

Oregon Department of Agriculture
Plant Pest Risk Assessment for
Spanish Heath, *Erica lusitanica*
2009 (Revised 2011)

Names: Spanish heath, Portuguese heath, Spanish heather, *Erica lusitanica*
Family: Heather, *Ericaceae*

Findings of This Review and Assessment: Spanish heath, *Erica lusitanica*, was evaluated and determined to be a category “**A**” rated noxious weed, as defined by the Oregon Department of Agriculture (ODA) Noxious Weed Policy and Classification System. This determination was based on a literature review and analysis using two ODA evaluation forms. Using the Noxious Qualitative Weed Risk Assessment v.3.8, Spanish heath scored **56** indicating a Risk Category of **A**; and a score of **17** with the Noxious Weed Rating System v.3.2, indicating an “**A**” rating.

Introduction: Spanish heath is a weedy ornamental of the *Erica* species known from only a few sites in Curry, Coos, and Benton Counties in Oregon. First established in Oregon in the 1970’s, at a rare plant nursery near Langlois, it spread slowly for decades until recently. Now its population is increasing exponentially (Stansell, McKenzie 2008 pers. comm). Growing up to 10’ tall, this species produces up to 9 million seeds per plant (Weeds of Australia, 2007) and is capable of forming dense stands in forest lands, wild areas, pastureland and on right-of-ways and will be a troublesome weed to control, should it be allowed to spread in western Oregon. Spanish heath has infested large areas in



Spanish heath shrubs, photo by Ken French, ODA

Northern California (Humboldt, Del Norte Counties) and has the potential to infest similar habitat in Oregon and Washington. It is well adapted to moist, acidic soils and could infest shrub and forest habitats along the coastal belt and in the Willamette Valley foothills. In California, it is commonly found growing in close association with gorse, Scotch, French broom, and Armenian blackberry, especially along utility right of ways, riparian areas and roadsides (Wood, 2008).

Growth Habits, Reproduction and Spread: Spanish heath is a woody, upright, perennial evergreen shrub, (tree heather) growing up to 10 feet tall. Leaves are light green, needle like, 3-7 mm long and arranged around the stem in groups (whorls) of three to four. Blooms are a showy mass of small, white to pink, bell (tubular) shaped flowers, with 3 bracts, 4 sepals and a corolla. Plants begin flowering in December and continue until April. Fruit are smooth capsules about 1/8” diameter containing many, very fine pepper sized seeds. Large plants produce millions of easily transported seeds. These seeds may be wind, water, animal or human transported. Spread could be expected to be rapid.

Factors that Effect Establishment and Spread in Oregon: Human activities such as right-of-way maintenance, logging, livestock movement and the non-commercial ornamental plant trade can transport seeds and plants long distances away from parent populations. Disturbed ground provides an excellent growth medium of the tiny seeds. Drought tolerance and a lack of herbivory can allow for unrestricted growth throughout its life cycle. An abundance of growing season moisture provides an opportunity for rapid growth and dominance on a site. It is fortunate that the plant is tall and showy and easily detected by a diversity of land managers, right-of-way maintenance personnel and private landowners.

Probability of Detection: Spanish heath is showy and easy to identify. The public and weed professionals can easily locate and report outbreaks.

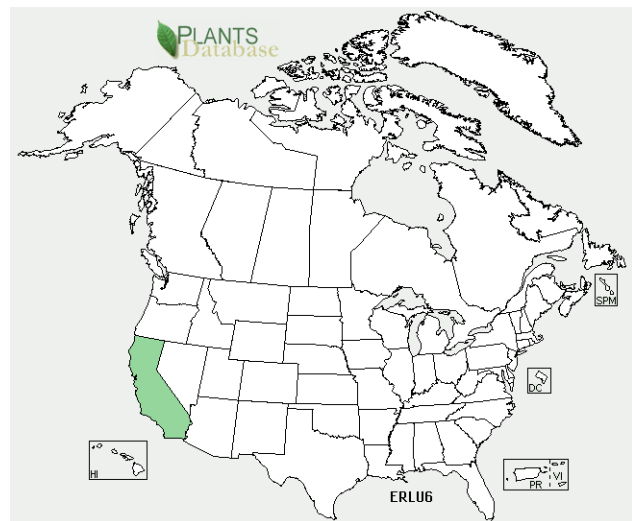
Reproductive Potential after Establishment: With abundant germination moisture, large numbers of heath germinate and establish.

