

Invasive Species Program

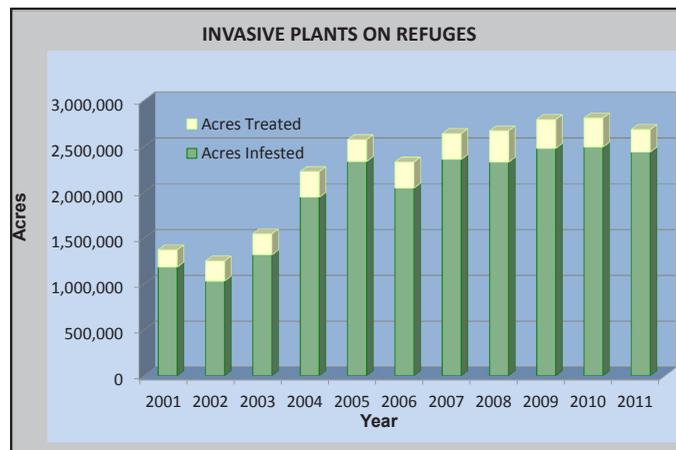
National Wildlife Refuge System

Update FY 2011

Invasive Species Management in the National Wildlife Refuge System

Invasive species continue to alter wildlife habitat and pose challenges to all those engaged in managing the National Wildlife Refuge System (NWRs). Recent climate change information predicts that invasive species may have more competitive dispersal and survival characteristics than native species as temperature, water availability, and weather patterns change.

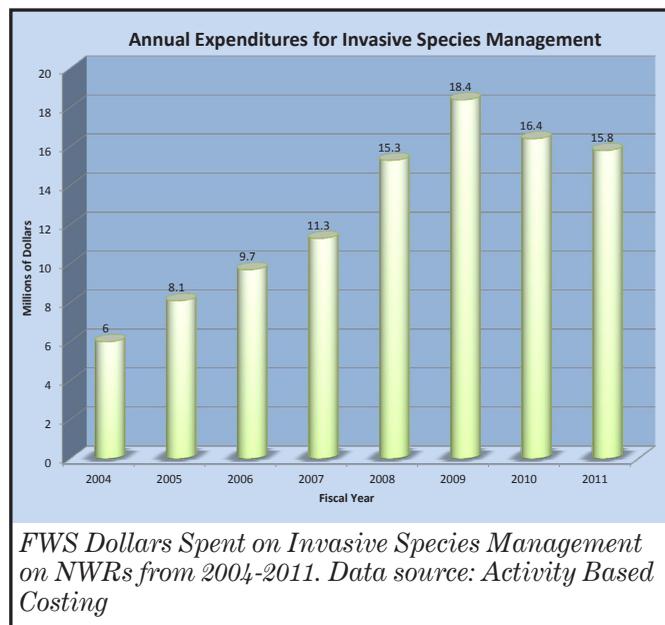
In FY2011, there were 2.4 million acres infested with non-native invasive plants within the NWRs of which 246,347 acres, about 10%, were treated. Many refuges have prioritized the treatment of small incipient infestations, referred to as early detection species, to protect pristine areas rather than focusing on treating larger established infestations. Additionally, there are more than 3,800 invasive animal populations residing on refuge lands. Invasive animals and plants can be especially detrimental to island ecosystems where more than 50 percent of extinctions are known to be caused by invasive species.



Number of acres infested and treated on NWRs 2001-2011. Data source: Refuge Annual Performance Plan

Cost of Invasive Species Management

In FY2011, the NWRs spent \$15.8 million on invasive species management activities. Rising infestation acreage and costs such as fuel, mechanical equipment, and chemicals for treating invasive species are reflected in this total. In 2009, expenditures peaked at \$18.4 million, partially due to the availability of special funds through the American Recovery and Reinvestment Act (ARRA) and Southern Nevada Public Land Management Act (SNPLMA).



FWS Dollars Spent on Invasive Species Management on NWRs from 2004-2011. Data source: Activity Based Costing

Invasive Species Inventory and Monitoring Program on National Wildlife Refuges

Inventory and monitoring (I&M) are critical components of invasive species management and play key roles in confronting existing infestations and deterring future threats. With accurate inventory data, we learn what the problem is, where it is, or its extent. Similarly, we begin to understand the patterns of its spread at relevant scales. Therefore, to assist NWRs with field-based inventories of invasive plant infestations, a pilot project is underway to test a prioritization framework and develop an inventory handbook.

