



# Israel's Least Wanted Alien Ornamental Plant Species

Ornamental Plants Potentially Inva-  
sive in Israel's Natural Ecosystems

First Edition – July 2013



המשרד להגנת הסביבה



الوزارة لحماية البيئة  
Israel Ministry of Environmental Protection

First Edition  
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**Editor:** Dr. Jean-Marc Dufour-Dror, ecologist, ecological consultant to the Ministry of Environmental Protection

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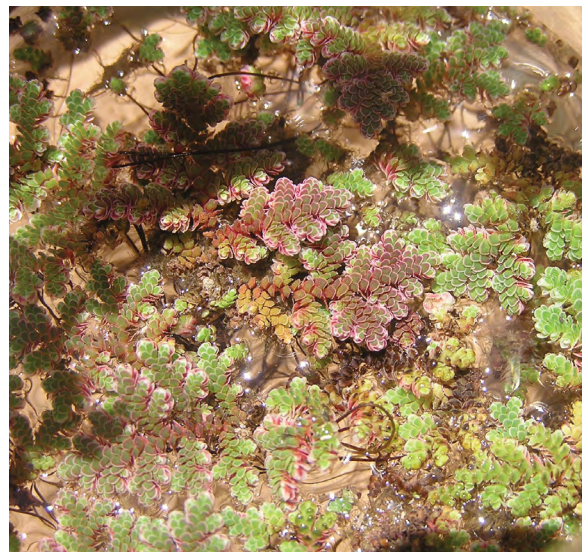
An invasive plant species is an alien taxon that has settled, and spread in an area outside its natural distribution range, as a result of human intervention, and that poses a threat to local species and ecosystems. The introduction of alien ornamental taxa is one of the main sources of invasive plant species proliferation into the natural ecosystems in Israel.

# 1

## Main Objective

The list of unwanted alien ornamental plants in Israel is a tool being offered to landscape architects, gardeners, environmentalists, ecologists, foresters and the general public. The list allows checking whether an alien plant species proposed for planting has a high invasive potential in Israel and may pose a threat to local ecosystems. The main objective of the list is to prevent the use of plants that might become invasive in natural ecosystems in Israel's various regions. Therefore the use of this list will help to preserve biodiversity in Israel's natural ecosystems of Israel.

Alien taxa known as weeds only in cultivated areas are not included in the list since the main goal is protection of natural ecosystems.



*Azolla filiculoides* (Red water fern) is an alien ornamental that has begun to spread in Israel.

Two years ago, the fern completely covered the Birkat Ya'ar pond in the coastal plain, an important natural site for many waterbird species.

Photo: Jean-Marc Dufour-Dror

# 2

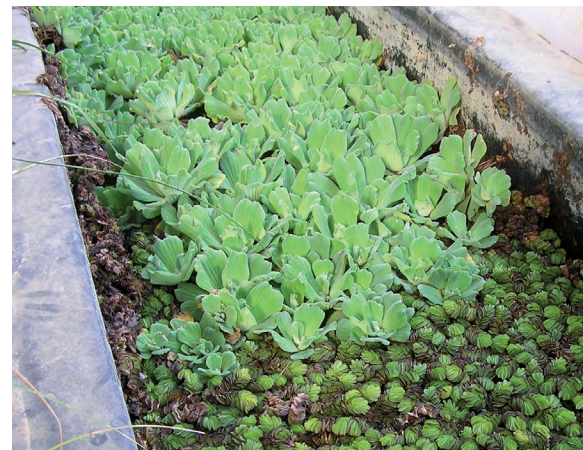
## Back-ground

Invasive plant management in a given region requires information and prevention measures, combined with active control programs in infested sites. Compiling the list of Israel's least wanted alien ornamental plants species is the first practical prevention measure designed to preclude the use of invasive taxa among alien ornamental plants in Israel.

