

ENDANGERED SPECIES

Colorful Bay Area denizen slithering away

'Beautiful serpent' suffering effects of urbanization

Jane Kay, Chronicle Environment Writer

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Earlier this month, Alison Willy took her 10-year-old daughter, Sarah, on an unusual California vacation trip, a search for the colorful San Francisco garter snake and other rare animals such as the Steller sea lion and the marbled murrelet.

"I wanted her to see these animals before they go extinct," said Willy, a senior biologist at the U.S. Fish and Wildlife Service.

On the trail of the critically endangered snake, Willy and her daughter headed for Año Nuevo State Park, on the San Mateo County coast. But Willy couldn't find a single San Francisco garter snake to show her daughter. She sadly told Sarah that only two decades before, as a graduate student at California State Hayward, she had surveyed a thriving population right there.

"When we walked around ponds in 1983, we could see and hear the snakes," Willy said. "We could watch them cross the trail in front of us and go down to the water."

As the Bay Area celebrates the 34th Earth Day today, the U.S. Fish and Wildlife Service is making an unusual plea: It is asking residents from San Francisco to Santa Cruz to help find the remaining population of the endangered snake and to take precautions against its further demise.

If the public doesn't step up, the snake may disappear forever, warned Harry McQuillen, chief of the endangered species recovery branch in the Sacramento office of Fish and Wildlife.

"There's no reason that this most beautiful snake in North America, named after one of the most famous cities in the world, should go extinct," said McQuillen, who took over his post in November. The snake tops his list of 115 animals and plants that need help in avoiding extinction.

"We hope if people see a San Francisco garter snake on one of their walks or in their yards that they'll give us a call," McQuillen said. "We cannot recover this snake without public help." The number is (916) 414-6600.

He also made a plea for people to leave the snake alone if they find one. "Sometimes people are afraid of snakes," he said. "They'll swerve in their vehicles purposefully to hit it or smack it with a shovel because they think it'll bite their child. This snake is absolutely harmless."

Called "the most beautiful serpent in North America" by noted herpetologist Robert Stebbins, the slender 3-foot snake has an orange head, bright greenish-blue belly and, down its back, a greenish-yellow strip edged in black and bordered by red and black stripes.

Females bear 16 or so live babies in July or August. They eat threatened California red-legged frogs, Pacific tree frogs, western toads, mosquito and other fish, worms, newts and salamanders. They bask in the sun by day and go into crevices and burrows of small rodents at night.

The snake is suffering the effects of urbanization: the filling of wetlands, encroachment of shopping malls, the building of roads and contaminants from automotive oil and garden chemicals. Poaching by black-market collectors and the arrival of non-native bullfrogs, which eat both the snake and its food, the celebrated red-legged frog, have added to the snake's decline.

Federal biologists don't know how many are left, but they believe the numbers are critically low. The Fish and Wildlife Service has commissioned a population survey so it can set aside habitat to link small populations.

The snake once lived in the uplands of freshwater seasonal wetlands formed in "sag" ponds created by sagging earth along the San Andreas fault on the Peninsula.

Now, it survives in only a few locations: Pescadero Marsh Natural Preserve, Año Nuevo State Reserve, Laguna Salada in Pacifica's Sharp Park Golf Course and the San Francisco State Fish and Game Refuge near Burlingame. The snake likes habitat west of Crystal Springs and west of Highway 101 and near the bay at the site of the San Francisco International Airport.

The San Francisco serpent, a subspecies of the common garter snake, was first listed in 1967 under a law that predated the Endangered Species Act of 1973. The state listed it as endangered in 1971. In 1999, Fish and Wildlife declared that the species was in decline.

At the time of the listing under the old law, there was no requirement to designate so-called critical habitat -- land essential for recovery. Without that protection, much development went ahead in snake territory without consultation with Fish and Wildlife.

Fish and Wildlife biologists say a series of developments took a toll on the snake's population:

-- In the 1960s, the snakes lost prime habitat during the development of Skyline ridge in San Mateo County, particularly at the site of Skyline College, with the filling of the ponds along the fault.

-- In the 1980s, a malfunctioning tide gate at Cupid's Row canal at the airport allowed salt water to enter and kill California red-legged frog tadpoles and eggs, food for the snake. Improper dredging of the canals also smothered the snakes and their food supply.

-- Construction of the golf course in Sharp Park destroyed pond uplands and wiped out habitat in the 1930s. Over the years, sea water and sand would encroach into Laguna Salada, chasing out frogs that the snake eats.

-- In Pacifica, a landowner tore up upland habitat and filled two quarry ponds in the 1980s.

-- Filling and draining quarry ponds and flooding the reservoir at Crystal Springs over two decades by the city of San Francisco destroyed habitat.

In recent years, airport and Bay Area Rapid Transit officials have worked with government scientists to protect the snakes and frogs during expansion. They spent thousands of dollars to modify construction to avoid the animals. But at least four snakes were killed during the BART extension, and habitat was demolished.

In its permit to build in the habitat, the airport agreed to aid the reptile on its 180 acres west of Highway 101. Little has been done thus far. The airport is surveying for snakes and sending reports to Fish and Wildlife, and has promised to expand freshwater wetlands "in the next few years," said Nixon Lam, an airport planner.

Two separate airport surveys showed a sharp decline, from 635 snakes found in 1985 to 179 with more intensive trapping in a 1991 survey by Fish and Wildlife biologist Sheila Larsen. Starting in 2000, two years of trapping to remove snakes during construction turned up only a few dozen.

Larsen said she has hope that the snake can be saved, but she cautioned about the prospect of extinction.

"Losing a species has an unknown effect on all other species," she said. "When you start ripping one string in the web of life, and you keep doing it again and again, things fall apart. And you don't know how it's going to fall apart, or when it's going to fall apart."

Honored a decade ago by a U.S. postal stamp commemorating endangered species, the snake is in trouble because Fish and Wildlife didn't protect it, said Peter Galvin, California director of the Center for Biological Diversity.

"This incredibly beautiful creature has been a denizen of the Bay Area hundreds of years before any European people came to the shores," said

Galvin. "Look how fast it's disappeared in 250 years. It's on the verge of extinction. Maybe the last place we're going to see it is on a postage stamp."

San Francisco garter snake

This endangered snake lives in wetlands and grasslands near water that supports large frog populations.

-- Description: It has a broad greenish-yellow strip running the length of its back, bordered in black and flanked on either side by red and black stripes. The snake's head is orange and its belly is blue-green.

-- Status: Endangered without critical habitat.

-- Present habitat: Limited to small areas within San Mateo County from San Francisco County line south along the foothills of the Santa Cruz Mountains to Point Año Nuevo.

-- Threats: Destruction of habitat by development. Source: thinkquest.org