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Noise pollution hurts wildlife, but states have trouble turning down the volume

October 23 2019, by Alex Brown

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A low rumble thrums through the deck as Tacoma, a 5,000-ton ferry, makes its run across Puget Sound from Seattle to Bainbridge Island. Standing near the railing, Colin McCann, a legislative analyst for

Washington State Ferries, points to the water where the agency recently dropped a microphone 500 feet below the surface as part of a study to capture the acoustic profile of every vessel in the state's fleet.

Washington aims to protect the area's southern resident killer whales. The endangered clan of 73 orcas became a regional cause celebre last summer after a grieving mother orca carried the body of her dead calf for 17 days.

The orcas track salmon using echolocation, or sonar, and research has shown that the din in these heavily trafficked waters has hampered their ability to detect prey. Reducing vessel noise was a key recommendation of the Orca Task Force assembled last March by Democratic Gov. Jay Inslee.

"There's been a lot of quick action," McCann said. "You've seen that urgency."

Once officials know the noise level each of the seven classes of ferries emits at various speeds, the agency will pair the details with a recently launched orca-tracking app. Ferry captains will be directed to slow down or reroute to accommodate the orcas.

Washington state also wants to quiet the discord affecting Olympic National Park, a landscape of coastal and mountain wilderness west of Seattle. Washington Attorney General Bob Ferguson, a Democrat, is suing to prevent the U.S. Navy from increasing flights over the park, citing effects on both nearby residents and wild animals, including endangered species.

These issues have made Washington one of the rare states to recognize sound pollution as a threat to its wildlife. Increasingly, research shows that human-caused noise can be harmful to many species. But very little

regulation—and even less enforcement—exists in the United States to limit the increasing encroachment of noise on the environment.

"The literature has shown that noise fundamentally changes behavior, distributions and reproductive success (for wildlife)," said Jesse Barber, who runs the Sensory Ecology Lab at Boise State University. "We can now clearly say that noise is a pollutant, but that takes some time to work its way into policy."

Washington state Sen. Christine Rolfes, a Democrat, said she expects the issue to gain visibility.

"It might be one of the next frontiers of pollution regulations," she said. "I don't know that people have ever thought of noise as pollution. I certainly wasn't that aware of it until recently."

Most local noise ordinances address nuisance noise in residential areas, the kind of racket that draws neighbors' complaints and has been shown to harm human health. Fewer legal guidelines exist to protect wildlife.

But states wanting to address the problem face challenges. Noise doesn't stop at state, county or city boundaries. Many of the loudest sources are transportation-related; short of tearing up highways and relocating airports, officials have no obvious solutions. And law enforcement agencies may not have the resources to patrol with decibel meters and seek out violators.

Science has illustrated the harmful effects noise has on wildlife.

Several years ago, Boise State's Barber and a team of scientists installed 15 speakers in an Idaho woodland and played traffic noises to create a "phantom road" over half a mile of terrain. They found that 30% of songbirds moved elsewhere once the noise began, and many other

species that remained struggled to gain weight.

In another experiment, Barber found that by asking visitors to voluntarily keep quiet at Muir Woods National Monument, a redwood forest near San Francisco, researchers measured an increase in birds near the trail.

Early efforts to regulate noise began in 1972, when the U.S. Environmental Protection Agency created the Office of Noise Abatement and Control, which set policy standards that many states used as benchmarks for their own regulations. Those included noise limits for the trucking industry, construction equipment and the transportation sector.

But when the Reagan administration shut down the office a decade later, citing a desire to transfer more regulatory power to local governments, states' appetite for noise policy withered as well, experts say. As a result, noise pollution has grown largely unchecked in prevalence and intensity.

The EPA argued that local communities could better regulate noise, said Les Blomberg, executive director of the Noise Pollution Clearinghouse, a nonprofit that tracks noise regulations throughout the country. "We've spent the last 40 years proving that wrong. Local communities can do a lot to regulate noise, but a lot of noise comes from noise sources in interstate commerce."

In 2017, the National Park Service found that human-caused sounds at least doubled natural noise levels in 63% of protected lands in the United States, such as parks and forests. The agency's Natural Sounds and Night Skies Division is behind one of the few federal efforts to deal with the noise issue. But with limited jurisdiction and regulatory power, it has mainly contributed research and small-scale changes such as using quieter tools and vehicles.

In 2005, acoustic ecologist Gordon Hempton dubbed a hidden spot in Olympic's Hoh Rainforest the One Square Inch of Silence, the quietest location in the contiguous United States. He's made it his mission to protect this place, and he's among many state residents concerned by the Navy's proposal to increase training flights of its Growler jets over the park.

