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# Environmental Stewardship and Greening the Government



U.S. Fish and Wildlife Service  
January 2004

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This document is published and maintained by the Environmental and Facility Compliance Branch, Division of Engineering, with input from many other Service Offices. For questions/comments, please call Billy Umsted, Chief, EFC, at (303) 984-6865.

## I. Introduction

The Fish and Wildlife Service (Service) is a leader within the Department of the Interior in environmental stewardship. The public looks to the Service as stewards of the environment. We must provide an outstanding model of environmental leadership. Efforts in this area are in direct support of the Service mission which is:

“Working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.”



The Service has an active commitment to “Greening the Government” by protecting the natural processes that sustain life. Greening Service facilities will improve the future health of the environment on the lands that we are entrusted to conserve. The greening goals of the Service are contained in the Department of the Interior Strategic and Action Plans and Director’s Order 144.

Noteworthy is a commitment to stewardship initiatives in the following areas:

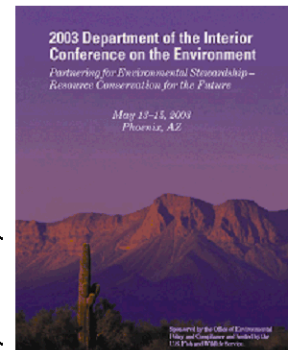
- Environmental Compliance
- Environmental Management Systems
- Environmental Training
- Remediation and Cleanup of Solid Waste
- Energy Conservation

- Sustainable Design in Construction
- Natural Resource Damage Assessment
- Historic Preservation
- Pollution Prevention
- Green Acquisition and Restoration
- Recycling

The Service extends its environmental commitment to 95 million acres across the United States, encompassing a network of 540 refuges within the National Wildlife Refuge System and 70 installations within the National Fish Hatchery System.

### 2003 Department of the Interior Conference on the Environment

A big highlight for 2003 was the Service hosting the 2003 Department of the Interior Conference on the Environment in Phoenix, Arizona, May 13-15, 2003. Conference Co-Chairs were Ken Naser, Office of Environmental Policy and Compliance, and Billy Umsted, Division of Engineering.



The conference theme was “Partnering for Environmental Stewardship – Resource Conservation for the Future.” Approximately 550 people were in attendance.

The conference was designed to provide a forum for DOI staff and representatives from non-governmental organizations, tribes, states, other federal agencies, and the private sector to meet and to exchange information on a wide variety of environmental issues and topics.

The conference was organized along five technical tracks: Environmental Stewardship, Trust Responsibilities, and Accountability; Environmental Partnering and Outreach; Resource Conservation and Management; Environmental Management Systems: Going Beyond Greening; and



Environmental Remediation and New Technologies. There were 115 technical presentations, 14 technical poster displays, 68 exhibits, and 5 field trips. Training was provided on 22 topics and 26 sessions were offered in addition to two 8-hour HAZWOPER refresher classes.

Conference attendees were welcomed by Mr. Christopher Kearney, Deputy Assistant Secretary - Policy and International Affairs and Mr. Marshall Jones, Service Deputy Director.



Photo by Tami Hellemann, NBC

*Christopher Kearney, Deputy Assistant Secretary – Policy and International Affairs*



Photo by Tami Hellemann, NBC

*Marshall Jones, Service Deputy Director*

The Opening Plenary Session included remarks given by Ms. Nina Rose Hatfield, Deputy Assistant Secretary – Budget and Finance on environmental liability. Ms. Hatfield introduced a video address by the Honorable Gale A. Norton, Secretary of the Interior, who expressed the Department’s commitment to environmental compliance and the use of Environmental Management Systems (EMSs) as a tool to move beyond compliance.

The keynote address was given by the Honorable James Connaughton, Chairman, Executive Office of the President, Council on Environmental Quality who addressed a number of current environmental and natural resource issues.

A featured conference event was the Capstone Plenary Session that consisted of an interactive panel session on EMS implementation issues that included questions from the audience. The panel members were Mr. John Howard, Federal Environmental Executive, Office of the Federal Environmental Executive; Mr. Jay Benforado, Director, National Center for Environmental Innovation, U.S. Environmental Protection Agency; Ms. Suellen T. Keiner, Director, Center for the Economy and Environment, National Academy of Public Administration. Ms. Karen Wade, Director, Intermountain Region, National Park Service served as the moderator.



Photo by Tami Hellemann, NBC

*The Honorable James Connaughton, Chairman Council on Environmental Quality*



Photo by Tami Hellemann, NBC

*Jay Benforado, Director - National Center for Environmental Innovation - U.S Environmental Protection Agency*







Photo by Tami Heilemann, NBC

*John Howard, Federal Environmental Executive Office of the Federal Environmental Executive*



Photo by Tami Heilemann, NBC

*The "Conference Team" (Left to Right: Becky Burluson, Marlene Johnson, Jewel Bennett, Carol Toffoli, Erin Quinn, Rhonda Miller, Bev Avila)*



Photo by Tami Heilemann, NBC

*Suellen Keiner, Director -Center for the Economy and Environment - National Academy of Public Administration*

Photos of some of the conference exhibitors:



Photo by Tami Heilemann, NBC



Photo by Tami Heilemann, NBC

*Karen Wade, Director - Intermountain Region National Park Service*



Photo by Tami Heilemann, NBC

**II. Environmental Compliance Auditing Program**

**Background**

The Service initiated a comprehensive environmental compliance auditing program in 1994. The Division of Engineering (DEN) started the program with publication of state and federal handbooks for auditor use in the field. The DEN developed a sustainable program by training and certifying Regional personnel to accomplish the audits while maintaining central control over an audit database, training, and distribution of funding. The Service completed its first full cycle of audits at all facilities in FY 2002. The Service has also assisted other Bureaus in setting up mandatory compliance auditing programs.



*Environmental Compliance Audit - Dale Hollow NFH, Tennessee, March 2003*

**Purpose**

The Service engages in certain operations and activities that could cause environmental impacts on public health and the environment.

The purpose of the Service Environmental Compliance Auditing Program is to:

- Establish Service-wide standards and consistency for Regional environmental compliance audits as a means of ensuring the Service’s compliance with all applicable environmental laws and regulations;
- Assure the Service Directorate and environmental program managers that environmental programs are effectively addressing issues that could:
  - Impact Service mission effectiveness
  - Jeopardize the health of Service personnel or the public
  - Degrade the environment
  - Expose the Service to avoidable financial liabilities as a result of noncompliance with environmental requirements
  - Erode public confidence
- Maintain a record of outstanding and corrected environmental deficiencies; and
- Provide accurate information to develop budget priorities.

**Scope**

The Service has a wide range of field facilities that require audits. They include the following:

<u>Type of Facility</u>	<u># of Facilities</u>
Wildlife Refuges	540
Fish Hatcheries	70
Wetland Management Districts	35
Ecological Services Field Offices	62
Law Enforcement	44
Fish Health Centers/Technology Centers	15
State Hatcheries	20
Fish & Wildlife Management Asst. Offices	14
Fisheries Assistance Office	3
Fisheries Resource Office	16
Wildlife and Habitat Management Office	8
Miscellaneous Field Offices	27
<b>Total</b>	<b>854</b>



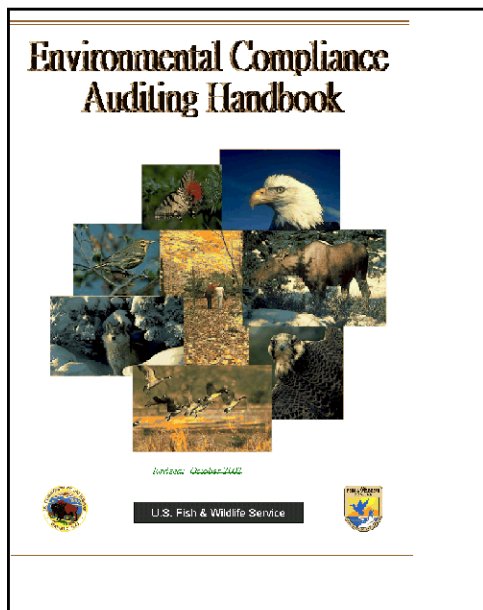
Environmental audits planned during FY 2004: 127  
Formal audits and 33 Informal audits.

## Procedures

- Audits are conducted using Federal (updated annually) and State (updated every 2 years) handbooks. These handbooks list all state and federal compliance requirements in a matrix format that is easy for auditors to follow.

The handbooks are divided into 11 protocols:

- Air Emissions Management
- Drinking Water Management
- Hazardous Materials Management
- Hazardous Waste Management
- Pesticide Management
- Petroleum, Oils, and Lubricants (POL) Management
- Solid Waste Management
- Special Pollutants Management
- Underground Storage Tank (UST) Management
- Wastewater Management
- Greening



*Federal Auditing Handbook*

Audits are divided into 3 categories:

- **Formal Audits.** Formal audits are performed on all staffed facilities with maintenance facilities, fuel storage areas, laboratories and chemical storage areas. Formal audits require a site visit to the Service facility to be evaluated. While on-site, the auditors conduct record searches, interviews and site surveys, to determine the compliance status of a facility. These audits are performed by a team of two to three Service-trained individuals. Additionally, auditors provide compliance training to field personnel while on-site.
- **Informal Audits.** Informal audits are performed on facilities that are not staffed and have minimal operations, storage and maintenance activities. This is accomplished through a telephone conversation with the facility manager and by using a questionnaire and auditing handbooks.
- **Self Audits.** The Service requires audits for all field facilities through the use of the Self Audit Questionnaire. Through the self audit process, field stations perform an annual inspection to determine compliance with environmental laws and regulations. The purpose of a self audit is to provide a quick evaluation of environmental issues during the period between scheduled formal and informal audits.

## Types of Findings

Audit findings are listed in five different categories as follows:

- **Significant:** A problem categorized as significant requires immediate attention. It poses, or has a high likelihood to pose, a direct and immediate threat to human health, safety, the environment, or the facility's mission.
- **Major:** A major deficiency requires action, but not necessarily immediate action. Major deficiencies may pose a threat to human health, safety, or the environment. Any immediate threat, however, must be categorized as significant.



- **Minor:** Minor deficiencies are usually administrative in nature, even though those findings might possibly result in a notice of violation. This category may also include temporary or occasional instances of noncompliance.

- **Required Practice:** Required Practice items are those derived from Service policy or Executive Orders. While not a federal or state regulatory requirement, compliance is still required.

- **Management Practice:** Management Practice items are those for which there is no specific regulatory, Service, or Executive Order requirement.

### Most Common Findings on Service Facilities

The following were some of the most common environmental compliance audit findings found at Service facilities in FY 2003:

- **Operational practice**
  - The improper handling, storing and labeling of hazardous materials;
  - The improper handling, storing and disposal of hazardous waste;
- **Environmental and Safety Plans**
  - Inadequate Hazardous Communication Plan;
  - Inadequate or non-existing Spill Prevention, Control and Countermeasure (SPCC) Plan;
- **Recordkeeping**
  - Inadequate training records for personnel engaged in hazardous material/hazardous waste operations;
  - Inadequate records for recycling of used oil
  - Inadequate discharge permits.

Photos from past audits:

### Typical Audit Findings



*Incompatible Storage - Acids with Flammables*



*Unlabeled Containers*



*Unlabeled pesticide applicator or container*





*Open Paint Containers*



*Inadequate Storage of Hazardous Waste -  
Abandoned Drums*



*Improper Battery Storage*



*55-Gallon Drum of Unknown Liquid -  
Rusted Through at Top*



*Unprotected Floor Drain Leading to Leachfield*



*Damaged Container of Linseed Oil*

**Quality Assurance/Quality Control (QA/QC)**

In order to maintain consistency in the audit program, QA/QC evaluations are performed by the DEN and a third party, the Corps of Engineers.

**Program Status, 2003 Accomplishments**

For the years FY 1994 through FY 2003, the Service has completed audits at 837 facilities. The average number of all audit findings to date per formal audit is 11. Approximately 90% of all findings are corrected without the need for additional funding.

The average percentage of open findings was 14% during FY 2003. This compares to 20% open findings at the end of FY 2002.

In summary, during FY 2003, a total of 93 formal and 39 informal audits were conducted at Service facilities. The average number of findings per formal audit was 8. This compares to an average of 15 findings per formal audit in the early years of the program. There were no significant findings in FY 2003.

