

Cal-IPC Plant Assessment Form

For use with “[Criteria for Categorizing Invasive Non-Native Plants that Threaten Wildlands](#)”
by the California Invasive Plant Council and the Southwest Vegetation Management Association

Version February 2003, modified March 2009
California Invasive Plant Council (formerly CA Exotic Pest Plant Council)
Berkeley, CA www.cal-ipc.org, phone (510) 843-3902

Table 1. Species and Evaluator Information

Species name (Latin binomial):	<i>Limonium ramosissimum</i> (Poir.) Maire subsp. <i>provinciale</i> (Pignatti) Pignatti
Synonyms:	
Common names:	Algerian sea lavender
Evaluation date (mm/dd/yy):	05/20/2011
Evaluator #1 Name/Title:	Elizabeth Brusati, Science Program Manager
Affiliation:	Cal-IPC
Phone numbers:	510-843-3902
Email address:	edbrusati@cal-ipc.org
Address:	1442-A Walnut St. #462, Berkeley, CA 94709
Evaluator #2 Name/Title:	Joseph M. DiTomaso, Specialist in Cooperative Extension
Affiliation:	Dept. of Plant Sciences, University of California-Davis
Phone numbers:	530-754-8715
Email address:	jmditomaso@ucdavis.edu
Address:	Mail Stop 4, One Shields Ave., Davis CA 95616

Section below for list committee use—please leave blank

List committee members:	
Committee review date:	
List date:	
Re-evaluation date(s):	

General comments on this assessment:

Not listed in USDA GRIN database.

According to the Jepson Online Interchange, this species is supposed to be listed in Hrusa et al. 2002 but I can't find it.

Table 2. Criteria, Section, and Overall Scores

Species: *Limonium ramosissimum* subsp. *provincale*

Region: California

1.1	Impact on abiotic ecosystem processes	D	Other Publ. Mat.	<p>Impact</p> <p>Enter four characters from Q1.1-1.4 below:</p> <p>DBUU</p> <p>Using matrix, determine score and enter below:</p> <p>C</p>	<p>Plant Score</p> <p>Using matrix, determine Overall Score and Alert Status from the three section scores and enter below:</p> <p>Limited</p> <p>No Alert</p>
1.2	Impact on plant community	B	Other Publ. Mat.		
1.3	Impact on higher trophic levels	U	No Information		
1.4	Impact on genetic integrity	U	Other Publ. Mat.		
2.1	Role of anthropogenic and natural disturbance	C	Other Publ. Mat.	<p>Invasiveness</p> <p>Enter the sum total of all points for Q2.1-2.7 below:</p> <p>10</p> <p>Use matrix to determine score and enter below:</p> <p>C</p>	
2.2	Local rate of spread with no management	B	Other Publ. Mat.		
2.3	Recent trend in total area infested within state	C	Observational		
2.4	Innate reproductive potential Wksht A	A	Other Publ. Mat.		
2.5	Potential for human-caused dispersal	C	Other Publ. Mat.		
2.6	Potential for natural long-distance dispersal	B	Other Publ. Mat.		
2.7	Other regions invaded	D	No information		
3.1	Ecological amplitude/Range	D	Other Publ. Mat.	<p>Distribution</p> <p>Using matrix, determine score and enter below:</p> <p>D</p>	
3.2	Distribution/Peak frequency Wksht C	D	Observational		

Documentation

Average of all questions

2.4 out of 4.0

Table 3. Documentation (Scores are explained in the “[Criteria for Categorizing Invasive Non-Native Plants that Threaten Wildlands](#)”. Short citations may be used in this table. List full citations at end of PAF.)

