

Best Management Practices for Controlling Eastern Redcedar



E-988

Oklahoma Department of Agriculture, Food, and Forestry - Forestry Service
Oklahoma Cooperative Extension Service
United States Department of Agriculture - Forestry Service
Oklahoma Department of Wildlife Conservation
Natural Resources Conservation Service

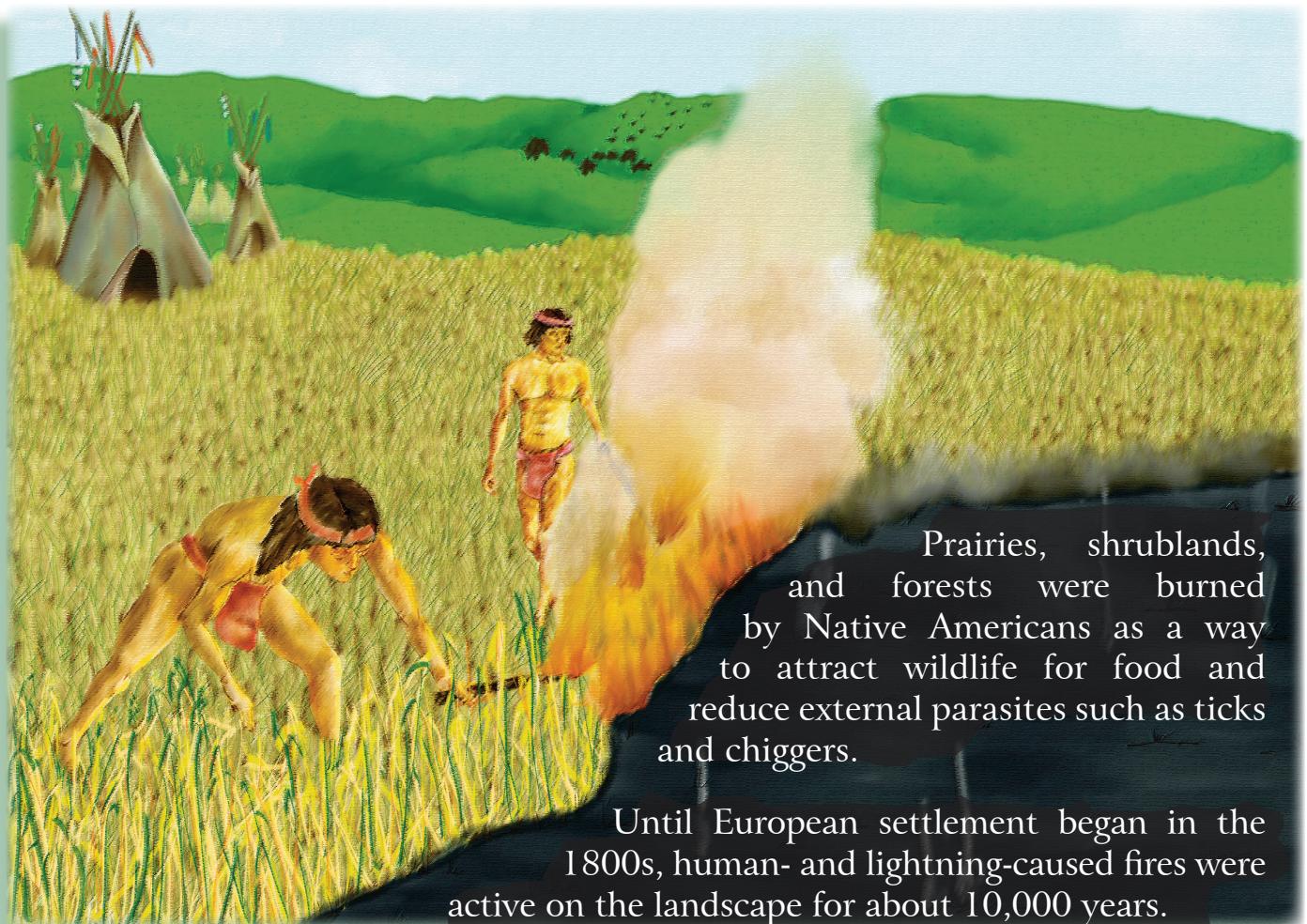
Headings and Figures

Maintenance practices to prevent eastern redcedar from invading prairies, shrublands, riparian zones, forest, and introduced pastures

