

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): | Ludwigia peploides |
| Synonyms: | Jussiaea peploides |
| Common names: | creeping water primrose, California water primrose |
| Evaluation date (mm/dd/yy): | 03/01/04 |
| Evaluator #1 Name/Title: | Joel Trumbo |
| Affiliation: | CA Dept of Fish and Game |
| Phone numbers: | (916) 358-2952 |
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| Address: | 1701 Nimbus Road, Suite F, Rancho Cordova, CA 95670 |
| Evaluator #2 Name/Title: | Joe DiTomaso |
| Affiliation: | UC Davis |
| Phone numbers: | 530-754-8715 |
| Email address: | DiTomaso@vegmail.ucdavis.edu |
| Address: | Weed Science Program, Robbins Hall, Univ. California, Davis CA 95616 |

Section below for list committee use—please leave blank

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|--------------------------------|--|
| List committee members: | Carla Bossard, Joe DiTomaso, John Randall, Cynthia Roye, Jake Sigg, Alison Stanton, Peter Warner |
| Committee review date: | 03/19/04 |
| 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 | A | Observational |
| 1.2 | Impact on plant community | A | Observational |
| 1.3 | Impact on higher trophic levels | B | Other Pub. Mat'l |
| 1.4 | Impact on genetic integrity | D | Rev'd, Sci. Pub'n |

“Impact”
 Enter four characters from Q1.1-1.4 below:
AABD
 Use matrix determine the score; enter below:
A

| | | | |
|-----|--|------------|--------------------------|
| 2.1 | Role of anthropogenic and natural disturbance | B 2 | Observational |
| 2.2 | Local rate of spread with no management | B 2 | Observational |
| 2.3 | Recent trend in total area infested within state | B 2 | Observational |
| 2.4 | Innate reproductive potential | A 3 | Rev'd, Sci. Pub'n |
| 2.5 | Potential for human-caused dispersal | B 2 | Observational |
| 2.6 | Potential for natural long-distance dispersal | A 3 | Observational |
| 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:
15
 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:
High
No Alert

| | | | |
|-----|----------------------|----------|----------------------|
| 3.1 | Ecological amplitude | C | Observational |
| 3.2 | Distribution | B | Observational |

“Distribution”
 Use matrix determine the score; enter below:
B

Table 3. Documentation

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| Question 1.1 Impact on abiotic ecosystem processes |
| Identify ecosystem processes impacted: increased sedimentation, increased organic enrichment, restricted water flow and decreased light availability into the water column. Changes in dissolved oxygen concentrations may also be expected to occur in non-flowing systems with dense infestations. |
| Rationale: described impacts would be expected from any infestation of floating species with heavy biomass above and below the water surface |
| Sources of information: personal observation, Joel Trumbo Butte County 1990 - present. jtrumbo@ospr.dfg.ca.gov |
| Question 1.2 Impact on plant community composition, structure, and interactions |
| Identify type of impact or alteration: severe impacts would include occlusion (>75%) of water surface limiting the growth of native species within the water column or on water surface. Fragmentation of native aquatic plant community . |
| Rationale: described impacts would be expected from any aquatic plant infestation which forms, large, monotypic vegetation mats. Coverage of water surface is often complete in shallow water bodies. |
| Sources of information: personal observation, Joel Trumbo Butte County 1990 - present. jtrumbo@ospr.dfg.ca.gov |
| Question 1.3 Impact on higher trophic levels |
| Identify type of impact or alteration: dense infestations of emersed aquatic vegetation can cause alteration of aquatic faunal communities due to changes in subsurface cover and dissolved oxygen content. |
| Rationale: dense aquatic weed cover will change subsurface habitat quality for fish species because of increased biomass. |
| Sources of information: Aquatic vgetation influences on growth and recruitment of age-0 largemouth bass in Aliceville Lake. Alabama Department of Conservation and Natural Resources, January 1996. |
| Question 1.4 Impact on genetic integrity |
| Identify impacts: While several subspecies exist within CA (native and introduced), there appears to be no evidence of hybridization |
| Rationale: sexual reproduction may be limited. |
| Sources of information: Aquatic and Riparian Weeds of the West. Joe DiTomaso and Evelyn Healy. University |

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| of California Agriculture and Natural Resources. Oakland, California. 2003. |
| Question 2.1 Role of anthropogenic and natural disturbance in establishment |
| Describe role of disturbance: Species appears to cause most of its problems in man-made structures such as irrigation and drainage canals. In natural areas, problems are often related to human-caused nutrient enrichment. |
| Rationale: enter text here |
| Sources of information: personal observation, Joel Trumbo Butte County 1990 - present. jtrumbo@ospr.dfg.ca.gov enter text here |
| Question 2.2 Local rate of spread with no management |
| Describe rate of spread: can spread rather rapidly, particularly in shallow water areas and areas with high nutrient enrichment. However, slower to spread than its frequent cohort parrotfeather, <i>Myriophyllum aquaticum</i> . |
| Rationale: enter text here |
| Sources of information: personal observation, Joel Trumbo Butte County 1990 - present. jtrumbo@ospr.dfg.ca.gov enter text here |
| Question 2.3 Recent trend in total area infested within state |
| Describe trend: Probably slightly increasing in the state. |
| Rationale: enter text here |
| Sources of information: Observational, Trumbo and DiTomaso (ditomaso@vegmail.ucdavis.edu) |
| Question 2.4 Innate reproductive potential |
| Describe key reproductive characteristics: high vegetative reproductive potential |
| Rationale: enter text here |
| Sources of information: Aquatic and Riparian Weeds of the West. Joe DiTomaso and Evelyn Healy. University of California Agriculture and Natural Resources. Oakland, California. 2003. |
| Question 2.5 Potential for human-caused dispersal |
| Identify dispersal mechanisms: flowing water in canals and streams, transport on boats and boat trailers |

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| Rationale: enter text here |
| Sources of information: personal knowledge and observation, Joel Trumbo |
| Question 2.6 Potential for natural long-distance dispersal |
| Identify dispersal mechanisms: flowing water, on the bodies of migrating waterfowl |
| Rationale: enter text here |
| Sources of information: Aquatic and Riparian Weeds of the West. Joe DiTomaso and Evelyn Healy. University of California Agriculture and Natural Resources. Oakland, California. 2003. |
| Question 2.7 Other regions invaded |
| Identify other regions: has invaded numerous other global locations including Europe and Australia. |
| Rationale: enter text here |
| Sources of information: Aquatic and Riparian Weeds of the West. Joe DiTomaso and Evelyn Healy. University of California Agriculture and Natural Resources. Oakland, California. 2003. The Jepson Manual, University of California Press, Berkeley and Los Angeles California. 1993. |
| Question 3.1 Ecological amplitude |
| Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: My very rough estimate would be >5% but < 20% of freshwater aquatic sites have been invaded. |
| Rationale: frequency estimate |
| Sources of information: personal observation, Joel Trumbo |
| Question 3.2 Distribution |
| Describe distribution: one of the most common freshwater, emersed aquatic weeds in the State, but it is limited to freshwater sites. |
| Rationale: enter text here |
| Sources of information: observation, Joel Trumbo, and Joe DiTomaso (ditomaso@vegmail.ucdavis.edu) |

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 | No: 0 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 | Unknown: 0 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 | Yes: 2 pts |
| Resprouts readily when cut, grazed, or burned | Yes: 1 pt |
| | 7 pts 2 unknowns |
| | A (6+ pts) |
| Note any related traits: enter text here | |

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 | C. 5-20% |
| | rivers, streams, canals | B. 21-50% |
| | 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 | score |
| | 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 | 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).