

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):	Parentucellia viscosa (L.)
Synonyms:	Bartsia viscosa, Bellardia viscosa
Common names:	yellow glandweed, yellow or sticky parentucellia (broadleaved glandweed)
Evaluation date (mm/dd/yy):	12/29/04 and 5/19/05
Evaluator #1 Name/Title:	Elizabeth Brusati, project manager
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Evaluator #2 Name/Title:	Toni Corelli
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Section below for list committee use—please leave blank

List committee members:	Cynthia Roye, Jake Sigg, Joe DiTomaso, Peter Warner
Committee review date:	8/15/05
List date:	enter text here
Re-evaluation date(s):	enter text here

General comments on this assessment:

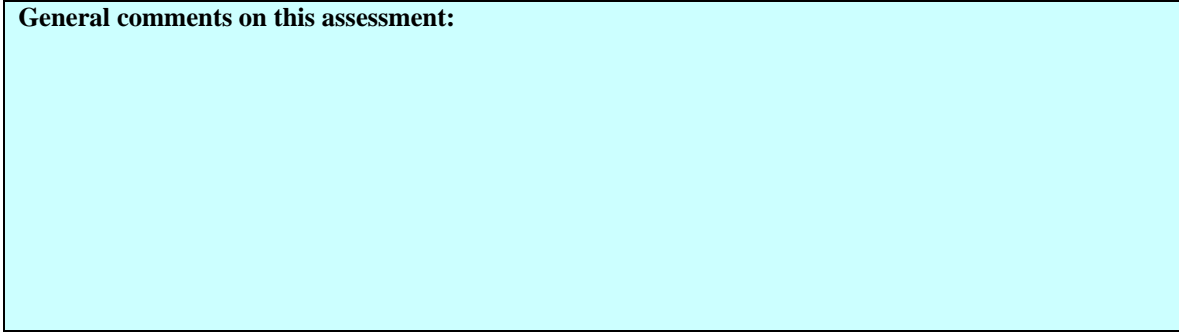


Table 2. Criteria, Section, and Overall Scores

1.1	Impact on abiotic ecosystem processes	U	No Information
1.2	Impact on plant community	C	Other Pub. Mat'l
1.3	Impact on higher trophic levels	U	No information
1.4	Impact on genetic integrity	D	Rev'd, Sci. Pub'n

Impact

Enter four characters from Q1.1-1.4 below:

UCUD

Using matrix, determine score and enter below:

C

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

Invasiveness

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

11

Use matrix to determine score and enter below:

B

Plant Score

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

Low

No alert

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

Distribution

Using matrix, determine score and enter below:

B

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes	U No Information back
Identify ecosystem processes impacted: Nothing reported in the literature.	
Rationale: enter text here	
Sources of information: enter text here	
Question 1.2 Impact on plant community composition, structure, and interactions	C Other published back
Identify type of impact or alteration: In Humboldt Bay, effects on native species were fairly minor and not much different than that expected by normal successional processes on the dunes. <i>P. viscosa</i> occurred at fairly low cover values (1, 2).	
Rationale: enter text here	
Sources of information: 1. Pickart A., and K. S. Wear. 1999a. <i>Parentucellia viscosa</i> invasion in dune wetlands of northern California. U. S. Fish and Wildlife Service. 2. Pickart A., and K. S. Wear. 1999b. The ecology of <i>Parentucellia viscosa</i> invasion in dune wetlands. Proceedings California Exotic Pest Plant Council Symposium. 5:57-70.	
Question 1.3 Impact on higher trophic levels	U no information back
Identify type of impact or alteration: No information, but if effects on plant community are not significant, then presumably there won't be a large number of impacts extending to higher trophic levels.	
Rationale: enter text here	
Sources of information: enter text here	
Question 1.4 Impact on genetic integrity	D Rev'd, Sci. Pub'n back
Identify impacts: none	
Rationale: No native <i>Parentucellia</i> species.	
Sources of information: Hickman, J. C. (ed.) 1993. The Jepson Manual, Higher Plants of California. University of California Press. Berkeley, CA	
Question 2.1 Role of anthropogenic and natural disturbance in establishment	B Other Pub. Mat'l back
Describe role of disturbance: Parasite of early successional species on dunes (1). Mostly in disturbed sites but	

