

SAN DIEGO COUNTY INVASIVE ORNAMENTAL PLANT GUIDE

This Guide is produced and distributed by the San Diego Chapter of the American Society of the Landscape Architects (SD/ASLA) and the San Diego Chapter of the California Native Plant Society (CNPS) for the primary purpose of educating landscape professionals and the general-public regarding the cultivation, selection, use and management of non-native and/or invasive plants in San Diego regional landscapes.

It is understood that this Guide is of special importance in the “urban interface”: areas where natural vegetation and man-made landscapes come into close contact. It is not the intent of the authors to add unnecessary constraints or to discourage the planting of a broad selection of native and non-native species where it is unlikely that their presence would have any effect upon indigenous plant populations or habitat. This Guide is provided solely as a reference document and is not intended for regulatory purposes.

What is an Invasive Plant?

An ‘Invasive Plant’ is a species that has become a weed pest: a plant that grows aggressively, spreads rampantly and displaces native plants. Invasive plants usually appear on disturbed ground and moist places, and the most aggressive can invade native areas. Invasive plants are generally undesirable because they can be difficult to control, can escape from cultivation, and can out-compete native plants. Invasive plant infestations can be environmentally destructive, costing government, resource agencies and private land owners millions of dollars each year to control and remove.

Characteristics of Invasive Plants

Invasive plants can be trees, shrubs, vines, groundcovers, grasses or aquatic plants. Invasive plants **tend to be:**

- Spread by wildlife, water, wind, and /or seeds.
- Reproduce rapidly by roots, seeds, shoots or all three.
- Produce numerous seeds that disperse and sprout easily.
- Adapt to different climatic conditions.
- Be non-native to San Diego County.
- Exploit and colonize disturbed land and non-disturbed native areas.
- Not be controlled by predators or native control mechanisms.

Impacts of Invasive Plants in San Diego County

With San Diego’s mild climate it is possible to use plants from around the world in our landscape. Some of these plants are invading the natural environment and displacing native plants and ultimately altering natural landscapes and habitats. Biological impacts of invasive species include:

- Competition with native plant species (e.g. space, water, nutrients, and biological resources such as pollinators and dispersers).
- Change in natural fire occurrences and frequencies (e.g. invasive annuals and desert fires).
- Decrease in quality of food and habitat for local fauna (e.g. poisonous weeds and poor nesting sites)
- Potentially adverse genetic effects of hybridization among invasive species and natives (e.g. swapping out of genes).¹

How to Use the Guide

This guide is intended to educate professionals and the general public on non-native invasive plants that can adversely impact habitats in San Diego County. The Guide will help the professional and the general public makes decisions on when and where not to use invasive plants. The Guide provides a list of plants in two categories:

1. Most Invasive - These plants have been documented as aggressive invaders that may establish even from distant plantings to displace natives and disrupt habitats. Using these plants in any landscape is strongly discouraged.
2. Moderately Invasive - These plants have been documented as moderately invasive and having the potential to spread when planted next to open space or natural areas. Before selecting or installing plants from this category, use the Guide to investigate whether the plant may be potentially invasive in a particular location and site.

More detailed information on each plant is available on our website at www.asla-sandiego.org

The San Diego Chapter of the American Society of Landscape Architects mission statement: “To lead, to educate and to participate in the careful stewardship, wise planning and artful design of our cultural and natural environments.”

The California Native Plant Society is a statewide nonprofit organization seeking to increase understanding and appreciation of California’s native plants and to preserve them in their natural habitat through scientific activities, education and conservation.

What Can I do about Invasive Plants?

The best way to control invasive plants is prevention. Methods of prevention include the following:

Select Plant Material Carefully. When designing landscapes or purchasing plants for installation, select plants that will compliment the site and prevent invasive plants from impacting the native plant communities, natural open spaces or surrounding environments. When landscaping adjacent to open space or natural areas, it is recommended to use locally native plants. The CNPS website (see Resources below) is a good source of information on native plants.

Remove Invasive Plants Before They Become A Problem. Effective monitoring is essential so that invasive plants can be removed while they are still small and easily controllable. For instance, do not let invasive plants go to seed or allow spreading groundcovers such as Ice Plant or Myoporum to spread and take root in natural areas. Mechanical removal through digging or cutting is preferred. Large populations of invasive plants may need to be stopped by trained professionals.

Replace Invasive Plants With Native Or Non-invasive Species. Invasive plants are often especially quick to exploit bare soil and disturbed areas. When you remove an invasive plant, replant with a native or non-invasive species, before the invasive plant can grow back from seed or its roots. Areas that can not be replanted should be covered with a heavy layer (3" minimum) of **weed free** mulch to prevent seeds of the invasive plants from germinating.

Use Fertilizers Wisely. Proper site preparation begins with a soil test before applying fertilizer. High fertilizer levels of nitrogen sometimes give an advantage to invasive plants that utilize fertility to develop explosive growth. For balanced soil fertility, try using organic, slow decomposing compost and weed free mulches instead of high nitrogen fertilizers.

Long Term Maintenance Planning. Landscape design should consider the ultimate size and potential spread of each plant species and the difficulty of controlling it in comparison with the maintenance to be available. Keep in mind that maintenance is a long term commitment and frequently subject to budget cuts and may not be always available. Areas near buildings and areas that are actively used get more maintenance than areas that are out of sight or distant from use areas. Plants with a potential for invasiveness should not be planted in areas where maintenance and observation are likely to be infrequent. Creating sustainable landscapes is encouraged.

For more information:

*San Diego Chapter of the American Society of Landscape Architects, www.asla-sandiego.org

* ASLA National Policy Statement on Non-Native Invasive Species, www.asla.org

*San Diego Chapter of the California Native Plant Society, www.cnpsd.org, info@cnpsd.org, Phone: 619- 685-7321

*California Invasive Plant Council, www.cal-ipc.org, Phone: 510-843-3902

*University of California Cooperative Extension County of San Diego, Regional Advisor on Invasive Plants, Carl Bell, <http://cesandiego.ucdavis.edu>

*San Diego County Plant Atlas, San Diego Natural History Museum, Department of Botany, www.sdplantatlas.org

Native Plant Demonstration Gardens in San Diego County

Mission Trails Regional Park, www.mtrp.org

Quail Botanical Gardens, www.qbgardens.com

San Diego Wild Animal Park, www.sandiegozoo.org

Torrey Pines State Reserve, www.torreypine.org

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This Guide is a living document and requires feedback to ensure the accuracy of the information. Please contact us with information on new invasive plants or with disagreements concerning plant species within the Guide at www.asla-sandiego.org.

¹ Mooney, H.A. and E.E. Cleland. 2000. The evolutionary impact of invasive species. In: *Proceedings of the National Academy of Sciences of the United States of America Colloquium on The Future of Evolution*. The National Academies Press, Washington, D.C.



CNPS *San Diego Chapter*
California Native Plant Society

BOTANICAL NAME:
Acacia baileyana

COMMON NAMES:
Bailey Acacia
Cootamundra Wattle

FAMILY: Fabaceae
(=Leguminosae)

ORIGIN: Southeastern Australia



Photo credit: Dean William Taylor 2002 and CalPhotos- Berkeley Digital Library Project

Reason for listing as invasive species:

This species is a fast growing, small to medium sized tree that adapts well to many conditions. Once established, this species needs little to no water in coastal or inland climates. It naturalizes in coastal climates and should be managed carefully.¹ *Acacia baileyana* is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas".² It appears to be mildly invasive and when found in natural areas, it is usually adjacent to a landscaped area. It is known to establish in wet or riparian areas.^{1,5} Because of its ability to spread from landscaped areas into natural areas or open spaces, it is not recommended for planting adjacent to natural areas or open spaces that have water or riparian areas.^{3,4,5}

Methods of invading natural areas:

Seed and wildlife

Locations where it invades:

riparian/wetland

Where invasive in San Diego:

San Elijo Lagoon, Green Canyon in Fallbrook, Lilac Road in Valley Center, Lake Calavera, Agua Hedionda Lagoon^{3,4,5}

Invasive varieties include:

All members of the species including *Acacia baileyana* 'purpurea'

Varieties not known to be invasive:

Alternative plants to consider:

Native Species:

Ornamental species:

¹ Perry, Bob. 1996. *Landscape Plants for Western Regions*. Land Design Publishing. Claremont, CA, p. 66.

² Checklist of the Vascular Plants of San Diego County. Accessed September 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>

³ Carlsbad Habitat Management Plan, December 2004.

⁴ Beauchamp, R. Mitchel, *A Flora of San Diego County*, 1986.

⁵ Field observation, Carolyn Martus, consulting biologist, c_martus@yahoo.com.

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BOTANICAL NAME:
Acacia longifolia (A. latifolia)

COMMON NAMES:
Golden Wattle,
Sydney Golden Wattle

FAMILY: Fabaceae
(=Leguminosae)

ORIGIN: Eastern and southern
Australia



Photo @ 2006 Carolyn Martus

Reason for listing as invasive species:

This non-native species has escaped cultivation and established in natural areas of San Diego County, according to the "Checklist of the Vascular Plant of San Diego County."¹ "*Acacia longifolia* shows considerable invasibility on dune sands, especially in western Santa Barbara and San Luis Obispo counties, from Vandenberg AFB north to Oceano. In fact, most of the sites of the sand plum, *Prunus fasciculata* var. *punctata*, west of Nipomo Mesa and in the Guadalupe dunes, have been replaced by *A. longifolia*."² This species is able to tolerate heat, aridity, wind, salt spray, and drought.³ Used extensively for landscaping along freeways, it is most commonly found naturalizing and spreading in our coastal watersheds.⁴

Methods of invading natural areas:

Spreads by seed and wildlife.

Locations where it invades:

coastal sage, coastal habitats, riparian/wetland

Where invasive in San Diego:

San Elijo Lagoon, Manchester Reserve, Lake Calavera, Buena Vista Lagoon, Carlsbad Hydrological Unit, Lake Murray, Rose Canyon⁴

Invasive varieties include:

All members of the species *Acacia longifolia*

Varieties not known to be invasive:

None

Alternative plants to consider:

California Native Species and cultivars:

Isomeris arborea
Encelia californica

Bladderpod
California Encelia, Bush
Sunflower

Baccharis salicifolia
Rhus integrifolia
Malosma laurina
Heteromeles arbutifolia
Ceanothus spp.
Salix lasiolepis

Mule-Fat
Lemonadeberry
Laurel Sumac
Toyon
California Lilac
Arroyo Willow

Ornamental species:

Arbutus unedo

Strawberry Tree

¹ Simpson, M.G. and J.P. Rebman. 2001. *Checklist of the vascular plants of San Diego County*, 3rd ed. SDSU Herbarium Press, San Diego.

² Wilken, Dieter (research botanist, Santa Barbara Botanic Garden). E-mail to Carol Bornstein. 12 Nov. 2004.

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³ Perry, Bob. *Landscape Plants for Western Region, An Illustrated Guide to Plants for Water Conservation*. 1992, p. 70.

⁴ Field observation Carolyn Martus, consulting biologist, c_martus@yahoo.com.

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BOTANICAL NAME:

Aptenia cordifolia

COMMON NAMES:

**Red Apple,
Baby Sunrose, Heartleaf
Iceplant, Dew Plant**

FAMILY: Aizoaceae

ORIGIN: South Africa



Photo © Carolyn Martus 2006

Reason for listing as invasive species:

This fast growing groundcover does well in full sun, tolerates most soil types and is capable of resisting drought for long periods at a time.¹ When landscaped adjacent to open spaces or natural areas it can spread into native vegetation, smothering and dominating the native plant community.² It will climb oak trees and shrubs. *Aptenia cordifolia* has not been evaluated by CAL-IPC and is listed as a 'plant needing more information.'³ This non-native species has escaped cultivation and established in natural areas of San Diego County according to the "Checklist of the Vascular Plants of San Diego County."⁴ Because it readily spreads from landscaped areas to natural areas and open spaces, it is not recommended for planting adjacent to natural areas or open spaces.³

Methods of invading natural areas:

Vegetatively, roots easily

Locations where it invades:

coastal habitats, riparian

Where invasive in San Diego:

La Jolla, San Diego, National City, Point Loma⁵, Escondido Creek, Ostrich Creek⁶

Invasive varieties include:

All members of the species *Aptenia cordifolia*

Varieties not known to be invasive:

Unknown at this time

Alternative plants to consider:

Native Species:

Ornamental species:

¹ Perry, Bob. (1996). *Landscape Plants for Western Regions*. Land Design Publishing.

² *Invasive Plants of California's Wildlands*, Bossard et.al., 2000.

³ Exotic Pest Plants of Greatest Ecological Concern. Accessed January 23, 2005 on the World Wide Web at http://groups.ucanr.org/ceppc/1999_Cal-IPC_list/

⁴ Checklist of the Vascular Plants of San Diego County. Accessed October 10, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.

⁵ Beauchamp, R. Mitchel, *A Flora of San Diego County*, 1986.

⁶ Carolyn Martus, consulting biologist, field observation, c_martus@yahoo.com.

