



The North Carolina Sandhills Weed Management Area: Facilitating Regional, Invasive Species Management Partnerships Among DoD and Neighboring Land Stewards

06-334

Background:

A Weed Management Area (WMA) is a partnership of Federal, State and local government agencies, as well as, individuals, and various interested groups that cooperatively manage non-native invasive plant species (NIS) in a defined area. This project provided funding to the US Army Corps of Engineers, Engineering Research and Development Center (ERDC-CERL) to establish the North Carolina Sandhills Weed Management Area (NCSWMA). Establishing a WMA in the NC Sandhills was particularly important because of the unique and valuable natural resources that are at risk of being negatively impacted by NIS. With only five percent of the historic longleaf pine-wiregrass ecosystem remaining today, landowners in the North Carolina Sandhills play an important role in conserving rare species diversity.



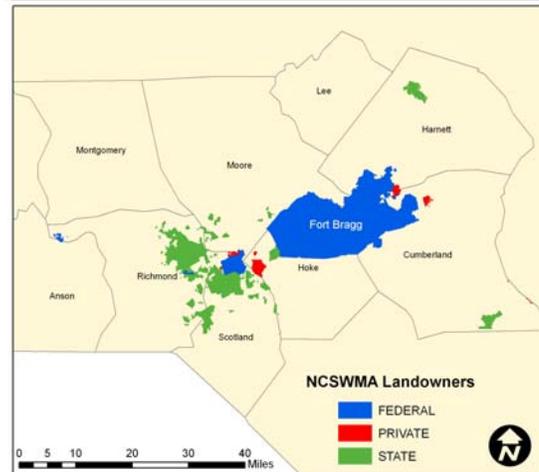
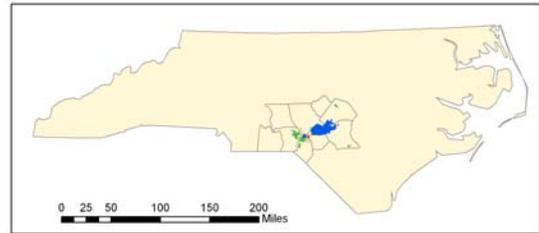
Photo by Peter Frank

Typical longleaf pine-wiregrass forest

Herbarium records, floral inventories, and an extensive NIS survey in 2004 confirm that at least 51 NIS already occur in the NC Sandhills. NIS identified in the region have the potential to naturalize and spread prolifically throughout natural areas, displacing native flora, changing community structure, altering water, energy, nutrient and disturbance cycles, causing losses of biodiversity, increasing soil erosion, and degrading threatened and endangered species habitat.

Approaches to NIS management that have proven successful often involve the development of a WMA, because aggressive regional management efforts are highly effective at reducing the long-term magnitude and cost of impacts.

Lying within the Sandhills ecoregion of North Carolina, Fort Bragg, Pope AFB, and Camp Mackall form one of the largest and most active military complexes in the world. NIS impact DOD natural resources stewardship responsibilities, as well as directly and indirectly affecting the training and testing mission of installations.



Landowners participating in the NC Sandhills WMA

These installations are also the largest landowners in the region, encompassing more than 160,000 acres. By initiating the development of a WMA in the NC Sandhills, the DOD not only helps ensure the protection of its valuable natural resources in the region, but it also takes a strong leadership role in regional natural resources stewardship.

The other primary stakeholders in the WMA include: North Carolina Division of Parks and Recreation, North Carolina Wildlife Resources Commission, Sandhills Area Land Trust, The Nature Conservancy, U.S. Fish and Wildlife Service, and private commercial foresters.

Objective:

The objective of this project was to establish a regional cooperative Weed Management Area in the Sandhills ecoregion of North Carolina by:

1. educating and fostering regional NIS management support,

2. organizing and coordinating a Weed Management Area with regional stakeholders,
3. assisting in the development of a Cooperative Agreement to enable cooperation among the various Federal partners,
4. facilitating the identification of goals of the Weed Management Area and the development of a Strategic Plan,
5. supporting the development of a GIS database of known invasive plant distributions and current invasive plant management efforts,
6. providing technical support for early detection and rapid response efforts,
7. facilitating communication and sharing of expertise among members, and
8. assisting the Weed Management Area in identifying and securing funding resources.

Summary of Approach:

To achieve the project's objectives, ERDC-CERL initially communicated the importance and benefits of a regional WMA to important regional stakeholders. A workshop was then held to discuss and determine the purpose, objectives, and functions of the WMA. Some preliminary actions determined at the workshop were then implemented by ERDC-CERL.

