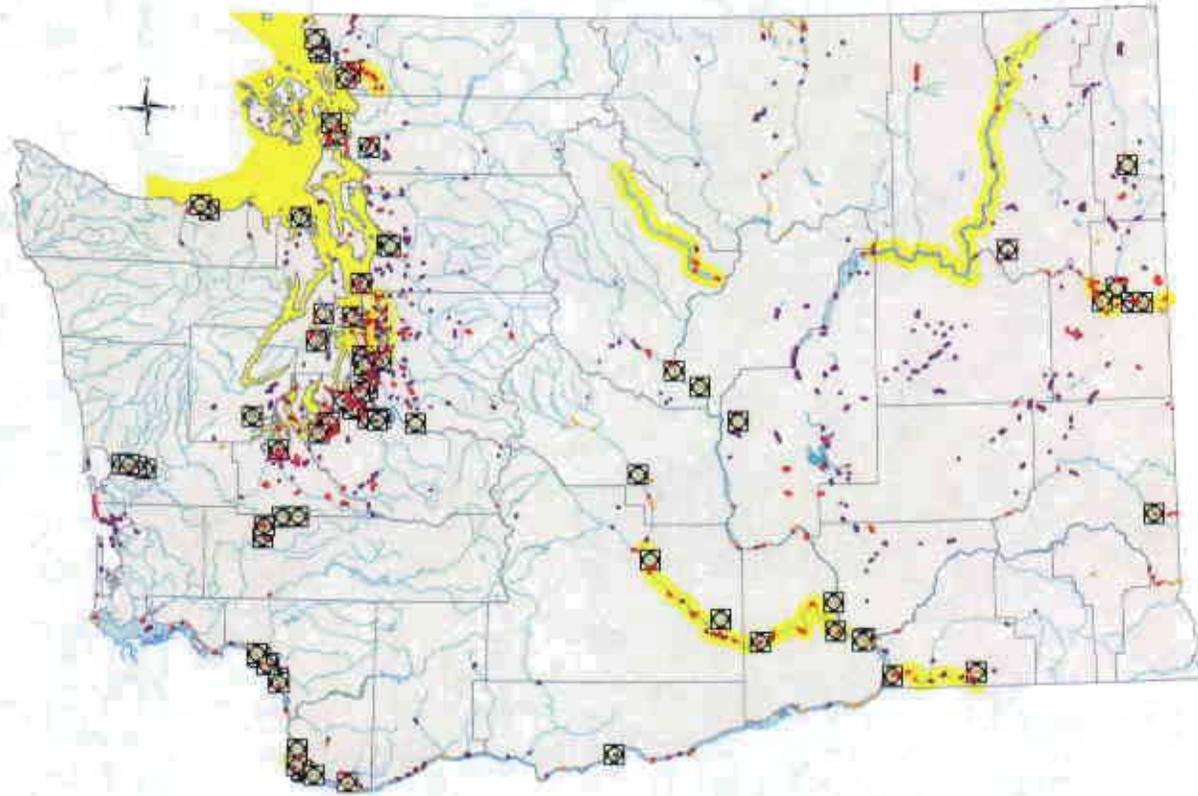
- + Active (5,412)
- x Inactive (1,587)

\*Data acquired from the USFWS Environmental Conservation Online System (ECOS) in January 2008. No metadata was supplied with these data layers. It was indicated (by ECOS personnel) that the layers were several years old and most likely originally acquired from the Office of Surface Management, or its predecessor.

### Other map symbols

- River
- Lake or reservoir
- County

## Water Contaminant Issues in the State of Washington



0                      50                      100                      150  
Miles

### Water Quality Assessment\*

- Attaining some criteria [Cat 2]
- Limited, TMDL approved [Cat 4A-B]
- 303(d), TMDL needed [Cat 5]

\*Data acquired from the Washington Department of Ecology for the 2004 Integrated Water Quality Assessment.