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BOTANICAL NAME:
Asparagus densiflorus

COMMON NAMES:
Asparagus fern

FAMILY: Asparagaceae
[Liliaceae]

ORIGIN: South Africa



more photos at

<http://www.hear.org/pier/imagepages/singles/asdenp86.htm>

Reason for listing as invasive species:

Asparagus densiflorus is often grown as a potted plant or used as a groundcover. It forms tuberous roots, tolerates dry and poor soils and full sun growing conditions. In mild climates, it grows in full sun or part shade and can survive periods of drought and frost.¹ *Asparagus densiflorus* has recently been found to naturalize in natural areas or non-cultivated lands in San Diego County and it will be added to the next edition of the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."² It appears to spread in a similar manner to a closely related species, *Asparagus asparagoides* (a highly invasive plant in San Diego) which spreads by berries. In Australia, it has invaded coastal, rainforest, frontal dunes, sclerophyll forest and coastal heath. In Hawaii it has been found to be rather widespread on the island of Kauai, spreading along roadsides and invading secondary forest.³ Even when used in urban areas, it should be carefully managed. Species of *Asparagus* are exploding in areas with similar climates to that found in San Diego.

Methods of invading natural areas:

Humans have dispersed this plant globally for landscaping and cultivation. The plant carries berries that are very attractive to birds who help spread the plant to natural lands and open spaces.³

Locations where it invades:

wetlands, riparian, oak woodland

Where invasive in San Diego:

Mission Valley Preserve⁴

Invasive varieties include:

All members of the species *Asparagus densiflorus*

Varieties not known to be invasive:

Alternative plants to consider:

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<u>Native Species:</u>	<i>Fragaria vesca</i> <i>Achillea millefolium</i> <i>Vitis girdiana</i>	California Strawberry Yarrow Desert Wild Grape
<u>Ornamental species:</u>	<i>Trachelospermum</i> spp.	Jasmine

¹ Sunset Western Garden Book, 2001 Edition.

² New County Non-natives, 9/13/2004, San Diego Natural History Museum.

³ Asparagus densiflorus PIER species info. Accessed February 1, 2004 on the world wide web at http://www.hear.org/pier/species/asparagus_densiflorus.htm

⁴ Judy Gibson, Collections manager San Diego Natural History Museum.

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BOTANICAL NAME:
Asparagus setaceus
(A. plumosus)

COMMON NAMES:
Asparagus Fern,
Plumosa Fern

FAMILY: Asparagaceae
[Liliaceae]

ORIGIN: South Africa



Photo © 2002 University of Florida

Reason for listing as invasive species:

Asparagus setaceus is an evergreen perennial herb categorized in the *Checklist of Vascular Plants of San Diego County* as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."¹ Many species of the *Asparagus* genus are known to be invasive locally.^{2,3} Because of its ability to spread easily from landscaped areas into natural areas or open spaces it should not be used for landscaping adjacent to open spaces or natural areas.^{2,3} Even when used in urban areas, it should be carefully managed. Species of *Asparagus* are exploding in areas with similar climates to that found in San Diego.^{2,3}

Methods of invading natural areas:

Based on similar species of the *Asparagus* genus², this species likely spreads via creeping rhizomes (root-like structures) and seeds. Though its common name is Asparagus Fern, it is not a true fern.

Locations where it invades:

riparian/wetland, coastal habitats

Where invasive in San Diego:

Golden Canyon, Golden Hill, urban canyons in San Diego³

Invasive varieties include:

All members of the species *Asparagus setaceus*

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species and cultivars:

Clematis pauciflora

Ropevine, Small-Leaf Virgin's Bower
Pipestem Virgin's Bower

Clematis lasiantha

Ornamental species:

¹ Simpson, M.G. and J. Rebnan. 2001. *Checklist of the Vascular Plants of San Diego County*, 3rd Edition. SDSU Herbarium Press. San Diego, CA.

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² Cooperative Research Center for Weed Management Systems, Australia. 2000. Best Practice Management Guide. http://www.weeds.crc.org.au/documents/bridal_creeper.pdf.

³ Dr. Jon Rebman, botanical curator San Diego Natural History Museum, personal communication

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BOTANICAL NAME:
Callistemon viminalis

COMMON NAMES:
Weeping Bottlebrush

FAMILY: Myrtaceae

ORIGIN: Eastern Australia



H. Vannoy Davis © California Academy of Sciences

Reason for listing as invasive species:

Callistemon viminalis is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."¹ "In its native habitat in eastern Australia, *C. viminalis* is found along watercourses and it performs best in cultivation if a reliable water supply is available. Once established, however, it is able to tolerate extended dry periods. It can tolerate less than perfect drainage but may be damaged by moderate to heavy frost."² It appears to be mildly invasive, usually found spreading from an adjacent or nearby planted population.

Methods of invading natural areas:

Humans have dispersed this plant globally for landscaping and cultivation. Seeds then travel over shorter distances from initial plantings through gravity or perhaps by wildlife.

Locations where it invades:

wetlands and riparian areas that are adjacent to cultivated areas

Where invasive in San Diego:

Lower San Diego River, lower Otay River Valley near I-805³, Carlsbad Highlands⁴, Mission Valley Preserve⁵

Invasive varieties include:

All members of the species *Callistemon viminalis*

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species and cultivars:

Heteromeles arbutifolia
Myrica californica
Arbutus menziesii

Toyon
Wax Myrtle
Pacific Madrone

Ornamental species:

Arbutus unedo

Strawberry Tree

¹ *Checklist of the Vascular Plants of San Diego County*. Accessed February 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.

² Association of Societies for Growing Australian Plants, Accessed February 1, 2004 on the World Wide Web at <http://farrer.riv.csu.edu.au/ASGAP/c-vim.html>

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³ Field observation by Brad Burkhardt (b.burkhardt@attglobal.net)

⁴ Carolyn Martus, consulting biologist, field observation, c_martus@yahoo.com.

⁵ San Diego County Plant Atlas, San Diego Natural History Museum. Accessed January 22nd 2006 on the World Wide Web at www.sdplantatlas.org.

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BOTANICAL NAME:
Catalpa bignonioides

COMMON NAMES:
Common Catalpa
Indian Bean

FAMILY: Bignoniaceae

ORIGIN:
Southeastern United States,
Florida to Mississippi



Photo: Crocus Nursery



Photo: NC State University

Reason for listing as invasive species:

There are 11 species of *Catalpa* native to the southern U.S. and East Asia. *Catalpa bignonioides* has been observed in San Diego wildland areas but has not been documented with an herbarium voucher. *Catalpa speciosa* was recently documented as a naturalized species in San Diego County.¹ *Catalpa bignonioides* is a fast growing, 30 to 50 foot tall deciduous tree with large, dramatic leaves, trumpet shaped flowers and a long, thin, distinctive seed. It is native to riverbanks and swamps but is adaptable to heat and cold and a variety of soils.² Catalpas have very light seed that can float on the breeze³ providing wide seed distribution and potential expansion of the area invaded. Several cultivars are available. In San Diego County, it persists from cultivation, and naturalizes along roadsides and watercourses.⁴ The *Catalpa* genus is not listed in the CAL-IPC List of Invasive Plants.⁵

Methods of invading natural areas:

Seed borne by wind, and some possible root suckering⁶

Locations where it invades:

wetland, oak woodland, grassland, coastal habitats

Where invasive in San Diego:

Olivenhain, San Luis Rey⁷, Lyon's Valley, Sloane Canyon⁸, Torrey Pines (coastal riparian)⁹; hundreds in riparian Caroll Creek, Sorrento Creek to Penasquitos lagoon, Marian Bear, Rose Creek¹⁰

Invasive varieties include:

All members of the species *C. bignonioides*

Varieties not known to be invasive:

Unknown

Alternative plants to consider:

California Native Species and cultivars:

Acer macrophyllum
Acer negundo
Alnus rhombifolia
Chilopsis linearis
Fraxinus parryi

Big-leaf Maple
Box Elder
White Alder
Desert-willow
California Ash

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	<i>Fraxinus velutina</i>	Velvet Ash
	<i>Populus fremontii</i>	Western Cottonwood
<u>Ornamental species:</u>	<i>_ Chitalpa tashkentensis</i>	Chitalpa
	<i>Dombeya</i> spp.	Snowball

¹ San Diego County Plant Atlas as accessed on the World Wide Web on January 22nd, 2006 at www.sdplantatlas.org

² *Sunset Western Garden Book*, Sunset Publishing Corporation, 2001.

³ Turner, R.J, and Watson, Ernie, *Botanica*, Myna, Random House Australia, 1997.

⁴ Beauchamp, R. Mitchel, *A Flora of San Diego County*, Sweetwater River Press, 1986.

⁵ CAL IPC LIST, California Invasive Plant Council Website, accessed March 4, 2005.

⁶ Turner, R.J, and Watson, Ernie, *Botanica*, Myna, Random House Australia, 1997.

⁷ Beauchamp, R. Mitchel, *A Flora of San Diego County*, Sweetwater River Press, 1986.

⁸ Dr. Jon Rebman, Curator of Botany, San Diego Natural History Museum, personal communication.

⁹ Darren Smith, ecologist for Torrey Pines State Park, Darren@parks.ca.gov, April, 2005.

¹⁰ Mike Kelly, Director, Conservation Resources Network, mkellysd@aol.com, April, 2005.

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BOTANICAL NAME:
Chasmanthe floribunda

COMMON NAMES:
African Cornflag
Chasmanthe

FAMILY: Iridaceae

ORIGIN: South Africa



Photo © 2003 Tony Morosco

Reason for listing as invasive species:

Chasmanthe floribunda is propagated by the division of corms and is very drought resistant. It is grown as a garden ornamental and prefers light to medium well-drained soils in an open sunny position. It has escaped from gardens in Australia.¹ This genus of three species is perhaps one of the easiest of the South African bulbs to grow, and indeed it is considered a pest in some parts of the world, and has naturalized in Mediterranean climates. Because of this tendency, and perhaps due to the harshness of the red-orange flower color (which most people find hard to appreciate), these plants are often considered vulgar and undesirable.² *Chasmanthe floribunda* is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."³ Because it is found naturalizing and spreading in many areas throughout San Diego that are close to urban areas, it is not recommended for landscaping adjacent to open spaces or natural areas.⁴

Methods of invading natural areas:

Dispersed by wind and water¹, seed

Locations where it invades:

chaparral, coastal sage, grassland, riparian, coastal habitats

Where invasive in San Diego:

Many urban canyons in San Diego including Switzer Canyon, Juniper Canyon, Cedar Ridge Park⁴, San Elijo Lagoon Ecological Reserve⁵

Invasive varieties include:

All members of the species *Chasmanthe floribunda*

Varieties not known to be invasive:

Alternative plants to consider:

Native Species:

Ornamental species:

Anigozanthos hybrids

Kangaroo Paws

¹ Australian Government – Department of Environment and Heritage (December 2004). Accessed March 19, 2005 on World Wide Web at <http://www.deh.gov.au/biodiversity/invasive/publications/weeds-potential/appendix-b-c.html>

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² The Mediterranean Garden Society (January 2005). Accessed March 19, 2005 on World Wide Web at <http://www.mediterraneangardensociety.org/plants/Chasmanthe.floribunda.cfm>

³ Checklist of the Vascular Plants of San Diego County. Accessed September 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.

⁴ Personal communication, Dr. Jon Rebman, botanical curator San Diego Natural History Museum.

⁵ Personal communication, Carolyn Martus, consulting biologist, c_martus@yahoo.com.

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BOTANICAL NAME:
Cotoneaster pannosa,
C. lacteus

COMMON NAMES:
Cotoneaster

FAMILY: Rosaceae

ORIGIN: Asia, China



Photo courtesy the California Invasive Plant Council, www.cal-ipc.org

Reason for listing as invasive species:

Cotoneaster franchetti, *C. lacteus*, and *C. pannosa* are listed on the 2005 Cal-IPC Invasive Plant Inventory as 'moderate.' These species have substantial and apparent ecological impacts on ecosystems, plant and animal communities, and vegetational structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal. Ecological amplitude and distribution may range from limited to widespread.¹ *Cotoneaster pannosa* and *C. lacteus* have escaped cultivation and established in natural areas of San Diego County according to the "Checklist of the Vascular Plants of San Diego County."² Cotoneasters in general are adapted to many soils and thrive in full sun or part shade.³ *Cotoneaster pannosa* and *C. franchetti* are often confused with each other and can only be distinguished when in flower. Cotoneasters are spread by birds and once established in natural areas they grow quickly and displace native plants. Their requirement for moisture has limited their spread to moist areas and they are generally only found growing in coastal areas. They are not recommended for planting adjacent to open space or natural areas.^{4,5,6,7,8}

Methods of invading natural areas:

seed, wildlife^{4,5,6,7,8}

Locations where it invades:

coastal habitats, riparian/wetland

Where invasive in San Diego:

North Park, Juniper Canyon, Mission Hills, many other urban canyons throughout San Diego.⁹

Invasive varieties include:

All members of the species *C. pannosa* and *C. lacteus*

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species and cultivars:

Comarostaphylis diversifolia
Rhamnus crocea
Heteromeles arbutifolia

Summer-holly
Redberry
Toyon, Christmas Berry

Ornamental species:

¹ California Invasive Plant Council Plant Assessment Form as accessed on the world wide web on March 17th, 2006. http://cal-ipc.org/list_revision/completed_pafs.html

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- ² Checklist of the Vascular Plants of San Diego County. Accessed September 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.
- ³ *Sunset Western Garden Book*. Sixth Edition. April 1998. Sunset Publishing Corp. Menlo Park, CA.
- ⁴ California Invasive Plant Council information on *Cotoneaster* spp. by Jake Sigg as accessed on the world wide web on 4/17/2005, <http://ucce.ucdavis.edu/datastore/detailreport.cfm?usernumber=36&surveynumber=182>
- ⁵ Redwood National and State Parks as accessed on the world wide web on 4/17/2005, <http://www.nps.gov/redw/cotoneaster.htm>
- ⁶ Cal-IPC Plant assessment form for *C. franchetii* as accessed on the world wide web on 4/17/2005, <http://ucce.ucdavis.edu/files/filelibrary/5319/18221.pdf>
- ⁷ Cal-IPC Plant assessment form for *C. lacteus* as accessed on the world wide web on 4/17/2005, <http://ucce.ucdavis.edu/files/filelibrary/5319/18222.pdf>
- ⁸ Cal-IPC plant assessment form for *C. pannosa* as accessed on the world wide web on 4/17/2005 <http://ucce.ucdavis.edu/files/filelibrary/5319/18220.pdf>
- ⁹ Dr. Jon Rebman, botanical curator San Diego Natural History Museum, personal communication.

