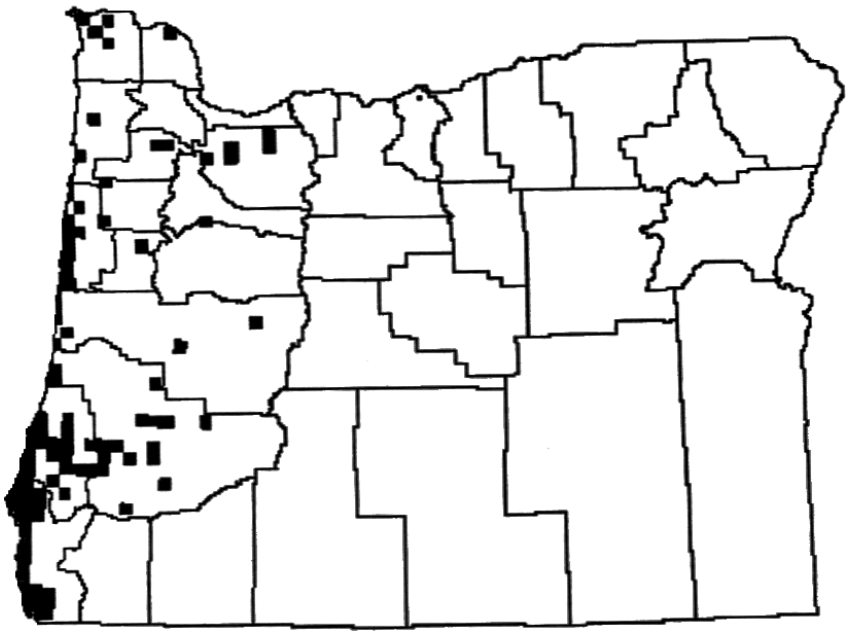
Figure A.20
Oregon Gorse 1999



A7. LEAFY SPURGE

A. Description

Leafy spurge (Euphorbia esula) is a long-lived deep-rooted herbaceous perennial. Plants grow as high as three feet in dense patches. Flowers are small and inconspicuous, and both stems and leaves have a sticky latex sap. A highly competitive plant, leafy spurge displaces native vegetation, and loss of plant diversity and loss of livestock and wildlife forage and habitat are the main impacts of leafy spurge.

B. Native Area/Arrival In The U.S.

The weed was brought to the northeastern North American, from Eurasia, as an ornamental in 1829. It soon spread from yards to gardens, and by the 1900's, infestations had reached the West Coast of North America. Because of its high genetic variability, the species easily adapts to local growing conditions. It can be found in dry to subhumid habitats, in subtropical to subarctic habitats, on sites ranging from flood plains and river bands to grasslands, ridges, and mountain slopes. It is primarily found in pastures, rangelands, roadsides, waste areas, abandoned cropland and increasingly in areas disturbed by development.

C. Current Status

In Oregon, most leafy spurge infestations are small, usually occurring along stream courses. Its spread is slow, but steady, and biological control agents, while showing promise of control, have not yet proven consistent. Nationwide, leafy spurge infests close to three million acres of land in 29 states. Economic losses in North Dakota alone exceed $14.4 million annually due to reduced forage production and use, and control costs. Because cattle will not graze in areas with a 10 percent to 20 percent leafy spurge cover, the weed reduces carrying capacity of infected rangeland to near zero.

