

U.S. Fish & Wildlife Service

Wildland Fire Management

Keeping Fire on Our Side

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www.firewise.org



Members of the national Blue Goose wildland fire crew after completing an assignment. USFWS

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The U.S. Fish & Wildlife Service manages fire to conserve, protect, and enhance fish, wildlife, and plants and their habitats, while first ensuring human safety and then protecting our facilities and neighboring communities. Prescribed fire and other means maintain and restore vegetation in natural areas while reducing the risk of damaging wildfire to land and property.

Prescribed burn at Ding Darling National Wildlife Refuge (NWR) in Florida diverts smoke away from roads and homes. USFWS



Safety Always Comes First!

Managing wildland fires can protect lives, prevent damage to property, and keep natural areas healthy. In 1978, the Service established a formal fire program, adopted interagency standards and began hiring professional regional fire managers. In 1979, the Service headquartered its fire program with other agencies at the National Interagency Fire Center in Boise, Idaho.



Smoke from planned fires usually has fewer impacts to air quality and human health than smoke generated by wildfires. Bowdoin Wetland Management District, Montana, USFWS

The Service's fire program currently employs more than 500 permanent employees, along with more than 200 seasonal and temporary fire staff stationed throughout the United States and its Territories. With the help of our partners, along with more than 2,000 other Service employees trained to assist on a "call-when-needed" basis, we respond to more than 500 wildfires burning 300,000 acres per year on Service lands.

Living Safe with Fire

In recent years rapid growth of communities around our lands, the acquisition of more urban refuges, and the increase in critical habitat for declining species has increased the complexity of issues for fire managers. Thinning overgrown vegetation around these areas has become more important to reduce the risk of damaging wildfire to these human and biological communities.



Low-intensity fire burns at Sherburne NWR, Minnesota. USFWS

Areas near homes are often pre-treated with prescribed fire or through other methods to render the vegetation less flammable, giving firefighters an edge in controlling advancing flame fronts during a wildfire. Prescribed fire also helps keep smoke within safe levels, control some types of invasive weeds, restore degraded farm fields to native grasslands, and increase forage for migratory birds, big game species, and other wildlife.



A retrofitted boat operates as a floating fire engine at Mid-Columbia River National Wildlife Refuge Complex, Washington. USFWS



Engine crew monitors smoke on South One Fire at Great Dismal Swamp National Wildlife Refuge, Virginia. USFWS



Snow geese flock around tracked fire vehicle during burn at Pea Island National Wildlife Refuge, North Carolina. USFWS

It's Only Natural

Like wildlife, wildfire has always been part of natural areas. Without this unique ecological process periodically cleansing dead and overgrown vegetation and recycling nutrients back into the soil, there could be no native tallgrass prairie, no duck-laden wetlands, no lodgepole pine or jack pine forests.

Some prairie plants and forest species simply can't germinate unless exposed to the heat of fire. Fires can stimulate growth of native grasses and wildflowers, while destroying many woody and non-native plants, and creates a mosaic of vegetation for mating and nesting. Fire also benefits some endangered species and rare and natural areas. For the most part, wildlife populations remain safe during a fire and enjoy better living conditions afterwards.



Fern sprouts through the ashes after a fire at Rachel Carson NWR, Maine.

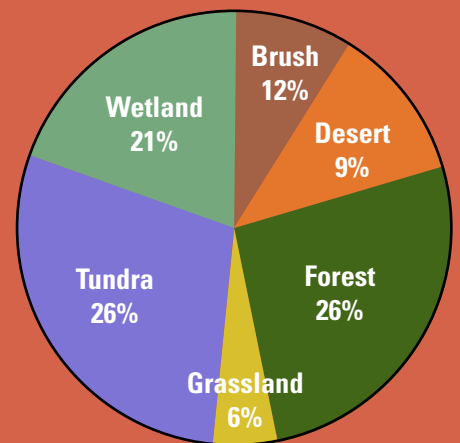
B. Harris, USFWS



Eastern box turtle in New Jersey Pine Barrens is one of many species that have evolved with fire.

J. Dowhan, USFWS

U.S. Fish & Wildlife Service Lands (by vegetation type)



The Service manages more than 75 million burnable acres spread across all 50 states and every U.S. territory, including at least one national wildlife refuge within an hour's drive of every major city. These natural areas include 16 million acres of forest, 8 million acres of brush, and 4 million acres of grassland. The majority of these lands are fire-adapted with fire as a critical component to maintain healthy habitat: more than 80% in the lower 48 states and more than 90% in Alaska. Without fire, biologists could not restore and maintain the health of these ecosystems.



