

Info Sheet

Russian Olive—A Locally Invasive Tree

February 2019

Russian olive trees have become ubiquitous around Medicine Hat and in surrounding areas. Dense stands are readily found on stream banks, around ponds, and on the sides of drainage ditches. They are also found in coulees, natural areas, gardens, and anywhere else they have the opportunity to grow. Russian olive trees are not native to southeastern Alberta. Introduced as an ornamental and shelterbelt plant, Russian olive trees are very prolific in producing fruit with seeds that are easily dispersed by birds. This tree can extract (fix) nitrogen from the air, and with other essential nutrients (phosphorus and potassium) available from the soil, it grows luxuriantly. It can also tolerate some degree of soil salinity or alkalinity. In the semi-arid climate of southeastern Alberta there are very few diseases or pests of significance that would hinder its growth. Medicine Hat and surrounding areas have the climate and soil that provide favourable conditions for Russian olive trees to establish and become a local invasive species. Once established they are very difficult to eradicate, requiring the application of various control measures over many years.



Lone cottonwood tree among Russian olive trees being taken down by beavers, College Drive pond, Medicine Hat, July 2018.

Ecological Impacts

Russian olive trees can become, or in some locations have become, the dominant vegetation replacing, displacing, or choking native plants. They bring about several ecological issues especially on land adjacent to streams, ponds, and lakes (riparian areas) that provide habitat for many birds and other wildlife. The invasive nature of Russian olive trees creates a disadvantage for



Drainage channel at Marlborough coulee, Medicine Hat is lined with Russian olive trees; it discharges into Seven Persons Creek, July 2018.

native plants and the wildlife that rely on them. MULTISAR (a habitat stewardship group in Alberta) states that 72% of birds found in Alberta's cottonwood forests (native trees) depend exclusively on these forest stands.

Beaver and deer are other examples of species being impacted as they both prefer to feed on cottonwood trees which are being displaced from the riparian habitat by the growth of Russian olive trees. Since deer and beaver avoid Russian olive for browsing or den construction this further provides the Russian olive with a growth advantage over native species such as the cottonwood poplars.

The higher nitrogen content of Russian olive tree leaf litter contributes to nutrient load in water bodies which can result in unhealthy algal blooms. Furthermore, the leaf litter that settles to the bottom of a stream or pond decomposes slowly, which may negatively impact bottom dwelling and/or bottom feeding aquatic organisms.

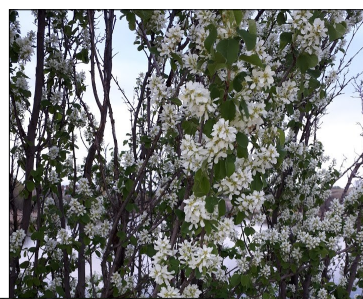
Mitigation and Management

The aggressive spread of Russian olive trees must be managed by actively working to reduce its population through seedling and sapling suppression, and removal of mature trees. Methods of control include physical removal using various tools followed by an herbicide application. A gradual eradication program has to be implemented and must include prior or simultaneous planting of native shrubs and trees. The best preventive measure is to not plant Russian olive trees.

Alternatives to Russian Olive Trees

Shrubs—golden currant, Saskatoon, thorny buffalo berry, chokecherry, red osier dogwood, and wolf willow

Trees—cottonwoods, green ash, and Manitoba maple



Golden currant among cattails

Saskatoon berry

Red osier dogwood



Chokecherry



Thorny buffalo berry



Wolf willow or Silverberry

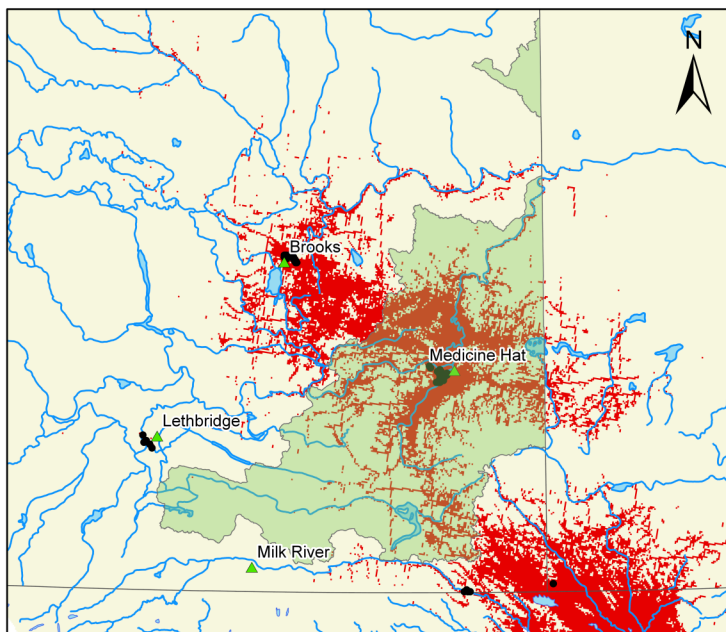


See more native plants in SEAWA's booklet of Common Riparian Plants:
<http://seawa.ca/state-of-the-the-watershed/resources/>

For more information go to:

Alberta Native Species Council - <https://anpc.ab.ca/>

Russian Olive Datasheet - <https://www.cabi.org/isc/datasheet/20717>



Observed occurrences of Russian olive trees and suitable habitat in the SEAWA watershed and southeastern Alberta. This map shows the potential for infestation of Russian olive trees in the SEAWA watershed.

Source: Liana Pekrul, Biodiversity and Landscape Ecology Research Facility, University of British Columbia.

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