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BOTANICAL NAME:
Crassula ovata
(*C. argentea*, *C. portulacea*)

COMMON NAMES:
Jade Plant,
Money Tree

FAMILY: Crassulaceae

ORIGIN: South Africa



Photo © Collectors Corner 2004

Reason for listing as invasive species:

Crassula ovata is a medium to large upright shrub that is categorized in the *Checklist of Vascular Plants of San Diego County* as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."¹ It will grow easily in full sun with little to no water. Because of its ability to spread from landscaped areas into open spaces and natural areas where it out competes surrounding native plant communities, it is not recommended for landscaping directly adjacent to open space or natural areas.^{2,3,4}

Methods of invading natural areas:

Seed and fragments of the plant.

Locations where it invades:

coastal sage scrub^{2,3,4}

Where invasive in San Diego:

Numerous urban canyons, including Mission Hills², Switzer Canyon, Manzanita Canyon, San Elijo Lagoon; especially found on north-facing slopes^{2,3,4}.

Invasive varieties include:

All members of the species *Crassula ovata*

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species and cultivars:

Ornamental species:

¹ Simpson, M.G. and J. Rebman. 2001. *Checklist of the Vascular Plants of San Diego County*, 3rd Edition. SDSU Herbarium Press. San Diego, CA.

² Dr. Jon Rebman, Botanical Curator San Diego Natural History Museum, personal communication.

³ Melanie Johnson, Associate Planner City of San Diego, personal communication.

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⁴ Carrie Schneider, California Native Plant Society, personal communication, carrieschneider@earthlink.net

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BOTANICAL NAME:

Cupaniopsis anacardioides

COMMON NAMES:

Carrot Wood

FAMILY: Sapindaceae

ORIGIN: Australia



Photo © Carolyn Martus 2006

Reason for listing as invasive species:

This evergreen tree tolerates sea-coast conditions, heat, drought, and poor soil.¹ It is highly invasive in Florida and Hawaii.² It spreads easily from landscaped areas into adjacent wetlands and should not be used for landscaping adjacent to open space or natural areas.³

Methods of invading natural areas:

seed

Locations where it invades:

coastal habitats, riparian/wetland

Where invasive in southern California:

San Diego River within City of San Diego, Rose Canyon, Mission Trails Regional Park, Mission Valley Preserve

Invasive varieties include:

All members of the species *Cupaniopsis anacardioides*

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species and cultivars:

Ornamental species:

¹ Perry, Bob. 1996. *Landscape Plants for Western Regions*. Land Design Publishing. Claremont, CA.

² Hawaii's Most Invasive Horticultural Plants as accessed on the World Wide Web on April 18th, 2007, <http://www.state.hi.us/dlnr/dofaw/hortweeds/species/cupana.htm>

³ September 2006, Mike Kelly personal communication, invasive plant biologist, San Diego, CA. mkellysd@aol.com.

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BOTANICAL NAME:
Cyperus involucratus
(*Cyperus alternifolius*)

COMMON NAMES:
African Umbrella Plant

FAMILY: Cyperaceae

ORIGIN: Africa ¹



Photo © Carolyn Martus 2006

Reason for listing as invasive species:

Cyperus involucratus can become weedy and aggressive in wet areas². This non-native species has escaped cultivation and established in natural areas of San Diego County according to the "Checklist of the Vascular Plants of San Diego County."³

Methods of invading natural areas:

Seed, self-sows.²

Locations where it invades:

riparian/wetlands⁴

Where invasive in San Diego:

Agua Hedionda Ecological Reserve, near El Camino Real and Cannon Rd., along lower Agua Hedionda Creek; Carlsbad Highlands Ecological Reserve, canyon ca. 1 mile SE of Cerro de la Calavera, ca. 0.25 mi. SW of the dead end of Cannon Rd; Chula Vista. West end of E Street between I-5 & San Diego Bay; Santa Ana Mtns.; Santa Rosa Plateau; De Luz Creek at crossing of Tenaja Trail, ca 0.1 mi W of the junction with De Luz Road ⁴

Invasive varieties include:

All members of the species *Cyperus involucratus*

Varieties not known to be invasive:

Alternative plants to consider:

Native Species:

Ornamental species:

¹ *Sunset Western Garden Book*. Sixth Edition. April 1998. Sunset Publishing Corp. Menlo Park, CA.

² Perry, Bob. 1996. *Landscape Plants for Western Regions*. Land Design Publishing. Claremont, CA.

³ *Checklist of the Vascular Plants of San Diego County*. Accessed October 10, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.

⁴ University & Jepson Herbaria, Regents of the University of California Website, accessed April 2005.

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BOTANICAL NAME:
Echium candicans
(Echium fastuosum)

COMMON NAMES:
Pride of Madeira

FAMILY: Boraginaceae

ORIGIN: Canary Islands



Photo © Carolyn Martus 2006

Reason for listing as invasive species:

This medium to large evergreen shrub grows on rocky slopes, and tolerates full sun, wind, humidity and drought.¹ This plant is on the 2005 Cal-IPC Invasive Plant Inventory as a plant with 'limited' ecological threat: this species is invasive but its ecological impacts are minor. Its reproductive biology and other attributes result in low to moderate rates of invasion. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.² It occurs occasionally in native areas, and is reported from an area along 101 south of Big Sur.² It is occasionally found naturalizing and spreading in natural areas and open spaces.³ At this time, it appears to be invasive in coastal or riparian habitats and should not be used when landscaping directly adjacent to open spaces or natural areas.

Methods of invading natural areas:

Seed

Locations where it invades:

riparian, wetland, coastal sage.

Where invasive in San Diego:

San Elijo Lagoon (Rios and Santa Inez trails)³

Invasive varieties include:

All members of the species *Echium candicans*

Varieties not known to be invasive:

Alternative plants to consider:

Native Species:

Ornamental species:

¹ Perry, Bob. 1996. *Landscape Plants for Western Regions*. Land Design Publishing, Claremont, CA.

² California Invasive Plant Council Plant Assessment Form as accessed on the world wide web on April 18th, 2005, <http://ucce.ucdavis.edu/files/filelibrary/5319/17402.pdf>.

³ Carolyn Martus, consulting biologist, field observation, c_martus@yahoo.com

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BOTANICAL NAME:

Ficus carica

COMMON NAMES:

Edible Fig,
Common Fig

FAMILY: Moraceae

ORIGIN: southern Arabia



Photo © 2005 Luigi Rignanese

Reason for listing as invasive species:

"If not controlled, edible fig trees could crowd out native trees and understory shrubs characteristic of California's riparian forests."¹ "No published or unpublished reports are available with quantitative information on the impacts of edible figs invading natural vegetation in California or elsewhere."¹ *Ficus carica* is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."² This plant is on the 2005 Cal-IPC Invasive Plant Inventory as 'moderate.' It appears to spread easily from landscaped areas into nearby riparian areas and drainages, and should not be planted adjacent to open spaces or natural areas.³

Methods of invading natural areas:

"It is not clear how the Edible Fig spreads into preserves and other wild areas. It grows quickly and can spread vegetatively by root sprouts, soon forming dense thickets that exclude most other plants. Limbs that have been cut or broken and fallen to the ground can take root, and it is thought that branches broken off during storms or floods may wash up and root at downstream sites. Many birds eat the fruits and may spread the seeds. Hujik (pers. comm.) reports that deer also feed on the fruits. Seeds germinate only if they are removed from the fleshy syconium during passage through an animal's gut or by mechanical means such as heavy rainfall (Lisci and Pacini 1994)."¹

Locations where it invades:

"Edible Figs invade and dominate riparian forests, streamside habitats, levees, and canal banks in and around California's Central Valley, surrounding foothills, the south coast, and the Channel Islands (Hickman 1993). They are also widely cultivated for fruit and ornament in areas below 2,500 feet (800 m) elevation."¹ "Edible Fig is most likely to escape where soils stay moist throughout the summer. It has invaded many nature preserves and parks in California."¹

Where invasive in San Diego:

Many locations throughout San Luis Rey Watershed, many locations throughout the Carlsbad Hydrological Unit⁴, San Diego River⁵

Invasive varieties include:

All members of the species *Ficus carica*

Varieties not known to be invasive:

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Alternative plants to consider:

California Native Species
and cultivars:

Ornamental species:

Magnolia grandiflora cultivars

¹ California Invasive Plant Council (October 2004). Accessed November 1, 2004 on World Wide Web at <http://ucce.ucdavis.edu/datastore/detailreport.cfm?usernumber=50&surveynumber=182>

² Checklist of the Vascular Plants of San Diego County. Accessed September 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.

³ California Invasive Plant Council Plant Assessment Form as accessed on the world wide web on April 18th, 2005. <http://ucce.ucdavis.edu/files/filelibrary/5319/17406.pdf>.

⁴ Carolyn Martus, consulting biologist, c_martus@yahoo.com, personal communication.

⁵ Brad Burkhart, consulting biologist, b.burkhart@attglobal.net, personal communication.

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BOTANICAL NAME:

Fraxinus uhdei

COMMON NAMES:

Evergreen Ash, Shamel Ash, Mexican Ash

FAMILY: Oleaceae

ORIGIN: Central America and Mexico



Photo © Carolyn Martus 2005, and Photo © John M. Randall, The Nature Conservancy

Reason for listing as invasive species:

Fraxinus uhdei grows rapidly from seed to 60 or 80 feet¹, creating shade and competition for native plants. It thrives in moist soil conditions, but can survive arid conditions.² It germinates easily and prolifically from seed. This species is shade tolerant, so it can come up within existing native canopy. It appears to be spreading into some canyons below mesas where it is used as a street tree. Seeds remain viable for up to 8 years. *Fraxinus uhdei* is typically confined to water courses and moist areas.³ It is not currently on Cal-IPC List.⁴ There are over 65 species of *Fraxinus*⁵, some are native.

Methods of invading natural areas:

Seed disbursed by wind, run-off and possibly storm drain systems

Locations where it invades:

oak woodland, riparian, wetland

Where invasive in San Diego:

East side Cedar Ridge Park, San Diego⁶, Canyon at Elm St. west of I-15 between Hwy 94 and I-805⁷; Canyon along Regents Road at Jutland, San Diego; Agua Hedionda Creek, Live Oak Creek⁸

Invasive varieties include:

All members of the species *Fraxinus udhei*

Varieties not known to be invasive:

Not enough information

Alternative plants to consider:

Native Species:

Alnus rhombifolia
Fraxinus dipetala
Fraxinus velutina
Populus fremontii
Acer macrophyllum
Acer negundo

White Alder
California Ash
Velvet Ash
Western Cottonwood
Big-leaf Maple
Box Elder

Ornamental species:

Tristania conferta

Brisbane Box

¹ *Sunset Western Garden Book*, Sunset Publishing Corporation, 2001.

² Turner, R.J. and Wasson, Ernie, *Botanica*, Myna (Random House Pty Ltd), 1997.

³ Element Stewardship Extract, Nature Conservancy ISI website, accessed January, 2005.

⁴ CAL-IPC LIST, California Invasive Plant Council Website, accessed September through December, 2004.

⁵ Turner, R.J. and Wasson, Ernie, *Botanica*, Myna (Random House Pty Ltd), 1997.

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⁶ San Diego Natural History Museum, Botanic Archives.

⁷ Ibid.

⁸ Carolyn Martus, consulting biologist, personal communication c_martus@yahoo.com.