In November 2008 a summary report on a study entitled "Protection of the Landscape Heritage in Israel: Building a policy document for planners and local authorities on the use of alien plants" was submitted to the Chief Scientist of the Ministry of Environmental Protection (Study No. 61-810, Editor: Jean-Marc Dufour-Dror). The result of this research was the basis for the current list which was finally elaborated in collaboration with representatives of the Israel Ministry of Environmental Protection, weed specialists from the Plant Protection Service at the Ministry of Agriculture, ecologists and botanists from the Nature and Parks Authority, the Jerusalem Botanical Gardens, and the Hebrew University Herbarium (see list of consultants on the title page of this document). The final and current edition of the list includes 141 species of ornamental alien plant taxa potentially invasive in Israel. In addition, the list includes ten alien species recommended for monitoring, as their invasiveness in Israel is still unclear. This



### Israel's least wanted alien ornamental plants



*Water lettuce and giant salvinia (kariba weed) are known worldwide as highly invasive aquatic plants. These species have been invading Israel and new foci are detected every year. The individuals shown in the photograph were photographed in an Israeli nursery and are sold as ornamentals for ponds.*  
Photo: Dr. Jean-Marc Dufour-Dror

list is the first edition, and the members of the Israel's invasive plant speciality group who participated in compiling this list, will meet once a year in order to update the list.

## Israel's least wanted alien ornamental plants

# 3

## Method

The selection of plant species to be included in the list was based on the biogeographic approach which stipulates that an alien plant species that became invasive in a given geographic region, primarily characterized by a specific type of climate, is likely to be invasive in other regions which experience the same type of climate. For example, if a plant species is invasive in south west Australia, characterized by a Mediterranean-type climate, this plant species is likely to become an invasive taxon if introduced in the Cape region of South Africa, in California, in the Mediterranean Basin or in the Mediterranean region of Chile. Many experts on invasive plants, e.g. Rejmanek, Richardson, Higgins, Pitcairn & Grotkopp (2005); Groves, Panetta & Virtue (2001); Reichard (2001); Pheloung, Williams & Halloy (1999), consider the biogeographic approach to be the most appropriate method in order to assess which alien plant species may become invaders in a given region:

"Weediness elsewhere is a good predictor of a taxon becoming a weed in new areas with similar environmental conditions"

*Pheloung et al. 1999.*

"Invasive elsewhere: Probably the single best predictor of invasive ability is knowledge of what the species has done in other places where it has been introduced"

*Reichard (2001)*

"Extrapolations based on previously documented invasions are fundamental for predictions in invasion ecology. (...) this approach should lead to immediate rejection of imports of many invasive taxa (prevention) and prioritized control of those that are already established"

"The knowledge of whether a species is invasive elsewhere turned out to be the key information for correct predictions"

*Rejmanek et al. (2005)*

"Results of previous considerations of invasive plants (...) showed that many biological attributes (...) were poor indicators of invasiveness. (...) Despite this general and somewhat disappointing result, certain attributes, such as whether the plant is weedy elsewhere, could still be used profitably to begin to assess numerically whether plants should be introduced to regions or countries"

*Groves et al. (2001)*



## Israel's least wanted alien ornamental plants

### Remarks about the list

- (a) The list focuses on ornamental plant species and alien taxa that may be used in forestry. This document is not an exhaustive list of all alien plant taxa that may invade natural habitats in Israel if introduced.
- (b) The most frequent common names of all plants are given along with their scientific names. Yet, it is recommended to refer primarily to scientific names since one taxon may have numerous common names.
- (c) A distinction has been made between invasion stages:
- 0 Species not recorded in Israel so far.
  - 1 Species present in Israel only in sites where all individuals are planted or cultivated.
  - 2 Casual species \*.
  - 3 Naturalized species \*\*.
  - 4 Invasive species \*\*\*.

\* **Casual alien plants:** Alien plants that may flourish and even reproduce occasionally, but are unable to form sustainable populations. The persistence of plant populations of this taxa relies on repeated introductions (Richardson et al., 2000).

