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Mission clash: Hatchery salmon releases 'not good science,' Romberg director asserts

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EACH YEAR, scores of children head to Blackie's Pasture for the Tiburon Salmon Institute's annual Kiss & Release festival, turning 1,000 fingerlings loose into Richardson Bay. The institute has also historically worked with United Anglers of Casa Grande — a program at Casa Grande High School in Petaluma — to release tens of thousands more into the bay.

But in a document obtained by The Ark as part of a California Public Records Act request, Karina Nielsen, director of the Romberg Tiburon Center of Environmental Studies, says telling kids that releasing salmon into the bay is helping wild salmon populations is "like telling kids unicorns and mermaids are real."

"It's not good science or good science outreach and education," she says.

In fact, she says, the Tiburon Salmon Institute's practices — if they were done at a larger scale — would actually hurt wild salmon populations.

Is this true?

Fishery biologists say the answer is yes — and no.

In a draft email to a colleague at San Francisco State University, which operates Romberg, Nielsen says the institute's releases are modeled on bad practices that mislead kids into thinking they are helping salmon when they are not.

"What TSI is doing with raising salmon in pens and releasing them into the bay is not consistent with (National Oceanic and Atmospheric Administration) policy. … It works against restoring salmon populations," Nielsen writes.

In another internal memo, she writes: "Hatchery salmon, pen-raised in S.F. Bay, are not wild salmon, will not save wild salmon, and may even harm wild salmon populations. Raising hatchery salmon in pens, away from the streams where they were spawned, enhances the risks of straying, a known risk factor for recovery of wild salmon populations."

For his part, Brooke Halsey, the head of the Tiburon Salmon Institute, questions Nielsen's expertise with fish.

"She's not an ichthyologist," says Halsey, a Tiburon lawyer who has sat on Marin Fish and Wildlife, state Fish and Wildlife and Audubon boards — and Romberg's. "We're not trying to teach science, we're trying to connect kids to fish."

Before Halsey took over the 42-year-old program and renamed it the Tiburon Salmon Institute, the San Francisco Tyee Club — an anglers club — raised salmon at Romberg and released them into the bay to boost fishing stock. He says that while the program still releases hatchery salmon into the bay, under Halsey's direction the institute has refocused on education and conservation. The institute's motto is "Today's Youth for Tomorrow's Salmon."

Fish biologists studying the effects of hatchery salmon on wild populations agree that domestic salmon released into the wild, while they do help boost salmon stocks in general, do not help conserve wild salmon and in fact are having a negative impact on the few that remain.

A collection of 20 studies by leading university scientists around the world, published in the 2012 issue of the Environmental Biology of Fishes scientific journal, says there is increasing evidence that salmon raised in man-made hatcheries can harm wild stocks.

The problem, says Peter Moyle, professor of fish biology at the University of California at Davis and an expert on the effects of hatchery fish on wild populations, is that fish raised domestically are bigger than their smaller, wild cousins.

"These large fish will outcompete the wild fish," he says. "If you release a big slug of fish all at once it will push out the wild ones."

Wild salmon are already struggling to survive because most cannot get back to their home streams to spawn. More than 70 percent of salmon streams lie above man-made dams, Moyle says.

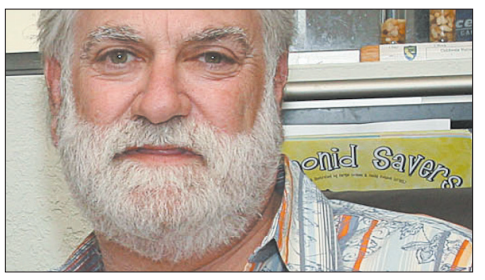
We have become dangerously dependent on hatchery salmon, which now make up a large percentage of worldwide stocks, Moyle says.

Hatchery fish also do not have the genetic diversity of wild salmon, which leaves the population vulnerable to a population-devastating disease. Wild salmon, by contrast, have genetic variations depending on which stream they come from that protect them from diseases in that stream; "straying" fish that spawn in other streams threaten native genetic strains.

Hatchery salmon, because they were raised domestically, have not "imprinted" on a particular home stream. These fish stray, sometimes as far as Japan. Fewer than 1 percent make it back to a river to spawn.

"In my book, it's like telling kids unicorns and mermaids are real."

— Romberg Director Karina Nielsen in an draft email obtained through a public records request



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— Brooke Halsey of the Tiburon Salmon Institute

In fact, in 2013, the California Department of Fish and Wildlife ordered the United Anglers of Casa Grande, where Halsey is a club adviser, to stop raising Chinook salmon at the campus hatchery because of concerns over straying.

Hatchery salmon do, however, have a positive impact overall on salmon stocks, which have been severely depleted by man-made habitat degradation. They are now essential to the $3 billion Pacific salmon commercial fishing industry and help keep salmon on the dinner plate.

"If your goals are to provide fish for fishing, it's something that works," Moyle says. "But it doesn't do much for salmon conservation."

However, he says he doubts the institute itself is harming stocks.

Moyle says private and public hatcheries release 5 billion juvenile salmon each year worldwide. The institute by contrast releases just 10,000. Most of those will probably not even make it out to sea, Moyle says, because they will be eaten by other larger predator fish in the bay.

Halsey admits that only "one or two" of the thousands of smolts released during his popular Kiss & Release festival will return upriver to spawn.

Government hatcheries are working to improve genetic diversity in their domestic hatcheries' stock and help find ways that juvenile salmon can be imprinted with home streams. Halsey says he has been working with state Department of Fish and Wildlife scientists experimenting with transporting fish in bay waters so that they "imprint" and have a better chance of returning home.

Moyle applauds the institute's hands-on approach to educating kids about salmon.

"It isn't a bad thing," he says. "Kids can release these fish and learn about the whole cycle. Some people might say that those kids are learning about the wrong thing, but I think it's important for kids to have a connection to real critters."