

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):	Salsola soda L.
Synonyms:	
Common names:	oppositeleaf Russian thistle, glasswort
Evaluation date (mm/dd/yy):	1/3/07
Evaluator #1 Name/Title:	Elizabeth Brusati, project manager
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Evaluator #2 Name/Title:	Joseph M. DiTomaso
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Section below for list committee use—please leave blank

List committee members:	Joe DiTomaso, Peter Warner, Joanna Clines
Committee review date:	2/14/2007
List date:	enter text here
Re-evaluation date(s):	enter text here

<p>General comments on this assessment: enter text here</p>

Table 2. Criteria, Section, and Overall Scores

1.1	Impact on abiotic ecosystem processes	U	No Information
1.2	Impact on plant community	B	Other Pub. Mat'l
1.3	Impact on higher trophic levels	B	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:

UBBD

Using matrix, determine score and enter below:

B

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

Invasiveness

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

12

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:

Medium

No Alert

3.1	Ecological amplitude/Range	A	Other Pub. Mat'l
3.2	Distribution/Peak frequency Wksht C	D	Other Pub. Mat'l

Distribution

Using matrix, determine score and enter below:

B

Table 3. Documentation

<p>Question 1.1 Impact on abiotic ecosystem processes</p>	<p>U No Information back</p>
<p>Identify ecosystem processes impacted: Has the potential of alter native wetland ecosystems in San Francisco Bay, but there is little information on its abiotic impact.</p>	
<p>Rationale: enter text here</p>	
<p>Sources of information: 1. Tamasi, J. 1998. The distribution of the non-native plant <i>Salsola soda</i> in San Francisco Bay: summary of a thesis. CalEPPC News Summer 1998, p. 4. Available: www.cal-ipc.org</p>	
<p>Question 1.2 Impact on plant community composition, structure, and interactions</p>	<p>B Other Pub. Mat'l back</p>
<p>Identify type of impact or alteration:</p> <p>Can form monospecific stands in estuaries but may be outcompeted by native pickleweed. A pioneer species. (1)</p> <p>One of the co-dominant forbs in high marsh zones bordering small tidal creeks at Newark Slough, SF Bay. Tends to concentrate in drift lines, which may be a problem for rare native plants such as <i>Suaeda californica</i> that depend completely on this zone (2).</p> <p>Displaces native species in vernal pools?</p> <p>Replacing the native pickleweed and therefore transforming the landscape (3)</p>	
<p>Rationale: enter text here</p>	
<p>Sources of information: 1. Susan Schwartz, Friends of Five Creeks, Alameda Co., personal comm.</p> <p>2. Peter Baye, e-mail 1/4/07</p> <p>John Gerlach, observational</p> <p>3. Tomasi, J. 1998. The distribution of the non-native plant <i>Salsola soda</i> in San Francisco Bay: Summary of a thesis. CalEPPC News, Summer, pg 4,9</p>	
<p>Question 1.3 Impact on higher trophic levels</p>	<p>B Other Pub. Mat'l back</p>
<p>Identify type of impact or alteration: Establishes in previously unvegetated areas, subsequently affecting the short-legged shorebirds by decreasing their visibility from predators. Occurs well within the dispersal range of the endangered plant soft bird's-beak (<i>Cordylanthus mollis</i> ssp. <i>mollis</i>).</p>	
<p>Rationale: enter text here</p>	
<p>Sources of information: Tamasi, J. 1998. The distribution of the non-native plant <i>Salsola soda</i> in San Francisco Bay: summary of a thesis. CalEPPC News Summer 1998, p. 4. Available: www.cal-ipc.org</p> <p>Baye, P. 1998. More on <i>Salsola soda</i>. CalEPPC News, Fall 1998. p. 7. Available: www.cal-ipc.org</p>	

Question 1.4 Impact on genetic integrity	D Rev'd, Sci. Pub'n back
Identify impacts: None	
Rationale: No native Salsola spp. in California.	
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 Other Pub. Mat'l back
Describe role of disturbance: Inhabits mostly habitats with natural or human disturbance in the San Francisco Bay Area (1, 2). Although it has invaded many disturbed areas and become dominant or co-dominant, including disturbed soils, spilled or discharged dredge slurries, and areas where there is artificially reduced tidal action, it is of particular concern because it is also widespread in undisturbed sal marsh areas of the south Bay.	
Vernal pools	
Rationale: enter text here	
Sources of information: 1. Tamasi, J. 1998. The distribution of the non-native plant Salsola soda in San Francisco Bay: summary of a thesis. CalEPPC News Summer 1998, p. 4. Available: www.cal-ipc.org	
2. Baye, P. 1998. More on Salsola soda. CalEPPC News, Fall 1998. p. 7. Available: www.cal-ipc.org	
3. get information from John Gerlach	
Question 2.2 Local rate of spread with no management	B Observational back
Describe rate of spread: Increasing rapidly along creek mouths and brackish open shores in Eastern San Francisco Bay (1).	
Overall size and penetration into marshes has increased in the past 10 years around San Francisco Bay. Used to be a novelty in the North Bay but is now common. The bay is fairly saturated with it west of Suisun. (2)	
Now spreading into vernal pools areas and is expected to spread inland and along coastal saline habitats in the southern regions of the state.	
Rationale: enter text here	
Sources of information: 1. Susan Schwartz, Friends of Five Creeks, Alameda Co., personal comm., 2005.	
2. Peter Baye, e-mail, 1/4/07	
Question 2.3 Recent trend in total area infested within state	B Other Pub. Mat'l back
Describe trend: increasing in vernal pools and other salt marsh areas.	
Rationale: enter text here	

