

**Custer County Conservation District**  
**Yellowstone River Conservation District Council**  
Contract #YRCDC-010  
Final Report

Submitted by: Celestine Duncan, Contractor  
Date: 2/24/06

A literature review on Russian olive (*Elaeagnus angustifolia*) was initiated November 9, 2005. The initial review included a search on AGRICOLA and Plant Science abstracts. In the course of the review, an internet search was also conducted and a comprehensive summary of literature on Russian olive by Kris Zouhar was found in Fire Effects Information System (FEIS): U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. Available [Online] at <http://www.fs.fed.us/database/feis/>. The information was reviewed and found to be complete as of September, 2005. A copy of the FEIS document was sent to Warren Kellogg in December, 2005. Warren distributed the document to the Yellowstone River CD Technical Advisory Committee (TAG) for their review. In late January, the TAG approved the FEIS document and concluded that no further work was necessary on a literature review.

The Contractor also reviewed the vegetation section of the project proposal on December 12, 2006 and submitted comments to Warren Kellogg as part of this contract. These comments are on file with W. Kellogg.

The following information was not part of the FEIS document and may be useful background information:

**Russian olive:**

In Montana, Russian olive was petitioned for inclusion on the state noxious weed list (Lesica and Miles 2002). The plant was not recommended for addition to the state list based on the following reasons: 1) The plant occurs statewide and it is often difficult to determine where it has escaped and is causing problems. 2) Economic impacts are hard to determine and it has a very slow spread rate. 2) Russian olive has shown documented habitat type conversion but also has distinct habitat and wildlife benefits in some areas of the state. 3) Since beneficial or harmful impacts are very site specific, the committee felt that the decision to add this plant to a noxious weed list must be a county decision (Montana Statewide Noxious Weed List Advisory Committee 2002).

Currently there is proposed federal legislation (HR 489IH and S 177 RS) to control Russian olive and tamarisk, and the Natural Resource Conservation Service (NRCS) is proposing a Special EQIP Initiative to control Russian olive along riparian areas and water courses in Montana (NRCS document, Husby personal communication). In addition the following projects were completed or proposed in 2005.

- In Montana, the BLM spent \$141,000 to control Russian olive on 100 ac. in Treasure County in 2005 (Cramer personal comm.).

- BLM is proposing a \$35,000 project to control Russian olive in the Upper Missouri River Breaks National Monument (Bill Volk personal comm..)
- The Marias River Watershed group conducted a river assessment in 2005. Results indicated that Russian olive was present and increasing on the river. Infestations are currently at levels that could be eradicated with an aggressive management program which is currently being developed.

Russian olive remains on the Natural Resource Conservation (NRCS) recommended list for planting (Holzworth personal communication). Historically about 40,000 Russian olive nursery stock were grown and distributed annually in Montana (Lesica and Miles 2002). There were 16,200 Russian olive seedlings distributed in the state for planting in 2005 (Justice, personal communication, DNRC plant nursery data) with about \$9000 in revenue generated (Mary Sexton, personal communication). Montana Department of Fish, Wildlife, and Parks (FW&P) also continues to recommend and plant Russian olive in shelterbelts (Kristi DuBois personal comm.).

On February 10<sup>th</sup>, 2006 a meeting was held to discuss the potential of changing current state and federal policy for Russian olive. Nancy Peterson (Ag), Mary Sexton (DNRC), Jeff Hager (FWP), and Dave White and Ron Nadwornick (NRCS), Janet Ellis (Audubon), Dave Burch, Greg Ames, and Tonda Moon (MDA), and Celestine Duncan (Private) attended the meeting. The decision by the directors was that a science-based decision-making process was needed, and that could only be obtained through convening scientists to develop a long-range management plan for Russian olive. Until the plan is completed, management of Russian olive by DNRC and NRCS is proposed to remain status quo. As of the time of this report, there has not been a group of people identified to serve on the planning committee.

A group of weed scientists, county weed coordinators, university botanists, and organizations in Montana and Canada proposed a more pro-active approach to Russian olive management. Alberta Ag. Fieldman, The Montana Weed Control Association, Montana Audubon, and the Montana Weed Summit Steering Committee agree with this proposal. Their goals are outlined below and in the following Factsheet.

1. Stop or severely curtail recommendation of Russian olive in plantings.
2. Stop production, distribution, and planting of Russian olive by state agencies.
3. Support research to develop alternatives to Russian olive in shelterbelts and other plantings.
4. Develop educational materials regarding invasiveness of Russian olive. *This is not a proposal to add Russian olive to the current noxious weed list.*

## Russian Olive *Elaeagnus angustifolia* L. FACTSHEET: DRAFT (C. Duncan 2/8/06)

Issue: Currently there is proposed federal legislation (HR 489 IH and S 177 RS) to control Russian olive and tamarisk, and the Natural Resource Conservation Service (NRCS) is proposing a Special EQIP Initiative to control Russian olive along riparian areas and water courses (NRCS document, Husby personal communication). In addition the following projects were completed or proposed in 2005.



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- The Marias River Watershed group conducted a river assessment in 2005. Results indicated that Russian olive was present and increasing on the river. Infestations are currently at levels that could be eradicated with an aggressive management program which is currently being developed.

However, Russian olive remains on the recommended plant list for NRCS, and the Department of Natural Resources and Conservation (DNRC) plant nursery propagated, sold, and distributed 16,200 Russian olive seedlings in Montana in 2005 (Justice, personal comm., DNRC plant nursery data). Sale of R. olive contributed \$9000 to the state nursery in 2005. Montana Department of Fish, Wildlife, and Parks (FW&P) also continues to recommend and plant Russian olive in shelterbelts (Kristi DuBois personal comm.).

### Proposal (Russian olive action committee):

1. Stop or severely curtail recommendation of Russian olive in plantings.
2. Stop production, distribution, and planting of Russian olive by state agencies.
3. Support research to develop alternatives to Russian olive in shelterbelts and other plantings.
4. Develop educational materials regarding invasiveness of Russian olive. *This is not a proposal to add Russian olive to the current noxious weed list.*

Alberta Ag. Fieldman, The Montana Weed Control Association, and the Montana Weed Summit Steering Committee agree with this proposal. In addition, the DNRC Conservation District Division has indicated they would consider funding research to help develop substitutes for Russian olive in wind breaks.

### 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 and New Mexico, and is considered potentially invasive and banned in Connecticut (USDA NRCS 2005). The plant has no special federal status. Russian olive was petitioned for inclusion on the Montana state noxious weed list (Lesica and Miles 2002); however the petition was denied.

**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. The California Invasive Plant Council lists Russian-olive among the most invasive wildland pest plants in California.

**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).
  - Some authors suggest that the 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).

**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).