Native Range: Spanish heath is from southwest France, north and western Spain and Portugal. It will grow in most soils and especially prefers acidic conditions.

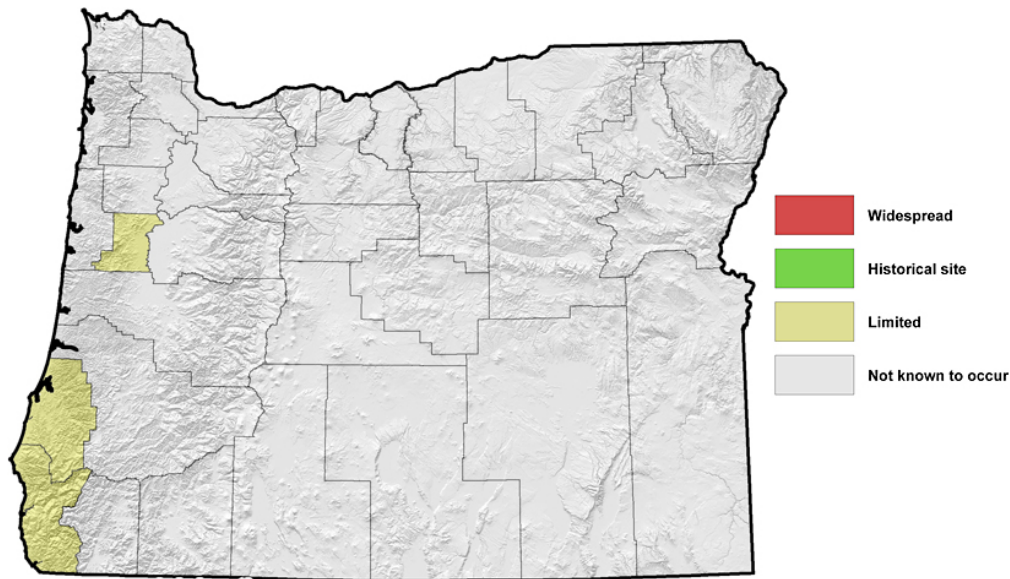


*Spanish heath in Oregon,
photo by Ken French, ODA*

Distribution in North America: It does not occur naturally on the American continent, or the vast majority of Asia, but has naturalized in parts of Australia and New Zealand where it is now viewed as a major environmental weed (The Heather Society, 2007). The weed has only been found at seven sites in Oregon with none reported in Washington. California infestations are centered in Humboldt County (especially the Trinidad area) where it is an “A” rated weed, with infestations being reported both in Del Norte and Mendocino Counties. Infestations in Oregon can be traced back to the 1970’s when it was planted at Stricker’s Rare Plant Nursery (now closed) north of Langlois near the Curry/Coos County line. Escaped populations have spread from there approximately 4 miles south and 2 miles north, also west and east. A separate, small infestation has been confirmed near Nesika Beach, north of Gold Beach.



US distribution of Spanish heath on Plants Database



2011 Spanish heath

Oregon's Spanish heath distribution on WeedMapper

Positive Economic Impacts:

Historically the plant was believed to possess medicinal properties. The name *Erica* derives from the Greek word *ereiko* meaning to break. This terminology may originate from the theory that the plant could dissolve gallstones; alternatively, it may refer to the fact that the stems are easily broken. (The Heather Society, 2007) The only positive economic benefit is associated with its harvest by the floral industry for use in arrangements mainly around Valentines Day. No other economic use has been noted.

