

# 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

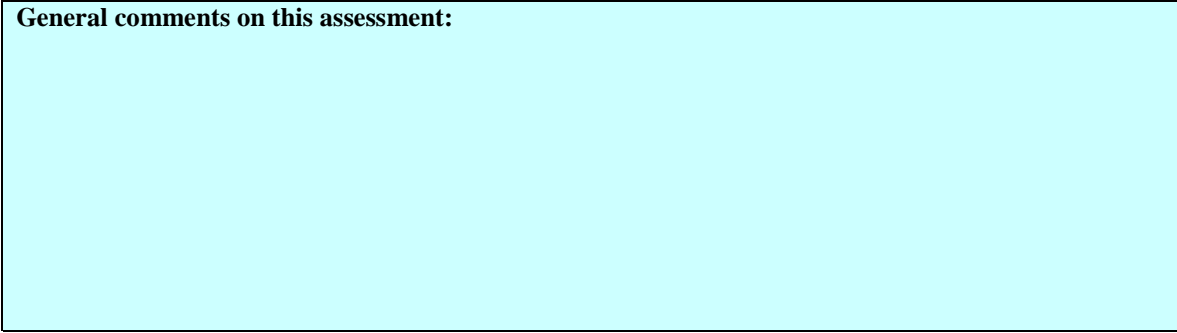
**Table 1. Species and Evaluator Information**

<b>Species name (Latin binomial):</b>	Ranunculus repens L.
<b>Synonyms:</b>	
<b>Common names:</b>	creeping buttercup
<b>Evaluation date (mm/dd/yy):</b>	12/30/04
<b>Evaluator #1 Name/Title:</b>	Elizabeth Brusati, project manager
<b>Affiliation:</b>	California Invasive Plant Council
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<b>Address:</b>	1442A Walnut St. #462, Berkeley, CA 94709
<b>Evaluator #2 Name/Title:</b>	enter text here
<b>Affiliation:</b>	enter text here
<b>Phone numbers:</b>	enter text here
<b>Email address:</b>	enter text here
<b>Address:</b>	enter text here

Section below for list committee use—please leave blank

<b>List committee members:</b>	Carla Bossard, John Randall, Cynthia Roye, Jake Sigg, Peter Warner
<b>Committee review date:</b>	2/11/05
<b>List date:</b>	enter text here
<b>Re-evaluation date(s):</b>	enter text here

**General comments on this assessment:**



**Table 2. Criteria, Section, and Overall Scores**

<a href="#"><u>1.1</u></a>	Impact on abiotic ecosystem processes	<b>C</b>	Rev'd, Sci. Pub'n
<a href="#"><u>1.2</u></a>	Impact on plant community	<b>C</b>	Rev'd, Sci. Pub'n
<a href="#"><u>1.3</u></a>	Impact on higher trophic levels	<b>C</b>	Rev'd, Sci. Pub'n
<a href="#"><u>1.4</u></a>	Impact on genetic integrity	<b>D</b>	Rev'd, Sci. Pub'n

**Impact**

*Enter four characters from Q1.1-1.4 below:*

**CCCD**

*Using matrix, determine score and enter below:*

**C**

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

**Invasiveness**

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

**9**

*Use matrix to determine score and enter below:*

**C**

**Plant Score**

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

**Low**

**No Alert**

<a href="#"><u>3.1</u></a>	Ecological amplitude/Range	<b>B</b>	Observational
<a href="#"><u>3.2</u></a>	Distribution/Peak frequency <a href="#"><u>Wksht C</u></a>	<b>C</b>	Observational

