



**U.S. Fish & Wildlife Service**

# **Inside Fire Management**

*News from 2007*

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*April 2008*

*Cover photo: Fire crew from the Sacramento National Wildlife Refuge Complex talks with visitors at the Coleman National Fish Hatchery Salmon Festival.*

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## Introduction

Enjoy this collection of articles showcasing examples of U.S. Fish and Wildlife Service fire management activities during the past year. Additional and current stories are featured on [www.fws.gov/fire](http://www.fws.gov/fire).

## Smoke in the Swamp

The Big Turnaround Complex at Okefenokee National Wildlife Refuge was the most expensive wildfire ever for the U.S. Fish and Wildlife Service and, at more than 330,000 acres, its largest ever outside of Alaska.

The \$30 million Big Turnaround was an extension of the Sweat Farm Road fire, which started on April 16 on private land ten miles west of Waycross, Georgia, when a tree limb fell across a power line. Prolonged drought and record-low water levels in the Okefenokee swamp set the stage for this major wildfire, which burned for several months in a mix of shrub-scrub, cypress, wetland prairies, peat and long-leaf pine forest.

*Georgia's Sweat Farm Road fire entered Okefenokee National Wildlife Refuge on April 22.*



The suppression strategy for the Big Turnaround was to keep the fire in the swamp and out of the high-value pine uplands. Fire managers coordinated suppression efforts with the Georgia Forestry Commission and Greater Okefenokee Association of Landowners (GOAL) representing federal and state agencies, timber industry officials and private landowners.

Fire is a natural component of the Okefenokee ecosystem; since 1937, there have been more than 300 fires, and its plants and animals are well-adapted to surviving fire's periodic occurrence. The Big Turnaround Complex is expected to have no lasting negative impacts on wildlife populations. Moreover, its effects will benefit many species living in the swamp and in upland areas. *Portions of this story appeared in the July/August 2007 edition of RefugeUpdate; see [www.fws.gov/refuges](http://www.fws.gov/refuges).*

## Protecting NASA Assets

At Florida's Merritt Island National Wildlife Refuge, where the Service manages land owned by and surrounding the Kennedy Space Center, ongoing hazardous fuels reduction projects protect this national asset. Refuge fire managers burn about 17,000 to 20,000 acres of hazardous fuels annually on these lands, using a staff of about a dozen people.

"As you can imagine, we have to do an amazing amount of coordination with NASA when we do these burns because of all the space program equipment and fuel around there," said Glen Stratton, fire management officer at the refuge. "You want to be kind of careful when you're burning around solid rocket fuel storage areas."



*Smoke rises from a prescribed burn at Merritt Island National Wildlife Refuge, a refuge located at the Kennedy Space Center.*

A 590-acre burn, conducted over a weekend to minimize disruption for NASA personnel, was designed to rid the area of pine and oak scrub undergrowth. Veteran fire managers pulled off the project near the power substation and main transmission lines for the space center and within a half-mile of the space shuttle assembly and storage area.

***Fire in the City***

The subject of wildland urban interface (WUI) – subdivisions and other construction close to wildlands – is squarely in the spotlight as development continues to push against the boundaries of national wildlife refuges.

While National Fire Plan initiatives strive to reduce wildfire risk by reducing accumulations of hazardous fuels on federal lands, WUI areas continue to spring up along the edges of these scenic areas, requiring federal land managers to expend more and more resources each year to protect these structures from potential fire.

About \$19.5 million of the Service’s \$75 million fire budget in FY2007 was dedicated to hazardous fuels reduction in WUI areas near refuges. There are more than 700 such communities identified as high risk from wildfire.

Hazardous fuels reduction in the WUI focuses on high-risk communities and adjacent natural resources that are inherently important to social or economic stability, such as watersheds or agricultural lands. Many times, communities identify a refuge itself as the most important “value” in the area, due to the benefits of open space and recreational dollars that refuge visitors infuse into local economies.

***Flames a Mile High***

The Rocky Mountain Arsenal National Wildlife Refuge near downtown Denver, Colorado, is considered the most “urban” refuge in the country. Using prescribed fire to accomplish habitat and hazardous fuels management goals in an urban environment is a challenge. With new subdivisions popping up around the refuge, it will soon



*Prescribed fire is used as a restoration tool at Rocky Mountain Arsenal National Wildlife Refuge.*

be completely surrounded by developments.

The primary purpose of this refuge is to restore the native shortgrass ecosystem, and prescribed fire is one of the tools that makes restoration possible. Within the next 10 years, nearly 8,000 acres of former croplands will be re-seeded with grasses, wild flowers, and shrubs native to Colorado's high plains. The Service is also reintroducing bison to the refuge, returning native grazers as a natural complement to fire in sustaining the prairie. *Portions of this story appeared in the May/June 2007 edition of RefugeUpdate; see [www.fws.gov/refuges](http://www.fws.gov/refuges).*

### **Burnout Protects Wildlife**

On May 29, fire crews at Florida Panther National Wildlife Refuge, along with crews at Big Cypress National Preserve, worked to contain the Big Cypress Complex wildfire.