persists in grasslands that have not been recently grazed (2).	
Rationale: Scored as B because needs open areas but does not require anthropogenic disturbance.	
Sources of information: 1. Pickart and Wear 1999a, b 2. Warner, Peter. California State Parks, Mendocino. Pers. Comm. E-mail 5/18/05	
Question 2.2 Local rate of spread with no management	B Other Pub. Mat'l back
Describe rate of spread: In Humboldt Bay, <i>P. viscosa</i> increased 200% between 1989-1999, but this included a decline between 1995-99. As rapid succession progresses and dunes migrate, <i>Parentucellia</i> is likely to decline (1). Slowly increasing, both coastally and inland (2).	
Rationale: enter text here	
Sources of information: 1. Pickart and Wear 1999a, b 2. Warner, Peter. California State Parks, Mendocino. Pers. Comm. E-mail 5/18/05	
Question 2.3 Recent trend in total area infested within state	B Observations back
Describe trend: Slowly increasing range, both coastally and inland.	
Rationale: enter text here	
Sources of information: 1. Warner, Peter. California State Parks, Mendocino. Pers. Comm. E-mail 5/18/05	
Question 2.4 Innate reproductive potential	B Rev'd, Sci. Pub'n back
Describe key reproductive characteristics: Hemiparasitic annual, but can germinate and grow without hosts. Can colonize a wide range of hosts (1, 2, 3). Self-compatible but capable of outbreeding (1, 2). Seeds remain viable for at least a year (1). Preferred host is <i>Lotus purshianus</i> (1). Can parasitize members of its own species (2). Fecundity is exponentially a function of plant size, and an average plant can have 12,000 seeds (1).	
Rationale: Not sure of some scores on worksheet.	
Sources of information: 1. Pickart and Wear 1999,a b 2. Atsatt, P. R., and D. R. Strong. 1970. The population biology of annual grassland hemiparasites. I. The host environment. <i>Evolution</i> . 24:278-291 3. Pate, J.S., and T. L. Bell. 2000. Host associations of the introduced annual root hemiparasite <i>Parentucellia viscosa</i> in agricultural and bushland settings in western Australia. <i>Annals of Botany</i> . 85:203-213	

Question 2.5 Potential for human-caused dispersal	C Observational back
Identify dispersal mechanisms: Sticky seed heads stick to clothing.	
Rationale: enter text here	
Sources of information: Peter Warner, California State Parks, pers. Obs.	
Question 2.6 Potential for natural long-distance dispersal	C Other pub. back
Identify dispersal mechanisms: Wind-dispersed. Sticky seed heads attach to fur.	
Rationale:	
Sources of information: Pickart and Wear 1999 a, b Peter Warner, California State Parks, pers. Obs	
Question 2.7 Other regions invaded	C Rev'd, Sci. Pub'n back
Identify other regions: Native to Europe. <i>P. viscosa</i> is present in coastal California, Oregon, and Washington (1, 2). Reported from coastal grasslands near Corvallis, OR (2). Also present in Australia (3). Arkansas, Louisiana, Mississippi, Texas (4).	
Rationale: Seems to invade the same habitats elsewhere as it does in California.	
Sources of information: 1. Pickart and Wear 1999a, b 2. Atsatt and Strong 1970 3. Pate and Bell 2000 4. DiTomaso J., Healy E.H. in prep. Weeds of California and Other Western States. p. 622.	
Question 3.1 Ecological amplitude/Range	B Other Pub. Mat'l back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: <i>P. viscosa</i> invades dune hollows on north spit of Humboldt Bay. Also found in ditches in the Lake Earl Dunes of Del Norte County and Ten Mile Dunes in Mendocino County, but not noticeably invasive in those areas (1). <i>P. viscosa</i> is found in coastal dune wetlands, moist grasslands, roadsides and other disturbed areas, and was recently found in pastures in the central Sierra Nevada foothills (2).	
Parentucellia viscosa was only noticed this year at a controlled burn site at Jasper Ridge Biological Preserve. We know it wasn't there in 2001. It has also been found at 3 other locations in San Mateo County: along Sand Hill Road, west of Hwy. 280; on the SF Peninsula Watershed at the headwaters of the San Mateo Creek; and in Half Moon Bay west of Hwy. 1 in. These are all 2005 locations. There are thousands of plants at all of these locations, (estimated over 20,000 at each location). The plants seem to like vernal moist areas and may be fire followers since 2 of these locations (Jasper Ridge and San Hill Road populations) seemed to have come in after a fire. At these 4 locations in San Mateo County <i>P. viscosa</i> becomes the dominant plant after becoming established.	

Rationale:	
Sources of information: 1. Pickart and Wear 1999a, b 2. DiTomaso and Healy. in prep. 3. Toni Corelli, Jasper Ridge botanist	
Question 3.2 Distribution/Peak frequency	D Other Pub. Mat'l back
Describe distribution: Limited.	
Rationale: enter text here	
Sources of information: Pickart and Wear 1999a, b	

Worksheet A[back](#)

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	Unknown: 0 pts
Seeds remain viable in soil for three or more years	Unknown: 0 pts
Viable seed produced with <i>both</i> self-pollination and cross-pollination	Yes: 1 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	No: 0 pt
	5 pts 2 unknowns
	B (4-5 pts)
Note any related traits:	

Worksheet C - California Ecological Types

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(*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	D. present
	desert	score
	interior	score
Scrub and Chaparral	coastal bluff scrub	score
	coastal scrub	score
	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	C
	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	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).