

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):	Washingtonia robusta H. Wendl.
Synonyms:	W. filamentosa (often mistaken for native W. filifera)
Common names:	Washington palm, Mexican fan palm, skyduster, thread palm
Evaluation date (mm/dd/yy):	1/4/05
Evaluator #1 Name/Title:	Elizabeth Brusati, project manager
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Evaluator #2 Name/Title:	enter text here
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Section below for list committee use—please leave blank

List committee members:	Joe DiTomaso, John Randall, Carla Bossard
Committee review date:	3/11/05
List date:	enter text here
Re-evaluation date(s):	enter text here

General comments on this assessment:

Table 2. Criteria, Section, and Overall Scores

1.1	Impact on abiotic ecosystem processes	C	Other Pub. Mat'l
1.2	Impact on plant community	B	Other Pub. Mat'l
1.3	Impact on higher trophic levels	B	Observational
1.4	Impact on genetic integrity	C	Other Pub. Mat'l

<p>Impact</p> <p><i>Enter four characters from Q1.1-1.4 below:</i></p> <p>CBBC</p> <p><i>Using matrix, determine score and enter below:</i></p> <p>B</p>

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

<p>Invasiveness</p> <p><i>Enter the sum total of all points for Q2.1-2.7 below:</i></p> <p>14</p> <p><i>Use matrix to determine score and enter below:</i></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>Medium</p> <p>Red Alert</p>
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3.1	Ecological amplitude/Range	C	Other Pub. Mat'l
3.2	Distribution/Peak frequency Wksht C	D	Observational

<p>Distribution</p> <p><i>Using matrix, determine score and enter below:</i></p> <p>C</p>

Table 3. Documentation

<p>Question 1.1 Impact on abiotic ecosystem processes C Other Pub. Mat'l back</p>
<p>Identify ecosystem processes impacted: Increased fire danger</p>
<p>Rationale: Dead fronds hanging on tree are a fire hazard and in some areas are required by law to be removed.</p>
<p>Sources of information: Gilman, E. F., and D. W. Watson. 1994. <i>Washingtonia robusta</i>. Washington palm. Fact Sheet ST-670. Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Gainesville, FL. http://hort.ifas.ufl.edu/WASROBA.pdf</p>
<p>Question 1.2 Impact on plant community composition, structure, and interactions B Observational back</p>
<p>Identify type of impact or alteration: Can convert riparian communities into monospecific stands (1). <i>W. robusta</i> forms dense thickets (2) that can grow to 80 ft. tall (3). However, the shade it produces is not as dense as other trees.</p>
<p>Rationale:</p>
<p>Sources of information: 1. Tu, M., and J. M. Randall. 2002. Red Alert! New Introductions and Recent Expansions in California. Proceedings, California Exotic Pest Plant Council Symposiums 2000, 2001, 2002.</p> <p>2. Daehler, C. No date. <i>Washingtonia robusta</i> (Mexican fan palm). Australian/New Zealand Weed Risk Assessment adapted for Hawai'i. Kaulunani Urban Forestry Program and U.S. Forest Service.</p> <p>3. Miller, M.E., N.P. Maxwell, and J. Amador. 1980. Lethal decline of <i>Phoenix canariensis</i> and <i>Phoenix dactylifera</i> in the Rio Grande Valley Texas. <i>Journal of the Rio Grande Valley Horticultural Society</i> 34: 89-95.</p>
<p>Question 1.3 Impact on higher trophic levels B Anecdotal back</p>
<p>Identify type of impact or alteration: Possible increase in rodent populations (leading to increased predation on birds' nests?). Displaces native animal species that cannot live in palm monoculture (2).</p>
<p>Rationale: Dead fronds are bedding roost for rodents (1). Dead leaves remain around the trunk for many years, forming a dense, thatchlike shroud that reaches almost to the ground (3). I'm extrapolating from that fact to a potential increase in predation pressure from those rodents.</p>
<p>Sources of information: 1. Gilman and Watson 1994</p> <p>2. Tu and Randall 2002</p> <p>3. Young, J.A. and C.G. Young. 1992. Seeds of woody plants in North America. Portland, Oregon: Dioscorides Press. Pp. 356-357.</p>
<p>Question 1.4 Impact on genetic integrity C Other Pub. Mat'l back</p>
<p>Identify impacts: Can hybridize with native California palm, <i>W. filifera</i>, to form hybrid <i>Washingtonia x filabusta</i>.</p>

Rationale: Scoring as C because no information on how common these hybrids are outside of cultivation, although Sunset says they will readily hybridize when growing near each other.	
Sources of information: Starr, F., K. Starr, and L. Loope. 2003. USGS Biological Resources Division, Hawaiian Ecosystems at Risk. Haleakala, HI. www.hear.org. Brenzel, K. N. 2001. Sunset Western Garden Book. Sunset Publishing Company, Menlo Park, CA.	
Question 2.1 Role of anthropogenic and natural disturbance in establishment	B Rev'd, Sci. Pub'n back
Describe role of disturbance: Most spread seems to occur in disturbed areas. Found in undisturbed habitat with available water source (3,4) .	
Rationale: Occasionally found in disturbed areas near planted landscapes in southern California. A couple of palms were found in undisturbed desert washes in southern California (1). In Hawaii, prolific near urban water sources such as irrigation ditches or ponds (2).	
Sources of information: 1. Cornett, J. W., J. Stewart, and T. Glenn. 1986. Washingtonia robusta naturalized in southern California. Bulletin of the Southern California Academy of Sciences. 85:56-57 2. Starr et al. 2003 3. Hicks, B.F. 1989. Prehistoric development and dispersal of the desert fan palm. Principes 33(1): 33-39. 4. Knapp, J. 2004. Catalina Invasive Plant Ranking Plan for the Catalina Island Conservancy. Unpublished.	
Question 2.2 Local rate of spread with no management	B Anecdotal back
Describe rate of spread: Spreading in southern California.	
Rationale: enter text here	
Sources of information: enter text here	
Question 2.3 Recent trend in total area infested within state	B Anecdotal back
Describe trend: Spreading in southern California.,	
Rationale: enter text here	
Sources of information: enter text here	
Question 2.4 Innate reproductive potential	C Other Pub. Mat'l back
Describe key reproductive characteristics: Reproduces by seed. Fruits are drupes.	

