



U.S. Fish & Wildlife Service

*A Framework for the Future:
Environmental Contaminants Program
Strategic Plan
2008-2012*



*"With each sunrise, we start anew."
- Anonymous*

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Vision of the Environmental Contaminants Program

50 Years after *Silent Spring*...

- Be pioneers in reversing the legacy of pollution and restoring our fish and wildlife resources;
- Demonstrate that our expertise and contributions in achieving healthy fish, wildlife and habitats, are indispensable; and
- Instill within the Service an understanding of the integral role the Environmental Contaminants Program plays in achieving the Service's Mission.

Mission of the U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service's mission is, working with others, to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.

Mission of the Environmental Contaminants Program

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.

Goals of the Environmental Contaminants Program

- Goal 1. Conserve trust resources and their habitats through contaminant prevention.
- Goal 2. Restore and recover trust resources and their habitats harmed by environmental contamination and other stressors.
- Goal 3. Provide environmental contaminant expertise and high-quality scientific data and interpretation to support sound management decisions for trust resources.

- Goal 4. Increase accountability, coordination, and visibility of the Environmental Contaminants Program to our internal and external partners and the public.
- Goal 5. Maintain and support an adequately-sized, technically capable workforce with state of the art training, equipment, and technologies.

ACRONYMS

ACF – Analytical Control Facility

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

FO – Field Office

FWCA – Fish and Wildlife Coordination Act

FWPCA – Federal Water Pollution Control Act

GIS – Geographic Information System

GPRA – Government Performance and Results Act

IPM – Integrated Pest Management

LE – Law Enforcement

MBTA – Migratory Bird Treaty Act

NRDAR – Natural Resource Damage Assessment and Restoration

OPA – Oil Pollution Act

PUP – Pesticide Use Proposal

QA/QC – Quality Assurance/Quality Control

RCRA – Resource Conservation and Recovery Act

RO – Regional Office

Service – U.S. Fish and Wildlife Service

USGS – U.S. Geological Survey

EXECUTIVE SUMMARY

*“The most alarming of all man’s assaults upon the environment is the contamination of air, earth, rivers, and sea with dangerous and even lethal materials.” – Rachel Carson’s *Silent Spring**

The U.S. Fish and Wildlife Service (Service) has been studying the effects of contaminants on fish and wildlife since the agency’s earliest days, but the Environmental Contaminants (EC) Program did not begin to take form until the 1950s, when increasing awareness of pollution problems spurred the American public to demand action. Then, in 1962, Rachel Carson, a former Service employee, captured national attention with her landmark book, *Silent Spring*, which described the widespread harmful effects of pesticides on the environment. Carson’s alarming message that the effects of these substances on wildlife serve as indicators of what may ultimately jeopardize our own health—struck a chord with the American public.

Many believe that Carson’s book inspired the modern environmental movement and prompted the development of many of the pollution prevention laws that are in place today. After her book was published, Congress passed or amended the National Environmental Policy Act and pollution prevention laws such as the Clean Water Act; Clean Air Act; Federal Insecticide, Fungicide and Rodenticide Act; Safe Drinking Water Act; Toxic Substances Control Act; and the “Superfund” toxic waste cleanup law also known as the Comprehensive Environmental Response, Compensation, and Liability Act.

Today, the Service’s Environmental Contaminants Program includes contaminants specialists stationed at more than 75 locations around the country. These scientists are on the front lines in the fight against pollution. They specialize in detecting toxic chemicals; addressing their effects; preventing harm to fish, wildlife, and their habitats; and removing toxic chemicals and restoring habitat when prevention is not possible. They are experts on oil and chemical spills, pesticides, water quality, hazardous materials, and other aspects of pollution biology.

The Service's contaminants specialists work in partnership with all of the Service's Programs as well as other agencies and organizations that rely on our expertise. The Environmental Contaminants Program provides the scientific data that inform decision-makers about pollution and contaminant problems affecting fish and wildlife resources. These activities are critical to the Service's mission to protect habitats and improve environmental quality for fish and wildlife. *By reducing or eliminating environmental contaminant threats to fish, wildlife and their habitats and restoring injured resources, the Environmental Contaminants Program helps the Service to achieve the vision of maintaining healthy fish and wildlife, healthy habitats, healthy people, and a healthy economy for the nation.*

The Environmental Contaminants Program's Strategic Plan refocuses the Program on (1) contaminant prevention and (2) the restoration and recovery of fish, wildlife and habitats, which have been impacted by contaminants. Working with partners, the Environmental Contaminants Program will identify and target priority resources and geographic areas that have contaminants known to affect fish and wildlife resources. The Environmental Contaminants Program will integrate and combine cross-program expertise, resources, and ideas with other Service offices and programs to address these priority resources and geographic areas in a proactive manner and will focus its overall efforts to ensure that the Service achieves "results on the ground" with respect to its mission. In order to effectively accomplish these objectives, the Environmental Contaminants Program will collaborate with Federal, Tribal, and State agencies, and other partners to identify potential projects and opportunities for leveraging the Service's financial resources to achieve increased restoration and recovery of fish and wildlife.

This plan's goals, objectives, and strategies focus on opportunities to protect, restore and recover fish, wildlife, and habitats. The five goals are:

- Goal 1. Conserve trust resources and their habitats through contaminant prevention.
- Goal 2. Restore and recover trust resources and their habitats harmed by environmental contamination and other stressors.
- Goal 3. Provide environmental contaminant expertise and high-quality scientific data and interpretation to support sound management decisions for trust resources.
- Goal 4. Increase accountability, coordination, and visibility of the Environmental

Contaminants Program to our internal and external partners and the public.

- Goal 5. Maintain and support an adequately-sized, technically capable workforce with state of the art training, equipment, and technologies.

This Environmental Contaminants Program Strategic Plan provides a framework for each Region to develop step-down strategic plans. Regional step-down strategic plans should encompass the concepts of the National strategic plan, while recognizing the unique circumstances of each region.

Environmental Contaminants Program Mandates

Some of the Nation's major conservation laws [e.g., the Migratory Bird Treaty Act (MBTA) of 1918, the Endangered Species Act of 1973 (ESA), the Fish and Wildlife Act of 1956, the Fish and Wildlife Coordination Act of 1958, and the National Wildlife Refuge Administration Act of 1966] provide for the Service's authority to evaluate and to conserve our Nation's 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 including (1) on-refuge contaminants investigations, (2) refuge cleanup projects, (3) oversight of remedial efforts conducted by responsible parties on Service lands, (4) refuge-scale contaminant evaluations using the Contaminant Assessment Process (CAP), (5) pre-acquisition surveys, (6) spill response on Service lands, and (7) integrated pest management (IPM) 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), Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA, or "Superfund"), and 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.

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 health and livelihood. The Service is the principal Federal agency charged with protecting fish and wildlife resources. We work cooperatively with many other government, public and private entities to ensure fish, wildlife and people can coexist in an environment that maintains a balance of quality, as well as quantity, of habitats.

