

Environmental Contaminants Program

How the Environmental Contaminants Program Supports the Mission of the National Wildlife Refuge System

Our 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.

Although many people may think of National Wildlife Refuges (Refuges) as pristine havens for fish and wildlife, approximately 17% of Refuges have major contaminant issues that must be addressed. Refuges face a wide variety of contaminant threats including impaired air and water quality and an ongoing threat of spills.

The U.S. Fish and Wildlife (Service) Environmental Contaminant (EC) Biologists play critical roles in preventing, identifying, cleaning up, and restoring contaminated areas on Refuges. EC Biologists have technical expertise in a wide variety of pollutants, such as oil and hazardous materials, pesticides, and metals. EC Biologists investigate potential sources of contamination on refuge lands, prioritize cleanups, and assist Refuge Managers on cleanup and restoration.

EC Biologists survey lands prior to acquisition to prevent the Service from unknowingly acquiring contaminated parcels that will be costly to clean up. Without EC Biologists, the Service could not meet its important mandate to “ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of the present and future generations of Americans” [16 USC § 668dd(a)(4)(B)].

EC Biologists are essential to the Service and fill a unique role by addressing contaminant impacts to trust resources, including Refuges.

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

Aldo Leopold, A Sand County Almanac, 1949



USFWS

Rachel Carson National Wildlife Refuge. In 1962 Rachel Carson published her ground-breaking book, Silent Spring. She linked the unrestrained use of post-World War II chemical pesticides with negative biological consequences.

Some of the Important Work EC Biologists Do for Refuges

Pre-Acquisition Surveys

- Full knowledge of contaminants on property and potential liability before purchase
- Allows planning for required remediation costs
- EC staff co-developed & teach Level I Environmental Site Assessment Course
- EC staff assist on Level I; conduct Level II & oversee Level III

CAP

- Review existing data; identify and document contaminant concerns; prioritize sampling
- >309 CAPs completed on refuges
- Data incorporated into Refuge CCP process
- May discover significant problems resulting in immediate Investigations or Clean-ups

On-Refuge Investigations

- Identify contaminants: sources, routes of exposure, and impacts
- ID & assess magnitude of contaminant concern
- Provide recommendations & technical assistance to avoid, reduce, or remove threat
- Investigations typically show contaminant is not restricted to Refuge
- Broad impact: Improvement at Landscape level
- Enhances partnership building

On-Refuge Clean Ups

- DEQ is lead & partners with NWRS & Engineering
- Characterize, assess, prioritize, & clean-up hazardous waste sites on Refuges nationwide
- Clean-ups range from routine (1-year) to complex (multi-year)



Preacquisition survey at Cape May National Wildlife Refuge, New Jersey.

- Over 500 Refuge cleanup projects completed
- Hundreds of compliance audit findings corrected
- Ensures Service is in compliance with laws & regulations

Spill Response and Planning

- Wildlife capture and rehab
- Identification of sensitive habitats
- Hurricane Response

Service/EPA Liaison Program

- 5 positions funded by EPA
- Ecological Risk Assessments, Clean Up Evaluations, & Sampling & Analysis
- Provide support to Refuge Program
- Vieques NWR, Caddo Lake NWR, Rocky Flats NWR, Salinas NWR, & Lee Metcalf NWR

Water Quality

- Technical assistance for remediating known water quality problems on refuges (*e.g.*, selenium & mercury)
- Determine minimum water quality required by sensitive aquatic species (*e.g.*, freshwater mussels & ammonia)
- Recommend target levels for water quality for restoring habitats & recovering populations

- ID facilities with 'impaired waters', provide management options within context of regulatory implications

Pesticides and Pest Management

- Help teach Refuge staff about pesticides, integrated pest management (IPM), and invasive species (3 different NCTC courses)
- Collaborated with Refuge staff to develop the Pesticide Use Proposal (PUP) online database
- Streamlined PUP process; Met FO, RO, & WO Refuge user needs
- In 2008, >2,400 PUPs entered

Abnormal Amphibian Surveys

- Determine extent of abnormal or malformed frogs on Refuge since 2000
- ID Refuges where abnormality prevalence exceeds background
- 130 Refuges/WMDs in 42 states
- Examined ~53,000 frogs & toads
- 4,200 classified abnormal, ranging from injuries to skeletal malformations

NRDA and Restoration

EC Biologists play a major role in restoring habitats and natural resources degraded by pollution, including when responsible parties release hazardous substances that affect Refuge properties. These restoration efforts embrace Strategic Habitat Conservation.

- Michigan Islands NWR: PCB contamination; Settlement = \$14,800,000 to acquire properties within boundaries of Michigan Islands NWR for waterbirds
- San Francisco Bay NWR: 40,000 intermediate fuel oil release; Settlement = \$3,445,000 to restore important seabird habitat