\*\* **Naturalized alien plants:** Alien plants that form self-replacing populations without human intervention for a period of at least ten years (Richardson et al., 2000).

\*\*\* **Invasive alien plants:** Alien plants that fall under the definition for naturalized plants, but produce a large number of reproductive offspring, at considerable distances from the

parent plants. This definition specifies a scale of more than 100 meters distance for taxa spreading by seeds over a period of fifty years, or at least six meters in three years for taxa spreading by creeping stems (Richardson et al., 2000).

- (d) Several alien taxa are likely to invade only in a specific region of the country. In these cases the region where the plant must not be planted is specified. Note that the name "coastal plain" indicates the entire area extending from the Mediterranean sea coastline to the foot hills of the mountain region.
- (e) Dioecious species : Since several ornamentals are dioecious the recommendation is to ban only female individuals.
- (f) Unwanted hydrophytes (aquatic plants, floating or non-floating) are highlighted in red in the table as these invasive taxa can cause extensive damage to natural ecosystems in Israel. Eleven hydrophytes are listed in this first edition of the table.

## Israel's least wanted alien ornamental plants

# 4

## Practical recommendations for using the list

(a) This list is a tool in order to prevent the use of potentially invasive taxa in planting and landscaping projects. It is therefore recommended that any private or public entity requesting to plant alien species submit in advance the full list of taxa intended for use in the project, for examination by the relevant governmental supervising office. Any taxon listed in the present document should be banned from the planting or landscaping project.

It is necessary that the lists of species submitted for examination and approval include the scientific names of the plants. It is inadvisable to rely solely on vernacular names for correct identification of the taxa.

**Important:** Only a few alien plant species may be harmful to local ecosystems in Israel. Most alien species are not invasive, so alternatives can always be found.

Dr. Jean-Marc Dufour-Dror  
Jerusalem, Israel, July 2013

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## Israel's least wanted alien ornamental plants

A plant that should not be used in any part of the country

Species that may invade only certain areas in the country

No.	Scientific name	Common name	Invasion stage in Israel					Areas it may invade in Israel		Special conditions
			0	1	2	3	4	Countrywide	Other	
1	<i>Myoporum laetum</i>	Ngaio Tree		1					Coastal plain ←	
2	<i>Myoporum montanum</i>	Water Bush	0						Coastal plain ←	
3	<i>Myriophyllum aquaticum</i>	Parrot's Feather			2			✓		Invasive hydrophyte: reject in all cases ←
4	<i>Nassella trichotoma</i>	Serrated Tussock	0					✓		
5	<i>Nicotiana glauca</i>	Tree Tobacco					4	✓		
6	<i>Oenothera drummondii</i>	Beach Evening Primrose				3			Countrywide except in the mountain region ←	Problematic in sandy habitats ←

Plant not recorded in Israel so far

Plant present in Israel only in places in which it is grown or planted

Casual plant

Naturalized plant

Invasive plant

Remarks about a specific type of habitat the plant may invade



## Israel's Least Wanted Alien Ornamental Plant Species

This list includes only alien ornamental plants species whose planting or sowing in Israel  
is unadvisable due to their high invasive potential

