

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):	Myosotis latifolia
Synonyms:	Myosotis sylvatica [misapplied in older California references]
Common names:	common forget-me-not, wood forget-me-not, broadleaf forget-me-not
Evaluation date (mm/dd/yy):	12/13/04
Evaluator #1 Name/Title:	Jim Bromberg/ Biological Science Technician
Affiliation:	Point Reyes National Seashore
Phone numbers:	(415) 464-5231
Email address:	James_Bromberg@nps.gov
Address:	1 Bear Valley Road, Point Reyes Station CA 94956
Evaluator #2 Name/Title:	Peter J. Warner / ecologist
Affiliation:	California State Parks
Phone numbers:	707-937-9172; 707-937-2278
Email address:	corylus@earthlink.net
Address:	P. O. Box 603, Little River, CA 95456

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:

There is no information on *Myosotis sylvestris*, and little on *M. latifolia*, so perhaps this PAF should cover both of them. I changed the level of documentation (and citation format) on 2.4 from anecdotal to "other published". Because the weeds book isn't out yet, I wasn't sure if it can be counted as reviewed yet.- E. Brusati

Table 2. Criteria, Section, and Overall Scores

1.1	Impact on abiotic ecosystem processes	U	No Information
1.2	Impact on plant community	B	Observational
1.3	Impact on higher trophic levels	U	Observational
1.4	Impact on genetic integrity	D	Rev'd Sci Pub'n

Impact

Enter four characters from Q1.1-1.4 below:

UBUD

Using matrix, determine score and enter below:

C

2.1	Role of anthropogenic and natural disturbance	3 (2 pts)	Other Pub. Mat'l
2.2	Local rate of spread with no management	3 (2 pts)	Observational
2.3	Recent trend in total area infested within state	3 (2 pts)	Other Pub. Mat'l
2.4	Innate reproductive potential Wksht A	3 (3 pts)	Other Pub. Mat'l
2.5	Potential for human-caused dispersal	3 (3 pts)	Observational
2.6	Potential for natural long-distance dispersal	3 (2 pts)	Observational
2.7	Other regions invaded	3 (1pt.)	Observational

Invasiveness

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 Overall Score and Alert Status from the three section scores and enter below:

Low
No Alert

3.1	Ecological amplitude/Range	B	Other Pub. Mat'l
3.2	Distribution/Peak frequency Wksht C	C	No Information

Distribution

Using matrix, determine score and enter below:

B

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes	U No Information back
Identify ecosystem processes impacted: unknown	
Rationale:	
Sources of information:	
Question 1.2 Impact on plant community composition, structure, and interactions	B Observational back
Identify type of impact or alteration: reduction in native ground cover (1). <i>Myosotis</i> is an invader of the understory along roads and trails, and once established, spreads into less disturbed adjacent native plant communities (2).	
Rationale: 1. At Muir Woods National Monument, it was found that <i>M. latifolia</i> was the dominant forest floor cover prior to removal. Following removal, there was a noticeable increase in uncommon native plants including trillium, clintonia, fetid-adderstongue, starflower, etc. (Monroe)	
Sources of information: Email from Mia Monroe, Muir Woods National Monument (National Park Service). mia_monroe@nps.gov	
2. Warner, PJ. Personal observations, 1996-2005. Marin, Sonoma, Mendocino, Humboldt 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: Reduction of habitat for invertebrates, small mammals and birds	
Rationale: Muir Woods National Monument has experienced rebounds of plant diversity after removing monocultures of forget-me-nots. Since different plants are often required at various stages of the life cycle for different animals, it is suspected that habitat for many animals may be reduced by <i>M. latifolia</i> , although no known research has been done at this point. [Hypothetical arguments should be discarded. - PJW]	
Sources of information: email from Mia Monroe, Muir Woods National Monument	
Question 1.4 Impact on genetic integrity	D Rev'd Sci Pubn. back
Identify impacts: Extremely unlikely to impact the one native forget-me-not, <i>Myosotis laxa</i> .	
Rationale: Regional distributions and habitats of <i>M. laxa</i> and <i>M. latifolia</i> do not overlap, so potential for hybridization would seem to be low.	
Sources of information: Hickman, J. (editor). 1993. The Jepson Manual: Higher Plants of California.	

