



## Reintroduction of Prescribed Fire in Coastal Plain Ecosystems to Reduce Wildland Fire Risk

05-252

### Background:

The historic pattern of wildfires ignited by military training and testing activities has demonstrated that fuel loading has become a threat to the DoD mission. This wildland fire risk, a result of 50 years of fire exclusion policies and practices, is currently impacting military readiness and endangering military personnel. Federal lands throughout the Coastal Plain of the southeastern United States share a similar problem. Fires ignited in the organic soil areas by DoD operations, lightning, and arson result in frequent and costly wildfires. Wildfires in this area can grow from a low intensity burn to a virtually uncontrollable burn until weather conditions change or the fire has run out of fuel. Fire suppression efforts are costly and often hampered by inaccessibility, poor soil trafficability on wet organic muck soils, and fires that tend to burn deeply into the organic soils. Reducing wildland fire risk and the resulting catastrophic impact an uncontrolled burn will have on and around the DOD installations, as well as air and water quality in the immediate vicinity and in downwind communities is critical to supporting future operations.



Photo of Dare County Bombing Range by North Carolina Forest Service

### Objective:

The project will reconstruct historical vegetation and fire regimes with the goals of: 1) Operational implementation of a prescribed fire program to restore original fire regimes and reduce wildland fire risk, 2) Restoring fire-maintained vegetation structure and the diversity of understory food species required for TES, 3) Implementing an ecosystem management approach to commercial forest lands and native vegetation, 4) Restoring forest wetlands types as required for TES wildlife species, and 5) Restoring and sustaining a realistic

training environment. The project will facilitate technology transfer of the approach to prescribed fire for other DoD installations in the U.S.

### Summary of Approach:

Maps of presettlement fire regimes were reconstructed based on the effect of fire compartment size in the original landscape, the effect of fire barriers, fire filters, prevailing wind direction during fire season, topographic and soil factors affecting fire intensity, fire frequency, fire spread, and fire effects on vegetation. A first approximation map of original vegetation communities was then developed after searching for remnant fire frequency indicator species and communities on the site, and mapping remnant natural vegetation on each soil series. Historical vegetation and fire regimes were then used to construct recommendations for prescribed fire management plans for the DoD training and testing installations.

### Benefit:

The proposed project will contribute to uninterrupted mission readiness and the sustainability fire dependent ecosystems on DoD facilities in the Coastal Plain of the southeastern US. The project will also contribute to substantial monetary savings for DoD through the implementation of a prescribed fire program which costs the DoD approximately \$30.00 per acre versus wildland fire suppression costs of \$100 - \$900 per acre.

### Accomplishments:

A prescribed fire implementation plan has been presented to the Air Force, Navy, and Marine Corp natural resources staffs for North Carolina training and testing installations. In addition, the plan has been presented to The Nature Conservancy, the North Carolina Heritage Program, and the North Carolina Department of Forestry for their review and comment. GeoBase data will be used in future development of prescription burn plans and in regulatory discussions with the North Carolina Department of Environment and Natural Resources for smoke dispersion and fire emissions.

### Contact Information:

Robert Mickler  
Alion Science and Technology, Inc.  
1000 Park Forty Plaza, Suite 200  
Durham, NC 27713  
Phone: (919) 406-2104  
Fax: (919) 549-4665  
Email: [rmickler@alionscience.com](mailto:rmickler@alionscience.com)