



ENVIRONMENTAL INSIGHT

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PARTNERS IN HABITAT RESTORATION: NAKAE & ASSOCIATES

Most of the slopes and hills adjacent to The Toll Roads blend seamlessly into the surrounding landscape and the thriving native plants have been weaned off of supplemental water and fertilizer for decades. This natural landscape is the result of a network of experts and years of planning and preparation. For 20-plus years, Nakae & Associates has been part of the team contributing to the successful restoration of lands protected by the Transportation Corridor Agencies (TCA), including habitat restoration in the San Joaquin Hills adjacent to the 73 Toll Road.

The San Joaquin Hills Transportation Corridor Agency's (73 Toll Road) restoration is among the most successful of TCA's environmental projects – creating 600 acres of revegetation and receiving a Federal Highway Administration Award for Environmental Excellence. Nakae & Associates General Manager Kevin Kirchner said that a team effort was key to the project's success.

“Several elements made it successful, starting with the restoration specifications and customized seed palette created by the project biologist Dr. Margot Griswold and continuing with the adaptive management used throughout the implementation and long-term maintenance,” said Kirchner.

Poor soil quality and the extraordinary effort needed to bring water to some remote sites posed challenges early on. The large, barren slopes had hard, infertile soil and sandstone that made planting difficult, according to Kirchner.



“Even the design of the temporary irrigation was a challenge because the length of the mainline was very long. It took miles and miles of pipe to get water to these plants for the first two to three years,” said Kirchner.

The project team wasn't afraid to take risks with innovative techniques. With Dr. Griswold's encouragement, the team rototilled mycorrhizal inoculum, a beneficial fungi that encourages plants' vigorous growth, into the hydroseeding application. It was a then-untested way that wound up being a tremendous success. Kirchner recalled that the conventional wisdom at the time was that mycorrhizae had to be rototilled into the soil to keep UV light from killing it. Dr. Griswold had the idea to add it as a first step to the hydroseed mix, then follow that application with another spray of fiber. The technique worked, not just on that project but on many others since. Now the technique is used regularly.

TCA used adaptive management practices that allowed changes during the design and build process to be effective within actual on-the-ground project conditions. The adaptive approach worked.

“Today, you can drive the project site and hardly find any weeds at all. It's totally self-sustaining, and no longer requires any maintenance or water other than that provided by rainfall,” said Kirchner.

NATURAL BEAUTIES GREAT FOR THE HOME GARDEN

Every year, we see more interest from individuals and families in how they can bring more native plants into their gardens and home landscapes. Nakae & Associates' Kevin Kirchner picks six California native plants that deserve a place in your corner of paradise.



Coast sunflower: *Encelia californica*

Medium-sized evergreen shrub with deep green leaves and yellow daisy-like flowers with dark centers. Flourishes in sun and grows about three to five feet tall and wide.

Photo by Curtis Clark, CC BY-SA 2.5



California fuchsia: *Epilobium canum*

Hummingbirds flock to this low-growing perennial plant with striking red flowers that appear in summer. Thrives in sunny spots with well-drained soil.

Photo by Stan Shebs, CC BY-SA 3.0



Big pod ceanothus: *Ceanothus megacarpus*

This California lilac features long sprays of white flowers with small dark green foliage. Great for erosion control with a long blooming season.

Photo by John Rusk, CC BY 2.0



White sage: *Salvia apiana*

Silver-white leaves, spicy scent and dramatic sweeping flower stalks make this a garden favorite. Loves sunny spots and grows to be about three to four feet tall and four to five feet wide.

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Coffeeberry: *Rhamnus Californica*

Leathery evergreen leaves are dotted with tiny yellow-green flowers in spring and red or black berries in the fall. Takes full sun to partial shade.

Photo by Bri Weldon, CC BY 2.0



Blue sage: *Salvia clevelandii*

Blue flowers bring beauty and a pleasant spicy scent in spring amid pale green leaves. Takes full sun and thrives on slopes in well-drained soil.

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TheTollRoads.com

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