



San Diego  
Chapter  
California Native Plant Society  
619.685.7321 — [www.cnpssd.org](http://www.cnpssd.org)

HOW TO RESTORE  
AN ICEPLANT-  
COVERED HILLSIDE  
IN SAN DIEGO

### Situation

Years ago, Freeway iceplant (*Carpobrotus edulis*) was touted as the perfect solution for fire safety. Planted on hillsides of thousands of homes in San Diego, it has since crawled off the original site and into neighboring Open Space parks, endangering unique plants by smothering them. Iceplant provides little habitat value compared to the plant community that it is replacing.

Compared to the native shrubs, iceplant has very shallow roots that do not hold soil well; close inspection often reveals gullies underneath the twisted mat of vines. After rain, Iceplant engorges with water, substantially increasing its weight. As a result, Iceplant can cause the deterioration of steep hillsides by encouraging slumping – potentially endangering the house above.

### Solution

Replace your iceplant with well-chosen native plants.

#### PROCEDURE:

First, remove the iceplant. Then add native container plants, leaving the dead iceplant to act as mulch while the container plants become established. Keep an eye out for volunteers of native plants, which may return once the iceplant is removed.

#### 1. Remove the Iceplant:

Because of its shallow roots, iceplant can be easily pulled, piled up and left to dry out (which will take several months).

If erosion on a steep hillside is a concern, iceplant can be killed in place by spraying with 2% (final concentration) of Roundup. Choose a low-wind day. Check the label for precise directions on use. The active ingredient, glyphosate, is essentially non-toxic to humans and other animals – its target is an enzyme specific to plants; it does not bioaccumulate and it breaks down over time. It binds tightly to soil particles and is therefore unlikely to wash from the site. Roundup will not kill seeds, but it will kill desirable plants, which may be covered while one sprays. It will take several weeks for sprayed plants to start yellowing. A good schedule to follow is: treat in the spring or summer, then plant or sow seed in the late fall.

#### 2. Plant container plants

First, decide what plants are appropriate, figure out where to get them, and then plant them.

##### **Appropriate Plants:**

First, there may be a viable native seed bank, so keep an eye out for volunteers of native plants, which will return once the shade by the Iceplant is removed. Next, choose plants based on the habitat type that originally existed on your hillside. If possible, find a nearby area with native vegetation, and study the slopes that have the orientation as yours (for example, south-facing or north-facing). The native plants growing there are the ones that will be successful on your hillside with the least maintenance.

The city of San Diego publishes two pamphlets that deal with appropriate native plants, appropriate brush management and fire safety. Call 619-533-4444 or download from:

[www.ci.san-diego.ca.us/fireandems/inspections/brush.shtml](http://www.ci.san-diego.ca.us/fireandems/inspections/brush.shtml)

- Environmentally Sensitive Erosion Control for Canyons and Hillsides
- Fire Safety and Brush Management Guide

The plants in the table below are chosen because they are easy to grow plants, are distributed widely on hillsides around San Diego, and are consistent with easy fire-zone management, because their foliage resists ignition, or they can be pruned easily to reduce fire risk. Many other native plants fit these criteria.

#### Where to get plants

1. Collect cuttings and seed from your local area (with the permission of the property owner). Books are available to help with advice:

- Emery, D.E., *Seed Propagation of California Native Plants*. 1988: Santa Barbara Botanic Garden.
- Hart, J.D., *Propagation Secrets for California Native Plants*. 1994.
- Schmidt, M.G., *Growing California Native Plants*. 1980: University of California Press.

## APPROPRIATE PLANTS

Easy to grow plants, distributed widely on hillsides around San Diego, and consistent with easy fire-zone management because their foliage resists ignition or they can be pruned easily to reduce fire risk. Many other native plants fit these criteria.

### Trees or tree-like shrubs

<i>Heteromeles arbutifolia</i>	Toyon
<i>Quercus dumosa</i>	Scrub Oak
<i>Quercus agrifolia</i>	Coast Live Oak
<i>Quercus engelmannii</i>	Engelmann Oak
<i>Rhus integrifolia</i>	Lemonadeberry - use sparingly, plants become quite large.

