

ALL FOR AN

Graniterock constructs
habitat for the endangered
red-legged frog

AMPHIBIAN



By **ROBIN MUSITELLI**
Sentinel staff writer

Animals

SANTA CRUZ

MINE IT AND they will come, says Jim West. Graniterock Co. mined, and dug ponds to wash the sand it quarried north of Santa Cruz.

So what happened? The elusive red-legged frogs, so rare that they're on the federal endangered species list, moved in, says West, who is Graniterock's director of government affairs.

Now, instead of filling the ponds as originally planned, Graniterock is making more frog ponds — specially designed, dug and landscaped — to help the frog population leap back to recovery.

"It was a completely unintended consequence," admits West, relishing the irony of a strip-mining operation being the salvation of an endangered species.

"We created some of the finest frog breeding areas out of complete ignorance."

Consider, for instance, the 42-inch pipeline under Highway 1, across

from Wilder Ranch State Park. Graniterock installed it years ago to convey sand from the quarry, under the highway to railroad cars.

The pipeline is no longer used to move sand. Now it's a frog freeway, an underground passage which keeps the frogs from getting squished while trying to cross the highway. Another unintended consequence, West says.

Graniterock's frog consciousness is an outcome of the status bestowed in 1996, when the federal government designated it a threatened species.

4-11-99
Graniterock's Jim West and biologist Dana Bland survey one of the ponds the company created near Wilder Ranch for the endangered red-legged frog.

Dan Coyro/Sentinel

Please see FROGS — PAGE A8

Frogs

Continued from Page A1

Graniterock's plans to turn the quarry into a recreational vehicle park had just been blown apart by opponents who didn't want coastal property turned into a parking lot for Winnebagos.

On the rebound, Graniterock decided to resume quarrying operations, which had idled in 1990, on its 312-acre property by Wilder Ranch State Park.

The red-legged frog leaped into the picture during debate over the RV park, when frogs were found nearby, dead on Highway 1, and biologists speculated that the red-legged were in old ponds on the property.

As a condition of mining 3 million tons of sand over 15 years, Graniterock had to plan conservation measures for the frog, the first habitat conservation plan undertaken for the red-legged frog in the county. The planning and approval process took two years, and has cost up to \$500,000, West estimated.

All this, of course, is for the celebrated jumping frog immortalized by Mark Twain in his story, "The Notorious Jumping Frog of Calaveras County." Lore has it that the frog caught in a swamp near Angels Camp, was a red-legged frog.

The biggest frog native to California, the red-legged frog's low staccato grunt used to be heard from Marin County to Baja California, Mexico and inland through the Central Valley.

The fat red-hind legs that propelled the frog in Twain's story soon proved to be a liability for the species.

By the turn of the 20th century, biologists estimate that some 80,000 frogs a year were being killed for their tasty legs. The females, being larger, were especially prized.

At the same time, the red-legged frogs were being devoured, their habitat in the Central Valley was being transformed from a large wetland of marshes into an agricultural region of fields.

The double whammy was rough on the frogs. Their numbers plunged.

Then came the next big blow. After the red-legged frogs were eaten



Dan Coyro/Sentinel photos

Graniterock's frog ponds are fenced off so the endangered amphibians aren't disturbed.

As a condition of mining 3 million tons of sand over 15 years, Graniterock had to plan conservation measures for the frog.

into scarcity, they were replaced with a tasty newcomer imported from the east — bullfrogs.

Bullfrogs were better adapted to the new farmlands than the red-legs, and also took to the giant reservoirs that were being filled in the Central Valley. They could withstand higher temperatures, lay more eggs. Worst of all, they ate red-legged frogs.

There were other problems for the lowly red-legged amphibian. Road-building put silt in their creeks and ponds. Livestock grazed away streamside vegetation and stomped the banks into mud. Pollution spoiled the clean water they needed.

By the 1990s, the frog had disappeared from 70 percent of its original range, according to biologist

Dana Bland who is overseeing Graniterock's frog plan.

The species remains only in pockets in 240 stream drainages in the coastal mountains of Central California.

Bland estimates that largest frog population is in Pescadero Marsh on the San Mateo County coast.

The frogs at Graniterock's Wilder quarry comprise a "substantial" population, she says. Similar populations can be found at Elkhorn Slough, the Bonny Doon Quarry and in Carmel Valley, according to Bland.

Frogland at Wilder quarry is on 10.5 acres behind a barbed wire fence where Winnebagos were once envisioned to park. There are seven frog ponds now and plans for five more.

The most recent frog subdivision is a pond dug last fall in accordance with Bland's instructions.

There's an island in the middle with up to six feet of deep water surrounding it. That provides refuge from raccoons. The sides of the pond are steep and sheltered with willows to keep predators away and provide hiding places for the frogs.

The sides of the ponds are landscaped with the kinds of native water plants frogs like — arroyo willows and tules and spikerush. Non-native plants, such as French broom and pampas grass, had to be pulled. Chemical herbicides are forbidden, of course.

Telephone poles near the pond had to be moved to eliminate an easy perch that was being used by frog hunters. "Birds of prey were sitting on the telephone poles waiting for lunch," West explains.