A complete summary (by Region) of the audit program (FY 1994-2003) is shown on the table below:

Region	Detailed Regulatory Findings			Required Mgmt Practice	Mgmt Practice Findings	Total # Findings	Total # Audits	Average # Findings
	Minor	Major	Significant					
1	794	681	3	304	343	2125	236	9
2	313	251	2	130	229	925	74	13
3	682	345	1	341	218	1587	158	10
4	502	330	0	224	193	1249	174	7
5	471	365	2	309	304	1451	226	6
6	231	355	0	252	236	1074	279	4
7	215	58	0	101	67	441	48	9
<b>Totals</b>	<b>3208</b>	<b>2385</b>	<b>8</b>	<b>1661</b>	<b>1590</b>	<b>8852</b>	<b>1195</b>	<b>7</b>



A complete summary (by Region) of the audit program for FY 2003 is shown on the table below:

Region	Detailed Regulatory Findings			Required Mgmt Practice	Mgmt Practice Findings	Total # Findings	Total # Audits	Average # Findings
	Minor	Major	Significant					
1	90	34	0	14	12	150	15	10
2	10	19	0	7	9	45	4	10
3	117	16	0	69	39	241	17	14
4	2	2	0	4	4	12	3	4
5	58	31	0	19	31	139	21	7
6	14	67	0	27	24	132	29	5
7	14	1	0	15	9	39	4	10
Totals	305	170	0	155	128	758	93	8

Shown below is a chart that compares the number of **Open Detailed Regulatory Findings** to the **Total Number of Detailed Regulatory Findings**.

<u>Region</u>	<u>Total Findings</u>	<u>Total "Open" Findings</u>	<u>% Open Findings</u>
1	1464	251	17%
2	525	57	11%
3	1019	222	22%
4	836	107	13%
5	841	38	5%
6	606	78	13%
7	276	28	10%
9	0	0	0%
Totals	5567	781	14%



## III. Environmental Compliance Audit Tracking

Environmental compliance audits and associated findings are tracked in a National centralized web-enabled database referred to as the Environmental Facility Compliance Audit Tracking System (EFCATS). The EFCATS database is a user-friendly system that enables Service employees to input, edit and generate reports using internet browser technology. The next 4 pages illustrate features of the database.

### **Brief Description of Attached Screen Shots:**

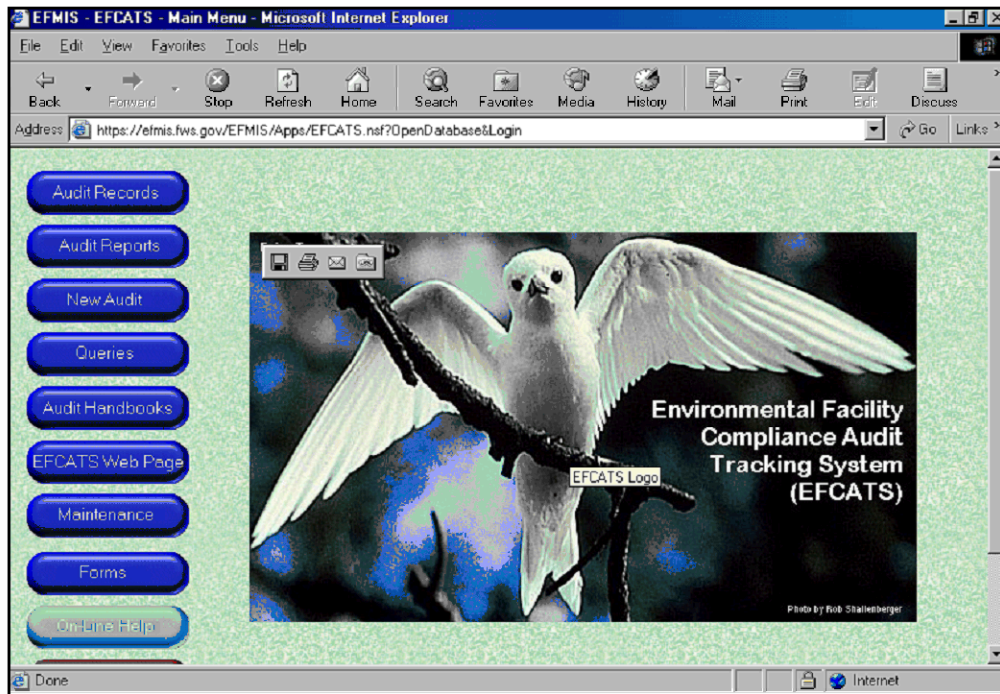
**Page 9** – “Environmental and Facility Compliance, EFMS, etc.” This is the Log-In Screen.

**Page 9** – Audit Record (in expanded view)

**Page 10** - This screen displays finding information including Condition, Solution, Status, Cost Information, and Photos.







*This photo depicts the first page of the Service’s database for tracking environmental compliance audit findings. This national database is web-enabled and allows Regions to input audit data and track findings.*

EFCATS - Audit Records - All Regions

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#)  
[N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

[Previous](#) [Next](#) [New](#)  
[Expand All](#) [Collapse All](#)

Audit Date	Finding Number	Findings	Finding Status	Repeat
▶ ABERDEEN WETLANDS ACQUISITION OFFICE (64910)				
▶ ABERNATHY FISH TECHNOLOGY CENTER (13210)				
▶ ACE BASIN NATIONAL WILDLIFE REFUGE (42511)				
▶ AGASSIZ NATIONAL WILDLIFE REFUGE (32510)				
▶ ALAMOSA NATIONAL WILDLIFE REFUGE (65510)				
▶ 03/18/1997		3 Findings		
▶ 06/18/2002		12 Findings		
	65510.02.01		Open	No
	65510.02.02		Closed	No
	65510.02.03		Closed	No
	65510.02.04		Closed	No
	65510.02.05		Closed	No
	65510.02.06		Closed	No
	65510.02.07		Closed	No
	65510.02.08		Closed	No
	65510.02.09		Closed	No
	65510.02.10		Open	No
	65510.02.11		Open	No
	65510.02.12		Closed	No
▶ ALASKA MARITIME NATIONAL WILDLIFE REFUGE (74500)				

[EFCATS](#)  
[Log Out](#)

[Expand All](#) [Collapse All](#)  
[Previous](#) [Next](#) [New](#)

*This screen shows the “Records” view (in expanded format which includes number of findings and whether the finding is open or closed).*



Log Out EFCATS Audit View Findings Finding Cost Edit

**FINDING INFORMATION SECTION**

Station Name: ALAMOSA NATIONAL WILDLIFE REFUGE      Audit Date: 06/18/2002  
 Finding Number: 65510.02.02      Repeat Finding?: No  
 Repeat Finding No. 1: N/A      Repeat Finding No. 2: N/A      Repeat Finding No. 3: N/A

---

Env. Cat. Section: Hazardous Materials Management      Finding Type: Detailed Regulatory  
 Audit Protocol: HMI.1.10.      Finding Category: Major  
 Section Code: HMI - General Hazardous Materials      Compliance: Regulatory  
 Universal Code: 01Z - Labels/Markings

**FINDING SUMMARY SECTION**

Criteria: Containers of hazardous chemicals in the workplace are required to be labeled, tagged, or marked with specific information (29 CFR 1910.1200(h)(3)(i), 1910.1200(h)(4)(i), 1910.1200(h)(5), and 1910.1200(f)(5) through 1910.1200(f)(7)).

Condition: An unlabeled one-gallon container was found in the Oil/Paint House building.

Sugg. Solutions: Identify contents of the container and label accordingly. All containers must be clearly labeled to avoid any confusion and misuse of the contents.

Corrective Action: Item was removed. Disposal was conducted through contract with Safety Kleen, September 2002. Item is closed.

Comments:

Finding Status: Closed      Closed Date: 04/15/2003

**FINDING PHOTO SECTION**



An unlabeled one-gallon container was found in the Oil/Paint House building

Log Out EFCATS Audit View Findings Finding Cost Edit

**Finding Cost Information Section**

Log Out EFCATS Audit Records View Findings Finding

Station Name: ALAMOSA NATIONAL WILDLIFE REFUGE      Audit Date: 06/18/2002  
 Finding Number: 65510.02.03

Add Item Cost Guide Total Costs Save Remove All Items

Tip: If this form appears to be incorrectly displaying cost data, i.e., totals not recalculating, etc. please hit Total Costs or Save button to refresh form.

Cost Guide Ref. No.	Item Description	Unit # of Items	Standard Cost (\$)	Non-Standard Cost (\$)	Total Est. Cost (\$)	Completed	Date Completed
0						No	
	TOTAL Est. Cost - All Items per finding						
	Contingency	0%					
	TOTAL (Includes Contingency)						
	Total Est. Cost - all COMPLETED Items						
	Total Est. Cost - all NOT COMPLETED Items						

Add Item Cost Guide Total Costs Save Remove All Items

Log Out EFCATS Audit Records View Findings Finding

These screens display finding information, including condition, solution, costs, and photos



#### IV. Environmental Management Systems

The Service is a leader within the DOI for the implementation of Environmental Management Systems (EMSs). Director's Order No. 144 was published in May 2002 and serves as a policy statement for the FWS. The scope of the Order can be accessed through our website: <http://policy.fws.gov/do144.html>. The Order addresses greening initiatives in the Service through: Employee responsibilities, training, environmental audits, Environmental Management Systems, accountability through performance evaluations and awards, environmentally preferable procurement, contracting and designs, conservation planning, community outreach, energy management, landscape management, water and wastewater management and solid and hazardous waste management. A Director's memorandum (February 2003) reemphasizes management commitment, goals of the program and a schedule for the implementation of the service wide EMS.

The Service's EMS implementation strategy for 2003 focused on EMS development at the field station level where Service activities have the most direct and immediate impact on the environment. The Service recognizes that EMS benefits can be realized at all field stations, regardless of size and complexity, but that EMS development will focus on field stations that are larger and more complex and have the *greatest* environmental aspects and impacts. The Service selected approximately 70 facilities and will implement EMS over a three-year period (FY 2003-2005) to meet the deadline of December 31, 2005. A training program, conducted by the Division of Engineering (DEN) in Feb 2003, provided a hands-on approach with a custom designed EMS Tool Kit on EMS implementation to the Regional Environmental Compliance Coordinators. The principle components of the tool kit are the model Environmental Management Plans (EMPs), Other

EMS related tools include model Standard Operating Procedures (SOPs) and other information such as Fact Sheets on specific subjects, projects, and related EMS requirements (i.e., greening initiatives). The tool kit will also evolve to include resources for general environmental program development, pollution prevention, model plans, resource lists and other information requested by field stations to help them meet environmental goals and targets. The environmental audit program is also part of the EMS implementation process and all facilities targeted for EMS are also audited at the same time.

A general EMP template was developed that is customized with every field visit. The EMP template provides a consolidated description of the EMS in place at the field station and includes the field station's environmental management policy, key environmental aspects and impacts of its operations, individual and collective roles and responsibilities of the field staff and the goals and targets established to improve the field station's environmental performance.

The EMP is divided into an introduction and ten sections: Policy, Aspects and Impacts, Goals and Targets, Responsibility and Accountability, Documents, Document Control and Information Management, Environmental Reporting, Communication regarding environmental matters, Environmental Training to promote sound environmental management, Budget as it relates to environmental programs and Monitoring, Measurement and Corrective Actions. The EMP is an Action Plan for the field station EMS. Other items included in the EMP are Standard Operating Procedures relating to day-to-day operations at the field station, Waste Inventories, Solid Waste Diversion Calculations and Finding sheets related to Environmental Audit that are performed during the field visit and a draft Energy Management Review.

The EMP implementation process usually takes one week for each facility. It includes an in-brief, facility walk-through, interviews, record review and an out-brief. The goal of the implementation process is to leave the facility with a fully finished product that they can review and modify to suit their needs. A six-month review process is established to encourage continuous improvement and a viable EMS. A framed policy statement that is customized for the facility is provided at the out-brief in order that they can display it at an appropriate place to inform visitors and employees about the station's commitment to environmental stewardship.

