

## CHAPTER 8

### FOREST PROTECTION

#### 8.1 Fuels Management

Historically, fire was the single most important natural process that shaped the landscape of the Southeastern Coastal Plain. Natural ignitions, mainly from lightning strikes, and fires started by Native Americans, provided the source for fires that burned over much of the landscape, generally at 1-3 year intervals. These fires, with their short return intervals, were responsible for maintaining very open, park-like expanses under what was then a longleaf pine overstory. The ecosystems which flourished under these conditions were fire-maintained and in some cases actually required fire for some portion of its lifecycle. Early settlers continued the Native American practice of burning the woods, to clear underbrush and provide graze for their cattle.

Today, forest managers use prescribed burning to mimic the historic role of fire in the southern pine woodland. Prescribed burning is one of the most important treatments that natural resource managers in the southeast can apply in terms of time, cost and effectiveness to effect changes in the vegetation of the coastal plain. Fire has many beneficial uses, including ecosystem restoration, maintenance of threatened or endangered species habitat, maintenance of quality browse for wildlife, reduction of forest fuels available to wildfires, site preparation for forest regeneration, and reduction in the amount of hardwood brush.

Figure 8-1. The herbaceous understory shown in this longleaf stand has been well maintained with prescribed burning.



While it is true that fire is a very important tool in the treatment of southern forests, there are some impacts that may be of concern. Fire affects the aesthetic quality of the burned area, has potential to affect growth on residual trees, generates smoke that may affect surrounding areas, and can escape and become a wildfire.

Burning on Camp Lejeune is normally conducted between the first of November and the end of June. This timeframe covers both the dormant and growing seasons. Growing season burns are conducted primarily for hardwood and understory brush control, ecosystem restoration and threatened and endangered species management.

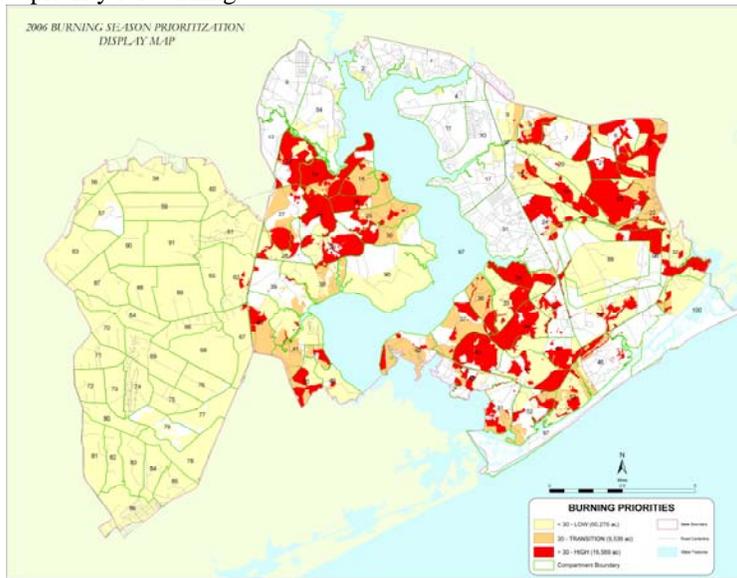
Figure 8-2. The ground cover in this longleaf stand is shown four weeks following a growing season burn.



There are approximately 93,000 acres of forest at Camp Lejeune that receive some level of fuels management.

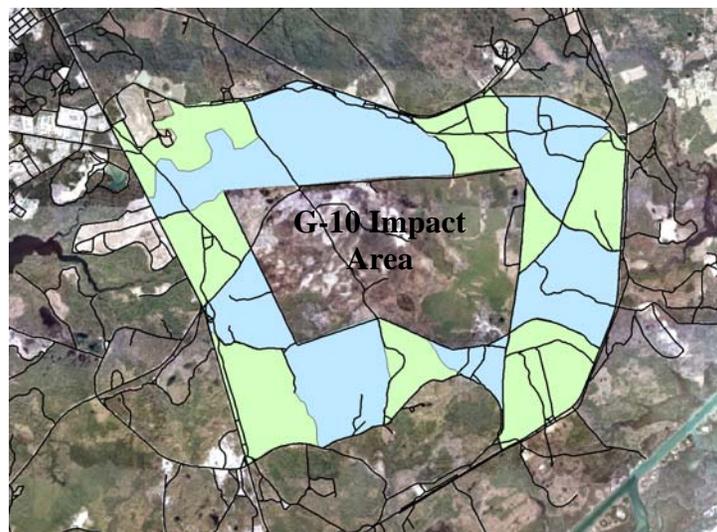
Beginning in FY-06, areas to receive prescribed burn treatments will be scheduled based upon a Prescribed Burning Prioritization Model. This prioritization model transitions the prescribed burning program from one of burning areas on a set schedule, to a program that allows for adaptive management and underscores the relative need for fire among the various habitats throughout the landscape. The model assigns priorities based on various factors, such as time since last burn, RCW clusters maintenance and recruitment site preparation and management. This model will assist in ensuring a suitable allocation of resources across the landscape for application of prescribed burning treatments. Burning will be conducted with the primary focus on restoration of the landscape, to more closely mimic that of pre-settlement conditions. Additional information on the Prescribe Burning Prioritization Model can be found in Appendix O.

