

The Price of Woody Invasive Species: Expected and Realized Threats to Riparian Areas

Findings from 2026 Report: Current and Future Costs of Woody Invasive Species (Nelson and Whited, 2026)

Woody invasive species increasingly threaten Montana's economies and riparian ecosystems.

Common buckthorn

(*Rhamnus cathartica*)

Russian olive

(*Elaeagnus angustifolia*)

Saltcedar

(*Tamarix chinensis*, *T. ramosissima*, and all associated hybrids)

To better understand the impacts, we must first calculate the costs.

This includes:



Habitat Suitability Overview

Coverage for Optimal Habitat:
(Approximate Values at Present)

Common buckthorn*:

6,300 km² or 1.5M acres

Russian olive:

7,400 km² or 1.8M acres

Saltcedar:

5,000 km² or 1.2M acres

Mid-Range Climate Scenarios:
(2041 to 2070 Projections)



*Occurrence Data is Insufficient.

Recommendation: Encourage reporting.



Areas of Optimal Suitability **Expected to Increase by 46%**



Areas of Optimal Suitability **Expected to Increase by 224%**



For context, Montana has nearly 377,000 km² or 93 million acres of land.



Costs of Mitigation Practices

Based on Surveys from Montana Land Managers.

Today's Costs to Future Projections:

[Based on Reported Costs, Mid-Range Climate Scenarios (2041-2070), and Habitat Suitability]

Common buckthorn*:

\$7 million



*Insufficient Data

Russian olive:

\$44 million



\$69 million

Saltcedar:

\$28 million



\$103 million

Takeaway:

Delayed Intervention will Substantially Increase Costs

Impacts to Economic Sectors

Agriculture

Total Potential Rent Losses:

Common buckthorn:	\$13,304
Russian olive:	\$4.2 million
Saltcedar:	\$3.2 million

Municipalities/Industry

Invaded and uninvaded ecosystems provide comparable levels of key regulating services (water quality maintenance, erosion control, and flow regulation). **Site-specific characteristics should be considered to understand benefits of individual mitigation projects.**

Recreation/Tourism

These sectors remain unassessed due to lack of reference studies. Further analysis and study of public preference and changes in welfare from invasive species management activities are necessary to understand potential impacts to these critical Montana economic sectors.

Conclusions

- **Action is economically warranted. Delaying control will substantially increase costs**, particularly for saltcedar, whose optimal habitat is projected to expand dramatically under climate change.
- **Agricultural losses from all three species are modest under current conditions but will likely grow as invasions expand.**

Recommendations

- **Address gap by developing an ecosystem services prioritization framework and investing in research to capture the public value of invasive species management to restore riparian areas.**
- **Continue monitoring and encouraging reporting to better capture species range and improve habitat modeling.**



FLATHEAD LAKE
BIO STATION
UNIVERSITY OF MONTANA



To access the full report, scan this QR code or visit woodyinvasives.mt.gov.