



## Russian Thistle Identification and Management

### Background Information

#### History and Impacts

Russian thistle, (*Salsola* spp.) also known as tumbleweed, is a summer annual native to southeastern Russia and western Siberia and was first introduced into the United States in the late 1800's as a contaminant in flax seed in South Dakota. Today it is common throughout the western United States, having invaded about 100 million acres.

In late fall and early winter Russian thistle becomes conspicuous as it breaks from the soil and is blown across highways and fields. Russian thistle can reduce yield and quality of numerous crops in agricultural areas and can also threaten native plant ecosystems. Plants accumulate along fence lines and other areas posing a serious fire hazard.

#### Habitat

Russian thistle is primarily a weed in sites where the soil has been disturbed, such as along roadways and fence lines. It is also prevalent in vacant lots and other non-crop areas.

#### Identification

**Plant:** Russian thistle is a bushy summer annual with numerous slender ascending stems that become nearly woody at maturity. The overall shape of the plant becomes oval to round and at maturity can attain a diameter varying from 18 inches to 6 feet or more under favorable soil moisture and fertility conditions.

**Leaves:** Leaves of young plants are fleshy, dark green, narrow, and about 1 inch in length. Seedlings have very finely dissected leaves that almost look like pine needles. As the plant matures in July through October, the older leaves become short and stiff with a sharp-pointed tip.

**Stems:** Stems vary from 8 to 36 inches in length and usually have reddish to purplish stripes.

**Flowers:** The single, inconspicuous flowers lack petals and are borne above a pair of small spine-tipped bracts where the narrow leaves meet the stem.



**Seeds:** Russian thistle seed begins to germinate when it is exposed to the proper temperature (52° to 90°F) and moisture conditions. As it uncoils, the young taproot extends into the soil within about 12 hours, giving Russian thistle an advantage over many other plants under limited moisture conditions. A minimum amount of moisture, lasting only a few hours, will allow germination and root growth to deeper, subsurface moisture. Russian thistle normally will not germinate successfully in firm soil, the soil in the site must be loose. Seed viability is rapidly lost, over 90% of the seed either germinate or decay in the soil during the first year.

### **Reproduction and Spread**

Russian thistle is a summer annual that lives for one growing season and reproduces solely from seed. The seed is spread when mature plants detach at the base and are blown along by the wind in late fall through the winter. A large Russian thistle plant may produce more than 200,000 seeds.



## **Control Information**

### **Integrated Pest Management**

Integrated Pest Management (IPM) involves selecting from a range of manual, mechanical, chemical, cultural and biological control methods to match the management requirements of a specific site. Management will require dedication over a number of years, persistence is necessary. Control practices should be selected to minimize soil disturbance which will avoid creating more opportunities for germination of weed seeds from the seed bank.

### **Early Detection and Prevention**

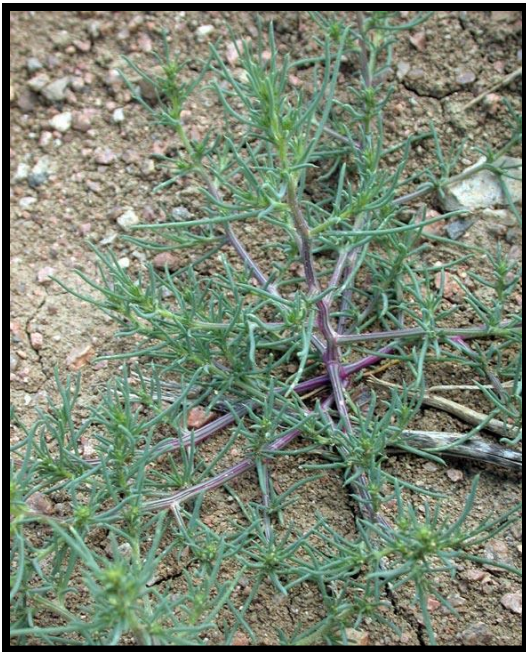
Early detection and prevention is the key to weed control. Prevent plants from spreading away from existing populations by washing vehicles, equipment, animals and clothing that have been in infested areas.

### **Manual, Mechanical, Cultural**

Small populations of Russian thistle are easily pulled or hoed out at early growth stages. If plants have already started producing seed, it is best to collect the plants and dispose of them prevent new infestations. Maintaining healthy pastures, fields or other desired vegetation will prevent establishment of Russian thistle. Burning is sometimes used to destroy accumulated Russian thistle plants however this is not an effective control practice. While burning may eliminate the accumulated organic debris most seed will already have been disseminated.

### **Chemical**

Many herbicides are effective against Russian thistle. Post emergent applications are effective, but applications should be made when plants are small for effective control. Reapplication of post emergent



herbicides is often needed due to repeated flushes of seed germination later in the season following rainfall. Avoid repeated use of a single herbicide or of herbicides that have the same mode of action to prevent the evolution of herbicide-resistant populations. Post emergent herbicides that are effective when properly applied include dicamba (Banvel, Clarity), 2,4-D (many products), and glyphosate (many products).

Precautions: Herbicides should only be applied at the rates and for the site conditions and land usage specified on the label of the product being used. Follow all label directions, the label is the law. For your personal safety always wear gloves, long sleeves, long pants, closed toe shoes, and appropriate eye protection. Follow label directions for any additional personal protection equipment needed.

### **Biological**

Biological control agents are established but do not provide sufficient control.

## Summary of Best Management Practices

- Do not allow plants to reach maturity and form seeds, early detection and management is key
- Mechanical control such as pulling or hoeing is effective on small populations
- Several herbicides are effective, however monitoring and reapplication may be required as seeds sprout through the growing season
- Establish competitive vegetation to outcompete new seedlings and occupy the site



If you have any questions or need additional assistance, please contact Deschutes County at 541-322-7117 or visit our website at [www.deschutes.org/weeds](http://www.deschutes.org/weeds)