Impact	
Question 1.1 Impact on abiotic ecosystem processes	D Other Pub Mat back
Identify ecosystem processes impacted: Seems to be minor at best. <p>“<i>L. ramosissimum</i>, like other <i>Limonium</i> species excretes salts and draws moisture from the soil via evapotranspiration ... but this effect does not seem to substantially change either of these soil properties at an effect size detectable by these surveys.”</p>	
Sources of information: Archbald 2011	
Question 1.2 Impact on plant community composition, structure, and interactions	B Other Pub Mat back
Identify type of impact or alteration: Competes with native salt marsh plants. <p>San Francisco Bay: “In high elevation plots, <i>Sarcocornia pacifica</i> cover was 17% lower in invaded than un-invaded plots while <i>Jaumea carnosa</i> and <i>Distichlis spicata</i> cover lost lower cover at all three elevations. Combined with mapping results showing density of LRSP increases with population size, these data provide evidence that LRSP is not functioning similarly to native fugitive species which colonize and then are outcompeted by native plants, but instead that LRSP is reducing cover of native plants where it invades...”</p> <p>Carpinteria Marsh: “...native cover decreased in invaded plots by 6%, 1% and 7% at low, medium and high elevations over the course of 1 year.”</p> <p>Sea lavender germinated more quickly than <i>S. pacifica</i>, <i>J. carnosa</i> or <i>D. spicata</i> at 0 ppt salinity, but the same as these species at 15, 30, and 45 ppt.</p>	
Sources of information: Archbald 2011	
Question 1.3 Impact on higher trophic levels	U Unknown back
Identify type of impact or alteration: Unknown	
Sources of information:	
Question 1.4 Impact on genetic integrity	U Other Publ. Mat. back
Identify impacts: Unknown, but could impact native <i>Limonium californicum</i> . In their native range in the Mediterranean, <i>Limonium</i> species often hybridize.	
Sources of information: Hickman, 1993, Archbald 2011	
Invasiveness	
Question 2.1 Role of anthropogenic and natural disturbance in establishment	C Other Publ. Mat. back
Describe role of disturbance: Appears to need, or at least benefit from, some disturbance to establish. Salt marshes receive natural disturbance in the form of waves, washed-up wrack, etc., that can clear space for a species such as sea lavender to spread.	

<p>“The largest known populations of <i>L. ramosissimum</i> (LR) in San Francisco Estuary are in marshes where sediment or fill has been used to construct tidal marsh habitat above MHW, including marshes restored for mitigation or restoration purposes.”</p>	
<p>Sources of information: Archbald 2011</p>	
<p>Question 2.2 Local rate of spread with no management</p>	<p>B Other Publ Mat. back</p>
<p>Describe rate of spread: Populations are increasing in high marsh and ecotonal habitats in the San Francisco Estuary. Outreach and limited searches resulted in dozens of new populations recorded in San Francisco Estuary.</p>	
<p>Sources of information: Archbald 2011</p>	
<p>Question 2.3 Recent trend in total area infested within state</p>	<p>C Observational back</p>
<p>Describe trend: Increasing somewhat but with local control efforts the populations are about static?</p>	
<p>Sources of information:</p>	
<p>Question 2.4 Innate reproductive potential</p>	<p>A Other Publ Mat back</p>
<p>Describe key reproductive characteristics: Seeds retain the ability to germinate after two weeks floating in salt water.</p> <p>“Seed output of [this] subspecies ranged from 360 seeds per square meter to 11,400 seeds per square meter. By contrast, data from morphology studies at CP [Coyote Point] found seed output ranged from about 3,000 to about 17,400 seeds per plant, depending on elevation...390 to 790 inflorescences/square meter * 343 to 981 seeds/inflorescence results in estimated seed output as high as 133,700 to 774,990 seeds per meter square...”</p> <p>In experiments exposing seeds to salt water at different salinities and immersion times, an average of 88% of seeds germinated across treatments.</p>	
<p>Sources of information: Archbald 2011</p>	
<p>Question 2.5 Potential for human-caused dispersal</p>	<p>C Other Publ. Mat. back</p>
<p>Identify dispersal mechanisms: Sold at nurseries in the San Francisco Bay Area. Aquatic dispersal of seeds from horticultural plantings is possible but not widely planted.</p>	
<p>Sources of information: Archbald 2011</p>	
<p>Question 2.6 Potential for natural long-distance dispersal</p>	<p>B Other Publ Mat back</p>
<p>Identify dispersal mechanisms: Seeds can float on tides and retain ability to germinate.</p>	
<p>Sources of information: Archbald 2011</p>	