INTRODUCTION

The U.S. Fish and Wildlife Service is the principal Federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. Among these natural or trust resources are migratory birds, federally protected species, Service-managed lands, certain inter-jurisdictional fishes, and marine mammals. In addition, Congress has legislated broad, as well as specific Service responsibilities and authorities. These responsibilities and authorities include, but are not limited to:

- authority to evaluate and protect natural resources;
- authority to conduct investigations necessary to determine contaminant effects on fish, wildlife and their habitats, as well as to report and make recommendations to Congress;
- authority to restore trust resources injured by petroleum and other hazardous material spills or releases; and
- authority to maintain the biological integrity, diversity and environmental health of the National Wildlife Refuge System.

Environmental contamination is an unfortunate, but undeniable, cause of impairment to many of the Service's trust resources. As evidence of this contaminant-related impairment, a person may look no further than the all-too-routine announcements of fish and wildlife consumption advisories and oil spills. The EC Program is the Service's answer to addressing these impacts. Working with other Federal, Tribal, State and local agencies, academia, industry, landowners, and non-governmental organizations, EC Biologists protect and restore fish, wildlife and their habitats from the effects of environmental contaminants (Appendix A). By addressing these threats, the EC Program plays an essential part in achieving the Service's mission.

Fish and wildlife serve as indicators of environmental and ultimately human health. Many kinds of fish and wildlife are important food sources for people and provide economic benefits to local communities by attracting recreational users, enhancing tourism, and supporting commercial harvests as well as other activities. *Ensuring that fish and wildlife resources are free from contamination benefits the health, economy, and quality of life of the American people.*

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

The core strength of the Service's EC Program is the scientific expertise of its dedicated biologists located at more than 75 stations across the country. By collecting and evaluating environmental contaminants data using rigorous, standardized techniques, EC Biologists provide the scientifically sound information and interpretation essential to fulfilling the Service's mission. EC Biologists use information from field investigations to document and remedy the harmful effects of contaminants on fish, wildlife and their habitats and recommend innovative, problem-solving solutions for the remediation and restoration of habitats injured by contamination. These field investigations ensure that EC Biologists develop and maintain technical expertise and the ability to collect timely and dependable scientific information in order to respond to contaminant threats as they arise.

Meeting Challenges

Since the early 1900s, the Service has studied and documented the adverse effects of human activities to fish and wildlife. The Service's early researches related to pesticide effects on wildlife and were brought to light by former Service employee Rachel Carson in her book *Silent Spring*. This book elevated public and Congressional awareness regarding the impacts of pesticides on the environment and led to national efforts by the Service to address environmental contaminant issues, including monitoring for pesticides in fish and wildlife. In 1982, the Service established the EC Program which expanded the Service's capability to identify, protect and restore wildlife resources threatened by contaminants in collaboration with our State and Federal partners.

Understanding the ubiquitous nature of contaminants in the environment and their relationships to environmental health is a major challenge in providing information and scientific support for natural resource management decisions. Each year, fish and wildlife managers deal with contaminant issues associated with (1) thousands of toxic and hazardous substances, (2) hazardous waste sites, (3) wildlife pesticide poisoning incidents, (4) oil and hazardous spills, (5)

emerging issues related to the development and wide spread use of new chemical products, and (6) other environmental contaminant challenges (Table 1).

The current and emerging environmental contaminant challenges will be addressed using three important operating principles:

- 1) Utilize EC Program capabilities to benefit and support the objectives of other Service programs. [*Service Program Support*]
- 2) Work with partners and build coalitions to integrate contaminant-related issues into environmental and fish and wildlife management decisions. [*Partnerships*]
- 3) Provide high quality information to managers, scientists, interest groups and the public. [*Science Excellence*]

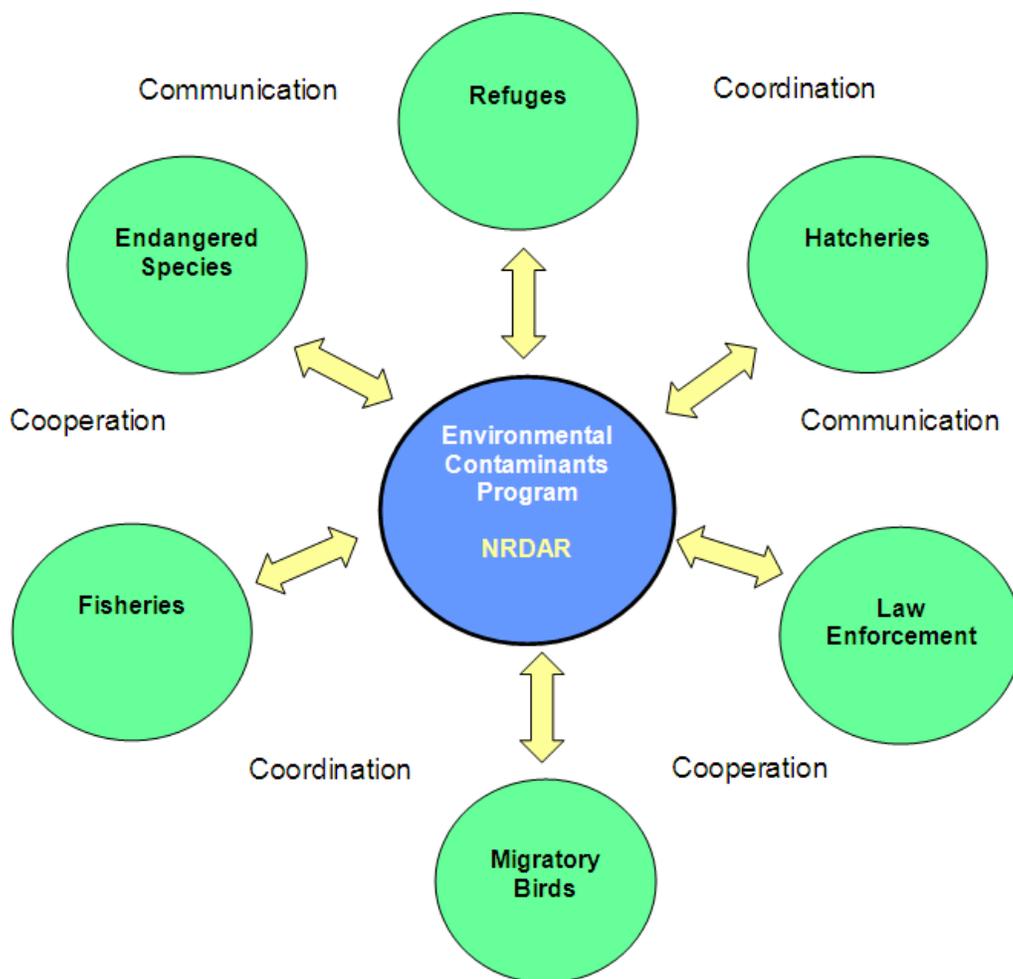
Table 1. Current Environmental Contaminant Challenges

- 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 U.S. in 2004, and that figure is not atypical
- 136,000,000 pounds of toxic chemicals are discharged each year into waterways
- 14,000,000 acres of lakes and 846,000 miles of rivers and streams have fish consumption advisories
- 41 FWS management units (NWRs, Waterfowl Production Areas, etc.) have consumption advisories for fish, shellfish, or wildlife
- 67,000,000 birds are estimated to die from pesticide poisoning each year
- 20 percent of the Nation's endangered and threatened species are imperiled partially because of pollutants
- Inter-sex characteristics and endocrine disruption is becoming common in fish and wildlife
- Addressing the myriad of environmental contaminant threats that will manifest from a changing climate.

