

Studies point to gap in permits for shoreline armoring

A significant number of Puget Sound property owners have been altering their shorelines without required permits, according to studies. A new report suggests that state and local regulators should increase enforcement and make penalties more costly for violators.

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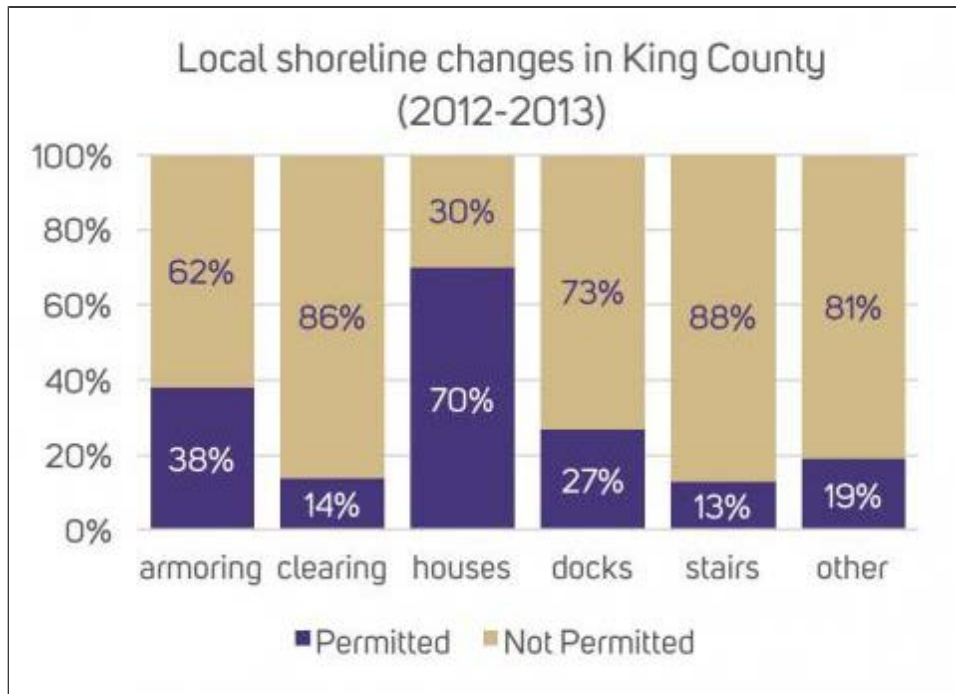


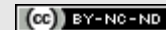
Chart: Local shoreline changes in King County (2012-13). Source: King County, 2014

Monitoring near Vashon Island in a 30-foot research boat, Kollin Higgins scanned the shoreline,

Rethinking shoreline armoring

Salish Sea Currents

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looking for man-made alterations. At the southwestern tip of the island, some kind of object caught his eye.

Higgins motioned for the boat's driver to move in for a closer look at what appeared to be a pile of large concrete blocks on the beach.

Higgins, a research biologist with King County, was conducting a shoreline survey of recent changes that could disrupt ecological functions. At the same time, this study was designed to see how many shoreline owners had modified their waterfront properties without required permits.

The project, funded by the Environmental Protection Agency through a cooperative agreement with Washington Department of Fish and Wildlife, was connected with Puget Sound recovery efforts. Findings from this and related studies would inspire new ideas for protecting and restoring Puget Sound's delicate shoreline.

As the boat continued toward the concrete blocks, Higgins shifted his attention to a nearby collection of massive logs, all lined up parallel and hugging the upper edge of the beach. It seemed odd to see a neat line of logs on a section of beach normally devoid of large driftwood.

When he spotted a rusty cable tying the logs together, Higgins knew he had found a rather primitive retaining wall, or bulkhead. It appeared someone was trying to hold back erosion, although it wasn't clear how well the bulkhead would perform.



Chinook research boat used in study to audit shoreline changes. Photo courtesy King County.

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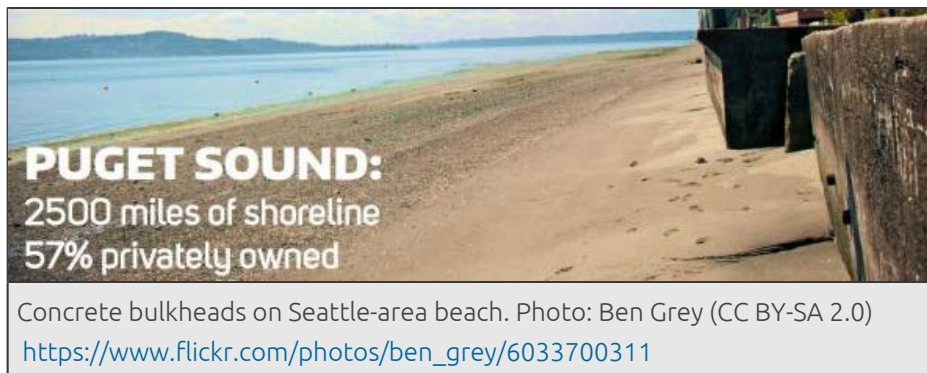
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Later, back at his office, Higgins pored over his photos and consulted with county shoreline planners. They found no permits on file for the massive log structure, first estimated at 292 feet long. It was perhaps the longest unpermitted bulkhead constructed in Central Puget Sound over the past decade.