Negative Economic Impacts: Because of the experience of land managers in Australia and New Zealand under similar conditions, significant impacts to Oregon's wild lands, forestlands, pasture and right-of-way could occur. Competition from Spanish heath could significantly impact forest regeneration and productivity, especially in Coos and Curry County. Pasture productivity would suffer as edible forage becomes out-competed by this less desirable shrub. Right-of-way maintenance costs would increase in infested areas. Mowing has no long-term impact on the species, and the high seed output would quickly establish dense stands blocking access roads for power lines, reducing line-of-sight on public highways, and increasing the opportunity for roadside fires in areas where herbicide use is restricted. In the cranberry growing region of southwestern Oregon, Spanish heath favors the open ground, dikes and access roads near cranberry bogs. Increased herbicide use would be required to maintain existing open ground and infrastructure. In all susceptible areas, control costs to contain or eradicate populations would be significant.

Ecological impacts: In parts of Australia and New Zealand, Spanish heath is a major environmental weed (State of Victoria, 2001). Impacts to parks, wildland and wildlife refuges result from the aggressive growth and competition provided by the plant. In California, Spanish heath is a weed of wild land and forest where it forms dense stands, especially in disturbed areas. It provides limited forage for grazing animals and few insects so it grows rapidly with limited herbivore pressure. Other impacts can include reductions in native plant diversity, invasion of riparian areas, competition with conifer and broadleaf tree species and overall degradation of the land base. Currently, Spanish heath infestations in Oregon are rare and impacts are minimal.

Control: Clipping, mowing or cutting can prevent seed loss, but does not kill plants. Plants respond to mowing by spreading horizontally through stem rooting and root stolon development, forming thick mats of vegetation. Because stems break easily, pulling is difficult and largely ineffective though digging may help remove small infestations. Herbicides can be a good tool, but are not a perfect solution. Repeat applications may be needed over a period of several years. Because of Spanish heath's aggressive nature and difficulty of control, it should be given a high priority for prevention, control, and eradication when encountered.

Noxious Weed Qualitative Risk Assessment

Oregon Department of Agriculture

Common name: Squarrose knapweed
Scientific name: *Centaurea virgata*
Family: Sunflower, *Asteraceae*

For use with plant species that occur or may occur in Oregon and to determine their potential to become serious noxious weeds. For each of the following categories, select the number that best applies. Numerical values are weighted to increase priority categories over less important ones. Choose the best number that applies, intermediate scores can be used.

Total Score: 62 Risk Category: A

GEOGRAPHICAL INFORMATION

1) 6 Invasive in Other Areas

- 0 Low- not known to be invasive elsewhere.
- 2 Known to be invasive in climates dissimilar to Oregon's current climates.
- 6 Known to be invasive in geographically similar areas.

Comments: Known to be invasive in climates similar to Oregon

2) 6 Habitat Availability: Are there susceptible habitats for this species and how common or widespread are they in Oregon?

- 1 *Low* – Habitat is very limited, usually restricted to a small watershed or part of a watershed (e.g., tree fern in southern Curry County).
- 3 *Medium* – Habitat encompasses 1/4 or less of Oregon (e.g., oak woodlands, coastal dunes, eastern Oregon wetlands, Columbia Gorge).
- 6 *High* – Habitat covers large regions or multiple counties, or is limited to a few locations of high economic or ecological value (e.g., threatened and endangered species habitat).

Comments: Capable of successfully invading most of eastern and southwestern Oregon regions.

3) 0 Proximity to Oregon: What is the current distribution of the species?

- 0 *Present* – Occurs within Oregon.
- 1 *Distant* – Occurs only in distant US regions or foreign countries.
- 3 *Regional* – Occurs in Western regions of US but not adjacent to Oregon border.
- 6 *Adjacent* – Weedy populations occur adjacent (<50 miles) to Oregon border.

Comments: Occurs within Oregon.

4) 10 Current Distribution: What is the current distribution of escaped populations in Oregon?

- 0 *Not present* – Not known to occur in Oregon.
- 1 *Widespread* – Throughout much of Oregon (e.g., cheatgrass).
- 5 *Regional* – Abundant (i.e., occurs in eastern, western, central, coastal, areas of Oregon) (e.g., gorse, tansy ragwort).
- 10 *Limited* – Limited to one or a few infestations in state (e.g., kudzu).

Comments: Limited to one established infestation in the state.