Other U.S. Fish and Wildlife Service Programs Rely on the Expertise of the Environmental Contaminants Program

Environmental contaminants threaten resources managed by all programs within the Service. Other Service programs rely on the EC Program to assist them in solving contaminant-related problems. Therefore, environmental contaminant activities are strategically focused to be as fully integrated as possible into other Service operations (Figure 1).

Figure 1. The Environmental Contaminants program is strategically integrated into other Service operations and programs.



For example, environmental contaminants activities conducted on Service-managed lands and facilities are developed and conducted at the request of, and in full collaboration, coordination, and communication with, Refuge and Hatchery Managers and Biologists. Endangered species-related environmental contaminants work is directed, as a priority, towards facilitating recovery and protection of listed species, as well as providing a proactive approach to avoid listing species. EC Biologists conduct joint operations with Law Enforcement (LE) to protect migratory birds and other trust resources by helping LE Agents determine possible causes of migratory bird deaths and violations of the MBTA. EC Biologists also provide technical assistance to the Migratory Bird and Fisheries Programs, with the long-term goal of protecting, conserving, and restoring fish and migratory bird populations. When Service resources are impacted by oil and chemical spills, EC Biologists work closely with Federal and State spill response officials to identify resources-at-risk and evaluate response strategies to minimize and mitigate potential impacts on trust resources. Following spills or releases of hazardous substances, EC Biologists work with other Service programs and our co-trustees (i.e., other Federal, Tribal, or State agencies) to assess injuries to Service trust resources and develop and implement restoration actions.

Partnerships

The EC Program provides scientific and technical assistance to numerous partners and collaborators. *While other agencies, including the U.S. Environmental Protection Agency (EPA), principally focus on human health, the Service's EC Program is the primary Federal agency focusing on the health of our nation's fish and wildlife resources.* The EC Program has the front-line capability to monitor the ecological vital signs of the nation's fish and wildlife and the legal authority to take action when threats are identified. EC Biologists interact with State and Federal biologists and land managers, land owners, resource users, other stakeholders and the public when conducting field investigations and seeking solutions to complex environmental threats. Through this collaborative process, the Service and the public are brought closer together to work towards developing solutions to fish and wildlife management problems. Working with partners on contaminant issues fosters early recognition of emerging threats and enables greater communication among parties regarding how to prevent or mitigate potential future impacts.

Science Excellence

Scientific excellence is the foundation of the EC Program. EC Biologists use scientific methods to produce verifiable results and conclusions that further the state of scientific knowledge on the impacts of contaminants on fish and wildlife and their habitats. EC Biologists routinely collect and analyze scientific data under strict standard operating procedures and quality assurance/quality control (QA/QC) measures. The EC Program's Analytical Control Facility (ACF), which is dedicated to providing high quality environmental chemistry expertise in support of the Service and other Department of the Interior (DOI) Bureaus, helps to ensure that field data are analyzed quantitatively in a high quality manner. Using rapid turn-around capabilities and peer review the ACF ensures that the EC Program produces scientifically credible data in a timely manner to decision-makers and fish and wildlife managers.

STRATEGIC PLAN

The strategic planning effort for the EC Program has been designed to provide an opportunity to re-evaluate our past activities and practices. With input from our partners and customers, the EC Program developed a strategic plan that reprioritizes opportunities and activities to ensure a successful future. As part of this process, the EC Program will work with our partners to identify and target contaminant issues of concern with known effects to trust resources and focus the Program's efforts on preventing future injuries and restoring priority trust resources. *Prevention of contaminant impacts and restoration and recovery of injured Service trust resources and habitats are the highest priorities for the EC Program through the next five years.*

However, while continuing to address the numerous contaminant issues that have been the traditional focus of the Program, we will face new and more complex environmental problems in the future. If we are to meet the expectations of the Service, EC Program partners, and the public, while facing increasing contaminant threats to fish and wildlife and their habitats, limited Program resources, and increasing demands for the EC Biologists' scientific expertise, it will require extreme flexibility and regular reevaluation of our priorities.

Table 2. Environmental Contaminants Program Expertise across the Nation

<ul style="list-style-type: none">• agricultural chemicals• agricultural irrigation drainwater• contaminants associated with energy development• contaminated sediments• cyanide leach pits• heavy metals (e.g., mercury, lead, cadmium, and zinc)• spill response• fire suppression chemicals• petroleum hydrocarbons• inter-sex characteristics and endocrine disruption in fish and wildlife• urban and industrial pollution	<ul style="list-style-type: none">• PCBs and dioxins• water quality• acid precipitation• selenium• mining wastes• military site remediation• unexploded ordinance• lead shot• pesticides• integrated pest management• ecological risk assessment• natural resource damage assessment and restoration• global climate change
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To increase efficiency, the Washington Office arm of the EC Program will identify and maintain a database of in-house experts in the various fields of contaminant knowledge to serve as clearinghouses of information for other staff and management. This approach will help to provide high-quality, timely and relevant scientific advice to decision-makers for application to Service trust resource protection.

Geographic focus areas identified in partnerships with other Service programs will receive priority effort by EC Biologists to maximize resource protection efforts of the Service. Because Field and Regional Offices (FOs and ROs) are best positioned to know which resources are at risk in their geographic areas, these offices will make the necessary determinations as to which areas EC Biologists will focus their efforts. Using multiple sources of information the EC Program in the RO and FO also will help other programs to identify important geographic focus

areas and provide opportunities for new partnerships in areas such as: State Comprehensive Wildlife Conservation Actions Plans, eco-regional plans, recovery plans, conservation strategies, resource management plans, natural resource damage assessment restoration, and the myriad of other land and natural resource activities affecting the Service.

Goals, Objectives, and Strategies

In keeping with the EC Program's priorities, the following goals, objectives, and strategies were developed to capitalize on opportunities for protection, restoration and recovery of fish and wildlife. These goals are consistent with the DOI's Strategic Plan, fiscal year 2003 – 2008, and the Service's Government Performance and Results Act (GPRA) Implementation Plan.

Goal 1. Conserve trust resources and their habitats through contaminant prevention.

Environmental Contaminants Biologists provide a critical role in protecting the nation's resources by preventing injury to fish, wildlife, plants and their habitats. Through the review of environmental documents, legislation, regulations, state water quality standards, permits, and licenses, the EC Program helps ensure that harmful effects of contaminants on fish, wildlife, and plant populations and habitats are prevented or minimized. EC Biologists routinely provide technical assistance to other Federal, Tribal, State, and local agencies, academia, industry, and the public on activities that affect environmental quality (e.g., mining, agriculture, pesticide use, industrial discharges, non-point source and wastewater discharges, as well as other modifications to use of land and water). To effectively and efficiently address contaminant problems, EC Biologists typically use an integrated, risk-based approach to focus limited staff time on Service trust resources in geographic areas impacted by contaminants or at immediate risk from exposure.

Oil and hazardous material spills have the potential to severely impact Service trust resources including birds, marine mammals, inter-jurisdictional fishes, and Service-managed lands. EC Biologists play a major role in planning for and responding to oil spills, primarily to prevent or reduce impacts to fish, wildlife and their habitats. The guidance for this work is contained in the

Service's National Oil Spill Contingency Plan. To ensure preparedness in case of a spill, EC Biologists participate in numerous oil spill drills conducted across the nation each year and work with other agencies and private parties to develop spill response plans that address Service trust resource concerns.

