

Invasive Species Strike Teams

National Wildlife Refuge System

Fiscal Year 2010 Update

Over 2.5 million acres of the National Wildlife Refuge System (NWRS) are infested with invasive plants. Invasive species directly affect native plant communities and wildlife habitat by changing biological diversity and altering ecosystem function. Control and management of invasive species continue to be a priority for refuge management.

In 2004, the NWRS initiated an Invasive Species Strike Team (ISST) program. Currently, teams are located in the following areas: Hawaii and the Pacific Islands (Region 1), Southwest and Lower Colorado River area (Region 2), Upper Missouri/Yellowstone/Columbia River (Region 6), North Dakota (Region 6), and the Florida Everglades (Region 4). The ISST program mission seeks to contribute to the restoration and maintenance of native plant and wildlife communities on refuge lands and neighboring landscapes by reducing impacts from invasive species. The primary strategy used by the ISSTs

is early detection and rapid response (EDRR), which focuses on eradicating new, incipient infestations of highly invasive species. In addition, ISSTs implement control, restoration, and monitoring programs. And, in some cases, ISSTs assist neighboring landowners to manage invasive species through education and project partnerships.

Southwest

In Arizona and New Mexico, ISSTs combat invasive species that impact soils, sediment load, and flow patterns along the southwestern rivers. In 2010, the Arizona ISST utilized youth conservation corps groups, such as Student Conservation Association (SCA), Southwest Conservation Corps (SWCC), and American Conservation Experience (ACE), as well as National Park Service crews to pull over 300,000 invasive salt cedar seedlings and cut down mature plants on 103 acres. Crews also planted over 2,000 native trees and removed Russian thistle, Sahara mustard, and giant salvinia.

In New Mexico, a four person team was hired for the 2010 field season. The team assisted in controlling invasive species on five NWRs, White Sands Missile Range, White Sands National Monument, and Broad Canyon Ranch (NM State Parks). The team mapped 1503 acres and treated a total of 494.31 acres. Complimenting that effort, ACE worked extensively at Bitter Lake NWR on priority invasive plants in sensitive areas around springs and seeps. Statewide, species treated include Tamarisk, Russian olive, Russian knapweed, and invasive thistles.



ACE crew looking for Russian knapweed on Bitter Lake NWR.

Florida Everglades

Florida and the other southeastern states are prone to invasive species introduction because of their mild climate and numerous ports of entry. Native wildlife of the region are at risk due to changing fire occurrence patterns, plant and animal competition, altered vegetation succession, and limitations on wildlife habitat availability. In 2010, the Florida Everglades ISST funded projects on seven Florida refuges and an additional six projects on refuges in other southeast states.

Gross area surveyed was 4,178 acres. An additional 908 infested acres were treated using highly experienced invasive plant contractors. This ISST



Location of Invasive Species Strike Teams in the U.S.

also conducted 14 EDRR projects on three Florida refuges. Species targeted include air potato, Brazilian pepper, Chinese tallow, cogon grass, Lygodium and Melaleuca.

The ISST is active in regional Cooperative Invasive Species Management Areas (CISMA). Team members also participate in collaborative invasive plant and animal removal workdays throughout Florida that target species such as Burmese and North African pythons and feral hogs.



Trailer used by the Florida Invasive Species Strike Team.

Hawaii and Pacific Islands

The Hawaiian and Pacific Island Strike Team focuses on a chain of eight islands, reefs, and atolls extending about 800 miles northwest from the Hawaiian Islands. This ISST collaborates with partners including the University of Hawaii PIPES (Pacific Internship Programs in Exploring Science). ISST has funded 10 PIPES students in the last 3 years, who along with refuge staff have controlled a variety of invasive plant and animal species including feral cats, broom sedge, buffleggrass, and octopus tree. In 2010, the ISST mapped 432 acres of the island ecosystems, and treated 476 acres utilizing early detection and rapid response methods.

North Dakota

In North Dakota, FWS is responsible for maintaining the biological diversity and integrity of 306,937 upland acres. The North Dakota ISST has focused on numerous plant species invading refuge and other lands. In 2010, invasive species were treated on a total of 25,845 acres. Primarily herbaceous species were treated. A total of 38,106 acres of lands were mapped and inventoried for occurrence of invasive plants with all 8 refuges and refuge complexes reporting new infestations of invasive plants. This makes mapping work extremely important for EDRR efforts. The North Dakota ISST and other ISSTs have created partnerships

with universities, chemical companies, private landowners, and other agencies to increase their knowledge of new species and improve their control techniques and monitoring capabilities.



ATV mounted sprayer control of herbaceous invasive plants.

Upper Missouri/Yellowstone/Upper Columbia River (MOYOCO)

The Montana ISST implements a mobile-crew system of 10 career-seasonal and temporary employees that are highly trained in IPM methods and data collection. This team strives for conservation of biological integrity of wildlife habitat with 12 Refuges and 5 Wetland Management Districts covering over 1.3 million acres. Project sites are often remote, and cover vast areas of uneven terrain, around wetlands, and along riparian areas that require spot-spraying and hand-pulling. In 2010, they mapped 25,936 acres and treated 555 acres, e.g., two inventories each of >3,000 acres for leafy spurge, and labor-intensive hand-work around the threatened plant, Spalding's Campion. New and satellite infestations are always discovered, and control efforts have seen significant reductions in distribution and abundance. This ISST also provides funding to refuges for contract work, chemical and equipment purchase. Summaries, analyses, recommendations, and results from a new modeling project for predicted spread are provided to increase science capacity for management decisions.



EDRR on saltcedar sapling on Copple WPA

Future Challenges

Climatic shifts in precipitation levels moving toward warmer and drier moisture patterns, from tropical to desert ecosystems, is predicted to greatly increase some species of invasive plants while decreasing others. Larger numbers of these plants can impact water quantity and quality, and increase soil erosion rates. The effects on ecosystem services, habitat quality and native wildlife populations are expected to be substantial. Updating and standardizing Federal, State, and local laws and regulations are much needed improvements. There is also a critical need for more extensive education and enforcement of prevention and decontamination protocols at a national level.

The ISST program requires flexibility in time and place to respond quickly and effectively to invasive species infestations as they develop, and before they become established. EDRR is a cornerstone of the program and must be fully embraced, and implemented on a consistent basis and on a large enough scale to be effective.

Finally, invasion ecology and the variation of physical and biological conditions across the NWRS must be thoroughly understood. A recently initiated NWRS Invasive Species Inventory and Monitoring Program is developing a protocol and prioritization process for conducting invasive species inventories on refuges. Pilot projects will be implemented at selected refuges that vary in size, scale, and species represented. The results will be utilized in collaboration with partners to assure greater success in managing NWRS lands.

Contact:

*Jenny Ericson
National Invasive Species Program
Coordinator
U.S. Fish and Wildlife Service
703-358-2063
Jenny_Ericson@fws.gov*

U.S. Fish & Wildlife Service
<http://www.fws.gov>

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