			Invasion stage in Israel					Areas it may invade in Israel		
No.	Scientific name	Common name	0	1	2	3	4	Countrywide	Other	Special conditions
1	Acacia baileyana	Cootamundra wattle		1					Mediterranean coast and inland	
2	Acacia cyclops	Western Coastal Wattle					4	✓		
3	Acacia dealbata	Silver Wattle		1					Coastal plain	
4	Acacia elata	Mountain Cedar Wattle		1				✓		
5	Acacia farnesiana	Farnese Wattle			2				Mediterranean coast and inland	Low probability of invasion in the mountain region
6	Acacia implexa	Screw-pod Wattle	0					✓		
7	Acacia karroo	Karoothorn				3		✓		
8	Acacia longifolia	Sydney Golden Wattle		1				✓		
9	Acacia mearnsii	Black Wattle	0					✓		
10	Acacia melanoxylon	Sally Wattle		1					Coastal plain	
11	Acacia paradoxa	Kangaroo Thorn			2			✓		
12	Acacia podalyriifolia	Queensland Silver Wattle		1				✓		
13	Acacia pycnantha	Golden Wattle		1				✓		
14	Acacia salicina	Willow Wattle					4	✓		
15	Acacia saligna	Blue-leafed Wattle					4	✓		
16	Acacia victoriae	Elegant Wattle					4	✓		
17	Acetosa sagittata	Turkey rhubarb	0					✓		

No.	Scientific name	Common name	Invasion stage in Israel					Areas it may invade in Israel		
			0	1	2	3	4	Countrywide	Other	Special conditions
18	<i>Ageratina adenophora</i>	Crofton Weed	0					✓		
19	<i>Ailanthus altissima</i>	Tree-of-Heaven					4	✓		
20	<i>Amorpha fruticosa</i>	Desert False Indigo	0					✓		
21	<i>Anredera cordifolia</i>	Gulf Madeiravine	0							
22	<i>Araujia sericifera</i>	Cruel Vine		1					Coastal plain	
23	<i>Arctotheca calendula</i>	Cape Weed		1						
24	<i>Argemone ochroleuca</i>	Pale Mexican Pricklypoppy	0					✓		
25	<i>Asparagus asparagoides</i>	African Asparagus Fern		1					Mediterranean coast and inland	
26	<i>Atriplex holocarpa</i>	Pop Saltbush					4		Countrywide except in the mountain region	
27	<i>Atriplex lindleyi</i> subsp. <i>inflata</i>	Lindley's Saltbush	0							
28	<i>Atriplex nummularia</i>	Bluegreen Saltbush		1						
29	<i>Atriplex semibaccata</i>	Australian Saltbush			2					
30	<i>Azola filiculoides</i>	Red Water Fern			2			✓		Invasive hydrophyte: reject in all cases
31	<i>Baccharis halimifolia</i>	Eastern Baccharis		1					Mediterranean coast and inland	
32	<i>Bassia hyssopifolia</i>	Fivehook Bassia	0					✓		
33	<i>Carpobrotus acinaciformis</i>	Elands Sourfig				3			Coastal plain	Outside the coastal plain, may be planted in urban gardens only, not in gardens adjacent to natural areas
34	<i>Carpobrotus edulis</i>	Hottentot Fig					4			

## Israel's Least Wanted Alien Ornamental Plant Species (contd.)

No.	Scientific name	Common name	Invasion stage in Israel					Areas it may invade in Israel		
			0	1	2	3	4	Countrywide	Other	Special conditions
35	<i>Cereus jamacaru</i>	Queen of the Night		1				✓		
36	<i>Cestrum laevigatum</i>	Inkberry	0					✓		
37	<i>Chamaecytisus prolifera</i>	Escabon		1					Mediterranean coast and inland	
38	<i>Chrysanthemoides monilifera</i>	Boneseed		1				✓		
39	<i>Cirsium arvense</i>	Californian thistle			2			✓		
40	<i>Clematis vitalba</i>	Evergreen Clematis		1				✓		
41	<i>Coccinia grandis</i>	Ivy Gourd	0						Coastal plain	
42	<i>Conicosia pugioniformis</i>	Narrow-leaved Iceplant	0					✓		
43	<i>Cortaderia jubata</i>	Andean Pampas Grass	0						Mediterranean coast and inland	
44	<i>Cortaderia selloana</i>	Silver Pampas Grass			2					
45	<i>Cotoneaster franchetii</i>	Orange Cotoneaster		1						
46	<i>Cotoneaster glaucophyllus</i>	Bright Bead Cotoneaster		1						
47	<i>Cotoneaster pannosus</i>	Silverleaf Cotoneaster		1						
48	<i>Cotula coronopifolia</i>	Brassbuttons	0					✓		
49	<i>Cyperus imbricatus</i>	Shingle Flatsedge			2			✓		
50	<i>Cyperus involucratus</i>	Umbrella Sedge					4	✓		
51	<i>Cytisus linifolius</i>	Mediterranean Broom		1					Mediterranean coast and inland	
52	<i>Cytisus monspessulanus</i>	French Broom	0							
53	<i>Cytisus scoparius</i>	English Broom	0							
54	<i>Cytisus striatus</i>	Portugese Broom	0							