With the thousands of chemicals that are being developed and released into the environment each year, the EC Program recognizes the need to focus our limited staff resources on preventing or reducing the impacts of those chemicals known to present the greatest risk to Service priority trust resources. *By preventing pollution, the considerable costs associated with investigation, remediation and restoration are reduced, making prevention by far the most cost-effective resource management practice the Service can offer.* Contaminants of concern to Service trust resources include historically and currently used chemicals, as well as those toxic chemical compounds in development. Though some toxic chemicals are no longer in use in the United States, they remain a threat due to their persistence in the environment. EC Biologists work to protect habitats essential to threatened and endangered species from adverse effects of new exposures to environmental contaminants and work towards recovery of those species that have been impacted. As new data generated by Service EC Biologists and others identify and describe the toxic impacts of new and emerging chemicals to fish and wildlife resources, additional contaminants likely will become of concern.

The Congressionally appropriated base 1130 budget of the EC Program has not increased significantly in over a decade, and for the foreseeable future budget increases are not likely. Therefore, the Program anticipates that certain tasks, such as reviewing pesticide use proposals, consultations with others outside the Service, permit reviews, and pre-acquisition surveys may not be performed or only will be provided to other Service programs and our partners on a reimbursable basis.

Objective 1.1: Identify and address contaminant issues regionally identified.

Action 1.1.1 – Identify and target contaminants of concern with known effects to trust resources.

Action 1.1.2 – Identify and coordinate with other Service Programs to target geographic areas based on priority trust resources and the degree and immediacy of contaminant threats.

Action 1.1.3 – Identify common initiatives with other Federal, Tribal and State agencies to protect trust resources and achieve common goals while eliminating duplication of effort.

Action 1.1.4 – Post focus area information and actions taken to an Environmental Contaminants database maintained and managed by the Washington Office.

Strategic Plan Success Measures:

- Conservation focus areas are identified in each region and prioritized.
- Identify priority species which may be at risk from contaminant exposures.
- Identify and prioritize existing and potential contaminant concerns in each region’s geographic focus area. Document areas and contaminants of concern in a geographic information system (GIS) data layer available to all Service programs.

Objective 1.2: Communicate with Federal, Tribal and State 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.

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

Strategic Plan Success Measures:

- Number of consultations and technical assistance actions conducted with other Federal, Tribal, State, and local, agencies on contaminant issues.
- Number of policy and regulatory changes resulting from EC Program consultations and technical assistance that lead to prevention and reduction in contaminant impacts on Service trust resources.

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 to prevent the release and minimize the adverse effects of contaminants on Service trust resources.

Action 1.3.2 – Complete development of a clearer, user friendly, national Integrated Pest Management (IPM) and Pesticide Use Proposal (PUPs) database.

Action 1.3.3 – Establish database user requirements and ensure database compatibility with other Federal and Service databases as appropriate.

Action 1.3.4 – Make the database available to the public, land and natural resource managers, and other experts in the fields of pesticides use, and land and natural resources management.

Action 1.3.5 – Prevent and minimize the impacts of pesticides on species of conservation concern, including pollinators and other non-target species.

Strategic Plan Success Measure:

- Develop and make available on intranet IPM and PUPs database.
- Species protected, number and status.
- Number of consultations and technical assistance actions provided other Service program that lead to reduced pesticide impacts to species and Service lands.
- Number of consultations and technical assistance actions provided to other agencies that lead to reduced pesticide impacts to species and Service lands.
- Number of investigations assessments, analyses, reviews, and evaluations of contaminant effects on fish, wildlife and their habitats that help inform consultations and technical assistance actions.

Objective 1.4: Develop a National Spill Response Team to foster partnerships and increase efficiencies in responding to large-scale spills and releases.

Action 1.4.1 – Identify and secure funding for a National Spill Response Coordinator.

Action 1.4.2 – Designate and train personnel in each region for a National Response Team.

Strategic Plan Success Measures

- Development and establishment of a functional National Spill Response Team.
- Number of fish and wildlife resources rehabilitated or spared injury through response actions to oil and hazardous material spills or releases.

Goal 2. Restore and recover trust resources and their habitats harmed by environmental contamination and other stressors.

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

- Aldo Leopold

When spills or other releases of oil or hazardous substances occur, EC Biologists are typically the Service’s lead responders. They provide biological and technical expertise to identify the scope and geographic extent of the incident, minimize potential impact, and restore and recover the injured fish and wildlife resources in a timely manner. Work on these activities are conducted in coordination, collaboration, and communication with other Federal, Tribal, State, public, and private partners. The Service has shifted the focus of the EC Program to prioritize restoration and recovery activities for the duration of this Strategic Plan. The three major categories of action for this goal are (1) identification and implementation of restoration activities through the NRDAR processes, (2) identification and implementation of restoration actions for trust resources, and (3) implementation of species recovery through technical assistance and support to other Service Programs that are directly responsible for the resource (e.g., Refuges, Migratory

Bird Management, Endangered Species, and Fisheries and Wildlife Management Assistance Programs).

Although NRDAR cases can be time and resource intensive, they often lead to significant restoration of trust resources and rewarding partnerships across the country. The natural resource damage assessment regulations promulgated under CERCLA (43 CFR 11) and OPA (15 CFR 990), set the criteria for determining injuries and damages when contaminants or oil has been released into the environment. EC Biologists focus on viable restoration options when deciding the degree to which they engage in a natural resource damage assessment. Natural resource damage assessment cases are not considered complete when a settlement is achieved. Instead, this is just the starting point of the hard work of restoring injured natural resources. For the next several years the EC Program will concentrate on: (a) completing the restoration projects associated with settled cases; (b) planning and implementing restoration activities on current cases; and (c) pursuing new cases involving injury to Service priority resources.

The EC Program restores natural resources and recovers species outside the NRDAR context as well by providing information needed by others to accomplish their program goals. Through the investigative work and technical expertise provided to other Service programs, Federal agencies, Tribes and States, the EC Program contributes directly to the restoration of habitat and recovery of fish and wildlife.

Objective 2.1: Identify opportunities for restoration of fish and wildlife and their habitats, linking these opportunities to restoration needs associated with NRDAR.

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, with the restoration goals in mind.

Action 2.1.2 – Prioritize restoration and recovery efforts to be conducted, according to geographic focus areas and species identified by other Service programs.

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

Action 2.1.4 – Publish the focus area information on the intranet clearinghouse database described in Objective 3.4.

Strategic Plan Success Measures:

- Identify and describe the restoration needs associated with each NRDAR project.
- Quantify the number of potential restoration projects identified.
- Conduct Regional prioritization of restoration projects.
- Publish the information associated with the Regional prioritization of restoration projects on the national clearinghouse database as described in Objective 3.4.

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

Action 2.2.1 – Develop criteria that allow milestones in the NRDA and restoration process to be measured 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 – Develop a “Directory of Contaminant Experts” to promote experts from across the country to context to expedite planning and implementation of NRDA restoration.

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.

Strategic Plan Success Measures:

- Develop milestones to show NRDAR accomplishments on an annual basis.

- Identify and categorize NRDA restoration projects successfully implemented each year.
- Identify and publish a Directory of Contaminant Experts for use in field contaminant operations.