"Prior to the Navy arriving, it was not only the least noise-polluted national park in the U.S., it was also the most noise-diverse," he said. "There are sounds you can't hear anywhere else."

One Square Inch is about a 3-mile hike into the rainforest, amid chest-high ferns and moss-covered trees. The nearby Hoh River babbles in the distance, while nearby birds chirp incessantly. At regular intervals, though—rarely longer than half an hour—the forest buzzes with the whine of a distant plane, or rumbles at a low-passing jet. According to Hempton, 80% of flights over the area are now conducted by the military.

"You add noise pollution into the background, and the owl that's hunting at night can no longer hear the soft scratching of the rodent underneath the leaves," Hempton said. "The consequences on wildlife are large enough that it is literally creating species shifts in natural areas."

The Navy's plan, which would increase by about a third its operations from a nearby air station, has prompted residents and organizations to form a coalition called the Sound Defense Alliance.

"We are squeezing all those natural sounds out of our environment," said Larry Morrell, the alliance's executive director. "We're trying to protect an extremely valuable and increasingly scarce natural resource, which is quiet. ... Once you lose the quiet, it's really hard to get it back."

The Navy has said the training is vital, and it stands behind its environmental review of the proposal, which found that the expansion is not likely to "jeopardize the continued existence" of endangered species.

Michael Welding, a public affairs officer with Naval Air Station Whidbey Island, said in an email that the Navy could not comment on questions related to its endangered species analysis because of pending litigation.

However, he noted that the Navy already conducts an average of 2,300 Growler flights a year over the area that includes the park, and the proposal would only raise that by an additional 300 flights. Welding also said the Olympic Peninsula is an important training area, both because of its geographic diversity and airspace availability.

The attorney general's office did not respond to a request for comment.

On another front, the Port of Seattle also is trying to crack down on noise. It oversees the docking of massive container ships that cross the Pacific Ocean and are the loudest ships on the water.

Port of Seattle Commissioner Fred Felleman said the orcas are such a popular cause that many in the maritime industry might voluntarily slow vessel speeds and stay away from whale feeding areas, while bolstering research on the effects of underwater noise.

The port also has provided on-shore power sources for ships to plug into while they're docked, so they no longer have to run noisy generators while they're sitting in the water.

Scott Veirs, an oceanographer who runs Orcasound, a network of live hydrophones in Puget Sound, called ships the "biggest knob we can turn" to help orcas.

"Fifteen percent of ships are responsible for half of the radiated noise," he said. "If we replaced them with the best performers, we'd be well on our way to solving the problem. ... If we can reduce the noise from ships in the next five years, that's equivalent to getting (orcas) more access to the scarce salmon."

Michael Jasny, director of the Natural Resources Defense Council's Marine Mammal Protection Project, said few states are engaged with noise as an environmental issue. He noted a South Carolina state agency's recent move to block seismic surveys in state waters in the Atlantic Ocean, which blast the ocean floor with loud air guns to search for oil and gas. Many other coastal cities have bans on such surveys, but much more regulation is needed, he said.

"I don't think states have been terribly proactive—other than Washington state and South Carolina—in issuing their own laws," he said. "It's difficult to regulate outside of state waters. There's absolutely a role for states to play in some sectors, but ... there's a limit on the reach of states."

That's why noise pollution remains a thorny—and generally unaddressed—problem for states. Quiet advocates say it will take drastic measures just to prevent things from getting worse. Barber, the Boise State scientist, believes the country needs to stop building new roads and increase public transportation on existing corridors. But states have little say over the interstate highway system or federal airspace.

In Washington state, it remains unclear to what extent leaders will try to clamp down further on noise pollution. In response to Ferguson's legal challenge, the Navy has said it will re-evaluate whether its flight plans violate the Endangered Species Act, looking at disturbances to the marbled murrelet, a threatened seabird. That review is expected to be completed early next year.

While the bill Rolfes sponsored easily passed, requiring whale-watch tour boats to stay a greater distance from orcas and forcing all vessels to slow down when orcas are nearby, she said it's just the start.

"We did not address vessel noise in general and the impact of noise on the underwater environment," she said. "There's a lot of work to be done."

Further efforts to limit vessel noise around orcas could include everything from speed limits to different routes to quieter engines and propellers. How much of that would come from new laws as opposed to industry recommendations or incentives is another open question.

McCann, the ferry official working on the noise study, said awareness has been a critical first step in creating momentum.

"It's something that we're seeing industrywide, people taking it more seriously," he said. "The hope is that we're leading by example and providing a road map for other maritime partners."

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Citation: Noise pollution hurts wildlife, but states have trouble turning down the volume (2019, October 23) retrieved 4 May 2024 from https://phys.org/news/2019-10-noise-pollution-wildlife-states-volume.html

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