Historical Fire Use	1
Native Americans using fire	1
Forest understory being taken over by eastern redcedar	1
Decline of quail and prairie chicken bird species	2
Contemporary Use of Prescribed Fire	2
Woman starting a prescribed burn in fire-protection gear	2
Smoke from a prescribed burn	2
Phases of an ecosystem restoration	3
Mechanical Controls of Eastern Redcedar	3
Bow saw	3
Bulldozer	3
Restoration Practices needed to Control Lighter Infestation (works well on small trees or a few trees per acre)	4
Chainsaw	4
Loppers	4
Brush cutter	4
Restoration Practices needed to Control Heavy Infestations (large trees or many trees per acre)	5
Ball and chain	5
Cedar hydraulic saw	5
Methods to Eliminate the Infestation	6
Eastern redcedar in its historical locale	6
Man working a prescribed fire	6
Grassland on fire	6
A Detailed Discussion of Best Management Practices	6
Practices to Reduce the Negative Impacts of Wildfire (Firewise principles)	7
Home with Firewise principles applied	7
Firewise zones	8
Notes	9

Bison once freely roamed the ecosystems that are now being invaded by eastern redcedar. They, like the prairie, are making a comeback on well-managed rangeland across the state.

Historical Fire Use



Prairies, shrublands, and forests were burned by Native Americans as a way to attract wildlife for food and reduce external parasites such as ticks and chiggers.

Until European settlement began in the 1800s, human- and lightning-caused fires were active on the landscape for about 10,000 years.

Farming and over-use by livestock fragmented the landscape and thus stopped large-scale fires. This resulted in a rapid landscape change from open stands of trees with a tallgrass understory in forested areas to unproductive, closed canopy forests. In prairies and shrublands, fire suppression resulted in an increase in both fire-tolerant woody plants (resprouters) and fire-intolerant woody plants such as eastern redcedar and Ashe juniper.