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BOTANICAL NAME:

Gazania linearis

COMMON NAMES:

**Gazania, Gazania Daisy,
Colorado Gold, Hardy Gazania**

FAMILY: Asteraceae

(=Compositae)

ORIGIN: South Africa



Photo © 2006 Carolyn Martus

Reason for listing as invasive species:

Gazanias are one of the most widely planted ground covers in coastal, inland, valley, and desert gardens throughout the West. They are naturally adapted to coastal climates. ¹ *Gazania linearis* is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas".² On the 1999 Cal-IPC list it was designated as 'needs more information', and only reported to invade in the San Francisco area. ³ It is found naturalized and spreading in many areas throughout the county, directly competing with native plant communities and is not recommended for planting near open space or natural areas. ⁴

Methods of invading natural areas:

seed

Locations where it invades:

riparian/wetland, coastal, coastal sage, chaparral, grassland

Where invasive in San Diego:

Otay Ecological Reserve, Viejas Mountain, Rose Canyon, Lopez Canyon, Crestridge Ecological Reserve⁴, Mission Trails Regional Park.⁵

Invasive varieties include:

All members of the species *Gazania linearis*

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species and cultivars:

Ceanothus spp.
Erigeron glaucus
Fragaria chiloensis
Heuchera spp.
Iris douglasiana
Lonicera subspicata
Sisyrinchium bellum
Zauschneria spp.

Groundcover California
Seaside Aster
Strawberry
Coral Bells
Pacific Iris
California Honeysuckle
Blue-eyed Grass
California Fuschia

Ornamental species:

¹ Perry, Bob. *Landscape Plants for Western Regions*. Claremont, California: Land Design Publishing, 1992.

² Checklist of the Vascular Plants of San Diego County. Accessed September 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.

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³ Exotic Pest Plants of Greatest Ecological Concern. Accessed January 23, 2005 on the World Wide Web at http://groups.ucanr.org/ceppc/1999_Cal-IPC_list/

⁴ Dr. Jon Rebman, botanical curator, San Diego Natural History Museum, personal communication

⁵ Mike Kelly, director of the Conservation Resources Network and past-president of the California Invasive Plant Council, personal communication.

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BOTANICAL NAME:

Hedera helix

COMMON NAMES:

English Ivy

FAMILY: Araliaceae

ORIGIN: England, Ireland,
Mediterranean Region, Northern
Europe



Photo © Joe DiTomaso 1985

Reason for listing as invasive species:

Hedera helix is a perennial, evergreen woody vine growing up to 99 feet or shrub. Vines attach to the bark of trees and other surfaces by way of numerous root-like structures. Leaves are dark, green and waxy.ⁱ English Ivy is an aggressive invader that threatens all vegetation levels of forested and open areas. It can alter natural succession patterns by forming an 'ivy desert' of vigorous vines where nothing else can compete. It inhibits regeneration of understory plants, i.e. forest wildflowers, new trees and shrubs. Growing along the ground as well as into the forest canopy, the dense growth prevents sunlight from reaching other plants, especially deciduous trees, and eventually kills the understory and over-story trees by shading them out.ⁱⁱ This plant is on the 2005 Cal-IPC Invasive Plant Inventory as 'high', this species has severe ecological impacts on ecosystems, plant and animal communities, and vegetation structure. Its reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment.ⁱⁱⁱ

Methods of invading natural areas:

Reproduces vegetatively and by seed, which is dispersed to new areas primarily by birds. New plants grow easily from cuttings or from stems making contact with the soil.

Locations where it invades:

oak woodland, and riparian^{iv}

Where invasive in San Diego:

Live Oak Creek, Buena Vista Creek, Keys Creek (from adjacent planted areas), Rose Canyon^v

Invasive varieties include:

There are many cultivars and varieties of *Hedera helix*. Until further research can be done on the cultivars and varieties of these species it is recommended they not be planted where they can creep or spread into adjacent wildlands; they should be cut back and not allowed to set fruit and cuttings should never be disposed into natural areas. Sometimes *Hedera hibernica* is sold as *Hedera helix*.

Varieties not known to be invasive:

Unknown

California Native Species and cultivars:

<i>Arctostaphylos</i> species and cultivars	Groundcover Manzanitas
<i>Baccharis pilularis</i>	Dwarf Coyote Brush
<i>Fragaria vesca</i>	Wood Strawberry
<i>Iva hayesiana</i>	San Diego Marsh-Elder
<i>Ribes viburnifolium</i>	Evergreen Currant

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Ornamental species:

Satureja douglasii
Symphoricarpos mollis
Vitis californica

Distictus buccinatoria
Fragaria chiloensis
Juniperus conferta

Yerba Buena
Creeping Snowberry
California Wild Grape
Blood Red Trumpet Vine
Beach Strawberry
Shore Juniper

ⁱ PCA Alien Plant Working Group. Accessed February 28, 2005 on the World Wide Web at <http://www.nps.gov/plants/alien/fact/hehe1.htm>

ⁱⁱ Bossard, Carol, John Randall, and Marc C. Hoshovsky, *Invasive Plants of California's Wildlands*. 2000.

ⁱⁱⁱ Cal-IPC 2005 Invasive Plant Inventory Plant Assessment Form for *Hedera helix*
<http://ucce.ucdavis.edu/files/filelibrary/5319/15588.pdf>

^{iv} Carolyn Martus, biologist, personal observation, c_martus@yahoo.com.

^v San Diego County Plant Atlas Database as accessed on the worldwide web at www.sdplantlas.org on January 22, 2006.

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BOTANICAL NAME:
Hypericum canariense
(**Hypericum floribundum**)

COMMON NAMES:
Klamathweed,
Canary Island St. John's wort

FAMILY: Hypericaceae

ORIGIN: Canary Islands

Reason for listing as invasive species:



Photos © J. Wade, more photos at
<http://tncweeds.ucdavis.edu/photosg-p.html>

"The overall impacts of this new invader are unknown, but *Hypericum canariense* appears to outcompete and exclude nearly all other vegetation once it has invaded. In coastal California areas that have become infested, *H. canariense* can comprise up to 90 to 100% of the vegetation cover, and it out-competes and excludes both the native scrub vegetation (*Baccharis* spp., *Toxicodendron diversilobum*) as well as other non-native vegetation such as Jubata Grass (*Cortaderia jubata*). The only native plants that persist with *H. canariense* invasions are trees that are over 1.5 m tall (J. Wade, personal communication). In favorable conditions, infestations of *H. canariense* can spread at a rate of up to 45-90 meters per year. It is thought to have escaped from cultivation, as it has traits desirable to horticulturists (i.e. attractive, ornamental foliage and large, bright yellow flowers)." ¹ *Hypericum canariense* is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas".² This plant is on the 2005 Cal-IPC Invasive Plant Inventory as 'moderate.' This species has substantial and apparent ecological impacts on ecosystems, plant and animal communities, and vegetational structure. Its reproductive biology and other attributes are conducive to moderate to high rates of dispersal. Ecological amplitude and distribution may range from limited to widespread.³ It is found to naturalize and invade in a few areas in San Diego County but its impacts are fairly localized and it does not appear to spread rapidly. This plant is not recommended for planting adjacent to or near open spaces or natural areas.⁴

Methods of invading natural areas:

"*Hypericum canariense* produces large amounts of viable seed. Many seedlings have been found just downslope of mature shrubs in San Diego County." ¹

Locations where it invades:

"*Hypericum canariense* has recently been observed invading natural areas in San Mateo, Santa Barbara and San Diego counties in California. It has been found growing in the wild in disturbed places, coastal sage scrub, and in grassland habitats up to 100 meters in elevation in coastal areas of California. *Hypericum canariense* has the potential to extend its range inland from its present coastal distribution." ¹

Where invasive in San Diego:

Florida Canyon, Lake Murray, Point Loma ^{4,5,6}

Invasive varieties include:

All members of the species *Hypericum canariense*

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Varieties not known to be
invasive:

Alternative plants to consider:

California Native Species
and cultivars:

Ornamental species

¹ The Invasive Species Initiative (January 2003). Accessed November 1, 2004 on World Wide Web at <http://tncweeds.ucdavis.edu/alert/alrthype.html>

² Checklist of the Vascular Plants of San Diego County. Accessed September 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.

³ California Invasive Plant Council Plant Assessment Form as accessed on the world wide web on April 18th, 2005. <http://ucce.ucdavis.edu/files/filelibrary/5319/18688.pdf>

⁴ Dr. Jon Rebman, botanical curator San Diego Natural History Museum, personal communication.

⁵ Mike Kelly, director Conservation Resources Network and past-president of the California Invasive Plant Council.

⁶ *A Flora of San Diego County, California*. Beauchamp, R. Mitchel 1982. p. 175.

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BOTANICAL NAME:
Ipomoea purpurea

COMMON NAMES:
Common Morning-Glory

FAMILY: Convolvulaceae

ORIGIN: Tropical America



Photos courtesy of
<http://oncampus.richmond.edu/academics/biology/plants/INDEX.HTM>

Reason for listing as invasive species:

"Common Morning-Glory began in cultivation and spread rapidly into other areas because it can tolerate a myriad of soils and temperatures. It is easily able to dominate the substrate, nutrients, water, and sunlight of native species."¹ *Ipomoea purpurea* is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."² Found naturalizing and spreading in creeks and drainages, it should not be used for landscaping adjacent to open spaces or natural areas.

Methods of invading natural areas:

Seed

Locations where it invades:

"Common Morning-Glory can be found along roadsides, planting fields, thickets, and waste areas. Because it prefers sunlight, the common morning-glory tends to grow in places with high exposure."¹ Found in riparian/wetland areas, and coastal habitats.

Where invasive in San Diego:

Agua Hedionda Creek, Buena Vista Creek, Cottonwood Creek, Camp Pendleton, Buena Vista Lagoon, Penasquitos Canyon³

Invasive varieties include:

All members of the species *Ipomoea purpurea*

Varieties not known to be invasive:

Alternative plants to consider:

Native Species:

Ornamental species:

Trachelospermum spp.

¹ Invasive Exotic Plants at the University of Richmond (May 2004). Accessed November 1, 2004 on World Wide Web at <http://oncampus.richmond.edu/academics/biology/plants/Pages/Ipomoea%20purpurea.htm>

² Checklist of the Vascular Plants of San Diego County. Accessed September 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.

³ Carolyn Martus, consulting biologist, personal communication, c_martus@yahoo.com.

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BOTANICAL NAME:

Limonium perezii

COMMON NAMES:

Perez's Marsh-Rosemary, Sea Lavender

FAMILY: Plumbaginaceae

ORIGIN: Canary Islands



Photo © Carolyn Martus 2006

Reason for listing as invasive species:

Sea Lavender is fully adapted to mild and dry coastal climates and has proven to be one of the best perennials for seaside gardens, where it needs little care or attention once it is established. It has become naturalized on dunes and bluffs in coastal areas.¹ Because of its ability to naturalize and spread in coastal and riparian areas, it is not recommended for landscaping adjacent to these areas.

Methods of invading natural areas:

Seed

Locations where it invades:

coastal habitats, riparian, coastal sage

Where invasive in San Diego:

Carlsbad, Bonita, Imperial Beach²
Camp Pendleton, Buena Vista Lagoon, Agua Hedionda Lagoon, San Elijo Lagoon³

Invasive varieties include:

All members of the species *Limonium perezii*

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species and cultivars:

Erigeron glaucus
Monardella villosa
Monardella linoides
Penstemon heterophyllus
Penstemon spectabilis
Salvia 'Dara's Choice'
Verbena lilacina

Ornamental species:

¹ Perry, Bob. *Landscape Plants for Western Regions*. Claremont,

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- California: Land Design Publishing, 1992.
- ² Beauchamp, R. Mitchel. *A Flora of San Diego County, California*.
National City, California: Sweetwater River Press, 1986.
- ³ Carolyn Martus, consulting biologist, field observation, c_martus@yahoo.com.

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BOTANICAL NAME:
Limonium sinuatum

COMMON NAMES:
**Notch-Leaf Marsh-Rosemary,
Statice**

FAMILY: Plumbaginaceae

ORIGIN: Canary Islands



Photo © Joseph Dougherty/ecology.org

Reason for listing as invasive species:

Often grown for use as a cut flower, drought tolerant and can survive a variety of soil types. *Limonium sinuatum* is categorized in the *Checklist of Vascular Plants of San Diego County* as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."¹ Usually found in coastal areas, persisting in open spaces and natural areas adjacent to landscaped areas or disturbed areas.^{2,3}

Methods of invading natural areas:

Seed

Locations where it invades:

coastal habitats, riparian/wetland, coastal sage

Where invasive in San Diego:

Many places including Camp Pendleton, Agua Hedionda Lagoon, Buena Vista Lagoon, San Elijo Lagoon, coastal bluffs in La Jolla^{2,3}

Invasive varieties include:

All members of the species *Limonium sinuatum*

Varieties not known to be invasive:

Unknown

Alternative plants to consider:

California Native Species and cultivars:

Erigeron glaucus
Monardella villosa
Monardella linoides
Penstemon heterophyllus
Penstemon spectabilis
Salvia 'Dara's Choice'
Verbena lilacina

Ornamental species:

¹ Simpson, M.G. and J. Rebman. 2001. *Checklist of the Vascular Plants of San Diego County*, 3rd Edition. SDSU Herbarium Press. San Diego, CA.

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² Carolyn Martus, consulting biologist c_martus@yahoo.com, field observation.

³ Beauchamp, R. Mitchel, *A Flora of San Diego County*, Sweetwater River Press, 1986.

