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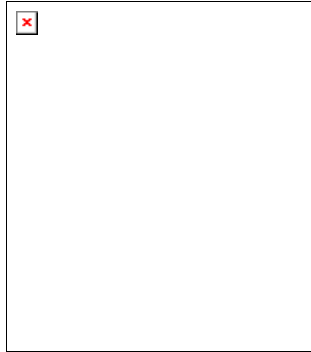
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Bolinás farms cede stream rights to Coho

Jacoba Charles
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Peter Martinelli, of Fresh Run Farms, will irrigate his crops with two storage ponds and a holding tank. Photo by Jacoba Charles.

Three organic farms in Bolinas are collaborating with the Point Reyes National Seashore (PRNS) in an unprecedented effort to cede their summer water rights to Coho salmon. The project moved one step closer to completion on Monday, when the Marin County Community Development Agency finalized the first necessary permit.

"I think this plan is a revolutionary step for the coast of California to provide insurance for agriculture while also protecting fisheries," said Steve Kinsey, president of the Marin County Board of Supervisors, who was an early advocate of the proposed Pine Gulch Enhancement Project. The plan hinges on the construction of several large ponds that would allow them to store enough water for irrigation throughout the dry season.

Fresh Run Farms, Paradise Valley Farm and Star Route Farms currently pump water directly from Pine Gulch Creek to irrigate their crops. This leads to dramatic fluctuations in creek flow during the dry season, when water levels are already low.

The county approved the coastal permit and design review on November 15, and the appeal period closed Monday without contest. However, approval and authorization from the State Water Board and Fish & Game are still needed – which will take years.

"The unique thing about this is that it's voluntary on the part of the farmers," said Mike Reichmuth, a fisheries biologist with the National Park Service who is based at Point Reyes. "You don't usually see landowners who actually want to go the extra step to help out."

Logistics and history

There is no precedent for an arrangement such as the one planned in the Pine Gulch Enhancement Project. Historically, "riparian water rights" allow landowners to draw water from the creek all year, regardless of their impact on the fish.

They are not, however, allowed to store water for over 30 days without what is called an "appropriative right." The chance of a private landowner receiving such rights was described by Kinsey as "virtually unfathomable." In order to stay in business, they rely on water drawn from streams – even during dry summer months.

The enhancement project hopes to construct a legal incentive, whereby the farmers arrange to temporarily abandon their riparian rights in return for temporary, seasonal rights to water storage for more than 30 days – de facto appropriative rights.

The project started when Brannon Ketcham, a hydrologist with PRNS, began doing watershed surveys in 1997. After talking with the farmers along the creek about their ideas for protecting and improving the habitat, a scaled-back version of today's project was born.

"The park service doesn't have any jurisdiction over the farms," said Jeremy Tejrjian, a Marin County planner. "They just share the stream, and so they contributed their time and resources to make this happen." For

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their part, the farmers' dedication to sustainability motivated them to act proactively in the face of future regulation.

Ketcham got a grant to study off-stream water storage options, and hired Lee Erickson, an agricultural engineer from Valley Ford to develop specific plans. Carol Whitmire, a local planning consultant, came on board as a project manager – and a 10-year saga through California's labyrinthine water laws began.

"What initially seemed like a simple solution has become an odyssey of time and expense," Kinsey said, "But it still makes as much sense now as it did then."

An initial plan, which proposed only 30-day water storage, was rejected by regulatory authorities as inadequate. They instead encouraged the development of the current, much more ambitious plan.

Concerns

In addition to the challenge of navigating a brand-new permitting process, local environmental groups such as the Sierra Club and the Tomales Bay Association have slowed approval of the plan.

"I don't know anyone who's against this," said John O'Connor, a Dogtown resident and board member of the Tomales Bay Association. "Some of us are just concerned about the details of how it gets done."

He described his two main concerns as development potential and appropriate oversight. Once appropriate rights are approved on a property, he said, the owner can then petition for a zoning change. He advocates an indelible use designation, where the water reverts to the creek unless it is being used for farming.

Kinsey said that there is no development potential that comes from the plan, however. "Agricultural zoning and the coastal program prevent any chance of future development," he said.

O'Connor is also concerned about oversight of the new system, once it is in place. "It needs immediate, hands-on oversight and right now there isn't anyone who is going to do that," he said.

All the farms are given daily withdrawal limits that vary based on stream flow during the spring. The logistical difficulties of determining what the limit is each day, and who will take it, leave too much room for error in his book.

