



Hailey Hoffman/The Astorian

A second booster is available against the coronavirus.

Boosters: Oregon is taking several steps to adjust pandemic response

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in the future — such as how many boosters will be needed, how many days in quarantine will be considered acceptable — is unclear. “We don’t know, because so much of what we’re learning is in real time,” Lulich said.

The Oregon Health Authority reported four new coronavirus cases for the county on Friday.

Since the pandemic began, the county had recorded 4,596

virus cases as of Friday. The county has recorded more than 45 virus-related deaths.

Oregon had recorded 704,515 virus cases and 7,147 deaths as of Friday.

With the state of emergency over COVID-19 lifted on Friday, Oregon is taking several steps to adjust pandemic response.

Oregon Health & Science University has reduced its forecast of the trajectory of COVID-19 from weekly to once every other week.

The health authority has ended its daily report of virus cases, hospitalizations and deaths. The statistics will still be updated on the health authority’s website for pandemic information.

“The shift in reporting will better capture trends over time as Oregon moves into the next phase of the pandemic,” the health authority’s announcement said.

Gary Warner of the Oregon Capital Bureau contributed to this report.

Green crab: These crabs are small but are still mighty predators

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that way,” said Chase Gunnell, a spokesperson for the Washington Department of Fish and Wildlife.

Wildlife managers and researchers are using tools like trapping to stay abreast of crab populations. These crabs are adaptable, but trapping in places they most like to inhabit — salt marshes, muddy tide flats, pocket estuaries, and other areas protected from predators like larger crabs — is time and labor intensive.

New research from the University of Washington is pointing wildlife managers toward a relatively new approach: using something called environmental DNA analysis, or eDNA, to detect the presence and population density of the crabs, even when they’re in smaller, less noticeable numbers. The research shows this analysis is about as likely as trapping to detect crabs, expanding possibilities for monitoring in the state.

The results build trust in a different way of seeing the world, said study co-author Ryan Kelly, an assistant professor in the University of Washington’s School

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Emily Grason | marine ecologist of the Washington Sea Grant crab team

of Marine and Environmental Affairs. “And we can take that lesson and apply it to green crab, but also to the next invasive species, or endangered species,” Kelly said. “In my eyes, (our) paper is the best one out there showing how eDNA really works in a real-world management setting.”

Small but mighty

Marine ecologist Emily Grason of the Washington Sea Grant crab team said being able to detect crabs at low densities can offer the biggest bang for scientists’ buck in terms of responding to infestations before they become problems.

These crabs are small but mighty predators. Their reddish-to-green shells rarely grow larger than 4 inches across, but they inhale young oysters and clams, and even prey upon crabs equal in size or smaller. They have a his-

tory of eating native shore crabs in places like California and Oregon.

The green crab fundamentally changes ecosystem dynamics, outcompeting other predator species such as Dungeness crabs for food and shelter — something that’s a big concern for shellfish harvesters in Washington state.

In the process of overwhelming species on the East Coast, they’ve been documented to have damaged eelgrass beds that support lots of species, including juvenile salmon. “It’s not just one species. It’s the whole ecosystem that’s in jeopardy,” Buzzell said.

Researchers don’t need to see these successful predators to detect their presence. Thanks to eDNA, scientists can now sense that animals are present by sampling water, soil and more for the genetic traces that living

things leave behind in the world around them — bits of skin, shells, hair, mucus, poop, urine and more. They can even use this information to estimate the number of animals present.

The paper’s lead author, Abigail Keller, collected water samples in crab habitats around the state over three months in 2020, and compared the eDNA analysis of those samples with trapping data from the same places. In the process, Keller and the team created a method that not only shows how trapping and eDNA analysis can be equally capable of detecting the presence and number of green crabs, but which also helps scientists better understand the relationship between how abundant an animal is and the ability to detect it.

The research also gives managers a reason to trust eDNA as a monitoring tool,

and starts to guide them on how and where to use it to complement other monitoring. That could expand crab monitoring throughout Washington, boosting the chances of keeping green crab numbers low.