**Distribution**

*Using matrix, determine score and enter below:*

**B**

**Table 3. Documentation**

<b>Question 1.1</b> Impact on abiotic ecosystem processes	C Rev'd, Sci. Pub'n <a href="#">back</a>
Identify ecosystem processes impacted: May deplete potassium from soil, although the evidence for this sounds somewhat circumstantial (1).	
Rationale: enter text here	
Sources of information: 1. Lovett-Doust, J., L. Lovett-Doust, and A. T. Groth. 1990. The biology of Canadian weeds. 95. <i>Ranunculus repens</i> . Canadian Journal of Plant Science. 70:1123-1141.	
<b>Question 1.2</b> Impact on plant community composition, structure, and interactions	C Rev'd, Sci. Pub'n <a href="#">back</a>
Identify type of impact or alteration: May secrete toxins that cause neighboring plants to suffer N deficiency (1). Crowds out other plants (2).	
Rationale:	
Sources of information: 1. Lovett-Doust et al. 1990. 2. Burrill L.C., 1992. Creeping Buttercup. <i>Ranunculus repens</i> L. Pacific Northwest Publication #PNW 399.	
<b>Question 1.3</b> Impact on higher trophic levels	C Rev'd, Sci. Pub'n <a href="#">back</a>
Identify type of impact or alteration: Poisonous to livestock and humans (1, 2). No information on effects on native species.	
Rationale: Scored as C because no info on how it affects native species	
Sources of information: 1. Lovett-Doust et al. 1990 2. Fuller T.F., McClintock E. 1986. Poisonous Plants of California. University of California Press, Berkeley. pp. 221-222.	
<b>Question 1.4</b> Impact on genetic integrity	D Rev'd, Sci. Pub'n <a href="#">back</a>
Identify impacts: There are numerous native <i>Ranunculus</i> species, but experimental crosses using <i>Ranunculus</i> species are rarely successful. No close hybrids have been recorded for <i>R. repens</i> .	
Rationale: enter text here	
Sources of information: 1. Lovett-Doust et al. 1990	
<b>Question 2.1</b> Role of anthropogenic and natural disturbance in establishment	C Rev'd, Sci. Pub'n <a href="#">back</a>
Describe role of disturbance: Pioneer colonizer of ploughed land or smaller disturbed sites. Common weed of	

lawns, pastures, and waste places (1).	
Rationale: Lightly grazed sites contained more seedling recruits than intensely grazed sites, but established seedlings lived longer on severely grazed sites (2). Scored as B because all papers mention it in connection with disturbance.	
Sources of information: 1. Lovett-Doust et al. 1990. 2. Sarukhan, J, and Harper, J. L. 1973. Studies on plant demography: <i>Ranunculus repens</i> L., <i>Ranunculus bulbosus</i> L. and <i>Ranunculus acris</i> L. i. population flux and survivorship. <i>Journal of Ecology</i> . 61: 675-716.	
<b>Question 2.2</b> Local rate of spread with no management	C No Information <a href="#">back</a>
Describe rate of spread: Does not spread much.	
Rationale: enter text here	
Sources of information: Peter Warner, California State Parks, Personal Observation	
<b>Question 2.3</b> Recent trend in total area infested within state	C No Information <a href="#">back</a>
Describe trend: Stable	
Rationale: enter text here	
Sources of information: Peter Warner, California State Parks, Personal Observation	
<b>Question 2.4</b> Innate reproductive potential	A Rev'd, Sci. Pub'n <a href="#">back</a>
Describe key reproductive characteristics: Perennial herb with stolons that readily root at nodes, even when there is no direct contact with soil. Insect-pollinated. A small degree of selfing may occur. Plants produce 1-5 flowers and most flowers produce 20 or fewer seeds (maximum number of seeds produced was 77). One quarter of plants that flower set seed (1). Seed bank is large (up to 11,400 seeds/m <sup>2</sup> ) and persistent (1). Seeds can survive 16 years (2). Clones show large variation in their amount of sexual reproduction (3).	
Rationale: enter text here	
Sources of information: 1. Lovett-Doust et al. 1990 2. Lewis, J. 1973. Longevity of crop and weed seeds: Survival after 20 years in soil. <i>Weed Research</i> . 13: 179-191 3. Lynn, D.E., and S. Waldren. 2001. Variation in life history characteristics between clones of <i>Ranunculus repens</i> grown in experimental garden conditions. <i>Weed Research</i> . 41:421-432.	