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BOTANICAL NAME:
Lobularia maritima

COMMON NAMES:
Sweet Alyssum

FAMILY: Brassicaceae
(=Cruciferae)

ORIGIN: Western
Mediterranean



Photo © 1999-2004 Dave Skinner

Reason for listing as invasive species:

This self-sowing annual does well in a variety of soil types and is drought tolerant.¹ *Lobularia maritima* is an annual plant categorized in the *Checklist of Vascular Plants of San Diego County* as "A taxon that is not native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."² It is found persisting in open spaces and natural areas directly adjacent to landscaped areas. Because it produces many seeds and survives in natural areas and open spaces, it is not recommended for landscaping directly adjacent to open spaces or natural areas.

Methods of invading natural areas:

seed³

Locations where it invades:

riparian, wetland, coastal, coastal sage scrub, chaparral

Where invasive in San Diego:

Numerous urban canyons, including Tecolote Canyon.³ Lake Calavera open space (Carlsbad), unnamed open space in Carlsbad near Poinsettia Ave⁴, Viejas Mountain⁵

Invasive varieties include:

All members of the species *Lobularia maritima*

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species:

Ornamental species:

¹ *Sunset Western Garden Book*, Sunset Publishing Corporation, 2001.

² Simpson, M.G. and J. Rebman. 2001. *Checklist of the Vascular Plants of San Diego County*, 3rd Edition. SDSU Herbarium Press. San Diego, CA.

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³Melanie Johnson, associate planner, City of San Diego, personal observation.

⁴Carolyn Martus, consulting biologist c_martus@yahoo.com, field observation.

⁵ Dr. Jon Rebman, Botanical Curator San Diego Natural History Museum, personal communication.

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BOTANICAL NAME:
Lonicera japonica

COMMON NAMES:
Japanese Honeysuckle

FAMILY: Caprifoliaceae

ORIGIN: Japan and Korea



Photos courtesy

<http://oncampus.richmond.edu/academics/biology/plants/INDEX.HTM>

Reason for listing as invasive species:

"In North America, Japanese Honeysuckle has few natural enemies allowing it to spread widely and out-compete native plant species¹. *Lonicera japonica* is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."² It is found naturalizing and spreading in riparian areas. Because of its ability to easily spread and establish in open spaces and natural areas, it is not recommended for planting adjacent to natural areas or open spaces.^{1,3,4}

Methods of invading natural areas:

"Growth and spread of Japanese Honeysuckle is through vegetative (plant growth) and sexual (seed) means. It produces long vegetative runners that develop roots where stem and leaf junctions (nodes) come in contact with moist soil. Underground stems (rhizomes) help to establish and spread the plant locally. Long distance dispersal is by birds and other wildlife that readily consume the fruits and defecate the seeds at various distances from the parent plant."¹

Locations where it invades:

"A ubiquitous invader, Japanese Honeysuckle thrives in a wide variety of habitats including fields, forests, wetlands, barrens, and all types of disturbed lands."¹

Where invasive in San Diego:

Many locations throughout the San Luis Rey Watershed and the Carlsbad Hydrological Unit³, San Diego Urban Canyons⁴

Invasive varieties include:

All members of the species *Lonicera japonica*

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species and cultivars:

Ornamental species:

Gelsemium sempervirens
Campsis radicans
Clematis x jackmanii

¹ Weeds Gone Wild: Alien Plant Invaders of Natural Areas (September 2004). Accessed November 1, 2004 on World Wide Web at <http://www.nps.gov/plants/alien/fact/loja1.htm>.

² *Checklist of the Vascular Plants of San Diego County*. Accessed February 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>

³ Carolyn Martus, consulting biologist, personal communication, c_martus@yahoo.com.

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⁴ Dr. Jon Rebman, botanical curator San Diego Natural History Museum, personal communication.

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BOTANICAL NAME:
Lotus corniculatus

COMMON NAMES:
**Birdfoot Trefoil,
Birdfoot Deervetch,
Bloomfell,
Ground Honeysuckle**

FAMILY: Fabaceae
(=Leguminosae)

ORIGIN: Eurasia

Reason for listing as invasive species:

Methods of invading natural areas:

Locations where it invades:

Where invasive in San Diego:

Invasive varieties include:

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species and cultivars:

Ornamental species:



Photos from www.uib.es/depart/dba/botanica/herbari/generes/Lotus/corniculatus/http://plants.usda.gov/lotus/ and www.google.com/images

Lotus corniculatus is a moderately long-lived herbaceous, perennial legume growing 2-3 feet, which may displace desirable vegetation if not properly managed.¹ It is used widely for erosion control and often spreads into adjacent or surrounding natural areas.² Once established forms a dense mat that excludes other vegetation and produces a long-lived seedbank.

seed, and potentially wildlife, water/storm drains¹

coniferous woodland, oak woodland, chaparral, riparian, wetland, grassland, desert, coastal sage

Found throughout San Diego County but usually often spreading from a nearby hydroseeded area. Examples include Camp Pendleton, Escondido Creek, Lake Calavera (Carlsbad).²

All members of the species

unknown

Aquilegia formosa
Encelia californica
Mimulus aurantiacus
Salvia 'Allen Chickering'
Salvia clevelandii

California Columbine
California Encelia
Coast Monkey Flower
Allen Chickering Sage
Fragrant Sage

Alstroemeria hybrids
Dietes bicolor
Hemerocallis hybrids
Phlomis fruticosa
Salvia greggii

Peruvian Lily
Fortnight Lily
Daylily
Jerusalem Sage
Autumn Sage

¹ Plants National Database. Accessed February 28, 2005 at <http://plants.usda.gov>

² Carolyn Martus, consulting biologist, field observation, c_martus@yahoo.com.

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BOTANICAL NAME:
Ludwigia hexapetala
(**Ludwigia uruguayensis**)

COMMON NAMES:
Uruguay Marsh-purslane
Water Primrose

FAMILY: Onagraceae

ORIGIN: South America

Reason for listing as invasive species:

Methods of invading natural areas:

Locations where it invades:

Where invasive in San Diego:

Invasive varieties include:

Varieties not known to be invasive:

Alternative plants to consider:

Native Species:

Ornamental species:



Photos: DiTomaso, 2000

This green and fleshy perennial grows prostrate on exposed mud and in lakes and marshes. Flowers appear in August. Invasive in wet areas and mostly in coastal areas below 600 feet in elevation.¹ This plant is on the 2005 Cal-IPC Invasive Plant Inventory as 'high.' This species has severe ecological impacts on ecosystems, plant and animal communities, and vegetational structure. Its reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment.² Due to its ability to spread quickly across muddy shorelines and water, this fast growing perennial invades lake shores, marshes, muddy places, damp soil areas and drainages and seeps in canyons, and edges of both fresh and salt water wetlands. It is aggressive and can compete with and displace native species.³

Seed, vegetatively, water/storm drains

riparian, wetland

Near the intersection of Federal & Euclid, San Diego¹

All members of the species *Ludwigia hexapetala*

None

¹ Beauchamp, R. Mitchel, *A Flora of San Diego County*, Sweetwater River Press, 1986.

² Cal-IPC 2005 Invasive Plant Inventory Plant Assessment Form for *Ludwigia hexepetala*
<http://ucce.ucdavis.edu/files/filelibrary/5319/15599.pdf>

³ Bossard, Carla, *Invasive Plants of California Wildlands*, University of California Press, 2000.

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BOTANICAL NAME:
Malephora crocea
(**Mesembryanthemum crocea**)

COMMON NAMES:
Red-flowered Iceplant
Croceum Iceplant

FAMILY: Aizoaceae

ORIGIN: South Africa



Photo: Joe DiTomaso, 1999

Reason for listing as invasive species:

A long-blooming, sturdy, succulent groundcover, resistant to fire, heat and drought, *Malephora crocea* is well adapted to the coastal and foothill climates and is tolerant of a wide variety of soil conditions. It is frequently used as a slope ground cover for erosion control.^{1,2} Naturalizes and invades vegetatively by creeping into adjacent areas, or breaks off and can be transferred through storm drains to establish a foothold in wetland areas downstream. This plant is well adapted to the San Diego area, but does not grow at the extreme rate of some other Iceplant species.

Methods of invading natural areas:

vegetatively, water/storm drains, possibly by seed (to be verified)

Locations where it invades:

oak woodland, chaparral, riparian, wetland, coastal sage, coastal habitats

Where invasive in San Diego:

Encinitas, Del Mar, Lomas Santa Fe, San Diego, National City³, Switzer Canyon in North Park⁴, Goldfish Point, La Jolla⁵, Tijuana River Valley, 1977⁶

Invasive varieties include:

All members of the species *Malephora crocea*

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species and cultivars:

<i>Baccharis pillularis</i> 'Twin Peaks'	Prostrate Coyote Brush
<i>Arctostaphylos</i> spp.	Manzanita
<i>Eriogonum</i> spp.	Buckwheat
<i>Iva hayesiana</i>	Poverty Weed
<i>Salvia sonomensis</i>	Creeping Sage
<i>Camissonia cheiranthifolia</i>	Beach Evening Primrose
<i>Tanacetum camphoratum</i>	Dune Tansy
<i>Coprosma kirkii</i>	-
<i>Drosanthemum</i> spp.	-
<i>Juniperus</i> species	Juniper (prostrate variety)
<i>Rosemarinus officinalis</i> 'Prostratus'	Prostrate Rosemary

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Senecio mandraliscae
Verbena species

Chalk Sticks
Verbena

-
- ¹ Sunset Western Garden Book, Sunset Publishing Corporation, 2001
 - ² Perry, Robert, Landscape Plants for Western Regions, Land Design Publishing, 1992
 - ³ Beauchamp, R. Mitchel, A Flora of San Diego County, Sweetwater River Press, 1986.
 - ⁴ San Diego Natural History Museum Plant Archives, 2005
 - ⁵ Ibid.
 - ⁶ Ibid.

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BOTANICAL NAME:

Mentha pulegium
Mentha spicata var. spicata

COMMON NAMES:

Pennyroyal
Spearmint

FAMILY: Lamiaceae

ORIGIN: Europe, Asia



© Br. Alfred Brousseau, Saint Mary's College
Mentha spicata var. *spicata*



© Br. Alfred Brousseau, Saint Mary's College
Mentha pulegium

Reason for listing as invasive species:

This genus includes over 25 species of aromatic perennial herbs from Europe, Africa and Asia. The following two species have been found to be invasive in San Diego: *M. pulegium* and *M. spicata* var. *spicata*. *Mentha pulegium* is on the 2005 Cal-IPC Invasive Plant Inventory as 'moderate', this species has substantial and apparent ecological impacts on ecosystems, plant and animal communities, and vegetational structure. Its reproductive biology and other attributes are conducive to moderate to high rates of dispersal. Ecological amplitude and distribution may range from limited to widespread.¹ It is a low groundcover plant 4 to 12" high, and is invasive, tough and able to tolerate a wide range of conditions.² It spreads by stolons, as well as seed that sticks to animal fur and is transported by stock animals and cattle.³ It is used in traditional medicine to treat nausea, headache, colds, nervousness and skin conditions, but can be poisonous in large doses.⁴ In San Diego County it invades and displaces native plants in moist areas and is difficult to eradicate.⁵ *Mentha spicata* var. *spicata* is an aromatic spreading perennial herb 1 to 3' tall used for flavoring drinks and food.⁶ It naturalizes in moist places.⁷

Methods of invading natural

Vegetatively by quick spreading underground stems,

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<u>areas:</u>	seed transported by stock animals and cattle ⁸	
<u>Locations where it invades:</u>	wetland	
<u>Where invasive in San Diego:</u>	<i>Mentha pulegium</i> : Mesa Grande <i>Mentha spicata</i> var. <i>spicata</i> : Lake Henshaw, Julian, Palomar Mountain, Lake Murray ⁹	
<u>Invasive varieties include:</u>	All members of the species <i>M. pulegium</i> , <i>M. spicata</i>	
<u>Varieties not known to be invasive:</u>	Unknown	
<u>Alternative plants to consider:</u>		
<u>California Native Species and cultivars:</u>	<i>Achillea millefolium</i>	Yarrow
	<i>Baccharis pilularis</i> 'Twin Peaks #2'	Prostrate Coyote Brush
	<i>Artemisia</i> spp. (prostrate varieties)	Coastal Sagebrush
<u>Ornamental species:</u>	<i>Thymus</i> spp.	Thyme
	<i>Veronica repens</i>	Creeping Speedwell
	<i>Fragaria chiloensis</i>	Beach Strawberry
	<i>Lysimachia nummularia</i>	Moneywort
	<i>Sutera cordalis</i>	Bacopa
	<i>Rosemarinus officinalis</i> 'Prostratus'	Prostrate Rosemary
	<i>Verbena</i> spp.	Verbena

¹ California Invasive Plant Council Plant Assessment Form as accessed on the world wide web on April 18th, 2005 http://cal-ipc.org/file_library/10638.pdf.

² *Sunset Western Garden Book*, Sunset Publishing Corporation, 2001

³ Bossard, Carla, *Invasive Plants of California Wildlands*, University of California Press, 2000.

⁴ Turner, R.J, and Watson, Ernie, *Botanica*, Myna, Random House Australia, 1997.

⁵ CAL-IPC LIST, California Invasive Plant Council Website, accessed September through December, 2004.

⁶ *Sunset Western Garden Book*, Sunset Publishing Corporation, 2001.

⁷ Beauchamp, R. Mitchel, *A Flora of San Diego County*, Sweetwater River Press, 1986.

