

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):	Ficus carica L.
Synonyms:	enter text here
Common names:	edible fig
Evaluation date (mm/dd/yy):	08/27/04
Evaluator #1 Name/Title:	John M. Randall
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Evaluator #2 Name/Title:	enter text here
Affiliation:	enter text here
Phone numbers:	enter text here
Email address:	enter text here
Address:	enter text here

Section below for list committee use—please leave blank

List committee members:	Joe DiTomaso, Peter Warner, Alison Stanton, Jake Sigg, Cynthia Roye, John Randall
Committee review date:	8/27/2004
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	C	Observational
1.2	Impact on plant community	A	Observational
1.3	Impact on higher trophic levels	B	Observational
1.4	Impact on genetic integrity	D	Rev'd, Sci. Pub'n

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

2.1	Role of anthropogenic and natural disturbance	B 2	Observational
2.2	Local rate of spread with no management	A 3	Observational
2.3	Recent trend in total area infested within state	B 2	Anecdotal
2.4	Innate reproductive potential	A 2	Rev'd, Sci. Pub'n
2.5	Potential for human-caused dispersal	A 3	Rev'd, Sci. Pub'n
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:
17
 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:
Medium
No Alert

3.1	Ecological amplitude	A	Other Pub. Mat'l
3.2	Distribution	C	Other Pub. Mat'l

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

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes
Identify ecosystem processes impacted: NO observed impact on ecosystem processes. However, it is possible the <i>Ficus carica</i> litter is significantly different from litter of the native trees and other species that it displaces and if so it may significantly alter nutrient cycling and soil chemistry.
Rationale:
Sources of information: personal observations. I did not find any literature reporting results of research on the impacts of <i>Ficus carica</i> on invaded areas. Also see Randall, J.M. 2000. <i>Ficus carica</i> L. pp. 193-198 In: C.C. Bossard, J.Randall and M.C. Hosovsky (eds.) <i>Invasive Plants of California's Wildlands</i> . University of California Press, Berkeley.
Question 1.2 Impact on plant community composition, structure, and interactions
Identify type of impact or alteration: Forms dense stands within native riparian forests and woodlands. Edible fig is sometimes the only woody species in these dense stands and the only woody species in other stands.
Rationale: enter text here
Sources of information: personal observations and observations reported by land managers at Dye Creek Preserve. I did not find any literature reporting results of research on the impacts of <i>Ficus carica</i> on invaded areas. Also see Randall, J.M. 2000. <i>Ficus carica</i> L. pp. 193-198 In: C.C. Bossard, J.Randall and M.C. Hosovsky (eds.) <i>Invasive Plants of California's Wildlands</i> . University of California Press, Berkeley.
Question 1.3 Impact on higher trophic levels
Identify type of impact or alteration: If it produces fruits, it attracts rats which will also prey on birds, particularly nestlings (Underwood,).
Rationale: enter text here
Sources of information: Cynthia Roye, pers observation. Aug. 2004.

Question 1.4 Impact on genetic integrity
Identify impacts: There are no native <i>Ficus</i> species, and no native members of the Moraceae
Rationale: enter text here
Sources of information: Hickman, J.C. 1993. The Jepson Manual Higher Plants of California. University of California Press, Berkeley, CA.
Question 2.1 Role of anthropogenic and natural disturbance in establishment
Describe role of disturbance: <i>Ficus carica</i> becomes established in riparian areas that have had no recent anthropogenic disturbance but its establishment appears to be promoted by flooding disturbance. <i>Ficus carica</i> is also common along many levees in the Sacramento-San Joaquin Delta. Although they may have become established decades after the initial creation of the levees they may benefit from disturbance caused by maintenance activities.
Rationale: enter text here
Sources of information: Personal observations and personal communications with Becky Waegell and Peter Hujick, land managers of the Cosumnes River Preserve and Dye Creek Preserve respectively. Also see pp 195-196 in Randall, J.M. 2000. <i>Ficus carica</i> L. pp. 193-198 In: C.C. Bossard, J.Randall and M.C. Hosovsky (eds.) Invasive Plants of California's Wildlands. University of California Press, Berkeley.
Question 2.2 Local rate of spread with no management
Describe rate of spread: I observed the rapid increase in size of an infestation at the Cosumnes River Preserve over a 2-3 year period and estimated ages of trees in the roughly 0.25 acre infestation and found that the oldest trunk present was probably only 8 years old.
Rationale: enter text here
Sources of information: Personal observations, and corroborating statements by land managers at the Cosumnes River Preserve and Dye Creek Preserve. Also see Randall, J.M. 2000. <i>Ficus carica</i> L. pp. 193-198 In: C.C. Bossard, J.Randall and M.C. Hosovsky (eds.) Invasive Plants of California's Wildlands. University of California Press, Berkeley.
Question 2.3 Recent trend in total area infested within state
Describe trend: Reports of new or newly detected infestations from Cosumnes River Preserve and Dye Creek suggest that this species is still spreading in California
Rationale:
Sources of information: Personal observations at Cosumnes River Preserve, reports from Becky Waegell of

Cosumnes River Preserve and from Peter Hujik at Dye Creek Preserve.