Bulkheads and other types of beach structures known as ‘shoreline armoring’ are meant to protect shoreline property against storm surge and erosion. Residents throughout Puget Sound have been building structures like these for more than a hundred years, and estimates are that as much as a third of Puget Sound’s shoreline is armored. More and more, however, experts believe this tendency to put up protective seawalls is harming the environment. Removal of shoreline armoring has become a high priority for state and federal agencies, and the Puget Sound Partnership has included its removal as one its ‘Vital Signs’ for Puget Sound health.



These efforts appear to be bearing fruit. County by county, the number of new bulkheads permitted is in decline, while the number of bulkheads removed is on the increase. In 2014 for the first time, [the total linear footage of removed bulkheads exceeded that of new construction](#). But new studies show that this may only tell part of the story. The problem, according to the studies, is that many armoring structures have no permit at all. That makes them something of a wild card in the regulatory process, much harder to document, and a significant environmental concern.

The unpermitted bulkhead on Vashon Island, although unusual for its size, was just one of many rogue structures found in the study. Higgins, who surveyed primarily the shoreline in South King County (including the cities), found dozens of unpermitted bulkheads of various kinds, along with unpermitted docks, stairs, boat ramps, cleared slopes and dozens of major and minor repairs to existing structures.

“What surprised me the most,” he said, “is the number of things that were

occurring that were not in the permit system, things that generally would require permits. We knew we would see some, but we didn't know we would see so much."

In the study, Higgins identified 145 various changes to the shoreline that he believed required permits. Local permit officials could find approved applications for only 46 of them. The studies were not entirely conclusive — later, a few additional permits were found, and some projects turned out not to need permits — but, in the end, county and state officials were shocked at the amount of sensitive shoreline work completed without any oversight. If this issue was so prevalent in one small part of Puget Sound, how extensive was the problem Soundwide? The study authors caution that while the results are far from comprehensive, the trend appears to be troubling enough to warrant more in-depth studies.

Reaching out to property owners

The bulk of the issue, say experts, concerns private landowners. About two-thirds of Puget Sound's shoreline is in private ownership, and much of state and federal outreach is aimed at this group. Strategies include new social marketing approaches, and also a push for better enforcement.

Two keys to maintaining healthy shorelines are helping shoreline owners understand the unique ecological values of their property and enforcing the local regulations, said Tim Trohimovich of Futurewise, an environmental non-profit. According to studies, people are more likely to acquire permits when they see what needs to be protected and when they are likely to face serious consequences for ignoring the rules, he added.

"In jurisdictions that have a reputation for lax enforcement, someone might say, 'Why should I get a permit if my neighbor or the guy down the beach didn't?'" he noted.

Trohimovich participated in another EPA-funded research project to identify ways that city, county and state officials can be more effective in their enforcement efforts. The researchers looked at existing studies focused on effective enforcement and then picked up ideas from more than 100 officials from all levels of government in the Puget Sound region.

"What we found is that resources are really tight right now, and enforcement staffs have been greatly reduced at both the state and county levels," Trohimovich said. It appears, he added, that many

jurisdictions have not replaced enforcement positions cut during the recession.

Even at full operation, local enforcement efforts generally focus on problems called in by neighbors and others observing land-use violations, Trohimovich said. Such complaint-based systems are useful, he said, because potential observers are everywhere. But average people may not know the rules or understand the harm from certain actions.

“In shoreline areas of Puget Sound, some things are taking place under the water where you cannot see,” he said. “Unless someone has pointed out where surf smelt eggs are likely to be found, people may not know that spawning is going on right in front of their house. This is one reason to educate the public about the need for a permit.”



Pacific sand lance at rest on sand. Photo: Collin Smith, USGS.
<https://www.flickr.com/photos/usgeologicalsurvey/13378704834>

Complaint-based systems can be made more effective by sharing all sorts of information with the public, including web-based maps showing permits for each shoreline property, Trohimovich said. “But to do an effective job, you really need to conduct independent enforcement actions as well.”

The report recommends making sure that the approval process becomes more costly in time and money for violators than for people who follow the rules.

It could help to gain compliance if contractors were required to resolve violations on one project before getting a permit for the next, according to the report. Contractors also could be required to post financial

guarantees to cover the cost of correcting problems if they fail to do the job right.

One way to increase the efficiency of enforcement programs is to make sure everyone involved — from elected officials to prosecutors to judges — understand the importance of shorelines and what is being protected by the regulations, the report says.

“We are all learning about the environment, so we need to update our shoreline regulations from time to time,” Trohimovich said. “At the same time, enforcement of existing regulations is critical to the protection of Puget Sound now and in the future.”

Are permits enough?

Regulators say that just getting shoreline owners to obtain permits may not be enough. Contractors actually need to build what has been permitted, which is not always a given. In Kitsap and San Juan counties, a separate study examined whether completed projects matched the approved designs and conditions listed in the permits. The study was carried out by researchers for the Department of Fish and Wildlife and the two counties.

The study concluded that 11 of 42 bulkheads (26 percent) were longer than indicated on the plans. Those 11 averaged 17 percent longer than permitted, adding 287 feet of bulkhead beyond the total permitted length. The study also found that nine of 34 projects (26 percent) were taller than permitted.

The investigators reported that many permits were written without fixed reference points, such as the corner of a house or other upland feature. Given dynamic changes along the shoreline, references such as “six feet from the toe of the bank” made it difficult to conclude how many actual permit violations had occurred. One of the study’s recommendations is that all future permits include multiple fixed reference points.

Sources: Kinney et al. (2015). Analysis of effective regulation and stewardship findings: A review of Puget Sound Marine and Nearshore Grant Program results, part 1. University of Washington Puget Sound Institute. 57 pages.

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