

Modern tidegates open waters to fish, farmers

By GAIL OBERST
For the Capital Press

COOS COUNTY, Ore. — For more than 100 years, farmers and ranchers on the Oregon coast have installed tidegates to turn estuaries into farmland, inadvertently cutting off young salmon and other fish from their habitats.

Now, modern tidegates promise to provide homes for fish, and agricultural land for farmers.

Leo Kuntz, a former commercial fisher, boat builder and diver, has been at the forefront of the challenge to invent tidegates that conform to recent laws that require failing gates to be either removed, upgraded or replaced. His innovations have made the owner of Nehalem Marine Manufacturing a hot commodity. In the past 20 years, he’s installed his gates at hundreds of locations along the West Coast between Canada and Mexico.

His latest invention is the tidegate with muted tidal regulators (MTR). The new gates seem to hit all the sweet spots for man and fish, slowing down tidal flow to allow young fish to enter pasture channels, opening the gates for a longer period of fish passage, improving water quality and controlling tidal flooding on the land.

Old-style tidegates featured heavy metal or top-hinge doors that, even when open, posed barriers to the small fish that fed and sheltered in the gated streams and flooded fields. High velocity water through the gates often scoured banks and washed away soil.

“We’re really about finding these win-win opportunities,” said Chris Claire, Oregon Department of Fish and Wildlife biologist who is among volunteer, technical, farming and funding partners installing many of Kuntz’s tidegates along the Coquille River and its tributaries.

State laws, passed in 2001 and enforced beginning in 2008, require gates to be at least 4 feet wide, have open fish passage and a water velocity at or under 2 feet per second at least half the time.

The law is triggered when a gate fails or there are other changes to the culverts that house them. To assess the



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Leo Kuntz, center, at the Seestrom Creek project on the Coquille River, has developed modern tidegates that can maintain both pastures and salmon habitat. Left is Melanie Dunne of the Coquille Watershed Association. Right is Chris Claire, ODFW biologist.

work ahead, five years ago the Coquille Watershed Association conducted a survey of 120 tidegates in the watershed. As a result, several gate improvements on private and public property are completed or planned.

Coos County landowners are not alone in their need to replace failing tidegates. The effort to modernize gates is coast-wide, Kuntz said.

“Our failing infrastructure has come to a head,” said Melanie Dunne, executive director of the association.

Kuntz recently toured one of the newly installed MTR tidegates controlling tidewater into 125 acres of sheep pasture. Thirteen river miles upstream from the mouth of the Coquille, the Seestrom Creek project is home to 200 head of sheep and five new or repaired tidegates. Future plans for additional tidegate replacement and estuary improvements will expand the project to adjacent agricultural land.

New tidegates and their installations don’t come cheap. Construction of the box culvert on the Seestrom Creek project has cost more than \$300,000, in addition to the \$70,000 price tag on Kuntz’s

innovative equipment.

Smaller culverts with tidegates can cost as little as \$10,000 to replace, but still, Kuntz said, the expense is more than most farmers can afford. As result, state, federal and nonprofit funding and technical help underwrite most of the improvements.

Kuntz’s patented invention is called a muted tide regulator because it creates a muted tide cycle inside the gates. This “muted” tide restores much of the habitat value while maintaining the farmland. Unlike traditional gates that are controlled by water levels on the river or bay side of the gate, the MTR gate opens and closes according to the level of the interior waterways. This control allows gate doors to remain open whenever there is a low enough interior water level activate it. Descriptions can be found on Kuntz’s website, www.nehalemmarine.com.

Information about rules, regulations and funding available for tidegates is available from organizations including the Coquille Watershed Association, a non-regulatory group, or from the Oregon Department of Fish and Wildlife, which approves designs and permits.

Irrigating vineyards requires different expertise

By ALIYA HALL
For the Capital Press

Originally, Alexander Levin, viticulturist and assistant professor in Oregon State University’s Department of Horticulture, got into the industry to become a wine maker.

During an internship, however, he became more interested in the vineyard side of the business. He went back to school in 2012 and specialized in irrigation.

Irrigation is a crucial part of any agricultural enterprise, but when it comes to vineyards standard irrigation methods don’t necessarily transfer.

Levin said irrigation is a critical part of the winery business, especially in the Willamette Valley, but farmers may not need to apply all of the water they think they need.