BIOLOGICAL INFORMATION

- 5) 2 **Environmental Factors:** Do abiotic (non-living) factors in the environment effect establishment and spread of the species? (e.g., precipitation, drought, temperature, nutrient availability, soil type, slope, aspect, soil moisture, standing or moving water).
- 1 *Low* – Severely confined by abiotic factors.
 - 2 *Medium* – Moderately confined by environmental factors
 - 4 *High* – Highly adapted to a variety of environmental conditions (e.g., tansy ragwort, Scotch broom).

Comments: Moderately confined by environmental factors. Prefers dryer conditions and well-drained soils.

- 6) 5 **Reproductive Traits:** How does this species reproduce? Traits that may allow rapid population increase both on and off site.
- 0 *Negligible* – Not self-fertile, or is dioecious and opposite sex not present.
 - 1 *Low* – Reproduction is only by seed, produces few seeds, or seed viability and longevity are low.
 - 3 *Medium* – Reproduction is vegetative (e.g., by root fragments, rhizomes, bulbs, stolons).
 - 3 *Medium* – Produces many seeds, and/or seeds of short longevity (< 5 years).
 - 5 *High* – Produces many seeds and/or seeds of moderate longevity (5-10 years) (e.g., tansy ragwort).
 - 6 *Very high* – Has two or more reproductive traits (e.g., seeds are long-lived >10 years and spreads by rhizomes).

Comments: Produces many seeds of moderate longevity.

- 7) 3 **Biological Factors:** Do biotic (living) factors restrict or aid establishment and spread of the species? (What is the interaction of plant competition, natural enemies, native herbivores, pollinators, and pathogens with species?)
- 0 *Negligible* – Host plant not present for parasitic species.
 - 1 *Low* – Biotic factors highly suppress reproduction or heavily damage plant for an extended period (e.g., biocontrol agent on tansy ragwort).
 - 2 *Medium* – Biotic factors partially restrict or moderately impact growth and reproduction, impacts sporadic or short-lived.
 - 4 *High* – Few biotic interactions restrict growth and reproduction. Species expresses full growth and reproductive potential.

Comments: Moderately limited by biological factors. Grass competition can restrict density.

- 8) 3 **Reproductive Potential and Spread After Establishment - Non-human Factors:** How well can the species spread by natural means?
- 0 *Negligible* – No potential for natural spread in Oregon (e.g., ornamental plants outside of climate zone).
 - 1 *Low* – Low potential for local spread within a year, has moderate reproductive potential or some mobility of propagules (e.g., propagules transported locally by animals, water movement in lakes or ponds, not wind blown).
 - 3 *Medium* - Moderate potential for natural spread with either high reproductive potential or highly mobile propagules (e.g., propagules spread by moving water, or dispersed over longer distances by animals) (e.g., perennial pepperweed).
 - 5 *High* – Potential for rapid natural spread throughout the susceptible range, high reproductive capacity and highly mobile propagules. Seeds are wind dispersed over large areas (e.g., rush skeletonweed).

Comments: Comments: Wind and water dispersed and by animals locally.

- 9) 5 **Potential of Species to be Spread by Humans.** What human activities contribute to spread of species? Examples include: interstate or international commerce; contaminated commodities; packing materials or products; vehicles, boats, or equipment movement; logging or farming; road maintenance; intentional introductions of ornamental and horticultural species, or biofuel production.
- 1 *Low* – Potential for introduction or movement minimal (e.g., species not traded or sold, or species not found in agricultural commodities, gravel or other commercial products).
 - 3 *Medium* – Potential for introduction or off-site movement moderate (e.g., not widely propagated, not highly popular, with limited market potential; may be a localized contaminant of gravel, landscape products, or other commercial products) (e.g., lesser celandine, Canada thistle).
 - 5 *High* – Potential to be introduced or moved within state high (e.g., species widely propagated and sold; propagules common contaminant of agricultural commodities or commercial products; high potential for movement by contaminated vehicles and equipment, or by recreational activities) (e.g., butterfly bush, spotted knapweed, Eurasian watermilfoil).

Comments: High potential to be moved by human activities.

