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ONE DOLLAR

Epoxy, tag, crab, repeat

RESEARCHERS LOOK AT THE **IMPACT OF DREDGING ON CRABS**



Colin Murphey/The Daily Astorian

Curtis Roegner, left, a fisheries research biologist with the National Oceanic and Atmospheric Administration, tosses a Dungeness crab back into the waters of the Columbia River during a recent study of the species.

By **KATIE FRANKOWICZ**
The Daily Astorian

It takes six hands to tag a Dungeness crab.

One pair of hands preps and tests small cylindrical, acoustic tags. A second pair lifts a crab from a bucket and gently dries a spot on top of its shell. A third has been busy mixing up epoxy in paper cups and now dabs a bit along a convenient groove at the top of the shell. The second pair of hands pushes the tag gently down onto this puddle of epoxy.

The crab looks a bit like a coal miner afterwards, head lamp in place, ready to plunge back into the darkness.

For the past three years, Curtis Roegner, a fisheries research biologist with the National Oceanic and Atmospheric Administration, has been tagging crabs in and around the Columbia River estuary, tracking their movements and trying to get a better understanding of how these animals respond to a variety of events and conditions, especially how they weather dredge operations near the river's mouth.

As the dredges maintain the depth and width of important shipping channels, they dump sediment at various spots out in the ocean and near to shore. Sedi-



ABOVE: Dungeness crab wait for the glue holding radio tags on their backs to dry before they will be returned to the Columbia River. **BELOW:** A Dungeness crab before being fitted with a radio tag that will allow scientists to better study the species.



ment dumps close to shore are intended to increase the amount of sand on beaches and alleviate erosion, but researchers weren't sure what the process meant for Dungeness crabs, a multimillion-dollar fishery for Oregon and Washington state.

"So far we're finding there don't seem to be any negative effects," Roegner said. But, he added, their research is still preliminary.

For as much as they have discovered, many questions remain. Roegner says the unanswered questions become even more important as researchers chart changes in the crabs' marine habitats — from low levels of dissolved oxygen in the water to ocean acidification and the widening sweep of climate change.

Questions

Dungeness crabs can use both the estuary and the ocean. Those that make it into the estuary appear to benefit from the experience, growing faster and, as a bigger crab, encountering fewer predators. But they can't reproduce here and must return to the ocean eventually.

"When they do that, where they go out there, we don't know," Roegner said.

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Warning signs for salmon

Low levels of young fish off the coast

By **KATIE FRANKOWICZ**
The Daily Astorian

The numbers of young salmon caught off the Oregon and Washington state coasts during an annual federal survey cruise this June were among the lowest recorded in the past 20 years.

In fact, numbers were low across nearly all the species researchers regularly catch or observe — from birds like the common murre to forage fish like anchovies and smelt.

Months ahead of schedule, as a kind of heads up, West Coast researchers, project managers and program directors decided to send out a memo in mid-August detailing their initial findings — data that would usually be combined with other information and put out on a webpage at the end of the year.

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Rich Landers/Spokesman Review

A federal survey in June found low numbers of young salmon off the coasts of Oregon and Washington state.

BACK TO SCHOOL

Watch out for school buses and students as Clatsop County's five school districts head back to class starting Tuesday.

Astoria middle and high schools start Tuesday, along with Warrenton schools. John Jacob Astor and Lewis and Clark elementary schools will hold conferences Tuesday, with the first full day of school Wednesday.

Classes begin Tuesday for first- through sixth-graders in Seaside, along with ninth-graders. The rest of Broadway Middle and Seaside High schools begin Wednesday. Kindergarten classes begin Thursday.



For Hesse, tobacco prevention is addicting

The county's public face against tobacco

By **JACK HEFFERNAN**
The Daily Astorian

Julia Hesse has an ironic sense of humor about her role as a tobacco coordinator.

"I can't get away from it," she said. "It's addicting."

Hesse, 65, moved to Astoria from Colorado earlier this year and became the Clatsop County Tobacco Coordinator in March. Her arrival filled a seven-year vacancy. Health



Promotion Specialist Steven Blakesley had assumed the position's duties in the meantime. Hesse started before Gov. Kate Brown signed a law in August that, effective in 2018, will ban sales of tobacco products to consumers under 21 years old. A part-time employee with the county, Hesse will be the public face of potential tobacco prevention policies.

"The tobacco industry is a ruthless, predatory drug pusher. Countering their influence is really important to me," Hesse said. "We have shifted from being health educators to advocating for strong policy."

Hesse admits, though, that it won't be easy.

Tobacco consumption is linked to 21 percent of all deaths in Clatsop County, and the total economic cost to the county is more than \$27 million. More than 20 percent of 11th graders, pregnant women and adults in general smoke tobacco.

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Submitted Photo

Julia Hesse is the county's new tobacco prevention coordinator.