On May 25th, 2006, ERDC-CERL met with representatives of the North Carolina Wildlife Resources Commission, Sandhills Area Land Trust, The Nature Conservancy, and U.S. Fish and Wildlife Service to introduce the concept of a WMA and discuss how it could be applied in the NC Sandhills. A presentation and workshop was then planned to educate a larger audience of regional landowners and stakeholders of the concept of a WMA, and how it could be specifically applied in the region.



Photo by Peter Frank

Chinese tallowtree (*Sapium sebiferum*) is a highly invasive tree found in relatively small numbers in the NC Sandhills, making it an ideal candidate for early detection and rapid response management.

On June 8th, 2006, a presentation was delivered to the North Carolina Sandhills Conservation Partnership (NCSCP), a large, diverse group of regional conservation stakeholders. The presentation introduced the concept of a WMA and described a potential course of action.

On July 19th, 2006, ERDC-CERL, along with Fort Bragg held a workshop at Fort Bragg to specifically discuss and determine the purpose, objectives, and functions of the WMA. Discussions from the workshop resulted in the formation of specific goals and objectives that make up the NCSWMA Strategic Plan. A Recruitment Committee was also formed to identify active members to hold leadership positions.



Photo by Peter Frank

Large golden bamboo (*Phyllostachys aurea*) infestation identified outside, but near Fort Bragg's boundary.

ERDC-CERL developed a website to publicize the WMA's creation and goals, as well as provide a space for NCSWMA members to post documents, advertise events, plan activities, and share information. The website also contains useful information about NIS that have been identified in the NC Sandhills, including photos, descriptions, and links.

[\(https://kd.erd.c.usace.army.mil/projects/nc_sandhills_weed_mgmt_area/\)](https://kd.erd.c.usace.army.mil/projects/nc_sandhills_weed_mgmt_area/)

A NIS survey was also developed and distributed to land managers in the region. The survey collected information helpful for assessing which invasive plants are impacting the region, what control measures are being implemented, and what management practices might be affecting NIS distributions.

A GIS database was developed to consolidate and organize spatial data pertinent for planning and prioritizing NIS management. The database contains known locations of NIS, property boundaries of WMA members, and data on NIS management efforts.

Using the goals and objectives generated at the July 19th workshop, a Strategic Plan was developed. The Strategic Plan defines a structure, recommends a membership recruitment strategy, and identifies goals and actions for

the North Carolina Sandhills Weed Management Area over a 5 year period. If implemented as described, the Strategic Plan can guide the NCSWMA to eradicate a few highly invasive NIS from the region, reduce overall NIS populations, prevent new NIS introductions, protect threatened and endangered species habitat, and sustain the Sandhills ecosystem.

Contact Information:

Matt Hohmann
US Army Corps of Engineers ERDC-CERL
PO Box 9005 Champaign, IL 61826-9005
1(800)USA-CERL ext.5863
matthew.g.hohmann@usace.army.mil

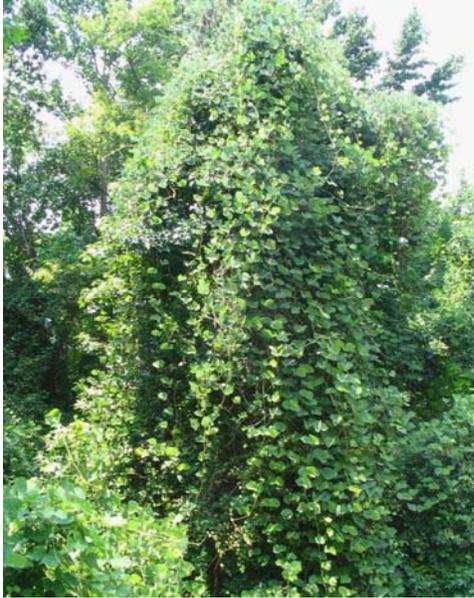


Photo by Peter Frank

Dense roadside infestation of kudzu (*Pueraria montana*)

Benefit:

Installation land managers are burdened by the high costs of land management, as they struggle to fund NIS management programs. A regional cooperative Weed Management Area distributes cost and management responsibilities among all members of the partnership. This relieves some pressures from installation land managers, who otherwise would have to continuously support management efforts on new infestations introduced from outside their jurisdictional boundaries. Successful NIS management, through coordinated partnership efforts in the North Carolina Sandhills, can educate and motivate other installations about the many benefits of regional weed management.

Accomplishments:

Numerous efforts helped to successfully establish the NCSWMA in 2006 and provide the tools needed for future success. Results of the meetings, planning workshop, and survey directly supported the development of a website, GIS database, and Strategic Plan that are educating and organizing the diverse group of landowners participating in the WMA. Regional NIS management is a long-term commitment. The initial work in 2006 has laid the groundwork essential to support future efforts.