Question 2.1 Role of anthropogenic and natural disturbance in establishment	B Other Pub. Mat'l back
Describe role of disturbance: Myosotis will move in after disturbance by fire (1), and mowing, and trail maintenance, etc. (2).	
Rationale: Point Reyes National Seashore experienced Myosotis spreading after the Mount Vision fire of 1995. In some shaded areas, populations of Myosotis were observed to be 75 to 100% cover in the three years following the fire.	
Sources of information: 1. U. S. Dept. of the Interior, Pt. Reyes National Seashore. 1998. Vision Fire Vegetation Monitoring Final Report 1996-1998. 2. Warner, PJ. Personal observations, 1996-2005. San Mateo, Marin, Sonoma, Mendocino, Del Norte, Humboldt Counties. 707-937-2278/corylus@earthlink.net	
Question 2.2 Local rate of spread with no management	B Observational back
Describe rate of spread: Aggressive. Infestations expand very quickly from one plant (2).	
Rationale: Muir Wood National Monument has experienced M. latifolia growing and taking over partly shaded and moist areas especially where other non-natives have been removed or soil has been disturbed. While actual quantitative rates of spread have not been determined, staff at MWNM consider it to spread aggressively.	
Sources of information: 1. Email from Mia Monroe, Muir Woods National Monument 2. Warner, PJ. Personal observations, 1996-2005. San Mateo, Marin, Sonoma, Mendocino, Del Norte, Humboldt Counties. 707-937-2278/corylus@earthlink.net	
Question 2.3 Recent trend in total area infested within state	B Other Pub. Mat'l back
Describe trend: Increasingly common. I have no prior data, but based on reports of distributions in the Jepson Manual and the CalFlora Database, I'd estimate that this plant is expanding its range (2).	
Rationale: [M. latifolia] has become an increasingly common site along trails of the Monterrey Bay area (1).	
Sources of information: 1. Weed Control By Species:Elkhorn Slough National Estuarine Research Reserve (October 2000). http://www.elkhornslough.org/plants/weeds.PDF 2. Warner, PJ. Personal observations, 1996-2005. San Mateo, Marin, Sonoma, Mendocino, Del Norte, Humboldt Counties. 707-937-2278/corylus@earthlink.net	
Question 2.4 Innate reproductive potential	A Other Pub. Mat'l back
Describe key reproductive characteristics: Reproduces by seed and vegetatively by fibrous creeping roots. Seeds can remain viable over long periods of time (1).	
Rationale: enter text here	

Sources of information: 1. Di Tomaso, J, and E. Healy. in prep. Weeds of California. as yet unpublished.	
Question 2.5 Potential for human-caused dispersal	A Observational back
Identify dispersal mechanisms: Seeds available at seed distributors and nurseries; seeds stick to hikers pant legs. Based on distribution of this species along trails and roads, the evidence is fairly convincing that human activities can be implicated in its dispersal (2).	
Rationale: Muir Woods believes that seeds were scattered intentionally in the Redwood Creek watershed by local garden clubs. They additionally believe that seeds have been further distributed by attachment to hikers legs and transport throughout the trail system (1). These seeds are available at most seed distributor websites. Mowing and other road- and trailside maintenance activities can also spread seeds (2).	
Considering the dispersal mechanisms noted above, and the dominance of this species along roads and trails, I'd hypothesize that humans account for the most of the seed dispersal for this species (2).	
Sources of information: 1. email from Mia Monroe, Muir Woods National Monument 2. Warner, PJ. Personal observations from 1996-2005. San Mateo, Marin, Sonoma, Mendocino, Del Norte, Humboldt Counties. 707-937-2278/corylus@earthlink.net	
Question 2.6 Potential for natural long-distance dispersal	B Observational back
Identify dispersal mechanisms: unknown if there are any animal dispersal mechanisms but may be dispersed by water. The fruits have hooked appendages that cling to fur; most animals probably do not range more than 1 km from the site of seed attachment, but some do (2).	
Rationale: Muir Woods National Monument has found populations of <i>M. latifolia</i> downstream from other populations and suspect that either seeds or root fragments may be carried downstream by high water events (1).	
Sources of information: 1. email from Mia Monroe, Muir Woods National Monument 2. Warner, PJ. Personal observations, 1996-2005. San Mateo, Marin, Sonoma, Mendocino, Del Norte, Humboldt Counties. 707-937-2278/corylus@earthlink.net	
Question 2.7 Other regions invaded	U No Information back
Identify other regions: Only listed as invasive in the U. S. in California (1).	
Rationale:	
Sources of information: 1. USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (http://plants.usda.gov). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.	
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	

<p>the state, if known: It is know to occur mostly in forested riparian areas of California.</p> <p>Sporadically very invasive in Calif. north coast forests and riparian woodlands, especially impacting forest edges, such as along trails and roads; very uncommon outside moist, shady, generally coastal habitats (4).</p>	
<p>Rationale: The USDA reports <i>Myosotis latifolia</i> occurring in approximately 12 counties in California, mostly coastal counties or directly adjacent to the San Francisco Bay. Muir woods reports it occurring on the forest floor in the Redwood Creek Watershed. I have personally observed it in Point Reyes National Seashore and Golden Gate National Recreation Area along hillsides of forested creeks and streams. It is reported in Marin Flora to be abundantly naturalized in moist places with high shade, especially under redwoods.</p>	
<p>Sources of information: USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (http://plants.usda.gov). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.</p> <p>email from Mia Monroe,</p> <p>Howell, J. T. 1970. Marin Flora: manual of the flowering plants and ferns of Marin County, California. University of California Press. Berkeley, CA.</p> <p>4. Warner, PJ. Personal observations, 1996-2005. San Mateo, Marin, Sonoma, Mendocino, Humboldt Counties. 707-937-2278/corylus@earthlink.net</p>	
<p>Question 3.2 Distribution/Peak frequency</p>	<p>C No Information back</p>
<p>Describe distribution: unknown</p>	
<p>Rationale:</p>	
<p>Sources of information:</p>	

Worksheet A[back](#)

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

Worksheet C - California Ecological Types

[back](#)

(*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	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	D. prese
	riparian woodland	D. prese
	riparian scrub (incl. desert washes)	Unknow
Woodland	cismontane woodland	score
	piñon and juniper woodland	score
	Sonoran thorn woodland	score
Forest	broadleaved upland forest	Unknow
	North Coast coniferous forest	C. 5-20%
	closed cone coniferous forest	D. prese
	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).