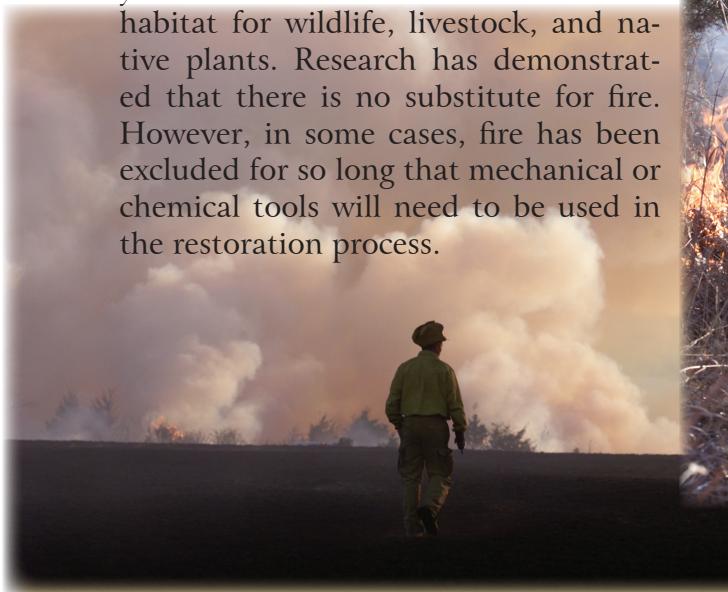




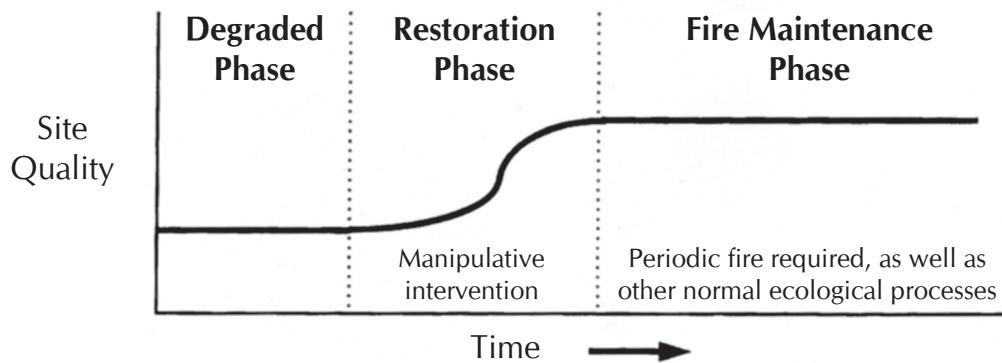
Fire suppression has resulted in a decline in many wildlife species that are habitat specialists, such as the bobwhite quail, lesser and greater prairie chickens, and many types of songbirds. Mammal, reptile, amphibian, and invertebrate distribution has also been affected. Fire is also very important for wild turkeys, white-tail deer, and elk.

Contemporary Use of Prescribed Fire

The most economically and ecologically sound tool to maintain and restore landscapes is prescribed fire. Fire prevents invasion of species such as eastern redcedar into forests and prairies. Fire also controls resprouting woody plants, provided the frequency is at least every three years. Fire is an ecosystem driver that facilitates ecosystem processes, including nutrient cycling, water cycling, and soil health. Fire helps maintain watershed function, water quality, and water yield. Fire also restores and maintains habitat for wildlife, livestock, and native plants. Research has demonstrated that there is no substitute for fire. However, in some cases, fire has been excluded for so long that mechanical or chemical tools will need to be used in the restoration process.



Phases of Ecosystem Restoration



A site's quality may represent a wide range of environmental variables such as composition, structure, diversity, productivity, and various ecological processes

Mechanical Control of Eastern Redcedar

There are many different types of mechanical treatments that will control eastern redcedar. These vary from hand tools to bulldozers. However, mechanical treatments are very expensive when compared to fire, and they do not offer the ecosystem the benefits of fire. Also, mechanical treatment must be repeated frequently if fire is not part of the management plan to maintain control.



Restoration Practices Needed to Control Light Infestations



Light infestations on small acreages (160 acres or less) can be controlled by using hand-held shear/loppers, chainsaws, or brush cutters. These treatments need to be repeated every three years as new eastern redcedar will be invading rapidly if prescribed fire is not used.

Proper grazing management for cattle is mandatory to ensure that enough fine fuel (grass) is available to carry the fire

and burn the eastern redcedar. If eastern redcedar trees are not controlled, then cattle numbers must be reduced each year to account for the continual loss of grass. Eventually, the eastern redcedar will become so thick that fire will not carry across the area except under extreme wildfire conditions (high winds, low humidities, and high temperatures).



Works well on small trees or a few trees per acre

Restoration Practices Needed to Control Heavy Infestations (large trees or many trees per acre)



Heavy infestations are very expensive to control. A ball and chain being pulled by two bulldozers is recommended for large acreages because it is much less expensive than other mechanical practices. Hydraulic saws and clippers also will accomplish the task. Bulldozers alone are not recommended because of cost and soil disturbance. These treatments should be followed by prescribed fire or heavy infestations will occur within 10 years.



Methods to Eliminate an Eastern Redcedar Invasion

Restoring fire (the historical driver) to the ecosystem eliminates eastern redcedar as a problem and causes it to retreat back to its historical places in the landscape (rock outcrops and canyons).