D. References For More Information

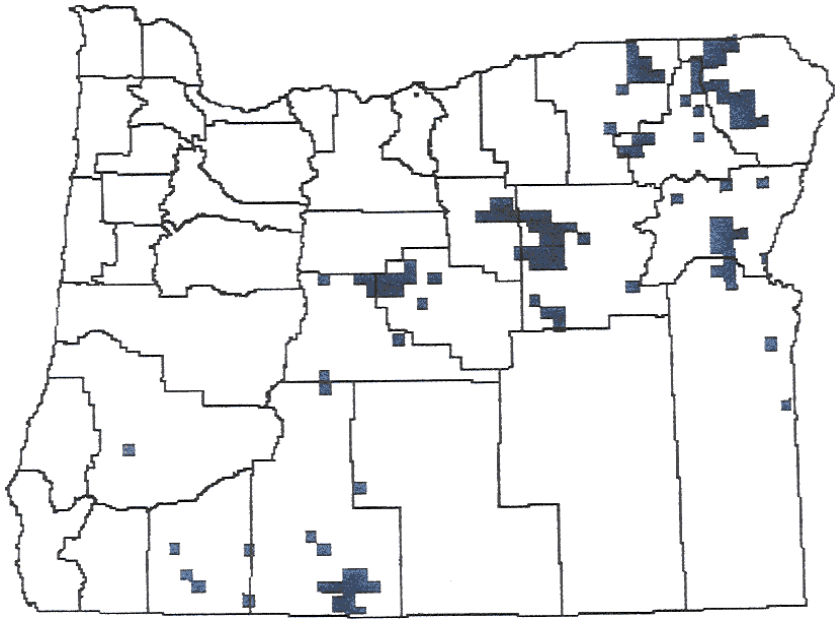
Best, K. F., G.G. Bowes, A.G. Thomas and M.G. Maw. "The biology of Canadian weeds, 39. Euphorbia esula L." *Canadian Journal of Plant Science*. Vol. 60:651-653. 1980.

Lajeunesse, Sherry, Roger Sheley, Celestine Duncan, and Rodney Lym. Leafy Spurge. Pp 249-260. In: Sheley, Roger L. and Janet K. Petroff (eds.). Biology and Management of Noxious Rangeland Weeds. Oregon State University Press. Corvallis, Oregon. 1999.

Figure A.21
Leafy Spurge

Source: Photo by Roger Sheley. Montana State University.

Figure A.22
Oregon Leafy Spurge 1999



A8. RUSH SKELETONWEED

A. Description

Rush skeletonweed (Chondrilla juncea) is a deep-rooted herbaceous perennial plant of the sunflower family closely related to chicory. It has yellow flowers which produce seeds which are wind-dispersed. It has the ability to invade both crop and rangelands throughout the western United States. Cool winters and warm summers with winter and spring rainfall are optimum conditions for the growth and reproduction of rush skeletonweed. Rush skeletonweed is known to have a high degree of genetic diversity, and it has the potential to dominate a wide range of productive crop and grazing lands.

B. Native Area/Arrival In The U.S.

Rush skeletonweed is native to Asia and the Mediterranean region, including North Africa. It was first reported in the United States near Spokane, Washington, in 1938. It was found in Idaho during the 1960's, and in Oregon in the early 1970's. It likely arrived in the U.S. as a contaminant of seed or other imported agricultural commodities.

C. Current Status

While the first discovery of rush skeletonweed was in Douglas County in Oregon, a greater concern was with its discovery in counties along the Columbia River and in other parts of eastern Oregon. The number of individual infestations in small grain-producing areas has steadily increased, and established areas in rangelands are increasing. There is some indication that the establishment of three biological control agents may have slowed the invasion into Oregon.

Rush skeletonweed currently infests more than 6.2 million acres of rangeland in the Pacific Northwest and California. Overall infested acreage within this region is increasing, and invasion into rangeland areas is supported largely by wind dispersal. At one time, rush skeletonweed reduced wheat yield 80 percent in southeastern Australia until its impact was reduced by the effects of three different biological control agents.

