

Russian Olive *Elaeagnus angustifolia* L. FACT SHEET – Updated September 21, 2010

Issue: Because of the concern regarding the spread of Russian olive along Montana's river systems, particularly in eastern Montana, as of September 10, 2010, Russian olive can no longer be sold in the state. This prohibition was adopted by the Montana Dept. of Agriculture, based on a petition by Montana Audubon and the Montana Native Plant Society. This ban was instituted because local Conservation Districts, federal agencies, and others are spending time and money to control this invasive species. As examples:



- From 2005 through 2007, the Bureau of Land Management expended about \$500,000 for control of Russian olive in riparian areas (Jennifer Cramer, personal comm.).
- A Russian olive control/demonstration project along the Marias River received \$21,000 in 2009 in state funding (Warren Kellogg, personal comm.).
- Treasure County removed 100 acres with hand labor at a cost of \$1,000/acre (Marias River Watershed Meeting Minutes, January 8, 2008).
- On June 21, 2007, the Yellowstone River Conservation District Council adopted a recommendation for Russian olive management in the Yellowstone River Valley that states, "Russian olive should not be planted in the Yellowstone River valley, and where it currently exists, Russian olive should be controlled or eradicated." Several removal demonstration projects have been initiated since this recommendation was approved.

Although Russian olive has not made the national weed list, the Natural Resources Conservation Service started a \$1 million program in 2008 to help landowners remove Russian olive and salt cedar in Montana because, according to U.S. Agriculture Undersecretary Mark Rey, "The two shrubs are becoming a problem in Montana after disrupting ecosystems and waterways in many other Western states. They out-compete native vegetation and tax water reserves" (source: *Helena Independent Record*, July 27, 2008). This program was written up in July 2010 in the *Billings Gazette*, with interviews from two landowners who describe how their properties went from "once-impenetrable thickets" of Russian olive to providing grazing land. (source: *Billings Gazette*, July 20, 2010). All this work eventually led to the prohibition of Russian olive sale in the state of Montana.

Background

Plant: Russian olive is an introduced fast-growing shrub or small deciduous tree to 10 to 25 feet tall.

History: Russian olive is native to southern Europe and western Asia (Little 1961). It was intentionally planted beginning in the early 1900's as an ornamental, and for windbreaks, erosion control and wildlife enhancement purposes (Christiansen 1963, Little 1961). Since its introduction, it has become naturalized throughout the western United States from North Dakota to Washington and south to Texas and California (Olson and Knopf 1986) in addition to several Midwestern states, and three provinces in Canada.

Legal Status: Russian olive is considered a noxious weed in Colorado (see: <http://www.colorado.gov/cs/Satellite/Agriculture-Main/CDAG/1174084048733>), New Mexico (see: <http://www.nmda.nmsu.edu/animal-and-plant-protection/noxious-weeds>), Wyoming (Wyoming Department of Agriculture press release, February 12, 2007), and 7 Utah Counties (Carbon, Duchesne, Grand, San Juan, Sevier, Uintah, and Wayne) (see: Additional Noxious Weeds Declared by Utah Counties at <http://ag.utah.gov/divisions/plant/noxious/index.html>). It is also listed as a noxious weed by Treasure and Powder River Counties in Montana. The plant has no special federal status. In August 2008, Russian olive was petitioned for inclusion on the Montana state noxious weed list by Montana Audubon and the Montana Native Plant Society. This petition is still under consideration and expected to be acted upon during the winter of 2009-2010.

Spread: Fruits/seed distributed by animals and by water or ice. Seed viability is about 3 years.

Invasion Potential: Russian olive is invasive due to high seed production and viability, seed longevity, seed dispersal by birds and mammals, vegetative reproduction following injury, drought and salt tolerance, and the ability to establish in the absence of disturbance in late successional communities. The tree resprouts following fire. In the spring of 2007, the Natural Resources Conservation Service (NRCS) took Russian olive off its preferred list of plants for the state of Montana. In 2008 the Montana Dept. of Natural Resources and Conservation nursery destroyed their stock of Russian olive and committed to not selling this plant; however, it is still sold by private nurseries throughout the state. The California Invasive Plant Council lists Russian-olive among the most invasive wildland pest plants in California.