A Detailed Discussion of Best Management Practices

Information can be found in these publications:

Oklahoma Cooperative Extension Service

☞ E-927, *Using Prescribed Fire in Oklahoma*

☞ F-2876, *Eastern Redcedar Control and Management—Best Management Practices to Restore Oklahoma's Ecosystems*

 F-2877, *Fire Effects in Oklahoma*

 F-2878, *Fire Prescriptions for Vegetation Management*

Oklahoma Department of Agriculture, Food, and Forestry - Forestry Service

 *A Strategy for Control and Utilization of Invasive Juniper Species in Oklahoma* (This publication can be found at <http://www.oda.state.ok.us/forestry-formshome.htm> then click the Redcedar Taskforce link)

Practices to Reduce the Negative Impacts of Wildfire (Firewise principles)

Practices recommended by Firewise to protect homes from wild-fires. Check out <http://www.firewise.org> for more information.

1. Keep a clearing of at least 30 feet around the house for fire fighting equipment.
2. Space the trees you plant carefully.
3. Remove “ladder fuels.” They link the grass to the tree tops.
4. Create “fuelbreaks” — driveways, gravel walkways, or lawns.
5. Maintain your irrigation system regularly.
6. Prune tree limbs so the lowest is between six to 10 feet above the ground.
7. Remove leaf clutter from the roof and yard.
8. Mow regularly.
9. Remove dead or overhanging branches.





Zone 4 is a natural zone of native or naturalized vegetation. In this area, use selective thinning to reduce the volume of fuel. Removing highly flammable plant species offers further protection while maintaining a natural appearance.

Zone 3 is a low-fuel volume zone. Select plants that are mostly low growing and fire resistant to provide a decreased fuel-volume area. A few well-spaced, fire-resistant trees in this zone can further retard a fire's progress.

Zone 2 establishes a vegetation area consisting of plants that are fire resistant and low growing. An irrigation system will help keep this protection zone green and healthy.

Zone 1 is the protection area immediately surrounding the house. Here vegetation should be especially fire resistant, well irrigated, and carefully spaced to minimize the threat from intense flames and sparks.

10. Store firewood away from the house.
11. Refuel garden equipment carefully.
12. Maintain garden equipment regularly.
13. Put cigarette ashes and butts in ashtrays.
14. Store and use flammable liquids properly.
15. Dispose of (lawn, tree, brush) cuttings and debris promptly, and remember to follow local regulations.
16. Observe local regulations regarding vegetative clearances and fire-safety equipment requirements.
17. Check your generator and/or water hose to be sure it is in good repair.
18. Keep combustible materials from beneath decks or elevated porches.
19. Use nonflammable metal to make trellises.
20. Have at least two ground-level doors as safety exits.
21. Keep at least two means of escape (door and window or two windows) in each room.
22. Mark your driveway and access roads clearly.
23. Keep ample turnaround space near your house for fire equipment.
24. Prevent sparks from entering the house by covering vents with wire mesh no larger than 1/8 inch.
25. Use construction materials that are fire resistant or noncombustible.

Notes

For more information contact the Oklahoma Department of Agriculture, Food, and Forestry - Forestry Service at 405.521.3864 or any of the other participating agencies.

In accordance with Federal law and U.S. Department of Agriculture policy, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, age, or disability. (Not all prohibited bases apply to all programs.)

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten building, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410 or call 202.720.5964 (voice and TDD). USDA is an equal opportunity provider and employer.

Printed with the assistance of Hazard Mitigation Grant #02-DG-11083140-05A from the National Fire Plan.

These institutions are equal opportunity providers.

Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990, and other federal laws and regulations, does not discriminate on the basis of race, color, national origin, gender, age, religion, disability, or status as a veteran in any of its policies, practices, or procedures. This includes but is not limited to admissions, employment, financial aid, and educational services.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert E. Whitson, Director of Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of \$6,778.21 for 20,000 copies. #6823 0304 JA



Oklahoma Department of Agriculture, Food, and Forestry -
Forestry Service
Oklahoma Cooperative Extension Service
United States Department of Agriculture - Forestry Service
Oklahoma Department of Wildlife Conservation
Natural Resources Conservation Service