



Invasive Species Inventory Pilot Project FY12 Update

Natural Resource Program Center

The Natural Resource Program Center is part of the National Wildlife Refuge System and will directly support the science-based management of the Nation's 560 National Wildlife Refuges and 38 Wetland Management Districts that manage more than 150 million acres of public lands and waters across the United States in all 50 States, several Territories, and the marine environment.

The underpinning legislation guiding the formation of the Center is the National Wildlife Refuge System Improvement Act of 1997 (P.L. 105-57). The Act states that the Secretary shall, "monitor the status and trends of fish, wildlife, and plants in each refuge."

Background

Invasive species are one of the most pervasive threats to habitat management in the National Wildlife Refuge System (NWRS) and the threat is expected to increase in light of global climatic change and associated disturbance events (e.g., fire, flooding). Invasive plants can alter ecosystem integrity, diversity, and health in many ways including decreases in diversity and richness of native plant communities and loss of wildlife habitat. Over 2.5 million acres of refuge lands are infested with invasive plants and hundreds of invasive animal populations, from rats to feral pigs and pythons, inhabit refuges. It is among the fastest growing areas of refuge spending.

Inventory and monitoring (I&M) are critical components of invasive species management and play key roles in confronting existing infestations and deterring future threats. Without inventory data, we do not know what the problem is, where it is, or its extent. Likewise, we do not understand the patterns of its spread at relevant scales.

Assessing invasive plant threats on refuge lands is the first step, and provides the foundation of a strategic and adaptive approach to invasive plant management. Assessments identify which species pose the greatest threat to trust resources (prioritization). They also determine the status of priority invasive plants (location, abundance, pathways), identify potential new invaders (early detection), and identify invasive plant impacts to trust resources (e.g., rare species, high value habitats). In order to assist NWRs with field based assessments of invasive plant infestations, a pilot project is underway to test a prioritization framework and develop an inventory handbook.

In 2011 and 2012, prioritization workshops were conducted at Alligator River NWR, Quivira NWR, Silvio O. Conte NFWR, and San Diego NWR. These four refuges were selected for participation in this project according to specific criteria. Inventories and GIS trainings were also carried out with assistance from Utah State University and IGIS, Inc.



Andres Abeyta of IGIS Technologies, Inc. leads a mapping training session at Silvio O. Conte NFWR. Credit: USFWS

The total numbers of acres mapped at each refuge are estimated to be: 5,500 acres for Alligator River NWR, 11,000 acres for Quivira NWR, 1,200 acres for Silvio O. Conte NFWR and 1,962 acres for San Diego NWR. In collaboration with the National Institute of Invasive Species Science (NISS) at Colorado State University, predictive modeling for distributions of invasive plant species at both Refuge and Landscape Conservation Cooperative (LCC) levels is underway for these refuges. In 2013, inventories will be conducted at two additional refuges, Middle Mississippi NWR and Washington Maritime NWRC (primarily the San Juan Islands NWRs and the sand spit on Dungeness NWR). Over the coming months, the project team will begin documentation of these case studies for the prioritization process, mapping methods, and logistical considerations used in this pilot project.

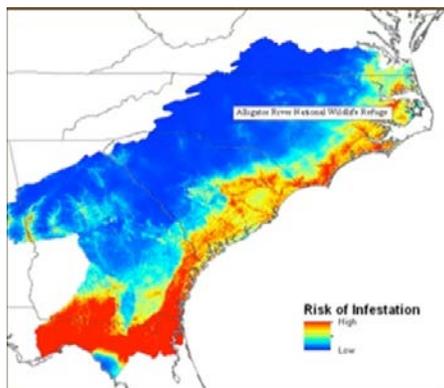
Once the case studies are complete, additional participation will be requested to assist in the evaluation of the invasive plant assessment process (prioritization, inventory design, and methods, risk modeling). Subsequently, a framework will be developed that can be used to lead refuges through a prioritization process that meets their invasive plant management objectives. The work conducted on the pilot refuges will be presented as examples, along with other refuge case studies. The framework will be prepared as a handbook available to refuges through the National Inventory & Monitoring Program to assist them with field based invasive species inventories.



David Bishop assessing invasive plants at Silvio O. Cone NFWR. Credit: USFWS



Utah State University mapping team conducting an inventory at Quivira NWR. Credit: USFWS



Modelling potential distribution of Alligator weed in the South Atlantic LCC.



Alligator weed in the canals at Alligator River NWR. Credit: USFWS

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[http://www.fws.gov/refuges/
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September 2012