

Part IV. Plant Assessment Form

For use with “Criteria for Categorizing Invasive Non-Native Plants that Threaten Wildlands”
by the California Exotic Pest Plant Council and the Southwest Vegetation Management Association

Table 1. Species and Evaluator Information

Species name (Latin binomial):	Spartium junceum
Synonyms:	
Common names:	Spanish broom
Evaluation date (mm/dd/yy):	3/9/2004
Evaluator #1 Name/Title:	Carla Bossard
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Evaluator #2 Name/Title:	enter text here
Affiliation:	enter text here
Phone numbers:	enter text here
Email address:	enter text here
Address:	enter text here

Section below for list committee use—please leave blank

List committee members:	Cynthia Roye, Carla Bossard, Doug Johnson, Joe DiTomaso, Jake Sigg, Alison Stanton, Matt Brooks, Peter Warner.
Committee review date:	March 19, 2004
List date:	enter text here
Re-evaluation date(s):	enter text here

Table 2. Criteria, Section, and Overall Scores

1.1	Impact on abiotic ecosystem processes	A	Rev'd, Sci. Pub'n
1.2	Impact on plant community	B	Rev'd, Sci. Pub'n
1.3	Impact on higher trophic levels	B	Other Pub. Mat'l
1.4	Impact on genetic integrity	D	Rev'd, Sci. Pub'n

“Impact”
 Enter four characters from Q1.1-1.4 below:
ABAD
 Use matrix determine the score; enter below:
A

2.1	Role of anthropogenic and natural disturbance	B 2	Rev'd, Sci. Pub'n
2.2	Local rate of spread with no management	A 3	Observational
2.3	Recent trend in total area infested within state	B 2	Observational
2.4	Innate reproductive potential	A 3	Rev'd, Sci. Pub'n
2.5	Potential for human-caused dispersal	B 2	Observational
2.6	Potential for natural long-distance dispersal	B 2	Rev'd, Sci. Pub'n
2.7	Other regions invaded	C 1	Other Pub. Mat'l

“Invasiveness”
 For questions at left, recall that an A gets 3 points, a B gets 2, a C gets 1, and a D or U gets=0. Enter the sum total of all points for Q2.1-2.7 below:
15
 Use matrix to determine score and enter below:
B

“Plant Score”
 Using matrix, determine the Overall Score and Alert Status from the three section scores and enter them below:
High
No Alert

3.1	Ecological amplitude	A	Other Pub. Mat'l
3.2	Distribution	C	Observational

“Distribution”
 Use matrix determine the score; enter below:
B

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes
Identify ecosystem processes impacted: A. changes soil chemistry and fire intensity of ecosystems.
Rationale: A. A nitrogen fixer that changes soil chemistry and adds large amounts of flammable fuel load that can change fire intensity of ecosystems
Sources of information: Nilsen, E.T. and S Semones. 1997. Comparison of variance in quantitative growth and physiological traits between genets and ramets derived from an invasive weed, <i>Spartium junceum</i> (Fabaceae). 168:827-834. Rejmanek, M and J. Randall. 1994. Invasive alien plants in California: 1993 summary and comparison with other areas in North America. <i>Madrono</i> .41:161-177. State Noxious Weed Control Board. 2003. Spanish Broom (<i>Spartium junceum</i> L.) http://www.nwcb.wa.gov/weed_info/spanishbroom.html McClintock, E..1979. The weedy brooms-where did they come from? <i>Freemontia</i> .6:15-17 Nilsen, E.T. 2000. <i>Spartium junceum</i> in Bossard, Randall and Hoshovsky, eds. <i>Invasive Plants of California's Wildlands</i> . U. C. Press, Berkeley, CA. P. 306-309. Nilsen, E. T. and D. Karpa. 1994. Seasonal acclimation of stem photosynthesis in two, invasive, legumes in coastal California. <i>American J. of Botany</i> .80:1126-1136
Question 1.2 Impact on plant community composition, structure, and interactions
Identify type of impact or alteration: B. May reduce biomass and diversity of native species.
Rationale: Can change soil nitrogen dynamics favoring some species over others, blocks light and uses up water resulting in many species becoming locally extinct and forming monospecific stands.,
Sources of information: Nilsen, E.T. and S Semones. 1997. Comparison of variance in quantitative growth and physiological traits between genets and ramets derived from an invasive weed, <i>Spartium junceum</i> (Fabaceae). 168:827-834. Rejmanek, M and J. Randall. 1994. Invasive alien plants in California: 1993 summary and comparison with other areas in North America. <i>Madrono</i> .41:161-177. State Noxious Weed Control Board. 2003. Spanish Broom (<i>Spartium junceum</i> L.) http://www.nwcb.wa.gov/weed_info/spanishbroom.html Nilsen, E.T. 2000. <i>Spartium junceum</i> in Bossard, Randall and Hoshovsky, eds. <i>Invasive Plants of California's Wildlands</i> . U. C. Press, Berkeley, CA. P. 306-309. Nilsen, E. T. and D. Karpa. 1994. Seasonal acclimation of stem photosynthesis in two, invasive, legumes in coastal California. <i>American J. of Botany</i> .80:1126-1136
Question 1.3 Impact on higher trophic levels
Identify type of impact or alteration: reduces forage