Objective 2.3: Identify and implement restoration and recovery opportunities outside the NRDAR process for fish and wildlife resources impacted by contaminants.

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

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

Action 2.3.4 – Prioritize geographic focus areas and species identified by other Service programs in each Region to restore and recover Federal trust resources.

Action 2.3.5 – Publish geographic focus area and priority species information on clearinghouse database, as described in Objective 3.4.

Strategic Plan Success Measures:

- Record the following information on an annual basis:
 - Total area of potential restoration and recovery actions identified.
 - Total area of restoration and recovery projects completed with the technical assistance of the EC Program.

- Number of consultations and technical expertise provided to other Service programs.
- Number of consultations and technical expertise provided to other Service programs that lead to restoration and recovery actions.
- Number of contaminants identified and description of those known to have the potential to cause adverse biological effects on fish and wildlife and their habitats.
- Number of contaminants effects on fish and wildlife and their habitats investigated that lead to restoration and recovery.
- Number of episodic fish and wildlife die-offs investigated per year that lead to restoration and recovery.
- Prioritize Regional restoration projects with clear delineation of the criteria for prioritization.
- Provide annual data synthesis of NRDAR activities.
- Publish data synthesis results in NRDAR clearinghouse database.

Goal 3. Provide environmental contaminant expertise and high-quality scientific data and interpretation to support sound management decisions for trust resources.

Environmental contaminants are stressors of the natural environment that affect fish and wildlife and their habitats. As such, they can impair reproduction and growth, alter behavior, increase sensitivity to disease, decrease immune response, and result in direct and indirect mortality of fish and wildlife. 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. Data from these scientific investigations are used to make land management decisions and develop policies and guidelines to resolve contaminant threats to fish and wildlife and their habitats. In addition, the information collected from investigations can be used to develop natural resource damage assessments and to support restoration efforts. A rapid turn-around capability ensures

scientifically-credible data are readily available for decision-makers and fish and wildlife managers.

Investigations provide EC Biologists on-the-ground knowledge of fish and wildlife habitats, resulting in their ability to recognize adverse changes such as those caused by contaminants. Early detection of contaminants in the environment can decrease the impacts to fish and wildlife as well as the cost of addressing impacts. Additionally, 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.

Scientific investigations selections are based on Service priorities and objective criteria. 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. For 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. In addition, EC Program expertise has been used to address and resolve water-quality issues on National Wildlife Refuges.

Objective 3.1: Develop and use the EC Program’s procedures and protocols, QA/QC, and standard operating procedures (SOPs) including chain of custody, to acquire and collect data that are legally defensible and scientifically credible.

Action 3.1.1 – Use environmental contaminants protocols, QA/QC, and SOPs to support the collection of appropriate and representative data that are legally and scientifically credible.

Action 3.1.2 – Standardize the EC Program’s field and laboratory sample collection and analysis procedures.

Action 3.1.3 – Post EC Program data quality guidance, including QA/QC, SOPs, field and laboratory sample collection procedures, sample preservation, holding times, and chain of custody procedures on the Service intranet.

Strategic Plan Success Measures:

- Publish ACF guidance, SOPs, etc. on the Service intranet.
- Publish EC data quality guidance on the Service intranet.

Objective 3.2: Conduct independent scientific peer review of environmental contaminants investigation reports, as well as review and reach internal consensus regarding screening ecological benchmarks and contaminant effects thresholds used by the EC Program.

Action 3.2.1 – Review and where appropriate update existing scientific peer review protocol and post on the Service intranet.

Action 3.2.2 – Review selected screening ecological benchmarks and contaminant effects thresholds and establish a nationally consistent approach for their use.

Strategic Plan Success Measures:

- Post scientific protocol for peer review on intranet.
- Identify screening ecological benchmarks and thresholds for use by EC Program staff.

Objective 3.3: Complete environmental contaminants investigation data interpretation and reports in a timely manner to ensure that scientific information is available for management decisions.

Action 3.3.1 – Work with managers (project leaders) to prioritize workload to facilitate prompt completion of EC reports.

Action 3.3.2 – Convey scientific information to decision-makers as appropriate throughout the investigation process.

Strategic Plan Success Measures:

- Percent of environmental contaminant investigations with data and initial interpretation provided to decision-makers per year.
- Percent of environmental contaminant investigations with final reports completed or published and provided to decision-makers per year.

Objective 3.4: Develop and maintain a list of environmental contaminants staff expertise and published investigations reports in accordance with the Data Quality Act.

Action 3.4.1 – Develop an EC Program staff expertise list and place in national database.

Action 3.4.2 – Develop and implement a protocol for posting documents, such as correspondence, assessment reports, and white papers on the Service’s intranet in order to facilitate active internal coordination of scientific information.

Action 3.4.3 – Develop a national list of published EC Program investigation reports in accordance with the Data Quality Act.

Strategic Plan Success Measures:

- Identify and publish a directory of environment contaminants experts for use in field contaminant operations (See Objective 2.2).
- Develop a protocol for posting documents.
- Post published EC Program investigation reports on the Service’s intranet.

Objective 3.5: Target technical assistance and/or the collection of scientific information to specific management needs or actions.

Action 3.5.1 – 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; threatened and endangered species; migratory birds; 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.

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

Objective 3.6: Maintain and use the Analytical Control Facility (ACF) to provide high quality and reliable analytical services for the EC Program.

Action 3.6.1 – Improve the efficiency of the contract analytical services available through the Service’s ACF [*e.g.*, upgrade the Environmental Contaminants Data Management System (ECDMS), streamline delivery order process].

Action 3.6.2 – Expand the analytical services capabilities of the ACF to include additional non-routine analyses, such as bioassays, other toxicological methods and non-routine analytes, including new and emerging contaminants.

Action 3.6.3 – Improve the quality of customer service from the ACF to the field.

Strategic Plan Success Measures:

- Upgrade ECDMS.
- Add bioassays, non-routine analyses, and other toxicological methods to ACF capabilities.

Goal 4. Increase accountability, coordination, and visibility of the Environmental Contaminants Program to our internal and external partners and the public.

*“It is not only what we do, but also what we do not do,
for which we are accountable.”*

- Moliere

Communication of the EC Program’s successes has not been a priority until recently. The overall goal is to develop measures that effectively communicate the achievements and value of the EC Program in the conservation, protection, and restoration of trust resources. Effective measuring and reporting of the EC Program’s accomplishments is vital to the continued success of the Program.

In Fiscal Year 2005, EC Biologists provided technical assistance to EPA at 317 hazardous waste sites, responded to over 2,500 requests from Federal, State, and local entities, and more than 1,850 requests from other Service programs for technical assistance with environmental contaminant issues.

Accountability

Objective 4.1: Develop and implement performance measures to determine the efficiency and effectiveness of EC Program activities and fiscal responsibilities.

Action 4.1.1 – Develop and implement regional and field office step-down plans within 2 years after the finalization of the national strategic plan.

Action 4.1.2 – Review, revise and implement the Service’s operational plan’s performance target goals, including GPRA performance measures which accurately reflect the work and achievements of the EC Program.

Action 4.1.3 – Annually monitor and evaluate regional and national progress toward meeting specified performance measures and report on related accomplishments.

Action 4.1.4 – Manage EC Program funding to maximize Program performance and use Program funds in a timely and responsible manner.

