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Second Chances

Rich Stallcup

Habitat restoration is the most encouraging environmental practice humans have adopted since the notion of parks and preserves a century ago. Successful rebuilding of natural and native ecosystems is like rebirthing a battered and tired world. It is the rare second chance that humans have to repair and nurture Earth.

Enhancing wildlife populations through habitat restoration has become priority business for many government agencies and conservation-based organizations. PRBO is leading the way in developing several techniques.

In some situations, restoration is a huge undertaking, involving much time, money, and energy. In others, it doesn't take much more than careful thought, and love. Native plants will aggressively revegetate, given the right chance, after non-native, invasive vegetation is thoroughly removed. Willows and sedges spread and thrive, once denuded streams or broader wetlands are fenced in from grazing animals. Many salt marsh plants will reappear on their own within months, once hydrated with bay water—although in San Francisco Bay the presence of exotic invasive species makes active management necessary for restoration to succeed. Where restorable land is large (like acres of iceplant, broom, or pampas grass), large equipment may need to be used. Bulldozers are very effective removers of shallow-rooted plants. What took it out can bring it back.

In fact, restoration jobs large and small demand monitoring and maintenance, some (like growing oaks) for years. Active, conscious management efforts,

Once drained, dry, and empty, Rush Creek Marsh on northern San Francisco Bay is now flooded with water and with birds (egrets, gulls, and Black-necked Stilts in this photo).



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incorporating the results of ongoing research such as PRBO's, must be sustained over time in order for restoration to succeed. This can even include management of artificial habitats, such as the salt ponds in South San Francisco Bay, as part of the restoration mix.

The presence of native birds is often the signal that restoration is working. In the Presidio of San Francisco, devastated populations of California Quail, Nuttall's White-crowned Sparrows, and others have responded favorably to recent restoration of dune and coastal scrub habitats. At Crissy Field, what had been a bayfill parking lot is now a tidal estuary abounding with waterbirds. Black and Clapper Rails promptly move into renewed habitats on San Francisco Bay.

Understory riparian breeders like Swainson's Thrush, Wilson's and Orange-crowned Warblers, and Song Sparrows appear shortly, as if by magic, after willows are started along damaged streams. It takes years to grow alders and "tree" willows, sufficient to shelter nesting

Warbling Vireos and Black-headed Grosbeaks in mid-level riparian habitat, and decades for high-canopy riparian dwellers like Yellow Warbler—so we better get going *now*. Any successful riparian recovery will be foraged by many migrants (MacGillivray's Warbler, Cassin's Vireo) and winterers (Ruby-crowned Kinglet, Townsend's Warbler, Fox Sparrow).

Plant Locally—Plan Globally. Here in the U.S. we are making gigantic strides toward reversing wrongs committed against natural landscapes, bringing back ecosystems that were earlier ravaged by human activity. What if these practices became routine in conservation thinking? What if, through economic and political positivity, they became a reality in countries and on continents where hope has been lost? *It is possible.* We and future generations have the technology and energy to restore green-and-blue Earth.

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