

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):	Asphodelus fistulosus L.
Synonyms:	Asphodelus tenuifolius Cav.
Common names:	onion weed, asphodel, hollow stemmed asphodel, wild onion
Evaluation date (mm/dd/yy):	08/09/04
Evaluator #1 Name/Title:	Jonathan C. Fox/ Research Associate
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Evaluator #2 Name/Title:	enter text here
Affiliation:	enter text here
Phone numbers:	enter text here
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Address:	enter text here

Section below for list committee use—please leave blank

List committee members:	John Randall, Alison Stanton, Cynthia Roye, Jake Sigg, Joe DiTomaso, Peter Warner
Committee review date:	8/27/2004
List date:	enter text here
Re-evaluation date(s):	enter text here

<p>General comments on this assessment: Origin - extends from Mediterranean region through Asia Minor to western Asia and northern India.</p>
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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	C	Other Pub. Mat'l
1.4	Impact on genetic integrity	D	Rev'd, Sci. Pub'n

Impact

Enter four characters from Q1.1-1.4 below:

CABD

Using matrix, determine score and enter below:

B

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

Invasiveness

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

Medium

Red Alert

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

Distribution

Using matrix, determine score and enter below:

C

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes	C Other Pub. Mat'l back
Identify ecosystem processes impacted: In dense patches, lowered soil nitrogen prevents other plants establishing and competing with the weed (1).	
Rationale: enter text here	
Sources of information: (2)Parsons W.T., Cuthbertson E.G. "Onion Weed," Noxious Weeds of Australia. Pgs. 90-92. Year unknown.	
Question 1.2 Impact on plant community composition, structure, and interactions	B Other Pub. Mat'l back
Identify type of impact or alteration: Displacement and increased grazing pressure on palatable grasses, herbs and shrubs (1).	
Rationale: A. fistulosus is unpalatable and generally not eaten by livestock, native herbivores and feral animals(1). Onion weed grows so thickly it considerably reduces other vegetation, particularly grasses(2).	
Sources of information: (1)Turner J. The Impact of Onion weed dominance on biodiversity, total grazing pressure and pastoral enterprises in the Eastern Districts and North East Pastoral Soil Conservation Districts. 1999.	
(2)Underwood, J.A., Mesa E. Asphodelus fistulosus, Onion weed Texas Infestation Status Report. 2001	
Question 1.3 Impact on higher trophic levels	C Other Pub. Mat'l back
Identify type of impact or alteration: A. fistulosus infestations may have a negative impact on native birds or insects that feed on or inhabit native grasses (1).	
Rationale: see question 1.2.	
Sources of information: (1)Turner J. The Impact of Onion weed dominance on biodiversity, total grazing pressure and pastoral enterprises in the Eastern Districts and North East Pastoral Soil Conservation Districts. 1999.	
Question 1.4 Impact on genetic integrity	D Rev'd, Sci. Pub'n back
Identify impacts: No hybridization in literature.	
Rationale: No other member of genus Asphodelus in California (1).	
Sources of information: Hickman, J.C.(e.d.)1993. Asphodelus. pp.1179-1180. The Jepson manual: vascular plants of California. University of California Press, Berkeley. 1400	

Question 2.1 Role of anthropogenic and natural disturbance in establishment	B Other Pub. Mat'l back
Describe role of disturbance: Described in literature as "a weed of disturbed sites". It thrives wherever there is little competition from other plants (1). Beginning to move into grasslands and other wildland sites following burning (2).	
Rationale: Competition for moisture seems to prevent Onion weed From invading any perennial vegetation with established roots near the surface (1).	
Sources of information: (1)Turner J. The Impact of Onion weed dominance on biodiversity, total grazing pressure and pastoral enterprises in the Eastern Districts and North East Pastoral Soil Conservation Districts. 1999. (2)DiTomaso J., Healy E. Weeds of California and Other Western States. As yet unpublished.	
Question 2.2 Local rate of spread with no management	A Other Pub. Mat'l back
Describe rate of spread: Rapid rate of spread.	
Rationale: In Australia the plant was recorded as naturalized in Victoria in 1983, it must have developed rapidly to have been proclaimed for the shire of Queenscliff in 1895 (1). In San Luis Obispo County, the infestation level in Morro Bay has more than doubled in the last 5 years (2).	
Sources of information: (1)Underwood, J.A., Mesa E. Asphodelus fistulosus, Onion weed Texas Infestation Status Report. 2001 (2)Fox, J.C. 2004. Personal observations during 2000-2004 Centaurea solstitialis roadside surveys for SLO County Ag Department, CA. (805)528-7091, anyplacewild@kcbx.net	
Question 2.3 Recent trend in total area infested within state	A Rev'd, Sci. Pub'n back
Describe trend: Federally listed noxious weed. Current distribution: South and Central Coast, sothern San Joaquin Valley, to about 800 m, and possibly elsewhere. Expected to expand range (4).	
Rationale: In Australia, a place with similar climate, A. fistulosus initially spread along the coastal areas but by 1905 it was sufficiently important in the Mallee to be proclaimed at Swan Hill, and in 1918 at Karkaroc (1). Onion weed now occurs in all states of Australia (1). According to Parsons (2) onion weed is most aggressive in Australia in areas with "light sandy soils" and 25 to 50 cm annual precipitation. Annual precipitation in this range occurs in California from San Jose south to San Diego (3). However, onion weed is drought hardy and well adapted to surviving in areas with lower, less seasonal rainfall (5). It also can grow on a range of other soil types (5).	
Sources of information: (1)Underwood, J.A., Mesa E. Asphodelus fistulosus, Onion weed Texas Infestation Status Report. 2001 (2)Parsons W.T., Cuthbertson E.G. "Onion Weed," Noxious Weeds of Australia. Pgs. 90-92. Year unknown. (3)Patterson, D.T. 1996. Temperature and Photoperiod Effects on Onionweed (Asphodelus fistulosus) and Its Potential Range in the United States. Weed Technology. 10(4):684-688. (4)DiTomaso J., Healy E. Weeds of California and Other Western States. As yet unpublished.	