During FY 2003, the Service implemented EMS at the following facilities:

- Long Island NWR Complex
- Aransas NWR Complex
- Eastern Neck NWR
- Dale Hollow NFH Complex
- Neal Smith NWR
- John Heinz NWR
- Parker River NWR
- Quinault NFH
- Devils Lake NWR & WMD
- Arrowwood NWR & WMD
- Audubon NWR & WMD
- Fergus Falls WMD
- Rocky Mountain Arsenal NWR Complex
- Wichita Mountains NWR
- Klamath Basin NWR Complex
- Southeast Louisiana NWR Complex

The Service will continue the process for the following facilities in 2004:

- Klamath Basin NWRC
- Bosque del Apache NWR
- San Francisco Bay NWR
- S.E. Louisiana NWRC
- Imperial NWR
- Blackwater NWR
- Okefenokee NWR
- Ohio River Islands NWR
- Neosho NFH

- Texas Chenier Plain NWRC
- Crescent Lake/North Platte Complex
- Jordan River NFH
- Yukon Delta, Kenai & Tetlin NWRs
- Desoto NWR
- Alligator River NWR
- Crab Orchard NWR
- Ft. Niobrara/Valentine Complex
- Eastern Massachusetts NWRC
- Rhode Island NWRC
- Dworshak Fisheries Complex
- Malheur NWR
- National Bison Range/Lost Trails
- Creston Fish and Wildlife Center
- South Texas Refuges Complex

Implementation of the EMS will be monitored. The summary reports will be prepared to document the program. In obtaining and using such data, DEN can tailor support of the field station implementation effort, and the overall implementation strategy can be kept relevant to the needs of field stations and regions.

Tools will be developed to assess the quality of information gathered from field stations. Such information will be disseminated to other field stations. Measures will be in place to ensure the quality of data provided to other parties. Any self-assessment tool developed for use by field stations in gathering information will be both user-friendly and robust. This will ensure a standardized and comprehensive analysis of EMS activity.

The next two pages show photos of facilities where EMS has been implemented.





*Wichita Mountains Wildlife Refuge -  
Solar Battery Charger*



*Aransas/Matagorda NWRC -  
Windmills Creating Wetlands*



*Quinalt National Fish Hatchery - Water System  
(from left to right: Paul Hayduk, Project Leader  
and Pete Weher, Region 1)*



*Eastern Neck NWR - Wind Turbine*



*Fergus Falls Wetland Management District -  
Environmental Education*



*J. N. "Ding" Darling NWR - EMS Team  
(from left to right: Billy Umsted, Jim Poje,  
V. A. Sridhar, and Mike Brady)*





*Fergus Falls Wetlands Management District*



*Savannah Coastal NWR*



*Charles M. Russell National Wildlife Refuge -  
Mike Granger with Hybrid Vehicle*



*Parker River NWR*



*Leavenworth National Fish Hatchery*



*Arrowwood National Wildlife Refuge*





V. Training

**Environmental Compliance Training**

The Service’s environmental compliance training is a proactive approach to achieve the goal of full compliance. Proper training helps achieve this goal. The Service uses outreach techniques for training whereby Service personnel travel to select locations close to the field stations.

The training classes include Environmental Compliance Training (ECT) (formerly known as the Resource Conservation and Recovery Act Training), Comprehensive Environmental Resource Compensation and Liability Act (CERCLA) and environmental auditing. Environmental compliance training makes Service personnel aware of some of the basic tenets of environmental laws. The training stresses the elimination/minimization of the use of hazardous materials with a goal of zero waste. The course provides a primer in pollution prevention and trains employees on “Greening the Government” with the purchase of environmentally preferable products as required by Executive Order 13101. The training also summarizes the goals of Executive Order 13148 relating to Environmental Management Systems. The course teaches procedures in a “cradle-to-grave” approach for handling, storing and disposal of any hazardous waste that the field station may generate.

CERCLA training involves teaching the process of cleanup of large or “Superfund” sites. Additionally, multiple 8-hour Hazardous Waste Operations (HAZWOPER) Refreshers have been conducted. An Environmental Compliance Auditor Training Certification Course was conducted in October 2002.



*Environmental Compliance Training Class at Tern Island*



*Attendees at the Environmental Compliance Training Class at Tern Island*

During 2003, training was conducted at 3 field stations, with a total of 51 personnel in attendance. As of December 2003, 63 ECT classes have been conducted to train more than 1250 Service field personnel. Additional compliance training was provided at the May 2003 “DOI Conference on the Environment” in Phoenix, Arizona. The Service had many in attendance since we hosted the conference. Findings on compliance audits have been significantly reduced as a direct result of these training efforts. Additional specific compliance training is provided to field stations with regular environmental compliance audits.



VI. Remediation/Cleanup

As trustee of 95 million acres of federal lands, the Service is required by law to clean up known contamination. The main federal regulations for cleanup are CERCLA and RCRA. Appropriate cleanup studies, plans, and reports must be accomplished for the regulatory agency (state or federal) prior to cleanup. In the larger cleanups such as Superfund or large CERCLA sites, public hearings are held to gather input on the proposed remedy.

The Service has two major programs for cleanup of contaminated property. These programs include the Refuge Cleanup Program and the CERCLA/RCRA cleanups under the DOI Central Hazardous Materials Program.

The Refuge Cleanup Program consists of 40 to 60 projects per year with an annual budget of approximately \$2.4 million. Examples of projects include the cleanup of pesticides, small landfills, and other contaminants. These projects normally range from \$20,000 to \$250,000 per project.

The only active Superfund remediation site on Service lands is the Crab Orchard NWR site. Approximately \$4 million is expensed annually on the remediation. The Service currently has 74 facilities on the Federal Docket; however, 31 of the facilities are “No Further Remedial Action Planned (NFRAP).”

**Prime Hook NWR**

In 1999, the Service identified the lead shot cleanup site on the Prime Hook NWR, Delaware. The lead shot was deposited on Service land by an adjacent gun club that was in operation for 37 years. A site characterization study found as many as 57,868 lead shot pellets per square foot at a concentration in soils as high as 2,745 mg/kg. For the protection of

waterfowl, the removal of approximately 1300 tons of lead shot and lead contaminated soil began in the fall of 2002 and was completed in the spring of 2003. After the removal was complete, portland cement was incorporated to stabilize any remaining lead shot/lead contaminated soils. Subsequent confirmation samples resulted in Toxicity Characteristic Leaching Procedure (TCLP) readings less than the TCLP criteria of 5 mg/l.

The site is presently revegetated after hydroseeding with a seed mix selected by the Refuge.

The managers for the project were Charlie Fasano, Division of Engineering, Denver, Colorado, and Sherry Krest, Chesapeake Bay Field Office, Annapolis, Maryland.



*Prime Hook NWR - Post Lead Shot and Lead Contaminated Soil Removal and Stabilization - Fill and Topsoil Placement*



*Prime Hook NWR - Post Remediation - Vegetative Cover*



### Sachuest Point NWR

The land parcel, transferred to FWS in 1972, contained two areas of concern, a High Fill Area (HFA) of about 15 acres and a Low Fill Area (LFA) of about 6 acres. Historically, the Town of Middletown, RI, started piling and burning trash in the LFA in the late 1950s/60s. Due to complaints about odor and smoke, they stopped the burning process and started burying the waste in the HFA. The Middletown citizenry realized that the situation was not desirable for the beach area and the land was transferred to the Audubon Society to stop the dumping. However, the Audubon Society was not completely successful in stopping the trash accumulation. Finally, when the land transfer was made to the Fish and Wildlife Service (FWS), the dumping stopped and the HFA was used as a transfer station for a short period until all activities were completely curtailed.

Between 1995 and 1998, the Service characterized the landfill in accordance with all of the applicable federal and state laws and regulations. The studies indicated that the buried trash was typical of the municipal landfill of the times. EPA attached a low priority to the project. The Rhode Island Department of Environmental Management, however, required a resolution that would meet all of the state laws and regulations. Several alternatives were discussed for the project starting from leaving everything as is, on the one extreme, and removing everything from both areas of the landfill and hauling it off site, at the other extreme. Only after appropriate risk assessments, exhaustive reviews and consultations over a period of several years did the concerned parties arrive at the current approach which involves moving trash from the smaller LFA to the larger HFA for consolidation of the waste material. The project commenced on Sept 30, 2003. Cleanup costs are in excess of \$3 million. The Town of Middletown, Rhode Island, cost shares the cleanup costs as a partner with the Service.

The LFA contains mostly tree stumps, and concrete material. In this project, the FWS has made arrangements to recycle all such material as well as several tires and large metal pieces found in the HFA while preparing for the consolidation. A culvert project that was done about 5 years ago adjacent to the connecting road between second and third beach area (behind the trailer park), has resulted in minimizing the invasive species such as phragmites in that area and fish are coming back in the brackish waters in the small tidal ponds, facilitating a natural reduction of mosquito larvae.

The creation of wetlands is a corollary to the project and a very beneficial one indeed. In the long range, the invasive phragmites would all be replaced by native spartina grass and wetlands will flourish in what used to be the LFA. The area is environmentally sensitive, and the beach area is habitat for the endangered Piping Plovers. The Plovers will not be affected during the project because they will not be at the site until springtime rolls around and even then, only at the beach.

The consolidated landfill in the HFA will have regular and very long term operations and maintenance tasks performed to ensure that the integrity of the cap is not compromised. The project, a cooperative effort between the Town of Middletown, Rhode Island, and the Service, is to be completed by June 2004.

The manager for this project is V. A. Sridhar, Division of Engineering, Denver, Colorado.



Sachuest Point NWR, Continued



*Excavation of Materials in Low Fill Area*



*Depositing Soil From Low Fill to High Fill Area*



*Excavation in Low Fill Area*



*Loading Lead-Contaminated Soil*

## VII. Environmental Compliance Policy

- Ozone Depleting Substances Phaseout Plan

Service Manual Chapters and Directors Orders can be found at the following web address:

<http://policy.fws.gov/direct.html>

The Service has published 25 chapters in the Fish and Wildlife Service Manual concerning environmental issues. These chapters include the following topics:

- Policies and Responsibilities
- Pollution Prevention
- Reporting Pollution Incidents
- Inventories
- Hazardous Waste Compliance Docket
- Environmental Compliance Auditing Program
- EPA Enforcement Policy
- Clean Air Act
- Clean Water Act
- Safe Drinking Water Act
- Solid Waste Disposal Act
- RCRA Hazardous Waste
- Asbestos Management
- Underground Storage Tanks
- PCB's
- CERCLA Cleanup Sites
- Radioactive Materials
- Radon
- Medical Waste
- Emergency Planning and Community Right-to-Know
- Recycling
- Energy Conservation
- Green Acquisition
- Remediation, Abatement, and Environmental Compliance Funding
- Reporting Releases of Hazardous Substances, Oil Discharges and Contaminated Sites





VIII. Energy Management

The Service applies innovative approaches in energy management and is recognized as a Federal energy leader. The Service met the building energy reduction goal in FY 2002, one year ahead of schedule. Many energy-efficient lighting, fuel switching, and renewable energy projects have proven to be cost effective. Five facilities are designated as “Federal Energy Saver Showcases.” The newest showcase is the Herbert H. Bateman Educational and Administrative Center at Chincoteague National Wildlife Refuge, Virginia.

**New Energy Website**

During 2003, the Service developed a new “one-stop shopping” energy website for the Department of the Interior. It includes information about energy showcases, policy, energy efficiency technologies, and renewable energy.



**The Environmental Management System (EMS) and Energy Audits**

Energy management is an important part of the continuous improvement-oriented Environmental Management System (EMS) required by Executive Order 13148. The blackout in the summer of 2003 emphasized the need to continue implementation of electrical load reduction measures and energy reduction strategies, within funding limitations, as



identified in each field station’s Facility Energy Strategic Plan. The Service’s EMS emphasizes pollution prevention, green acquisition, energy and transportation efficiency, recycling, and waste avoidance. A part of the EMS is the Energy Management Review, conducted by using an energy checklist approach to recommending tuning, operation and maintenance, and energy conservation measures.



*Minnesota Valley NWR Visitor Center*

Since 1990, 59 comprehensive energy audits, 8 “SAVEnergy” Audits, and 20 renewable energy opportunity assessments have been completed, the latter funded by a \$35,000 grant from the National Renewable Energy Laboratory (NREL). These audits are already producing results. Since a “SAVEnergy” Audit of the was completed in September 2002, the Minnesota Valley NWR Visitor Center has saved thousands of taxpayer dollars by participating in a utility program called “Peak Control” by powering down unnecessary equipment as well as alternating air conditioning when peak electrical usage is reached.

