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

Electronic version, February 28, 2003

Table 1. Species and Evaluator Information

Species name (Latin binomial)**:**	Polygonum sachalinense Maxim.
Synonyms:	Fallopia sachalinensis, Reynoutia sachalinensis
Common names:	giant knotweed, sakhalin knotweed, sacaline
Evaluation date (mm/dd/yy)**:**	2/28/05
Evaluator #1 Name/Title:	Elizabeth Brusati, project manager
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Section below for list committee use—please leave blank

List committee members:	Carla Bossard, John Randall, Carri Pirosko, Dan Gluesenkamp, Gina Skurka, Brianna Richardson
Committee review date:	7/8/05
List date:	enter text here
Re-evaluation date(s):	enter text here

General comments on this assessment:
enter text here

Table 2. Criteria, Section, and Overall Scores

1.1	Impact on abiotic ecosystem processes	B	Other Pub. Mat'l
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	U	No Information

Impact

Enter four characters from Q1.1-1.4 below:

BBBU

Using matrix, determine score and enter below:

B

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

Invasiveness

Enter the sum total of all points for Q2.1-2.7 below:

13

Use matrix to determine score and enter below:

B

3.1	Ecological amplitude/Range	D	Other Pub. Mat'l
3.2	Distribution/Peak frequency Wksht C	D	Anecdotal

Distribution

Using matrix, determine score and enter below:

D

Plant Score

Using matrix, determine Overall Score and Alert Status from the three section scores and enter below:

Medium

Red Alert

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes B Other Pub. Mat'l back
Identify ecosystem processes impacted: Decreases water flow, increases erosion. Does not appear to be as bad as Polygonum cuspidatum.
Rationale: Thickets can clog small water ways. Creates bank erosion problems and is considered a flood control hazard.
Sources of information: 1. Anonymous. 2005. Invasive Knotweeds. King County (Washington) Noxious Weed Control Program Weed Alert. King County Department of Natural Resources and Parks, Water and Land Resources Division, Noxious Weed Control Program. Available: http://dnr.metrokc.gov/weeds
Question 1.2 Impact on plant community composition, structure, and interactions B Rev'd, Sci. Pub'n back
Identify type of impact or alteration: Creates dense colonies that exclude other vegetation (1). Possibly allelopathic. Not as widespread as Polygonum cuspidatum in the NW so impacts are probably less.
Rationale: Early emergence and height of knotweeds (4m) allows them to shade out other species and prevent revegetation (2). Root exudates inhibited lettuce seedling growth (3).
Sources of information: 1. DiTomaso, J., and E. Healy. in prep. Weeds of California and Other Western States. 2. Seiger, L. 1991. Element Stewardship Abstract for Polygonum cuspidatum. The Nature Conservancy, Arlington, VA. Accessed on-line at www.tncweeds.ucdavis.edu 3. Inoue, M., H. Nishimura, H.-H. Li, and J. Mizutani. 1992. Allelochemicals from Polygonum sachalinense Fr. Schm. (Polygonaceae). Journal of Chemical Ecology. 18:1833-1840
Question 1.3 Impact on higher trophic levels B Other Pub. Mat'l back
Identify type of impact or alteration: Decreases value of riparian habitat for fish and wildlife.
Rationale: If it blocks streams, fish passage will be inhibited.
Sources of information: 1. Anonymous 2005
Question 1.4 Impact on genetic integrity U No Information back
Identify impacts: There are numerous native and introduced Polygonum species in California (1). No information on hybridization with native species, but P. sachalinense is known to hybridize with other introduced knotweeds (2), so hybridization with natives seems possible. Closely related to and hybridizes with Japanese knotweed. No information on hybridization with native Polygonum species.
Rationale: enter text here

Sources of information: 1. Hickman, J. C. (ed.) 1993. The Jepson Manual, Higher Plants of California. University of California Press. Berkeley, CA

2. Tu, M., and J. Randall. 2003. 2003 Cal-IPC Red Alert! Proceedings of the California Invasive Plant Council Symposium 2003. Available: www.cal-ipc.org

Question 2.1 Role of anthropogenic and natural disturbance in establishment B Other Pub. Mat'l back

Describe role of disturbance: Inhabits riparian areas, forest edges, and other disturbed moist places.

Rationale: enter text here

Sources of information: 1. DiTomaso and Healy. 2006. Weeds of California. UC DANR Publ. #3488..

Question 2.2 Local rate of spread with no management B Observational back

Describe rate of spread: Rhizomes spread very quickly in Oregon, but has not spread much in California. One patch neara the Central Coast has been there a few years and has not spread much.

Rationale: Sounds like an A but need better documentation for this.

Sources of information: Tu, Mandy. Personal communication. The Nature Conservancy, Invasive Species Program. Portland, OR. www.tncweeds.ucdavis.edu

DiTomaso, observational.