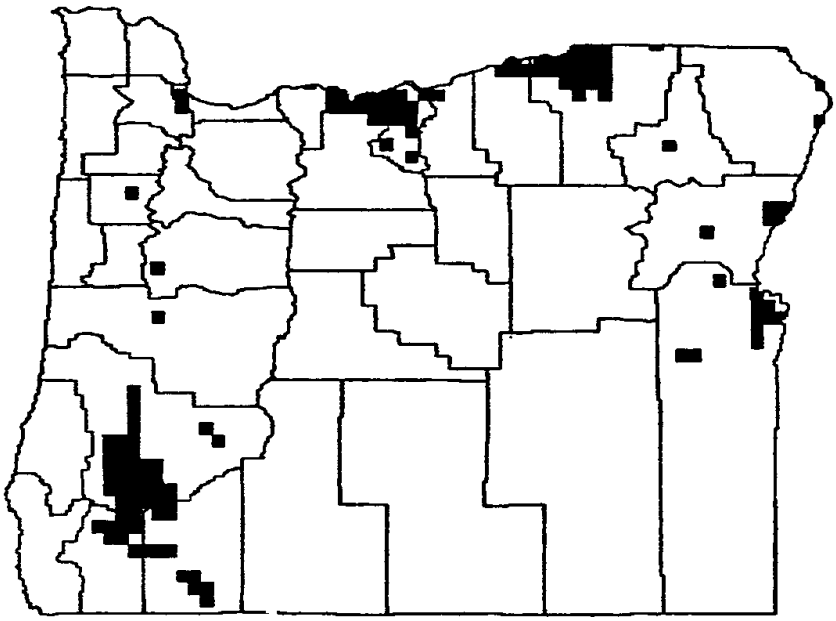
D. References For More Information

Sheley, Roger L., Joseph M. Hudak, and Robert T. Grubb. Rush Skeletonweed. Pp 308-314. In: Sheley, Roger L. and Janet K. Petroff (eds.). Biology and Management of Noxious Rangeland Weeds. Oregon State University Press. Corvallis, Oregon. 1999.

Figure A.23
Rush Skeletonweed

Source: Photo by Roger Sheley. Montana State University.

Figure A.24
Rush Skeletonweed



A9. PURPLE LOOSESTRIFE

A. Description

Purple loosestrife (Lythrum salicaria) is a tall (to six feet or more) perennial that invades wetland areas. Its purple flowers mature to capsules containing many very small seeds which are dispersed extensively by water movement. Purple loosestrife reduces the diversity of native wetland ecosystems by crowding out wildlife-supporting native vegetation, such as cattails and rushes. Songbirds do not eat the small seeds of purple loosestrife. Muskrats cannot use it for food or shelter. Waterfowl are negatively affected when dense, impenetrable stands of purple loosestrife eliminate nesting sites and open water. Its thick, molted root system can rapidly fill irrigation ditches, decreasing water flow and increasing maintenance costs.

B. Native Area/Arrival In The U.S.

Purple loosestrife comes from Europe and Asia. It was introduced into North America from Europe in the early 1800's as horticultural stock and as a contaminant of ship ballast. Purple loosestrife was well established along the New England seaboard by the 1830's, and spread into vast stretches of interior drainage basins. As agricultural settlements moved west, wetlands, watersheds, and forests were cleared for cropland and pasture. This provided the disturbance and stress to native wetlands that allowed invasion by purple loosestrife. The range of purple loosestrife has greatly expanded since 1941. The northern Midwest is almost completely colonized. The most dramatic expansion, however, has been in the arid west.

C. Current Status

Oregon now has more than 30 individual infestations of purple loosestrife, most of which are small and cause negligible harm. The numbers of new infestations seems to have slowed with increased public awareness of the potential of this plant to do harm and with the implementation of a quarantine against the sale of plants or seed. Quarantines have been implemented in other western states as well, and invasion into the West is further slowed by the effect of newly-established biological control agents.

D. References For More Information

Malecki, R.A., B. Bossey, S.D. Hight, J.J. Drea and J.R. Coulson. "Biological Control of Purple Loosestrife." *Bioscience*. Vol. 43:680-686. 1993.

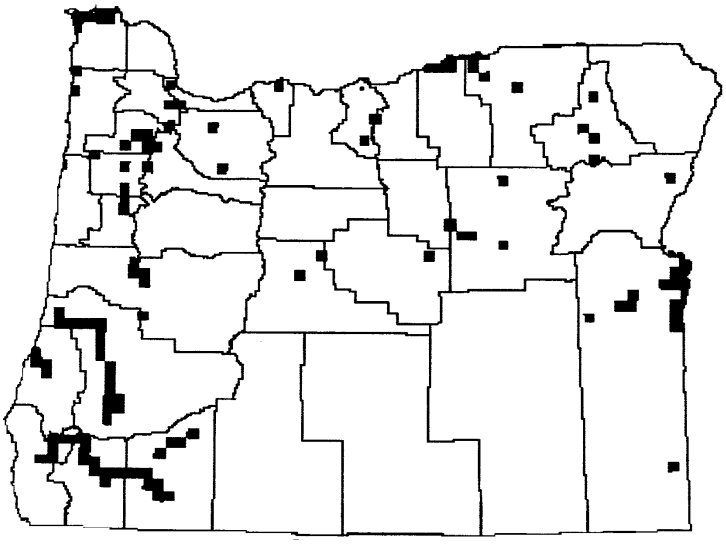
Mullin, Barbara. Purple Loosestrife. Pp 298-307. In: Sheley, Roger L. and Janet K. Petroff (eds.). Biology and Management of Noxious Rangeland Weeds. Oregon State University Press. Corvallis, Oregon. 1999.