<p>Self-compatible, does not require specialist pollinators (1).</p> <p>In Australia, 9 years or more to reproductive maturity (2). Does not produce coppices or resprouts (2), but does resprout when cut completely (3). Resistant to fire damage (4). Seed production lasts two months (5).</p>	
<p>Rationale:</p>	
<p>Sources of information: 1. Anonymous. no date. Risk Assessment Results - Washingtonia robusta. USFS. Institute of Pacific Islands Forestry. Pacific Island Ecosystems at Risk. http://www.hear.org/pier/wra/pacific/washingtonia_robusta_htmlwra.htm. Accessed 1/4/05</p> <p>2. Brown, K. and K. Brooks. 2002. Bushland weeds – a practical guide to their management. Environmental Weeds Action Network. Greenwood, Australia. Pp. 88-89.</p> <p>3. Knapp, J.J. 2002. Personal observation of palm control efforts on Catalina Island, CA. (310) 510-1299.</p> <p>4 Hicks 1989</p> <p>5. Young, J.A. and C.G. Young. 1992. Seeds of woody plants in North America. Portland, Oregon: Dioscorides Press. Pp. 356-357.</p>	
<p>Question 2.5 Potential for human-caused dispersal</p>	<p>A Other Pub. Mat'l back</p>
<p>Identify dispersal mechanisms: Escape from cultivation.</p>	
<p>Rationale: Listed by numerous references (internet and books) as a popular plant for large gardens and as a street tree (1, 2). Has escaped from gardens on Maui (3). Related <i>W. filifera</i> spread from plantings at picnic sites into remote springs in Nevada (4).</p>	
<p>Sources of information: 1. Brenzel 2001</p> <p>2. Gilman and Watson 1994</p> <p>3. Starr et al. 2003</p> <p>4. Pers. comm. E-mail from Curt Deuser, Lake Mead Exotic Plant Mgmt. Team, Boulder City, NV to Carolyn Martus, California Native Plant Society - San Diego. 10/4/04</p>	
<p>Question 2.6 Potential for natural long-distance dispersal</p>	<p>A Other Pub. Mat'l back</p>
<p>Identify dispersal mechanisms: Seeds could disperse by water where it invades riparian areas, or with birds (1, 2) or coyotes (1). Birds such as mountain bluebirds, cedar waxwing, and house finch are also considered primary dispersal agents (3).</p>	
<p>Rationale: Birds often perch in the branches, but the information on dispersal is observational only. Gilman and Watson say the fruits are not attractive to wildlife.</p>	
<p>Sources of information: 1. Cornett et al. 1986</p> <p>2. Starr et al. 2003</p> <p>3. Hicks 1989</p>	

4. Gilman and Watson 1994	
Question 2.7 Other regions invaded	C Other Pub. Mat'l back
Identify other regions: Hawaii (1), Australia (1). Naturalized in Florida (2). Starr et al. list it as invasive in Florida, but Gilman and Watson (3) lists it with little invasive potential. Mostly a riparian problem.	
Rationale:	
Sources of information: 1. Starr et al. 1986 2. USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (http://plants.usda.gov). National Plant Data Center, Baton Rouge, LA 70874-4490 USA 3. Gilman and Watson 1994.	
Question 3.1 Ecological amplitude/Range	C Other Pub. Mat'l back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: Southern California riparian areas (1). Capable of growing in semi-arid, desert regions, usually forming colonies near water (2). Sunset lists Washingtonia as appropriate for gardens in warmer areas of zones 8, 9, and 10 (3). In San Diego area, present in wetlands, canyons, creeks, and coastal lagoons (4). W. robusta was introduced to California by the mission fathers as early as the 18th century (5).	
Rationale:	
Sources of information: 1. Tu and Randall 2002 2. Starr et al. 2002 3. Brenzel 2001 4. E-mail from Carolyn Martus, California Native Plant Society, forwarded 1/9/05. 5. Deardorff, D. 1976. Plant portraits: Washingtonia robusta the Mexican fan palm. Lasca Leaves 26(2): 43-45	
Question 3.2 Distribution/Peak frequency	D Observational back
Describe distribution: see 3.1	
Rationale: enter text here	
Sources of information: enter text here	

Worksheet A[back](#)

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	Unknown: 0 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	No: 0 pt
Fragments easily and fragments can become established elsewhere	No: 0 pts
Resprouts readily when cut, grazed, or burned	Yes: 1 pt
	3 pts 1 unknown
	C (1-3)
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	score
	riparian woodland	D. present
	riparian scrub (incl. desert washes)	D. present
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).