Action 4.1.5 – EC Program Washington Office shall provide an explanation of annual budget decisions made to Regional and Field Office Environmental Contaminants personnel.

Strategic Plan Success Measures:

- Regional and field office strategic plans completed within 2 years of national strategic plan completion.
- Operational plan performance target goals.
- GPRA performance measures updated.

Partnerships

Objective 4.2: Develop and improve long-term partnerships with States, Tribes, other Federal agencies, non-governmental organizations, industry, and other Service programs to foster collaborative conservation strategies to protect, restore, and enhance trust resources.

Action 4.2.1 – Continue to work with other Service programs to leverage available funding, partnerships, and expertise, to maximize the attainment of fish and wildlife conservation goals.

Action 4.2.2 – Participate in regional and national conservation-focused events (e.g., Earth Day, Migratory Bird Day, River Rally, scientific conferences).

Strategic Plan Success Measures:

- Participation in regional and national conservation-focused events.
- Development of new partnerships.
- Accomplishments with partnerships.

Visibility

Objective 4.3: Collaborate and share information with our internal and external partners, stakeholders, future partners, decision-makers, and others to protect, restore, and enhance trust resources.

Action 4.3.1 – Designate national and regional EC Program Outreach Coordinators to work with Service outreach experts to develop and disseminate outreach materials and accomplishments of the Program.

Action 4.3.2 – Coordinate with National Conservation Training Center (NCTC) in developing a workshop to train designated EC Program staff from each region in outreach techniques.

Action 4.3.3 – Develop and implement an outreach program for national, regional and field office personnel to advance the EC Program’s presence and contributions to the Service, its partners and the public.

Action 4.3.4 – Educate and inform other Service programs, management and employees, by providing presentations at their management meetings and briefing Assistant Regional Directors, Deputy Regional Directors, Regional Directors, to increase their understanding of the accomplishments and importance of the EC Program.

Action 4.3.5 – Develop and post a national Internet list of published EC Program investigation reports, including Service reports and peer-reviewed, scientific publications.

Action 4.3.6 – Establish a suite of outreach materials that are accessible to multiple users including: a Strategic Plan fact sheet, current and updated web pages, environmental contaminants investigation fact sheets, accomplishment reports, and success stories.

Actions 4.3.7 – In coordination with the External Affairs office, inform congressional staff of on-going restoration activities and other significant EC Program actions in their district.

Action 4.3.8 – Develop outreach partnerships to highlight the link between healthy habitats, healthy, healthy fish and wildlife, healthy people, and a healthy economy.

Strategic Plan Success Measures:

- Designate EC Program Regional and Washington Office Outreach Coordinators by 2008.
- EC Program outreach workshop developed in conjunction with NCTC.
- Minimum of two outreach materials developed and submitted for publication or dissemination in a general audience format by each Region annually (e.g., *FWS News*; magazines; newspapers, *DOI People*, *Land and Water*, *News You Can Use*; Animal Planet; Discovery Channel).

- EC Program outreach information posted on Regional and Washington Office web sites.
- Political leaders in each Region (e.g., Congressional offices, State legislators) contacted at least twice per year to discuss environmental contaminants restoration and recovery issues.

Goal 5. Maintain and support an adequately-sized, technically capable workforce with state-of-the-art training, equipment, and technologies.

“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

The EC Program will 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. The field of environmental contaminants is extremely 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 the EC Program's visibility and show the “value added” by the Program to the Service’s overall mission with support for adequate staffing levels, training, investigations, prevention efforts, and restoration projects.

Action 5.1.2 – Washington Office, with assistance from the Regions, will prepare funding initiatives to incorporate into budget justifications to Congress.

Action 5.1.3 – Develop an inventory of Contaminant Program staff expertise to improve the efficiency of our workforce, provide for the identification of internal subject matter experts and create national and regional rosters.

Action 5.1.4 – Develop and adhere to annual Regional and Field Office work activity guidance.

Strategic Plan Success Measures:

- At least one budget initiative will be explored and developed each fiscal year.
- Develop “Directory of Contaminant Experts” and post on the Service’s intranet and Environmental Contaminants listserver.

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 – Hold a biennial national EC Program class to provide training and technical information exchange.

Action 5.2.2 – Washington Office will facilitate the development of a national online 8-hour Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) refresher course that meets Occupational Safety and Health Administration (OSHA) requirements and DOI and Service needs.

Action 5.2.3 – Work with the Service’s NCTC to maintain employee skills through employee development and training programs.

Action 5.2.4 – Support staff attendance at professional meetings.

Action 5.2.5 – Maintain the existing EC Program listserv and develop an index of topics or discussion threads.

Strategic Plan Success Measures:

- National training organized and provided every other year.
- 8-hour HAZWOPER refresher course developed and placed online.
- EC Program listserv maintained and indexed annually.
- Maintain and improve employee skills through training and development.
- Support staff membership in professional societies and attendance to professional meetings.

Making Decisions and Setting Priorities

To direct its efforts wisely, the EC Program will use the following eight criteria to decide which contaminant activities, opportunities, and issues to address for each goal. These criteria are intended to be considered collectively, meaning a decision regarding whether or not, and in what manner, EC Program involvement is warranted should be based on all the criteria. The criteria and associated evaluation factors are described below in a general order of significance.

1. *Prevention* – Consider the extent to which the EC Program action will directly contribute to preventing future contaminant impacts. Identify the most effective way to implement the action so it is clearly recognized as preventative.

2. *Restoration* – Consider the extent to which the EC Program action will directly contribute to the restoration of fish, wildlife, and plant populations, and habitat. Identify the most effective approach for the EC Program to implement restoration on behalf of Service trust resources.

3. *Service Program Support* – Consider the extent to which the EC Program action will support the objectives of another Service program. Based on the Service program and related management process, identify the most effective way for the EC Program action to be implemented to provide, and be recognized for, the programmatic support.

4. *Resource Management and Regulatory Decisions Outside of the Service* – Consider the extent to which EC Program involvement can influence the final resource management or regulatory decision. Consider the nature of trust resources and/or Service priorities and extent to which they would be substantively affected. Based on the decision-making entity/individual and process, identify the most effective way to implement the EC Program action to positively affect the decision.

5. *Conservation Partnership Support* – Consider the extent to which the EC Program action will support the objectives of a Service partner. Based on the partner and the Service relationship, identify the most effective way to implement the action and gain recognition for the support provided by the EC Program.

6. *Value-Added* – Consider the extent to which the EC Program action will add value to the overall benefit of a project sponsored by other Service programs or non-service partners. Consider the level of EC Program commitment which may be necessary to achieve the desired outcome. Work with the sponsors to determine the most effective way to implement the EC Program action for it to be recognized as adding value.

7. *Existing Commitments* – Consider the extent to which existing workloads and commitments might affect implementation of an action. Identify options for completing the action, including a range of levels of EC Program involvement.

8. *Cost-effectiveness* – Consider the benefit to trust resources and Service priorities relative to the investment (e.g., funding, staff time, etc.) necessary to implement the action. Consider the cost-effectiveness of each of the options outlined in criterion #7 above.

External Factors Potentially Affecting Achievement of Strategic Goals

The following key factors may have a significant effect on our ability to achieve our goals and objectives.