⁸ Bossard, Carla, *Invasive Plants of California Wildlands*, University of California Press, 2000.

⁹ Beauchamp, R. Mitchel, *A Flora of San Diego County*, Sweetwater River Press, 1986.

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BOTANICAL NAME:
**Mesembryanthemum
crystallinum**
M. nodiflorum

COMMON NAMES:
Crystalline Ice Plant
Slender-Leaf Ice Plant

FAMILY: Aizoaceae

ORIGIN: South Africa

Reason for listing as invasive
species:



Photo: Bon Terra Consulting ©2002

A succulent prostrate annual herb with crystalline appearing bubbles along the stems, *Mesembryanthemum* is frequently seen naturalized along coastal bluffs and coastal strands.¹ It was introduced as early as the 1500's from sand ballast deposited from ships.² It is very tolerant of saline soils, salt spray and coastal conditions, and was used by Caltrans until 1969 for soil stabilization purposes.³ However, it was found to be killed by hard freezes and does not provide effective erosion control.⁴ It has also been used in hanging baskets, window boxes and gardens. The stems, leaves and fruits are edible and can be boiled or used as a garnish.⁵ *Mesembryanthemum crystallinum* is on the 2005 Cal-IPC Invasive Plant Inventory as 'moderate' - this species has substantial and apparent ecological impacts on ecosystems, plant and animal communities, and vegetational structure. Its reproductive biology and other attributes are conducive to moderate to high rates of dispersal. Ecological amplitude and distribution may range from limited to widespread.⁶ It is found to naturalize and invade in many areas in the county but its impacts are fairly localized and it does not appear to spread rapidly. Frequently naturalizes in disturbed areas along the coast where it establishes quickly by seed and can out-compete native plants. It has adapted up to 8 miles from the coast. Grazing, erosion and disturbance promote invasion. The first winter rains germinate the seed. As the plant grows, it absorbs water from the soil, out-competing natives for water. It flowers March to June with fruit following in June to August. As it desiccates in late summer, it increases the nitrate level in the soil to a level that can be detrimental to native grass and seedlings.^{7,8} The seed is eaten and spread by rats, mice and rabbits.⁸

Methods of invading natural
areas:

Seed, wildlife, water/storm drains

Locations where it invades:

chaparral, riparian, wetland, grassland, coastal sage, coastal dunes

Where invasive in San
Diego:

Mesembryanthemum crystallinum: Del Mar, Point Loma, Silver Strand, National City, Otay Mesa, Boundary Monument⁹, Torrey Pines State Park, Penasquitos Creek Lagoon, Reynard

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Way between Eagle and Arroyo, San Diego, 2003¹⁰
 Mesembryanthemum nodiflorum: Del Mar, Mission Beach,
 Silver Strand, Otay Mesa, Boundary Monument.⁹

Invasive varieties include: All members of the species *Mesembryanthemum crystallinum*
 and *Mesembryanthemum nodiflorum*

Varieties not known to be
 invasive: Unknown

Alternative plants to
 consider:

California Native Species
 and cultivars:

<i>Baccharis pilularis</i> 'Twin Peaks'	Prostrate Coyote Brush
<i>Eriogonum</i> spp.	Buckwheat
<i>Iva hayesiana</i>	San Diego Marsh- Elder
<i>Salvia sonomensis</i>	Creeping Sage
<i>Coprosma kirkii</i>	-
<i>Artemisia pycnocephala</i>	Sandhill Sage
<i>Drosanthemum</i> spp.	-
<i>Juniperus</i> species	Juniper (prostrate varieties)
<i>Rosemarinus officinalis</i> 'Prostratus'	Prostrate Rosemary
<i>Verbena</i> species	Verbena

Ornamental species:

¹ Beauchamp, R. Mitchel, *A Flora of San Diego County*, Sweetwater River Press, 1986.
² Dale, Nancy, *Flowering Plants of the Santa Monica Mountains*, Capra press, 1986.
³ Bossard, Carla, *Invasive Plants of California Wildlands*, University of California Press, 2000.
⁴ Ibid.
⁵ Dale, Nancy, *Flowering Plants of the Santa Monica Mountains*, Capra press, 1986.
⁶ California Invasive Plant Council Plant Assessment Form as accessed on the world wide web
 on April 18th, 2005. http://www.cal-ipc.org/file_library/20372.pdf
⁷ Bossard, Carla, *Invasive Plants of California Wildlands*, University of California Press, 2000.
⁸ Dale, Nancy, *Flowering Plants of the Santa Monica Mountains*, Capra press, 1986.
⁹ Beauchamp, R. Mitchel, *A Flora of San Diego County*, Sweetwater River Press, 1986.
¹⁰ San Diego Natural History Museum, Botanical Archives

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BOTANICAL NAME:
Mirabilis jalapa,

COMMON NAMES:
**Four O’Clock,
Marvel of Peru**

FAMILY: Nyctaginaceae

ORIGIN: South America



Photo courtesy Garry DeLong

Reason for listing as invasive species:

Mirabilis jalapa is a perennial shrub that grows well in full sun with little water and reseeds itself freely. It is categorized in the *Checklist of Vascular Plants of San Diego County* as “A taxon that is not native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas.”¹ Because of its ability to easily spread from landscaped areas into natural areas it is not recommended for planting adjacent to natural areas or open spaces.^{2,3}

Methods of invading natural areas:

Species is known to spread via seed and by tuberous roots.³

Locations where it invades:

riparian, wetland, coastal sage

Where invasive in San Diego:

Cedar Ridge Park, Switzer Canyon.²

Invasive varieties include:

All members of the species *Mirabilis jalapa*

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species and cultivars:

Mirabilis laevis var. *crassifolia*

Coastal Wishbone Plant

Mirabilis laevis var. *retrorsa*

Wishbone Plant

Ornamental species:

¹ Simpson, M.G. and J. Rebman. 2001. *Checklist of the Vascular Plants of San Diego County*, 3rd Edition. SDSU Herbarium Press. San Diego, CA.

² Dr. Jon Rebman, botanical curator San Diego Natural History Museum, personal communication.

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³ North Carolina State University. Unknown.
<http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/perennials/Mirabja.htm>

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BOTANICAL NAME:
Myriophyllum aquaticum
Myriophyllum spicatum



COMMON NAMES:
Parrot's Feather
Eurasian Milfoil

FAMILY: Haloragaceae

ORIGIN: South America

Photo © 2001 California Dept Food and Ag (CDFA)

Reason for listing as invasive species:

An aquatic perennial with stems up to 6 feet in length and bottle brush like tips that extend up to 8 inches out of the water. The plant roots at the bottom of lakes, ponds and slow streams. The wiry stems appear blue green below water. The foliage above the surface is finely dissected feather-like leaves, yellow green in color.^{1,2} The plant was introduced for aquariums and ponds in the late 1800's and has spread into natural lakes throughout the USA since that time.³

Myriophyllum aquaticum and *M. spicatum* are on the 2005 Cal-IPC Invasive Plant Inventory as 'high', these species have severe ecological impacts on ecosystems, plant and animal communities, and vegetational structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment.⁴ The plant spreads quickly in fresh water bodies.⁵ Fragments of the brittle stems break off and settle in sediment, rooting quickly to start new plants. It forms dense mats, spreading by rhizomes. No fruit forms in the United States since only female plants have been imported; consequently the plant does not spread by seed.⁶ Control is very difficult, relying on physical and chemical methods which can affect native species. The plant can significantly alter physical and chemical characteristics of lakes and streams by shading out algae that serve as the basis of the aquatic food web and alters habitats used by waterfowl.⁷

Methods of invading natural areas:

vegetatively, wildlife, water/storm drains, also spread from lake to lake by boats, boat trailers, fishing gear and dumping of aquarium waste.⁸

Locations where it invades:

riparian, wetland

Where invasive in San Diego:

San Vicente Reservoir, Lake Murray⁹
(Although it has not been documented with an herbarium voucher)

Invasive varieties include:

All members of the species *M. aquaticum* and *M. spicatum*

Varieties not known to be invasive:

Unknown

Alternative plants to consider:

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Native Species:

Ornamental species:

-
- ¹ R.J. Turner and Earnie Wasson, *Botanica*, Myna, 1997.
 - ² Bossard, Carla, *Invasive Plants of California Wildlands*, University of California Press, 2000.
 - ³ Ibid
 - ⁴ Cal-IPC 2005 Invasive Plant Inventory Plant Assessment Form
http://www.cal-ipc.org/file_library/20398.pdf and http://www.cal-ipc.org/file_library/20399.pdf
 - ⁵ Beauchamp, R. Mitchel, *A Flora of San Diego County*, Sweetwater River Press, 1986.
 - ⁶ Bossard, Carla, *Invasive Plants of California Wildlands*, University of California Press, 2000.
 - ⁷ Ibid
 - ⁸ Ibid
 - ⁹ Beauchamp, R. Mitchel, *A Flora of San Diego County*, Sweetwater River Press, 1986.

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BOTANICAL NAME:

Olea europaea

COMMON NAMES:

**Olive,
European Olive**

FAMILY: Oleaceae

ORIGIN: Mediterranean Area.
Brought to California in 1700s
by Franciscan missionaries
from Mexico, 1870 - 1900
resurgence of orchard
plantings throughout the
state.¹

**Reason for listing as invasive
species:**

**Methods of invading natural
areas:**

Locations where it invades:

Where invasive in San Diego:

Invasive varieties include:

**Varieties not known to be
invasive:**

Alternative plants to consider:

Native Species:

Ornamental species:



Photos courtesy of Joe DiTomaso and Luigi Rignanesi

Olea europaea can grow in full sun with little water and will survive heat, drought and is cold-hardy to 15° F. The seeds are spread by birds into natural areas where it can survive, persist and spread with little water. It is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."² *Olea europaea* is on the 2005 Cal-IPC Invasive Plant Inventory as 'limited': this species is invasive but its ecological impacts are minor. Its reproductive biology and other attributes result in low to moderate rates of invasion. Ecological amplitude and distribution are generally limited, but this species may be locally persistent and problematic.³

Humans have dispersed this plant globally for landscaping and cultivation. Seeds then travel over shorter distances from initial plantings through gravity and presumably birds⁴

Reported as invasive in riparian habitats in Santa Barbara and San Diego⁵

Mission Hills Canyon, Dairy Allen Road Canyon (Mission Hills), 32nd Street Canyon (South Park), Viejas Mountain⁶

All members of the species *Olea europaea*

Olea europaea 'Fruitless'

¹ Thomas, Jason. (December 1995). *Olive Fact Sheet*. Accessed September 19, 2004 on the World Wide Web at WWW.FRUITSSANDNUTS.UCDAVIS.EDU/CROPS/OLIVE-FACTSHEET.HTML

² *Checklist of the Vascular Plants of San Diego County*. Accessed September 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html> .

³ Cal-IPC 2005 Invasive Plant Inventory Plant Assessment Form for *O. europaea*

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http://www.cal-ipc.org/file_library/18692.pdf

⁴ Hawaii State Alien Species Coordinator (Department of Land & Natural Resources [DLNR], Division of Forestry & Wildlife [DOFAW]). *Hawaii's Most Invasive Horticultural Plants*. Accessed September 19, 2004 on the World Wide Web at <http://www.state.hi.us/dlnr/dofaw/hortweeds/species/oleeur.htm>

⁵ Regents of the University of California, Department of Agriculture and Natural Resources. *Exotic Pest Plants of Greatest Ecological Concern in California*.

⁶ Dr. Jon Rebman, botanical curator, San Diego Natural History Museum, personal communication.

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BOTANICAL NAME:
Opuntia ficus-indica

COMMON NAMES:
**Indian Fig,
Tuna Cactus,
Mission Prickly Pear**

FAMILY: Cactaceae

ORIGIN: Species evolutionary origins have been obscured through widespread cultivation and naturalization. Studies show the species to be a close relative of a group of prickly-pears from central and southern Mexico. ¹

Reason for listing as invasive species:

Methods of invading natural areas:

Locations where it invades:

Where invasive in San Diego:

Invasive varieties include:

Varieties not known to be invasive:

Alternative plants to consider:

Native Species:

Ornamental species:



Photo © Vicent Martinez

Opuntia ficus-indica is a big, tree-like cactus that can grow to 15 ft tall and is extremely drought tolerant. It is categorized in the *Checklist of Vascular Plants of San Diego County* as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."² Because it spreads easily from landscaped areas to nearby by open spaces or natural areas where it can survive without water and take over native plant habitat, it is not recommended for landscaping adjacent to open spaces or natural areas.

Species appears to spread vegetatively and via seed.³

Species is known to invade coastal sage and riparian/wetland.⁴

Encinitas, Mission Valley, San Ysidro⁵ and numerous urban canyons⁶

All members of the species *Opuntia ficus-indica*

Opuntia littoralis

Coastal Prickly-Pear

¹ Griffith, P.M. 2004. The origins of an important cactus crop, *Opuntia ficus-indica* (Cactaceae): new molecular evidence. *American Journal of Botany* 91:1915-1921. Accessed February 15, 2005 on the World Wide Web at <http://www.amjbot.org/cgi/content/abstract/91/11/1915>.