The biggest difference between irrigating field crops and grapes is there’s a discontinuous canopy with grapes. Instead of a lawn where the entire surface area is covered by leaves, in a vineyards only narrow lines are covered.

“You need to account for that — not covering the whole surface of land because it’s tight in rows with trellises,” he said. “You still need to irrigate, but you can be more conservative with amounts.”

When it comes to when and how much to irrigate, he said farmers are still relying on visual symptoms because it’s the cheapest and easiest way.

“The plant is wilting; put water on it,” he said. “Plant growth is one of the most sensitive physiological processes to water stress. Visual symptoms can be diagnostic. However, the challenge is things are interpreted as soil stress could be due to something else.”

Instead, he recommends

using an integrated irrigation water management process to keep grapes hydrated. This includes scientific methods like water budgeting, measuring soil moisture and using plant-based methods.

Water budgeting is similar to balancing a checkbook, where the amount of water to be applied is calculated as the balance between the amount of water held in the soil root zone, and the estimated amount of water used by the crop over a given period of time.

Estimates of crop water use can be made from local or regional weather data and crop growth stage or canopy size.

Levin said that although he is a proponent of using plant-based methods because it’s the biggest indicator, the more scientific the strategy — the more labor intensive and costly it gets.

“When I talk to growers, everyone wants to do the most basic things and processes,” he said. “I find the trouble is when (farmers) don’t have a plan or don’t stick to a plan.”

However, Levin found that many farmers prefer science-based tools to actively checking their plants.

He said that even while using scientific methods it’s still important to look at the plant and assess its needs that way as well.

“(Farmers) want someone to tell them when to turn the water on and for how long, but it’s not that simple,” he said.

Overall, whether to irrigate is an economic decision with costs and benefits. Levin also added that he can’t decide for the farmer which method is best. His advice, however, is to create an irrigation plan and stick with it.

“Growers don’t irrigate when plants are stressed,” he said. “They irrigate when they’re stressed.”

MEDIA RELEASE

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Columbia-Snake River Irrigators Association Risk Mitigation Response Alternative

Irrigation Sector Direct Economic Impacts Under Lower Snake River Dam Breaching/Drawdown Actions

The circumstances created by the Columbia-Snake River ESA litigation compel the Columbia-Snake River Irrigators Association (CSRIA) to development a Risk Mitigation Response Alternative, to protect Irrigation Sector assets from the adverse economic impacts that would be caused by Lower Snake River dam breaching and project pool drawdowns. The Irrigation Sector assets are real, and dam breaching or pool drawdown actions would critically impair pump station capabilities, agricultural production, and on-site processing operations. All of these direct economic impacts would have to be addressed under a responsible and market-based mitigation strategy.

- The Columbia River System Operation (CRSO) agencies’ EIS is required to identify appropriate mitigation measures, taking into account associated risks and liability. Per Washington Governor Jay Inslee’s direction and legislative funding, the state study addressing dam breaching impacts should fully consider all Irrigation Sector impacts and viable mitigation strategies.
- Mitigation measures incorporate direct net value changes to water distribution and land assets, predicated on observable, market-based determinations for willingness-to pay.
- The direct economic impacts must be defined based on market asset values for the irrigated land impacts. The dam breaching-pool drawdown actions would create a “distressed asset value” that must be the foundation for EIS/State study impacts and mitigation compensation.
- The primary Irrigation Sector impacts can be measured through recent assetbased market transactions and the market perception toward risks associated with “distressed asset values.” The asset market reflects the private, corporate, and institutional entities that have made recent market purchases, and those who have an ability to expand farming asset operations.
 - **The distressed asset capital value amounts to about \$446 to \$622 million for Ice Harbor/Upper McNary Pool Irrigation Sector impacts (90,640 acres}.**
- The risk mitigation response alternative includes obligations by the Irrigation Sector and a capital repayment structure that equitably assigns mitigation costs. The Bonneville Power Administration (BPA) and Washington State will be responsible for up-front mitigation payments. instruments:
 - **The combined BPA and WA State annual debt service would be about \$24-\$37 Million; for Ice Harbor/Upper McNary Pool, not including John Day Pool impacts.**
- Receiving the Risk Mitigation compensation, the Irrigation Sector will be responsible for impacts.

The CSRIA is prepared to discuss the Risk Mitigation Response Alternative with the CRSO agency leadership, and Governor Inslee’s Office (see CSRIA White Paper Review, CSRIA.org).

For Further Information: 509-783-1623