

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):	Lythrum hyssopifolium L.
Synonyms:	L. adsurgens, L. hyssopifolia
Common names:	Hyssop loosestrife, grass poly, hyssop lythrum
Evaluation date (mm/dd/yy):	12/29/04
Evaluator #1 Name/Title:	Elizabeth Brusati, project manager
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Evaluator #2 Name/Title:	enter text here
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Email address:	enter text here
Address:	enter text here

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	U	No Information
1.2	Impact on plant community	C	Rev'd, Sci. Pub'n
1.3	Impact on higher trophic levels	U	No Information
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>UCUD</p> <p><i>Using matrix, determine score and enter below:</i></p> <p>C</p>

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

<p>Invasiveness</p> <p><i>Enter the sum total of all points for Q2.1-2.7 below:</i></p> <p>11</p> <p>Use matrix to determine score and enter below:</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>Low</p> <p>No Alert</p>
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3.1	Ecological amplitude/Range	B	Other Pub. Mat'l
3.2	Distribution/Peak frequency Wksht C	A	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 Rev'd, Sci. Pub'n back
Identify type of impact or alteration: Could outcompete native species early in succession. Other species would outcompete <i>L. hyssopifolium</i> at later successional stages.	
In California, I've never seen a serious infestation of this plant, and given its poor long-term competitive ability (1), and preference for disturbed environments, I don't think that this plant has more than minor impacts on wild, native plant communities (3)	
Rationale: Highly competitive during early stages of succession but lacks long-term competitive ability (1). Because of specific habitat requirements, is less likely than purple loosestrife to displace native species (2). This species may be more invasive elsewhere, but my observations don't support this plant being considered a serious weed of wildlands (3).	
Sources of information: 1. Callaghan D.A. 1998. Biological Flora of the British Isles: <i>Lythrum hyssopifolium</i> L. <i>Journal of Ecology</i> 86: 1065-1072	
2. Johnson, M. T., and C. J. Rothfels. 2001. The establishment and proliferation of the rare exotic plant, <i>Lythrum hyssopifolia</i> , Hyssop-leaved Loosestrife, at a pond in Guelph, Ontario. <i>Canadian Field-Naturalist</i> . 115(2): 229-233.	
3. Warner, PJ. Personal observations, 1990-2005. San Mateo, Marin, Sonoma, Napa, Mendocino, Plumas, Sacramento, Del Norte, Humboldt, and other counties. 707-937-2278/corylus@earthlink.net	
Question 1.3 Impact on higher trophic levels	U No Information back
Identify type of impact or alteration: no information	
Rationale: enter text here	
Sources of information: enter text here	
Question 1.4 Impact on genetic integrity	D Rev'd, Sci. Pub'n back
Identify impacts: none	
Rationale: no native <i>Lythrum</i> in California	

Sources of information: Hickman, J. C. (ed.) 1993. The Jepson Manual, Higher Plants of California. University of California Press. Berkeley, CA enter text here	
Question 2.1 Role of anthropogenic and natural disturbance in establishment	C Rev'd, Sci. Pub'n back
Describe role of disturbance: Seems to require disturbance to open up bare areas for colonization (1,2). However, Lythrum h. does pioneer on seasonally flooded and silted sites, thus natural disturbance is also a factor in germination and establishment (3).	
Rationale: Pioneer of exposed mud. In agricultural lands, persistence depends upon spring ploughing (1). Usually inhabits areas that are frequently disturbed (2) or those seasonally flooded (3). I have not ever seen this species in an undisturbed area (3).	
Sources of information: 1. Callaghan 1998 2. Johnson and Rothfels 2001 3. Warner, PJ. Personal observations, 1990-2005. San Mateo, Marin, Sonoma, Napa, Mendocino, Plumas, Sacramento, Del Norte, Humboldt, and other counties. 707-937-2278/corylus@earthlink.net	
Question 2.2 Local rate of spread with no management	B Rev'd, Sci. Pub'n back
Describe rate of spread: In Ontario, increased from 100 plants with 426 stems to 1556 plants with 2090 stems in one year (1).	
Rationale: Without disputing this data, I've not seen a population of Lythrum h. spread at this rate in California (2).	
Sources of information: 1. Johnson and Rothfels 2001 2. Warner, PJ. Personal observations, 1990-2005. San Mateo, Marin, Sonoma, Napa, Mendocino, Plumas, Sacramento, Del Norte, Humboldt, and other counties. 707-937-2278/corylus@earthlink.net	
Question 2.3 Recent trend in total area infested within state	C Observational back
Describe trend: Most likely stable. This species was probably introduced to California long ago, and by now it has probably invaded most suitable habitats (1)	
Rationale: An informed guess. Could use more observations.	
Sources of information: 1. Warner, PJ. Personal observations, 1990-2005. San Mateo, Marin, Sonoma, Napa, Mendocino, Plumas, Sacramento, Del Norte, Humboldt, and other counties. 707-937-2278/corylus@earthlink.net	
Question 2.4 Innate reproductive potential	A Rev'd, Sci. Pub'n back
Describe key reproductive characteristics: Summer annual or biennial (1). Can cross-fertilize but usually self-pollinates. Flowers April - October (1). Produces many seeds and shoots grow from adventitious roots (1, 2).	

