

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):	Buddleja davidii Franchet.
Synonyms:	Buddleia davidii, B. variabilis, B. magnifica, B. nonoensis
Common names:	butterfly bush, summer lilac
Evaluation date (mm/dd/yy):	12/20/04
Evaluator #1 Name/Title:	Elizabeth Brusati, project manager
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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, John Randall, Carla Bossard
Committee review date:	3/11/05
List date:	enter text here
Re-evaluation date(s):	enter text here

<p>General comments on this assessment: enter text here</p>
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Table 2. Criteria, Section, and Overall Scores

1.1	Impact on abiotic ecosystem processes	U	Observational
1.2	Impact on plant community	D	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

Impact

Enter four characters from Q1.1-1.4 below:

UDUD

Using matrix, determine score and enter below:

D

2.1	Role of anthropogenic and natural disturbance	3 (2 pts)	Rev'd, Sci. Pub'n
2.2	Local rate of spread with no management	1 (0 pt)	Unknown
2.3	Recent trend in total area infested within state	1 (0 pt)	Unknown
2.4	Innate reproductive potential Wksht A	3 (3 pts)	Rev'd, Sci. Pub'n
2.5	Potential for human-caused dispersal	3 (3 pts)	Rev'd, Sci. Pub'n
2.6	Potential for natural long-distance dispersal	3 (3 pts)	Rev'd, Sci. Pub'n
2.7	Other regions invaded	3 (3 pts)	Other Pub. Mat'l

Invasiveness

Enter the sum total of all points for Q2.1-2.7 below:

14

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:

Not Listed

3.1	Ecological amplitude/Range	D	Observational
3.2	Distribution/Peak frequency Wksht C	D	Observational

Distribution

Using matrix, determine score and enter below:

D

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes	U No Information back
Identify ecosystem processes impacted: No information, but presumably would reduce light levels because it is a tall, fast-growing bush.	
Rationale: enter text here	
Sources of information: enter text here	
Question 1.2 Impact on plant community composition, structure, and interactions	D Other Pub. Mat'l back
Identify type of impact or alteration: Outcompetes native species in Oregon but these impacts are not seen in California.	
Rationale: Outcompetes Douglas fir seedlings on timber land (1). Forms dense thickets (2). In New Zealand, infestation density is greatest at 10 years, then declines so that native trees eventually become dominant again (3). Reported to displace native willows in Oregon (3).	
Sources of information: 1. Oregon Dept. of Agriculture. 2004. Popular butterfly bush added to noxious weed list. Oregon Dept. of Agriculture, Salem, OR. Feb. 25, 2004. www.oda.state.or.us/information/news/2004/040227weed.pdf .	
2. Washington State Noxious Weed Control Board. 2004. Buddleia davidii - draft. Written findings of the Washington State Noxious Weed Control Board. www.nweb.wa.gov/weed_info/buddleia.htm . Accessed 12/30/04	
3. Starr, F., K. Starr, and L. Loope. 2003. Buddleia davidii. USGS Biological Resources Division, Haleakala Field Station, Maui, HI. www.hear.org/pier/pdf/pohreports/buddleia_davidii.pdf	
Question 1.3 Impact on higher trophic levels	U Observational back
Identify type of impact or alteration: Butterflies love it, but B. davidii may displace native species that are host plants for native butterflies. Also visited by hummingbirds. No specific detrimental impacts to wildlife noted, other than possible displacement of other plants.	
Rationale:	
Sources of information: Starr et al. 2003	
Question 1.4 Impact on genetic integrity	D Rev'd, Sci. Pub'n back
Identify impacts: No information on hybridization.	
Rationale: One native related species, B. utahensis, lives on limestone and volcanic soils in Mojave Desert and is uncommon.	

