

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):	Daucus carota L.
Synonyms:	Carota sativa Rupr., Caulalis carota Crantz, Caulalis daucus Crantz
Common names:	wild carrot, Queen Anne's lace, bird's-nest, devil's plague
Evaluation date (mm/dd/yy):	3/1/05
Evaluator #1 Name/Title:	Elizabeth Brusati, project manager
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Section below for list committee use—please leave blank

List committee members:	Joe DiTomaso, Joanna Clines, Cynthia Roye, Doug Johnson
Committee review date:	7/8/05
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	D	Other Pub. Mat'l
1.3	Impact on higher trophic levels	C	Other Pub. Mat'l
1.4	Impact on genetic integrity	U	No Information

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

2.1	Role of anthropogenic and natural disturbance	C (1 pt)	Rev'd, Sci. Pub'n
2.2	Local rate of spread with no management	C (1 pt)	Other Pub. Mat'l
2.3	Recent trend in total area infested within state	C (1 pt)	Other Pub. Mat'l
2.4	Innate reproductive potential Wksht A	A (3 pts)	Rev'd, Sci. Pub'n
2.5	Potential for human-caused dispersal	C (1 pt)	Observational
2.6	Potential for natural long-distance dispersal	B (2 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>10</p> <p><i>Use matrix to determine score and enter below:</i></p> <p>C</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>Not listed</p> <p>No Alert</p>

3.1	Ecological amplitude/Range	A	Other Pub. Mat'l
3.2	Distribution/Peak frequency Wksht C	D	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	U No Information back
Identify ecosystem processes impacted: No information	
Rationale: enter text here	
Sources of information: enter text here	
Question 1.2 Impact on plant community composition, structure, and interactions	C Other Pub. Mat'l back
Identify type of impact or alteration: However, populations in wildlands are not common and when present are not at high densities. More common in disturbed areas, pastures, roadsides or croplands.	
Rationale: enter text here	
Sources of information: 1. Eckardt, N. 1987. Element Stewardship Abstract for <i>Daucus carota</i> . The Nature Conservancy, Arlington, VA. Available: http://tncweeds.ucdavis.edu/esadocs/daucaro.html	
Question 1.3 Impact on higher trophic levels	C Other Pub. Mat'l back
Identify type of impact or alteration: May be mildly toxic to horses and cattle.	
Rationale: enter text here	
Sources of information: 3. Fitzsimmons, JP, and LC Burrill. 1993. Wild carrot (<i>Daucus carota</i> L.). Pacific Northwest Weeds. PN Extension Publication 447.	
Question 1.4 Impact on genetic integrity	U No Information back
Identify impacts: There is a native <i>Daucus pusillus</i> (1). Cultivated carrots and wild carrot subspecies can crossbreed, but no information on crosses between <i>Daucus</i> species (2).	
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. Bradeen, J. M., I. C. Bach, et al. 2002. Molecular diversity analysis of cultivated carrot (<i>Daucus carota</i> L.) and wild <i>Daucus</i> populations reveals a genetically nonstructured composition." <i>Journal of the American Society of Horticultural Science</i> 127(3): 383-391.	
Question 2.1 Role of anthropogenic and natural disturbance in establishment	C Rev'd, Sci. Pub'n back
Describe role of disturbance: Inhabits open spaces that are disturbed periodically (1).	

Rationale: enter text here	
Sources of information: 1. Mitich, LW. 1996. Wild carrot (<i>Daucus carota</i> L.) Weed Technology. 10:455-457.	
Question 2.2 Local rate of spread with no management	C Other Pub. Mat'l back
Describe rate of spread: Already widespread	
Rationale: enter text here	
Sources of information: DiTomaso and Healy in prep.	
Question 2.3 Recent trend in total area infested within state	C Other Pub. Mat'l back
Describe trend: Already widespread	
Rationale: enter text here	
Sources of information: DiTomaso and Healy in prep.	
Question 2.4 Innate reproductive potential	A Rev'd, Sci. Pub'n back
Describe key reproductive characteristics: Annual, biennial, or short-lived perennial (1, 2). Reproduces by seeds. An average plant produces 10,000 seeds (2). Outcrossing and self-fertile (1), but generally cross-fertilized (2). Buried seeds can survive up to 20 years (1).	
Rationale: enter text here	
Sources of information: 1. DiTomaso, J., and E. Healy. in prep. Weeds of California and Other Western States. 2. Mitich 1996	
Question 2.5 Potential for human-caused dispersal	C Observational back
Identify dispersal mechanisms: Seeds could probably become attached to clothing or vehicles.	
Rationale: enter text here	
Sources of information: DiTomaso, observational	
Question 2.6 Potential for natural long-distance dispersal	B Rev'd, Sci. Pub'n back
Identify dispersal mechanisms: Seeds can be dispersed by wind or carried on animals' fur. Seeds can pass	

undamaged through the digestive tract of a horse (1).	
Rationale: enter text here	
Sources of information: 1. Mitich 1996	
Question 2.7 Other regions invaded	C Other Pub. Mat'l back
Identify other regions: Native to Europe (1). Present in all contiguous U.S. states (2). Abundant west of the Cascades in Oregon and Washington (3).	
Rationale: Scoring as C because already widespread in California.	
Sources of information: 1. Mitich 1996 2. DiTomaso and Healy in prep. 3. Fitzsimmons, JP, and LC Burrill. 1993. Wild carrot (<i>Daucus carota</i> L.). Pacific Northwest Weeds. PN Extension Publication 447.	
Question 3.1 Ecological amplitude/Range	A Other Pub. Mat'l back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: Present throughout California, especially coastal regions, except Great Basin and deserts, to 1500m. Disturbed places, roadsides, fields, pastures, orchards, vegetable crops. Usually grows on sandy or gravelly soils (1).	
Rationale: I'm guessing at habitats based on description above.	
Sources of information: 1. DiTomaso and Healy in prep.	
Question 3.2 Distribution/Peak frequency	D Observational back
Describe distribution: Common, but not in wildland areas. Mainly in disturbed sites.	
Rationale: enter text here	
Sources of information: DiTomaso, observational	

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	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	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	Yes: 1 pt
	8 pts Total Unknowns
	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	score
	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	D. presen
	valley and foothill grassland	D. presen
	Great Basin grassland	D. presen
	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. presen
	riparian scrub (incl. desert washes)	score
Woodland	cismontane woodland	D. presen
	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).