

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):	Erechtites glomerata E. minima
Synonyms:	Erectities arguta, Senecio glomeratus, Senecio arguta Erechtites prenanthoides, Senecio minimus, Senecio prenanthoides
Common names:	cutleaf fireweed, cutleaf burnweed, New Zealand fireweed, Australian burnweed, bushman's burnweed, cut-leaved coast fireweed Australian fireweed, little fireweed, coastal burnweed, Australian burnweed, toothed coast fireweed
Evaluation date (mm/dd/yy):	July 30, 2004
Evaluator #1 Name/Title:	Brianna Richardson, Cal-IPC Project Manager
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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, John Randall, Joe DiTomaso, Jake Sigg, Alison Stanton, Peter Warner
Committee review date:	8/27/2004
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	U	No Information
1.2	Impact on plant community	C	Rev'd, Sci. Pub'n
1.3	Impact on higher trophic levels	D	Rev'd, Sci. Pub'n
1.4	Impact on genetic integrity	D	Other Pub. Mat'l

<p>Impact</p> <p><i>Enter four characters from Q1.1-1.4 below:</i></p> <p>UCDD</p> <p><i>Using matrix, determine score and enter below:</i></p> <p>C</p>

2.1	Role of anthropogenic and natural disturbance	B (2 pts)	Rev'd, Sci. Pub'n
2.2	Local rate of spread with no management	B (2 pts)	Rev'd, Sci. Pub'n
2.3	Recent trend in total area infested within state	C (1 pt)	Observational
2.4	Innate reproductive potential Wksht A	A (3 pts)	Other Pub. Mat'l
2.5	Potential for human-caused dispersal	D (0 pts)	Rev'd, Sci. Pub'n
2.6	Potential for natural long-distance dispersal	A (3 pts)	Rev'd, Sci. Pub'n
2.7	Other regions invaded	C (1 pt)	Other Pub. Mat'l

<p>Invasiveness</p> <p><i>Enter the sum total of all points for Q2.1-2.7 below:</i></p> <p>12</p> <p><i>Use matrix to determine score and enter below:</i></p> <p>B</p>
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<p>Plant Score</p> <p><i>Using matrix, determine Overall Score and Alert Status from the three section scores and enter below:</i></p> <p>Medium</p> <p>No Alert</p>

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

<p>Distribution</p> <p><i>Using matrix, determine score and enter below:</i></p> <p>A</p>

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes	U No Information back
Identify ecosystem processes impacted: No impacts found 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 Rev'd, Sci. Pub'n back
Identify type of impact or alteration: Can dominate overall plant cover in post-clearcut sites, but usually replaced by trees and shrubs within 5-10 years. Quickly dominate grasslands and fields. Among the most serious pests in the Channel Islands. Rapidly spread in an established native grassland on San Miguel Island, displacing native grasses and forbs.	
Rationale: On the Channel Islands, impacts are more severe, with <i>Erechtites</i> replacing established native grasses and forbs. In north coast forests, the impacts are less severe: the plant can dominate in post-disturbance sites (fire, logging) but is replaced by native shrubs and trees over time. Early successional stages, however are impacted.	
Sources of information: 1) Bossard, C.C., J.M. Randall, M.C. Hoshovsky (eds). 2000. <i>Invasive Plants of California's Wildlands</i> . UC Press: Berkeley. 2) Halvorson, W.L.; R.E. Koske. 1987. Mycorrhizae associated with an invasion of <i>Erechtites glomerata</i> (Asteraceae) on San Miguel Island, California. <i>Madrono</i> . V.34, no.3: 260-268. Observational, Peter Warner, 2004.	
Question 1.3 Impact on higher trophic levels	D Rev'd, Sci. Pub'n back
Identify type of impact or alteration: Forms facultative mycorrhizal relationships with 9 vesicular-arbuscular mycorrhizae on San Miguel Island.	
Rationale: No impacts to native animals or insects found in the literature.	
Sources of information: 1) Halvorson, W.L.; R.E. Koske. 1987. Mycorrhizae associated with an invasion of <i>Erechtites glomerata</i> (Asteraceae) on San Miguel Island, California. <i>Madrono</i> . V.34, no.3: 260-268	
Question 1.4 Impact on genetic integrity	D Other Pub. Mat'l back
Identify impacts: No native relatives.	
Rationale: No potential for hybridization with native plants.	
Sources of information: 1) Bossard, C.C., J.M. Randall, M.C. Hoshovsky (eds). 2000. <i>Invasive Plants of</i>	