**NOTE:** Only those water features that are assigned one of the assessment categories listed above regarding an environmental contaminant pollutant parameter are displayed on this map.

### National Pollutant Discharge Elimination System\*

- NPDES facility

\*Data acquired from the US Environmental Protection Agency: Geospatial Data File (feature class) [GDF]. Version 1.0, Revision C, dated January 4, 2008.

**NOTE:** Only major NPDES interests maintained in the Permit Compliance System (PCS) are provided in the EPA GDF. Therefore, those are the only facilities that are displayed on this map.

### Fish Consumption Advisory\*



\*Data layer generated from information provided on the website for the Waterbody Specific Fish Consumption Advisories sponsored by the Washington State Department of Health as of August 22, 2007.

### Other map symbols

- River
- Lake or reservoir
- County

# Water Contaminant Issues in the State of Oregon



0 50 100 150  
Miles

## Water Quality Assessment\*

-  Attaining some criteria [Cat 2]
-  Limited, TMDL approved [Cat 4A]
-  303(d), TMDL needed [Cat 5]

\*Data acquired from the Oregon Dept. of Environmental Quality for the 2004-2008 Water Quality Assessment.

**NOTE:** Only those water features that are assigned one of the assessment categories listed above regarding an environmental contaminant pollutant parameter are displayed on this map.

**NOTE:** Assessment category 4B was also considered in the preparation of this map. However, no features in the DEQ dataset were assigned this category.

## National Pollutant Discharge Elimination System\*

-  NPDES facility

\*Data acquired from the US Environmental Protection Agency: Geospatial Data File (feature class) [GDF], Version 1.0, Revision C, dated January 4, 2008.

**NOTE:** Only major NPDES interests maintained in the Permit Compliance System (PCS) are provided in the EPA GDF. Therefore, those are the only facilities that are displayed on this map.