Question 2.7 Other regions invaded	D No information back
Identify other regions: No known infestations elsewhere.	
Sources of information:	
Distribution	
Question 3.1 Ecological amplitude/Range	D Other Publ Mat back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known:	
Invades salt marshes in San Francisco Bay Area, also Carpinteria Marsh (Santa Barbara Co.), Orange County, Los Angeles County and San Diego County. Reported from SF Bay in 2006, from Santa Barbara area approximately 1994.	
“In its native range, LR grows in high salinity, low moisture conditions in the Western Mediterranean, including coastal cliff communities fed by salt spray and in saline dunal depressions.” (Archbald 2011). It appears to survive better in high marsh habitat or at the ledge of old levees than in the low marsh, pickleweed plain.	
Grows well in salt marshes but can also grow and germinate seeds in brackish or freshwater marshes.	
Sources of information:, Archbald 2011, Jepson Flora Project 2011	
Question 3.2 Distribution/Peak frequency	D Observational back
Describe distribution: Scattered populations in several counties along the coast.	
Sources of information:	
References	
List full citations for all references used in the PAF (short citations such as DiTomaso and Healy 2007 may be used in table above). Websites should include the name of the organization and the date accessed. Personal communications should include the affiliation of the person providing the observation. Enter each reference on a separate line; the table will expand as needed.	
Examples:	
Mitich, L. W. 1995. Intriguing world of weeds: Tansy ragwort. Weed Technology. 9: 402-404.	
HEAR. Date unknown. <i>Emex spinosa</i> . Hawaiian Ecosystems at Risk. www.hear.org/pier/species/emex_spinosa.htm . Accessed March 17, 2009	
DiTomaso, J. M. Personal communication from Dr. Joe DiTomaso, Dept. of Plant Science, UC Davis. Email received 3/17/09.	
Archbald, G. 2011. Predicting the spread of <i>Limonium ramosissimum</i> in San Francisco Bay salt marshes. M.S. thesis, Biology, San Francisco State University, San Francisco, CA. May 2011.	
Hickman, J. C. (ed.) 1993. The Jepson Manual, Higher Plants of California. University of California Press. Berkeley, CA	
Hrusa, F., B. Ertter, A. Sanders, G. Leppig, and E. Dean. 2002. Catalog of non-native vascular plants occurring	

spontaneously in California beyond those addressed in The Jepson Manual. Part I. Madroño. 49(2): 61-98

Jepson Flora Project. 2011. *Limonium ramosissimum* (Poir.) Maire subsp. *provinciale* (Pignatti) Pignatti. Jepson Online Interchange. University and Jepson Herbarium, University of California-Berkeley. Available: http://ucjeps.berkeley.edu/cgi-bin/get_cpn.pl?82027&expand=1 [Accessed May 20, 2011)

USDA, NRCS. 2011. The PLANTS Database (<http://plants.usda.gov>, 18 May 2011). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

Worksheet A

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Reaches reproductive maturity in 2 years or less	Yes 1
Dense infestations produce >1,000 viable seed per square meter	Yes? 2
Populations of this species produce seeds every year.	Yes 1
Seed production sustained over 3 or more months within a population annually	Yes? 1
Seeds remain viable in soil for three or more years	unknown
Viable seed produced with <i>both</i> self-pollination and cross-pollination	unknown
Has quickly spreading vegetative structures (rhizomes, roots, etc.) that may root at nodes	No
Fragments easily and fragments can become established elsewhere	No
Resprouts readily when cut, grazed, or burned	Yes 1 pt
	6 Unknowns 2
	A

Note any related traits:

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	D
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).