

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):	Hedera helix L. and H. canariensis
Synonyms:	none
Common names:	English Ivy and Algerian ivy
Evaluation date (mm/dd/yy):	02/26/04 (modified 9/05)
Evaluator #1 Name/Title:	Tim Hyland / Resource Ecologist
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Section below for list committee use—please leave blank

List committee members:	Cythia Roye, Carla Bossard, Alison Stanton, Joe DiTomaso, Peter Warner
Committee review date:	May 14, 2004
List date:	enter text here
Re-evaluation date(s):	enter text here

Comments: In September 2005, the committee decided to combine H. helix and H. canariensis into one assessment because in many cases land managers do not distinguish between the two species when reporting them, and genetic issues make it unclear which species is the most invasive in many cases. Research is currently underway in California and the Pacific Northwest to determine whether both species are equally problematic in wildlands.

Table 2. Criteria, Section, and Overall Scores

1.1	Impact on abiotic ecosystem processes	B	Observational
1.2	Impact on plant community	A	Rev'd, Sci. Pub'n
1.3	Impact on higher trophic levels	A	Observational
1.4	Impact on genetic integrity	D	Other Pub. Mat'l

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

2.1	Role of anthropogenic and natural disturbance	A 3	Observational
2.2	Local rate of spread with no management	A 3	Observational
2.3	Recent trend in total area infested within state	A 3	Observational
2.4	Innate reproductive potential	A 3	Rev'd, Sci. Pub'n
2.5	Potential for human-caused dispersal	A 3	Other Pub. Mat'l
2.6	Potential for natural long-distance dispersal	A 3	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:
18
 Use matrix to determine score and enter below:
A

“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	A	Observational
3.2	Distribution	A	Other Pub. Mat'l

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

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes
Identify ecosystem processes impacted: C; Increased erosion in stream channels.
Rationale: By suppressing seedling establishment of woody understory shrubs dense stands of ivy can reduce the stability of stream banks that are stabilized by these deeply rooted plants.
Sources of information: Tim Hyland, California State Parks Resource Ecologist pers. obsv.
Question 1.2 Impact on plant community composition, structure, and interactions
Identify type of impact or alteration: A; Completely replace native vegetation, including trees, shrubs and herbaceous plants.
Rationale: Ivy largely eliminates the ability of other plants to reproduce by outcompeting their seedlings for light. In addition this plant smothers existing shrubs and trees by climbing and finally completely enshrouding them.
Sources of information: Thomas, L. K. 1980. The impact of three exotic plant species on the Potomac Island. National Park Service Monograph Series. Number 13 Washington, DC.
Question 1.3 Impact on higher trophic levels
Identify type of impact or alteration: B; Reduction in herbaceous low stature plants. Creation of a physical barrier to birds feeding on the ground.
Rationale: By obscuring the ground and reducing the growth of annual plants that act as a food source this plant reduces foraging habitat quality for ground feeding birds such as Dark-eyed Junco, Spotted and California Towhee etc.. Increased foraging of these species has been observed following the removal of English Ivy in oak woodland at Twin Lakes State Beach. This reduction of food resources in all likelihood would also impact small mammals that rely on these same food sources. These animals serve as food for meso mammals such as coyote, fox, weasels etc.
Sources of information: Tim Hyland, California State Parks Resource Ecologist

Question 1.4 Impact on genetic integrity
Identify impacts: D; None
Rationale: There is only one species native to California that is related at the family level to Hedera spp.. Although this plant Aralia californica occurs in habitats invaded by ivy there is no record of genetic exchange between Aralia and Hedera.
Sources of information: 1993. The Jepson Manual : higher plants of California / James C. Hickman, Editor. University of California Press, Berkeley and Los Angeles, California.
Question 2.1 Role of anthropogenic and natural disturbance in establishment
Describe role of disturbance: A; No disturbance required to establish in native plant communities.
Rationale: Infestations frequently found in intact plant communities away from roads or trails, usually at the base of trees where birds perch.
Sources of information: Tim Hyland, California State Parks Resource Ecologist pers. obsv.
Question 2.2 Local rate of spread with no management
Describe rate of spread: A; Increases rapidly in favorable habitat.
Rationale: Frequent seed deposition by various bird species serve to increase an already rapid spread by vegetative means. Ivy roots as it goes as well as spreading from fragments.
Sources of information: Invasive Plants of California's Wildlands, 2000 Carla C. Bossard, John M. Randall, and Marc C. Hoshovsky, editors. University of California Press, Berkeley and Los Angeles, California.
Question 2.3 Recent trend in total area infested within state
Describe trend: B; Increasing
Rationale: Known populations throughout the Santa Cruz District that are not being worked on are actively spreading. This trend is also occurring in State Parks both north and south of the Monterey Bay area.
Sources of information: California State Parks Condition Assesment, Ken Moore, founder Wildlands Restoration Team pers. com.. Peter Warner California State Parks Resource Ecologist North Coast Redwoods District. pers. com. Tim Hyland, California State Parks Resource Ecologist pers. obsv.
Question 2.4 Innate reproductive potential
Describe key reproductive characteristics: B; Vegetative fragments. Large quantities of seeds attractive to