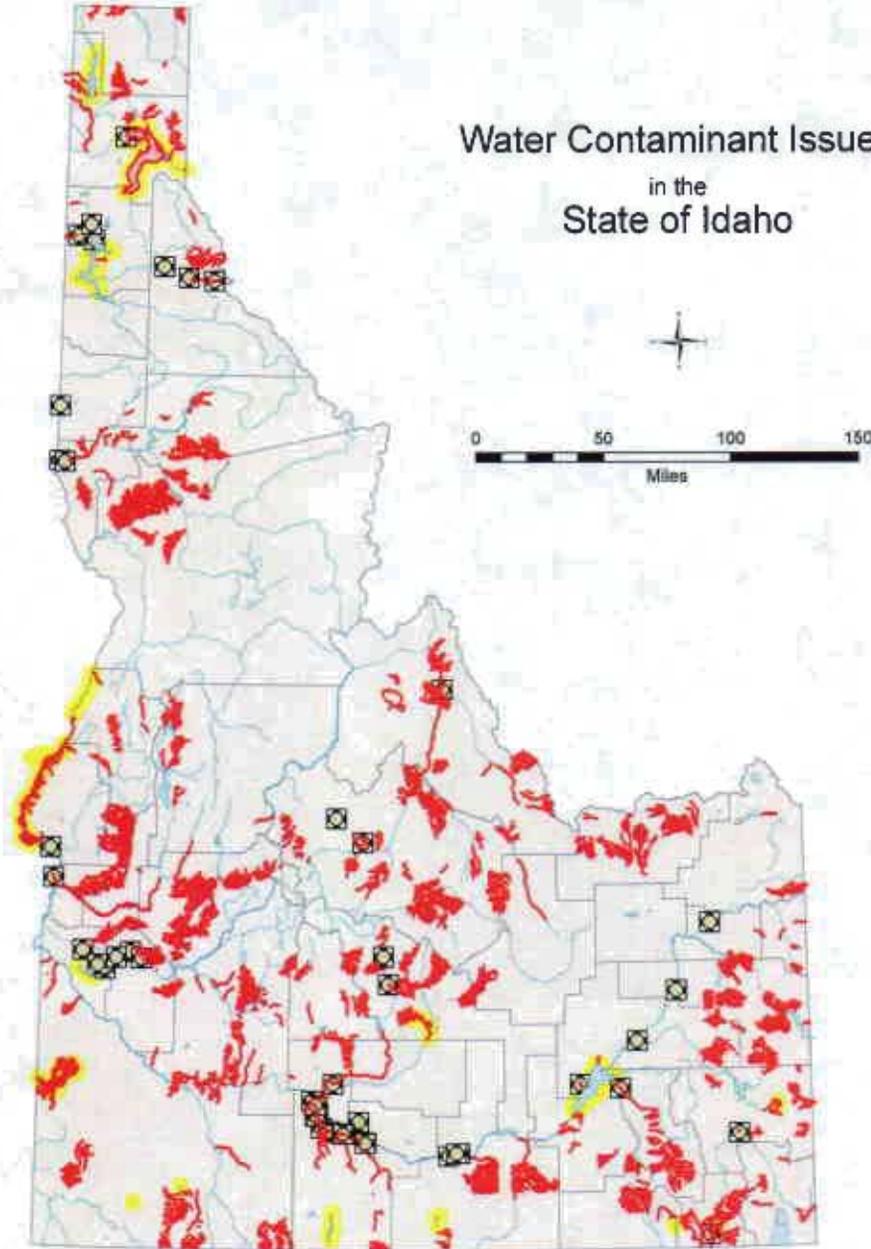
## Fish Consumption Advisory\*

 **\*Data layer generated from information provided on the website for the Environmental Toxicology Program of the Oregon Dept. of Human Services, Public Health Division as of July 17, 2008.**

## Other map symbols

-  River
-  Lake or reservoir
-  County

# Water Contaminant Issues in the State of Idaho



## Water Quality Assessment\*

 303(d), TMDL needed [Cat 5]

\*Data acquired from the Idaho Dept. of Environmental Quality for the 2002 Integrated Water Quality Assessment Report.

**NOTE:** Only those water features that are included in the IWQA because of an environmental contaminant pollutant parameter are displayed on this map. Assessment categories 2, 4A and 4B were also considered, however, no features were present in these categories with an associated EC pollutant parameter.

## National Pollutant Discharge Elimination System\*

 NPDES facility

\*Data acquired from the US Environmental Protection Agency Geospatial Data File (feature class) [GDF], Version 1.0, Revision C, dated January 4, 2008.

**NOTE:** Only major NPDES interests maintained in the Permit Compliance System (PCS) are provided in the EPA GDF. Therefore, those are the only facilities that are displayed on this map.

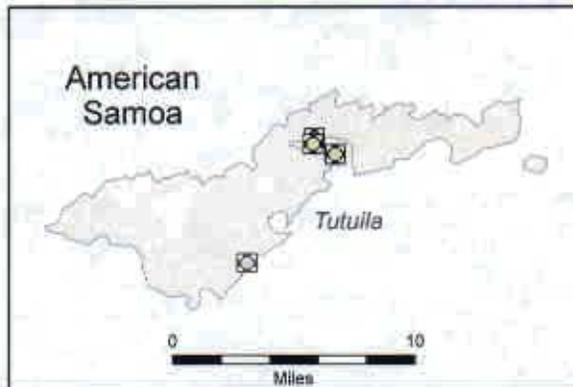
## Fish Consumption Advisory\*

 \*Data layer generated from information provided on the website for the Idaho Fish Consumption Advisory Program of the Idaho Dept. of Health and Welfare as of September 24, 2008.

## Other map symbols

 River  
 Lake or reservoir  
 County

# Water Contaminant Issues in the State of Hawaii and Pacific Territories



## Water Quality Assessment\*

 303(d), TMDL needed [Cat 5]

\*Data acquired from the Hawaii Dept. of Health, Environmental Planning Office for the 2006 Integrated Water Quality Monitoring and Assessment Report.

