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National Wildlife Refuge System

NWRS Inventory and Monitoring: Informing Biological Planning to Facilitate Excellence in Conservation Delivery

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National Wildlife Refuge System

THE NWRSIA of 1997

- Provide for the conservation of fish, wildlife, plants and their habitats;
- Ensure the biological integrity, diversity, and environmental health;
- Plan for the continued growth of the System;
- Assist in the maintenance of adequate water quantity and quality....;
- Acquire water rights....; AND
- **Monitor the status and trends of fish, wildlife, and plants in EACH refuge**



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We can no longer afford to independently toss conservation actions at the landscape hoping something is going to stick.

We must be deliberate and we must work together as a conservation community.

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Integrating science to inform biological planning

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- Inventory and Monitoring
- Water Resources
- Air Quality
- Human Dimensions



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National Wildlife Refuge System I&M: What Does it Do?

- Nationally coordinated program of I&M
- Informs a deliberate research agenda
- Relevance at all spatial scales
- Gather, synthesize and share standardized data
- Leverage resources with key partners and ensure sound stewardship of public funds
- Implementing a zone system to provide resources to the field



Zone System for I&M Support

- Is an intermediate level that bridges the region and field
- Provides additional capacity to support the field
- Successfully used by refuge law enforcement and fire team
- Several regions have deployed zone positions
- Minimum level of staffing for 1 zone includes:
 - 1 zone biologist, 1 zone data manager, 1 zone field technician, and 2 season zone technicians

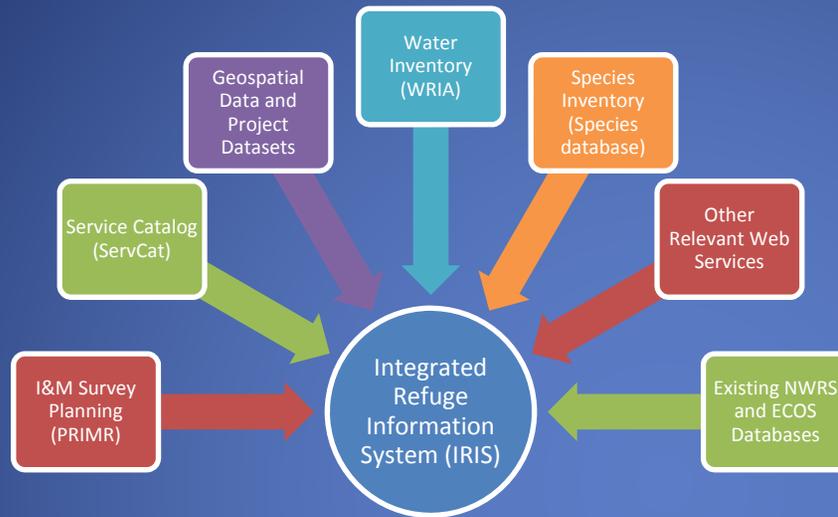


National Priority Projects

- Centralized Repository for Refuge Docs (ServCat)
- Planning and Review of I&M on Refuges (PRIMR)
- Water Quality and Quantity Monitoring
 - Water Resource Inventory and Assessment (WRIA)
- ESA Species Status on Refuges (T&E)
- National Phenology Network Partnership
- Wilderness Character Monitoring (WCM)
- Invasive Species Pilot Monitoring
- Provide Geospatial Abiotic Datasets to Refuges



Data Information System



Information Products:

- List of monitoring activities
- Abiotic data layers for refuges
- Species lists
- ESA status
- Document storage and retrieval
- Inventory and Monitoring Plans
- Geospatial analysis

Collaborators:

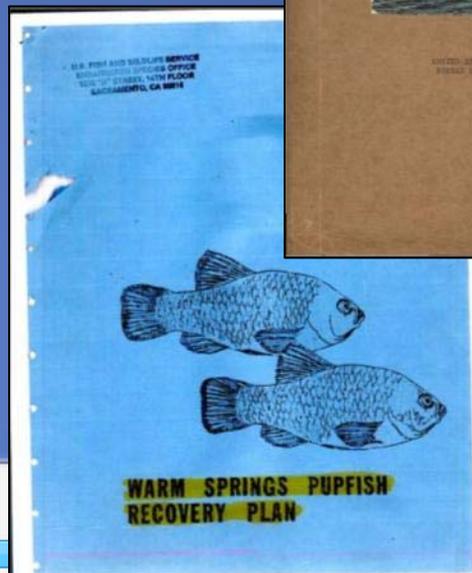
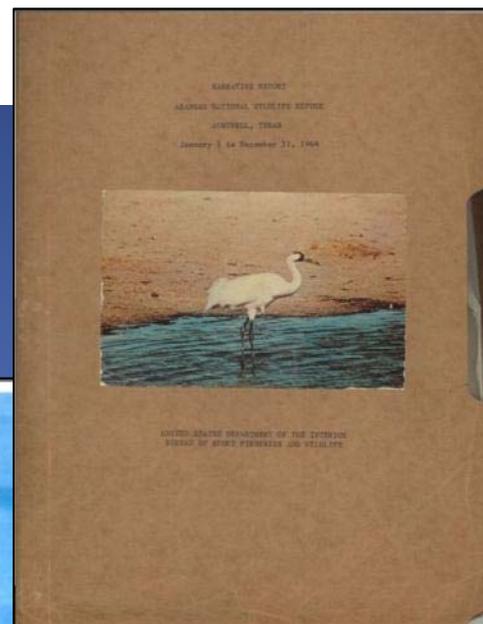
FWS Environmental Conservation Online System (ECOS), FWS Branch of Data Systems and Services (BDSS) and the National Park Service (NPS)





Service Catalog (ServCat)

1. Repository for critical management information
 1. Documents, datasets, and geospatial files
2. Centrally archived on a secure system
3. Fully documented with metadata
4. Readily discoverable and retrievable





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ServCat Data Mining Pilot

2,473 documents from 10 refuges

244 Plans

1,360 Reports/Documents

309 Data/Surveys

57 Maps

160 Photographs

6 Presentation/Poster

337 Letters/Articles



1. Stillwater NWR (Oct. 3 – 7)
2. Don Edwards San Francisco Bay NWR (Oct.24 - 28)
3. Aransas NWR (Oct. 31- Nov. 4)
4. Malheur NWR (Nov. 14 – 18)
5. Neal Smith NWR (Nov. 28 – Dec. 2)
6. Parker River NWR (Dec. 12 – 16)
7. Kenai NWR (Jan. 9 - 13)
8. St. Vincent NWR (Jan 30 – Feb. 3)
9. Tewaukon NWR (Feb 27 - Mar. 2)
10. Ash Meadows NWR

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Planning and Review of I&M on Refuges (PRIMR)

- Who, what, why and when of current and ongoing surveys
- Identify activities that would benefit from standardized protocols and sampling methods
- Will streamline the process of developing I&M plans



- Over 2000 I&M survey activities documented



Water Monitoring: Quality and Quantity



- The mission of the NWRS depends on reliable supplies of clean, fresh water
- Must have sufficient knowledge of the current status of refuge water quantity and quality
- Pilot Study to test development of core parameters
- Water Resource Inventory and Assessment



Status of T&E Species on Refuges

- Determine the status of all federally listed species on refuges.
 - ECOS (Range Maps and Species Lists)
 - Comprehensive Conservation Plans
- Rectify differences to create a validated list of ESA species for each station.