Rationale: contains alkaloids, forms stands unaccessable and unpalatable to wildlife
Sources of information: State Noxious Weed Control Board. 2003. Spanish Broom (<i>Spartium junceum</i> L.) http://www.nwcb.wa.gov/weed_info/spanishbroom.html Nilsen, E.T. 2000. <i>Spartium junceum</i> in Bossard, Randall and Hoshovsky, eds. Invasive Plants of California's Wildlands. U. C. Press, Berkeley, CA. P. 306-309.
Question 1.4 Impact on genetic integrity
Identify impacts: D. no known hybridization
Rationale: an outcrosser with no native congeners in California
Sources of information: State Noxious Weed Control Board. 2003. Spanish Broom (<i>Spartium junceum</i> L.) http://www.nwcb.wa.gov/weed_info/spanishbroom.html Nilsen, E.T. 2000. <i>Spartium junceum</i> in Bossard, Randall and Hoshovsky, eds. Invasive Plants of California's Wildlands. U. C. Press, Berkeley, CA. P. 306-309. Nilsen, E.T. and S Semones. 1997. Comparison of variance in quantitative growth and physiological traits between genets and ramets derived from an invasive weed, <i>Spartium junceum</i> (Fabaceae). 168:827-834.
Question 2.1 Role of anthropogenic and natural disturbance in establishment
Describe role of disturbance: B. Disturbance promotes dominance and spread.
Rationale: Favors diturbed habitats such as old fields, road banks, land slides, river islands and post- burn sites. It may persist indefiniatelyand disrupt normal succession. Fire promotes this species.
Sources of information: Nilsen, E.T. 2000. <i>Spartium junceum</i> in Bossard, Randall and Hoshovsky, eds. Invasive Plants of California's Wildlands. U. C. Press, Berkeley, CA. P. 306-309. Nilsen, E.T. and S Semones. 1997. Comparison of variance in quantitative growth and physiological traits between genets and ramets derived from an invasive weed, <i>Spartium junceum</i> (Fabaceae). 168:827-834.
Question 2.2 Local rate of spread with no management
Describe rate of spread: A. Episodic rapid invader.
Rationale: When conditions are suitable it can spread rapidly.
Sources of information: Observation. Stands at Leggett, near Cosumnes River, coastal Southern California

Question 2.3 Recent trend in total area infested within state
Describe trend: increasing
Rationale: B. Increasing rapidly in some areas, especially in the South of California
Sources of information: C. Bossard and J. DiTomaso , observations
Question 2.4 Innate reproductive potential
Describe key reproductive characteristics: A. high (7 points); monoecious, out-crossed, 7000-10000 seeds per plant in a season; effective stem sprouter; seeds viable at least 5 years in soil, probably much longer.
Rationale: see above
Sources of information: Nilsen, E.T. 2000. <i>Spartium junceum</i> in Bossard, Randall and Hoshovsky, eds. <i>Invasive Plants of California's Wildlands</i> . U. C. Press, Berkeley, CA. P. 306-309. Nilsen, E.T. and S Semones. 1997. Comparison of variance in quantitative growth and physiological traits between genets and ramets derived from an invasive weed, <i>Spartium junceum</i> (Fabaceae). 168:827-834.
Question 2.5 Potential for human-caused dispersal
Identify dispersal mechanisms: B. moderate
Rationale: Dispersed by rainwash and rivers since seeds float; moved by roadside equipment
Sources of information: Nilsen, E.T. 2000. <i>Spartium junceum</i> in Bossard, Randall and Hoshovsky, eds. <i>Invasive Plants of California's Wildlands</i> . U. C. Press, Berkeley, CA. P. 306-309. Nilsen, E.T. and S Semones. 1997. Comparison of variance in quantitative growth and physiological traits between genets and ramets derived from an invasive weed, <i>Spartium junceum</i> (Fabaceae). 168:827-834.
Question 2.6 Potential for natural long-distance dispersal
Identify dispersal mechanisms: C. Low
Rationale: dispersed ballistically and somewhat by ants, and water.
Sources of information: State Noxious Weed Control Board. 2003. Spanish Broom (<i>Spartium junceum</i> L.) http://www.nweb.wa.gov/weed_info/spanishbroom.html Nilsen, E.T. 2000. <i>Spartium junceum</i> in Bossard, Randall and Hoshovsky, eds. <i>Invasive Plants of California's Wildlands</i> . U. C. Press, Berkeley, CA. P. 306-309. Nilsen, E.T. and S. Semones. 1997. Comparison of variance in quantitative growth and physiological traits between genets and ramets derived from an invasive weed, <i>Spartium junceum</i> (Fabaceae). 168:827-834.

