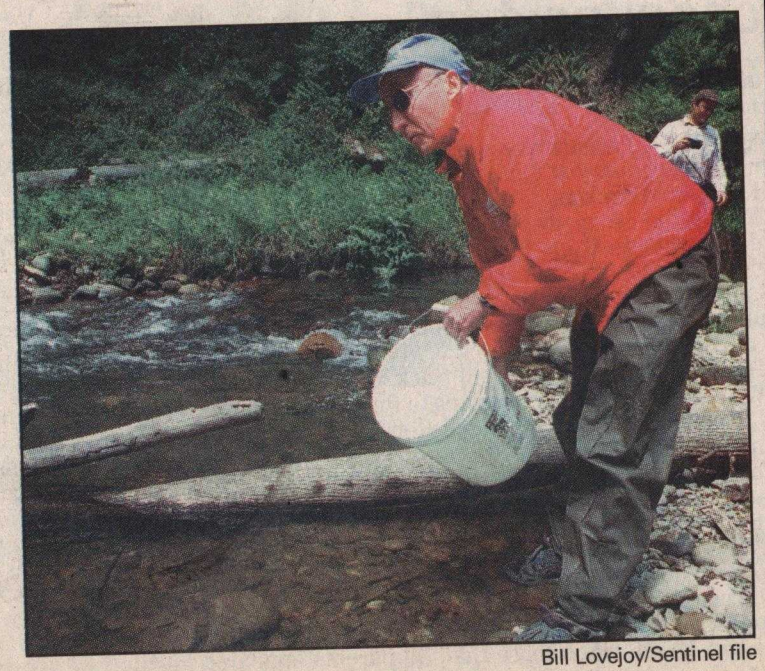
Environmentalists fear hatcheries are draining the

Gene pool

but hatchery officials argue they're saving an endangered species



Bill Lovejoy/Sentinel file

Bill Lovejoy/Sentinel

Larry Wolf, director of the Monterey Bay Trout and Salmon Project, checks on the progress of steelhead fry under the care of the project's hatchery. At top, hatchery volunteer Ephraim Romesberg released salmon fry into Waddell Creek in 1996.

5-17-99

Both sides want to replenish waters on Central Coast, but disagree on how

By ROBIN MUSITELLI
Sentinel staff writer

Fish + Fishing SWANTON

OVER THE NEXT FEW WEEKS, thousands of enthusiastic grade school students will empty cups of wiggling fry into streams — fish from the Monterey Bay Salmon & Trout Project hatchery that the youngsters have nursed in their classrooms.

The students are part of a 150-school effort to restore the steelhead and coho salmon fisheries.

But despite the students' great intentions, a growing group of environmentalists and biologists says the students are unwittingly propagating inferior fish that are endangering native wild ones.

Those on that side of the argument want to see most, if not all, hatcheries shut down.

But Larry Wolf, a director of the Monterey Bay Salmon & Trout Project, says the other side hasn't made its case that hatchery fish are inferior.

"There is no scientific proof," Wolf said. "There is no genetic difference. We're saying, so far, we don't see it."

Since its formation in 1976, the nonprofit Salmon and Trout Project has spawned, reared and released about 2 million chinook and coho salmon and steelhead trout into Central

Please see HATCHERIES — BACK PAGE

City unwittingly helped reduce fish population

By ROBIN MUSITELLI
Sentinel staff writer

Steelhead trout and coho salmon fight for their lives. Attacks from both man and Mother Nature — drought, water diversion, urbanization — have combined with other forces to devastate the species, both of which are protected under the Endangered Species Act.

Then there's the gantlet created by the city of Santa Cruz, something that hydrologist Robert Curry contends has been "devastating" to the fish.

Until a few years ago, city workers bulldozed the mouth of the San Lorenzo River to open

Please see SAN LORENZO — BACK PAGE

Hatcheries

Continued from Page A1

Coast streams and the Pacific Ocean. The fish are raised in tanks at the Big Creek Fish Hatchery, north of Davenport on Big Creek Lumber property.

By national standards, the Big Creek operation is small, helping it to sidestep some of the criticism that environmentalists are lobbing at large-production hatcheries.

Even hatchery critics applaud the educational aspects of the Big Creek facility, where students wade into the streams for an up-close education in environmental issues.

Nevertheless, they contend the product of hatcheries may do more damage than good.

"I call it 'stream heroin,' " said Dave Hope, a resource planner for Santa Cruz County. "It's one of those things that makes you feel good while you're falling apart."

Hope contends that fish raised in hatcheries are not ready for the rigors they will face in the wild and are less likely to survive than their naturally bred cousins.

"Any time you spend nurturing them, they get wimpy and can't survive droughts or predators," he said.

Hatchery fish are more susceptible to disease, which can be passed on to wild fish, and they compete with the native fish for food and space, he said.

The key problem, Hope maintains, is that genetic diversity decreases as the wild population is overwhelmed by hatchery fish.

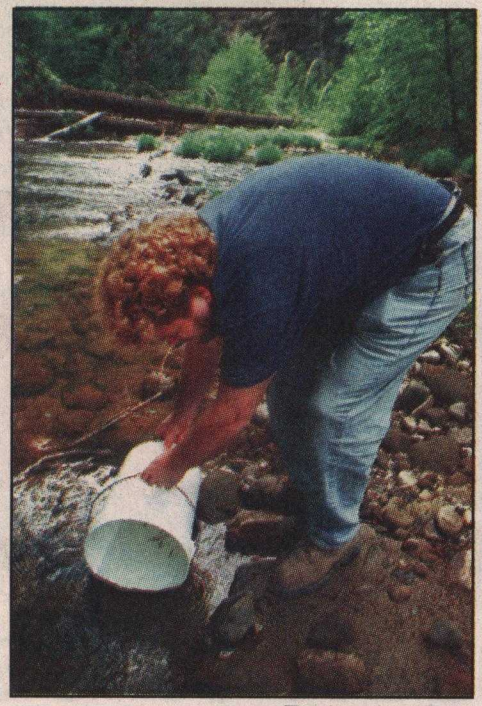
It is that genetic diversity that allows fish to develop a wide range of survival strategies during adverse environmental conditions, and that creates a "race" of fish attuned to conditions in the particular streams where they spawn. Eventually the hatchery fish, by virtue of their numbers, end up wiping out the native run, Hope said.