Thompson, L.Q., R.L. Stuckey and E.B. Thompson. Spread, Impact and Control of Purple Loosestrife (Lythrum salicaria) in North American Wetlands. U.S. Fish and Wildlife Service. Fish and Wildlife Research 2. 1987.

Figure A.25
Purple Loosestrife

Source: Photo by R. D. Richard. USDA-APHIS. Bozeman, MT.

Figure A.26
Oregon Purple Loosestrife



A10. WHITE TOP AND PERENNIAL PEPPERWEED

A. Description

White top (Cardaria draba) and perennial pepperweed (Lepidium latifolium) (often called tall white top) are both perennial members of the mustard family. They are well adapted to moist habitats, especially sub-irrigated pastureland, rangeland, roadsides, and ditch banks, but are capable of invading drier rangelands as well. White top contains glucosinolates which can be toxic to cattle. Like many noxious weeds, these species dramatically reduce biodiversity and forage production, and displace native plant communities. They also have the potential to invade cropland; especially lands under irrigation. White top is a serious problem in small grain and hay production, where control options are limited and expensive.

B. Native Area/Arrival In The U.S.

These noxious weeds probably both arrived in North America in contaminated alfalfa seed. White top is native to the former U.S.S.R., northern Iran, and Afghanistan, and can be found in Argentina and many other parts of North America.

C. Current Status

White top infestations are most serious in northern Malheur and Baker Counties in eastern Oregon, but serious infestations are found in several other counties. Both the size and the number of individual infestations are increasing. As serious weeds in other western states, white top has been targeted for biological control, but these weeds are closely related to both important domestic crop plants and rare native plants, therefore limiting the prospects for success.

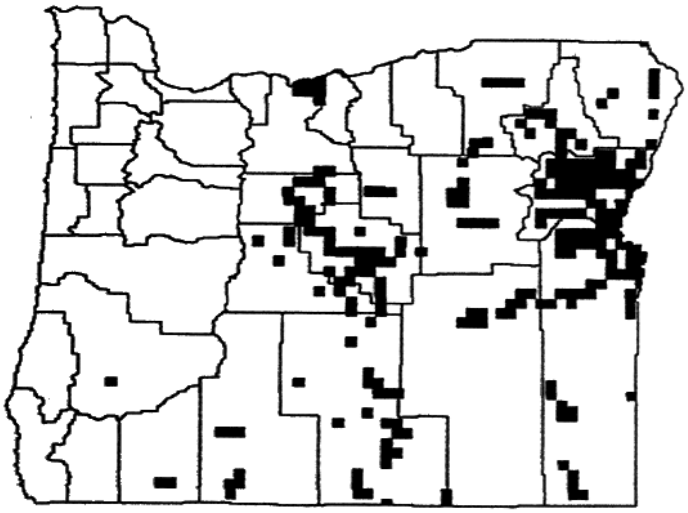
D. References For More Information

Sheley, Roger and Jack Stevens. Whitetop. Pp 401-407. In: Sheley, Roger L. and Janet K. Petroff (eds.). Biology and Management of Noxious Rangeland Weeds. Oregon State University Press. Corvallis, Oregon. 1999.

Figure A.27
White Top

Source: Photo by Roger Sheley. Montana State University.

Figure A.28
White Top and Perennial Pepperweed



A11. SCOTCH THISTLE

A. Description

Scotch thistle (Onopordum acanthium) is a biennial plant, living for two growing seasons. They germinate and grow into rosettes in their first year and spend the winter in this growth stage. In their second year, rosettes resume growth in early spring, then bolt in mid–to–late spring, set seed, and die by summer's end. Scotch thistle reproduces only from seeds. Sharp spines deter livestock and wildlife from grazing. Scotch thistle is found frequently in disturbed or degraded pastures and rangeland where it decreases livestock carrying capacity and weight gains. These biennial thistles also occur in other disturbed areas such as along trails, roadsides, and on abandoned cropland.

