

Invasive Species Program

National Wildlife Refuge System

Fiscal Year 2010 Update

Invasive Species Management in the National Wildlife Refuge System

Invasive species continue to alter wildlife habitat and pose challenges to management of the National Wildlife Refuge System (NWRS). Recent Climate Change information indicates that invasive species may have better dispersal and survival characteristics than native species as temperature, water availability, and weather patterns are altered. National Wildlife Refuges' current capacity to address this increased pressure on native wildlife and plants is limited by availability of information, resources and active management options. The number of acres reported to be infested with invasive plants continues to rise, from just under 2.5 million acres in FY2009 to just over 2.5 million acres in FY2010 (RAPP database). Refuge staff treated 13% of lands infested with invasive plants in 2010.

Invasive Species Inventory and Monitoring Program on National Wildlife Refuges

As identified in the NWRS Inventory and Monitoring Strategic Plan, an invasive species pilot program has begun. The pilot study, implemented in different environments, will strive to accomplish a threefold goal: 1) Gain a better understanding of the type and scale of invasive species inventory objectives; 2) evaluate cost-effective methods relative to these objectives; and 3) utilize probability of occurrence modeling to evaluate predicted spread and facilitate management decisions.

The information collected will establish national program guidelines for NWRS invasive plant inventory and monitoring. Findings from the pilot studies will allow refuges to adaptively manage invasive plants and the surrounding landscapes in which they occur.

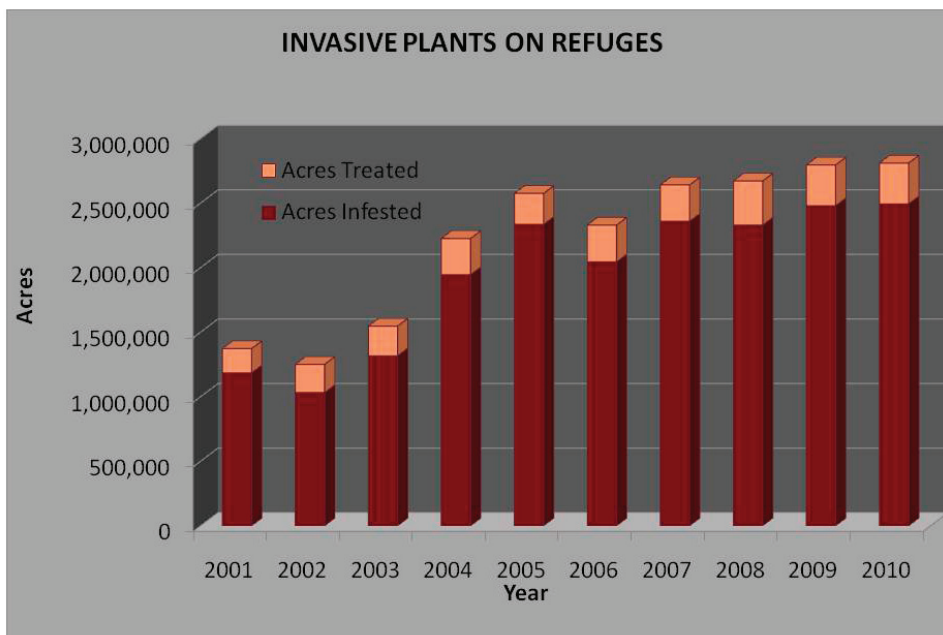
Large Invasive Species Eradication Projects

Annually, one or two large-scale invasive species eradication projects are awarded funding of up to \$1 million dollars. Project proposals are evaluated according to specific criteria by a multi-regional review panel and winners are selected by the Refuge Chiefs. Eligibility is based on potential to fully eradicate, rather than control or contain, an invasive species on refuge lands.



Using metal-bladed brushcutters to mow *Spartina* below soil surface ("grind" method) at Humboldt Bay NWR.

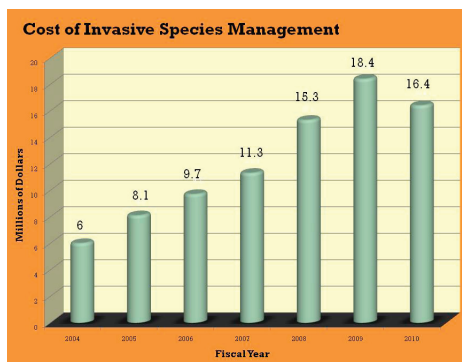
This year, the Humboldt Bay NWR *Spartina densiflora* Eradication Project was awarded funding to eradicate an invasive cordgrass species from all lands within the Refuge. *Spartina* has infested 289 ac (117 ha) of salt and brackish marsh. It causes physical changes to the environment, reduces native biodiversity, threatens rare plant species and communities, and changes the composition of benthic and terrestrial invertebrates. Thus far, primary treatment of *Spartina* has been completed in all units within the Refuge except the Eureka Slough Unit, where large scale mechanical treatment will soon be conducted. Secondary treatment on all previously treated sites was done this last winter.