Figure 8-3. This map shows the output of the Prescribed Burning Prioritization model prior to finalization. Red indicates areas of highest priority for burning.



Training ranges will continue to be scheduled for annual controlled burns. The surface danger zone for the G-10 impact area will continue to be burned in a checkerboard pattern on a two year cycle.

Figure 8-4. This image shows the schedule of burning in the G-10 impact area buffer. Areas in green are odd year burns. Areas in blue are even year burns.

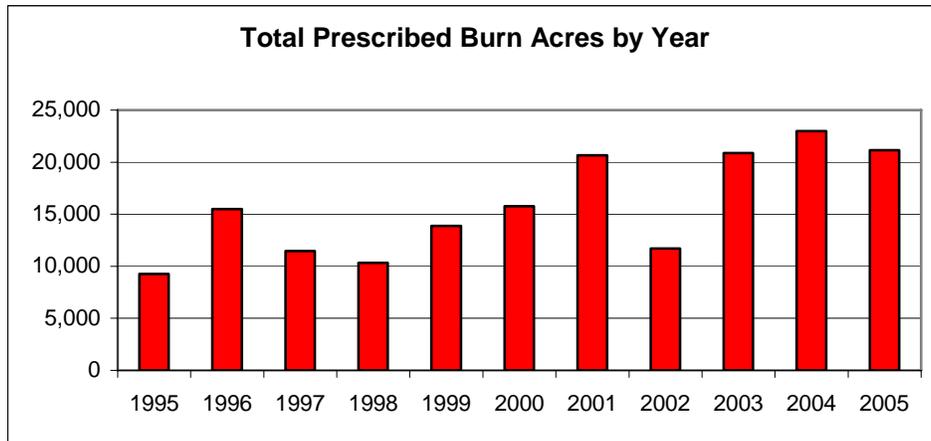


In order to maintain and improve the current training environment, while also working towards the goal of RCW recovery, the annual prescribed burning goal will be 20,000-25,000 acres/year during the 5-year period covered by this INRMP.

Before prescribed burning treatments, data on fuel loads, fuel conditions and smoke sensitive areas are collected for each of the treatment areas. Fuel loading describes the type and amount of vegetation available to sustain a fire. Fuel conditions describe the orientation of the fuels and

any fuel hazards. Smoke sensitive areas include population centers, hospitals, highways or recreational areas where smoke can negatively affect health, safety and aesthetics. This data is used to develop an annual compartment burning prescription. Areas in which prescribed burning treatments will meet multiple objectives are given higher priorities. North Carolina Division of Forest Resources Smoke Management Guidelines are followed and coordinated with the District 4 office in New Bern, prior to actual ignition. The annual prescribed burning acres accomplished for Camp Lejeune for the period 1995-2005 is shown in figure 8-5.

Figure 8-5. Total Prescribed Burn Acres by Year.



There are also areas of Camp Lejeune in which the understory fuels have not been maintained at the level required for effective prescribed burning to take place. Mechanical treatments, consisting of mowing of understory vegetation, will be conducted to restore these fire-neglected areas to a condition that can then have prescribed fire reintroduced.

Figure 8-6. Mechanical fuels treatment at Camp Lejeune.



Mowing these areas changes the fuel orientation from vertical to horizontal, reduces shading of the fuel from the understory shrubs and brush, and allows for increased wind flow and drying of

the fuels. Re-introduction of fire should enhance the understory and promote the development of an herbaceous ground layer.

## 8.2 Wildfire Suppression

The primary function of Camp Lejeune is the training of combat-ready Marines. As Marines train they use a number of pyrotechnic devices and fire incendiary rounds. A large number of wildfires are ignited as an offshoot of this training every year. To mitigate impacts from wildfires, the Forestry Section conducts prescribed burning across the Camp Lejeune landscape. The prescribed burning treatments help reduce the intensity of wildfires by reducing the amount of fuel available to a wildfire.

Trained and experienced initial attack personnel make a decision on an appropriate suppression response to each individual wildfire based on threats to human life, property, natural resources, time of year, weather conditions, fuel conditions and other fire occurrences. Once a decision is made, the wildfire is directly suppressed, indirectly suppressed, or allowed to burn to containment. Sometimes a combination of these strategies is employed. Direct suppression involves the use of tractor/plow units to construct firelines, construction of handline and/or the use of wildland fire engines to minimize the size and spread of the fire.

The 1996 Mutual Firefighting Assistance memorandum of agreement with the NC Division of Forest Resources authorizes Camp Lejeune to support the state, and be supported by the state, in the event of extreme wildfire. Camp Lejeune also has a 2001 Interagency Agreement with the Croatan National Forest for similar mutual aid.