Watershed

Pine Gulch Creek flows from forested headwaters on Inverness Ridge, through the fertile bottomlands of Paradise Valley before draining into the Bolinas Lagoon. Though it historically supported both Coho salmon and steelhead, the Coho disappeared after 1968, until a handful reappeared in 2001.

Local salmon populations became vulnerable after decades of overfishing, said Reichmuth. Coho are a particularly vulnerable fish because of their strict three-year life cycle and their dependence on both freshwater and deep ocean habitat. Dams, habitat destruction, droughts or changes in the upwelling currents that bring them food in the ocean all can threaten them. If three bad years hit in a row, local populations can disappear.

PRNS has several other projects aimed at helping salmon. An effort to fence cattle away from creeks is allowing vegetation cover to return, Reichmuth said. A large streambed restoration and culvert replacement project will be finished in the next year, allowing fish access to 20 additional miles of stream. And the Giacomini Wetland Restoration Project replaced levees with estuary, giving young fish places to find food and shelter on their way to sea.

Ketchum says Coho will eventually be introduced into Pine Gulch Creek. "We want to see 20 or 30 spawners each year to feel confident that they would keep coming back," said Ketcham. "The watershed can definitely support the fish, but we will probably need to take more proactive measures to get them started."

The farms

Fresh Run Farms, operated by Peter Martinelli, is nearest to the park. Goats, sheep, chickens and alpaca share the property that has been in his family for three generations. Martinelli, a robust man with an easy grin, has been farming 22.5 acres since 1995. His crops include leafy greens, fruits, flowers, pumpkins and beans, as well as wild foods harvested from the forest.

"This is an amazing area for farming," Martinelli said. "We have this beautiful black soil, a cool season and also these hills that ramp up the heat for tomatoes."

Located at the head of a narrow valley, the crops are grown on gently sloping fields. Martinelli is planning to build two ponds and a holding tank to store 20.5 acre-feet of water on an eastern hill, high above the house he was raised in. Initially he planned to expand a pond his grandfather built to provide water for the farm, but that was discovered to be red-legged frog habitat in 2002.

The valley broadens as the creek flows toward Paradise Valley Farm, operated by Dennis and Sandy Dierks. The couple is part of the New Land Fund, a non-profit that bought the land from Martinelli's father in 1972. "We're doing what we can to take care of the whole landscape, including the water," said Dennis, a slim, bearded man who raises goats, chickens and ducks and sells a spectrum of produce at farmers markets and upscale local restaurants.

Their farm is flatter and sunnier, but still flanked by low hills that curve back toward the creek to the south. Dierks will build a single 5.5 acre-foot pond to irrigate his fields – if, he jokes, he is still alive when the permits are eventually approved.

If you climb over the low hill marking the southern boundary of Dierks' farm, you reach Warren Weber's Star Route Farms. The property straddles the lowest reaches of the creek flatten into the Bolinas Lagoon, where the white-haired, rail-thin former English professor came in 1974 to take up organic farming.

Star Route farm, the largest of the three, also provides a wide variety of crops to local retail markets. It would be the first to run out of water in a drought year since the water would get used upstream first. An existing 3 acre-foot storage pond will be expanded to hold 26 acre-feet, and a row of rotund greenhouses on the east side of the creek will be replaced by a second, smaller pond.

As with the rest of the farmers, Weber expects that rainwater and groundwater flowing from the adjacent hills will keep the ponds full during the wet season. As the rains taper off, they will rely more often on a low horsepower pump to slowly draw water from the creek. "This process actually uses more electricity, because there is an extra step in moving the water," Weber said.

Instead of irrigating directly from the creek, water is pumped first to the storage ponds and then again onto the fields. All the farmers are also installing solar arrays, which will offset the cost and pollution that extra pumping would generate.

Overall, the project is going to require substantial work and money. Construction and expansion of the ponds could cost over a million dollars in public, private and donated funds that will be administered by the Marin Resource Conservation District.

Problems accompanying the ponds range excess sediment and algae that aren't in creek water, to additional maintenance caused by new infrastructure. And if endangered species move in to the newly created wetlands, the farmers become responsible for them as well.

"It's going to be a lot of time and responsibility," said Dierks. "But we live in a great system, and this is going to make it better."

By Jacoba Charles

Point Reyes Light - Charles, Jacoba "Bolinás Farms Cede Stream Rights to Coho"

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