<b>Question 2.5</b> Potential for human-caused dispersal	C Rev'd, Sci. Pub'n <a href="#">back</a>
Identify dispersal mechanisms: Dispersed in hay (1), in dung of farm animals, tire treads, and "in the trouser cuffs of boys who regularly walk through fields" (2).	
Rationale: Scored as C based on weed committee consensus that this species does not often spread.	
Sources of information: 1. Burrill 1992 2. Lovett-Doust et al. 1990	
<b>Question 2.6</b> Potential for natural long-distance dispersal	C Rev'd, Sci. Pub'n <a href="#">back</a>
Identify dispersal mechanisms: Wind dispersal, produces winged achenes. Probably does not disperse more than 1km. Seeds ingested by birds.	
Rationale: Score based on weed committee consensus that this is not likely.	
Sources of information: 1. Lovett-Doust et al. 1990 2. Burrill 1992	
<b>Question 2.7</b> Other regions invaded	B Rev'd, Sci. Pub'n <a href="#">back</a>
Identify other regions: Native to Europe. May have been introduced to North America with settlers. Present in broad band within U.S. and Canada between 38 and 50 degrees N. Also introduced to central and south America, New Zealand, and Australia (1). Occurs in Pacific northwest, mostly west of the Cascades (2).	
Rationale:	
Sources of information: 1. Lovett-Doust et al. 1990 2. Burrill 1992	
<b>Question 3.1</b> Ecological amplitude/Range	B Other Pub. Mat'l <a href="#">back</a>
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: We have no information from California, but in Canada it is common in pastures, grasslands, woodlands, swamps, and along the margins of ponds, rivers and ditches. In woodlands, it is restricted to clearings, forest margins, and paths where light is available. Can tolerate some salinity and is found on beaches, salt marshes, and on the margins of tidal estuaries. Usually found in heavy wet clay soils, can withstand waterlogging (1). In California, occurs in Marin, Sonoma, Mendocino, Napa, Monterey, Santa Barbara, Sacramento, and Nevada counties (2).	
Rationale:	
Sources of information: 1. Lovett-Doust et al. 1990	

2. USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

**Question 3.2** Distribution/Peak frequency

C Observational [back](#)

Describe distribution: enter text here

Rationale:

Sources of information: enter text here

**Worksheet A**[back](#)

Reaches reproductive maturity in 2 years or less	<b>Yes: 1 pt</b>
Dense infestations produce >1,000 viable seed per square meter	<b>Yes: 2 pts</b>
Populations of this species produce seeds every year.	<b>Yes: 1 pt</b>
Seed production sustained over 3 or more months within a population annually	<b>Unknown: 0 pts</b>
Seeds remain viable in soil for three or more years	<b>Yes: 2 pts</b>
Viable seed produced with <i>both</i> self-pollination and cross-pollination	<b>Yes: 1 pt</b>
Has quickly spreading vegetative structures (rhizomes, roots, etc.) that may root at nodes	<b>Yes: 1 pt</b>
Fragments easily and fragments can become established elsewhere	<b>Yes: 2 pts</b>
Resprouts readily when cut, grazed, or burned	<b>Yes: 1 pt</b>
	<b>11 pts      1 unknown</b>
	<b>A (6+ pts)</b>

**Note any related traits:** I calculated >1000 seeds per square meter based on 5 flowers/plant, and 20 seeds/flower, assuming many small plants within a square meter. Not sure about last two questions, but resprouting seems likely based on the presence of stolons.

## Worksheet C - California Ecological Types

[back](#)

(*sensu* Holland 1986)

Major Ecological Types	Minor Ecological Types	Code*
<b>Marine Systems</b>	marine systems	score
<b>Freshwater and Estuarine Aquatic Systems</b>	lakes, ponds, reservoirs	score
	rivers, streams, canals	score
	estuaries	score
<b>Dunes</b>	coastal	score
	desert	score
	interior	score
<b>Scrub and Chaparral</b>	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
<b>Grasslands, Vernal Pools, Meadows, and other Herb Communities</b>	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
<b>Bog and Marsh</b>	bog and fen	score
	marsh and swamp	score
<b>Riparian and Bottomland</b>	riparian forest	C. 5-20%
	riparian woodland	C. 5-20%
	riparian scrub (incl. desert washes)	score
<b>Woodland</b>	cismontane woodland	score
	piñon and juniper woodland	score
	Sonoran thorn woodland	score
<b>Forest</b>	broadleaved upland forest	score
	North Coast coniferous forest	C. 5-20%
	closed cone coniferous forest	score
	lower montane coniferous forest	score
	upper montane coniferous forest	score
	subalpine coniferous forest	score
<b>Alpine Habitats</b>	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).