**NOTE:** Only those water features that are included in the IWQMA because of an environmental contaminant pollutant parameter are displayed on this map. Assessment categories 2, 4A and 4B were also considered, however, no features were present in these categories with an associated EC pollutant parameter.

## National Pollutant Discharge Elimination System\*

 NPDES facility

\*Data acquired from the US Environmental Protection Agency: Geospatial Data File (feature class) [GDF], Version 1.0, Revision C, dated January 4, 2008.

**NOTE:** Only major NPDES interests maintained in the Permit Compliance System (PCS) are provided in the EPA GDF. Therefore, those are the only facilities that are displayed on this map.

## Fish Consumption Advisory\*

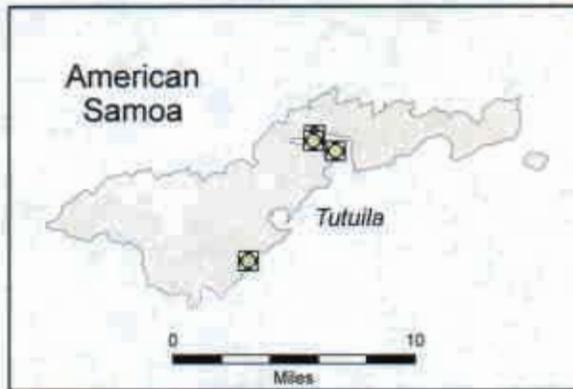
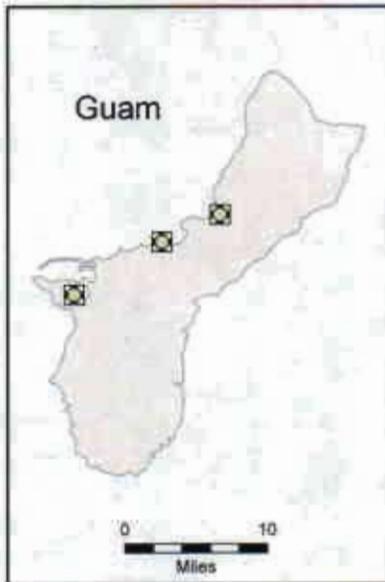
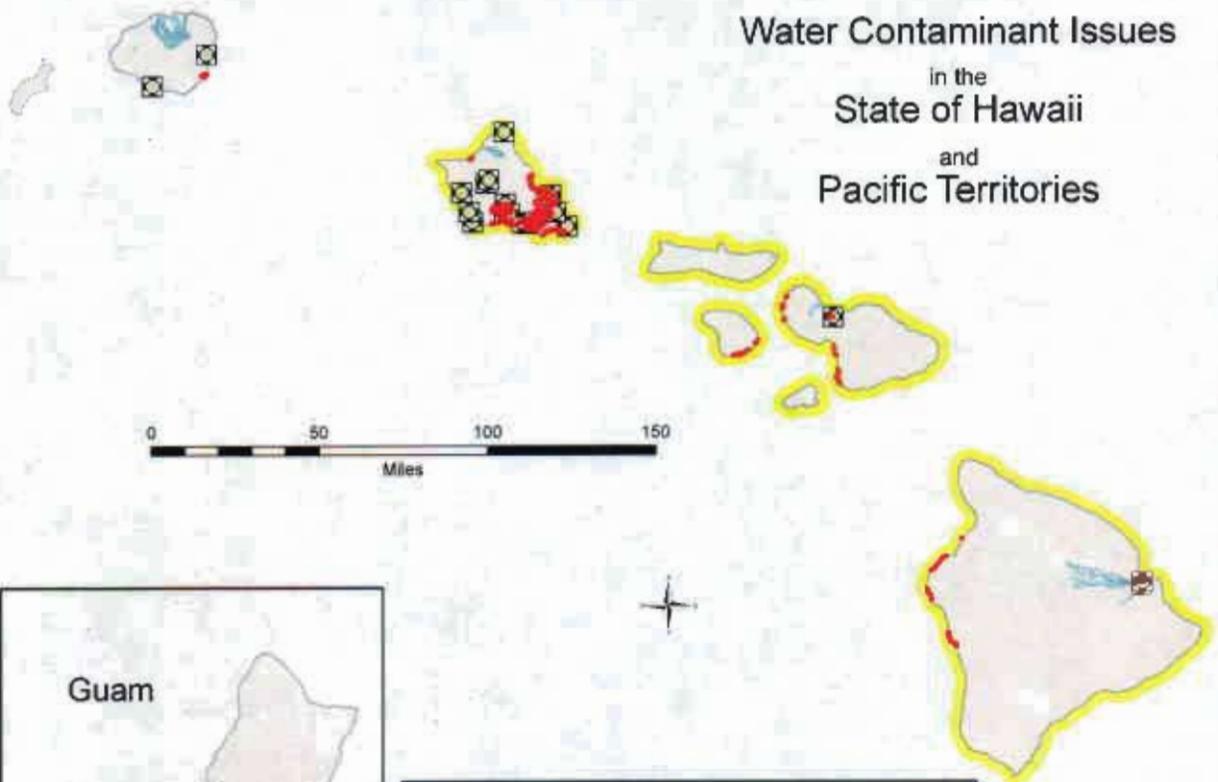