**Minimization of Petroleum-Based Fuel Use**

The Bozeman Fish Technology Center, Montana has converted from fuel oil to natural gas, and the Litchfield Wetlands Management District, Minnesota, converted from electric to propane heating.



**Operation and Maintenance Procedures to Increase Energy Efficiency**

Many field stations have installed energy-efficient lighting. A demonstration project at Patuxent Research Refuge’s Gabrielson Hall in Maryland proved that substantial energy savings are possible by using this Energy Star lighting technology.

The Service purchases energy-efficient appliances (especially microwave ovens and refrigerators) for its offices and promotes purchase of energy-efficient items on the GSA schedule through the Javits Wagner O’Day (JWOD) Program, which provides employment opportunities for thousands of people with severe disabilities to earn good wages and move to greater independence.



**Energy Efficiency During the Planning/Design Process**

Designs done by Service engineers must be certified as complying with applicable building energy codes. Service engineers are required to use computer programs and implement passive solar strategies when designing new buildings. Emphasis is on use of low-risk energy efficient technologies that are readily available, easily maintained, and cost effective. Use of systems such as the Leadership in Energy & Environmental Design (LEED) Green Building Rating System, and models such as COMcheck-EZ, and EPA’s “Portfolio Manager” and “Target Finder” for Energy Star building compliance are encouraged.



**Renewable Energy**

The Service advocates the use of renewable energy technologies such as solar, geothermal, wind, and hydroelectric power to reduce the use of fossil fuels, reduce maintenance costs, and free-up resources for other priorities.

**Solar Energy**

Among 53 others, the Service has active solar energy facilities at sites in remote Pacific Islands, Hawaii, South Dakota, Rhode Island, and Puerto Rico (solar cooling). Solar lighting has proven to be efficient at Merritt Island NWR, Florida.

Solar photovoltaic (PV) systems that are particularly appropriate for remote islands have been installed at Farallon NWR, California, Tern Island NWR, part of the French Frigate Shoals in the North Pacific, Block Island NWR, Rhode Island, and Petit Manan NWR, Maine, among other locations.



*Solar Panels for Well Pumps - Aransas/Matagorda NWR*

## Farallon NWR, California

After years of attempting to obtain outside funds for a PV system at the remote, rocky offshore Farallon NWR, California, the Service completed such a system in 1998. Located in the Pacific Ocean 25 miles west of the Golden Gate, the islands' wildlife resources include one-quarter million nesting seabirds and five breeding species of marine mammals. The solar system portion of the total project cost \$172,043, and it converted the diesel generator system to a 6.84 kW PV system with a generator backup. It virtually eliminated dependence on diesel fuel for generation of electrical power and substantially reduced hazardous ship-to-shore transfers of fuel on the open ocean. Fuel usage fell by 88 percent. Since solar systems are not appropriate for energy-inefficient buildings, siding, insulation, appliances, fixtures, and electrical wiring in the two houses and two shops were upgraded. Annual O&M savings are \$82,000.



*Farallon NWR Solar System*

In 2002, the Service installed two new solar PV projects at land-locked refuges – Hopper Mountain and Imperial — both were 2003 Federal Energy and Water Management Award winners.

## Hopper Mountain NWR, California

The Service demonstrated environmental leadership by successfully installing a 1.76-kilowatt PV solar system to provide 100% of the power for a remote California Condor research station at Hopper Mountain NWR, California. The Refuge supports efforts to save the majestic, endangered California Condor. The solar system consists of 110-watt PV modules that provide electricity and water pumping, eliminating an unreliable gasoline-powered generator. Approximately 23,000 kWh, \$1,025, and 31,000 pounds of air pollutants are saved annually. A condor information kiosk in Fillmore, California, will display the benefits of solar power in minimizing fuel transfers and human activity on fragile condor habitat.



*Hopper Mountain NWR Solar System*

## Imperial NWR, Arizona

Photovoltaic solar collectors were installed on the visitor center and office at Imperial NWR. The Refuge protects wildlife habitat along the lower Colorado River. The solar system provides 10 kW or about 47 percent of the field station's energy needs, or a yearly savings of 20,200 kWh, \$1,625, and 27,500 pounds of air pollutants. The Service received a \$20,000 rebate from the Arizona Public Utilities Commission. A display in the visitor center demonstrates the benefits of solar power to the 128,000 visitors the refuge receives annually.





*Imperial NWR Solar PV System*

**Federal Energy Saver Showcases**

The best way to present the success of the Service’s Energy Management Program is to discuss the Service’s Federal Energy Saver Showcases, which promote wise energy and water use and demonstrate cost-effective energy efficiency, water-conserving, and renewable energy technologies. Each showcase site prominently displays a plaque notifying visitors that the government building they are entering uses energy and water, as well as taxpayer dollars, wisely.

**National Conservation Training Center, West Virginia**

The Service’s National Conservation Training Center, Shepherdstown, West Virginia, is a campus of 17 buildings comprising 377,461 energy-using gross square feet. It will meet training needs for professionals in the Service as well as other Federal, State and private entities. Approximately 225 students could attend the Center at any given time to take comprehensive technical and management training courses in support of environmental activities.

The contract for the Center was awarded on May 31, 1994. Most construction was completed in the fall of 1997, and the fourth dormitory was completed on July 3, 2003. The Service’s construction goal was to utilize low-risk energy conservation management technologies and applications that are

readily available, easily maintained, and cost effective. In addition, siting of the project met a number of other goals such as: increased biodiversity on the site; new meadows; enhanced woodlands (and no net loss of trees); reinforced hedgerows; and maintenance of cropland for demonstration farming. Aesthetically, the buildings were designed to fit the scale and character of surrounding rural structures such as the Hendrix farm, which was built in the 1700’s. Before construction was initiated, archeological surveys and studies were conducted to protect cultural resources (prehistoric artifacts, Native American encampments, and 18th century homestead sites were found).


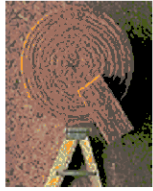


*National Conservation and Training Center - Bridge to the Commons*

During engineering design, computer analyses showed that all building envelopes and lighting would comply with Federal energy regulations, and that building energy use goals would be achieved. The following are some of the key energy management features of the Center:



*Daylighting in the Commons*

- Passive Solar Energy Design (buildings oriented on an east/west axis; large southern window areas; sun screens; brick floors behind windows for solar gain; extended roof lines (overhangs) for summer shading without precluding winter sun; and landscaping for optimum summer shading and wind breaks.)
- HVAC (lowest LCC system specified; water chilled off-peak; heat pumps supplemented with electric heat; centralized controls; variable speed motors; and no CFC's.)
- Energy-Efficient Lighting (electronic ballasts and T-8 lamps; ambient and task lighting specified throughout; and clerestory lighting that provides natural light.)  

- Insulation ("superinsulation," with argon-filled, double-pane windows and insulation in ceilings, walls, floors, foundations, and masonry voids that exceeds code requirements.)  

- Use of Recycled Materials Selected for Sustainability (fly ash in the cement; reclaimed metals in siding, redwood and red cedar not chosen for environmental reasons; recovered materials in the insulation; resilient flooring made from recycled tires for high impact areas; and drywall with high content of recycled gypsum.)
- Indoor Air Quality (interior finishes and related systems such as adhesives, laminates, and inherent materials specified with no indoor air quality problems.)

## Past "Energy Saver Showcase" Awards



*Wichita Mountains Wildlife Refuge -  
Visitor Center*



*Prairie Learning Center at Neal Smith NWR*



*Cusano Environmental Education Center  
John Heinz NWR at Tinicum*



*Cusano Center Interior*



*“Marsh Machine” Wastewater Treatment  
Cusano Visitor Center*

### Wind Energy Development

Advances in wind turbine technologies and increased interest in renewable energy sources have resulted in rapid expansion of the wind energy industry in the United States. The Service’s Project Planning Program typically becomes involved in the review of potential wind energy developments on public lands through the National Environmental Policy Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. The Service may also be called on for review and comment because of special technical expertise. Because development of wind energy is strongly endorsed in the Secretary of the Interior’s “Renewable Energy on Public Land Initiative,” the Service issued Interim Guidance on Avoiding and Minimizing Wildlife Impacts from

Wind Turbines on May 13, 2003. The purpose of the guidelines is to ensure that wildlife resources are protected while streamlining the site selection and plant design process, and avoiding unanticipated conflicts after construction.



### Conservation Through Collaboration

The Service’s Helena, Montana, Ecological Services Field Office, working in collaboration with two wind industry companies (Montana Power Company and Montana Wind Harness, LLC), the State of Montana Department of Fish, Wildlife, and Parks, and Montana State University, has developed a ranking system for evaluating potential wind energy development sites in Montana. The system, which has been in use in that area for about 2 years, focuses on pre-development evaluation of proposed sites, known as Wind Resource Areas (WRA’s), based on the potential impacts to wildlife. The system also presents a strategy for identification of study and monitoring needs for those sites selected for development. The objectives are to assist developers in deciding whether to proceed with development of a specific WRA, and if so, to provide recommendations on protection, mitigation, and enhancement procedures relative to siting, configuration, or operation of turbines to avoid or mitigate negative impacts to wildlife.

### Purchased Renewable “Green” Energy

Until the Service satisfies its concern with avian mortality from wind generation and formulates an official position on implementing and buying green power generated by wind energy technology, we will continue to emphasize other forms of renewable energy such as solar energy that do not have potential resource protection conflicts.



### Demonstration Wind Energy Project at Eastern Neck NWR, Maryland

The Eastern Neck NWR, Maryland, received a 2002 Federal Energy and Water Management Award for its Bergey Excel 10kW wind turbine, which became fully operational after it was grid-connected on May 17, 2002. It was installed on a 60-foot lattice tower, without lights or guy-wires, near the shore of the Chesapeake Bay to provide power to the headquarters building from the Refuge's historically strong, northwest winds during the winter months. Key considerations in the implementation of wind energy are: (1) determining the most ecologically benign designs and sites of wind turbines and towers, and (2) monitoring interactions of the turbine with wildlife, particularly birds and bats. Central to Eastern Neck NWR's "Bay Winds Energy Project" is an on-going survey of avian interaction, made possible by a \$7,000 grant from the U.S. Dept. of Energy and the Maryland Energy Administration for wind turbine field verification, avian interaction research, data collection/analysis of wind and solar energy generation, and public education. Additional grant funds were provided to cover travel costs for a presentation at the National Renewable Energy Laboratory's Wind Technology Center in Golden, Colorado.

Preliminary results of Eastern Neck NWR's wind energy-avian interaction surveys indicated only five bird strikes – all starlings - an invasive species, during the wind turbine's first year of operation. Survey protocols were further refined in 2003, and a poster presentation was accepted by The Wildlife Society for display during its 10th Annual Conference in Burlington, Vermont. Entitled "Monitoring Avian Interactions with a Small Wind Turbine: Incorporating Scavenger Activity into Bird Survey Protocol Metrics," Eastern Neck's poster was considered by many to be the most-viewed presentation at the conference.



*Bergey Excel 10kW Wind Turbine at Eastern Neck NWR*

The Refuge's partnership with the Maryland Energy Administration and U.S. Department of Energy resulted in \$20,000 in grant funding for a 2.5 kW PV solar system, called the "Centennial Solar Energy Project," the solar panels will supplement the wind turbine in providing renewable energy to the Refuge's headquarters building, particularly during the summer months of light wind. The hybrid wind-solar demonstration project will also provide data to State and Federal agencies as well as to refuge visitors and the conservation community.

The Maryland Energy Administration received Department of Energy funding to conduct a Mid-Atlantic Wind Energy Conference at Eastern Neck NWR in December 2003. Co-hosted by the States of Maryland, Delaware, and Virginia, the two-day workshop is targeted to industry and conservation stakeholders and to State and Federal legislators.

## Water Conservation

Executive Order 13123 requires water use reporting and implementation of Best Management Practices (BMP's) for water conservation. BMP's are a variety of technologies and techniques used to save water and associated energy costs, such as leak detection and repair, water efficient landscaping, also called xeriscaping, low-flow devices (toilets and urinals, faucets and showerheads), water reuse and recycling, and composting toilets.

The Service owns approximately 5,000 buildings, most of which are small, have low water use, draw water from unmetered wells, and are staffed by only a few employees, the Service reports water use only for field stations that purchase water from community water systems. In FY 2003, a total of 34,347,361 gallons of potable water was used at 35 field stations that purchase water from community water systems at a cost of \$129,448. Water management is included in the Facility Energy Strategic Plan for each of these field stations. In all new construction and building retrofits, the Service will continue to implement BMP's wherever possible. For example, all energy-showcases have BMP's in-place.

