

Burning in Hardwoods

Using Fire as a Management Tool in Oklahoma and North Texas Refuges



Mature hardwoods.



Firefighter using a drip torch on hardwoods.



Rio Grande turkey at the Wichita Mountains Wildlife Refuge.

Background

Vegetation types in the Oklahoma-North Texas refuges range from short grasses in the west to oak-hickory forests in the east. Although the region is commonly thought of only as an area with wide-open prairies, wheat fields and ranchland, over 10 million acres is presently forested.

The majority of the forestland is oak-hickory. Found in the eastern part of the district, it is comprised mainly of red oak, white oak and hickory. In the center of the district, ranging in width from five to thirty-five miles, towering trees bow out to the Cross Timbers, which are dense, gnarled patches of drought-resistant post and blackjack oaks. A third type of forest is bottomland hardwoods, found along the streams and low prairie rivers. Tree species found there include black walnut, various red and white oaks, pecan, cottonwood, elm and ash.

Why Burn in Hardwoods?

Much of the hardwood forest area was oak savannah, which has an oak canopy with grass understory. Few of these areas remain. Fire can reclaim those savannahs and maintain the ones that still remain. Periodic fire opens the forest and reduces dead vegetation decreasing potential for intense wildfire. Prescribed fire in the Cross Timbers is used as a tool to open up or thin woody vegetation. Further prescribed fire reduces eastern red cedar, an invasive species that crowds out other more desirable vegetation. In oak-hickory stands, fire enhances reproduction of desirable hardwood species, thus maintaining a food source for many animals.

Preparation and Planning for a Prescribed Burn

The U.S. Fish and Wildlife Service uses fire as a management tool to enhance or restore wildlife habitats and plant communities, while reducing fuel loads before damaging wildfires occur. Each national wildlife refuge has a unique management focus and its own unique Fire Management Plan. This Fire Management Plan defines the long-range purpose, objectives, and strategies of a refuge's prescribed burning and wildfire suppression programs. The U.S. Fish and Wildlife Service employs trained specialists whose jobs are to manage fire for resource benefits.

Each refuge is divided into management units, many of which receive prescribed burns. An individual unit has its own Prescribed Fire Plan that is prepared every time the unit is burned. The Prescribed Fire Plan, also known as a prescription, describes the plants, animals, and physical characteristics of the unit. It details the resource objectives, ignition method, weather parameters, smoke management procedures, public notification, specialized protective equipment and firefighting resources needed to burn the unit, with firefighter safety being the primary concern. Examples of resource goals that might be included in a Prescribed Fire Plan are:

- Reduction of hazardous fuel accumulations.
- Recycle nutrients into the soil.
- Improve wildlife distribution.
- Create disturbance to promote early successional species for food and/or shelter.

Who lives in Hardwoods?

Hardwood forests provide food, cover and nesting sites for numerous wildlife species. Deer, turkey and squirrels are common species in oak-hickory and Cross Timber forests. Bottomland hardwood areas are important breeding and wintering areas for wood ducks and migratory waterfowl, especially mallards. A wide variety of resident and migratory songbirds are supported by bottomland hardwood habitat. Many wildlife species such as white-tailed deer, numerous bird species, gray and fox squirrels, and cottontail and swamp rabbits also inhabit the area.



Wood ducks using hardwood bottom.



Woody debris being burned.

The Positive Effects of Burning Hardwoods

- Reduction of fuel buildup: Accumulated dead or dried wood, twigs, grasses and leaves increases the chance of devastating wildfires.
- Preparation of new growth: As plants are burned, nutrients are released to the soil providing food to growing plants. Seeds are able to germinate in the areas where soil is exposed.
- Diversification of plants: A fresh start allows an opportunity for a variety of plants to grow and provide food and habitat to wildlife.
- Continuation of growth cycle: Fire is part of nature's cycle of succession, creating opportunity for new life and promoting change.

Methods of Burning FWS lands of Oklahoma and North Texas

The U.S Fish and Wildlife Service uses a variety of ignition methods for their prescribed burns that may be used individually, or in combination with each other.

- Ping-Pong Balls: A machine attached inside a helicopter drops plastic spheres, looking just like ping-pong balls, which are ignited by an internal chemical reaction.
- Drip Torch: A hand-held fuel tank from which burning fuel is dispensed through a metal tube with a drip nozzle end.
- Fuses: A solid fuel ignition device similar to a road flare.

For More Information

Buffalo Lake NWR
Umbarger, TX 806/499-3382

Deep Fork NWR
Okmulgee, OK 918/756-0815

Hagerman NWR
Sherman, TX 903/786-2826

Little River NWR
Little Sandy NWR
Broken Bow, OK 580/584-6211

Muleshoe NWR
Grulla NWR
Muleshoe, TX 860/946-3341

Salt Plains NWR
Jet, OK 580/626-4794

Sequoyah NWR
Ozark Plateau NWR
Vian, OK 918/773-5251

Tishomingo NFH
Tishomingo, OK 580/384-5463

Tishomingo NWR
Tishomingo, OK 580/371-2402

Washita NWR
Optima NWR
Butler, OK 580/664-2205

Wichita Mountains NWR
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