



Kurt Ellison

Development surrounds much of Struve Slough on the east side of Main Street near Green Valley Road.

Watsonville's sloughs

Most people unaware of precious resource

By CHELA ZABIN
STAFF WRITER

Jerry Busch is worried about things that most people don't even think about — like what's not living in the mud in South County salt marshes.

That's of concern to Busch, a member of the Watsonville Wetlands Watch, because species diversity — the number of types of plants and animals — is one indication of how healthy an ecological system is.

"Just from personal observation, I've found really low diversity of invertebrates in the mud," he said.

That worries Busch because it may mean the slough system is not in good shape.

As crude a measure as Busch's informal mud-viewing might be, it's just about as good as any when it comes to trying to evaluate the state of the freshwater slough system that runs through South Santa Cruz County, including large portions of Watsonville, ultimately connecting to saltwater marshes near the coast. Because saltwater sloughs are more sensitive than freshwater sloughs, what Busch is seeing there may be a good indicator of problems fur-

ther upstream. He's also concerned about the effects on wildlife further up the food chain.

While it's nearly impossible to live in Watsonville and not notice the sloughs — portions of which can be seen on either

side of Main Street from Green Valley Road to St. Patrick's Church, and from the freeway bypass, Harkins Slough and Lee Roads — solid information about them is as elusive as the ever-changing sloughs themselves. No one, apparently, has

complete and up-to-date information about how healthy — or how ill — the sloughs are.

It's even difficult to find a map showing exactly where they lie. Sloughs grow and shrink with the rainfall and change as the land surrounding them changes. And as environmentalists and developers clash over their protection, defining what is and isn't slough becomes a political as well as a scientific matter.

In 1986, when Busch wrote his senior thesis at UC-Santa Cruz on the system, he estimated it covered 800 acres, 250 of which were being farmed or grazed.

The South County slough system is recognized on the local, state and federal levels as a significant and unique environment, and is part of the "Pacific Flyway," the path that stretches from Siberia to South America and is used by migrating birds as they make their yearly treks between their summer and winter homes.

Several rare and endangered species are considered dependent on wetlands. Portions of the Watsonville Slough system have been identified by state and federal agencies interested in purchasing and protecting them — whenever the funding might become available.

Despite that interest, and a host of city, county, state and

Complex system waxes and wanes

There are five fresh-water sloughs that make up the Watsonville Slough system, all of which eventually converge at Watsonville Slough, which connects to the Pajaro River and the Monterey Bay.

Because sloughs are somewhat seasonal — expanding and contracting with the rainfall — and because defining what is and isn't a slough is a political as well as scientific question, there's some disagreement on exactly where they lie. Some of the ways sloughs are defined include how many days they are covered with water and what types of soils and plants they contain.

The slough system covers approximately 800 acres in South Santa Cruz County.

Harkins Slough is generally considered to reach as far north as Highway 1. It crosses Harkins Slough Road, merges with Watsonville Slough and heads south and west to Watsonville Slough.

Struve Slough, which can be easily seen from Main Street between Green Valley Road and Clifford Avenue, continues on the other side of Main Street and runs under Harkins Slough Road. It has a western branch off Harkins Slough Road on the other side of Highway 1. The eastern arm of Struve Slough lies on the northwestern and central portion of the land where developer Jerome J. Lohr has proposed to build a 900-unit project, The Villages.

Watsonville Slough, a part of which also lies on the Villages parcel, on the southern edge, stretches north and east from the Villages parcel, surfacing near Main Street across from Arthur Road and continuing on the other side in the area of the Portola Heights Mobile Home Park. In some places, the slough is broad and highly vegetated, in others it is channeled and used as an agricultural drainage ditch. It crosses under Highway

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Naturalist Jerry Busch at state Fish and Game property overlooking Struve Slough.

SLOUGHS

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federal regulations of development around the sloughs, no one is really keeping an eye on how they're doing, individually or as part of the total local watershed.

Tests carried out in Watsonville Slough in the 1980s found high levels of pesticides, including DDT, and other carcinogenic substances. Various environmental impact reports written over the last 20 years have indicated low species diversity, a greater abundance of plants that can tolerate poor water quality and a high number of non-native plants.

But water quality is not routinely checked. Species types and numbers aren't being formally watched. There is no overall plan for preservation and restoration.

Max Puckett, environmental program manager at the As-

sociation of Monterey Bay Area Governments, said he has been trying to get funds together for a study and management plan for the sloughs. But budgets are tight, he said, and there's been little interest.

Historically, wetland areas have not been considered worth preserving, and conversion to other uses, like agriculture, was encouraged. Many sloughs were filled, then built on, or put into ditches for drainage, or mined for peat. John Zentner, a biologist who specializes in land restoration and who has been hired by a local developer, estimates that 75 percent of sloughs along the California coast have been significantly degraded, and as a result "California has become the weak link in the chain" of the Pacific Flyway.