### Back Bay NWR, Virginia

An impressive coalition of the Southern Coalition for Advanced Transportation, Georgia Power, Virginia Power, Department of Defense, National Fish and Wildlife Foundation, Commonwealth of Virginia and Department of the Interior, all contributed financially or technically in an innovative program to obtain three state-of-the-art alternative energy 24-passenger electric trams customized for off-road use, several electric bikes, and an electric pickup truck for Back Bay NWR, VA, creating a "clean transportation zone."



*Electric Tram at Back Bay NWR*

## PulseTech

The Service has developed guidance on how to use PulseTech's solar-powered battery charging and rejuvenation units, which extend the life of batteries from 3 to 8 years, in its motor vehicles.



## Biofuels

In an exciting new program, several National Wildlife Refuges have purchased biodiesel fuels for their vehicles. Biofuels such as ethanol are made from starch, and biodiesel is made from vegetable oil. Biofuels are also ethanol-blended reformulated gasoline. (For example, B-20 contains 20 percent ethanol and 80 percent gasoline, and B-100 is 100 percent ethanol.)

### Energy Efficiency: Good for You; Good for the Country

With help from Service Energy Managers leading by example, energy efficiency can become as American as apple pie, the flag, and baseball — the message conveyed in October 2003's Energy Awareness Month campaign. Service employees are helping increase our national energy supply and improve energy security through energy efficiency.

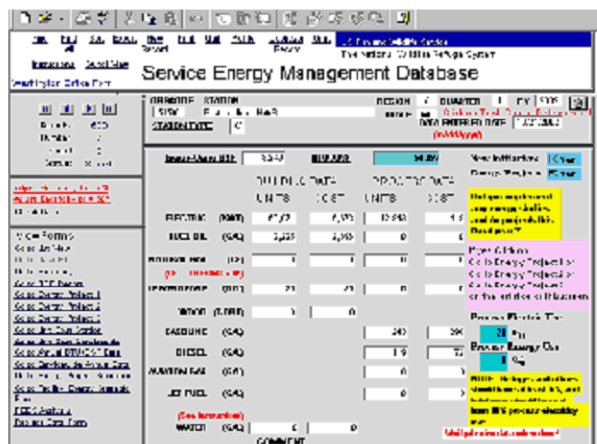
Awards

Since 1989, the Service has an excellent “track record” of 11 winners that received Federal Energy and Water Management Awards sponsored by the Department of Energy and the Federal Interagency Energy Policy Committee. On October 29, 2003, three Service teams accepted Federal Energy and Water Management Awards for innovative photovoltaic solar systems at previously discussed Hopper Mountain NWR, Imperial NWR, and Chincoteague NWR. Construction of these facilities is an excellent example of outstanding performance and commitment to energy conservation and sustainability.



Innovative Reporting of Energy Data

The Service is mandated to report energy consumption annually. A new unique web-based database enables more immediate, easier reporting and monitoring of Service energy use. It includes analytical features that more accurately identify building and process energy use (process energy use includes the “plug load”).



The Service’s Unique Energy Management Database





IX. Sustainable Design

**LEED Design Requirements**

The U.S. Green Building Council has refined its original version of its LEED program into version 2.1. LEED stands for Leadership in Energy and Environmental Design.

This green building design rating system is, indeed, LEEDing the way for the Fish and Wildlife Service. The Service must design new buildings to an equivalent “LEED certified” rating, at a minimum according the latest engineering policy.

LEED standards are currently available for:

- 1) LEED-NC: New construction and major renovation projects
- 2) LEED-EB: Existing building operations (pilot version)
- 3) LEED-CI: Commercial interiors projects (pilot version)

**Green Website**

The Fish and Wildlife Service has had its “Green Info” website on line since April of 2003. Service employees can log on to the “Green Info” website at [sii.fws.gov/r9eng](http://sii.fws.gov/r9eng).

Highlights of this website include:

Green Specification Guidelines - This is a 2-part document about developing green specifications for waste prevention and environmentally preferable products in planning, design, and construction projects. Part 1 gives a general background about *what* and *why* Service project managers should support greening, while Page 2 outlines the specifics about *how* to do it.

Specification Resources - This is a short presentation about environmental specification sources available from area expert sources that can be used without having to “re-invent the wheel.” Topics covered include:

- Division 1
- Construction Waste Management, Recycling
- Site/Landscaping
- Commissioning
- Modular Office Furniture
- Green Projects

**Federal Energy Saver Showcase -  
Herbert H. Bateman Educational and  
Administrative Center  
Chincoteague National Wildlife Refuge  
Chincoteague, Virginia**



*Herbert H. Bateman Educational  
and Administrative Center*

The Chincoteague National Wildlife Refuge is one of the most visited Service facilities in the Nation. It is geographically positioned to educate millions on the Service’s mission and actively engage visitors to conserve natural resources, such as the endangered Delmarva Peninsula fox squirrel, the threatened piping plover and bald eagle.



The Herbert H. Bateman Educational and Administrative Center includes the following technologies:

- Reduced site disturbance;
- Zeriscape landscaping;
- Onsite wastewater recycling;
- High-efficiency building envelope;
- Energy-efficient lighting;
- Low-e windows;
- Maximizes daylighting and views;
- Three light tubes for natural lighting of exhibits;
- Passive solar features such as overhangs and sunshades;
- Rapidly renewable materials:
- The entire structure is made from engineered lumber
- Bamboo floors and recycled carpet;
- Recycled rubber flooring;
- Recycled steel in the rebar;
- Wood certified by the Forest Stewardship Council;
- Geothermal heat pumps using deep, vertical wells;
- Non-toxic materials to avoid off-gassing and help indoor air quality.

The site was treated sensitively, with attention to maintaining scenic views, disturbing habitat minimally, and protecting endangered species. The original scope of work for this project required the architectural design team to consider solar shingles and solar photovoltaic panels, but because of the need to preserve the nesting and food habitat for the endangered Delmarva Peninsula fox squirrel, only trees that were in the way of the construction were cut down. The remaining large canopy of trees would not allow sufficient light to penetrate the site to make solar panels effective.



*Herbert H. Bateman Educational & Admin. Center  
Chincoteague National Wildlife Refuge, Virginia*



*An exhibit at the Herbert H. Bateman  
Educational and Administrative Center*

### **Water conservation strategies:**

Low water usage faucets, showers, and toilets were incorporated into this project. Waterless type urinals were used to save more water. An innovative constructed wetlands wastewater treatment system cleans wastewater from the two buildings. Specifically, wastewater is treated by three (3) treatment elements: a primary clarifier, a subsurface-flow-constructed-wetland with recycle, and a recirculating sand filter.

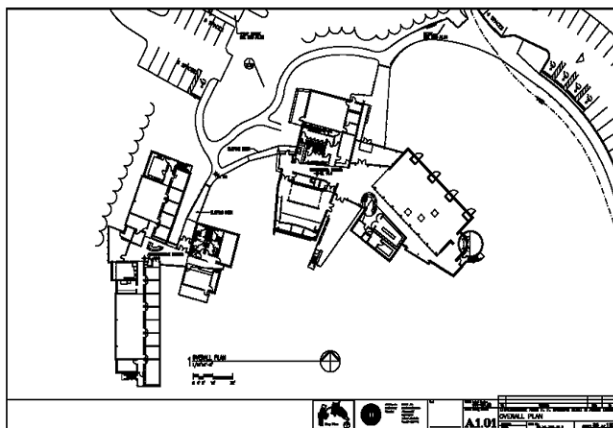


*Close-up Sign Above Urinal*



*Waterless Urinals*

Effluent from the treatment system is suitable for reuse as grey water and will be used in the buildings for flushing toilets. Any remaining grey water not used for flushing toilets will be used either to recharge the underground water storage tanks that are used to supply the necessary water volume for the sprinkler system or will be discharged to the ground in an environmentally compatible manner. Visitors to the facility will pass by the treatment system, which is interpreted through signs and outside displays. The Service is planning a display inside the Educational Center that shows how the wastewater treatment system works. In addition, there will be signs posted in all restrooms showing how the Center is conserving water.



*Site Plan, Herbert H. Bateman Educational & Administrative Center*

The Project Architect, who is LEED-certified, has completed the checklist for certification of the project and has determined that the buildings would qualify for a LEED GOLD rating.



*Herbert H. Bateman Educational and Admin. Center - Energy-efficient Windows*



*Herbert H. Bateman Educational and Admin. Center Bamboo floors and recycled carpet*



## **Parker River Visitor Center and Administrative Headquarters Parker River National Wildlife Refuge**

### **Project Description**

The new Parker River Visitor Center and Administrative Headquarters is a collaborative design effort which included community members, State Park staff, community partners, the City of Newburyport, the U.S. Fish and Wildlife Service, and a design team led by Cambridge Seven Associates, of Cambridge, Massachusetts. Key input was also given by neighboring organizations such as Massachusetts Audubon Society and the Society for the Preservation of New England Antiquities. The Commonwealth of Massachusetts, through its Department of Parks and Recreation, contributed \$1,000,000 toward the design and construction of the facility.

The 9,700 sq. ft. visitor center portion of the building includes an exhibit hall; gift shop, office and storage room for the Friends of Parker River NWR; auditorium; large, dividable multipurpose room; and visitor restrooms. Administration components include office space for over 16 staff, conference room, museum properties storage, and lunchroom. Maintenance buildings include a carpentry/storage building, a vehicle maintenance building, and a vehicle storage building, with a hazmat storage container.

### **Sustainable Design**

Sustainable architecture inspires, informs, and motivates those who experience it to think differently about the role of people in a society of all living species. Interpretive exhibits explain to visitors the environmental contributions of the facility, and of the National Wildlife Refuge System.

The Parker River facility strives to minimize the negative environmental impacts of construction. Buildings have a tremendous impact on our natural

environment, consuming 50% of energy use, 25% of virgin wood, and 16% of water use and filling 25% of landfills. At Parker River, energy use is minimized, resources used efficiently and the site treated sensitively. Energy use reductions were targeted by the use of a well-insulated building envelope, natural day-lighting, energy efficient lighting, and a geothermal heating and cooling system.

The facility benefits the environment by incorporating sustainable design, site restoration, construction waste recycling, education outreach, environmentally preferable materials, recycled-content materials, energy and water conservation.

Materials were selected with long term savings considerations and by life-cycle costing assessments.

### **Education/Outreach**

Interpretive exhibits are used to encourage actions of stewardship of the land. The exhibits themselves focus on the themes of: plants and animals of the barrier islands, management of these natural resources, the National Wildlife Refuge System, and migratory birds. Telescopes and binoculars are provided for viewing wildlife in the adjacent wetlands and across the road in the open, restored salt marsh managed by Massachusetts Audubon Society.

Boardwalks with interpretive panels allow close access to the wetlands and basins, providing education on the benefits of wetlands, wise resource management, and good stewardship.

### **Site Restoration/Preservation**

The building site was an old submarine demolition yard that was cleaned up by the mid 1990's. The site improvements made afforded an opportunity to return disturbed land to more natural habitats of this coastal area: shallow wetlands, old field, and upland woods, habitats found on the Refuge. Soil excavated from storm run-off cleansing basins was utilized as loam throughout the site.



All plants are native species of trees, shrubs, forbs, and grasses.

Exterior, pressure-treated alkaline copper quaternary (ACQ) wood did not contain arsenic or chromium unlike many other wood preservatives and is not considered hazardous by the Environmental Protection Agency.

### Environmentally Preferable Materials

The design process considered local materials availability, durability, longevity, low maintenance, and recycled content/reuse characteristics.

The building's sizeable columns and roof trusses are composed of engineered wood, eliminating the use of old growth, large timbers for structural elements. Engineered wood is manufactured from younger trees and wood strands. It utilizes wood pieces that are leftovers, cutoffs and from fast growing trees, thus minimizing depletion of forests and using wood scraps efficiently.

Extensive use was made of recycled-content materials were specified for carpet, hard surface (tile) and sheet goods (linoleum) flooring, sheetrock, and exterior decking. Deck piers were made out of a very dense recycled material containing scrap metals and plastics. Fiberboard panels contain recycled wood fiber. Plastic lumber is used for all site signage.