IMPACT INFORMATION

- 10) 7 **Economic Impact:** What impact does/can the species have on Oregon's agriculture and economy?
- 0 *Negligible* – Causes few, if any, economic impacts.
 - 1 *Low* - Potential to, or causes low economic impact to agriculture; may impact urban areas (e.g., puncture vine, pokeweed).
 - 5 *Medium* – Potential to, or causes moderate impacts to urban areas, right-of-way maintenance, property values, recreational activities, reduces rangeland productivity (e.g., English ivy, Himalayan blackberry, cheatgrass).
 - 10 *High* – Potential to, or causes high impacts in agricultural, livestock, fisheries, or timber production by reducing yield, commodity value, or increasing production costs (e.g., gorse, rush skeleton weed, leafy spurge).

Comments: Has impacts on rangeland productivity and hay quality and yields. Also seed contaminant.

- 11) 4 **Environmental Impact:** What risks or harm to the environment does this species pose? Plant may cause negative impacts on ecosystem function, structure, and biodiversity of plant or fish and wildlife habitat; may put desired species at risk.
- 0 *Negligible* – None of the above impacts probable.
 - 1 *Low* – Can or does cause few or minor environmental impacts, or impacts occur in degraded or highly disturbed habitats.
 - 4 *Medium* – Species can or does cause moderate impacts in less critical habitats (e.g., urban areas, sagebrush/ juniper stands).
 - 6 *High* – Species can or does cause significant impacts in several of the above categories. Plant causes severe impacts to limited or priority habitats (e.g., aquatic, riparian zones, salt marsh; or T&E species sites).

Comments: Can compete successfully in dryer climates for water and nutrients.

- 12) 1** **Impact on Health:** What is the impact of this species on human, animal, and livestock health? (e.g., poisonous if ingested, contact dermatitis, acute and chronic toxicity to livestock, toxic sap, injurious spines or prickles, causes allergy symptoms).
- 0 *Negligible* – Has no impact on human or animal health.
 - 2 *Low* – May cause minor health problems of short duration, minor allergy symptoms (e.g., leafy spurge).
 - 4 *Medium* – May cause severe allergy problems, death or severe health problems through chronic toxicity, spines or toxic sap may cause significant injury. (e.g., giant hogweed, tansy ragwort).
 - 6 *High* – Causes death from ingestion of small amounts, acute toxicity (e.g. poison hemlock).

Comments: Seedheads may cause physical injury to sheep and other livestock.

CONTROL INFORMATION

- 13) 8** **Probability of Detection at Point of Introduction:** How likely is detection of species after introduction and naturalization in Oregon?
- 1 *Low* – Grows where probability of early detection is high, showy and easily recognized by public; access to habitat not restricted (e.g., giant hogweed).
 - 5 *Medium* – Easily identified by weed professionals, ranchers, botanists; some survey and detection infrastructure in place. General public may not recognize or report species (e.g., leafy spurge).
 - 10 *High* – Probability of initial detection by weed professionals low. Plant shape and form obscure, not showy for much of growing season, introduction probable at remote locations with limited access (e.g., weedy grasses, hawkweeds, skeletonweed).

Comments: Not a showy plant, similar in appearance to diffuse knapweed. May not be identified for years in remote locations.

- 14) 2** **Control Efficacy:** What level of control of this species can be expected with proper timing, herbicides, equipment, and biological control agents?
- 1 *Negligible* – Easily controlled by common non-chemical control measures (e.g., mowing, tillage, pulling, and cutting; biocontrol is very effective at reducing seed production and plant density) (e.g., tansy ragwort).
 - 2 *Low* – Somewhat difficult to control, generally requires herbicide treatment (e.g., mechanical control measures effective at preventing flowering and but not reducing plant density; herbicide applications provide a high rate of control in a single application; biocontrol provides partial control).
 - 4 *Medium* – Treatment options marginally effective or costly. Tillage and mowing increase plant density (e.g., causes tillering, rapid regrowth, spread from root fragments). Chemical control is marginally effective. Crop damage occurs or significant non-target impacts result from maximum control rates. Biocontrol agents ineffective.
 - 6 *High* – No effective treatments known or control costs very expensive. Species may occur in large water bodies or river systems where containment and complete control are not achievable. Political or legal issues may prevent effective control.