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Refuges ESA Database

[ECOS](#) > [Refuges ESA Database Home](#) > [Refuge Data Entry](#) >

Refuge ESA Data Entry for 2012 Alaska Maritime National Wildlife Refuge

Please complete your Refuge's data entry. [Instructions are available here.](#)

Common Name	Scientific Name	ESA Status	Refuge Occurrence as described by ...			Monitored?	Comments
			CCP	ECOS	Biologist		





Refuge Abiotic Geospatial Data

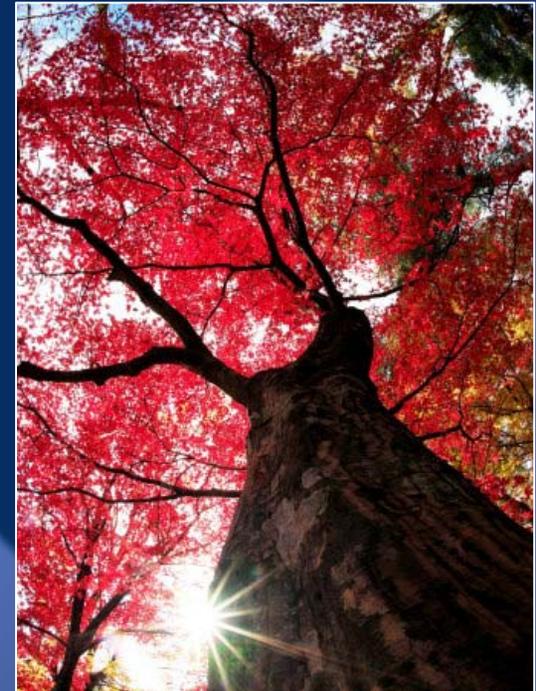
- Baseline Inventory Data Recommendations for NWR (WH8.1 -2004)
- Assessed the status of 6 core layers
 1. Topography
 2. Aerial Photography
 3. Hydrography
 4. Soils
 5. Boundaries
 6. NWRS Infrastructure
 - Oil/Gas Wellheads





USA National Phenology Network

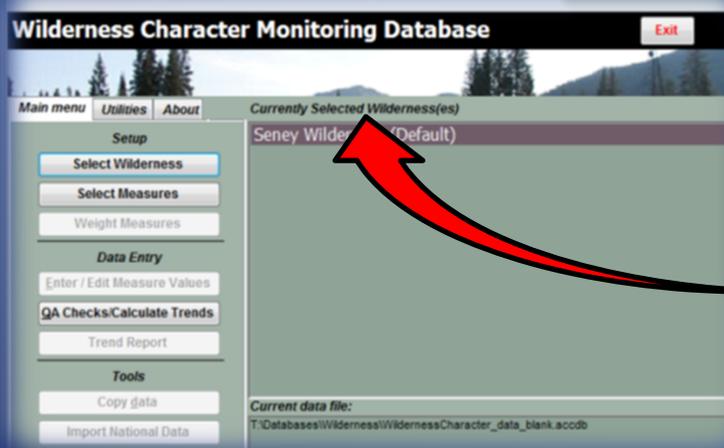
- Assess phenological information currently collected at field stations
- Determine what other phenological information is needed
- Work with USA-NPN to create a web portal for Refuges
- Increase awareness of USA-NPN standardized protocols and data storage system





Wilderness Character Monitoring

- Data collected on refuges will be collated in a national wilderness character database - FWS-NPS partnership
- I&M sent Wilderness Fellows to develop wilderness character measures with refuge staff in 2011 and in 2012





Invasive Species I&M Pilot

- I&M critical components of invasive species management
- Assessment of invasive plants on refuge lands first step to management
- 4 pilot projects implemented in 2011
 - Alligator River NWR
 - Quivira NWR
 - Silvio O. Conte NFWR
 - San Diego NWR





National Wildlife Refuge System I&M: What Will It Do?

- Full-scale implementation of ServCat and PRIMR
- Implementation of the I&M Policy
 - Development of IMPs
 - Development of standardized protocols
- Development of species occurrence database
 - Standardized species list
- Identification of core water monitoring metrics
- Implementation of standardized inventories
- Gap analysis and assessment of existing I&M data
- Support the integration of abiotic and biotic data
- Development of decision support tools
- Status and trends of refuge conditions



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A large, dark blue silhouette of a bird in flight, positioned horizontally across the center of the slide. The bird's wings are spread wide, and its tail is visible. The text "Thank you" is overlaid on the bird's body.

Thank you