Materials with low or no volatile organic compounds (VOCs) or hydrochlorofluorocarbons (HCFCs) were selected. VOCs contribute to poor air quality and HCFCs contribute to global warming.

### Construction Recycling

Construction materials and packaging materials were recycled to minimize impact on landfills. Concrete was recycled during construction, rather than being disposed of in a landfill.

### Energy

Energy conserving features of the Parker River facility include a southeastern orientation, a well-insulated building envelope, extensive use of natural day-lighting through clerestory windows, a geothermal heating ventilation and air conditioning system, and energy efficient lighting including timers and a light-dimming system controlled by the amount of external daylight.

All rooms have motion-detection devices that shut lights off when the room is no longer occupied.

The geothermal heating and cooling system consists of two vertical wells and heat pumps from which 55 ° F ground water is drawn up past heating or cooling fins. In the winter, that water warms the frigid outside air to 55 degrees. In the summer, the reverse will occur as the ground water absorbs heat from the hot air, cooling with minimal cost. This process is a highly efficient heating and cooling system that will reduce long-term energy costs.

### Water Conservation

Water conservation and recharge is an important feature of the facility. The project's soils are sandy and permeable due to its location near the coast. Roof runoff is directed to underground, perforated chambers that enable the water to percolate into the soil, rather than the typical practice of directing it into a storm sewer piping and manhole system. Costs are saved by minimizing the piping infrastructure and ground water is recharged instead of being directed off-site.

Runoff from road and parking hard surfaces is directed to a series of recharge basins seeded with moisture-loving native plants. Both cleaning and recharge begin as the water moves through several basins sized for a 100-year storm event. Degraded wet meadows on-site will be restored.

Throughout the facility, low-flush toilets and water-efficient urinals minimize amounts of water sent to local sewer treatment facilities.



*East View Over Admin. Offices*



*This standing seam metal roof at the Refuge is Energy Star compliant. The roof has an emissions level which meets LEED criteria for cool roofs.*



*South View into Maintenance Complex*



*This new building features mechanically operable windows, cool metal roofs, light-control sensors, and structural insulated panels to reduce energy consumption*



*Southeast Corner Viewing Deck*



X. Natural Resource Damage Assessment and Restoration

The primary aim of the Natural Resource Damage Assessment and Restoration Program (Restoration Program) is to restore natural resources injured as the result of oil spills or hazardous substance releases. Through the conduct of natural resource damage assessment activities authorized by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Clean Water Act (CWA) and the Oil Pollution Act (OPA), injuries to Interior trust resources are identified and damages assessed, leading to negotiated legal settlements or other legal actions against the responsible polluting parties. Settlements (in cash or in-kind services) are then used to finance or implement the restoration of the injured resources at no expense to the taxpayer. Settlements often include the recovery of costs incurred in conducting damage assessment activities, which are then used to fund other damage assessment projects.

Examples of Restoration Actions

One restoration project conducted under the OPA and one conducted under CERCLA demonstrate Service cooperation with co-trustees and other interested organizations in restoring injured natural resources.

*The Apex Houston Oil Spill: Restoration of a Common Murre Colony*

In late-January 1986, the barge *Apex Houston* spilled approximately 20,000 gallons of crude oil into the Pacific Ocean while en route from San Francisco to Long Beach. The spill killed approximately 10,000 birds. The majority of the oiled birds (approximately 6,300) were common murres, duck-sized seabirds that nest colonially on rocks and

islands along the California coast. The spill resulted in the extirpation of a murre nesting colony at Devil's Slide Rock, located about 15 miles south of San Francisco.



*An oiled common murre stranded on a beach during the 1986 Apex Houston oil spill. The Apex Houston spill oiled approximately 10,000 seabirds, including approximately 6,300 common murres. (Photo: Point Reyes Bird Observatory)*



*The murre colony at Devil's Slide Rock was extirpated by the oil spill. Murres are being restored to Devil's Slide Rock using social facilitation techniques, including the decoys and mirror boxes shown here. (Photo: USFWS)*

In 1994, after years of litigation, the case was settled for approximately \$6.4 million. Most of the settlement funds (approximately \$4.9 million) were earmarked for restoration of common murres. After publication of a Restoration Plan, the Fish and Wildlife Service and other natural resource trustees (California Department of Fish and Game and National Oceanic and Atmospheric Administration), in partnership with the Humboldt State University Foundation, National Audubon Society, U.S. Geological Survey, and Point Reyes Bird Observatory, embarked on a multi-year murre



restoration project. The murre restoration project involves restoration of the Devil’s Slide Rock colony, monitoring of nesting success at other nearshore colonies in central California, and public outreach and education. A portion of the settlement funds (approximately \$500,000) was used to acquire nesting habitat in the Santa Cruz Mountains for the marbled murrelet, another species of seabird that suffered mortality from the oil spill.

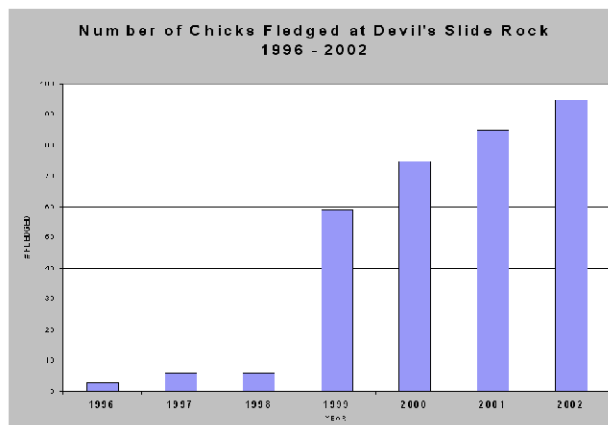
As part of the environmental education component of the common murre restoration project, children from local schools repaint the murre decoys in the fall so they can be reused during the next nesting season. In 2002, 782 students from ten schools participated in the environmental education program. During the seven years since the inception of this program, approximately 4,540 students from communities in the San Francisco Bay area (Montara, Pacifica, Half Moon Bay, San Leandro, Fremont and San Jose) have participated



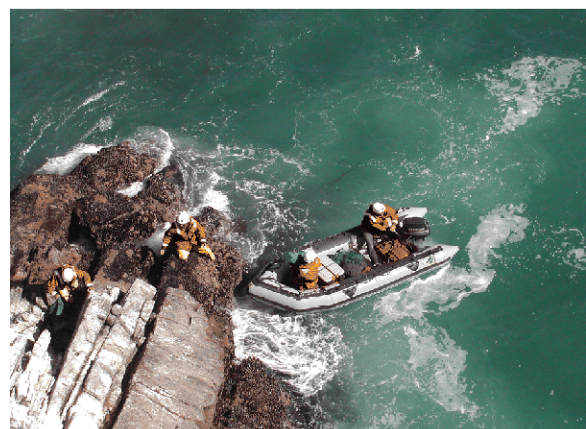
*As part of the environmental education component of the common murre restoration project, children from local schools repaint the murre decoys in the fall so they can be reused during the next nesting season. (Photo: USFWS)*

The Devil’s Slide Rock colony is being restored using a technique called social facilitation. This technique involves attracting murre back to the island with decoys, recorded calls, and mirrors. The project, which completed its eighth year in 2003, has been very successful. Murres began visiting the rock

within hours of deployment of the social attraction equipment in 1996, and six pairs of murres nested on Devil’s Slide Rock that year. Prior to implementation of this restoration project, murres had not nested at Devil’s Slide Rock since the oil spill in 1986, an absence of 10 years. Since 1996, the number of nesting murres has steadily increased (see table 1), and the goal of 100 nesting pairs established in the Restoration Plan has been met for three consecutive years. To ensure that the restored colony will be self-sustaining and continue to grow towards its pre-spill size of approximately 1,000 pairs, the amount of decoys and other social facilitation equipment in use will gradually be reduced over the next 5 years.



*Graph showing the number of murre chicks fledged at Devil’s Slide Rock, 1996-2002. (USFWS)*



*Social facilitation equipment. (Photo: USFWS)*

Table 1. Number of Murre Breeding and Territorial Sites at Devil's Slide Rock, 1996-03.

Measure of Success	1996	1997	1998	1999	2000	2001	2002	2003
# Territorial Sites <sup>a</sup>	5	9	10	16	25	46	43	90
# Breeding Sites <sup>b</sup>	6	9	13	70	98	113	123	109

<sup>a</sup> Territorial sites are sites that were regularly occupied and defended by murre pairs but eggs were not laid.  
<sup>b</sup> Breeding sites are sites where eggs were laid.

**Saginaw Bay: Restoration of coastal Wetlands**

In 1998 the Fish and Wildlife Service, along with co-trustees the State of Michigan and the Saginaw Chippewa Tribe settled an NRDAR claim with General Motors Corporation and the cities of Bay City and Saginaw. The claim was based on injuries to migratory birds and other wildlife and for lost recreational fishing opportunities because of fish consumption advisories caused by PCBs in Saginaw Bay. PCBs cause reproductive impairments, immune system suppression, deformities, and behavioral alterations in birds and mammals.

As part of the settlement with the potentially responsible parties (PRPs), the State of Michigan acquired ownership of 13 parcels adjacent to Saginaw Bay ranging from 10 to 280 acres in size. Four of these parcels, totaling 391 acres, consisted of land that had been drained for agriculture and were specifically selected for their restoration potential by the joint trustee and PRP technical work group.

Natural hydrological connections to Saginaw Bay were restored on the parcels acquired in the settlement by removing existing dikes and pumps and breaking drainage tiles. Dikes on the upland sides of the parcels were built or enhanced when necessary to protect adjacent land from inundation during times of high water levels in the bay. The trustees and responsible parties worked with Ducks Unlimited and many other partners to use some aspects of this acquisition and restoration as non-Federal match for a North American Wetlands Conservation Act grant that totaled \$1,000,000 and provided for additional wetland restoration projects impacting 3,000 acres in the watershed. The outcome is additional lands and shoreline access for public use, increased water absorption and filtration by the restored coastal wetlands, and increased habitat for fish (especially spawning and nursery areas), birds, and other wildlife. To learn about other positive results of this settlement including projects to enhance recreation and provide interpretive exhibits, please see <http://midwest.fws.gov/nrda/saginaw>.



The shoreline of Saginaw Bay with intact coastal marshes alongside land that is diked and drained for agriculture. (photo by Frank Horvath, USFWS)



Removal of dike along access channel to Saginaw Bay. (photo by Lisa Williams, USFWS)





*Enhancement of existing dike along the edge of the restoration project area to protect a adjacent property from flooding once part of the shoreline dike is removed. (photo by Lisa Williams, USFWS)*

restoration actions carried out by the responsible parties. Settlement payments from responsible parties are used to restore, replace, or acquire the equivalent of injured natural resources. In some cases, rather than monies being paid by responsible parties, the responsible parties may agree to carry out the restoration actions under supervision of the trustees. Settlement funds can also be used for restoration planning activities. The Restoration Plan is made available for public review and comment prior to implementation. Many restoration efforts are planned and implemented cooperatively and in partnership with state agencies, citizen groups and responsible parties.

### Restoration

The Service is a leader in the restoration of natural resources. The goal of the Restoration Program is to bring natural resources back to their natural state. Restoration actions vary in scope depending upon the site and complexity of injury, and may include: increasing the population of a species through reintroduction and/or restocking; increasing the amount of quality habitat available to a trust species through wetland or other habitat restoration and/or acquisition; enhancing or restoring the quality of existing habitat; enhancing the perpetuation of a species by protecting habitat through the use of deed restrictions or easements; and the purchase of quality habitat for management by states, non-profit organizations, or the federal government.

Sometimes the restoration can be completed quickly (e.g., limited plantings, addition of gravel to streambeds, protective fencing), and in other circumstances full recovery takes years (e.g., population supplementation projects, complex habitat restorations).

Restoration activities are achieved through payments received from responsible parties or through in-kind

## XI. Historic Preservation: Protecting and Using Our Nation's Past

Cultural resources, which consist of historic, archaeological, and cultural sites, are considered irreplaceable resources that are protected under many laws, executive orders, and agency regulations.

The most notable of these is the National Historic Preservation Act of 1966, (NHPA), as amended. This law requires that the US Fish and Wildlife Service (FWS), whose lands contain tens of thousands of these cultural resources, establish a preservation program to identify, evaluate, and protect important archaeological and historic sites that may be affected by mission-related projects undertaken on its lands.