During the summer of 2011, Inventories and GIS trainings were also conducted at three of these refuges with assistance from Utah State University and IGIS, Inc. The total number of acres mapped at each refuge are estimated to be: 5,500 acres for Alligator River NWR, 11,000 acres for Quivira NWR, and 1,200 acres for Silvio O. Conte NWR. The fourth pilot site, San Diego NWR, will begin its inventory in 2012. Once the pilot studies are complete, additional feedback will be requested to evaluate the projects for advantages and disadvantages of prioritization workshops, inventory design, and methods. Subsequently, a strategic framework will be developed that can lead refuge personnel through a prioritization process that meets their invasive plant management objectives.

Large Invasive Species Eradication Projects

Annually, one or two large-scale invasive species eradication projects are awarded funding of one million dollars. Project proposals are evaluated according to specific criteria by a multi-regional review panel and selections are made by Refuge Chiefs. Eligibility is based on potential to fully eradicate, rather than control, or contain, an invasive species on refuge lands. In FY2011, two refuges were selected to split the one million dollars over the course of two years.

Desecheo National Wildlife Refuge

Desecheo Island National Wildlife Refuge Restoration Project was awarded funding to protect and restore the island's ecosystem, particularly seabirds, reptiles and native plants, by removing non-native, invasive black rats. Located approximately 13 miles west of Puerto Rico, the refuge was home to tens of thousands of birds before the introduction of this and other invasive species. Biologists found only one pair of brown noddies, 13 pairs of breeding bridled terns, and no breeding seabirds on the refuge in 2010. Small, ground-nesting seabirds are likely to have suffered the greatest impact from rat predation while the fruits of the native, federally threatened Higo chumbo cactus and other sensitive plants are also damaged.

Midway Atoll National Wildlife Refuge

Non-native Plant (golden crownbeard) Eradication and Native Plant Restoration on Eastern Island was awarded funding to restore the function of Midway's insular ecosystem, high quality nesting/resting habitat for 18



Invasive plant Verbesina encelioides at Midway Atoll NWR.

Photo Credit: USFWS

species of seabirds and native plant biodiversity, and to enhance the long-term recovery efforts of the endangered short-tailed albatross and the Laysan teal. The refuge is home to the world's largest breeding colony of Laysan albatrosses. Seabirds depend on native vegetation for nesting and cover and few to no native plants are found among existing stands of golden crownbeard. Eradication of this plant is also a primary habitat goal within the Migratory Bird program, Endangered Species program, and Papahānaumokuākea Marine National Monument.

Invasives & Volunteers Program Update

The Invasives and Volunteers Program continued to be coordinated through the regional offices this year. Each region received a total of \$120,000 to disperse among the region's refuges.

Region 3 supported over 450 volunteers and 20 partners who planned and participated in the 1st annual Conservation Day at St. Croix Wetland Management District. This event included interpretive programs

on local invasive species, chemical treatment of 10 acres of upland habitat, restoration of 5 acres of oak savannah habitat, and mapping of over 200 acres for invasive species infestations. Additionally, they initiated the Prairie Plug Program, for which New Richmond high school and middle school students planted 3,200 native prairie grass plugs that will reseed hundreds of acres of Service land.

Updates from Around the Refuge System

Early Detection Rapid Response (EDDR) by the Invasive Species Strike Team in New Mexico

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. On Las Vegas NWR, ISST and an American Conservation Experience (ACE) crew continued to spot treat and monitor bull and musk thistle, treat acres colonized by Canada thistle, and partner with the New Mexico Department of Game and Fish (NMDGF) to treat McAllister Lake Waterfowl Management Area (a state holding within the refuge).



NMDGF and Service staff treating Canada thistle at McAllister Lake.

Photo credit: USFWS/Phillip Garcia

Efforts to Control Red

Imported Fire Ants (RIFA) at Attwater Prairie Chicken NWR

In Texas, over 1,300 acres were treated for RIFA in 2011. RIFA are extremely detrimental to insect populations that are an essential food source for the critically endangered Attwater prairie chicken. Results from treated areas show that the desirable insect populations have almost doubled.

Rat Control on Palmyra Atoll NWR

In June, the Palmyra Atoll NWR rat eradication project was implemented through a partnership with The Nature Conservancy and Island Conservation. Post eradication monitoring efforts over the next two years will determine the success of eradicating an estimated 30,000 rats that inhabited the 1 square-mile of land. Positive biological responses have already been observed.

Efforts at Control of Feral Hogs in Texas and Oklahoma

The Service continues working to control feral hogs on refuges such as Aransas, Anahuac, & Tishomingo NWRs via helicopter, by contracting with USDA-APHIS/Wildlife Services and trapping at Hagerman, Balcones Canyonlands, Aransas, Little River and Caddo Lakes national wildlife refuges. More than 2,000 hogs were removed in 2011.



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