Good sense

Neither eDNA nor trapping is 100% accurate. Kelly, the University of Washington professor, compares using them to having two clocks that each tell you a different time and which you don’t yet have the means to know which is correct.

“We have these two ways of measuring the world and both of them are really imperfect. But by putting the two streams of data together, you get a much better idea of what’s going on,” he said. Having more of these imperfect tools to use in comparative ways, Kelly said, the better the chance of arriving at some version of truth.

This data will help scientists figure out just how many water samples they need to collect or how many traps they need to set to pick up on different densities of potential crab populations.

The main takeaway of this research is that eDNA

can help scientists and wildlife managers monitor more places than trapping allows, improving chances of detecting a problem that may be on the horizon.

While the Department of Fish and Wildlife’s Gunnell said managers are unlikely to ever rid state waters of green crabs entirely, people are still working to keep the crab numbers low enough that they don’t destabilize native ecosystems.

There’s proof of concept in the value of handling known crab populations, Gunnell said, noting population levels are decreasing with existing monitoring efforts like trapping at places like Drayton Harbor near Blaine, Washington.

How quickly people need to be able to detect crab populations in order to prevent the crabs from wrecking ecosystems is still an open question, Washington Sea Grant’s Grason said, “because the landscape really influences how a given site will fare.”

“The only real answer we can offer at this point is that we want to find these populations as early as we can when they are as low as possible,” Grason said.

Tinker: ‘There have been wonderful people helping me all the way’

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being an actor,” she said, although she served a term on the Coaster board and joined the Arts Council of Clatsop County.

In her other life, Tinker began training and creating a massage therapy practice in 2010, a field chosen in part to give her flexibility to continue theater pursuits. That led to working with oncology patients at the Knight Cancer Collaborative. Her challenge was to design suitable regimens for patients undergoing chemotherapy and radiation treatments. “I can’t speak to what drew me to it,” she said, “I like to solve puzzles.”

With their move to Astoria, she has continued her massage therapy work. But virus restrictions necessarily restricted her work life. “That time kind of served as a period of reflection,” she said. “I realized that theater work is the work I really want to do. Now, how can I make it my job?”

The Ten Fifteen Theater, which takes its name from its downtown address on Commercial Street, became a reality thanks to longtime drama director Susi Brown, builder and actor Daric Moore and dance teacher Jessamyn West, one of the owners of the downtown building.

As the collaboration gelled, Tinker reached out to West. Her administrative role was carved out last July. Tinker laughed when asked what it entails. “You plan the season, work with each individual director, and help realize the vision,” she said. “Also there is the ‘nitty-gritty.’ You pay the bills, get plumbers, do marketing, social media and graphics.”

The troupe staged two productions last year, an



Danyelle Tinker works as a massage therapist and as executive director of Ten Fifteen Productions.

Irish play “The Weir,” which had been delayed by the pandemic, and a variety show “Almost Baroque,” in which Tinker made her Astoria debut with actor Jim Dott in a scene from Molière’s “The Misanthrope.”

The 2022 four-show main season began with an edgy comedy, “Art,” in March. It will conclude in December with Tinker directing a one-woman show called “The 12 Dates of Christmas.” “It is a very cute nontraditional holiday story,” she said.

Karen Bain, who directed “The Weir” last fall and “Art” in March, appreciates Tinker’s creative marketing. “One of the great things she brings to the table is she can sell plays,” said Bain, recalling “The Weir.” “I don’t think we would have sold out every performance if it wasn’t for Danyelle. When

I have a problem, I come to her and she solves it. She is always very positive and I appreciate that.”

Asked about her vision, Tinker has an answer ready. “The creation of art in general, bringing talented people together and providing a space for them to create,” she said.

She wants to cultivate “a culture of kindness, respect and inclusivity — where all feel valued and welcome to take part, regardless of their background or experience level.”

While the sole staff member, she wants to share the credit.

“There have been wonderful people helping me all the way,” she said. “Astoria is so rich with theater talent. I am happy to be able to offer a space for them to do their thing.”

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