Historic preservation, as called for under NHPA, is not simply focused on studying our nation's distant past, although this certainly is an important component. Preservation is, more importantly, about bringing our nation's rich history to life and making it relevant to current needs and plans. Examples of this kind of preservation include adaptive reuse of historic structures as offices and visitor centers, that not only saves on construction and energy costs over an extended period, but that results in adding a sense of place and character to our lands and communities.

FWS has a wide array of cultural resources to apply to this preservation ethic. FWS sites vary widely both geographically and temporally as they encompass 11,000 year old archaeological sites that provide evidence of the hemisphere's earliest inhabitants, historic cemeteries and sacred places, 19<sup>th</sup> and 20<sup>th</sup> century historic residences, farms, homesteads, and cabins, battlefields and lighthouses.

Historic cabins, many of which still exist on FWS lands, have played an important role in establishing communities that serviced various industries that contributed to the prosperity of this country during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. Many of these historic sites are listed on the National Register of Historic Places and attract hundreds of visitors each year who are interested in their unique settings and in their role in the development of the nation.

Examples of cabins located on FWS lands include several built by trappers, hunters, miners and others from the late 1800s to the mid-1900s in the Kenai National Wildlife Refuge (KNWR), Alaska. One such cabin—the Andrew Berg Homestead Cabin—was recently painstakingly moved from the shore of Tustumena Lake to the KNWR refuge visitor center, so that it could be better preserved and interpreted for visitors. Refuge staff, the Youth Conservation Corps, and volunteers from the local community participated in the relocation of the cabin.



*Restored Cabin at Kenai NWR  
Visitor Center - Soldotna, Alaska*

## *Historic Preservation of Midway Island NWR*



*A three-inch gun used during the Battle of Midway*

Preserving Midway's heritage is both an exciting opportunity and a daunting challenge. It is an important goal of the refuge to preserve and interpret Midway's historic resources.

The Navy has been the steward of Midway's historic resources for several decades. The Federal statutory responsibility for this effort is defined by the National Historic Preservation Act of 1966 (NHPA). As part of the base closure process, the Navy was obligated to consider the effects of the closure process on historic sites and structures. The Navy determined that 78 structures, buildings or objects were eligible for inclusion in the National Register of Historic Places, including the structures associated with the Battle of Midway National Historic Landmark, designated in 1986.

To guide the historic preservation process during the transition, the Navy entered into a Programmatic Agreement (PA) with the Fish and Wildlife Service, the Hawaii State Historic Preservation Office and the Advisory Council on Historic Preservation. The Programmatic Agreement recommended specific types of treatment for the 78 historic sites or structures (click on historic sites). The types of treatment are as follows:

- **Re-use:** The PA identified 23 buildings and structures to be used in support of refuge operations. This list includes, among others, the officers' housing, theater, barracks, shops and industrial facilities.

- **Secure:** The PA identified 13 historic properties to be secured by the Navy to minimize hazards to wildlife and people. That work was only partially completed prior to base closure. Examples of these properties include the power plant/command center that was shelled on December 7, 1941 and the Cable Station complex.

- **Leave as-is:** The PA identified 20 historic properties that would be left in "as-is" condition and would not be used under refuge management, other than for interpretive purposes. Examples include the runways on Eastern island and various bunkers, pillboxes and gun batteries.

- **Fill:** Parties to the Programmatic Agreement decided that four properties would be filled with sand. Included in this list were pillboxes on Sand and Eastern islands and two ammunition storage huts (ARMCO huts). The pillboxes were filled during the closure process but the Service decided that the ammunition huts would be secured instead of filled.

- **Demolish:** The PA called for demolition of 15 historic properties that were of secondary historical importance, were in very poor condition and/or were redundant to other resources being maintained. The Navy demolished these properties in 1996. Examples of these properties include a motor pool building, laundry, N.O.B. armory and airfield storage buildings.

- **Relocate:** The PA listed four items to be moved to enhance their protection and interpretation. Included were a torpedo, inert bomb, submarine net and pillbox.

### **Preservation Work Underway**

The Fish and Wildlife Service has initiated several projects to enhance protection and interpretation of Midway's rich historical resources. Here's a few examples of ongoing projects:

- **Documentation:** The Service is working with the Navy to obtain engineering and public works records for all historic sites and to gather other historic documents.



- **Planning:** The Service is preparing a Historic Preservation Plan to identify the preservation, management and interpretive needs of the 78 historic properties that remain on the refuge.
- **Legislation:** The Service is involved in the consideration of legislation that would designate all or part of the refuge as a national memorial to the Battle of Midway.
- **Interpretation:** The Service has incorporated Midway's historic resources into public tours for refuge visitors. Interpretive displays are being designed for the visitor center and for placement at historic sites on the refuge. A new handicapped accessible walkway has recently been built to the Battle of Midway memorial. Other walkways and trails have been built to enhance access to the cemetery, gun batteries and ammunition storage huts.
- **Preservation:** Several projects are underway to enhance protection and restoration of important historic properties. The roofs and soffits have been replaced on the historic officers quarters. Efforts to control termites have been accelerated. The Oceanic Society is now bringing groups of visitors to assist in historic site restoration projects. They are clearing encroaching vegetation from gun batteries, treating rust on ammunition huts, repairing damage to wooden structures and compiling pertinent photographs and other historic documentation.



## XII. Green Acquisition

### **Regional Greening Coordinators:**

The Service's Greening Coordinators continue to work closely with the Regional Business and Economic Development Program Managers (BEDP), Program Administrative Officers, Procurement Agents, attend some training based upon budgetary constraints, and attend and participate in local Federal Procurement Conferences and Trade Fairs.

### **Special Assistance provided by Regional BEDP Managers, Charge Card Holders, Program Administrative Officers, and Procurement Agents:**

The Regional BEDP Managers, Charge Card Holders, Program Administrative Officers, and Procurement Agents continue to stress the significance of acquiring "green products and services." The Service's Greening Contractor will continue to work closely with the Service's Charge Card Holder Coordinator and Regional Charge Card Holders to increase the acquisition of green products and services.

### **Fish and Wildlife Service's Greening Contract**

The Service awarded a "greening" contract to a private contractor on July 2, 2002. The contractor is classified as a small business firm located in Gaithersburg, Maryland. The original contract was divided into two phases, Phase 1 & 2. The purpose of Phase 1 was to refine the Contracting and Facilities Management's (CFM) goals and objectives of the Strategic Plan to incorporate greening initiatives included in other Executive Orders (E.O.) related to greening in addition to E.O. 13101, and those other Federal regulations. The Strategic Plan collected supplemental information from CFM staff

and other interested parties, such as the Division of Engineering, to ensure that the full range of issues and responsibilities were considered in the refined Strategic Plan. It incorporated information developed during tasks one and two into activities that CFM needs to develop or undertake to assist in implementing their responsibilities.

Phase 2 will consist of three tasks to assist in implementing CFM's responsibilities under the refined Action Plan. The contractor will develop products identified in the refined Action Plan, draft training materials, and draft models greening specifications for the Fish and Wildlife Service's Construction and Service contracts. The completion date of Phase 2 was April 2003.

After completing the work under Phases 1 and 2, it was apparent that we need to authorize the contractor to implement Phase 3. Phase 3 will focus on green procurement program testing and implementation activities.

### **General Scope and Tasks**

The consultant will assist CFM in testing and implementing green procurement activities at Headquarters, Regional Offices, and Field Stations. The consultant should enable CFM to efficiently understand and execute its strategies and specific actions. The consultant will perform the following Phase 3 tasks based on data gathered during Phases 1 and 2, information gathered during EMS implementation visits.

1. Develop and deliver a work plan and schedule within 30 days of authorization to proceed.
2. Develop and deliver Green Procurement Training materials and Workshop module for Regional Waste Prevention and Recycling Coordinators and other applicable Service employees.

3. Assist in the development and the delivery of Green Procurement Charge Card Training module.
4. Assist in strategic planning and architecture of Green Procurement website including electronic Green Procurement Manual.
5. Develop FWS-focused nationwide and regional green procurement source list and integrate into website architecture.
6. Develop strategy for and assist in the implementation of at least two pilots to field test various aspects of the Service's Green Procurement Program.
7. Through the Green Procurement Communication Program, assist in establishing and implementing a system for collecting Green Procurement Program Feedback and success stories (e.g., collection of success stories, issues addressed, things that work, etc.).
8. Assist in establishing program monitoring tools and systems that will be used to assess program and provide input for 2004 Annual Progress Report.
9. Assist in the review and modification of the Green Procurement Strategic Plan including assessment of Department of the Interior goals and targets and development of proposed Service-specific Green Procurement goals and targets if applicable.
10. Assist in refining full implementation of the strategy based on initial feedback from field stations on what is working and where additional support is still necessary.

## Purchases:

The Service continued the practice of purchasing energy-efficient appliances (especially microwave ovens and refrigerators) for all offices. This is done via charge card, other methods, on the GSA schedule and through the Javits Wagner O'Day (JWOD) Program, which is aggressively incorporate energy-efficient items into their product lines. (The JWOD Program provides employment opportunities for thousand of people with severe disabilities to earn good wages and move to greater independence.)

## Alternative Fueling:

The Service's CFM division has established a Website for alternative fueling sites and vehicles at: <http://sii.fws.gov/r9cgs/altfuel.htm>. It contains a list of Fish and Wildlife Service stations with more than 5 vehicles and the addresses of any alternative fueling sites within 10 miles. Another list has the distances from these Service stations to the nearest ethanol (E-85 or ethyl alcohol), Compressed Natural Gas (CNG or methane), and Liquefied Petroleum Gas (LPG or propane).

Over the past eight years, the Service has planned and implemented Alternative Fuel Vehicle (AFV) acquisitions in accordance with Executive Order 13031, and organized a network of Regional staff specialists to promote and oversee AFV acquisition and fuel conversion, and promote AFV awareness. In addition, a 25 percent improvement Servicewide in vehicle fuel economy was achieved by 1995 (1995 average of 17.8 mpg versus the FY 1991 base year average of 14.2 mpg Servicewide). Servicewide efforts have led to:

- Acquisition of 28 AFV's and four electric trams for wildlife tours;
- Plans for greatly increasing use of AFV's (including dual-system retrofits for the large number of isolated field stations);





- Greater emphasis on vehicle fuel conservation such as a push to voluntarily save an average of 2 gallons per month per government-owned or GSA leased vehicles;
- A positive climate for continuing Regional Office and field station participation in the AFV program; and
- Introduction of utility companies, manufacturers, and AFV consortiums to new markets.

A number of contributions and benefits have increased use of AFV's and conserved fuel.

### **Hybrid Vehicle at Charles M. Russell NWR, Montana**

While not an AFV, the new hybrid vehicle at Charles M. Russell NWR, Montana, is reputed to achieve approximately 50 miles per gallon and is very popular with Refuge staff. Other field stations will be acquiring hybrids in coming years.



*Hybrid Vehicle at the Charles M. Russell NWR*

### **Tactical Vehicle and Equipment Fuel Use:**

Fuel consumption data, including miles driven, fuel added during the quarter (diesel, gasoline, gasohol, propane/LPG), and total repair costs for every Service-owned (non-tactical) motor vehicle with a personal property number are submitted on a semi-annual basis by each field station, Regional Office, and the Washington Office online via the GSA F.A.S.T. Federal Automotive Statistical Tool.

XIII. Recycling

The largest waste component in an office environment is paper products. Service goals are to establish and maintain active recycling programs for office wastes, to reduce usage of paper and to increase the procurement of paper containing recycled materials. In a typical year, the Arlington Square Headquarters Building alone recycles 25-30 tons of paper according to reports from the General Services Administration.

**EPA and DOI Waste Prevention and Recycling Goals**

- Divert solid waste from disposal in landfills through recycling at the rate of **40% by the year 2000, 45% by the year 2005, and 50% by the year 2010.**
- Recycle the following commodities at all facilities, unless significant barriers exist (e.g., lack of markets, prohibitive cost): white paper, mixed paper/cardboard, aluminum, plastic, glass, pallets, scrap metal, fluorescent lamps and ballasts, batteries, toner cartridges, oil, antifreeze, cleaning solvents, tires, and composting.

As confirmed by our environmental audit program, most Service facilities have active recycling and green acquisition programs.