Number of acres infested and treated on NWRs 2001-2010. Data source: RAPP.

Increasing Costs of Invasive Species Management

As in previous years, the costs of invasive species management in the NWRs continue to climb. In FY2010, the NWRs spent \$16.4 million on invasive species management activities. Rising infestation acreage and costs of fuel, mechanical equipment and chemicals for treating invasive species are reflected in those totals. In addition to the NWRs funds listed above, American Reinvestment and Recovery Act (ARRA) funds were utilized to combat invasive species on some refuges. For example, one project in Florida (supported by \$1.25 million in ARRA funds) focusing on removing invasive plants at the Arthur R. Marshall Loxahatchee NWR. Approximately 9,000 acres of the refuge will be cleared of melaleuca, Old World climbing fern, Brazilian pepper, and Australian pine. The Arthur R. Marshall Loxahatchee NWR is home to the American alligator and the critically endangered Everglade snail kite.



FWS Dollars Spent on Invasive Species Management on NWRs from 2004-2010. Data source: ABC.

Invasives & Volunteers Program Update

Coordination of the Invasives and Volunteers Program shifted from the National Program office to the Regional Offices this year. As an example of 2010 accomplishments, a total of 10 projects were funded in the Midwest Region (Region 3). Within that region, 109 volunteers spent 1,642 hours mapping 9,574 acres and treating invasive species on 733 acres. One of these projects took place at the Upper Mississippi River National Wildlife and Fish Refuge, Minnesota and Wabasha County Cooperative Weed Management Area partners developed a unique way to engage volunteers in mapping invasive plants.

Local geocachers mapped target species in both Wabasha and Winona Counties as part of a “treasure hunt” using GPS units. This small army of people provided important information

for planning invasive species control projects. To date, 26 sites along the Upper Mississippi River were mapped; about 1740 acres.

Updates from Around the Refuge System

Early Detection Rapid Response by the Invasive Species Strike Team in North Dakota

NWRs Invasive Species Strike Teams (ISST) were established in key areas around the country to provide early detection/rapid response to invasive species on refuges. In North Dakota, the ISST mapped and inventoried a total of 38,106 acres. New infestations of invasive species were found on all 8 refuges and refuge complexes. Mapping and follow-up control of these early detections is extremely important to limiting invasive species costs and impacts to refuges.

Weeds Across Borders 2010

In order to effectively manage invasive species in North America, efforts must be made to cross jurisdictional boundaries. Since 2002, managers, regulators, and researchers from Canada, Mexico, and the US have been coming together to discuss invasive plant issues, challenges, and solutions at the biennial Weeds Across Borders conference. This year’s conference was held at the National Conservation Training Center (NCTC) in Shepherdstown, West Virginia, and organized under the theme, “Plant Invasions: Policies, Politics, and Practices”. Proceedings from the conference are available at: www.weedcenter.org/wab/2010/docs/WAB2010.pdf. The event was sponsored by the Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW) and endorsed by the Trilateral Committee for Wildlife and Ecosystem Conservation and Management.

Efforts at Control of Tamarisk in Southwestern U.S.

In Arizona, ISST Tamarisk control work along the Colorado River continues through partnerships with youth conservation corps and the National Park Service. Heavy infestation of Tamarisk on some Arizona refuges makes prioritizing projects critical and following up with active restoration essential. The team planted over 2000 native trees during the 2010 season.

In New Mexico, along with other ISST invasive control work, extensive

mapping, treatment and follow up monitoring of Tamarisk establishment on Maxwell, Las Vegas, and San Andres NWR continues. The goal is total eradication of this species from these refuges (expected in one to three years). Refuge biologists and ISST leaders have begun the process of evaluating Tamarisk infestations on surrounding properties to determine likely establishment pathways. Continued monitoring and control will be conducted on the larger landscape, which is crucially important for limiting reintroduction.

In southern Texas, where the Rio Grande empties into the Gulf of Mexico, Hurricane Alex flooded 17,000 acres of the Lower Rio Grande Valley NWR in 2010. A new, incipient establishment of Tamarisk was found. With some areas having up to 600-800 seedlings per acre, quick action by the refuge plant ecologist, other refuge staff, and volunteers was required. Mapping done in the fall will allow refuge staff to plan for a rapid response control program for this infestation.



Refuge plant ecologist Kim Wahl with a new Tamarisk infestation along the Rio Grande.

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