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- ² Simpson, M.G. and J. Rebman. 2001. *Checklist of the Vascular Plants of San Diego County*, 3rd Edition. SDSU Herbarium Press. San Diego, CA.
- ³ Johnson, Melanie. 2004. Field observation.
- ⁴ Johnson, Melanie. 2004. Field observation.
- ⁵ Beauchamp, R.M. 1986. *A Flora of San Diego County, California*. Sweetwater River Press, National City, California.
- ⁶ Johnson, Melanie. 2004. Field observation.

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BOTANICAL NAME:
Osteospermum fruticosum
(*Dimorphotheca fruticosa*)

COMMON NAMES:
Trailing African Daisy,
Freeway Daisy,
Creeping Marguerite,
Shrubby Daisybush

FAMILY: Asteraceae
(=Compositae)

ORIGIN: Southern Africa



Photo courtesy of
<http://www.geocities.com/Heartland/Fields/6244/jcgarden/bud/sunscape.jpg>

Reason for listing as invasive species:

This woody perennial has spreading branches that will root at the base. It does well in full sun with little water. *Osteospermum fruticosum* is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."¹ It appears to be mildly invasive, usually found near cultivated areas. In similar climates in New Zealand, *O. fruticosum* established locally in the wild as a garden escape; presumably, runners from a garden plant became established outside the perimeter of cultivation.² It appears to be mildly invasive, and is generally found in drainages or wet areas usually near cultivated or landscaped areas. It should not be used for landscaping directly adjacent to open space or natural areas.³

Methods of invading natural areas:

Spreads rapidly by trailing, rooting branches. It is unknown if it also spreads by seed.

Locations where it invades:

riparian, wetland, coastal habitats

Where invasive in San Diego:

Encinas Creek (Carlsbad), Dinwiddie Preserve (Fallbrook)³

Invasive varieties include:

All members of the species *Osteospermum fruticosum*

Varieties not known to be invasive:

Alternative plants to consider:

Native Species:

Ornamental species:

¹ *Checklist of the Vascular Plants of San Diego County*. Accessed February 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.

² Institute of Pacific Islands Forestry Pacific Island Ecosystems at Risk (PIER). (March 27, 2004.) Plant Fact Sheet for *Osteospermum fruticosum*. Accessed September 19, 2004 on the World Wide Web at http://www.hear.org/pier/wra/pacific/osteospermum_fruticosum_xlwra.xls.

³ Field Observation, Carolyn Martus (c_martus@yahoo.com)

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BOTANICAL NAME:
Parkinsonia aculeata

COMMON NAMES:
**Mexican Palo Verde,
Jerusalem Thorn**

FAMILY: Fabaceae
(=Leguminosae)

ORIGIN: desert grasslands and
canyons in Mexico and the SW
United States

**Reason for listing as invasive
species:**

**Methods of invading natural
areas:**

Locations where it invades:

Where invasive in San Diego:

Invasive varieties include:

**Varieties not known to be
invasive:**

Alternative plants to consider:

Native Species:

Ornamental species:



Photos courtesy of Wildflowers of Tucson website.

Mexican Palo Verde is a tree that grows in full sun with little water, tolerated alkaline soils and reseeds itself freely. In Australia, *Parkinsonia* is a *Weed of National Significance*. It is regarded as one of the worst weeds in Australia because of its invasiveness, potential for spread, and economic and environmental impacts. *Parkinsonia* threatens rangelands and wetlands around Australia. If left untreated, it displaces native vegetation and reduces access to land and waterways.¹ Plants have the ability to spread easily by seed to natural areas and open spaces where they have established populations that are spreading.² This non-native species has escaped cultivation and established in natural areas of San Diego County according to the "Checklist of the Vascular Plants of San Diego County."³

Spreads by seed.

It appears to naturalize more easily in inland and desert areas of the county.⁴

San Luis Rey River (By the I-15), Gird Road in Fallbrook and Lilac Road in Valley Center.⁴ Cedar Ridge Park, North Park (San Diego)⁵

All members of the species *Parkinsonia aculeata*

None

Sambucus mexicana

Tecoma stans

Blue Elderberry

Yellow Bells,
Yellow Trumpet Flower

¹ *Weeds of National Significance: Weed Management Guide. Department of the Environment and Heritage and the CRC for Australian Weed Management, 2003.*

<http://www.deh.gov.au/biodiversity/invasive/publications/p-aculeata.html>

² Dr. Jon Rebman, San Diego Natural History Museum, conversation 1/21/05.

³ Simpson, M.G. and J.P. Rebman. 2001. *Checklist of the vascular plants of San Diego County*, 3rd ed. SDSU Herbarium Press, San Diego.

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⁴ Martus, Carolyn, consulting biologist with Mission Resource Conservation District. E-mail to Marney Griffin. 13 Feb. 2005.

⁵ Dr. Jon Rebman, San Diego Natural History Museum, conversation 1/21/05.

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BOTANICAL NAME:
Pelargonium x hortorum

COMMON NAMES:
**Common Geranium,
Garden Geranium**

FAMILY: Geraniaceae

ORIGIN: South Africa



Photo © 2006 Carolyn Martus

Reason for listing as invasive species:

Pelargonium x hortorum is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."¹ It grows easily from seed; in mild climates it will grow in open areas, and needs little water once established.² When planted in gardens adjacent to open space it appears to spread via seed.³ Santa Cruz Island native plant restoration project reports to have removed 765 plants between 11/03 – 5/04 from natural lands.⁴

Methods of invading natural areas:

Humans have dispersed this plant globally for landscaping and cultivation. Seeds then travel over shorter distances from initial plantings through gravity.

Locations where it invades:

wetlands, riparian, oak woodland

Where invasive in San Diego:

Switzer canyon, Chocolate Canyon³

Invasive varieties include:

All members of the species *Pelargonium x hortorum*

Varieties not known to be invasive:

Alternative plants to consider:

California Native Species and cultivars:

Penstemon spp.
Galvezia speciosa
Heuchera spp.

Penstemon species
Snapdragon
Coral Bells species

Ornamental species:

¹ *Checklist of the Vascular Plants of San Diego County*. Accessed February 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.

² *Sunset Western Garden Book, 2001 edition*

³ Personal observation Carrie Schneider (carrieschneider@earthlink.net)

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⁴ Cal-IPC News, Summer 2004, p.4. Accessed on the World Wide Web at http://www.cal-ipc.org/symposia/documents/cal-ipc_news5513.pdf

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BOTANICAL NAME:
Pittosporum undulatum

COMMON NAMES:
**Victorian Box
Sweet Pittosporum
Australian Daphne
Cheesewood**

FAMILY:
Myoporaceae

ORIGIN:
Southeastern Australia



Photo: Bushcare, Tasmania Natural Heritage Trust
A 20 to 40' tall standard or multi trunked tree with wavy medium green leaves, fragrant white flowers, and yellow fruit.

Reason for listing as invasive species:

It is a prolific producer of viable fruit, which is attractive to birds, resulting in wide dispersal of the fruit.¹ The plant exudes toxins which inhibit native plant growth. It is a highly problematic invasive plant in Tasmania, Jamaica and other moist climates where it can become the dominant species.² While it escapes from cultivation in San Diego³, it is not drought tolerant and thrives only in moist soils.⁴ It is only marginally frost hardy⁵, so is potentially invasive in coastal canyons and near watercourses of San Diego County.

Methods of invading natural areas:

seed, wildlife

Locations where it invades:

oak woodland, riparian, wetland

Where invasive in San Diego:

Encanto Canyon north of Market Street and east of Malcolm X Library, San Diego⁶
San Diego State University, Balboa Park, San Diego⁷
Switzer Canyon, Juniper St. Canyon, Cedar Ridge Park⁸

Invasive varieties include:

Pittosporum undulatum and its cultivars

Varieties not known to be invasive:

Unknown

Alternative plants to consider:

Native Species:

Heteromeles arbutifolia
Prunus ilicifolia ssp. *ilicifolia*
Quercus agrifolia
Umbellularia californica
Myrica californica
Lyonothamnus f. 'Aspleniifolius'

Toyon
Holly Leaf Cherry
Coast Live Oak
Calif. Bay Laurel
Pacific Wax Myrtle
Catalina Ironwood

Ornamental species

Arbutus unedo
Tristania laurina
Magnolia grandiflora 'St. Mary'

Strawberry Tree
Water Gum
Magnolia

References:

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- ¹ Tasmania Natural Heritage Trust website, accessed January, 2005
 - ² Ibid.
 - ³ Beauchamp, R. Mitchel, A Flora of San Diego County, Sweetwater River Press, 1986
 - ⁴ Perry, Robert, Landscape Plants for Western Regions, Land Design Publishing, 1992
 - ⁵ Ibid.
 - ⁶ San Diego Natural History Museum, Botanical Archives.
 - ⁷ Beauchamp, R. Mitchel, A Flora of San Diego County, Sweetwater River Press, 1986.
 - ⁸ Dr. Jon Rebman, Curator of Botanical Collection, San Diego Natural History Museum, discussion, April, 2005.

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BOTANICAL NAME:
Prunus ilicifolia ssp. *lyonii*
(*P. lyonii*,
P. integrifolia,
Cerasus lyonii)

COMMON NAMES:
Catalina Cherry

FAMILY: Rosaceae

ORIGIN: California's
Channel Islands.

Reason for listing as invasive species:

Methods of invading natural areas:

Locations where it invades:

Where invasive in San Diego:

Invasive varieties include:

Varieties not known to be invasive:

Alternative plants to consider:

Native Species:

Ornamental species:



© Michael L. Charters, 2004

Prunus ilicifolia ssp. *lyonii* is an evergreen shrub or tree native to the Channel Islands and Baja California. It produces delicious edible fruits that can be spread by birds. It is categorized in the *Checklist of Vascular Plants of San Diego County* as "A taxon that is non-native to the county, but has become naturalized, meaning that the taxon is persisting or spreading in natural, non-cultivated areas."¹ The species is closely related to the native species *P. ilicifolia* ssp. *ilicifolia* (Hollyleaf Cherry) and has the potential to overtake the native subspecies and/or hybridize with it. It has been well documented that non-indigenous species can bring about extinction of native flora by hybridization and introgression either through purposeful introduction by humans or through habitat modification, bringing previously isolated species into contact.² Because of its potential to hybridize with the *P. ilicifolia* ssp. *ilicifolia* and persist or spread in natural areas, *P. lyonii* is not recommended for landscaping adjacent to open space or natural areas.

Spreads via seed.³

wetlands, riparian, coastal sage³

Buena Vista Lagoon, Mission Hills⁴

Prunus ilicifolia ssp. *lyonii*

Prunus ilicifolia ssp. *ilicifolia*

Holly-leaf Cherry

¹ Simpson, M.G. and J. Rebman. 2001. *Checklist of the Vascular Plants of San Diego County*, 3rd Edition. SDSU Herbarium Press. San Diego, CA.

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² Rhymer, J.M. 1996. Extinction by hybridization and introgression. *Annual Review of Ecology and Systematics* 27: 83-109. Accessed February 15, 2005 on the World Wide Web at <http://arjournals.annualreviews.org/doi/abs/10.1146/annurev.ecolsys.27.1.83;jsessionid=o6JraBU LfD29?cookieSet=1>.

³ Carolyn Martus, consulting biologist, field observation, c_martus@yahoo.com.

⁴ Dr. Jon Rebman, botanical curator, San Diego Natural History Museum, personal communication.

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BOTANICAL NAME:
Robinia pseudoacacia

COMMON NAMES:
Black Locust

FAMILY: Fabaceae
(=Leguminosae)

ORIGIN: Eastern United States



Photos courtesy of the California Invasive Plant Council, www.cal-ipc.org

Reason for listing as invasive species:

A fast growing, 40 to 75' tall deciduous tree that spreads by vigorous and profuse suckers and self-seeding.¹ Tenacious and durable, it is tolerant of poor soils and temporary dry conditions. It has become widely naturalized in moist areas throughout California.² Does not occur as frequently in warmer, drier areas. In San Diego, it persists and spreads around older plantings becoming a dense clump of sucker generated trees.³ Many cultivars are available. This plant is on the 2005 Cal-IPC Invasive Plant Inventory as 'limited', this species is invasive but its ecological impacts are minor. Its reproductive biology and other attributes result in low to moderate rates of invasion. Ecological amplitude and distribution are generally limited, but this species may be locally persistent and problematic.⁴

Methods of invading natural areas:

seed, vegetative sprouting and suckering⁵

Locations where it invades:

oak woodland, riparian, wetland, grassland, coniferous woodland

Where invasive in San Diego:

Moosa Creek⁶

Invasive varieties include:

Robinia pseudoacacia and fertile varieties

Varieties not known to be invasive:

None

Alternative plants to consider:

California Native Species and cultivars:

Acer macrophyllum
Acer negundo
Alnus rhombifolia
Fraxinus velutina

Big Leaf Maple
Box Elder
White Alder
Velvet Ash

Ornamental species:

_Chitalpa tashkentensis
Cornus nuttallii
Robinia ambigua 'Purple Robe'
Lagerstroemia indica
Cercis canadensis

Chitalpa
Dogwood
Purple Robe Locust
Crape Myrtle
Eastern Redbud

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- ¹ Sunset Western Garden Book, Sunset Publishing Corporation, 2001.
 - ² Perry, Robert, Landscape Plants for Western Regions, Land Design Publishing, 1992.
 - ³ Beauchamp, R. Mitchel, A Flora of San Diego County, Sweetwater River Press, 1986.
 - ⁴ Cal-IPC 2005 Invasive Plant Inventory Plant Assessment Form
http://www.cal-ipc.org/file_library/18693.pdf
 - ⁵ Bossard, Carla, Invasive Plants of California Wildlands, University of California Press, 2000.
 - ⁶ San Diego Natural History Museum, Botanical Archives.