Comments: Herbicides primarily used for control.

Category Scores:

22 Geographic score (Add scores 1-4)

18 Biological Score (Add lines 5-9)

12 Impact Score (Add lines 10-12)

10 Control Score (Add Lines 13-14)

62 Total Score (Add scores 1-14 and list on front of form)

Risk Category: 55-89+ = **A** 24-54 = **B** < 24 = unlisted.

This Risk Assessment was modified by ODA from the USDA-APHIS Risk Assessment for the introduction of new plant species.

1/15/2013 v.3.8

Oregon Department of Agriculture
Noxious Weed Rating System

Common Name: Squarrose knapweed
Scientific Name: *Centaurea virgata*

Points: 17 **Rating: A**

- 1) **3** **Detrimental Effects:** Circle all that apply, enter number of circles.
1. *Health:* causes poisoning or injury to humans or animals
2. *Competition:* strongly competitive with crops, forage, or native flora
3. *Host:* host of pathogens and/or pests of crops or forage
4. *Contamination:* causes economic loss as a contaminate in seeds and/or feeds
5. *Interference:* interferes with recreation, transportation, harvest, land value, or wildlife and livestock movement
- 2) **3** **Reproduction & Capacity for Spread:** Circle the number that best describes, enter that number.
1. Few seeds, not wind blown, spreads slowly
2. Many seeds, slow spread
3. Many seeds, spreads quickly by vehicles or animals
4. Windblown seed, or spreading rhizomes, or water borne
5. Many wind-blown seeds, high seed longevity, spreading rhizomes, perennials
- 3) **3** **Difficulty to Control:** Circle the number that best describes, enter that number.
1. Easily controlled with tillage or by competitive plants
2. Requires moderate control, tillage, competition or herbicides
3. Herbicides generally required, or intensive management practices
4. Intensive management generally gives marginal control
5. No management works well, spreading out of control
- 4) **5** **Distribution:** Circle the number that best describes, enter that number.
1. Widely distributed throughout the state in susceptible habitat
2. Regionally abundant, 5 or more counties, more than 1/2 of a county
3. Abundant throughout 1- 4 counties, or 1/4 of a county, or several watersheds
4. Contained in only 1 watershed, or less than 5 square miles gross infestation
5. Isolated infestation less than 640 acres, more than 10 acres
6. Occurs in less than 10 acres, or not present, but imminent from adjacent state
- 5) **3** **Ecological Impact:** Circle the number that best describes, enter that number.
1. Occurs in most disturbed habitats with little competition
2. Occurs in disturbed habitats with competition
3. Invades undisturbed habitats and crowds out native species
4. Invades restricted habitats (i.e. riparian) and crowds out native species

17 TOTAL POINTS

Note: Noxious weeds are non-native plants with scores of 11 points or higher. Any plants in 4.1, 4.2, and 4.3 should not be classified as “A” rated weeds. *Ratings:* 16+ = A, 15 – 11 = B
ODA Weed Rating System 8/30/2012 v.3.2

RA produced by Ken French, ODA, 2009
Edited by: Glenn Miller, ODA, 2011

References:

[Anonymous] Wild Heathers: Erica. The Heather Society. 2007 www.users.zetnet.co.uk/heather

[Anonymous] Weeds Australia, Weed Identification, Australia National Weeds Strategy, 2007
www.weeds.org.au/nws.htm

Heath Control, Spanish Heath, Pest Plant Manual #16 Taranaki Regional Council, New Zealand
<http://www.trc.govt.nz/environment/plants/pest+plants.htm>

McKenzie, Rick. Rancher, New Lake/Langlois area 2008 personal communication.

PLANTS Profile for Erica lusitanica (Spanish heath) USDA PLANTS
plants.usda.gov/java/profile?symbol=ERLU6

Stansell, Viva. USFS Botanist retired, Gold Beach, 2008 letter.

State of Victoria, Department of Primary Industries, A-Z of Weeds: Spanish Heath, Coast /Action
Coastcare Aug 2001 <http://www.dpi.vic.gov.au/dpi/index.htm>

Wood, Wendell, 2008 personal communication.

Appendix A

