Impacts

Perennial sowthistle can form dense monospecific stands by the spread of its rhizome-like roots. At high densities perennial sowthistle can drastically reduce water resources and likely decreases native plant diversity. It may also modify or retard the successional establishment of native species (Butterfield et al. 1996). It is also a host to a number of plant pests and a problem in several crops where it causes economic losses due to reduced crop yields, increased cultivation and herbicide expenses, and land depreciation.

Figure 3. *Perennial sowthistle appears above with a brownish stem and yellow flowers. This photograph taken in the fall, shows the plants after many of the flowers have gone to seed. Perennial sowthistle is capable of invading undisturbed areas and has heavily infested this estuarine meadow next to Hyder.*

Guidelines for Control Options

Manual Options: When hand-pulling, use a shovel and take care to get as much of the root as possible. **Mechanical Options**: Mowing or cutting to reduce seed production and root reserves should be done a few times per season for several years. Tillage that buries all root fragments more than 12 inches deep is reported to be effective; however, tillage implemented incorrectly may increase numbers by breaking up the rhizomes into separate pieces that can grow into new plants. **Herbicide Options**: This weed is relatively resistant to many, but not all, common broadleaf herbicides (Butterfield et al. 1996, Rutledge and McLendon 1996). The type of herbicide recommended depends on site factors and surrounding plant composition. For more information on chemical treatment options, contact your local Cooperative Extension Service office.

Annual sowthistle and spiny sowthistle may be controlled through hand-pulling or cutting prior to flowering. Herbicide application is generally unnecessary for these two species except for in cases with large infestations.

Notes: Sowthistle is a relative of chicory, and its roots have been used to make a coffee-like beverage. Because of the high hydrocarbon content of its milky sap, sowthistle has been investigated as a source of oil for manufacture of plastics and pharmaceuticals.

Literature Cited

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Rutledge, C.R., and T. McLendon. (1996) An Assessment of Exotic Plant Species of Rocky Mountain National Park. Retrieved January 30, 2005 from Department of Rangeland Ecosystem Science, Colorado State University, Northern Prairie Wildlife Research Center Home Page: http://www.npwrc.usgs.gov/resource/orthradata/Explant/explant.htm

Royer, F. & R. Dickinson. (1999). Weeds of the Northern U.S. and Canada. Edmonton, AB, Canada: The University of Alberta Press.

Alaska Administrative Code, Title 11, Section 34.020. Prohibited and restricted noxious weeds.

Photo Credits

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Caution: Herbicides can be dangerous to the user and the environment unless used according to the label directions. Federal law requires that the user read, understand, and follow all label directions. Consult with a UAF Cooperative Extension Service office near you for more information on use of herbicides. Mention of a herbicide in this publication does not constitute a recommendation for use by the USDA, nor does it imply registration of a product under Federal Insecticide, Fungicide, and Rodenticide Act, as amended. Mention of a proprietary product does not constitute an endorsement by the USDA.

Invasive Plant

Perennial Sowthistle

USDA United States Department of Agriculture Forest Service Alaska Region R10-PR-17 October 2007

Scientific Name: *Sonchus arvensis*
Family: Sunflower family (Asteraceae)
Common Names: creeping sowthistle, field sow-thistle, field sowthistle, moist sowthistle

Perennial sowthistle (including both subspecies *Sonchus arvensis* ssp. arvensis and ssp. uliginosus) is an invasive plant that is problematic throughout North America. It is listed as a noxious weed in Alaska and therefore prohibited in the state by law (11 AAC 34.020). In southeast Alaska, it is invading remote areas such as riparian and beach sites on Admiralty Island, Glacier Bay National Park, and Portland Canal (AKEPIC 2005). Sowthistle is a serious problem in agricultural areas because it has been found to reduce crop yield greatly (Royer and Dickinson 1999), and it also reduces the growth of native plants in a variety of settings. In the lower 48 states and interior Alaska perennial sowthistle is primarily found along roadsides or in agricultural areas. It has the potential to cause severe impacts to native vegetation in tidal meadows and beach fringe sites, which provide important habitat, cover, and food for a variety of wildlife, including black bears, brown bears, deer, and migratory waterfowl.