**Tracking Progress to Meet Waste Prevention and Recycling Goals**

Currently, the DOI Office of Environmental Policy and Compliance (OEPC) is working towards establishing a website that will enable field sites to report their data easily through the Internet.



*Outdoor Recycled Containers at the J. N. "Ding" Darling NWR*



*Indoor Recycled Plastic Containers at the J. N. "Ding" Darling NWR*



*Entrance Sign - J. N. "Ding" Darling NWR Sanibel Island, Florida*



XIV. Environmental Awards

A Service environmental awards program was established in FY 2002. This award recognizes Service offices, employees, and contractors for their exceptional achievements in recycling, pollution prevention, green buildings, alternative fuels/vehicles, green procurement and environmental management systems. Fiscal Year 2003 recipients for Fish and Wildlife Service Leadership Awards in the Facility category were:

**“Refuge of the Year”  
Charles M. Russell National Wildlife Refuge**

The Charles M. Russell National Wildlife Refuge has gone beyond compliance in establishing an Environmental Management System (EMS) at their Refuge. Examples of their efforts was to implement a plan to reduce vehicle fuel usage through better planning and utilizing more fuel efficient vehicles, reducing energy consumption and increasing the use of more efficient lighting, reducing solid waste through recycling and making environmentally preferable products a part of every day life on the Refuge.



*Refuge Staff at Charles M. Russell NWR (from left to right) Deb Goeb, JoAnn Dullum, Carmen Luna, Clayton Christensen, Jody Jones, Mike Hedrick (Refuge Manager), Shawn Bayless, Mike Granger, James Graham, Paula Gouse, Ben Pratt, Kathy Tribby, Billie Lewis, Sharon Lahr, Matt deRosier*





**“Hatchery of the Year”  
Leavenworth National Fish Hatchery**

The Leavenworth National Fish Hatchery has an outstanding EMS program currently in place. Examples of their efforts include mentoring students in natural resource education, operation of a large recycling program that is supported by local students, the elimination of hazardous waste streams, the use of goats as an alternative to pesticide use, and utilizing environmentally preferable products in their daily activities.



*Left to Right Top: Corky Broaddus, Jerry Sines, Gary Malm, Greg Clarine, Lance Schott, Shaun Love. Left to Right Bottom: LeRoy Gifford, Pam Grabeel, Julie Smith, Leonard Garcia, Julie Collins, Rocky McCleary, Susan Faw Faw, Doris Mayfield, Patti Leonard.*

### National Wildlife Refuges Receive Environmental Leadership Awards

#### Eastern Neck National Wildlife Refuge

This Refuge has undertaken measures to demonstrate environmentally sound and sustainable management practices and has been recognized in the category of Environmental Preferability. The Refuge utilizes alternative energy technologies such as wind and solar energy and is involved in cooperative efforts with the State of Maryland, the Department of Energy and the Maryland Energy Institute to study wind energy alternatives, as well as supporting the use of solar panels at the Refuge. Their outreach efforts have touched and educated many residents in the Chesapeake Bay area and have promoted the use of renewable energies.



*Martin Kaehny, Refuge Manager, Eastern Neck National Wildlife Refuge*

#### Bear River Migratory Bird Refuge

Aggregate is normally used to surface roads and dikes on the Refuge. Although there is an abundant supply of aggregate, the gravel pits have become a dust, noise and visual problem in the area. As an alternative, the Refuge chose to use “slag” a byproduct of steel production. This material, tested and approved by the Environmental Protection

Agency, is dense, angular and less expensive than aggregate. The Refuge was recognized for using a recycled product and promoting pollution prevention.



*Bear River Migratory Bird Refuge (Staff from left to right are: Rodney Jacobson, Richard Iwanski, Steve Hicks, Tim Woodward and Doug Hadley)*

### Individual Environmental Leadership Award

#### Jimmy Fox

Jimmy Fox, Refuge Operations Specialist for the Yukon Flats National Wildlife Refuge, reduced the amount of hard copies needed in the Fairbanks Refuges environmental library by converting environmental records and reference materials to electronic files and by linking to websites that provide federal and state regulations and policies. Storing the information on disks has given the Regional Environmental Compliance Coordinators an easily accessible environmental library.



*Jimmy Fox, Yukon Flats NWR*

**2003 Department of the Interior  
Environmental Achievement Award**

The Fiscal Year 2003 Fish and Wildlife Service recipients for the Department of the Interior Environmental Achievement Awards were:

**“Team” Category**

**Charles M. Russell  
National Wildlife Refuge**

The Charles M. Russell (CMR) National Wildlife Refuge is one of the first sites in the Department to implement an Environmental Management System (EMS) and it has done so commendably. An Environmental Management System is a collection of policies, plans, practices, activities, and evaluations that ensure environmental goals are met. The EMS created an Environmental Management Plan that identified Refuge operations’ environmental impacts, set goals and targets to improve environmental performance, and introduced a Refuge-wide Environmental Management Policy. To implement the Plan, CMR purchased one hybrid vehicle and three diesel pickup trucks (58% more fuel efficient and fueled with biodiesel). Staff use re-refined oil in all Refuge vehicles; recycle paper, oil, antifreeze, fluorescent bulbs and steel; and purchase products made with recycled content. Most importantly, environmentally preferable practices are a part of every day life for CMR employees who are given responsibility for environmental performance in their personal performance plans and who receive training to safely and competently fulfill their environmental duties. CMR’s environmental goals undergo several self-assessments, results are reported, and any goals not met are specifically addressed. Positive implementation of Environmental Management Systems is a key to meeting the Department’s environmental compliance requirements and to go beyond compliance to achieve environmentally sustainable practices.



*Left to Right: Mike Hedrick, Secretary  
Gale Norton, and Mike Granger*

**“Individual” Category**

**Michael Bryant, Pea Island National  
Wildlife Refuge, North Carolina**

Mr. Michael Bryant, Refuge Manager for the Pea Island National Wildlife Refuge, is recognized for over ten years of collaborative planning on a team of fourteen federal and state agencies who must build a replacement to the Bonner Bridge. Spanning the environmentally sensitive Oregon Inlet of the Outer Banks of North Carolina, most sites under consideration for the new bridge would have affected the Refuge and inlet environment adversely. Mr. Bryant’s exceptional achievement is the way in which he has maintained positive lines of communication to champion the most environmentally sound options. At any point during these discussions, the Department of Transportation (DOT) could have appealed to Congress for the Right of Eminent Domain, taking away the Refuge’s right to protest environmentally unsound options and leading to a time consuming and expensive legal battle. DOT has never considered such a course of action. Although a final site for a replacement bridge has not yet been selected, the





**Michael Bryant (Continued)**

most environmentally hazardous sites are no longer in consideration. Mr. Bryant is recognized for his decade long endeavor and exemplary demonstration of Secretary Norton's 4 Cs: Communication, consultation, and cooperation in the service of conservation.



*Michael Bryant and Secretary Gale Norton*

**2003 White House  
Closing the Circle Award**

This prestigious award recognizes Federal employees and facilities for efforts which resulted in significant contributions to, or have made a significant impact on, the environment in the categories of waste/pollution prevention, recycling, affirmative procurement, environmental preferability, education and outreach, environmental management systems, sustainable design/green buildings, and biobased products. The award recognizes work consistent with the intent of Executive Order 13101 - Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition, and Executive Order 13148 - Greening the Government Through Leadership in Environmental Management.

Three of the award recipients were from the Fish and Wildlife Service:

**James J. Behrmann, Region 6,  
Regional Safety Office  
“Affirmative Procurement”**

Jim Behrmann is the Environmental Compliance Coordinator for Region 6, Fish and Wildlife Service (FWS). He initiated the Waste Prevention, Recycling, and Federal Acquisition Program in FWS by coordinating with Engineering and Contracting and General Services Divisions. Jim had all the field stations in his region appoint a Recycling Coordinator. With these contacts, he initiated the use of 100% post-consumer recycled, chlorine-free copier paper in the Regional Office and field stations. Jim reviewed engineering plans, and encouraged that contracts specify use of recycled materials, such as fly ash, recycled content plastic lumber and shingles. In order to emphasize re-refined oil closed-loop programs, he has provided funding to field stations for their first purchase of re-refined oil. He also initiated the use of engine coolant recycling systems, and has purchased several units for Region 6 facilities. He has provided guidance and funds to help facilities purchase biodiesel fuel. Approximately 30 facilities are participating in the recycling program, thereby preventing these wastes from reaching a landfill or waterways.



*From left to right: John Howard, Federal Environmental Executive; James Behrmann, Regional Environmental Compliance Coordinator, Region 6; Willie Taylor, Director, Office of Environmental Policy and Compliance; and Christopher Kearney, Deputy Asst. Secretary, Policy & International Affairs*



**Chattahoochee Forest  
National Fish Hatchery  
“Waste/Pollution Prevention”**

The Chattahoochee Forest National Fish Hatchery has four full-time employees and two part-time employees that have made outstanding achievements in reducing storage of hazardous materials used in daily maintenance operations. Personnel inventoried more than 200 distinct substances ranging from common cleansers to toxic chemicals. All hazardous products were disposed of according to environmental specifications. The station eliminated the use of formalin altogether by redesigning the egg hatching process. Through employee awareness and education, the station has reduced the storage of chemicals by 60%. By reducing bulk storage, the potential for spills has also been reduced and/or minimized. Through recycling efforts, unused waste has been reduced 50%. The hatchery is now a cleaner, safer, more environmentally friendly place to work. Compliance with environmental regulations is more manageable, and the public can be assured that the Chattahoochee Forest NFH and the Department of the Interior are good stewards of the environment

**Buenos Aires  
National Wildlife Refuge  
“Recycling”**

The staff of Buenos Aires NWR are very proactive in managing and protecting the Buenos Aires NWR’s savannah-type environment that is among the most unique not only in the Southwest, but in the Service. The Refuge has made dramatic strides in promoting the Waste Reduction, Recycling and Affirmative Procurement programs. By the end of 2000, the Refuge was recycling approximately 40% of its wastes, a 100% increase over the prior year. The Refuge is in a remote location which makes recycling difficult, but they succeed in recycling not only paper, glass, aluminum, and plastic, but also tires, batteries, oil, solvents, oil and fuel filters, bicycles and scrap metal. They also recycle newspaper, colored paper, junk mail, and colored glass, which they had previously been unable to do. The kitchen staff composts food waste which is then used in the Refuges landscaping projects. The Refuge “closes the loop” by purchasing re-refined oil and recycled content paper products and plastic products.



*From left to right: John Howard, Federal Environmental Executive; Mitchell Pickelsimer and Terry Callihan, Hatchery Maintenance Workers; Deborah Burger, Hatchery Manager; Willie Taylor, Director, Office of Environmental Policy & Compliance and Christopher Kearney, Deputy Asst. Secretary, Policy & International Affairs*



*(From left to right: John Howard, Federal Environmental Executive; Steve Williams, Director, USFWS; Wayne Shifflett, Refuge Manager, Buenos Aires NWR; Bernie Freeman, Regional Environmental Compliance Coordinator; and Christopher Kearney, Deputy Asst. Secretary, Policy & International Affairs*





# Leadership



Recycled, renewable, and non-toxic building materials such as bamboo floors, corker walls, and recycled carpet provide good indoor air quality.



The indoor environment is enhanced further through abundant daylight and fresh air ventilation.



The Center uses an innovative constructed wetlands wastewater treatment system. The system includes a primary clarifier, a subsurface-flow constructed wetland with reeds, and a re-circulating sand filter. The effluent is used to flush toilets.

The new Herbert H. Bateman Educational and Administrative Center at Chincoteague National Wildlife Refuge was built using a holistic, sustainable approach, with a special focus on protecting wildlife and minimizing disturbance to site surroundings. The Center replaces five old, inadequate buildings, restoring natural habitat while also saving \$800,000 in backlog maintenance. Low-flow showers, faucets, and waterless urinals, along with natural wastewater treatment, save two million gallons of water annually. With geothermal heat pumps, energy-efficient lighting, high-performance windows, natural daylighting, sunshading, and a high-efficiency building envelope, the Center cuts energy use by 50% compared to a typical facility.

Herbert H. Bateman Educational and Administrative Center  
Chincoteague, Virginia



YOU HAVE  
the POWER™

United States Department of the Interior  
Federal Energy Management Program

October 2009

For more information on how you can get involved in the  
You Have the Power campaign, visit the FEEMP Web site at [www.doi.gov/feemp](http://www.doi.gov/feemp).



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