

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):	Arctotheca calendula (L.) Levyns (infertile varieties)
Synonyms:	none
Common names:	capeweed, South African capeweed, cape dandelion, cape gold
Evaluation date (mm/dd/yy):	12/21/04
Evaluator #1 Name/Title:	Elizabeth Brusati, project manager
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Evaluator #2 Name/Title:	Peter J. Warner; ecologist
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Section below for list committee use—please leave blank

List committee members:	Carla Bossard, John Randall, Cynthia Roye, Jake Sigg, Peter Warner
Committee review date:	2/11/05
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.
1.2	Impact on plant community	B	Other Pub Mat.
1.3	Impact on higher trophic levels	B	Doc'n level
1.4	Impact on genetic integrity	D	Rev'd, Sci. Pub'n

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

2.1	Role of anthropogenic and natural disturbance	1 (1 pt)	Observational
2.2	Local rate of spread with no management	3 (3 pts)	Other Pub. Mat'l
2.3	Recent trend in total area infested within state	2 (2 pts)	Observational
2.4	Innate reproductive potential Wksht A	2 (2 pts)	Rev'd, Sci. Pub'n
2.5	Potential for human-caused dispersal	3 (3 pts)	Rev'd, Sci. Pub'n
2.6	Potential for natural long-distance dispersal	0 (0 pts)	Doc'n level
2.7	Other regions invaded	B	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>13</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.
3.2	Distribution/Peak frequency Wksht C	C	Observational

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

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes	B Other Pub back
Identify ecosystem processes impacted: Light availability, water availability, space	
Rationale: Creates a dense monoculture that blocks light. Aggressive competitor for water and space. Scoring as B because I'm not sure if space is considered an "ecosystem process," or if this change is irreversible.	
Sources of information: Alvarez, M. 2000. <i>Arctotheca calendula</i> pp. 49-52 in Bossard, C. M., J. M. Randall, and M. C. Hoshovsky (ed.) <i>Invasive plants of California's wildlands</i> . University of California Press. Berkeley, CA.	
Question 1.2 Impact on plant community composition, structure, and interactions	B Other Pub. back
Identify type of impact or alteration: Rapidly overgrows other species to form dense monocultures. Aggressive competitor for water and space.	
Rationale: enter text here	
Sources of information: Alvarez, M. 2000. <i>Arctotheca calendula</i> pp. 49-52 in Bossard, C. M., J. M. Randall, and M. C. Hoshovsky (ed.) <i>Invasive plants of California's wildlands</i> . University of California Press. Berkeley, CA.	
Question 1.3 Impact on higher trophic levels	B Doc'n level back
Identify type of impact or alteration: Eaten by livestock, but sometimes poisonous. Used for pollen by beekeepers in Australia (1). However, another reference claims it is not poisonous (2). Not known to be eaten by California wildlife or invertebrates (3).	
Rationale: Scoring as B based on severe changes to plant community that could impact foraging by wildlife dependent on grasses, although there is no specific information on how capeweed invasion affects higher trophic levels.	
Sources of information: 1. Anonymous. Cape weed. http://weeds.tassie.net.au/txts/capeweed.html 2. McIvor, J.G., and D. F. Smith. 1972. Competitive growth of capeweed (<i>Arctotheca calendula</i>) and some annual pasture species. <i>Australian Journal of Experimental Agriculture and Animal Husbandry</i> . 13:185-189 3. Alvarez 2000	
Question 1.4 Impact on genetic integrity	D Rev'd, Sci. Pub'n back
Identify impacts: none	
Rationale: no closely related native species	
Sources of information: Alvarez 2000	