Environmentalists estimate that 90 percent of the state's wetlands have been lost over the last 100 to 150 years.

Wetlands have only recently gained recognition as important feeding and breeding grounds

for a wide variety of animals and as resting places for migrating birds.

Sloughs are, in fact, the most "productive" of all habitats.

"Wetland habitat," said Bruce Elliott, a biologist with the state Department of Fish and Game, "has a greater variety of wildlife relative to a unit of size of any other habitat type."

Zentner, who has restored wetlands throughout California, Nevada and Oregon, said Watsonville's sloughs aren't in as bad shape as some he has seen.

"The upper part of Watsonville Slough is in great shape," he said. "The eastern portion of Struve Slough, the part we call Dog Leg Slough, is in pretty bad shape."

The worst part is a branch of lower Watsonville Slough, which is nothing more than an agricultural drainage ditch about 10 feet across.

The regulatory agencies have placed their emphasis on making sure that more sloughs

aren't lost. Both the city and the county require that developers donate sloughs and a portion of the area surrounding the sloughs to them. The city of Watsonville, for example, has about 97 acres of sloughs permanently protected as open space.

The city and county also require that any building near the sloughs be set back from the slough, and generally place a number of conditions on development to try to cut back on the negative effects construction and human habitation can have on the areas.

But there are no regulations that can keep agricultural pesticides and dirt from blowing or washing into the sloughs, and older storm drains dump run-off from city streets into them every time it rains. There don't seem to be enough policing agencies to keep people from dumping trash or riding off-road vehicles around the sloughs, or to keep dogs, cats and children out.

How valuable is slough habitat?

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1 and runs to the Pajaro River and the bay. At Pajaro Dunes, Watsonville Slough becomes tidal and contains 40 acres of salt marsh.

Hanson Slough, on Harkins Slough Road past Lee Road, and Gallighan Slough, which is near Buena Vista Drive to the west of Harkins Slough, are smaller sloughs.

The quality of the system varies from slough to slough and in different parts of the larger sloughs.

"The upper part of Watsonville Slough is in great shape, over by Lee Road. That's really nice," said biologist John Zentner, who has been hired by property owner Lohr to restore the slough on the Villages property.

Zentner bases his evaluation on what type of vegetation can be found in the different sloughs and the surrounding areas. In his estimation, the best parts of the slough system are surrounded by native grasslands and oaks.

"Much of Struve Slough has been farmed but is not in really bad shape ... the east part of Struve Slough, the part we call Dog Leg Slough, is in pretty bad shape," he said. "The worst is a part of lower Watsonville Slough adjacent to the property that's been put into a drainage ditch."

Zentner said there are portions of the slough system that are in good enough shape to be used as models for the restoration Lohr has planned for Dog Leg Slough and the creation of additional wetlands there.

Environmental impact reports, written for projects in the slough areas over the last 20 years, disagree about whether Watsonville or Struve Slough is in better shape.

"Struve Slough is heavily disturbed and severely degraded as evidenced by the limited quantity and diversity of native plants," a consultant in 1978 wrote in a report for the Green Valley Highlands development.

"The potential impacts on the small finger of the Watsonville Slough are considered more significant because the habitat is more diverse and less disturbed than Struve Slough," Environmental Management Consultants of Monterey wrote in a report for the Console/Schwartz property, adjacent to the Lohr property.

—Chela Zabin

It's often hard to measure the value of natural habitat.

That's true, in part, because of man's limited knowledge of nature's inner workings. We can really only guess about the greater effects of development, elimination of habitat or the extinction of a species.

It's also true because much of what people value about nature is intangible. Natural areas are attractive, relaxing, enjoyable, educational and, for some, even have spiritual and cultural importance.

For Patrick Orozco, an Ohlone Indian leader, the sloughs, and other aspects of the local natural landscape, are an integral part of the culture he and other Native Americans are trying to preserve.

"The animals (that live there) are related to our stories and to the people of the past," he said.