- Prevention and reduction of adverse pollution impacts requires the strong commitment of all partners. The proactive engagement of all our partners, including other Federal, Tribal, State and local agencies, academia, industry, private landowners, and stakeholders, might be difficult to achieve, given the competing interests, conflicting mission and goals limited resources available at all levels.
- Continued increased demands for our scientific expertise and resources by multiple programs within the Service might exceed EC Program funding and hinder our ability to fully meet these demands.
- The multiple commitments of the EC Program, combined with the uncertainties inherent in providing a rapid response capability for unpredictable oil or chemical spills, make it possible the EC Program may lack the necessary resources required to meet all our customer's needs at a given time.

Many decisions are made outside the EC Program's control. The Service has many responsibilities for which it exercises direct control over most decisions; examples include managing resources within Refuges, listing threatened and endangered species, establishing recovery plans, and setting hatchery production targets. Many of these activities are done in coordination with partners, but the decisions are a Service responsibility. In other cases, the Service provides technical assistance or advice to others and the decision-making is completed outside the Service. Many decisions for limiting the release of contaminants are made outside the EC Program's control. For example, the amount of contaminants deemed safe for water and related resources are determined by the States and Tribes with the oversight of the EPA; contaminants released by point source discharges to surface waters are regulated by States and the EPA; clean up levels for hazardous waste sites are determined by EPA, States, or Federal Facilities; and approval and guidance for use of pesticides is regulated by EPA or in some instances the States. Because many pollution control decisions are made by others, progress on related EC Program goals is more difficult to document.

Success of prevention actions is difficult to quantify and document. Preventing pollution is the cornerstone of the EC Program. The EC Program recognizes that investing in preventive measures is the best way to reduce risks to human health and the environment. However, the EC Program is under increasing pressure to provide accurate identification and quantification of cost savings and it is difficult to demonstrate the amount of future costs saved and prevented as a result of the Program's intervention.

For example, techniques are not available for measuring the absence of impacts to non-target species or the prevention of population declines in sensitive species because a pesticide is not registered. Improving water quality, reducing the risk of contaminant impacts from releases, incorporating wildlife response actions into spill contingency plans, and improving habitat quality by recycling waste rather than releasing it into the environment, are other examples that lack methods for documenting benefits. However, preventing injury to fish and wildlife is viewed as being the most efficient way of meeting our mission because the costs of negative resource impacts never occur and costs associated with discovering, assessing, remediating and restoring trust resources are avoided.

Spills and other contaminant releases are unpredictable. The nature, location, and timing of spills and other contaminant releases from hazardous waste sites, mines, illegal pesticide use, etc. are generally unpredictable. This uncertainty makes it difficult to prepare and respond adequately to such events. Training and coordination with others in the response community improves the Service's ability to respond to an incident, but this only partially addresses the problem. Increasing the Service's role in monitoring, and coordination with existing monitoring programs such as the USGS Biomonitoring of Environmental Status and Trends and National Ambient Water Quality Act Programs and EPA's Environmental Monitoring and Assessment Program, could help provide an early warning system and improve our ability to proactively address problems before they become too large to manage effectively.

Continued development increases potential problems which are outside the Services' influence. Increases in human populations and urbanization generally lead to increased waste production and an expanded transportation infrastructure, which increases potential impacts to

fish and wildlife resources. For instance, increased manufacturing can lead to increased pollutant discharges to waters, land, or air, increasing concentrations of contaminants and exposure to wildlife. Increased human population density and urbanization can also lead to more transportation of chemicals on roads and waterways, and via pipelines, increasing the potential for spills and releases. Decisions related to development are generally made by local governments or individual property owners where Service technical assistance and regulatory opportunities are limited.

Planning and investment timelines are often not matched. Prevention, mitigation and restoration measures require an upfront investment. The return on that investment, although often very beneficial in the long term, may not occur within the terms of office of the officials making the decisions. Hence, budget and planning decisions made under short-term/annual timelines might adversely affect programs that have long-term benefits.

APPENDIX A: Scope of the Environmental Contaminants Program

Spills Prevention and Contingency Planning

Function: EC Program personnel provide assistance to local, State, and Federal emergency response agencies, as well as private industry, to plan for effective response actions in the event of a spill of oil or hazardous material. Planning and exercises are coordinated with Service Law Enforcement, Refuge, and Endangered Species personnel, as applicable. Service trust resource information (locations, priorities, etc.) and management recommendations are integrated into contingency plans for response actions to ensure resource impacts are prevented and minimized in the event of a spill.

FWS Operational Plan Performance Target:

2.8.2 – Number of spill prevention or spill response activities reported per year.

2.8.3 – Number of spill prevention or spill response activities conducted per year.

DOI GPRA Goal: No goals currently identified.

Environmental Contaminants Program Investigations

Function: Environmental Contaminants investigations are developed separately to address both on- and off-Refuge contaminant-related issues. Investigations can include conducting and assisting with law enforcement investigations of contaminant-related cases. A related investigation capability, the Contaminant Assessment Process (CAP), provides a “desktop” screening of potential contaminant factors affecting Refuge lands. Investigations are designed to inform resource managers and regulatory decision-makers in order to prevent contaminant impacts to Service trust resources, or to restore those resources impacted by contaminants.

FWS Operational Plan Performance Targets:

The Operational Plan Performance Targets may be expressed solely in the scientific units of measurement (British or French System).

1.7.7 – Restore or enhance a known number or quantity of acres of habitat in U.S. per year (non-NRDA).

4.2.2 – Number of contaminant investigation or restoration activities completed on Refuge lands per year.

13.2.5 – Number of contaminant investigations completed per year.

DOI GPRA Goal: No goals currently identified.

Spill Response

Function: EC Program personnel provide assistance to local, State, and Federal emergency response agencies in responding to spills of oil and hazardous material. This function can both prevent impacts to Service trust resources, as well as restore those resources impacted by the spill. The Natural Resource Damage Assessment and Restoration (NRDAR) process (below) is utilized to achieve the latter.

FWS Operational Plan Performance Target:

2.8.2 – Number of spill prevention and/or spill response activities performed per year.

DOI GPRA Goal: No goals currently identified.

Hazardous Waste Site Assistance

Function: EC Program personnel provide assistance to State and Federal regulatory response agencies responsible for cleaning up hazardous waste sites. Recommendations for contaminant source, pathway, and ecological receptor factors are provided for the remedial action to prevent and/or eliminate risks to trust resources.

FWS Operational Plan Performance Target:

1.7.7 – Restore or enhance a known number of acres of habitat per year in U.S. (non-NRDAR).

2.1.7 – Number of wetland acres protected through technical assistance and NRDAR per year in the U.S.

2.2.5 – Number of upland acres protected through technical assistance per year.

2.3.7 – Number of riparian, stream, shoreline acres/miles protected through technical assistance.

2.4.7 – Number of marine and coastal wetlands acres protected through technical assistance and NRDAR per year.

2.8.5 – Number of ongoing NRDAR cases, final settlements, and other environmental assessments.

DOI GPRA Goal: No goals currently identified.

Natural Resource Damage Assessment and Restoration

Function: Natural Resource Damage Assessment and Restoration is an authority of the Secretary of the Interior provided by CERCLA and OPA. The NRDAR process allows the Service (representing the Secretary of the Interior) to seek compensation to restore natural resources lost or injured due to releases of hazardous substances or oil. Service NRDAR activities are coordinated primarily through DOI's Restoration Program.