The fire started on the Preserve, which is managed by the National Park Service. It burned in terrain that was difficult for firefighters to reach and threatened to move onto the Refuge.

By the time it was 90% contained in mid-June, it had grown to 63,599 acres.

Fire managers determined that the best way to stop the western advance of the fire onto the refuge was a 2,200-acre burnout. It took two evenings of hand ignition to get the fire line secured. Aerial ignition completed the task on May 31. This action not only helped keep the fire off the refuge, but allowed crews to focus suppression resources on the fire's northern boundary, which was advancing toward private land and Native American trust lands.

### **Leading by Example**

Chris Wilcox, the U.S. Fish and Wildlife Service fire management officer for the New Mexico Fire District at Bosque del Apache National Wildlife Refuge, was a recipient of the 2007 Paul Gleason Lead by Example Award.

Wilcox received the award March 12 in the motivation and vision category for his outstanding contributions in promotion of the "Learning Organization."

The national award recognizes outstanding, demonstrated leadership in the principals and values of wildland firefighting. The award was created in 2003 in memory of Paul Gleason, a federal fire leader, mentor and teacher.

Recipients are named each spring by the National Wildfire Coordinating Group (NWCG), based on a nomination process. The NWCG comprises fire managers from the U.S. Forest Service, National Park Service, Bureau of Land Management, Bureau of Indian Affairs, U.S. Fish and Wildlife Service, the National Association of State Foresters, Intertribal Timber Council, and the U.S. Fire Administration.

### **Blue Goose Crew at Work**

The Blue Goose Crew is a U.S. Fish and Wildlife Service wildland fire crew established in partnership with the Columbia Basin Job Corps Center (JCC) in Moses Lake, Washington. The 20-person crew has 11 temporary appointments available for FWS fire personnel, in addition to the full-time superintendent position. The other 8 positions are filled by JCC students.

This new program is designed to target the development of FWS employees at the squad leader and crew boss levels. Students from the Job Corps serve as part of their training in wildland fire operations. The crew, based near 30,000-acre Columbia National Wildlife Refuge and other FWS-managed lands, is available for national dispatch to suppression assignments, as well as for prescribed fire and project work.

The crew provides required training for Crew Boss, Firefighter Type I and Incident Commander Type 4 or 5 positions within the interagency Incident Command System. Priority for crew member selection is given to those needing these assignments to complete their qualifications.

*Members of the Blue Goose Crew take a break on a project at Warm Springs, Oregon.*



### **Watching Grass Grow**

Fire specialists this spring conducted a series of research-oriented prescribed burns in grasslands at Patuxent National Wildlife Research Refuge in Maryland. The refuge plays a unique role in the National Wildlife Refuge System by allowing scientists to study the effects of fire on a variety of habitats.

“Research indicates that (prescribed) burning has many benefits over other habitat management practices,” said refuge manager Brad Knudsen. “Fire helps control undesirable exotic plants, maintains grassland habitat for nesting birds and small mammals, promotes wildflowers and other native plants, reduces accumulated organic debris and releases nutrients back into the soil.”

### **Keeping Fire on Our Side**

In fall 2006, fire specialists conducted prescribed burns for two successive days on 1,014 acres at Cedar Island National Wildlife Refuge in North Carolina. The burns reduced hazardous fuels around the community of Cedar Island, with the side benefit of improving the health of marshes and woodlands.

Fire crews from five national wildlife refuges traveled to Cedar Island, bringing their heavy equipment with them. A contract helicopter and pilot flew in to meet the crew for the burn. Natural resource personnel from Cherry Point Marine Corps Air Station assisted with the burns, and local North Carolina Forest Service personnel were available as back-ups, as was the Cedar Island Volunteer Fire Department. The fire department’s water tower served as a water tank refill location.

During the burns, a half-mile section of Highway 12 experienced some visibility



*A prescribed burn at Cedar Island National Wildlife Refuge thins woods and marshes that could fuel potential wildfires.*

impairment from smoke, but because a smoke management plan was included in the prescribed fire plan for each unit, fire crews were ready to respond. They quickly placed signs along the highway and used flashing lights on their vehicles to slow oncoming traffic. The smoke lasted about 90 minutes on each day. Additional burns were planned for a later date.