California's Wildlands. UC Press: Berkeley.	
Question 2.1 Role of anthropogenic and natural disturbance in establishment	B Rev'd, Sci. Pub'n back
Describe role of disturbance: Well suited to exploit fertile, freshly disturbed ground, but are weak competitors. Disturbance is unnecessary to establishment of <i>E. glomerata</i> in grasslands on the Channel Islands. Established and spread through a stable native grassland on San Miguel Island with no disturbance.	
Rationale: Can establish without disturbance, but more frequently relies on anthropogenic (logging) or natural (fire) disturbance.	
Sources of information: 1) Bossard, C.C., J.M. Randall, M.C. Hoshovsky (eds). 2000. Invasive Plants of California's Wildlands. UC Press: Berkeley. 2) Halvorson, W.L.; R.E. Koske. 1987. Mycorrhizae associated with an invasion of <i>Erectites glomerata</i> (Asteraceae) on San Miguel Island, California. Madrono. V.34, no.3: 260-268.	
Question 2.2 Local rate of spread with no management	B Rev'd, Sci. Pub'n back
Describe rate of spread: Quickly dominates grasslands and fields. Facultative mycorrhizal relationships may explain rapid rate of spread. In less than 1 year after establishment, <i>E. glomerata</i> spread to 173 acres w/ max density of 3237 plants/acre. One year after estab. at Pt. Reyes, 1.2 million <i>E.minima</i> plants had grown. Spread on San Miguel Island has been rapid.	
Rationale: Colonizes quickly after disturbance, more than doubling in less than 10 years, however does not persist at high density.	
Sources of information: 1) Bossard, C.C., J.M. Randall, M.C. Hoshovsky (eds). 2000. Invasive Plants of California's Wildlands. UC Press: Berkeley. 2) Halvorson, W.L.; R.E. Koske. 1987. Mycorrhizae associated with an invasion of <i>Erectites glomerata</i> (Asteraceae) on San Miguel Island, California. Madrono. V.34, no.3: 260-268. Observational, Alison Stanton, Peter Warner, Joe DiTomaso, John Randall, 2004.	
Question 2.3 Recent trend in total area infested within state	C Observational back
Describe trend: enter text here	
Rationale: Population decreasing throughout the state.	
Sources of information: Observational, Alison Stanton, Peter Warner, Joe DiTomaso, John Randall, 2004.	
Question 2.4 Innate reproductive potential	A Other Pub. Mat'l back
Describe key reproductive characteristics: Combined average seed density for the two species is around 522 per square meter in old-growth redwoods. Seeds spread by wind. Annual - produces seed every year. 89% of seeds may remain viable for at least 8 years. Plants flower April-October.	