(5)Turner J. The Impact of Onion weed dominance on biodiversity, total grazing pressure and pastoral enterprises in the Eastern Districts and North East Pastoral Soil Conservation Districts. 1999.	
Question 2.4 Innate reproductive potential	A Other Pub. Mat'l back
Describe key reproductive characteristics: Reach reproductive maturity at 18 months (1). Plants produce an average of 2,325 seeds/plant/year, and mature plants may produce as many as 13,200 seeds (2). Annual to short-lived perennial (3). Flowers February-April, except along southern California coast where plants can flower much later (3). Seed remains viable in the soil for many years (1). Onion weed plants form no distinct bulb, and reproduce by seed (2).	
Rationale: enter text here	
Sources of information: (1)Underwood, J.A., Mesa E. Asphodelus fistulosus, Onion weed Texas Infestation Status Report. 2001 (2)Turner J. The Impact of Onion weed dominance on biodiversity, total grazing pressure and pastoral enterprises in the Eastern Districts and North East Pastoral Soil Conservation Districts. 1999. (3)DiTomaso J., Healy E. Weeds of California and Other Western States. As yet unpublished.	
Question 2.5 Potential for human-caused dispersal	A Other Pub. Mat'l back
Identify dispersal mechanisms: The main method of spread is by seeds which can be dispersed in many ways such as on vehicles, machinery(road works), clothing and farm produce (1).	
Rationale: Main dispersal mechanism observed in San Luis Obispo County is by vehicles. Rate of spread is most rapid along roadsides (2).	
Sources of information: (1)Underwood, J.A., Mesa E. Asphodelus fistulosus, Onion weed Texas Infestation Status Report. 2001 (2)Fox, J.C. 2004. Personal observations during 2000-2004 Centaurea solstitialis roadside surveys for SLO County Ag Department, CA. (805)528-7091, anyplacewild@kcbx.net	
Question 2.6 Potential for natural long-distance dispersal	C Other Pub. Mat'l back
Identify dispersal mechanisms: Natural long distance dispersal of seeds can occur by animals, wool and by water in open channels (1).	
Rationale: Stock movement on properties is a major factors contributing to spread in Australia (2). In most situations, however, spread is mainly by wind blowing dead plants still bearing seeds (3).	
Sources of information: (1)Underwood, J.A., Mesa E. Asphodelus fistulosus, Onion weed Texas Infestation Status Report. 2001	

<p>(2)Turner J. The Impact of Onion weed dominance on biodiversity, total grazing pressure and pastoral enterprises in the Eastern Districts and North East Pastoral Soil Conservation Districts. 1999.</p> <p>(3)Parsons W.T., Cuthbertson E.G. "Onion Weed," Noxious Weeds of Australia. Pgs. 90-92. Year unknown.</p>	
Question 2.7 Other regions invaded	B Other Pub. Mat'l back
Identify other regions: Western AU, coastal heath scrub similar to maritime chaparral or chaparral.	
Rationale: Regions in CA that could be invaded correspond to habitats infested in Australia (1)(2).	
Sources of information: (1)Parsons W.T., Cuthbertson E.G. "Onion Weed," Noxious Weeds of Australia. Pgs. 90-92. Year unknown.	
(2)DiTomaso J., Healy E. Weeds of California and Other Western States. As yet unpublished.	
(3) Observational John Randall, Peter Warner, Joe DiTomaso. 2004.	
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 the state, if known: No date in literature of earliest introduction into CA. CDFR herbarium has vouchered specimen for San Luis Obispo County from 1957. Habitat described for CA includes: fields, pastures, roadsides, coastal dunes, orchard and agronomic crops, and other disturbed places, especially those with sparse vegetation. Beginning to move into grasslands and other wildland sites following burning (1).	
Rationale: No literature cites <i>A. fistulosus</i> as widespread in CA.	
Sources of information: (1)DiTomaso J., Healy E. Weeds of California and Other Western States. As yet unpublished.	
Question 3.2 Distribution/Peak frequency	D No Information back
Describe distribution: enter text here	
Rationale: No literature cites <i>A. fistulosus</i> as widespread in CA.	
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	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	No: 0 pt
Fragments easily and fragments can become established elsewhere	No: 0 pts
Resprouts readily when cut, grazed, or burned	Unknown: 0 pts
	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	D. presen
	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	D. presen
	valley and foothill grassland	D. presen
	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	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).