

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

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|---------------------------------------|--|
| Species name (Latin binomial): | Saponaria officinalis L. |
| Synonyms: | Lychnis saponaria Jessen |
| Common names: | bouncing-bet, bouncing betty, soapwort; goodbye summer |
| Evaluation date (mm/dd/yy): | 3/15/04 |
| Evaluator #1 Name/Title: | Ann Howald |
| Affiliation: | Garcia and Associates |
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| Address: | 210 Chestnut Avenue, Sonoma, CA 95476 |
| Evaluator #2 Name/Title: | Peter J. Warner, Associate State Park Resource Ecologist |
| Affiliation: | California Department of Parks & Recreation |
| Phone numbers: | 707/937-9172; 707/937-2278 |
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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 | U | Other Pub. Mat'l |
| 1.2 | Impact on plant community | B | Other Pub. Mat'l |
| 1.3 | Impact on higher trophic levels | C | Other Pub. Mat'l |
| 1.4 | Impact on genetic integrity | D | Doc'n level |

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

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

“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:
14
 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:
Low
Alert Status

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

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

Table 3. Documentation

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| Question 1.1 Impact on abiotic ecosystem processes |
| Identify ecosystem processes impacted: : Possible water quality effects but no data at present. |
| Rationale: Plants contain large amounts of saponins, are noted as toxic in literature, grow near water. Currently no evidence that these compounds enter or effect streams where Saponaria is found. |
| Sources of information: Google has 9,960 hits for Saponaria. Many of these sources discuss toxicity. |
| Question 1.2 Impact on plant community composition, structure, and interactions |
| Identify type of impact or alteration: Eliminates native vegetation from streamside habitat. |
| Rationale: Forms dense stands reaching 75-100% cover; 26 acres mapped along 10-mile stretch of N. Fork Feather River in 2003. |
| Sources of information: Garcia and Associates, Feb 2004. Rock Creek-Cresta Noxious Weed Control Monitoring Program. Unpublished report for PG&E. |
| Question 1.3 Impact on higher trophic levels |
| Identify type of impact or alteration: Low palatability to grazers and browsers. Roots are toxic to fish (saponin content is highest in roots), so possible reduction in food resources for riparian or lacustrine vertebrates and invertebrates, however, no data at present. Saponins from this plant are used, presumably in small quantities, in Germany to give beer a foamier head Species constituents include triterpene, saponin, resin, gum, mucilage, and phytosterols. |
| Rationale: Little evidence of toxicity to livestock or wild animals. Toxic to fish, so could be toxic to other aquatic invertebrates. Growth displaces native plant forage. |
| Sources of information: U. S. Dept. of Agriculture, Natural Resources Conservation Service @ http://plants.usda.gov/classification/output_report.cgi?SAOF4 Tiscali Gardening @ http://gardening.worldwide.co.za/0556.htm Plants Database @ http://plantsdatabase.com/go/171/ Grey Wing's Herbal @ http://www.geocities.com/Athens/4177/sopwrt.html |
| Question 1.4 Impact on genetic integrity |
| Identify impacts: None. |
| Rationale: enter text here |
| Sources of information: enter text here |

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| Question 2.1 Role of anthropogenic and natural disturbance in establishment |
| Describe role of disturbance: Natural disturbance seems most important. Plants invade streamside (shoreline) habitat, gravel bars, other areas affected by high water events. |
| Rationale: enter text here |
| Sources of information: : Personal observations. Reports from CalFlora database of locations for plants along streams and rivers. |
| Question 2.2 Local rate of spread with no management |
| Describe rate of spread: Rapid, potentially. |
| Rationale: At Lee Vining Creek (near Mono Lake, Mono Co) Saponaria has increased from undetectable levels to a dominant component of some areas of streamside habitat in 15 years. |
| Sources of information: Personal observations. |
| Question 2.3 Recent trend in total area infested within state |
| Describe trend: Likely increasing, but unknown. |
| Rationale: No regional monitoring has been done. |
| Sources of information: Personal observations, CalFlora database records. |
| Question 2.4 Innate reproductive potential |
| Describe key reproductive characteristics: : Produces many seeds. Spreads vegetatively by rhizomes and broken stem fragments. |
| Rationale: enter text here |
| Sources of information: :Hickman, JC (editor). 1993. The Jepson Manual: Higher Plants of California (Third printing). University of California Press, Berkeley. P. 487. U. S. Dept. of Agriculture, Natural Resources Conservation Service @ http://plants.usda.gov/classification/output_report.cgi?SAOF4 Howald, A. 2004. Personal observations. |
| Question 2.5 Potential for human-caused dispersal |
| Identify dispersal mechanisms: Horticultural and medicinal uses. |

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| Rationale: Popular garden plant in mountainous areas with harsh climate that plant easily tolerates. |
| Sources of information: U. S. Dept. of Agriculture, Natural Resources Conservation Service @ http://plants.usda.gov/classification/output_report.cgi?SAOF4 |
| Question 2.6 Potential for natural long-distance dispersal |
| Identify dispersal mechanisms: Seeds, stem fragments. |
| Rationale: Stem fragments carried by water; plant invades stream shorelines. |
| Sources of information: Howald, A. 2004. Personal observations. |
| Question 2.7 Other regions invaded |
| Identify other regions: Naturalized widely in North America, including grasslands and dunes along the Great Lakes. Also reported from the Queensland sandy plain area in Australia. |
| Rationale: Most of California is too dry for this species to prosper, so invasion of new ecological types appears unlikely, especially since the plant has been in California for a long time. |
| Sources of information: Bailey, L. H. Manual of cultivated plants. U. S. Dept. of Agriculture, Natural Resources Conservation Service @ http://plants.usda.gov/classification/output_report.cgi?SAOF4 |
| Question 3.1 Ecological amplitude |
| Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: : Riparian habitat; date of introduction unknown but found in the wild in CA by 1900. |
| Rationale: Dependent on minimum of 32 inches/year precipitation, so probably restricted in most of CA to riparian or lacustrine habitat. |
| Sources of information: U. S. Dept. of Agriculture, Natural Resources Conservation Service @ http://plants.usda.gov/classification/output_report.cgi?SAOF4 Howald, A. 2004. Personal observations. CalFlora database. |
| Question 3.2 Distribution |
| Describe distribution: Generally unknown; reported from Mono and Plumas Counties in riparian habitats. |

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| Rationale: Best guess based on limited personal observations. |
| Sources of information: Howald, A. 2004. Personal observations. |

Worksheet A

Complete this worksheet to answer Question 2.4.

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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 | 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 |
| | 8 pts Total 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 | 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 | 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 | D. present |
| | riparian scrub (incl. desert washes) | C. 5-20% |
| 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).