Figure 8-7. A wildfire burns in the Great Sandy Run Pocosin, Camp Lejeune, 2001



Indirect suppression can involve any of the previous tactics plus the use of natural and/or manmade barriers to contain the spread of the fire to a predetermined size. Allowing non-management ignited fires to burn to natural and/or existing manmade barriers can be employed only when resources or property are not threatened and smoke from the burn is not causing, nor will cause, a problem to smoke sensitive areas. A decision to allow a non-management ignited

fires to continue to burn can only be made by a qualified member of the Forestry staff or the Camp Lejeune Fire Department. During the period 2000-2004, the Base Forestry section responded to 490 wildfires, which burned a total of 8,000 acres. 30 of these wildfires, totaling 1,305 acres, were allowed to burn to containment with limited suppression actions for natural resource benefit.

The 2001 INRMP stated as a goal, the identification, prioritization and treatment of hazardous areas in the wildland/urban interface to mitigate the potential for wildfire to damage private or installation property. The 2001 INRMP further identified approximately 20 miles that were proposed for high priority fuels management. Additional assessments of the previously identified high hazard areas have determined that approximately 4 miles of the Base boundary has the highest priority for treatment. Figure 8-8 highlights the proposed treatment area. Proposed treatments consist of reducing pine stocking to 50-60 square feet of basal area and using mechanical treatments to reduce ground vegetation and shrubs in a 200-foot buffer along the 4 mile length. The mechanical treatment will utilize a mowing machine to alter the orientation of the surface and shrub fuels from a vertical arrangement to a horizontal arrangement. In doing this wildfires will be limited to the surface and will not be able to transition to the crowns of the standing timber. This treatment will provide defensible space for suppression forces to undertake control actions. Bottomland areas will be excluded from this treatment, as they are less a fire hazard threat, and to prevent damage to those fragile systems.

Figure 8-8. This image highlights the areas proposed for mechanical fuels treatment in the northern GSRA.



### 8.3 Forest Pest Management

Diseases that affect forest trees at Camp Lejeune are not considered to be problematic. Fusiform rust, caused by the fungus *Cronartium fusiforme*, is the most common disease infecting southern pines in the Camp Lejeune area. The disease attacks several southern pine species. It can be especially damaging to slash pine (*Pinus elliottii*) and loblolly pine (*Pinus taeda*). Cankers on limbs of the diseased tree are not normally a problem. Cankers, formed on the boles of older trees, reduce growth, reduce market value, and weaken the stems until breakage in windstorms

becomes likely. Infested trees are generally removed during normal silvicultural thinning operations.

The Southern Pine Beetle (SPB), an insect pest in southern forests, has historically caused extensive damage, on a periodic basis, to forest resources on Camp Lejeune. The Southern Pine Beetle is always present but causes major problems only when its population levels increase substantially. These population increases are normally in response to stress placed on trees from drought, or from windstorms or hurricanes.

Figure 8-9. Southern Pine Beetle spot. 2005



Maintaining healthy, vigorously growing trees is the best management course for prevention of SPB outbreaks. Southern Pine Beetle detection flights are regularly scheduled and flown each summer to assess the level of SPB activity on Camp Lejeune. Field crews then visit each identified infestation site to assess activity, recommend control measures and implement those control measures accordingly.

Additionally, Camp Lejeune actively manages a Gypsy Moth trapping program in cooperation with the Forest Pest Management Field Office, United States Forest Service in Asheville, North Carolina. Gypsy Moth traps, provided by the Forest Pest Management Field Office, are deployed and monitored each summer in recreation areas and housing areas at Camp Lejeune. Since 1995 forestry personnel have trapped 11 moths. No recorded defoliations have occurred.

**OBJECTIVE PRO1: Prescribe fire to promote wildlife habitat, restore natural communities, and manage fuel-loads.**

- **Action 8-01:** *Prescribe burn an average of 20-25K acres annually.*
- **Action 8-02:** *Increase growing season burning to one fourth of total acres treated by prescribed burning per year.*
- **Action 8-03:** *Implement the prescribed burning prioritization model.*

- **Action 4-07:** *Use mechanical treatments for midstory vegetation control and maintenance.*

**OBJECTIVE PRO2: Maintain forest protection database in support of management**

- **Action 8-04:** *Collect and maintain data on Southern Pine Beetle infestations.*
- **Action 8-05:** *Collect and maintain data in the Gypsy Moth Trapping program.*
- **Action 8-06:** *Collect and maintain data on prescribed burning and wildfire activity.*
- **Action 8-07:** *Maintain fire weather stations and weather data.*

**OBJECTIVE PRO3: Reduce impacts from wildland fire suppression actions.**

- **Action 8-08:** *Apply limited suppression strategies to wildfires when safe and appropriate.*
- **Action 8-09:** *Minimize plow lines.*

**OBJECTIVE PRO4: Mitigate wildland fire hazards in the Urban Interface.**

- **Action 8-10:** *Perform selective harvests and mechanical vegetation control to provide defensible space in identified high hazard areas.*

**OBJECTIVE PRO5: Track long-term changes in landscape conditions.**

- **Action 8-11:** *Install a series of Base wide photo points.*