No.	Scientific name	Common name	Invasion stage in Israel					Areas it may invade in Israel		Special conditions
			0	1	2	3	4	Countrywide	Other	
55	<i>Delairea odorata</i>	Cape Ivy	0							
56	<i>Diopogon lignosus</i>	Okie Bean		1					Coastal plain	
57	<i>Dodonaea viscosa</i>	Hopbush				3		✓		Dana and Dror hybrids are permitted for planting
58	<i>Echinopsis spachiana</i>	Torch Cactus		1				✓		
59	<i>Egeria densa</i>	Brazilian Waterweed	0					✓		
60	<i>Eichhornia crassipes</i>	Water Hyacinth					4	✓		Invasive hydrophyte: reject in all cases
61	<i>Elodea canadensis</i>	Canadian Waterweed			2			✓		
62	<i>Eragrostis curvula</i>	Weeping Lovegrass	0					✓		
63	<i>Erechtites minimus</i>	Coastal Burnweed	0					✓		
64	<i>Erica lusitanica</i>	Spanish Heath		1					Coastal plain and the Golan Heights	May be problematic in Hamra and acid soils
65	<i>Eucalyptus camaldulensis</i>	River Redgum				3			Mediterranean coast and inland	Problematic only in damp places in the summer. Do not plant near stream beds less than 100 m from the 50-year flood plain line. Near lakes, swamps, winter rain ponds and springs, do not plant less than 400 m from the water line at the peak of the winter season; do not plant less than 50 m from protected places in which ground water is up to 1 m from the ground surface.
66	<i>Fallopia japonica</i>	Japanese Knotweed	0					✓		

## Israel's Least Wanted Alien Ornamental Plant Species (contd.)

No.	Scientific name	Common name	Invasion stage in Israel					Areas it may invade in Israel		
			0	1	2	3	4	Countrywide	Other	Special conditions
67	<i>Ficus benghalensis</i>	Indian Banyan					4			
68	<i>Ficus benjamina</i>	Weeping Fig			2				The Jordan valley, Arava and the Dead Sea	
69	<i>Ficus microcarpa</i>	Chinese Banyan					4			
70	<i>Ficus religiosa</i>	Sacred Fig					4			
71	<i>Gomphocarpus fruticosus</i>	Milkweed		1					Countrywide except in the mountain region	
72	<i>Hakea drupacea</i>	Sweet Hakea	0					✓	Coastal plain and the Golan Heights	May be problematic in Hamra and acid soils
73	<i>Hakea gibbosa</i>	Rock Hakea	0					✓		
74	<i>Hakea salicifolia</i>	Willow-leaved Hakea	0					✓		
75	<i>Hakea sericea</i>	Silky Hakea		1				✓		
76	<i>Heterotheca subaxillaris</i>	Camphorweed					4	✓		
77	<i>Hydrilla verticillata</i>	Hydrilla	0					✓		Invasive hydrophyte: reject in all cases
78	<i>Ipomoea aquatica</i>	Chinese Waterspinach			2			✓		
79	<i>Ipomoea cairica</i>	Mile-a-minute Vine				3			Coastal plain	
80	<i>Ipomoea indica</i>	Blue Morningglory		1						
81	<i>Ipomoea purpurea</i>	Common Morningglory		1						
82	<i>Jatropha gossypifolia</i>	Bellyache Bush		1						
83	<i>Lantana camara</i>	Common Lantana					4	✓		
84	<i>Lathyrus tingitanus</i>	Tangier Pea	0						Mediterranean coast and inland	
85	<i>Leucaena leucocephala</i>	White Leadtree		1						
86	<i>Lycium ferocissimum</i>	African Boxthorn	0						Coastal plain	
87	<i>Melia azedarach</i>	Chinaberry Tree				3			Mediterranean coast and inland	
88	<i>Myoporum laetum</i>	Ngaio Tree		1					Coastal plain	
89	<i>Myoporum montanum</i>	Water Bush	0							