"Hatcheries have never improved or maintained a run of fish," Hope said. "They've always gone downhill. They absolutely have not even come close to showing signs of sustainability."

The Sierra Club is campaigning to save wild fish by saving their habitat rather than using hatchery fish to restock streams.

"It comes down to this: are you going to save the habitat and wild salmon or are you going to have hatchery salmon?" said Jennifer Witherspoon., who is working on the Sierra Club's Wild Salmon Forever project.

Witherspoon contends hatcheries can be used to restock rivers where fish have become extinct, such as coho in the San Lorenzo River. But basically, "hatcheries



The Associated Press

Hatchery volunteer Dave Hope released salmon fry into Wadell Creek in 1996.

are another human-engineered solution (that) are not going to recover wild populations," she said. "What led to their demise is still the same."

"In some cases, hatcheries can be part of the solution," she said. "But they're not the solution."

Hydrologist Robert Curry said he considers hatcheries "dangerous." Hatcheries and other management efforts, such as bulldozing the mouth of the San Lorenzo, have done more to hurt the fish than well-known culprits such as logging and sedimentation in the river, he said.

Hatchery fish, bred by reproducing one gene pool over and over, displace native fish through competition for spawning places, Curry argued.

"They may reproduce, but the genetic diversity decreases year after year after year," he said.

"The basic problem is dilution. We dilute the gene pool.

Coho salmon, now gone from the San Lorenzo, were specially adapted to withstand the relatively muddy and warm water in Santa Cruz County streams, Curry said. When the local population started to decline, fish were brought in from hatcheries in Oregon and Northern California, where the water is clearer and colder. They weren't as suited to the local streams, but still displaced the native population, Curry said.

Without the hatcheries, there may be too few fish now to restore the wild population, Curry said.

"But we won't know until we try. We are now breeding from a diminished gene pool and every bit of it needs to be maintained. We ought not to have any foreign stock here," Curry said. "We should shut the hatcheries down or at least restrict planting to streams that have no fish in them and no natural returns."

Talk like that is unsettling to Barry Burt, educational coordinator for the Trout & Salmon Project.

"If we hadn't supplemented with hatchery fish, we probably would be looking at extinction now," he said

Burt speculates that there probably isn't much competition between the native and hatchery fish, and says arguments about the pollution of the gene pool are an exaggeration.

Even so, he said, "a polluted gene pool is better than no gene pool at all."

The Big Creek hatchery is unfairly lumped in with "mega" production hatcheries, when it is actually more like a "ponding" operation, Burt said.

The hatchery uses breeding protocols that are models for other hatcheries, hatchery manager Dave Streig said. This year, the hatchery spawned 10 female coho, 11 female steelhead from the San Lorenzo River and three female steelhead from Scott Creek.

Some 49,900 steelhead and 62 coho were planted. As hatcheries go, that's not a lot, Streig said.

"We're supplemental planting. Just putting a few more out there to return to reproduce in the streams. We're not trying to inundate the streams with the progeny of the hatchery stock."

"What we're trying to do is maintain the diversity of the native population," Streig continued. "Our enhancement scheme is to take wild fish, bring them to the hatchery for one generation and then put them out and they have to reproduce in the wild."

At that point, Burt considers the fish "wild."

"If you're stocking and a generation comes back and spawns naturally in the stream, obviously it's not the same gene pool, but is a wild fish," he said.

There are so few fish in the streams that Streig doubts their numbers can bounce back without hatcheries. A drought, another El Niño, more predators or a flood could wipe them out.

"They're saying the fish will recover on their own. Yeah, in about 10,000 years, maybe. Or they may go extinct."

San Lorenzo

Continued from Page A1

the lagoon, rather than wait until it was breached naturally.

If the lagoon wasn't opened, the accumulated water would flood the basement of the Seaside Company's Boardwalk and other downtown businesses and would pond on the beach, said Dan Whatley, operations manager for the city.

The ponded lagoon water had a bad odor, high bacteria counts and was considered a health and safety hazard, Whatley said.

But for the salmon waiting offshore in the ocean, the opening of the river mouth and the release of the smell of the estuary was a signal to start migrating up the river to their spawning grounds, Curry said.

Usually, however, the tributaries where they were headed didn't have enough water at that time of year for the fish.

Predatory sea lions also quickly learned the routine and started picking off the migrating fish for an easy meal. "I think the sea lions actually watch the city's bulldozer trucks unload," Curry said. "I've watched them swim in to watch."

"In the natural course of things, the river mouth might stay closed until, say, Christmas Eve. In the middle of the night, the river mouth would blow out and those fish would migrate in the muddy river under adverse conditions. Not many sea lions would be out there. A lot more of the fish would make it through," Curry said.

Monterey Bay Salmon & Trout project data backs Curry's theory. This year, 40 percent of the fish in the San Lorenzo River had scars and others signs of marine mammal predation, said Larry Wolf, a director of the group.

"And those are the ones that made it through," he said.

The city's practice came under increasing criticism from environmentalists and from the state Coastal Commission.

In 1996, after more than two decades of bulldozing, the city stopped opening the river mouth.

"It was something that didn't seem to be making much sense for us," Whatley said.