Large individuals can produce 75, 000 seeds (3). Long-lived seed bank (2); seeds can survive 14 years in lab (1).	
Rationale: [NEED TO DISCUSS: fragmenting and re-establishment question - data supporting this? PJW]	
Sources of information: 1. DiTomaso J.M., and E.H. Healy. 2003 Aquatic and Riparian Weeds of the West. University of California Agricultural and Natural Resources Publication 3421. University of California. Pgs. 171-175. 2. Johson and Rothfels 2001 3. Callaghan 1998.	
Question 2.5 Potential for human-caused dispersal	C Rev'd, Sci. Pub'n back
Identify dispersal mechanisms: "Human activities" (1). Seeds transported on shoes or possibly boats.	
Rationale: Grows along waterways, ponds, and flooded fields (2).	
Sources of information: 1. DiTomaso and Healy 2003 2. Callaghan 1998	
Question 2.6 Potential for natural long-distance dispersal	B Rev'd, Sci. Pub'n back
Identify dispersal mechanisms: Seeds caught in mud on birds' feet (1, 1) or fur and feet of mammals (D). Possible transport by water.	
Rationale: Waterbirds are important dispersers. Seeds are buoyant, but sink quickly, so water dispersal is probably for short distances only (1).	
Sources of information: 1. Callaghan 1998 2. DiTomaso and Healy 2003	
Question 2.7 Other regions invaded	C Rev'd, Sci. Pub'n back
Identify other regions: Native to Europe, found on every continent except Antarctica (1). Recorded in North America in 1815 (1). Present in Washington and Oregon (2).	
Rationale: Scoring as C because it's already present throughout California, so I am assuming that it already occurs in most ecological types where it could survive.	
Sources of information: 1. Johson and Rothfels 2001 2. DiTomaso and Healy 2003	
Question 3.1 Ecological amplitude/Range	B Other Pub. Mat'l back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to	

the state, if known: Common in seasonal wetlands, ditches, and crops, especially rice fields. Tolerates some salinity but sensitive to heavy frost. Present throughout California except in Great Basin and deserts, to 1600m (1).

Rationale: Assessment based on my observations of the listed habitats (2).

Sources of information: 1. DiTomaso and Healy 2003
2. Warner, P.J. Personal observations, 1990-2005. San Mateo, Marin, Sonoma, Napa, Mendocino, Plumas, Sacramento, Del Norte, Humboldt, and other counties. 707-937-2278/corylus@earthlink.net

Question 3.2 Distribution/Peak frequency A No Information [back](#)

Describe distribution: Very common in marshes and other wetlands; not conspicuous, but often present in seasonally moist swales in grassland, scrub, and some woodlands. I have compiled numerous plant lists throughout northern California, and most of them include *Lythrum h.* (1).

Rationale: personal observations

Sources of information: 1. Warner, P.J. Personal observations, 1990-2005. San Mateo, Marin, Sonoma, Napa, Mendocino, Plumas, Sacramento, Del Norte, Humboldt, and other counties. 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	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	Unknown: 0 pts
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	Yes: 1 pt
Fragments easily and fragments can become established elsewhere	Yes: 2 pts
Resprouts readily when cut, grazed, or burned	Unknown: 0 pts
	10 pts 2 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	B. 21-50
	valley and foothill grassland	D. present
	Great Basin grassland	score
	vernal pool	C. 5-20%
	meadow and seep	B. 21-50
	alkali playa	score
	pebble plain	score
Bog and Marsh	bog and fen	score
	marsh and swamp	A. >50%
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).