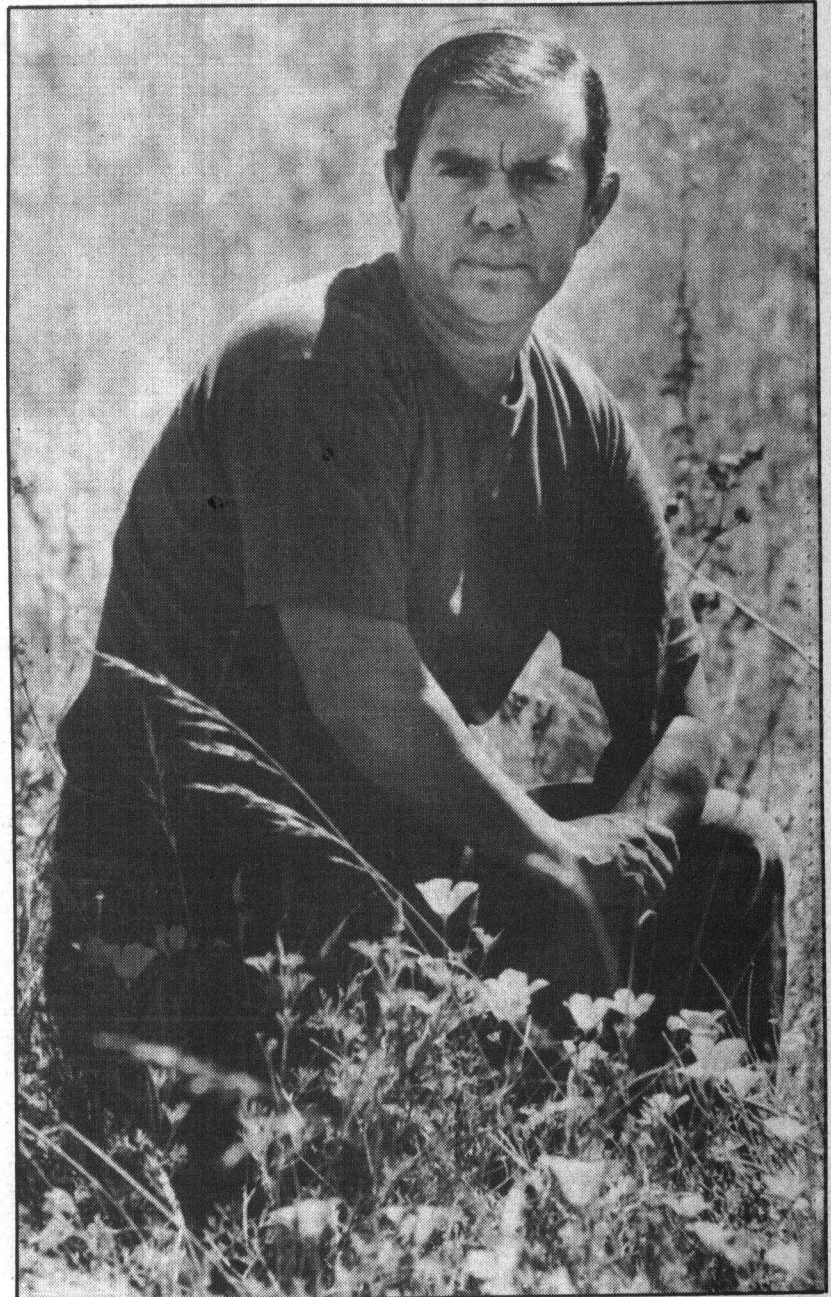
There are, however, some specific, tangible "services" sloughs, in general, provide to the environment and to humans. Here is a short list:

- **Food and habitat.** Wetlands are considered the most productive of all habitats in terms of the amount of plants and animals they contain.

Freshwater sloughs, like those in the Watsonville system, support more wildlife than saltwater sloughs, like Elkhorn Slough. Many species of waterfowl and both saltwater and freshwater fish require wetlands for breeding and nesting, including 20 percent of animals on the federal government's threatened or endangered lists.

Many game animals also depend on wetlands. Wetlands along the West Coast are a crucial part of the Pacific Flyway, a migration route used by many species of birds as they travel between their winter and summer homes. The reduction of birds traveling the flyway has been attributed to loss of coastal land.

In Santa Cruz County, rare and endangered species, including the Santa Cruz long-toed and California tiger salamanders, have been linked to wetlands. Birds listed by the state as "species of special concern" live or hunt on the grasslands around the sloughs, and the endangered Santa Cruz tarplant grows in abundance on a slope near Struve Slough.



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For Native American Patrick Orozco, the sloughs are part of his heritage.

- **Drainage.** In some cases, wetlands can temporarily store runoff and slow the flow of water, reducing flood peaks and the frequency of flooding.

- **Improvement of water quality.** Wetlands, with their vegetation and relatively slow flow, retain pollutants from run-off and other waters running into them, thus protecting, to a certain degree, the waters the sloughs themselves run into. Some types of pollutants can be broken down by biochemical processes in the sloughs, others are buried in the slough mud or taken up in slough plants. In some

areas, wetlands are being experimented with as a natural way of treating sewage effluents.

- **Shoreline erosion control.** Vegetation in wetlands near rivers, lakes and oceans can reduce erosion caused by wind, waves and flooding.

- **Atmospheric functions.** Some scientists believe that large wetlands can help moderate temperatures, provide a source of water to the atmosphere — helping to create rain — and release gases necessary to global atmospheric stability.

—Chela Zabin