

CONSERVING NEBRASKA'S GRASSLANDS

Chris Helzer photo

THE THREAT OF EASTERN REDCEDAR ENCROACHMENT

Nebraska's grasslands are worth their weight in gold

Grasslands are critically important to rural communities across the Great Plains. Grasslands support livelihoods, generate public education revenue, offer recreational opportunities, play an important role in storing carbon, maintaining water resources, providing habitat, and much more. As eastern redcedar encroaches, it alters the ecology of grasslands which has profound impacts on the resources important to us.

What are some of the impacts?

Loss of Range Production

From 1990 to 2019, nearly 4 million tons of range production was lost to encroachment in Nebraska. The amount lost could feed over 700,000 cows for one year.



Loss of Revenue

\$77 million in revenue for grass/hay production is lost annually to encroachment in Nebraska. The revenue loss equals the price of 400,000 1-ton bales.



Increase in Wildfire Risk

Encroachment increases the risk of extreme wildfires that are more difficult to suppress and threaten human life and property.



Loss of Grassland Birds

Since 1970, 720 million grassland birds have been lost. Some of the loss is caused by encroachment. Nebraska's state bird, the western meadowlark, has suffered a 42% decline across its range.



How and where is this happening in Nebraska?

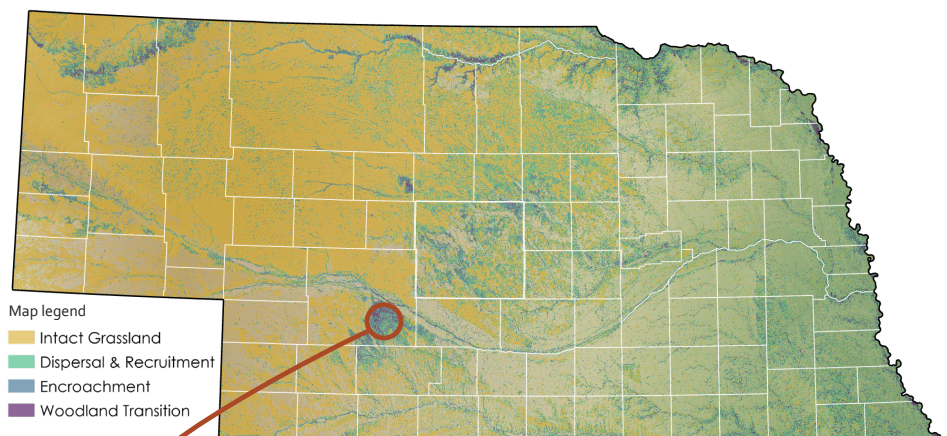
Understanding the stages of encroaching eastern redcedar and other invasive woody plants helps to determine the best management strategies. The map shows where the stages of encroachment, described below, are happening in Nebraska.

Intact Grassland: Treeless grasslands with no incoming seed from invasive woody plants.

Dispersal & Recruitment: Intact grasslands with invasive woody plant seedlings and/or incoming seed.

Encroachment: Grasslands with seed producing invasive woody plants (5-foot tall for eastern redcedar).

Woodland Transition: Final stage of encroachment is a woody-dominated ecosystem. Lands are no longer grasslands and have the most severe impacts of woody encroachment.



Map legend
Intact Grassland
Dispersal & Recruitment
Encroachment
Woodland Transition

Encroachment can happen quickly as shown in this time series.



1953

1993

2020

WHAT CAN WE DO ABOUT IT?

Land managers in Nebraska estimate that new approaches to managing eastern redcedar reduce the cost by \$25-\$500 per acre. These approaches focus on sustaining the best grassland resources, which helps develop proactive management strategies that are more successful and cost effective.

Employ Management Approaches that Reduce Encroachment Risk

Encroaching trees

Use management treatments such as tree cutting or prescribed fire to remove seed sources and reduce the risk of encroachment.

Prevent reinvasion by following up with management treatments after seed source removal to deplete the seedbank.

Grow tree-free, seed-free grassland cores across ownership boundaries.

Intact grassland

Keep grasslands intact to prevent future tree encroachment by monitoring annually and acting early.

background photo by
Ryan Lodge/Pheasants Forever

Study Up

Rangeland scientists from across the Great Plains are providing effective solutions to address woody encroachment. They emphasize proactive management strategies to reduce the underlying risks that make grasslands vulnerable to encroachment.

Reducing Woody Encroachment in Grasslands

<https://www.wlfw.org/great-plains/woodland-expansion>

Science Guide Outlines New Approach for Reducing Eastern Redcedar

<https://beef.unl.edu/beefwatch/2022/science-guide-outlines-new-approach-reducing-eastern-redcedar>

Eastern Redcedar Science Literacy Project

<https://agronomy.unl.edu/eastern-redcedar-science-literacy-project>

Enroll in Conservation Programs

The USDA Natural Resources Conservation Service (NRCS) offers programs to help landowners with woody tree encroachment. Learn about these programs at <https://www.nrcs.usda.gov> or visit your local USDA Field Office.

Environmental Quality Incentives Program (EQIP)

Conservation Stewardship Program (CSP)

Great Plains Grassland Initiative (GPGI)

Other cost-share options as well as financial and technical assistance are available through other partners (shown below).