### Groundcovers

<i>Sisyrinchium bellum</i>	Blue-eyed Grass ( <i>a perennial bulb that spreads</i> )
<i>Artemisia douglasiana</i>	Douglas' Sage
<i>Epilobium</i> (formerly <i>Zauschneria</i> )	California Fuchsia
<i>Eriogonum spp.</i>	Buckwheat
<i>Solidago californica</i>	California Goldenrod
<i>Iva hayesiana</i>	Iva

### Broad-leaf shrubs

<i>Ceanothus sp.</i>	California Lilac
<i>Isomeris arborea</i>	Bladderpod
<i>Lonicera subspicata</i>	Chaparral Honeysuckle
<i>Malosma laurina</i>	Laurel Sumac
<i>Prunus illicifolia ssp. illicifolia</i>	Hollyleaf Cherry
<i>Rhamnus californica</i>	Coffeeferry
<i>Rhamnus crocea</i>	Redberry
<i>Ribes speciosum</i>	Fuschia-flowered Gooseberry
<i>Simmondsia chinensis</i>	Jojoba*

### Succulents, Cactus, Yucca

*These can be easily propagated without irrigation, and they provide substantial habitat benefits. There are a number of species - find the one that is native to your area.*

<i>Opuntia sp.</i>	Cholla species (e.g. <i>Opuntia prolifera</i> )*
<i>Opuntia sp.</i>	Prickly-pear species (e.g. <i>Opuntia littoralis</i> )*
<i>Dudleya sp.</i>	Dudleya species (e.g. <i>Dudleya pulverulenta</i> )
<i>Yucca schidigera</i>	Mojave Yucca

\*needs no irrigation to establish and provides excellent habitat benefits.

### Where to get plants (cont.)

2. Visit a native plant nursery, for example, Las Pilitas in Escondido or Tree-of-Life on Ortega Highway in Orange County. These nurseries also have experienced staff who can help you with plant selection.

Recon Native Plant Nursery in the Otay area has just started selling to the public. At this time, they can only take orders by FAX (619-423-0632) or email ([rwest@recon-us.com](mailto:rwest@recon-us.com)) to Nursery Manager Ryan West; \$200 minimum order, 500 plant minimum for delivery. More services will be added at a later time.

See [www.cnpssd.org/horticulture/index.html](http://www.cnpssd.org/horticulture/index.html) for more sources.

### How to Plant

Within 100 feet of the structure (fire zone 2), plan to place shrubs about 15 feet apart. Dig a hole about twice as wide and a little deeper than the container. Do not amend the soil with anything. Remove the plant from the pot, without disturbing the roots. Place in the hole, backfill with the soil and tamp it firmly. Form a well around the plant to hold water. Water as much as you can the same day you put the plants in the ground; fill the wells around the plant with water several times.

Another method to deliver a good dose of water is to drill a small hole in the side of a 5-gallon plastic bucket (available inexpensively from hardware stores), which serves as a moveable drip system. Set the bucket near the plant, and fill the bucket up at least a couple times – the goal is to get a lot of water into the soil, so that the roots can grow deeply. Water again about once a month through the first summer – overhead sprinkling with a hose is OK. Don't install permanent irrigation – after they are established with good root systems, native plants do not need irrigation. Excessive irrigation encourages growth that requires increased maintenance.

### Finally

To learn more, attend the monthly meetings of the San Diego Chapter of the California Native Plant Society, held every 3<sup>rd</sup> Tuesday from 7 to 9 PM at Casa del Prado in Balboa Park, Room 104. Members of CNPS are happy to answer specific questions about your site that cannot be addressed in a general form such as this.

Also contact the San Diego CNPS website at [www.cnpssd.org](http://www.cnpssd.org) or email [info@cnpssd.org](mailto:info@cnpssd.org). Our website has information on horticulture, sources for plants, landscape contractors and more.

*By Carrie Schneider and Bruce Hanson*

**Dedicated to the Preservation of California Native Flora**

**CALIFORNIA NATIVE PLANT SOCIETY** San Diego Chapter

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*Join us at our monthly meetings (free and open to the public) held the third Tuesday of every month*

*(except August and December) at 7:00 pm in Room 101 of the Casa Del Prado in Balboa Park*