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)**:**	*Conium maculatum*
Synonyms:	enter text here
Common names:	Poison-hemlock
Evaluation date (mm/dd/yy)**:**	5/22/3
Evaluator #1 Name/Title:	Joe DiTomaso
Affiliation:	UC Davis
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Address:	Weed Science Program, Robbins Hall, Univ. California, Davis CA 95616
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 review committee use—please leave blank

Review committee members:	Joe DiTomaso, Peter Warner, Alison Stanton, Carla Bossard, Cynthia Roye, Jake Sigg, Doug Johnson, Brianna Richardson
Committee review date:	06/06/03
List date:	enter text here
Re-evaluation date(s):	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	**B**	**Other Pub. Mat'l**
1.3	Impact on higher trophic levels	**A**	**Other Pub. Mat'l**
1.4	Impact on genetic integrity	**D**	**Other Pub. Mat'l**

"Impact"

Enter four characters from Q1.1-1.4 below:

UBAD

Use matrix determine the score; enter below:

B

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

"Invasiveness"

For questions at left, recall that an A gets 3 points, a B gets 2, a C gets 1, and a D or U gets=0. Enter the sum total of all points for Q2.1-2.7 below:

12

Use matrix to determine score and enter below:

B

"Plant Score"

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

Medium

No Alert

3.1	Ecological amplitude	**A**	**Other Pub. Mat'l**
3.2	Distribution	**C**	**Other Pub. Mat'l**

"Distribution"

Use matrix determine the score; enter below:

B

Worksheet A. Complete this worksheet to answer Question 2.4.

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	**Yes: 1 pt**
Seeds remain viable in soil for three or more years	**Yes: 2 pts**
Viable seed produced with *both* 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**
Total Pts 8	**Total Unknowns 0**
Score A	

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes
Identify ecosystem processes impacted: None reported, unknown.
Rationale:
Sources of information:
Question 1.2 Impact on plant community composition, structure, and interactions
Identify type of impact or alteration: Can form very dense stands and crowd out other vegetation. Pioneer species colonizing disturbed sties and displacing natives during early successional stages. Suppresses light.
Rationale:
Sources of information: Pitcher, D. 1989. Poison hemlock. Element Stewardship Abstract. TNC Drewitz, J. 2000. *Conium maculatum*. In, Invasive Plants of California's Wildlands. CalEPPC. UC Press, Berkeley.
Question 1.3 Impact on higher trophic levels
Identify type of impact or alteration: Toxic to all organisms including humans, livestock, and wildlife. 10% of elk population on Grizzly Island, CA, died from ingestion of poison hemlock in 1985.
Rationale:
Sources of information: Mitich, L.W. 1998. Weed Technology 12:194-197; Pitcher, D. 1989. Poison hemlock. Element Stewardship Abstract. TNC; Parsons, W.T. and E.G. Cuthbertson. 1992. Noxious Weeds of Australia. Inkata Press, Sydney; DiTomaso, J.M. and E.A. Healy. 2005. Weeds of California. DANR (pre-print)
Question 1.4 Impact on genetic integrity
Identify impacts: None
Rationale: No native *Conium* species in North America
Sources of information: DiTomaso, J.M. 1999. Poison hemlock. In, Biology and Management of Noxious Rangeland Weeds. Oregon St. Univ. Press, Corvallis.
Question 2.1 Role of anthropogenic and natural disturbance in establishment
Describe role of disturbance: Usually found in disturbed sites, but can invade native plant communities in riparian woodlands and open flood plains of rivers and streams. Common in shady areas
Rationale:
Sources of information: DiTomaso, J.M. and E.A. Healy. 2005. Weeds of California. DANR (pre-print); Pitcher, D. 1989. Poison hemlock. Element Stewardship Abstract. TNC
Question 2.2 Local rate of spread with no management
Describe rate of spread: Spreads rapidly in newly disturbed sites. Probably > 10 years.
Rationale:
Sources of information: DiTomaso, J.M. 1999. Poison hemlock. In, Biology and Management of Noxious Rangeland Weeds. Oregon St. Univ. Press, Corvallis.
Question 2.3 Recent trend in total area infested within state
Describe trend: Appears to be stable statewide. Has been around for many years.
Rationale:
Sources of information: DiTomaso-Observational
Question 2.4 Innate reproductive potential
Describe key reproductive characteristics: Seed dispersal from late summer through winter. Dormancy about 3 years. Biennial, flowers in second year.
Rationale:
Sources of information: Baskin, J.M. and C.C. Baskin. 1990. Seed germination ecology of poison-hemlock. Canadian J. Bot. 68:2018-2024; DiTomaso, J.M. and E.A. Healy. 2005. Weeds of California. DANR (pre-print); DiTomaso, J.M. 1999. Poison hemlock. In, Biology and Management of Noxious Rangeland Weeds. Oregon St. Univ. Press, Corvallis.
Question 2.5 Potential for human-caused dispersal
Identify dispersal mechanisms: Can be moved by farm machinery, vehicles, ag practices, clothing, etc., but this is usually from agricultural area to agricultural area.
Rationale:
Sources of information: Pitcher, D. 1989. Poison hemlock. Element Stewardship Abstract. TNC
Question 2.6 Potential for natural long-distance dispersal
Identify dispersal mechanisms: Most seed fall to base of parent plant. Some long distance movement in water when plants are growing near streams.
Rationale:
Sources of information: DiTomaso, J.M. and E.A. Healy. 2005. Weeds of California. DANR (pre-print);

DiTomaso, J.M. 1999. Poison hemlock. In, Biology and Management of Noxious Rangeland Weeds. Oregon St. Univ. Press, Corvallis.
Question 2.7 Other regions invaded
Identify other regions: Reported as a weed in South America, Europe, temperate Asia, North Africa, Australia, New Zealand and Canada. Also throughout the US. A weed in 9 crops in 34 contries.
Rationale: Widespread worldwide but in the same type of habitats.
Sources of information: DiTomaso, J.M. and E.A. Healy. 2005. Weeds of California. DANR (pre-print); Drewitz, J. 2000. *Conium maculatum*. In, Invasive Plants of California's Wildlands. CalEPPC. UC Press, Berkeley.
Question 3.1 Ecological amplitude
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: Considered a facultative wetland indicator plant in the western US and an obligate wetland species in AZ and NM. Riparian areas, ditches, pastures, waste places. Introduced to the US as a garden plant in 1800s. First reported in California in 1893 in Berkeley.
Rationale:
Sources of information: DiTomaso, J.M. and E.A. Healy. 2005. Weeds of California. DANR (pre-print); Drewitz, J. 2000. *Conium maculatum*. In, Invasive Plants of California's Wildlands. CalEPPC. UC Press, Berkeley.
Question 3.2 Distribution
Describe distribution: Common in shady areas, particularly riparian woodlands and open flood plains of rivers and streams.
Rationale:
Sources of information: Pitcher, D. 1989. Poison hemlock. Element Stewardship Abstract. TNC

Complete the worksheet that corresponds to your state using the letter codes and instructions in Section 3.

Worksheet C - California Ecological Types

(*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**
Grasslands, Vernal Pools, Meadows, and other Herb Communities	coastal prairie	**D. presen**
	valley and foothill grassland	**D. presen**
	Great Basin grassland	**score**
	vernal pool	**score**
	meadow and seep	**D. presen**
	alkali playa	**score**
	pebble plain	**score**
Bog and Marsh	bog and fen	**score**
	marsh and swamp	**score**
Riparian and Bottomland	riparian forest	**D. presen**
	riparian woodland	**C. 5-20%**
	riparian scrub (incl.desert washes)	**D. presen**
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).