Question 2.7 Other regions invaded
Identify other regions: C. low
Rationale: occurs in similar habitats in Oregon and Mexico
Sources of information: State Noxious Weed Control Board. 2003. Spanish Broom (<i>Spartium junceum</i> L.) http://www.nwcb.wa.gov/weed_info/spanishbroom.html Nilsen, E.T. 2000. <i>Spartium junceum</i> in Bossard, Randall and Hoshovsky, eds. Invasive Plants of California's Wildlands. U. C. Press, Berkeley, CA. P. 306-309.
Question 3.1 Ecological amplitude
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: A. Widespread
Rationale: introduced in 1848 as an ornamental and used as roadside revegetation species 1930-1979
Sources of information: State Noxious Weed Control Board. 2003. Spanish Broom (<i>Spartium junceum</i> L.) http://www.nwcb.wa.gov/weed_info/spanishbroom.html Nilsen, E.T. 2000. <i>Spartium junceum</i> in Bossard, Randall and Hoshovsky, eds. Invasive Plants of California's Wildlands. U. C. Press, Berkeley, CA. P. 306-309.
Question 3.2 Distribution
Describe distribution: C.
Rationale: in some local areas to 90% but overall does not cover as much acreage as Scotch or French broom in California
Sources of information: State Noxious Weed Control Board. 2003. Spanish Broom (<i>Spartium junceum</i> L.) http://www.nwcb.wa.gov/weed_info/spanishbroom.html Nilsen, E.T. 2000. <i>Spartium junceum</i> in Bossard, Randall and Hoshovsky, eds. Invasive Plants of California's Wildlands. U. C. Press, Berkeley, CA. P. 306-309.

Worksheet A

Complete this worksheet to answer Question 2.4.

Reaches reproductive maturity in 2 years or less	Yes: 1 pt
Dense infestations produce >1,000 viable seed per square meter	Yes: 2 pts
Populations of this species produce seeds every year.	Yes: 1 pt
Seed production sustained over 3 or more months within a population annually	No: 0 pt
Seeds remain viable in soil for three or more years	Yes: 2 pts
Viable seed produced with <i>both</i> self-pollination and cross-pollination	No: 0 pt
Has quickly spreading vegetative structures (rhizomes, roots, etc.) that may root at nodes	No: 0 pt
Fragments easily and fragments can become established elsewhere	No: 0 pts
Resprouts readily when cut, grazed, or burned	Yes: 1 pt
	7 pts Total Unknowns
	A (6+ pts)
Note any related traits: enter text here	

Worksheet C - California Ecological Types

(*sensu* Holland 1986)

Major Ecological Types	Minor Ecological Types	Code*
Marine Systems	marine systems	score
Freshwater and Estuarine Aquatic Systems	lakes, ponds, reservoirs	score
	rivers, streams, canals	score
	estuaries	score
Dunes	coastal	score
	desert	score
	interior	score
Scrub and Chaparral	coastal bluff scrub	D. present
	coastal scrub	C. 5-20%
	Sonoran desert scrub	score
	Mojavean desert scrub (incl. Joshua tree woodland)	score
	Great Basin scrub	score
	chenopod scrub	score
	montane dwarf scrub	score
	Upper Sonoran subshrub scrub	score
Grasslands, Vernal Pools, Meadows, and other Herb Communities	coastal prairie	D. present
	valley and foothill grassland	D. present
	Great Basin grassland	score
	vernal pool	score
	meadow and seep	score
	alkali playa	score
	pebble plain	score
Bog and Marsh	bog and fen	score
	marsh and swamp	score
Riparian and Bottomland	riparian forest	score
	riparian woodland	D. present
	riparian scrub (incl. desert washes)	score
Woodland	cismontane woodland	D. present
	piñon and juniper woodland	score
	Sonoran thorn woodland	score
Forest	broadleaved upland forest	D. present
	North Coast coniferous forest	score
	closed cone coniferous forest	score
	lower montane coniferous forest	D. present
	upper montane coniferous forest	score
	subalpine coniferous forest	score
Alpine Habitats	alpine boulder and rock field	score
	alpine dwarf scrub	score

* A. means >50% of type occurrences are invaded; B means >20% to 50%; C. means >5% to 20%; D. means present but ≤5%; U. means unknown (unable to estimate percentage of occurrences invaded).