Question 2.1 Role of anthropogenic and natural disturbance in establishment		C Rev'd, Sci. Pub'n back
Describe role of disturbance: 1. Common along roadsides and disturbed land in native habitat; appears to require either deliberate or incidental disturbance for establishment (2)		
Rationale: I've never seen this plant in the wild in undisturbed areas, and in almost every case, the plant appears to have been dumped or planted where it is growing; I expect that it is highly dependent on human assistance for establishment in the wild (2).		
Sources of information: 1. Wood, H. 1994. The introduction and spread of capeweed, <i>Arctotheca calendula</i> (L.) Levyns (Asteraceae). <i>Plant Protection Quarterly</i> . 9:94-100		
2. Warner, PJ. Personal observations. Marin, Sonoma, Mendocino Counties, 1996-2005. 707/937-2278; corylus@earthlink.net		
Question 2.2 Local rate of spread with no management		A Other Pub. Mat'l back
Describe rate of spread: A small plant can cover as much as 200 square feet in 1-2 years. If planted 1 foot apart for landscaping, plants will spread to full cover in 6 months.		
Rationale: enter text here		
Sources of information: Alvarez 2000, citing gardening books		
Question 2.3 Recent trend in total area infested within state		B Observational back
Describe trend: At least slowly increasing, since it is still planted in landscapes, and people still dump the plant along roads, where mowing facilitates its spread (1). Some individuals have also been known to plant this weed intentionally in wildland areas (2).		
Rationale: Personal observations based on the widespread use of this plant in landscaping and debris-dumping (1).		
2. Alvarez, M. 1996. Anecdotes from Golden Gate National Recreation Area, as told to P. Warner.		
Sources of information: Warner, PJ. Personal observations. Marin, Sonoma, Mendocino Counties, 1996-2005. 707/937-2278; corylus@earthlink.net		
Question 2.4 Innate reproductive potential		B Rev'd, Sci. Pub'n back
Describe key reproductive characteristics: Sterile variety. All reproduction is by rapidly-growing stolons that can root at nodes. Stolons form from late winter through spring until water availability decreases. A small plant can cover up to 200 square ft/yr		
Rationale: enter text here		

Sources of information: Alvarez 2000	
Question 2.5 Potential for human-caused dispersal	A Rev'd, Sci. Pub'n back
Identify dispersal mechanisms: Introduced for horticulture. Still widely used in landscaping (1,3). Can be spread by mechanical equipment along roads (1,3). Most populations in southern Australia are near water, stockyards, or railways (2).	
Rationale: Found in Cal-IPC nursery survey 2004	
Sources of information: 1. Alvarez 2000 2. Wood 1994. 3. Warner, PJ. Personal observations. Marin, Sonoma, Mendocino Counties, 1996-2005. 707/937-2278; corylus@earthlink.net	
Question 2.6 Potential for natural long-distance dispersal	D No Information back
Identify dispersal mechanisms: enter text here	
Rationale: All reproduction is vegetative, so no seeds available for dispersal. Seems to require human activity to be spread.	
Sources of information: Inferred from information in Alvarez 2000	
Question 2.7 Other regions invaded	B Other Pub. back
Identify other regions: 1. southern Australia: "widespread and successful colonizer, responsible for significant economic losses to cropping and pasture industries, occupies regions with climate similar to its native South Africa"	
Rationale: Scoring as B based on the fact that it is widespread in Australia, which has similar habitats to parts of California, but capeweed has not yet invaded areas such as the central valley where it has the potential to grow (2)	
Sources of information: 1, Wood 1994 2. Alvarez 2000	
Question 3.1 Ecological amplitude/Range	A Other Pub. back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: As of 2000, was in Marin and Humboldt counties (1). Widespread along Sonoma and Mendocino coast, especially in disturbed coastal terrace prairie and seasonally wet areas (2). Could probably survive in most of California west of Sierra Nevada mountains.	

Rationale: enter text here	
Sources of information: 1. Alvarez 2000 2. Warner, PJ. Personal observations. Marin, Sonoma, Mendocino Counties, 1996-2005. 707/937-2278; corylus@earthlink.net	
Question 3.2 Distribution/Peak frequency	C Doc'n level back
Describe distribution: Most common in coastal prairie, especially adjacent to roads, trails, or historical homesteads or farms. Often seen adjacent to habitual roadside dumping sites. Also seen occasionally in coastal wetlands and coastal scrub, also adjacent to human-disturbed sites or domestic landscapes (1).	
Rationale: Purely observational, but lots of observations.	
Sources of information: 1. Warner, PJ. Personal observations. Marin, Sonoma, Mendocino Counties, 1996-2005. 707/937-2278; corylus@earthlink.net	

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	No: 0 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	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
	Total 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	score
	desert	score
	interior	score
Scrub and Chaparral	coastal bluff scrub	score
	coastal scrub	D. present
	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	D. present
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).