Sources of information: Tamasi, J. 1998. The distribution of the non-native plant Salsola soda in San Francisco Bay: summary of a thesis. CalEPPC News Summer 1998, p. 4. Available: www.cal-ipc.org	
Question 2.4 Innate reproductive potential	C Other Pub. Mat'l back
Describe key reproductive characteristics: Summer annual. Seeds probably short lived like other members of the genus.	
Rationale: enter text here	
Sources of information: DiTomaso and Healy. 2007. Weeds of California and Other Western States. UC ANR Publ #3488.	
Question 2.5 Potential for human-caused dispersal	C Other Pub. Mat'l back
Identify dispersal mechanisms: Found along roads and bike paths and can move on some occasions by vehicles.	
Rationale: enter text here	
Sources of information: Tamasi, J. 1998. The distribution of the non-native plant Salsola soda in San Francisco Bay: summary of a thesis. CalEPPC News Summer 1998, p. 4. Available: www.cal-ipc.org	
Question 2.6 Potential for natural long-distance dispersal	A Other Pub. Mat'l back
Identify dispersal mechanisms: Buoyant fruits float on tidal currents.	
Rationale: enter text here	
Sources of information: Tamasi, J. 1998. The distribution of the non-native plant Salsola soda in San Francisco Bay: summary of a thesis. CalEPPC News Summer 1998, p. 4. Available: www.cal-ipc.org	
Question 2.7 Other regions invaded	C Other Pub. Mat'l back
Identify other regions: Native to South Africa. First introduced to San Francisco Bay in 1968. Listed as a noxious weed in Arkansas. Appears to inhabit the same areas in California as elsewhere, but little information is available.	
Rationale: enter text here	
Sources of information: Tamasi, J. 1998. The distribution of the non-native plant Salsola soda in San Francisco Bay: summary of a thesis. CalEPPC News Summer 1998, p. 4. Available: www.cal-ipc.org	

Question 3.1 Ecological amplitude/Range	A Other Pub. Mat'l back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: Mudflats and saltmarshes in the San Francisco Bay region. Inhabits high tide drift line, marsh plains, and levees. Locally abundant on tidal creek edges. (1,2, 3, 4). Generally found in saline habitats, but also been observed in vernal pool areas (5). Also in the Suisun Bay (6). It is also invading the tidal creek bank edges in undisturbed, mixed stands of <i>Distichlis spicata</i> and <i>Salicornia virginica</i> .	
Rationale: enter text here	
Sources of information: 1. Tamasi, J. 1998. The distribution of the non-native plant <i>Salsola soda</i> in San Francisco Bay: summary of a thesis. CalEPPC News Summer 1998, p. 4. Available: www.cal-ipc.org 2. Baye, P. 1998. More on <i>Salsola soda</i> . CalEPPC News, Fall 1998. p. 7. Available: www.cal-ipc.org 3. Thomas, J. H. 1975. <i>Salsola soda</i> L. (Chenopodiaceae) in Central California. Madrono. 23(2): 95 4. Peter Baye, e-mail, 1/4/07 5. get information from John Gerlach 6. Tamasi, J. 1998. The distribution of the non-native plant <i>Salsola soda</i> in San Francisco Bay: summary of a thesis. CalEPPC News Summer 1998, p. 4. Available: www.cal-ipc.org	
Question 3.2 Distribution/Peak frequency	D Other Pub. Mat'l back
Describe distribution: Most extensive populations occur in northern San Pablo Bay.	
Rationale: enter text here	
Sources of information: Baye, P. 1998. More on <i>Salsola soda</i> . CalEPPC News, Fall 1998. p. 7. Available: www.cal-ipc.org	

Worksheet A[back](#)

Reaches reproductive maturity in 2 years or less	Yes: 1 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	Unknown: 0 pts
Seeds remain viable in soil for three or more years	No: 0 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	No: 0 pt
	2 pts 2 unknowns
	C (1-3)
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	D. present
Freshwater and Estuarine Aquatic Systems	lakes, ponds, reservoirs	score
	rivers, streams, canals	score
	estuaries	D. present
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	D. present
	meadow and seep	score
	alkali playa	score
	pebble plain	score
Bog and Marsh	bog and fen	score
	marsh and swamp	D. present
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).