

# Refuges - Division of Natural Resources

## Regional Project Updates

August 2014

### Inventory and Monitoring Plan (IMP) Workshops

An IMP is the description, justification, ranking, and selection of priority biological surveys that a station intends to conduct. The first step in the IMP process is to update survey records in PRIMR to provide Division of Natural Resources (DNR) and refuge staff with a list of current and expected surveys. These surveys and potential new ones are reviewed within the context of refuge planning objectives during the IMP workshop. Refuge staff use a prioritization tool to score the final list of surveys, and then identify a subset of these for implementation in the IMP.

Important milestones to date include:

- Rachel Carson NWR has an approved IMP (see : <https://ecos.fws.gov/ServCat/Reference/Profile/30052>)
- Back Bay, Potomac River Complex, Missisquoi, Umbagog and Iroquois National Wildlife Refuges (NWRs) have participated in IMP prioritization workshops.

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### Hurricane Sandy Resiliency Project Coordination

R5 DNR staff used principles of structured decision making (SDM) to engage other USFWS programs receiving Sandy Resiliency funds to coordinate projects, pool resources and avoid duplicative efforts. An initial meeting in December 2013 produced a draft objectives hierarchy for the coastal system that linked major system components, and associated ongoing or proposed projects and monitoring metrics, to an overarching fundamental objective shared by all programs. Important milestones to date include:

- A status and needs assessment for resiliency projects, written by detailee Georgia Basso (Ecological Services – Coastal Program).
- Identification of key monitoring protocols and metrics to evaluate resiliency actions for projects across R5.
- A foundation for coordinating with partners in Strategic Habitat Conservation.
- USFWS cooperators: North Atlantic LCC, Migratory Birds, Ecological Services (Partners Program) and Fisheries.

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### Surface Elevation Monitoring in Marshes

Marsh surface elevation trends are critical to understanding tidal marsh health. If accretion rates do not keep pace with elevation losses from sea level rise and subsidence, marshes convert to mudflat or open water. Refuges participating in the Salt Marsh Integrity (SMI) project and those with Hurricane Sandy Resiliency restoration projects are installing Rod Surface Elevation Tables (SETs) to measure progress in restoring and maintaining fully functioning salt marshes. Accomplishments and next steps include:

- Created a Regional SET installation team, providing on-the-ground assistance from Maine to Virginia.
- Prior to 2014, 172 SETs had been installed; the SET Team expects to install 324 SETs by the end of 2014.
- Over 400 SETs will be installed on 15 coastal refuges by 2016.
- All SETs will be connected to the National Spatial Reference System.

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### Regional Water Quality Monitoring Protocol

Refuge management is greatly dependent on water, yet we know little about the quality of the water flowing into refuges in Region 5. Increasing development is putting more demands on water, and climate change predictions forecast many changes to historic hydrologic cycles. These current and expected stresses underscore the importance of monitoring current water conditions. In the next year, Region 5 Refuges, with the assistance of Ecological Services and U.S.G.S., will be developing a protocol to assess water quality entering refuges and determine whether biological objectives are being supported. This work will allow us to:

- Develop a comprehensive picture of water quality throughout the region.
- Determine whether existing water quality is protective of aquatic life and refuge biological objectives.
- Provide a starting point to measure changes in water quality over time (both positive and negative).
- Develop additional protocols that individual refuges can use to meet site specific water quality issues.

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### Developing Ecological Site Descriptions (ESDs)

The DNR and the Northern Forest Land Management Research Demonstration (LMRD) have partnered with NRCS and NatureServe to develop ESDs on Refuges in the northern forest. Ecological sites are defined by physical features of the landscape (soil, landform, geology) and climate that produce distinctive vegetation, successional phases, which respond similarly to management actions and natural processes. ESDs correlate with soil map units that can be applied over broad areas, and will be entered into the NRCS soil database, available for public use. Key project components:

- Involves Umbagog, Nulhegan, Pondicherry, and Blueberry Swamp NWRs.
- An ESD team (soil scientists, plant ecologists, foresters, and botanists) has defined 7 ecological sites.
- Approximately 80% of the forest ecosystems occurring on refuges within the project area, and 1.8 million acres within the northern forest ecoregion will be described.

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### Baseline Forest Assessment Core Team

DNR staff, Refuge Managers, Biologists, Foresters and Scientists from the US Forest Service's (USFS) Forest Inventory and Analysis program conducted an SDM workshop in June to determine the core forest metrics and methods needed to efficiently evaluate forest conditions. The Team is reviewing protocols and partnering with the USFS to use existing programs, databases, and methodologies. The baseline protocol is the second tier of a 4-tiered Inventory & Monitoring framework being developed by the Team to inform forest planning and implementation. The protocol will complement remote sensing data (tier 1) and will provide information that helps characterize refuge forests. Accomplishments and next steps:

- Contracted with the USFS to assist with the development of a protocol and database.
- Tier 1, forest covertype mapping, will be tested at Great Dismal Swamp and Canaan Valley NWRs in spring of 2015.
- The baseline protocol will be tested at Canaan Valley, Umbagog and Nulhegan NWRs.

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