### ***In Good Company***

The U.S. Fish and Wildlife Service (FWS) and The Nature Conservancy (TNC) have worked together for decades on fire management projects across the country. While this partnership is important on a practical level, with fire experts working together toward a common goal, it also demonstrates the interwoven missions of both organizations. Here are a few examples of ongoing partnerships:

#### **DeSoto National Wildlife Refuge**

The FWS and TNC have worked since 1999 to do the legwork it takes to help

restore the unique prairie ecosystems found in this 640,000 acre Iowa refuge. DeSoto refuge has partnered with TNC to establish a fully equipped fire program, including fire caches throughout the seven-county area, a fully equipped wildland fire engine, and a fire boss with seasonal fire crew to burn on private lands.

#### **Seney National Wildlife Refuge**

A Joint Fire Science project has been underway at this Michigan refuge to collect data on FWS and nearby TNC lands. The Joint Fire Science Program is a partnership of six federal wildland fire and research organizations, established in 1998 to provide scientific information and support for fuel and fire management programs.

#### **Prescribed Fire Training Center**

TNC plays a significant role by providing a prescribed fire instructor at this national interagency facility in Tallahassee, Florida. The FWS is a leader in operating the center, which trains firefighters from across the country and from other nations.

## Drills Sharpen Skills

On August 11, 42 people from eight agencies turned out with lights whirling for a wildland-urban interface fire drill on Lake Phelps at Pocosin Lakes National Wildlife Refuge in North Carolina. The drill lasted about three hours and was funded by the Department of the Interior's Ready Reserves program.

The U.S. Fish and Wildlife Service (FWS) organized the drill with the help of the North Carolina Division of Forest Resources (NCDFR) and Washington County Emergency Management. Drill participants included firefighters from FWS, NCDFR, five volunteer fire departments (VFDs), Washington County's fire marshal, and other emergency managers.

While FWS and NCDFR controlled the "wildfire," the VFDs were assigned structure protection duties. Others role-played as spotter plane, tractor-plow operators, incident commander, and operations chief. "Spot fires" near houses were indicated by smoke bombs. Assigned observers threw simulated

kinks into the drill, including a flat tire on an engine, a smoke-caused "car wreck" (with simulated injuries and a vehicle fire), and a mock heart attack suffered by a firefighter due to overexertion.

Participants used the standard Incident Command System to plan the response. An After Action Review, required on all actual incidents, revealed what participants learned about communication, response time and procedures. The FWS hopes to hold more drills at Pocosin Lakes and other refuges in the area to improve efficiency and integration among agencies when fighting wildland fires.

## Into the Wild

The U.S. Fish and Wildlife Service continued its efforts this year to protect remote Alaskan villages within refuge boundaries from wildland fire.

In areas near villages where large wildland fires must be suppressed, prescribed burns and mechanical treatments have been conducted in cooperation with local villages to help reduce wildfire risk and maintain the role of fire in the ecosystem.

Among the recent projects, Yukon Flats National Wildlife Refuge used machinery to clear vegetation, reducing the risk of wildfires spreading from the refuge to the village of Beaver, population 80. After applying prescribed fire last year to three dry, grassy lakebeds totaling 145 acres, fire managers used machinery to connect the burned lakebeds, creating a semicircle of protective fire breaks around the village. The woody vegetation will be piled and burned near the Yukon River during future prescribed fires.

*Volunteer firefighters are put to the test on a simulation that includes a car crash caused by wildfire smoke.*





The Service is also reducing risk in the adjacent communities of Bettles and Evansville near Kanuti National Wildlife Refuge. Highly flammable black spruce is thinned around these communities with the help of the Evansville Tribal Council and Bettles Volunteer Fire Department. Begun in 2006, the project will continue until July 2008 and eventually result in thinning on 57 acres near residences and public areas.

### ***In a Land Down Under***

Three U.S. Fish and Wildlife Service fire program employees were dispatched to Australia in mid-January, along with more than 100 volunteers from other agencies, to assist with wildfire suppression and emergency rehabilitation near Melbourne, the capital of the State of Victoria. Each Service employee served a 30-day assignment.

John Segar, the Service's national fuels coordinator based in Boise, Idaho at the National Interagency Fire Center, served as the U.S. representative to the Victoria's Department of Sustainability and Environment. Segar coordinated crew deployment and provided guidance to the American firefighters in Victoria.

Mary Kwart, a Service fuels specialist based in Anchorage, Alaska, served as a Situation Unit Leader. As a member of an Incident Management Team, Kwart was responsible for providing daily maps and fire behavior data to support planning and operations.

Robert Lambrecht, the Fire Management Officer for the Koyukuk/Nowita National Wildlife Refuge based in Galena, Alaska, held a critical field position in Australia as a Division Supervisor working directly on the fire line.

An extended drought in Victoria triggered the sharp increase in fire danger and wildfire activity there. Assistance from the United States was provided as part of an exchange agreement between Australia, New Zealand and Canada. Crews from Australia have fought wildfires in the United States for three of the past six years. Before beginning fire assignments, all crews are oriented to local safety concerns such as fire behavior, weather, and natural hazards.