Bobcat in marsh after a prescribed fire at Lower Klamath NWR, California. S. Swanson, USFWS



Regular prescribed burning protects natural areas and enhances nesting areas for migratory birds. USFWS

Fire as a Tool

The roots of fire management in the National Wildlife Refuge System are interwoven with those of the refuge system itself. Wildlife biologist Herbert L. Stoddard first discovered a beneficial relationship between fire and wildlife while studying quail in the 1920s. Biologists at what became St. Marks National Wildlife Refuge in Florida ignited the Service's first documented "prescribed burn" in 1927. In 1933, Aldo Leopold identified "*the axe, the match, the cow, the plow, and the gun*" as the five critical tools for game management.

Fender's blue butterfly on Kincaide's lupine. Baskett Slough NWR, Oregon, USFWS



Western Meadowlark, USFWS

Even during the era of aggressive federal fire suppression in the 1930s and 40s, refuge managers took the long-term view by continuing to use prescribed burning. Today, the validity of this foresight is evident. More than half of all Service lands are currently rated in a condition which resembles the historic norm, posing the lowest risk of possible damage by wildfire and enhancing benefits to the natural area.

Every national wildlife refuge, national fish hatchery, or other Service unit with burnable vegetation is required to have an approved fire management plan. These plans specify desirable conditions and fire management options, and help us achieve overall land management goals.



Biologists examine Red-cockaded woodpecker nests after a wildfire at Okefenokee National Wildlife Refuge, Georgia. USFWS

Only the Best Science

Fire management is a physically arduous and dangerous natural resource profession that requires technical expertise in fire suppression, prescribed burning, and fire ecology. Experienced fire managers study weather patterns and other environmental factors to predict fire behavior, often using advanced computer modeling tools. We strive to maintain our lands in ecologically sound condition.

Night firing operation at Sheldon NWR, Oregon. USFWS



Reducing Risk

Reducing the risk of large, damaging wildfire is a shared responsibility among land managers, adjacent homeowners, and visitors. Every year, we use prescribed fire and other means on more than 350,000 acres of our lands to reduce the amount of dead and accumulated vegetation that could become fuel for a wildfire.



Heavy equipment helps managers thin overgrown trees and brush that could fuel a wildfire at Necedah NWR, Wisconsin. USFWS

Homeowners can also reduce risk by thinning trees and brush around their property, and removing flammable items directly in contact with structures. Since most of our unwanted fires are human-caused, our neighbors and visitors should also be very careful with any outdoor activities that could accidentally start a fire, such as cooking or hunting.



Firefighter uses a drip torch to light a prescribed fire at Rocky Mountain Arsenal NWR, Colorado.
USFWS

Crew builds a fire break at Rice Lake NWR, Minnesota.
USFWS



What is a Prescribed Burn?

A prescribed burn is a carefully planned and executed process. Long before a match is struck, refuge managers and fire staff complete a detailed burn plan of action, outlining the tracts of land to be affected, the conditions and resources required, the desirable outcomes in terms of vegetation changes, and contingency plans for various unexpected events that may occur. The burn plan is reviewed and approved at several levels to ensure it is consistent with the refuge's overall land management goals, before the project proceeds further.

Helicopter is used for reconnaissance during a fire at St. John's NWR, Florida.
USFWS



In advance of the burn, a firebreak or "blackline" is often built to contain a runaway blaze. Fire managers must wait for a "window of opportunity," a day with appropriate weather conditions conducive to lighting the burn and keeping it under control, including air temperature, humidity, wind speed and direction, and vegetation moisture.



Specialized personal protective gear provides fire and water safety at Currituck NWR, North Carolina.
USFWS



Firefighter on a prescribed fire at Buenos Aires NWR, Arizona.
USFWS

Once a window appears to be opening, local emergency personnel, neighboring residents, and local media are notified of the planned burn. On the day of the burn, trained firefighters and fire equipment are assembled at the site.

After reconfirming the weather forecast, a specially qualified firefighter oversees a small test burn to confirm that conditions are right. If they aren't, the burn is called off; if they are, the burning crew is then given the okay to start the larger project.

Specially trained firefighters light the fire according to the prescribed fire plan, while other firefighters ensure the fire does not spread outside of the prescribed area. The burn is closely monitored until it is completed and all flames are extinguished. Some prescribed fires extend over a number of days and nights, or are completed in stages.