\*Data layer generated from information provided on the website for the Hawaii Dept. of Health, Office of Hazard Evaluation and Emergency Response as of January 2008.

## Other map symbols

 River

# Water Contaminant Issues in the State of Hawaii and Pacific Territories



## Water Quality Assessment\*

 303(d), TMDL needed [Cat 5]

\*Data acquired from the Hawaii Dept. of Health, Environmental Planning Office for the 2006 Integrated Water Quality Monitoring and Assessment Report.

**NOTE:** Only those water features that are included in the IWQMA because of an environmental contaminant pollutant parameter are displayed on this map. Assessment categories 2, 4A and 4B were also considered, however, no features were present in these categories with an associated EC pollutant parameter.

## National Pollutant Discharge Elimination System\*

 NPDES facility

\*Data acquired from the US Environmental Protection Agency: Geospatial Data File (feature class) [GDF], Version 1.0, Revision C, dated January 4, 2008.

**NOTE:** Only major NPDES interests maintained in the Permit Compliance System (PCS) are provided in the EPA GDF. Therefore, those are the only facilities that are displayed on this map.

## Fish Consumption Advisory\*



\*Data layer generated from information provided on the website for the Hawaii Dept. of Health, Office of Hazard Evaluation and Emergency Response as of January 2008.

## Other map symbols

 River

## **Appendix C: Acronyms**

ACF – Analytical Control Facility

CAP – Contaminant Assessment Process

CERCLA - Comprehensive Environmental Regulatory and Compensation Liability Act

DOI – U.S. Department of the Interior

EC - Environmental Contaminants

ECDMS - Environmental Contaminants Data Management System

EPA – U.S. Environmental Protection Agency

ESA – Endangered Species Act

FIFRA – Federal Insecticide, Fungicide, and Rodenticide Act

FTE – if you use that in the text (I deleted that reference).

FWCA – Fish and Wildlife Coordination Act

FWO – Fish and Wildlife Office

FWPCA – Federal Water Pollution Control Act

IPM – Integrated Pest Management

MBTA – Migratory Bird Treat Act

MMPA- Marine Mammal Protection Act

NGO- Non-Governmental Organization

NRDA- Natural Resource Damage Assessment

NRDAR -Natural Resource Damage Assessment and Restoration

NWR- National Wildlife Refuge

OPA -Oil Pollution Act

PUP – Pesticide Use Proposal

QA/QC – Quality Assurance / Quality Control

RCRA - Resource Conservation and Recovery Act

Service - U.S. Fish and Wildlife Service

USGS – U.S. Geological Survey