Rationale: enter text here	
Sources of information: 1) Bossard, C.C., J.M. Randall, M.C. Hoshovsky (eds). 2000. Invasive Plants of California's Wildlands. UC Press: Berkeley. 2) DiTomaso, J.; E. Healy. Weeds of California and Other Western States. Currently unpublished. p. 158-159.	
Question 2.5 Potential for human-caused dispersal	D Rev'd, Sci. Pub'n back
Identify dispersal mechanisms: enter text here	
Rationale: No information in literature. Wind is the primary dispersal mechanism. May be spread by trail users, but no indication of that is made in the literature.	
Sources of information: 1) Bossard, C.C., J.M. Randall, M.C. Hoshovsky (eds). 2000. Invasive Plants of California's Wildlands. UC Press: Berkeley. 2) DiTomaso, J.; E. Healy. Weeds of California and Other Western States. Currently unpublished. p. 158-159.	
Question 2.6 Potential for natural long-distance dispersal	A Rev'd, Sci. Pub'n back
Identify dispersal mechanisms: Seeds dispersed by wind. Capillary pappus and small, light seeds make long-distance dispersal likely. Seeds are believed to have blown from Santa Barbara Island to San Miguel Island.	
Rationale: enter text here	
Sources of information: 1) Bossard, C.C., J.M. Randall, M.C. Hoshovsky (eds). 2000. Invasive Plants of California's Wildlands. UC Press: Berkeley. 2) DiTomaso, J.; E. Healy. Weeds of California and Other Western States. Currently unpublished. p. 158-159 3) Wilken, D.; L. Hannah. Erectites glomerata (Poir.) DC. Australian fireweed. 1998. www.usgs.nau.edu/SWEPIC/factsheets/MAVU_APRS.pd 4) Halvorson, W.L.; R.E. Koske. 1987. Mycorrhizae associated with an invasion of Erectites glomerata (Asteraceae) on San Miguel Island, California. Madrono. V.34, no.3: 260-268.	
Question 2.7 Other regions invaded	C Other Pub. Mat'l back
Identify other regions: Present in Washington and Oregon.	
Rationale: Seems to invade the same coastal forests in these states that it already invades in California.	
Sources of information: 1) USDA Plants Database. http://plants.usda.gov 2) Bossard, C.C., J.M. Randall, M.C. Hoshovsky (eds). 2000. Invasive Plants of California's Wildlands. UC Press: Berkeley.	

<p>3) Wilken, D.; L. Hannah. <i>Erechtites glomerata</i> (Poir.) DC. Australian fireweed. 1998. www.usgs.nau.edu/SWEPIC/factsheets/MAVU_APRS.pd</p>	
<p>Question 3.1 Ecological amplitude/Range</p>	<p>A Other Pub. Mat'l back</p>
<p>Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: <i>E. minima</i> naturalized in Humboldt County in 1918. <i>E. glomerata</i> found in north coast redwoods before 1941. <i>E. minima</i> found in redwood groves, <i>E. glomerata</i> found in coastal prairie and scrub.</p>	
<p>Rationale: Invades 5 major ecological types in California.</p>	
<p>Sources of information: 1) Bossard, C.C., J.M. Randall, M.C. Hoshovsky (eds). 2000. <i>Invasive Plants of California's Wildlands</i>. UC Press: Berkeley.</p> <p>2) Halvorson, W.L.; R.E. Koske. 1987. Mycorrhizae associated with an invasion of <i>Erechtites glomerata</i> (Asteraceae) on San Miguel Island, California. <i>Madrono</i>. V.34, no.3: 260-268.</p> <p>Observational, Alison Stanton, Peter Warner, Joe DiTomaso, John Randall, 2004.</p>	
<p>Question 3.2 Distribution/Peak frequency</p>	<p>B Other Pub. Mat'l back</p>
<p>Describe distribution: "Ubiquitous" in north coast redwood forests. Occurs from central Oregon to Santa Barbara and the Channel Islands. Prefers grasslands, woodlands, and coastal scrub habitat. Found in disturbed areas, roadsides, stream banks, pastures, and post-burn. Uncommon in north coast communities until other vegetation is removed.</p>	
<p>Rationale: In Bossard et. al. the plant is "ubiquitous" in north coast redwood forests--I conservatively gave it a B rating to represent that characterization. Invades 21-50% of north coast coniferous forests in CA.</p>	
<p>Sources of information: 1) Bossard, C.C., J.M. Randall, M.C. Hoshovsky (eds). 2000. <i>Invasive Plants of California's Wildlands</i>. UC Press: Berkeley.</p> <p>Observational, Alison Stanton, Peter Warner, Joe DiTomaso, John Randall, 2004.</p>	

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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	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	No: 0 pts
Resprouts readily when cut, grazed, or burned	Yes: 1 pt
	8 pts 1 unknown
	A (6+ pts)
Note any related traits: enter text here	

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	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
	chaparral	score
Grasslands, Vernal Pools, Meadows, and other Herb Communities	coastal prairie	C. 5-20%
	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	D. present
	riparian scrub (incl. desert washes)	D. present
Woodland	cismontane woodland	D. present
	piñon and juniper woodland	score
	Sonoran thorn woodland	score
Forest	broadleaved upland forest	score
	North Coast coniferous forest	B. 21-50%
	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).