

Capitalizing on eastern redcedar expansion is key to improving grazing land and increasing economic development.

From Adversity Rises Opportunity

NEBRASKA'S FORESTS HAVE FACED daunting conditions over the past several years, which will have a lasting effect on trees and forests for years to come. The Missouri River floods of 2011, an intense and extended wildfire season and record-setting drought in 2012, increased tree and forest removal in and around agricultural fields and the recent discovery in the Kansas City area of emerald ash borer (EAB) are all taking their toll.

Still, there is one species that continues to thrive and show great resiliency. Eastern redcedar is rapidly expanding into agricul-

tural fields, pastures and grazing lands, and the riparian forests along the Platte and Niobrara rivers. This aggressive tree species is dramatically affecting the natural resources of the state and potentially the livelihoods of Nebraskans.

Based on data collected across Nebraska from the U.S. Forest Service's Forest Inventory and Analysis program, results from inventories conducted from 2001 through 2010 estimated that individual eastern redcedar trees more than quadrupled from 40 million to 170 million on Nebraska forestland.

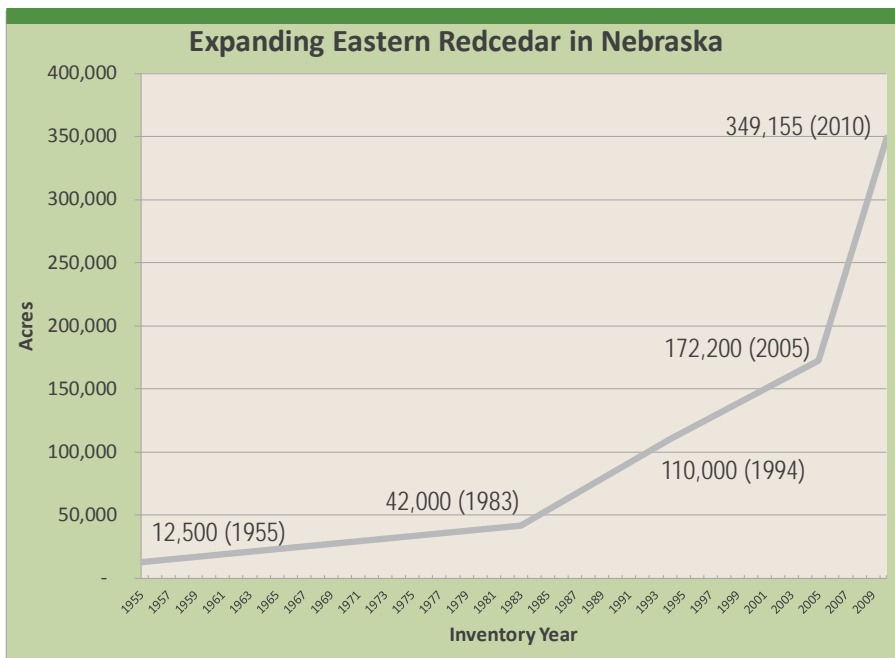
Since 2005, the number of acres identified as eastern redcedar forest or eastern redcedar mixed forest increased from 172,200 to 350,000 acres, an increase of approximately 38,000 acres of eastern redcedar forest every year over the past five years.

With the addition of 307,000 acres of eastern redcedar forest since 1983, we are literally seeing the emergence of an entirely new forest in Nebraska. Unfortunately, cedar is encroaching into native cottonwood-dominated riparian forests, increasing wildfire risk and intensity of these formerly fire-resistant forests. Cedar is also encroaching onto large expanses of range and pasture land, with severe impacts on rangeland productivity and grassland wildlife habitat.

Each 40,000 acres of rangeland converted to eastern redcedar forest results in the loss of enough forage to support 4,970 cows, with an economic loss of approximately \$5.7 million incurred by Nebraska cattle producers.

The redcedar issue is both a problem and an opportunity. Nebraska now has an enormous and virtually untapped energy resource of 5.5 million tons of wood in redcedar forests. This renewable resource could be used for energy to heat and cool buildings, converted to pellets for fuel or livestock bedding, sawn for higher-value products, or chipped for rot-resistant mulch.

Loss of forage land could have increasing impacts on cattlemen.



USEFUL RESOURCES. (Right) Aggressive eastern redcedar impacts a variety of Nebraska resources. Utilizing this species can help preserve rare native tree stands and increase available grazing land. This slash pile represents just a few of the hundreds of redcedar cleared by volunteers in Richardson County.



***Potential revenue
from redcedar as
boiler fuel:
\$9.8 million***

EXAMPLES OF FACILITIES USING renewable energy include the Lied Lodge and Conference Center in Nebraska City, Chadron State College in Chadron, Nebraska College of Technical Agriculture in Curtis and alfalfa dehydrators across Nebraska.

These facilities made the conscious decision to utilize affordable renewable energy instead of traditional fossil fuels. The emergence of vast quantities of redcedar could spark new woody biomass utilization facilities, increase economic development in rural Nebraska, inspire entrepreneurship throughout the state and reduce the negative environmental and economic effects of fossil fuel-based thermal energy applications. Every new wood-fired boiler creates a 30-year market for woody biomass fuel, creating long-lasting jobs in the area.

The Nebraska Forest Service is committed to the promotion and utilization of woody biomass in facilities across Nebraska. Currently, a variety of facilities—municipal buildings, hospitals, schools and college campuses—are working to secure capital funds for facility conversion.

At the same time, the forest products industry in Nebraska continues to expand production of woody biomass to supply these facilities.

The biggest barrier to the use of woody biomass is the need for up-front capital to purchase equipment. While these emerging woody biomass utilization markets are on the verge of breaking through to the mainstream of Nebraska, hurdles remain for small businesses and facilities in acquiring the needed capital to participate in these markets.



RENEWABLE RESOURCE. Eastern redcedar logs provide woody biomass and other high-value products for a variety of uses in Nebraska facilities.

DID YOU KNOW?

***The Wood-fueled Boiler
at the Nebraska College of Technical
Agriculture in Curtis Heats 200,000
Square Feet of Building Space.***

In January 2012, the college fired up its new wood-fueled boiler, a renewable energy conversion project spearheaded by Dean Weldon Sleight, with the assistance of the Nebraska Forest Service.

“One of the goals of this boiler was to create a local market for the eastern redcedar trees being removed from Frontier County pastures,” Sleight said. “Removing the unwanted redcedar will allow for increased cattle production in the area, creating more opportunities for farmers, ranchers and recent NCTA graduates.”

Utilizing cedar biomass is a key way to achieve the triple bottom line—improving economies, the environment and communities.