

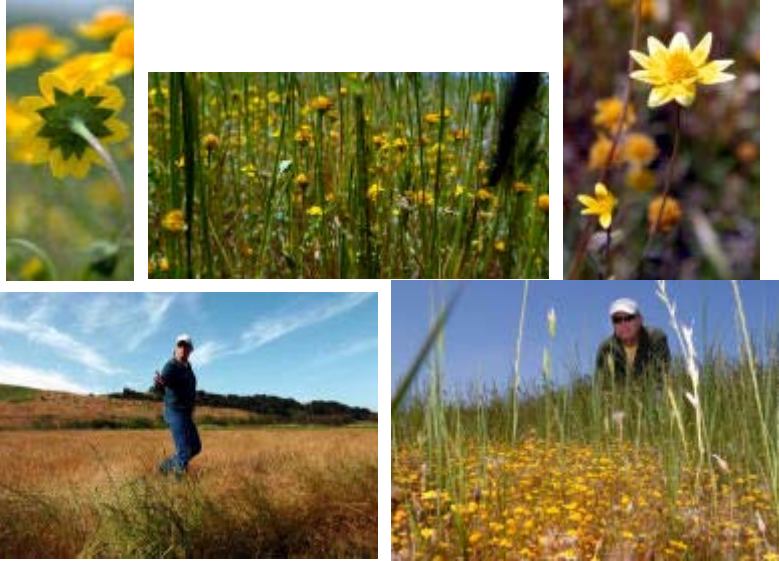
Cow's hoofs and healthy appetite help bring back endangered Contra Costa goldfields

By Denis Cuff

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HERCULES -- Bring on the cows. Save the rare flowers.

An endangered yellow wildflower that a decade ago had dwindled to just 30 plants in its last Contra Costa County stronghold is rebounding with the help of cattle grazing.

When the cows eat the right stuff at the right time, they open up opportunities for the Contra Costa goldfields to germinate in a preserve of seasonal wetlands along Highway 4 east of Hercules.

"Cattle grazing is a big part of the success story in the comeback of the Contra Costa goldfields," said Linus Eukel, executive director of the Muir Heritage Land Trust, a conservation group that manages the Hercules preserve and leads wildflower hikes there in the spring.

Botanists counted 6,972 goldfields during April and May this year in the preserve along Rodeo Creek, and counted 5,271 plants in 2010. The blooming season wound down in the past two weeks.

The Contra Costa goldfields, a member of the aster family, has dime-size flowers that create brilliant yellow natural carpets.

"They are gorgeous," said Ellen Dean, curator of the UC Davis center for plant diversity.

Loss of habitat brought the wildflower, known as *Lasthenia conjugens* to scientists, to the brink of extinction. In 1997, the federal government listed it as endangered.

Farmers and developers drained and either paved over or plowed up most of the goldfields' specialized habitat in vernal ponds and depressions in a range stretching from Santa Barbara to Mendocino counties.

"The plants have to germinate under certain conditions in these seasonal pools of water," Dean said.

To prosper, the plant needs pools that get wet in the winter but dry out in the spring. Without those special conditions, the plant can't survive.

Development wiped out goldfields in Concord, the place in Contra Costa County where the plant was first identified and named, said John Vollmar, a botanist who has studied the flower.

The goldfields survived in perhaps 20 places in eight counties, including Contra Costa, Alameda and Solano, the U.S. Fish and Wildlife Service said in a 2008 report.

Development isn't the only threat to the flower.

Non-native European grasses that took over much of California's landscape are crowding out and choking off openings for the goldfields to grow, botanists said.

The grasses were smothering the goldfields in the Hercules preserve, which Caltrans created to offset environmental damage caused by its road and freeway building in other areas.

One contractor hired by Caltrans to operate the preserve tried mowing the grasses without much success, Eukel said.

The Muir Heritage Land Trust took over management of the preserve in 2002, and with a \$200,000 maintenance fund contributed by the Contra Costa Transportation Authority, tried ways to help the plants.

Cattle worked best. The livestock munched the grasses, and their hoofs gouged little divots that trapped rain water to help germinate wildflower seeds, Eukel said.

Another natural ally helped. A solitary type of wild bee that builds burrows in nearby dry land flies in and pollinates the goldfields.

Over time, the Contra Costa goldfields population in the Hercules preserve has grown, with the exception of the drought year of 2007 when just three flowers were counted.

For a flower long damaged by human activity, it might sound odd that grazing would help bring them back, said Vollmar, the botanist.

"It seems funny, but grazing has been effective in managing areas affected by the introduction of these non-native grasses," said Vollmar, founder of Vollmar Consultants in Berkeley.

Before Europeans brought their cattle and grasses to the New World, California had bunch grasses to leave space for the goldfields to grow in, and large tule elk to churn up the wetland soil, Vollmar said.

"With the goldfields found in so few places," Vollmar said, "it's very significant that it's doing well in the Hercules preserve."