migratory birds
Rationale: 70% of seeds are viable. Seedlings are frequently found in concentrations under desirable roosting sites. American Robins often seen consuming berries. Fragments of plants in contact with soil after removal have been observed to resprout.
Sources of information: Invasive Plants of California's Wildlands, 2000 Carla C. Bossard, John M. Randall, and Marc C. Hoshovsky, editors. University of California Press, Berkeley and Los Angeles, California. Tim Hyland, California State Parks Resource Ecologist pers. obsv.
Question 2.5 Potential for human-caused dispersal
Identify dispersal mechanisms: A; Frequently sold and planted in landscape trade as groundcover.
Rationale: Found in many commercial landscapes. Some nurseries specialize in the growth of this plant and its cultivars.
Sources of information: http://hort.ifas.ufl.edu/shrubs/HEDHELA . The American Ivy Society http://www.ivy.org/ . Sunset Western Garden Book. Tim Hyland, California State Parks Resource Ecologist pers. obsv.
Question 2.6 Potential for natural long-distance dispersal
Identify dispersal mechanisms: A; Migratory birds
Rationale: American Robins have been observed eating the fruit of this species. These birds are migratory with a range that covers the entire state of California.
Sources of information: 1992 The National Geographic Society Field Guide to the Birds of North America, The National Geographic Society, Washington D.C. Tim Hyland, California State Parks Resource Ecologist pers. obsv. PCA Alien Plant Working Group. http://www.nps.gov/plants/alien/fact/hehe1.htm
Question 2.7 Other regions invaded
Identify other regions: C; Eastern seaboard of U.S.
Rationale: Widely planted in areas where it is able to grow.
Sources of information: Plant invaders of the Mid-Atlantic Natural Areas http://www.nps.gov/plants/alien/pubs/midatlantic/hehe.htm
Question 3.1 Ecological amplitude
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: A; Widespread. Introduction likely in early 1900s. Although it is found in State Park Units in the Sierra Foothills, it does not seem to be aggressively invading. This is not the case with the populations found

on the coast where it is currently expanding.

Rationale: This plant was well known to early settlers and is found in abundance near homesteads that were inhabited in the early 1900s

Sources of information: Invasive Plants of California's Wildlands, 2000 Carla C. Bossard, John M. Randall, and Marc C. Hoshovsky, editors. University of California Press, Berkeley and Los Angeles, California. Tim Hyland, California State Parks Resource Ecologist pers. obsv. 2003. Peter Warner California State Parks Resource Ecologist North Coast Redwoods District. pers. com. 2004

Question 3.2 Distribution

Describe distribution: A; Widespread. Found in Riparian Woodland, Riparian Forest, North Coast Coniferous Forest, Closed Cone Coniferous Forest, Broad Leaved Upland Forest, Lower Mountain Coniferous Forest and Coastal Scrub adjacent to Oak Woodland. See worksheet

Rationale: This plant thrives with year round moisture, and a heavy duff layer seems to assist in seedling establishment. It also appears to be much more drought tolerant in shaded sites so does not compete well in grasslands or chaparral communities. Although it will grow near the coast, it seems intolerant of direct salt spray.

Sources of information: Invasive Plants of California's Wildlands, 2000 Carla C. Bossard, John M. Randall, and Marc C. Hoshovsky, editors. University of California Press, Berkeley and Los Angeles, California. Tim Hyland, California State Parks Resource Ecologist pers. obsv. 2003. Peter Warner California State Parks Resource Ecologist North Coast Redwoods District. pers. com. 2004 Alien Plant Working Group.
<http://www.nps.gov/plants/alien/fact/hehe1.htm>

Worksheet A

Complete this worksheet to answer Question 2.4.

Reaches reproductive maturity in 2 years or less	No: 0 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	No: 0 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	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	No: 0 pts
Resprouts readily when cut, grazed, or burned	Yes: 1 pt
	6 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	D. presen
	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	C. 5-20%
	riparian woodland	B. 21-50%
	riparian scrub (incl. desert washes)	score
Woodland	cismontane woodland	score
	piñon and juniper woodland	score
	Sonoran thorn woodland	score
Forest	broadleaved upland forest	C. 5-20%
	North Coast coniferous forest	A. >50%
	closed cone coniferous forest	C. 5-20%
	lower montane coniferous forest	D. presen
	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).