

Western Ecological Research Center <http://www.werc.usgs.gov>

## Rare Plants in Channel Islands National Park

Eight islands lie off the coast of southern California, between Point Conception and the U.S.–Mexico border. The northernmost five islands (Anacapa, Santa Cruz, Santa Rosa, San Miguel, and Santa Barbara) make up Channel Islands National Park. The islands are undeveloped and preserved for conservation, interpretation, and low-impact recreation.

Many of the native plants found on the islands occur on the adjacent mainland. However, the islands are also home to endemic plants, or those found nowhere else in the world. Some of these plants developed on the islands from ancestors that floated across the channel and became separated from their mainland relatives. Others represent species that were once more widespread but now find suitable habitats only on the islands.

Each island has a slightly different species list, determined in part by distance from the mainland, size, and geology. Scientists have documented 775 plant taxa (including species, subspecies, and varieties) on the five park islands. Endemic species account for 75 taxa, nearly ten percent of the total park flora. Fifty-four of the endemics occur on more than one island; 21 are restricted to a single island.



Hoffmann's slender-flowered gilia, a Santa Rosa Island endemic plant threatened by conversion of dune scrub habitat to grassland. Photo: K. McEachern.

### Primary Areas of Research Support:

- Analyses of distribution and abundance
- Long-term population demographic monitoring and modelling
- Plant community trend analyses
- Field experiments

The Chumash Indians used the largest of the Channel Islands for several thousand years, and each island was used as a ranch for the production of wool and meat over the last 200 years. Chumash activities may have affected the abundance of certain plants at times, but the native vegetation remained intact. Ranching, on the other hand, changed the land cover of large areas from native scrub to grasslands dominated by alien annual grasses. This conversion of the vegetation from one type to another has had grave consequences for some of the island endemics, which depend upon habitats no longer intact. Slightly more than one-quarter of the 775 plants on the islands are alien species, not native to California or the islands. Sixteen taxa are thought to be lost from the islands, 14 are listed as federally endangered or threatened, and 74 more are considered rare or of special concern in California.

The USGS rare-plant research program at the Channel Islands focuses on understanding constraints placed on plant population growth in such altered habitats. Through field experiments with the rare plants, USGS scientists are developing ways to restore components of the native ecosystems to benefit many species affected by habitat degradation. Ultimately, recovery is likely to be most successful when island ecosystems are returned to a more native condition and the context for rare-plant population growth is restored.

### For more information, contact:

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