The Montana Dept. of Natural Resources and Conservation (DNRC) chose to cease selling Russian olive from the state nursery in the spring of 2008 because “Russian olive has become an invasive weed in riparian areas across the state. Russian olive is known to crowd out native vegetation, reduce wildlife species diversity, and reduce browse. Currently there is no way to insure that a Russian olive planting will not spread to local riparian areas. Because invasive problems with Russian olive are contrary to the mission of the DNRC the Montana Conservation Seedling Nursery will no longer sell Russian olive. When current inventories are exhausted in 2008 Russian olive will no longer be available for purchase for the nursery. The nursery will continue to work with it’s cooperators to identify suitable alternatives for Russian olive.” Instead of waiting to “exhaust supplies” Conservation Districts paid for DNRC to destroy the last 16,000 plants in their inventory.

Impacts: The following information on impacts and attributes of Russian olive is detailed in a literature review on Russian olive available at <http://www.fs.fed.us/database/feis/plants/tree/elaang/all.html>.

- Russian olive meets the biogeographic, spread, and impact criteria to be classed as an invasive species (Katz and Shafroth 2003).
- Once established, Russian-olive may hinder recruitment of native cottonwood and willow on some sites (Katz and Shafroth 2003; Lesica and Miles 2001).
- Russian-olive stands tend to be less diverse both structurally and compositionally than surrounding communities (Howe and Knoff 1991, Muldavin et al 2000).
- The impact of Russian-olive invasions upon wildlife species is variable, site specific, and often debated.
 - Although Russian-olive has been promoted for use in wildlife habitat plantings (Borell 1962), there has been relatively little research on its use by native animals (Katz and Shafroth 2003).
 - Displacement of native floodplain forest by Russian olive can result in loss of habitat for species such as cavity-nesting and insectivorous birds (Brown 1990, Knopf and Olson 1983, Lesica and Miles 2001). Brown (1990) attributed lower bird use to low insect abundance in Russian olive.
 - Wildlife species richness, abundance and density were greater in willow than in Russian-olive habitats, and all foraging guilds avoided Russian-olive in the breeding season along the Snake River in Idaho (Brown 1990).
 - Russian olive provides habitat for predators such as hawks, magpies, skunks, and raccoons which prey on nests of ducks and grouse (USF&WS).
 - Russian olive dominance increases since both beaver and livestock favor cottonwood and willow to Russian olive (Pearce and Smith 2001; Lesica and Miles 2001)
- In Montana, undisturbed colonizing and established cottonwood communities support as many as 114 and 58 plant species, respectively, compared to only 29 species in Russian-olive stands (Hansen et al. 1995, Pearce and Smith 2001).

- Insects, including honey bees, are found only at low densities on Russian-olive (Borell 1971 and others) and fruit is not consumed by insects (Vines 1960).
- Russian-olive may contribute substantial amounts of additional nitrogen to invaded ecosystems (Kearney et al. 1960)
- Russian-olive can block flow of irrigation ditches and increase difficulty for moving livestock (Lesica personal observation).
- Beavers primarily use cottonwood trees while rarely using Russian-olive or tamarisk along several rivers in eastern Montana (Lesica and Miles 1999, 2001; Pearce and Smith 2001). This favors dominance of Russian-olive in riparian sites.

Benefits:

- Domestic livestock browse young Russian-olive trees but adult Russian-olives deter browsers with sharp thorns and defense compounds in the leaves (cited by Katz and Shafroth 2003).
- Russian-olive produces abundant, edible fruit, and Borell (1971) reports that more than 50 kinds of birds and mammals eat the fruit of Russian olive.
- May provide important structural habitat for wildlife species (Knopf and Olson 1984).
- Russian-olive has been promoted for many uses including windbreaks and erosion control, snow traps, gully and streambank plantings, hedgerows, mine reclamation, and living fences (many references, see FEIS document).

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