FWS Operational Plan Performance Targets:

1.1.5 – Number of wetlands in acres enhanced or restored per year through NRDAR.

1.2.4 – Number of upland acres enhanced/restored through NRDAR 1.3.3 - Number of riparian stream/shoreline miles restored/enhanced through NRDAR.

1.4.8 – Number of marine/coastal acres restored/protected through NRDAR.

2.1.7 – Number of wetland acres protected through technical assistance and NRDAR.

2.2.6 – Number of upland acres protected through technical assistance through NRDAR.

2.3.8 – Number of riparian, stream, shoreline acres or miles protected through technical assistance through NRDAR.

2.4.7 – Number of marine and coastal wetlands acres protected yearly through technical assistance and NRDAR.

2.8.5 – Number of ongoing NRDAR cases, final settlements, and other environmental assessments conducted.

20.3.6 – Number of restoration settlements having a recreational component.

28.3.5 – Number of technical assistance support activities provided to Tribes for NRDAR, Restoration, CWA, and pesticides per year.

DOI GPRA Goals:

PIM.2.01.001(PIM 380) – Number of wetlands in acres enhanced or restored through NRDAR per year.

PIM.2.01.002(PIM 445) – Number of riparian stream or shoreline measured in miles restored or enhanced through NRDAR per year

Pre-Acquisition Environmental Site Assessment Program

Function: The Pre-Acquisition Environmental Site Assessment Program identifies contaminant and other environmental quality issues on real property that are proposed for acquisition into the Refuge System. These pre-acquisition environmental site assessments enable the Service to make informed decisions related to the condition of the property and the potential legal liabilities for environmental cleanup and compliance.

FWS Operational Plan Performance Target: No targets currently identified.

DOI GPRA Goals: No goals currently identified.

Pesticide Use Proposal Program

Function: Service policy is to minimize use of pesticides on Service lands and to apply integrated pest management practices wherever possible. Because the Service uses insecticides, herbicides, and fungicides on Refuges and Hatcheries, Pesticide Use Proposals are required. PUPs describe the target pest, crop, method of control, chemicals applied, rates of application, area being treated, sensitive habitats, and best management practices. Evaluation of the chemical impact to federally threatened and endangered species in the project area is required for each application.

FWS Operational Plan Performance Target:

2.8.1 – # of pesticide use proposals reviewed

DOI GPRA Goals: No goals currently identified.

Endangered Species Act Coordination

Function: EC Biologists often provide technical assistance in listing and recovery actions, candidate species conservation actions as well as participate in consultations for contaminant-related issues under the ESA with other Federal agencies on the effects of actions on listed species. Section 7 consultations are intended to avoid or minimize impacts to species proposed

for listing that occur on Service lands, federally-listed threatened and endangered species, candidate species, and critical habitat.

FWS Operational Plan Performance Target:

13.2.6 – Number of Clean Water Act consultations such as NPDES, TMDLs, and Triennial Review processes of State Proposed Water Quality Standards conducted annually.

13.2.7 – Number of Section 7 Consultations Pesticides – Off Service Lands – State and EPA consultations and technical assistance.

13.2.8 – Number of Section 7 Consultations CWA – Off Service Lands – State and EPA consultations and technical assistance.

DOI GPRA Goals: No goals currently identified.

Clean Water Act Coordination

Function: The EPA establishes water quality criteria and the States establish water quality standards based on these criteria. Operational controls (i.e., National Pollutant Discharge Elimination System permits) are implemented by the States under authority of EPA. Within the Federal Water Pollution Control Act [FWPCA; as Amended through P.L. 107-303, November 27, 2002] the Service has direct [Sec 118(f); Sec 208(i)(1); Sec 311(c)(6)(2)(M); Sec 404 (g)(2) and (3), and (h)(1), (j) and (m)] and indirect [Sec 103(2)(n)(1); Sec 304(a)(1) and (2); Sec 311(c)(6)(2)(A)] water quality responsibilities. In addition to the Services' FWPCA responsibilities, the Service has water quality responsibilities associated with ESA, Section 7 consultations. The consultations are with EPA on their Federal action to approve State standards and practices. A national Memorandum of Agreement between the Service, National Marine Fisheries Service, and the EPA is intended to facilitate this consultation process. Although this is an ESA function, environmental toxicology is the subject matter and that expertise lies within the EC Program. Thus, EC Biologists provide extensive technical knowledge in these activities at local, State, regional and national levels.

FWS Operational Plan Performance Target:

1.7.7 – Restore and enhance known quantity of acres of habitat yearly in U.S. (non-NRDA).

2.1.7 – Number of wetland acres protected per year, through technical assistance and NRDA.

2.2.5 – Number of upland acres protected through technical assistance per year.

2.3.7 – Number of riparian, stream, shoreline acres/miles protected through technical assistance.

2.4.7 – Number of marine/coastal wetlands acres protected through technical assistance and NRDAR.

13.2.6 – Number of Clean Water Act consultations (NPDES, TMDLs, Triennial Reviews of State Proposed Water Quality Standards).

13.2.8 – Number of Section 7 Consultations CWA – Off Service Lands – State and EPA consultations and technical assistance.

28.3.5 – Number of technical assistance support provided to Tribes yearly for NRDAR, restoration, CWA and pesticides activities.

DOI GPRG Goals: No goals are currently identified for these activities.

Technical Assistance

Function: The EC Program provides technical assistance to other Service programs, including other Federal, Tribal, State and local agencies, academia, industry, private landowners, stakeholders and the public. This category of activity includes a myriad of the Program's functions that have been described previously, such as the following:

- pest management decisions;
- contaminant- and water quality-related aspects of land use both on- and off-Service lands;
- development and/or implementation of contaminant- and water quality-related aspects of endangered species recovery plans;
- reviews of proposed federally permitted projects and actions;
- EPA and State-led remediation at hazardous waste sites; and
- providing information to conservation partners and the public on contaminant effects to fish and wildlife.

FWS Operational Plan Performance Targets:

1.7.7 – Restore and enhance known number and quantity of acres of habitat each year in U.S., not including NRDAR restoration action.

2.1.7 – Number of wetland acres protected through technical assistance and NRDA.

2.2.5 – Number of upland acres protected through technical assistance.

2.3.7 – Number of riparian, stream, shoreline acres/miles protected through technical assistance.

2.4.7 – Number of marine/coastal wetlands acres protected through technical assistance and NRDA.

2.8.1 – Number of pesticide use proposals reviewed.

13.2.6 – Number of Clean Water Act consultations (NPDES, TMDLs, Triennial Reviews).

13.2.7 – Number of Section 7 Consultations Pesticides – Off Service lands – State and EPA consultations and technical assistance.

13.2.8 – Number of Section 7 Consultations CWA – Off Service lands – State and EPA consultations and technical assistance.

28.3.5 – Number of technical assistance support activities to Tribes for NRDAR, restoration, CWA, and pesticides.

DOI GPRA Goal: No goals currently identified.

Environmental Contaminants Program Administration

Function: This category includes workload and budget development, fiscal management, accomplishment reporting and outreach, employee training, and project file and reference library management.

FWS Operational Plan Performance Target: No targets currently identified.

DOI GPRA Goal: No goals currently identified.