Two other species of sowthistles also occur in Alaska; annual sowthistle (*Sonchus oleracus* L.) and spiny sowthistle (*Sonchus asper* L. [Hill]). Many of the occurrences of spiny sowthistle are found along road corridors on Prince of Wales Island. Of the three species of sowthistle, annual sowthistle is the least common in Alaska, known to grow in less than a dozen locations from Fairbanks to Ketchikan.

Description

Despite the common name, sowthistles resemble dandelions more than they do the true thistles such as Canada thistle. Perennial sowthistle usually grows 2–4 feet high and has an extensive horizontal root system that grows up to 10 feet deep. All parts of the plant exude a milky white juice when broken. Long stems arise from a basal rosette of dandelion-like leaves. Stems are branched only at the top. Leaves are alternate, lance-shaped and 2.5–16 inches long, with a clasping base and prickly margins that vary from deeply toothed to nearly entire (figure 1). Flower heads are 1–2 inches across and bright yellow. The floral bracts are of variable lengths and green with white margins. Seeds are dark brown and prominently ridged and wrinkled with soft white bristly pappus. Of the two recognized subspecies, ssp. uliginosus lacks glandular hairs on the floral bracts and stalks; these glandular hairs are generally present on ssp. arvensis (figure 2).

Figure 1. *Clasping leaf base on perennial sowthistle*

Similar Species: Spiny sowthistle (*Sonchus asper*) and annual sowthistle (*Sonchus oleracus*) are annual herbs with short tap roots that distinguish them from perennial sowthistle, which has long horizontal roots. The leaves of spiny sowthistle are shallowly lobed with spiny margins and have distinctive, large rounded clasping flanges at the base around the stem. Annual sowthistle can be distinguished from spiny sowthistle by the acute pointed shape of the leaf base, which clasps the stem.

Life History

Sowthistle is a perennial herb that reproduces from seed and spreading rhizome-like roots. A single plant can produce 4,000–13,000 seeds that can remain dormant in the soil for up to 6 years (Alaska Exotic Plant Information Clearinghouse. 2005). Seeds are dispersed by wind, by small hooks on the pappus that readily attach to clothing and animal hair, and by birds that feed on the seeds. Spreading rootstocks, however, are the primary means of invasion into new areas, as plants are capable of producing new plants from buds on the roots up to 2 feet in depth. Early in the season the plants have a basal rosette that could be mistaken for dandelion. Plants over-winter below ground; with new buds arising from the rhizome-like roots in the spring, around the same time that sowthistle seeds germinate.

Figure 2. *Glandular hairs are visible on the floral bracts.*

Habitat

This plant can grow in a variety of habitat, but it prefers fine-textured soils, especially loams, and alkaline or neutral conditions. Perennial sowthistle is highly tolerant of salty soils. It is commonly found in cultivated fields (both grain and row crops), waste areas, meadows, sloughs, woods, lawns, roadsides, beaches, ditches, and river and lakeshores (figure 3).

Perennial Sowthistle

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Additional information on this plant can be obtained from your local UAF Cooperative Extension Service office, Alaska State Forestry office, or from:

US Forest Service
State & Private Forestry
Forest Health Protection

3301 “C” Street, Suite 202
Anchorage, Alaska 99503
Phone: (907) 743-9455

2770 Sherwood Lane, Suite 2A
Juneau, Alaska 99801-8545
Phone: (907) 586-8811, ext 283

3700 Airport Way
Fairbanks, Alaska 99709
Phone: (907) 451-2799

Or:

www.fs.fed.us/r10/spf/fhp
http://akweeds.uaa.alaska.edu
www.dec.state.ak.us/eh/pest/index.htm

Cover Photo. *Perennial Sowthistle in flower.*