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	B Doc'n level back
Describe role of disturbance: Occurs in roadsides, pastures, river gravel bars, and other disturbed areas (1). Prefers dry, open, disturbed areas such as roadsides, new developments, wastelands, pastures, and fields (2). In Briatin, colonizes railway embankments and old walls in the middle of cities, and rarely colonizes natural areas (3). All available references mention it establishing in disturbed areas, so I'm scoring it as a B.	
Rationale: enter text here	
Sources of information: 1. Washington Noxious Weed Control Board 2004 2. Starr et al. 2003 3. Owen, D.F.; Whiteway, W.R. 1980. Buddleja davidii in Britain: history and development of an associated fauna. Biological Conservation. 17(2): 149-156.	
Question 2.2 Local rate of spread with no management	U No Information back
Describe rate of spread: enter text here	
Rationale: enter text here	
Sources of information: enter text here	
Question 2.3 Recent trend in total area infested within state	U No Information back
Describe trend: enter text here	
Rationale: enter text here	
Sources of information: enter text here	
Question 2.4 Innate reproductive potential	A Other Pub. Mat'l back
Describe key reproductive characteristics: Fast-growing shrub that can grow 3 to 10 feet in a summer and reproduces its first year. May die back in winter but regrows from roots like a perennial and blooms the same year (1, 2). Each plant produces up to 3 million seeds that can remain dormant in soil for many years (3). Readily resprouts from rootstock and can be propagated by cuttings (3).	
Rationale: enter text here	

Sources of information: 1. Brenzel, K. N. 2001. Sunset Western Garden Book. Sunset Publishing, Menlo Park, CA	
2. Owen and Whiteway 1980.	
3. Washington State Noxious Weed Control Board. 2004	
Question 2.5 Potential for human-caused dispersal	A Other Pub. Mat'l back
Identify dispersal mechanisms: Escaped ornamental (1). May be spread by dumping of yard debris (2), machinery, or other vehicles (3).	
Rationale: Listed on numerous horticultural websites and in the Sunset Western Garden book. Popular as an ornamental bush.	
Sources of information: 1. Owens and Whiteway 1980	
2. Oregon Dept. of Agriculture 2004	
3. Washington State Noxious Weed Control Board. 2004	
Question 2.6 Potential for natural long-distance dispersal	A Other Pub. Mat'l back
Identify dispersal mechanisms: Wind and water (1, 2). Seeds are winged.	
Rationale: Infestations in Oregon occur far from residential areas (1).	
Sources of information: 1. Oregon Dept. of Agriculture 2004	
2. Starr et al. 2003	
Question 2.7 Other regions invaded	A Other Pub. Mat'l back
Identify other regions: Native to China. Colonizes disturbed areas in Britain (1). Considered a problem in Australia and New Zealand (2, 3, 4). Prefers streambanks and Also found in India (5). In United States, invades Oregon, Washington, and along the east coast (6).	
Rationale: Scoring as A because it colonizes a range of habitats in other regions but it not yet widespread in California.	
Sources of information: 1. Owens and Whiteway 1980	
2. Australian Dept. of Environment and Heritage. 1998. Potential environmental weeds in Australia. Buddleja davidii. January 1998. www.deh.gov.au/biodiversity/invasive/publications/weeds-potential/appendix-c-b.html	
3. PIER. no date. Risk assessment results: Buddleja davidii. US Forest Service, Institute of Pacific Islands Forestry, Pacific Island Ecosystems at Risk. www.pier.hear.org/pier/wra/australia/budav-wra.htm . Accessed 12/30/04	
4. Kay, M. 1996. Biological control of Buddleja davidii. Delfosse, E. S., Scott, R. R. [Eds] Proceedings of the Eighth International Symposium on Biological Control of Weeds. 307. (abstract only)	

<p>5. Biswas, S.N.; Prasad, R. 1970. On the occurrence of <i>Buddleha davidii</i> D. Loganiaceae D. in India. Journal of the Bombay Natural History Society. 67(2): 359-360</p> <p>6. USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (http://plants.usda.gov). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.</p>	
Question 3.1 Ecological amplitude/Range	D Observational back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: Present in Sonoma, San Mateo, Alameda, Santa Clara, and Los Angeles counties (1).	
Rationale: Scoring as D because limited distribution (Joe DiTomaso, UC Davis, and John Randall, The Nature Conservancy, pers. Obs.)	
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 3.2 Distribution/Peak frequency	D Observational back
Describe distribution: Limited	
Rationale:	
Sources of information: enter text here	

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	Unknown: 0 pts
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
	7 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	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	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	D
	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).