			Invasion stage in Israel					Areas it may invade in Israel		
No.	Scientific name	Common name	0	1	2	3	4	Countrywide	Other	Special conditions
90	Myriophyllum aquaticum	Parrot's Feather			2			✓		Invasive hydrophyte: reject in all cases
91	Nassella trichotoma	Serrated Tussock	0					✓		
92	Nicotiana glauca	Tree Tobacco					4	✓		
93	Oenothera drummondii	Beach Evening Primrose				3			Countrywide except in the mountain region	Problematic in sandy habitats
94	Opuntia engelmannii	Engelmann's Prickly pear	0						Mediterranean coast and inland	
95	Opuntia exaltata	Long-spine Cactus	0							
96	Opuntia fulgida	Rosea Cactus	0						Mediterranean coast and inland	
97	Opuntia humifusa	Creeping Prickly-pear		1						
98	Opuntia imbricata	Imbricate Pickly-pear		1						
99	Opuntia monacantha	Drooping Prickly-pear	0							
100	Opuntia robusta	Wheel Cactus		1						
101	Opuntia stricta	Erect Prickly-pear	0							
102	Paraserianthes (=Albizia) lophantha	Plume Albizia			2				Coastal plain	
103	Parkinsonia aculeata	Jerusalem Thorn					4	✓		
104	Passiflora mollisima	Banana Passionflower	0						Coastal plain	
105	Pennisetum clandestinum	Kikuyu Grass					4	✓		Particularly problematic in humid habitats
106	Phytolacca americana	American Pokeweed					4	✓		

## Israel's Least Wanted Alien Ornamental Plant Species (contd.)

No.	Scientific name	Common name	Invasion stage in Israel					Areas it may invade in Israel		
			0	1	2	3	4	Countrywide	Other	Special conditions
107	<i>Pistia stratiotes</i>	Water Lettuce					4	✓		Invasive hydrophyte: reject in all cases
108	<i>Populus alba</i>	White Poplar					4		Mediterranean coast	Do not plant near stream banks in the Upper Galilee less than 100 m from the 50-year flood plain line; only male individuals may be planted
109	<i>Populus deltaoides</i>	Common Cottonwood		1						
110	<i>Populus nigra</i>	Lombardy's Poplar		1						
111	<i>Prosopis glandulosa</i>	Honey Mesquite		1				✓		
112	<i>Prosopis juliflora</i>	Mesquite					4	✓		
113	<i>Prosopis pallida</i>	Algaroba		1				✓		
114	<i>Prosopis velutina</i>	Velvet Mesquite		1				✓		
115	<i>Retama monosperma</i>	Bridal Broom		1				✓		
116	<i>Ricinus communis</i>	Castor Bean					4		Mediterranean coast and inland	
117	<i>Robinia pseudoacacia</i>	Black Locust			2					
118	<i>Rosa rubiginosa</i>	Sweetbriar Rose		1				✓		
119	<i>Rubus anglocandicans</i>	Blackberry	0					✓		
120	<i>Rubus discolor</i>	Himalayan Blackberry	0					✓		
121	<i>Rubus fruticosus</i>	Bramble Blackberry	0					✓		
122	<i>Rubus laudatus</i>	Plains Blackberry	0					✓		

