



## Southeast Fire Management Success Story



### Mechanical Fuels Treatments Reduce Hazard Fuel Loads

In the past few years, the National Fire Plan has made it possible for numerous parks in the southeast region to successfully integrate mechanical treatments of fuels into their hazard fuels reduction strategies. Innovative partnerships between the National Park Service and equipment contractors are providing new opportunities for parks to implement projects that help them meet their management goals.

Parks are often most successful when they utilize a variety of hazard fuels reduction methods. Park policy, fuels, weather, and terrain are some of the factors that determine appropriate fire management strategies. The use of machinery has several advantages in some cases. When it's too wet to use prescribed fire, machines are often able to work rain or shine. Mechanical treatments can also be very effective in thinning extremely dense areas, providing immediate fuel breaks. Several parks in particular are having success using mechanical treatments for the first time.

The need for fuel breaks is clear at Cape Hatteras National Seashore. It is almost too easy to differentiate between private and parklands in aerial photos--the park stops where the houses start. Unfortunately wildfires burn across boundaries. Should a wildfire ever start in or near the park, many of beach houses in neighboring communities like Nags Head would be threatened. While it's important for homeowners incorporate Firewise principles in and around their homes, the fact remains that many beach homes are built on stilts and have cedar shake roofs. Since 2002, the park has been very successful in working with a contractor to thin fuel breaks along powerline right of ways and housing areas.

Large pieces of machinery with wheels and tracks over 5 ½ feet high might seem out of place at national parks like Cape Hatteras. In fact, the machine they used this year has tracks so wide it blocks both lanes of traffic while being transported and requires a police escort. It's the wide tracks that make it appropriate for use in wetland areas of the park by dispersing the weight of the machinery and minimizing impacts on natural resources. Park staff explain that in most areas they only way you can tell the machine came through is there is a thinned area where there wasn't before, and that's exactly what they were hoping for.

-more-

In addition to traditional beach areas, Cape Hatteras protects Buxton Woods, the largest Maritime Forest in the state. Skilled operators can thin areas once too dense to even crawl through, yet leave trees standing. A large boom arm allows for selective thinning. The arm raises and lowers a large metal disk with welded teeth around the outside like a weed-eater. Underneath the disk, circles of clock-like teeth, suck debris into the center like a tornado, mulching trees and vegetation under 30” tall down to within 2 inches of the ground. Trees more than 30” tall are left standing.

## Cape Hatteras National Seashore



Mulcher/shredder



Mulcher/shredder



Fuel break in wetland area



Fuel break along powerline



Fuel break along road



Thinned area around residence

Timucuan Ecological and Historic Preserve faces similar wildland-urban interface issues. Today dense slash pines (over 800 stems per acre) and tall shrubs have overgrown an area of the park that had been planted by a previous owner as a commercial source of pulpwood. In the fall of 2001, the park contracted with a local firm to treat 140 acres of the pine plantation with a Gyrotrac machine.

Compared to other heavy equipment such as a bulldozer, the Gyrotrac is well-adapted for the project, as a low ground pressure tracked machine that minimizes ground disturbance. The use of the Gyrotrac allowed for immediate reduction of wildland-urban interface fire danger. Approximately 25 trees per acres were left standing. These trees will rapidly grow now that the competition for sunlight, water and nutrients is reduced. These overstory trees will provide shade, wildlife habitat and an attractive setting for future hiking and biking trails.

-more-

---

### EXPERIENCE YOUR AMERICA

The National Park Service cares for special places saved by the American people so that all may experience our heritage.

## Timucuan Ecological and Historic Preserve



Photo #1 shows the mowing machine, a GYROTRACK, cutting the trees and brush at Cedar Point. Note height and density of brush between the trees. (September 2001)



Photo #2 shows the GYROTRACK. Note vegetation thickness. The spinning cutting teeth both cut down the trees and also chip up the limbs so that the fuel bed is less than 20 inches in height. (September 2001)



Photo #3 compares areas that have been mowed to areas where mowing was still to be completed. The entire area was mowed in the fall of 2001. Since that time no further mowing has occurred and native vegetation is now approximately 3 feet in height. Plans call for a prescribed fire in January 2004. (October 2001)



Photo #4 Shows area at completion of hazard fuel reduction mowing. A small number of trees were left on each acre for visual esthetics and wildlife habitat (October 2001)

-more-

### EXPERIENCE YOUR AMERICA

The National Park Service cares for special places saved by the American people so that all may experience our heritage.

Kings Mountain National Military Park has also had success with mechanical fuel reduction. To date they have treated 123 acres. Much of the hazard fuel build-up in the park is a result of a Southern Pine Beetle infestation. The infestation resulted in thick regeneration and left tons of fuel on the ground with some heavy tree snags still standing. Management objectives aimed to reduce the fuel load by over 75% by either chipping or burning stacked piles. To date the thinning is 95% complete and the remainder of the project involves burning the stacked piles.

The park utilized AD (administratively determined emergency hires) and seasonal forest technicians to conduct the thinning. A contractor chipped thinned fuels accessible to the road. The park often assigns community service workers to the project to assist with the piling of brush. In the summer months, the park hires an additional 2-3 Youth Conservation Corp (YCC) enrollees to help pile logs and brush as a rotating assignment during their eight-weeks in camp at the park. The use of the YCC offers the park an opportunity to educate young people about healthy forests and how fire plays a role in the landscape.

In addition to creating fuel breaks to minimize the threat of wildfire to local structures, the project has been successful in helping the park in working towards its goal of restoring the forest to its 18<sup>th</sup> century condition. The thinning has opened the canopy for native grasses and forbs, especially the Smooth Coneflower and Georgia Aster, both species of concern in South Carolina. “The results within the park have been well received by park neighbors and visitors,” said Chief Ranger Chris Revels.

## Kings Mountain National Military Park



Pre-treated beetle-kill area



Hand crews thin areas and cover debris piles to keep them dry until its time to burn



Piles are often burned when the surrounding area is wet from rain or snow



Hauling roadside piles



Chipper



Treated area in the wildland-urban interface

-more-

---

### EXPERIENCE YOUR AMERICA

The National Park Service cares for special places saved by the American people so that all may experience our heritage.

Most of these thinning projects are part of multi-year plans that include introducing prescribed fire to the landscape. Cowpens National Battlefield successfully completed their first-ever prescribed burn earlier this year. The burn was possible as a result of thinning completed by a contractor last year. The park used a Magnum machine with a hammer-head type mower that cuts trees and underbrush in a beaver-like fashion and grinds them into mulch. The Magnum has rubber tires and moves like a caterpillar, which allows for a shorter turning radius, making it easier to maneuver and effectively minimizing resource impacts. The use of these fire management strategies has provided effective fire danger mitigation in the park.

## Cowpens National Battlefield



2002 Fuel  
Reduction with  
Magnum



Little Overlook, Before



Little Overlook, During



Little Overlook, After

The use of mechanical fuel treatments is not new in our national parks. Parks like Everglades National Park and Big Cypress National Preserve have been utilizing mechanical treatments for years, with positive results. These projects traditionally focused on eradication of exotic plants and other related resource management projects.

These projects show that mechanical fuels treatments can be effective. Implementation of mechanical fuels treatments in our national parks will continue, as the southeast region meets its requirements of the National Fire Plan.

For more contact the Michelle Fidler, Regional Fire Education, Prevention, and Information Specialist at 404 562-3108 x 643.

-NPS-