Question 2.3 Recent trend in total area infested within state C Other Pub. Mat'l back

Describe trend: Currently present in a limited area, but may have the potential to spread widely (1, 2, 3).

Rationale: enter text here

Sources of information: 1. DiTomaso and Healy. 2006. Weeds of California. UC DANR Publ. #3488.

2. Tu and Randall 2003

3. Tu, Mandy. Personal communication. The Nature Conservancy, Invasive Species Program. Portland, OR. www.tncweeds.ucdavis.edu

Question 2.4 Innate reproductive potential B Other Pub. Mat'l back

Describe key reproductive characteristics: Fast-growing perennial that can grow up to 4m tall in one year. Mostly vegetative reproduction through fast-growing rhizomes. Fragments can develop into new plants (1). Seed production thought not to be important in northwestern U.S. (2).

Rationale: enter text here

Sources of information: 1. DiTomaso and Healy. 2006. Weeds of California. UC DANR Publ. #3488.

2. Tu, Mandy. Personal communication. The Nature Conservancy, Invasive Species Program. Portland, OR. www.tncweeds.ucdavis.edu

Question 2.5 Potential for human-caused dispersal C Other Pub. Mat'l back

Identify dispersal mechanisms: In Washington and Oregon, was originally introduced as a ornamental (1), but is no longer used for this purpose. Because it occurs along roadsides, rhizome fragments could be carried by vehicles. Other knotweeds are carried in fill dirt (2).

Rationale: 1. Tu and Randall 2003

2. Seigel 1991

Sources of information: enter text here

Question 2.6 Potential for natural long-distance dispersal B Anecdotal back

Identify dispersal mechanisms: Because knotweed it can occur along riparian areas, rhizome fragments could be transported by water.

Rationale: enter text here

Sources of information: Need documentation for this.

Question 2.7 Other regions invaded A Other Pub. Mat'l back

Identify other regions: Native to Japan and the Sakhalin Islands. A problem in the northeastern U.S., northern midwest, and England. Recent invader rapidly becoming a problem in the Pacific Northwest (1). Currently invades habitats in Oregon and Washington that are present but not invaded in California (2). Potential to invade riparian areas and forests, but does not appear to tolerate shade conditions well, so is unlikely to be a major problem in the forests and riparian areas under tree canopies.

Rationale: enter text here

Sources of information: 1. Tu and Randall 2003

2. Tu, Mandy. Personal communication. The Nature Conservancy, Invasive Species Program. Portland, OR. www.tncweeds.ucdavis.edu

Question 3.1 Ecological amplitude/Range D Other Pub. Mat'l back

Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: Recent invader that is currently uncommon. Inhabits disturbed moist sites, roadsides, riparian areas, and wetlands. In northwestern California, Cascade Range, San Francisco Bay Area, northern Sierra Nevada, northern Central Valley, to 500m (1). In the northwest, also invades forest edges and cobble bars in streams. Under experimental conditions, plants do not adjust photosynthetic rates to low light levels and appear

unable to adapt to shaded conditions (1).
Rationale: enter text here
Sources of information: 1. DiTomaso and Healy. 2006. Weeds of California. UC DANR Publ. #3488. 2. Tu, Mandy. Personal communication. The Nature Conservancy, Invasive Species Program. Portland, OR. www.tncweeds.ucdavis.edu
Question 3.2 Distribution/Peak frequency D Anecdotal back
Describe distribution: Uncommon in California so far.
Rationale: enter text here
Sources of information: CDFA

Worksheet A

back

Reaches reproductive maturity in 2 years or less	**Yes: 1 pt**
Dense infestations produce >1,000 viable seed per square meter	**No: 0 pts**
Populations of this species produce seeds every year.	**No: 0 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	**Unknown: 0 pts**
Viable seed produced with *both* self-pollination and cross-pollination	**Unknown: 0 pts**
Has quickly spreading vegetative structures (rhizomes, roots, etc.) that may root at nodes	**Yes: 1 pt**
Fragments easily and fragments can become established elsewhere	**Yes: 2 pts**
Resprouts readily when cut, grazed, or burned	**Yes: 1 pt**
	5 pts 2 unknowns
	B (4-5 pts)

Note any related traits:

Worksheet C - California Ecological Types

back

(*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. presen**
	coastal scrub	**D. presen**
	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**
	chaparral	**score**
Grasslands, Vernal Pools, Meadows, and other Herb Communities	coastal prairie	**score**
	valley and foothill grassland	**score**
	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	**score**
	riparian scrub (incl.desert washes)	**score**
Woodland	cismontane woodland	**score**
	piñon and juniper woodland	**score**
	Sonoran thorn woodland	**score**
Forest	broadleaved upland forest	**score**
	North Coast coniferous forest	**score**
	closed cone coniferous forest	**score**
	lower montane coniferous forest	**score**
	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).