The quarry access road was rerouted to accommodate the frogs. And a two-foot high "frog fence" has been installed to keep the frogs from getting on the quarry access road. A large culvert on the property is being replaced with a more frog-friendly bridge.

Bullfrogs, the red-legged frog's nemesis, don't get treated as well.

Graniterock is required to "eliminate" the bullfrogs, and non-native fish that eat the red-legged frog larvae. Biologists can net them, spear them with gigs or shoot them.

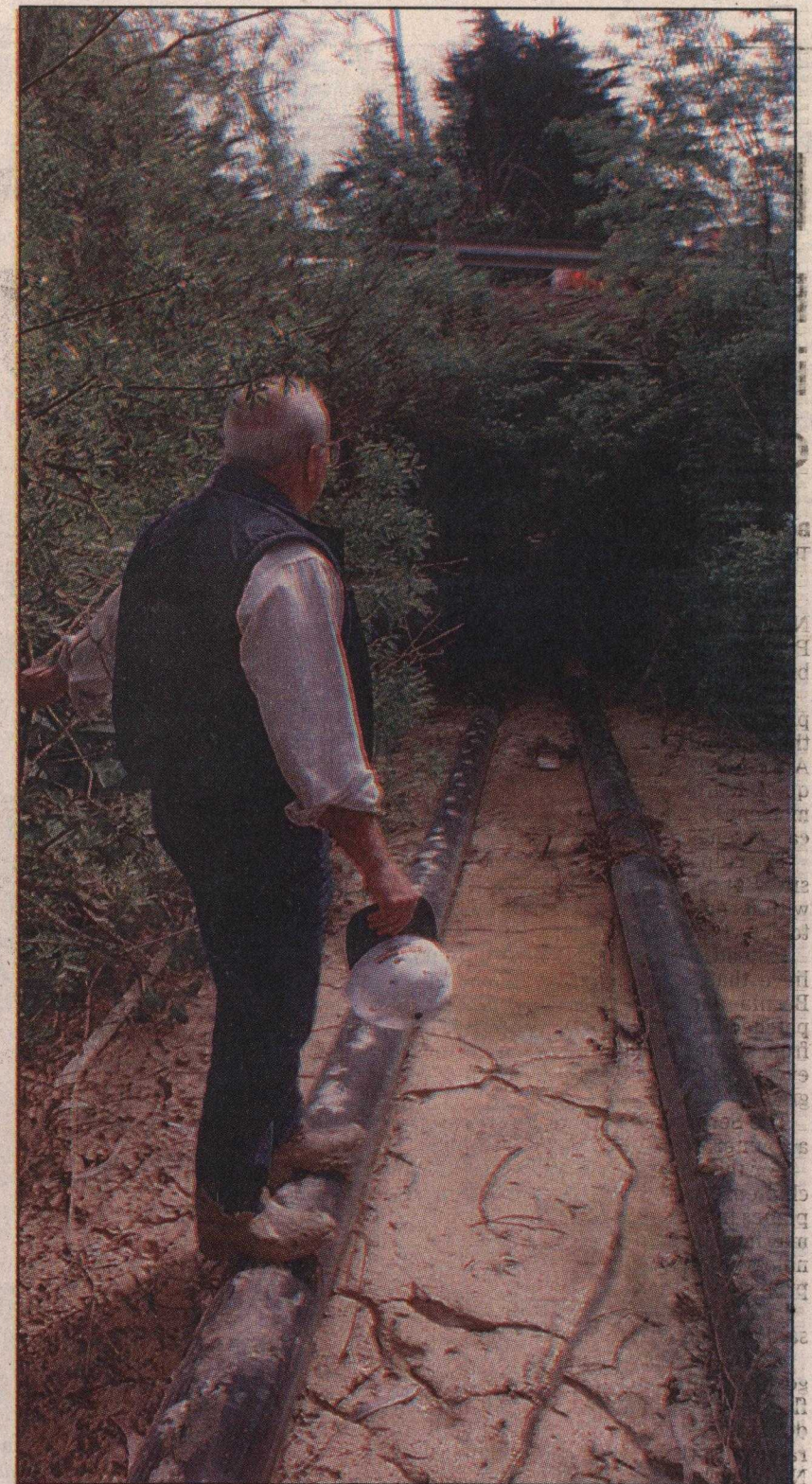
They can also dry them up. Last fall, Graniterock drained the ponds for a month when bullfrog tadpoles were present but most of the red-legged frog tadpoles had metamorphosed.

Bland estimates that the habitat conservation plan will take another two to three years to complete.

Graniterock expects to be done mining the property in 15 years. But the frog land will be maintained in perpetuity using interest from a \$20,000 fund that Graniterock has established, West said. The 10.5 acres will be donated to a conservation group.

Bland predicts that the red-legged frog population will never return to its historic highs because so much of its habitat has been lost.

But, if all goes as expected, the population at the Wilder quarry should be hopping.



Graniterock's Jim West inspects the pipeline under Highway 1 across from Wilder Ranch State Park. Graniterock installed it years ago to convey sand from the quarry, under the highway to railroad cars. Now, it allows endangered frogs to cross the highway without getting squished.