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BOTANICAL NAME:
Schinus molle

COMMON NAMES:
**Peruvian Pepper,
California Pepper**

FAMILY: Anacardiaceae

ORIGIN: Peruvian Andes.
Brought here for cultivation in
the 1700s. Frequently part
of the historic landscape at
the Franciscan Missions of
California.



Photo © Carolyn Martus 2006

Reason for listing as invasive
species:

This extremely durable, drought tolerant, vigorously growing tree produces prolific quantities of viable red fruits which can be carried by wildlife into adjacent areas. The seeds can sprout, and grow quickly establishing a broad headed canopy that hangs to the ground, shading the plants below. The leaves and seeds also produce toxins that prevent the growth of other plants under the canopy. This tree can survive periods of drought, and a wide variety of poor, salty and alkaline soil conditions, making it a tenacious survivor in the toughest landscape situations. The qualities that allow it to survive unaided in San Diego, make it invasive, and potentially difficult to control. When cut to the ground, it has the ability to come back quickly from the rootstock, and even to sprout along surface roots to establish new trunks.¹ *Schinus molle* is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that it is persisting or spreading in natural, non-cultivated areas."² *Schinus molle* is on the 2005 Cal-IPC Invasive Plant Inventory as 'limited', this species is invasive but its ecological impacts are minor. Its reproductive biology and other attributes result in low to moderate rates of invasion. Ecological amplitude and distribution are generally limited, but this species may be locally persistent and problematic.³

Methods of invading natural
areas:

Humans have dispersed this plant globally for landscaping and cultivation. Seeds then travel over shorter distances from initial plantings through gravity and presumably birds or wildlife.

Locations where it invades:

Reported as invasive in riparian habitats in Santa Barbara and San Diego.⁴ Observed in coastal sage, chaparral, riparian and oak woodlands.

Where invasive in San
Diego:

San Pasqual, Ramona, Torrey Pines State Reserve, Dehesa, Telegraph Canyon, Little Gopher Canyon Road, Dulin Road,

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Fallbrook, Agua Hedionda Lagoon, Camp Pendleton.^{5,6}
Switzer Canyon, Manzanita Canyon⁷

Invasive varieties include:

All members of the species *Schinus molle*

Varieties not known to be invasive:

None

Alternative plants to consider:

California Native Species and cultivars:

Quercus agrifolia
Quercus chrysolepis
Quercus engelmannii,
Lyonothamnus floribundus ssp.
aspenniifolius
Arbutus menzesii
Umbellularia californica
Heteromeles arbutifolia
Calocedrus decurrens
Chilopsis linearis

Coast Live Oak
Canyon Oak
Blue Oak
Fern-leafed Catalina
Ironwood
Madrone
California Bay
Toyon
Incense Cedar
Desert Willow

Ornamental species:

Geijera parviflora
Agonis flexuosa
Maytenus boaria
Arbutus unedo

Australian Willow
Peppermint Tree
Chilean Mayten
Strawberry Tree

¹ Observations of potentially invasive species in San Diego County by Scott Molentin, ASLA.

² Checklist of the Vascular Plants of San Diego County. Accessed September 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.

³ Cal-IPC 2005 Invasive Plant Inventory Plant Assessment Form
http://www.cal-ipc.org/file_library/20374.pdf

⁴ Santa Barbara County Weed Management Area Weed Alerts. Accessed January 23, 2005 on the World Wide Web at <http://www.countyofsb.org/agcomm/wma/InvasiveOrn.htm>

⁵ Beauchamp, R. Mitchel, *A Flora of San Diego County*, 1986, p. 82.

⁶ Carolyn Martus, personal communication c_martus@yahoo.com.

⁷ Personal observation by Carrie Schneider, CNPS board member, carrieschneider@earthlink.net.

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BOTANICAL NAME:
Senna didymobotrya
(Cassia didymobotrya)
COMMON NAMES:
Popcorn Senna

FAMILY: Fabaceae
(=Leguminosae)

ORIGIN: Eastern Africa



Photo © Carolyn Martus 2006

Reason for listing as invasive species:

Evergreen shrub, native to East Africa. Tolerates full sun and grows with little water. *Senna didymobotrya* is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that it is persisting or spreading in natural, non-cultivated areas."¹ It appears to be mildly invasive, usually found near disturbed or cultivated areas.

Methods of invading natural areas:

Humans have dispersed this plant globally for landscaping and cultivation. Seeds then travel over shorter distances from initial plantings through gravity.

Locations where it invades:

wetlands, riparian, oak woodland, chaparral, grassland, coastal sage habitats adjacent to cultivated areas

Where invasive in San Diego:

Agua Hedionda Creek², Camp Pendleton³, Switzer Canyon⁴

Invasive varieties include:

All members of the species, *Senna didymobotrya*

Varieties not known to be invasive:

Alternative plants to consider:

Native Species:

Senna armata
Dendromecon rigida
Dendromecon harfordii

Spiny Senna
Bush Poppy
Island Bush Poppy

Ornamental species:

Tagetes lemmonii

Mexican Marigold

¹ Checklist of the Vascular Plants of San Diego County. Accessed February 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>.

² Field Observation, Carolyn Martus (c_martus@yahoo.com)

³ Plant Species on Camp Pendleton, Accessed February 1, 2004 on the World Wide Web at <http://www.pendleton.usmc.mil/base/environmental/inrmp/Appendix%20N.pdf>

⁴ Personal observation Carrie Schneider (carrieschneider@earthlink.net)

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BOTANICAL NAME:

Ulmus parvifolia

COMMON NAMES:

Chinese Elm

Chinese Evergreen Elm

FAMILY: Ulmaceae

ORIGIN: China



Photo courtesy of Texas A&M University (TAMU)

Reason for listing as invasive species:

Ulmus parvifolia, an evergreen tree with vigorous growth to 40'-60' wide x 50'-70-' high, exhibits moderately invasive qualities within San Diego County open spaces. In the past, *Ulmus parvifolia* demonstrated value as an evergreen shade or street tree and for its adaptability to virtually any soil type. Yet, in addition to its invasive qualities, the tree's shallow roots also heave sidewalks and host many insect and disease problems.

Methods of invading natural areas:

Root systems are aggressive and close to the surface. The tree also produces an abundance of seed, which can become invasive in & around irrigated landscapes, as the young seedlings typically exhibit aggressive growth.

Locations where it invades:

Wetlands and riparian areas, such as stream banks and drainage swales, or any area that retains moisture from rain or irrigation.

Where invasive in San Diego:

Penasquitos Canyon Preserve¹, S.D. River¹, Otay River Valley², Switzer Canyon³

Invasive varieties include:
(or may be sold as)

Ulmus pumila, *U. parvifolia* 'Sempervirens' and many other evergreen and dwarf varieties.

Varieties not known to be invasive:

Unknown at this time

Alternative plants to consider:

Native Species:

Quercus agrifolia
Quercus engelmannii
Quercus chrysolepis
Sambucus mexicana
Umbellularia californica

Coast Live Oak
Mesa Oak
Canyon Oak
Blue Elderberry
California Bay

Ornamental species:

Podocarpus gracillior
Zelkova serrata

Fern Pine
Sawleaf Zelkova

¹ Personal observation, Mike Kelly (MKellySD@aol.com).

² Personal observation, Brad Burkhart (B.Burkhart@attglobal.net).

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³ San Diego Natural History Museum Floristic List,
<http://www.sdnhm.org/research/botany/lists/switzer.html>

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BOTANICAL NAME:
Vinca major

COMMON NAMES:
**Periwinkle,
Big leaf Periwinkle,
Blue Periwinkle**

FAMILY: Apocynaceae

ORIGIN: Southern Europe,
Northern Africa

Reason for listing as invasive species:

Methods of invading natural areas:

Locations where it invades:

Where invasive in San Diego:

Invasive varieties include:

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Periwinkle is drought tolerant and spreads vegetatively by arching stolons that root at the tips, and by vigorous underground growth of stolons. It also roots from fragments of the stem.¹ Tolerates many soil types.² Carried by creeks or drainages, or dumped by humans in open spaces or natural areas, this plant vigorously grows in wet shady areas. Very invasive in watersheds throughout San Diego County and once established it requires herbicide to control and forms a dense cover choking out other (native) vegetation.³ *Vinca major* is categorized in the Checklist of Vascular Plants of San Diego County as "A taxon that is non-native to the county, but has become naturalized, meaning that it is persisting or spreading in natural, non-cultivated areas"⁴. This plant is on the 2005 Cal-IPC Invasive Plant Inventory as 'moderate' - this species has substantial and apparent ecological impacts on ecosystems, plant and animal communities, and vegetational structure. Its reproductive biology and other attributes are conducive to moderate to high rates of dispersal. Ecological amplitude and distribution may range from limited to widespread.⁵ It is found to naturalize and invade in many areas in the county but its impacts are fairly localized and it does not appear to spread rapidly. This plant could be used in situations where the seeds or root fragments have no opportunity to be carried into storm drains, wetlands or natural areas. It is not recommended for areas adjacent to natural areas or in areas where it will not be monitored for its spread. Should not be used in areas where maintenance workers are likely to dump cuttings into nearby natural areas.

Humans have dispersed this plant globally for landscaping and cultivation. Plants have then been displaced vegetatively by creeks or drainages. Many original homesteaders used this plant extensively along banks.

riparian, wetlands, oak woodlands.

Harbison Canyon; Clevenger Canyon; Rose Canyon, Jamul, Cuyamaca North Peak⁶, San Luis Rey Watershed, Dawson Reserve, Santa Margarita River, Carlsbad Hydrological Unit (widespread)².

All members of the species, *Vinca major*

<u>Varieties not known to be invasive:</u>	None	
<u>Alternative plants to consider:</u>		
<u>California Native Species and cultivars:</u>	<i>Iva hayesiana</i>	Poverty Weed or San Diego Marsh-Elder
	<i>Ceanothus</i> spp	Wild Lilac species
	<i>Arctostaphylos</i> spp	Manzanita species
<u>Ornamental species:</u>	<i>Trachelospermum</i> spp.	Jasmine species

¹ The Weed Worker's Handbook, California Invasive Plant Council 2004

² Sunset Western Garden Book, 2001 Edition.

³ Personal observation, Carolyn Martus, c_martus@yahoo.com.

⁴ Checklist of the Vascular Plants of San Diego County. Accessed September 1, 2004 on the World Wide Web at <http://www.sdnhm.org/research/botany/sdplants.html>

⁵ California Invasive Plant Council Plant Assessment Form as accessed on the world wide web on April 18th, 2005. http://www.cal-ipc.org/file_library/19485.pdf

⁶ Beauchamp, R. Mitchel, A Flora of San Diego County, 1986, p. 82.

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BOTANICAL NAME:
Zantedeschia aethiopica

COMMON NAMES:
Calla Lily
Common Calla

FAMILY: Araceae

ORIGIN: South Africa



Photo © Carolyn Martus 2006

Reason for listing as invasive species:

Zantedeschia aethiopica continually increases its moderately invasive range, partly due to its availability in commercial nurseries. Its ability to grow in a variety of soils and its white or pastel-colored flower spathes seem attractive, yet the plant readily displaces native wetland species and is capable of invading sites with little or no apparent human disturbance. This plant is on the 2005 Cal-IPC Invasive Plant Inventory as 'limited', this species is invasive but its ecological impacts are minor. Its reproductive biology and other attributes result in low to moderate rates of invasion. Ecological amplitude and distribution are generally limited, but this species may be locally persistent and problematic.¹

Methods of invading natural areas:

Spreads by rhizomes that are often dispersed by dumping of garden waste. Birds also disperse seed over wide areas. Resprouts readily when cut, grazed or burned.

Locations where it invades:

wetlands, riparian, grassland & vernal pools

Where invasive in San Diego:

Keys Creek (Valley Center), Salt Works (Chula Vista)², Ostrich Creek (Fallbrook)², San Luis Rey River (Oceanside)³, Encinas Creek²

Invasive varieties include:

All members of the species *Zantedeschia aethiopica*

Varieties not known to be invasive:

Unknown at this time

Alternative plants to consider:

California Native Species and cultivars:

Iris douglasiana
Muhlenbergia rigens
Polystichum munitum
Salvia spathacea

Douglas Iris
Deer Grass
Sword Fern
Hummingbird Sage

Ornamental species:

Agapanthus africanus
Aloe vera
Aspidistra elatior
Liriope muscari

Lily-of-the-Nile
Medicinal Aloe
Cast Iron Plant
Lily Turf

¹ Cal-IPC 2005 Invasive Plant Inventory Plant Assessment Form

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http://www.cal-ipc.org/file_library/10643.pdf

² Field observation, Carolyn Martus (c_martus@yahoo.com).

³ Beauchamp, R. Mitchel, A Flora of San Diego County, California, (1986).

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