### ***Talk About the Weather***

On May 8, Horicon National Wildlife Refuge in Wisconsin completed a prescribed burn under the careful watch of Mike Fowle, a National Weather Service (NWS) forecaster.

Fowle, a former Incident Meteorologist for the NWS, made the visit to learn first-hand the importance of accurate weather forecasts in the arena of prescribed burning. His objective: find out how forecasters can better serve the fire community.

Since fire is heavily influenced by weather, the NWS routinely issues site-specific "spot forecasts" for prescribed burns as well as wildfires, either of which could pose a threat to life or property. Accurate short-term forecasts are critical in order to predict what fire will do. The prescribed burn gave Fowle as well as the refuge's fire specialists an opportunity to talk about the weather in a meaningful way and learn from each other's experience.

Horicon completed eight burns for a total of 1,090 acres this year. Six burns were completed at the nearby 1,054-acre Fox River National Wildlife Refuge, for a total of 184 acres. The burns were aided by staff and equipment from the Leopold Wetland Management District, Necedah

National Wildlife Refuge and the Wisconsin Private Lands Office.

### ***In the Eye of the Storm***

Acres of young Atlantic White Cedar trees are beginning to come up in the Great Dismal National Wildlife Refuge as a result of the refuge's cedar regeneration project. The project began in 2005 after Hurricane Isabel slammed into the area and knocked down 3,600 acres of the indigenous, old-growth trees in the 110,000 acre refuge, which is located on the state line between Virginia and North Carolina.

In the storm's aftermath, dense flammable undergrowth created a fire risk and also prevented new seedlings from naturally regenerating. Additionally, the downing of huge numbers of trees meant a loss of environment for a variety of animals, insects and more than 20 different species of birds that depend on the cedar stands for breeding habitat.

To reduce the fire risk and also restore new, healthy tree growth to the area, loggers have been removing the

downed trees and taking them to mills for processing. Woody undergrowth also is being cleared away to reduce fire fuel and create a receptive seed bed for new seedlings. Today, new cedar trees are naturally regenerated throughout the swamp. Wildlife Refuge staff are monitoring the re-growth through ongoing vegetation studies.

Local companies that have been assisting in the project include a local paper company that is growing seedlings from its own stock to replant in the swamp. The salvage crew is removing the downed trees and clearing out about 1,100 acres where the cedar trees once stood at no cost to taxpayers, as the contractor is keeping and selling the wood from trees recovered from the site.

### ***Mending Fences***

A Bureau of Reclamation wetland in Grant County, Washington near an impending housing development needed fencing in order to protect delicate wildlife habitat. The fence needed to be visually appealing to the neighbors who would be looking at it as well as



*A helicopter assists with removing downed vegetation at Great Dismal National Wildlife Refuge.*

low-impact to the creatures inhabiting the wetland. A barbed wire fence, which can be virtually invisible in a wetland setting, was not feasible because installing it would cause too much soil disturbance. Instead, reclamation employee Mitch Thompson worked with Washington Department of Natural Resources to come up with the perfect solution: an old-fashioned buck-and-rail fence.

Dan Brauner of the U.S. Fish and Wildlife Service's Little Pend Oreille National Wildlife Refuge arranged for the harvest and donation of 1,200 fourteen-foot rails from small trees that normally would be thinned and burned as part of the refuge's fuel reduction and habitat enhancement program. The mile of fence was prepared and built by a state inmate crew under the supervision of Brauner and others.

biomass was left on site. Additionally, a dense growth of invasive multiflora rose had spread over a 20-acre area in the sensitive and globally rare fen community on the refuge's Seneca unit and had to be cut out.

In a separate project on the refuge, other small hazardous fuel sites were treated in the area. Fire program sawyers removed isolated small stands of exotic pines near refuge parking lots and girdled several non-native pines in the vicinity of the highway that bisects the Sugar Lake unit. Then, in early summer, herbicide was applied to sprouting multiflora rose scattered in and around shrub fen. A second application will be made in 2008.

### ***Weeding Out Invasives***

A Wildland Urban Interface (WUI) project to remove 35 acres of fire-prone exotic pine and a sprawling thicket of invasive noxious weeds in the Erie National Wildlife Refuge was completed in September. The project was part of a multi-year invasive plant control effort aimed at reducing hazardous fuels and restoring the habitat on more than 55 acres of refuge land on the Pennsylvania refuge. Contractors with local companies performed much of the work.

Located adjacent to state highway 27, local roads and residences, the pine plantations were non-native remnants from an old Christmas tree farm planted many years ago. The pines had significantly edged out the native hardwood in the area, and were regarded as a fire threat to the local community. The trees were cut down, their limbs and tops mulched, and the

For more information on the U.S. Fish and Wildlife Service Fire Management Program, please see our website at [www.fws.gov/fire](http://www.fws.gov/fire).