B. Native Area/Arrival In The U.S.

Scotch thistle is native to Europe and Asia. It was introduced into the eastern United States in the late 1800's, and is now found in most western states, occupying sites characterized by high soil moisture, especially in dry climates, such as bottoms of swales, gullies, draws, and roadside borrow pits.

C. Current Status

Infestations in Oregon are most prevalent in Baker and Malheur Counties, but sizable infestations occur in other Oregon counties as well. Its range is increasing, and California stockmen are concerned with developing infestations in areas near the Oregon-California border. Scotch thistle is listed as noxious in seven western states.

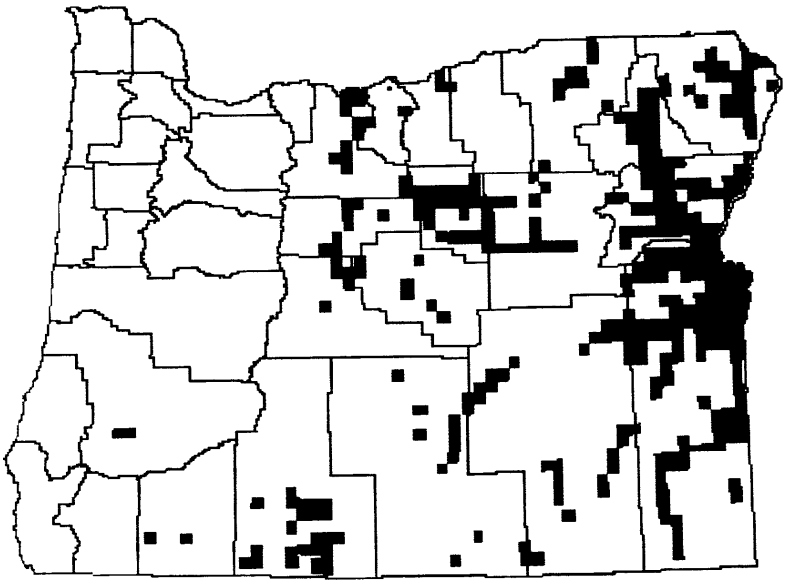
D. References For More Information

Beck, George K. Biennial Thistles. Pp 145-161. In: Sheley, Roger L. and Janet K. Petroff (eds.). Biology and Management of Noxious Rangeland Weeds. Oregon State University Press. Corvallis, Oregon. 1999.

Figure A.29
Biennial Thistles - Scotch Thistle

Source: Photo by K. George Beck. Colorado State University.

Figure A.30
Oregon Scotch Thistle 1999



A12. MEDITERRANEAN SAGE

A. Description

A member of the mint family, Mediterranean sage (Salvia aethiopis) has stiff square stems often said to form into candelabra shape. It typically grows as a biennial, and while it is not toxic to livestock, it is unpalatable to most grazing animals. Its leaves are covered with dense fine hairs, sometimes giving them a slivery appearance. Its presence reduces the value of grazing lands because it is unpalatable to grazing animals and wildlife, reducing forage production on rangeland and pasture. Once established, Mediterranean sage is able to spread into non-disturbed land, but is not normally found in pristine habitats. After maturing, the plant often breaks off at the ground surface and rolls with the wind, dispersing seed and frustrating containment efforts.

B. Native Area/Arrival In The U.S.

Native to the northern and eastern Mediterranean region, Mediterranean sage has invaded shrub steppe rangelands in six western states since it was introduced to California in the 1890's. In the hundred years after its introduction around 1892, it has spread to eight western states.

C. Current Status

In Oregon, Mediterranean sage was present in Lake County by the 1920's, and the largest infestations still occupy southern Lake County. The overall infested area in Oregon is estimated at 1,300,000 acres. Disturbances such as livestock grazing and trampling, off-road vehicles, and logging increase a site's susceptibility to invasion. Establishment of competitive grasses, coupled with proper grazing management and a crown-mining weevil, contribute to long term reduction of Mediterranean sage populations.

D. References For More Information

Roché, Cindy Talbott, and Linda M. Wilson. Mediterranean Sage. Pp 261-270. In: Sheley, Roger L. and Janet K. Petroff (eds.). Biology and Management of Noxious Rangeland Weeds. Oregon State University Press. Corvallis, Oregon. 1999.