Question 2.4 Innate reproductive potential

Describe key reproductive characteristics: *Ficus carica* trees are capable of producing abundant fruit and seed two or three times per year. The plants also spread vegetatively via root sprouts and via broken branches that make contact with the soil and form roots. These broken branches may be carried great distances in flood waters, finally washing up in a new location where they may establish a new population.

Rationale: enter text here

Sources of information: Randall, J.M. 2000. *Ficus carica* L. pp. 193-198 In: C.C. Bossard, J.Randall and M.C. Hosovsky (eds.) *Invasive Plants of California's Wildlands*. University of California Press, Berkeley.

Michailides, T.J. D.P. Morgan and KV. Subbarao. 1996. Fig endosepsis: an old disease still a dilemma for California growers. *Plant Disease* 80: 828-841.

Ferguson L., T.J. Michailides and H.H. Shorey. 1990. The California fig industry. In J. Janick (ed.) *Horticultural Reviews* 12. Timber Press, Portland, OR.

Kjellberg, F., P.H. Gouyon, M. Ibrahim, M. Raymond and G. Valdeyron. 1987. The stability of the symbiosis between dioecious figs and their pollinators: a study of *Ficus carica* L. and *Blastophaga psenes* L. *Evolution* 41: 693-704.

Question 2.5 Potential for human-caused dispersal

Identify dispersal mechanisms: *Ficus carica* is grown as a crop in California. In fact as of the late 1990s California was the third most important producer of figs in the world. Figs are also popular ornamental trees in California

Rationale: enter text here

Sources of information: Michailides, T.J. D.P. Morgan and KV. Subbarao. 1996. Fig endosepsis: an old disease still a dilemma for California growers. *Plant Disease* 80: 828-841.

Ferguson L., T.J. Michailides and H.H. Shorey. 1990. The California fig industry. In J. Janick (ed.) *Horticultural Reviews* 12. Timber Press, Portland, OR.

Question 2.6 Potential for natural long-distance dispersal

Identify dispersal mechanisms: Fig fruits are eaten by many animals, including birds which may disperse the seeds. Also, the branches are relatively brittle and may break off during storms or floods and can then be carried great distances before washing up in a new location.

Rationale: enter text here

Sources of information: Personal observations at Cosumnes River Preserve.
Question 2.7 Other regions invaded
Identify other regions: Edible fig has naturalized in Australia (Victoria, Western Australia), New Zealand and the Galapagos, but in these places it does not invade habitat types that it has not already invaded here in California.
Rationale: enter text here
Sources of information: Randall, R.P. 2002. A Global Compendium of Weeds. RG and FJ Richardson, Meredith, Victoria, Australia.
Question 3.1 Ecological amplitude
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: <i>Ficus carica</i> invades riparian forests, streamside habitats, levees and canal banks in the Central Valley and surrounding foothills, along the south coast and coastal flats and coastal scrub on the Channel Islands.
Rationale: enter text here
Sources of information: Hickman, J.C. 1993. The Jepson Manual Higher Plants of California. University of California Press, Berkeley, CA. Junak, S. T. Ayers, R. Scott, D. Wilken and D. Young. 1995. A Flora of Santa Cruz Island. Santa Barbara Botanical Garden and California Native Plant Society, Santa Barbara, California. Randall, J.M. 2000. <i>Ficus carica</i> L. pp. 193-198 In: C.C. Bossard, J.Randall and M.C. Hosovsky (eds.) Invasive Plants of California's Wildlands. University of California Press, Berkeley.
Question 3.2 Distribution
Describe distribution: Many of the riparian forests in the Central Valley contain <i>Ficus carica</i> as do many sloughs and levees in the Sacramento-San Joaquin Delta. However, when compared to all riparian forest habitat in the state a conservative estimate is that just 5-20% of all this habitat statewide contains the fig. enter text here
Rationale: enter text here
Sources of information: Personal observations, Also see: Hickman, J.C. 1993. The Jepson Manual Higher Plants of California. University of California Press, Berkeley, CA.

Randall, J.M. 2000. *Ficus carica* L. pp. 193-198 In: C.C. Bossard, J.Randall and M.C. Hosovsky (eds.) *Invasive Plants of California's Wildlands*. University of California Press, Berkeley.

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	Unknown: 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	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
	6 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	score
	rivers, streams, canals	score
	estuaries	score
Dunes	coastal	score
	desert	score
	interior	score
Scrub and Chaparral	coastal bluff scrub	score
	coastal scrub	D. present
	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	C. 5-20%
	riparian scrub (incl. desert washes)	score
Woodland	cismontane woodland	D. present
	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).