No.	Scientific name	Common name	Invasion stage in Israel					Areas it may invade in Israel		Special conditions
			0	1	2	3	4	Countrywide	Other	
123	Rubus rugosus	Keriberry	0					✓		
124	Rubus ulmifolius	Elmleaf Blackberry	0					✓		
125	Sagittaria platyphylla	Delta Arrowhead	0					✓		Invasive hydrophyte: reject in all cases
126	Salix fragilis	Crack Willow		1				✓		May be problematic only in humid habitats, only male individuals may be planted
127	Salvinia molesta	Giant Salvinia			2			✓		Invasive hydrophyte: reject in all cases
128	Salvinia natans	Floating Watermoss			2			✓		Invasive hydrophyte: reject in all cases
129	Schinus molle	Peruvian Peppertree			2			✓		Only male individuals may be planted
130	Schinus terebinthifolius	Brazilian Peppertree					4	✓		Only male individuals may be planted
131	Senna alata	Emperor's Candlesticks		1					Countrywide except in the mountain region	
132	Senna didymobotrya	African Senna		1						
133	Senna obtusifolia	Java-bean		1						
134	Sesbania punicea	Rattlebox	0					✓		
135	Sesbania sesban	Egyptian Riverhemp			2				Countrywide except in the mountain region	
136	Sparaxis bulbifera	Harlequin Flower		1				✓		
137	Syzygium jambos	Malabar Plum		1					Coastal plain	
138	Tamarix gallica	French Tamarisk		1				✓		



## Israel's Least Wanted Alien Ornamental Plant Species (contd.)

No.	Scientific name	Common name	Invasion stage in Israel					Areas it may invade in Israel		Special conditions
			0	1	2	3	4	Countrywide	Other	
139	Tamarix ramosissima	Saltcedar		1				✓		May be problematic in moist habitats
140	Washingtonia robusta	Mexican Fan Palm				3		✓		
141	Watsonia meriana var. bulbilifera	Bulbil Bugle-lily	0					✓		

### Summary

**The list includes 141 species of which:** • 45 not yet observed in Israel (Invasion stage 0 ) • 48 introduced in Israel but not observed outside the places in which they are grown/planted (Invasion stage 1 ) • 17 casual (Invasion stage 2 ) • 8 Naturalized (Invasion Stage 3 ) • 23 Invasive (Invasion Stage 4 )

## Alien ornamental taxa whose invasive potential in Israel is uncertain. These species require monitoring in Israel in the coming years

No.	Scientific name	Common name	Invasion stage in Israel					Areas it may invade in Israel	
			0	1	2	3	4	Countrywide	Other
1	Aptenia cordifolia	Heartleaf iceplant		1					Coastal plain
2	Heartleaf iceplant	Chilean Jessamine		1					Coastal plain
3	Cryptostegia grandiflora	Palay Rubbervine		1					Coastal plain
4	Gleditsia triacanthos	Honeylocust			2			✓	
5	Hedychium coronarium	Butterfly Lily		1					Coastal plain
6	Helichrysum petiolare	Licorice-plant		1					Coastal plain

## Alien ornamental taxa whose invasive potential in Israel is uncertain (contd.)

No.	Scientific name	Common name	Invasion stage in Israel					Areas it may invade in Israel	
			0	1	2	3	4	Countrywide	Other
7	<i>Leptospermum laevigatum</i>	Australian tea tree		1					Coastal plain
8	<i>Nassella tenuissima</i>	Tussockgrass	0					✓	
9	<i>Tipuana tipu</i>	Tiputree			2				Mediterranean coast
10	<i>Stenotaphrum secundatum</i>	St. Augustine Grass		1				✓	

The list was compiled by **Dr. Jean-Marc Dufour-Dror<sup>(1)</sup>** in consultation with **Dr. Ori Fragman-Sapir<sup>(2)</sup>**, **Dr. Michael Avishai<sup>(3)</sup>**, **Dr. Margareta Walczak<sup>(4)</sup>**, **Dr. Tuvia Yaacoby<sup>(4)</sup>**, **Ms. Sima Kagan<sup>(6)</sup>**, **Ms. Hagar Vered Lashner<sup>(7)</sup>**, **Mr. Israel Galon<sup>(8)</sup>**, **Ms. Abigail Heller<sup>(9)</sup>**, and **Ms. Ariella Gotlieb<sup>(10)</sup>**.