If at any point the burn is no longer meeting the planned objectives, actions are taken to discontinue the operation in a manner that is safest for firefighters and the public.

It Pays to Be a Firewise Homeowner!



Using Firewise principles enabled homeowners to survive this fire at Kenai National Wildlife Refuge, Alaska. USFWS

How Can You Help?

The U.S. Fish and Wildlife Service protects more than 700 communities near refuges and other Service-managed lands. Along with the pleasure of living near a beautiful natural area comes the responsibility of preparing in advance for potential wildfire. Homeowners can help protect their families and homes by following Firewise standards for landscaping and building to create defensible space around your home. From construction to maintenance, there are many steps you can take to make your property



fire-resistant and increase the odds that it will be standing once the fire has passed.

*Photo at left:
A carefully
planned
prescribed burn
at Mississippi
Sandhill Crane
NWR reduces
risk of wildfire
to nearby
homes. USFWS*

Residents in many areas have also helped develop community-based wildfire protection plans. Make sure your driveway is well marked and wide enough for fire engines to turn around. Support or become involved with your local volunteer fire department, which is often the first responder and bears responsibility for protecting residents and homes when fire strikes.

Select a safe site

Be a Firewise Homeowner!

When buying or building a home, choose a level location, at least 30 feet from a ridge or cliff.

Create a defensible space

Clear an area 30 feet wide around your home. Remove dry grass, brush, dead leaves and pine needles. Replace highly flammable plants with fire-resistant, high moisture ones. Relocate wood piles away from structures. Keep trees pruned.

Make your roof, walls and windows fire-resistant

If you have wood shakes, treat or replace them with non-combustible materials. Replace plate glass with tempered.

Check all additional structures

Wooden deck, fences, and trellises can act as ignition points and lead fire to your house. Clean leaves and debris from under patios. Consider building ground-level terraces. Don't attach wooden fences to your house.

Be accessible

Make sure your driveway is well marked and wide enough for fire equipment to enter.

Install screens on chimneys, vents, eaves and gutters

Flying sparks can enter through any opening. Keep gutters free of leaves, pine needles and debris.

Do You have a "Red Card"?

While the Service has kept full-time firefighters on duty across the country for over a quarter century, active fire seasons often demand a cadre of additional personnel at the ready. On large wildfire incidents, in addition to the need for more firefighters and equipment, there is also an increased need for technical and administrative support. From processing time sheets to producing infrared imagery, support personnel are critical to wildfire suppression operations.

For every firefighter wielding a shovel or working an engine on the fireline, there are jobs to be done in operations, planning, finance, and logistics under the Incident Command System (ICS). Common to all agencies managing wildfire and other emergencies, ICS is a flexible organization that expands or contracts in response to quickly changing needs.

All personnel working on wildfires, whether on the fireline or in support positions, must be trained and certified through a standard ICS process. When completed, you will be issued a "red card" showing your specialized qualifications.

Contact your local U.S. Fish & Wildlife Service office or fire department for information on fire training available in your area.

Smoke generated under planned conditions safely disperses high above Arthur R. Marshall Loxahatchee National Wildlife Refuge near Boca Raton, Florida, avoiding health and safety concerns while reducing the risk of future wildfire. USFWS

Fire Staff Locations

REGION 1

911 NE 11th Ave
Portland, OR 97232-4181
<http://www.fws.gov/pacific/refuges/fire/index.html>

REGION 3

Federal Bldg, Fort Snelling
1 Federal Drive
Twin Cities, MN 55111-4056
<http://www.fws.gov/midwest/fire/>

REGION 5

300 Westgate Center Drive
Hadley, MA 01035-9587
<http://www.fws.gov/northeast/refuges/fire>

REGION 7

1011 East Tudor Road
Anchorage, AK 99503
<http://alaska.fws.gov/fire/default.cfmw>

REGION 2

P.O. Box 1306
Albuquerque, NM
87103-1306
<http://www.fws.gov/southwest/firemanagement/>

REGION 4

1875 Century Boulevard
Atlanta, GA 30345
<http://www.fws.gov/southeast/refuges/fire-management.html>

REGION 6

134 Union Boulevard
Lakewood, Colorado 80228
<http://www.fws.gov/mountain-prairie/fire/>

REGION 8

2800 Cottage Way W-2606
Sacramento, CA 95825
<http://www.fws.gov/cno/fire/index.cfm>