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For reference: Dufour-Dror J.M., Fragman-Sapir O., Yaacoby T., Walczak M., Avishai M., Kagan S., Vered Lashner H., Galon I., Heller A. and Gotlieb, A. (2013) **Israel's Least Wanted Alien Ornamental Plant Species**. Israel Ministry of Environmental Protection, Nature & Parks Authority, Ministry of Agriculture, The Hebrew University Botanical Gardens, 20p.

## Israel's least wanted alien ornamental plants

### Examples of alien ornamental plants that are already invading Israel

1. **Parrot's feather** – *Myriophyllum aquaticum*

An invasive hydrophyte used as ornamental plant in aquaria. The plant has begun invading natural areas in Israel.

Photo: Dr. Jean-Marc Dufour-Dror



1

2. **Mesquite** – *Prosopis juliflora*

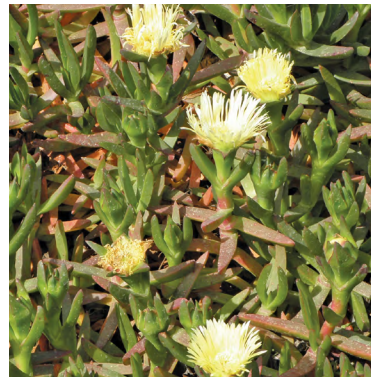
Native to an area ranging from Mexico to northern South America. A particularly devastating invader in East and South Africa, where it is called "Devil Tree".



2

3. **Ice plant** – *Carpobrotus edulis*

A plant native from South Africa that was used as an ornamental in other Mediterranean regions of the world and has become an invader over large natural areas on the coasts of California and in Mediterranean countries, including Israel.



3

4. **Common water hyacinth** – *Eichhornia crassipes*

One of the hundred most invasive organisms in the world. The plant is an invader also in Israel and is still sold as an ornamental plant in nurseries.



4

Photos: Jean-Marc Dufour-Dror



## Israel's least wanted alien ornamental plants



5



6



7



8

### Examples of ornamental plants with high invasive potential that have not yet been introduced to Israel

#### 5. Andean pampas grass – *Cortaderia jubata*

A grass species native to northern Argentina, Chile, Bolivia, and Peru. This plant has become a very problematic invader along the entire coast of California.

Photo: ARC-PPRI, South Africa

#### 6. Rattlebox – *Sesbania punicea*

A plant native to southern Brazil, Uruguay, and northeastern Argentina that has become a very aggressive invader in the whole Mediterranean region of South Africa.

Photo: ARC-PPRI, South Africa

#### 7. Serrated tussock – *Nasella trichotoma*

A plant of the grass family native to Argentina and Uruguay. A very problematic invader in South Africa and Australia.

Image source: ARC-PPRI, South Africa

#### 8. Rosea cactus – *Opuntia fulgida*

Plant from southwest U.S. and Mexico invading arid areas of South Africa.

Photo: ARC-PPRI, South Africa



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Ecosystems

**First Edition – July 2013**

Israel Ministry of Environmental Protection: [www.sviva.gov.il](http://www.sviva.gov.il)

Israel Ministry of Agriculture: [www.moag.gov.il](http://www.moag.gov.il)

Nature and Parks Authority: [www.parks.org.il](http://www.parks.org.il)

Hebrew University Botanical Gardens: [www.en.botanic.co.il](http://www.en.botanic.co.il)