

SEAWALLS, BULKHEADS and other structures known as shoreline armoring cover as much as a third of Puget Sound's shoreline. These structures are meant to protect property against storm surge and erosion, but a high percentage may violate state regulations, potentially harming sensitive habitat for salmon and other species. New studies funded by the EPA's National Estuary Program show that more information is needed to understand compliance and enforcement of shoreline armoring regulations in Puget Sound.

## BACKGROUND

Species like salmon and forage fish rely on Puget Sound's nearshore for food, shelter and spawning grounds. Shoreline armoring can interfere with natural processes that create and sustain this critical habitat. The State of Washington regulates shoreline development through Shoreline Management Act (SMA) and Hydraulic Project Approval (HPA) permits. The EPA's National Estuary Program funded a series of studies to look at public compliance with these permits in Puget Sound.



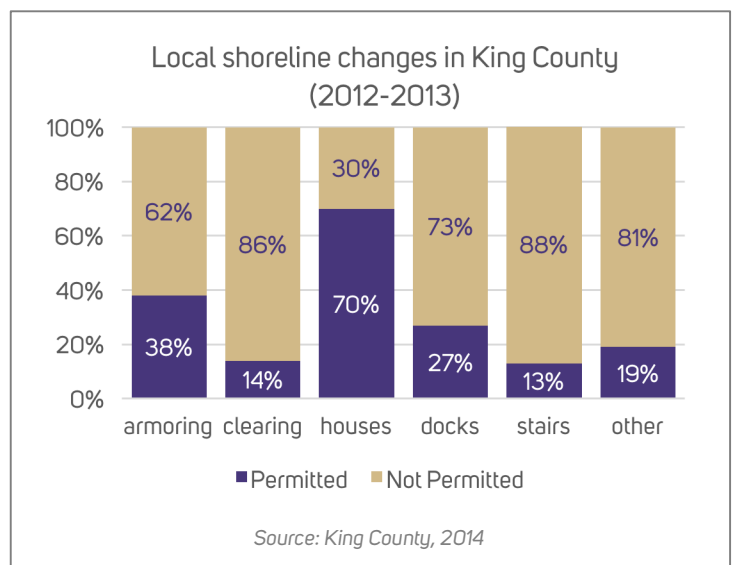
Pacific sand lance at rest on sand. Photo: Collin Smith, USGS.

Shoreline armoring using rock and recycled concrete. Kingston, WA. Photo: Tom Ringold (CC BY-NC-ND 2.0)

## THE CURRENT SITUATION

### MISSING PERMITS AND OTHER VIOLATIONS

- Limited studies conducted in King and San Juan counties identified unpermitted construction in up to half of the study sites.<sup>1,2</sup>
- Where shoreline stabilization projects were permitted, many were out of compliance. One pilot study found that permitted bulkheads in Kitsap and San Juan counties were often built longer or closer to the water than stated in the project permits. Length and proximity to the water were identified as the most critical dimensions for structures affecting nearshore habitat.<sup>3</sup>



## illegal shoreline armoring (continued)

### THE KNOWLEDGE GAP

Although initial studies indicate unwelcome trends, more research is needed to fully document compliance rates for armoring structures across Puget Sound. Surveys have not been conducted in most counties, and in many cases, a lack of standardized monitoring protocols make accurate assessments and inventories of shoreline structures difficult.<sup>4</sup> There is a need for more reliable and consistent data on regulatory compliance.

### WHAT WE KNOW

#### GETTING THE BEST DATA

The highest quality data on unpermitted construction has derived from surveys using field-based methods (e.g., boat surveys and site visits). Efforts that relied on remote methods for baseline data appeared to identify fewer armoring projects. Rigorous baseline inventories of shoreline structures at the parcel scale were useful for identifying unpermitted shoreline construction. This indicates that regular shoreline change monitoring could improve enforcement capability.



Concrete bulkheads on Seattle-area beach. Photo: Ben Grey (CC BY-SA 2.0)

### ENFORCEMENT

Critical information can be collected via simple surveys, but enforcement programs must also be capable of pursuing identified violations. Limited enforcement programs and weak penalties for violations undermine the effectiveness of local Shoreline Master Programs.

### THE CHALLENGES

Shoreline Master Plan programs have experienced staff reductions of 50-60% since 2007<sup>4</sup>. Most local jurisdictions do not have dedicated enforcement staff for shoreline regulations. Increases in staffing levels, funding, and training for SMP permitting programs would improve regulatory protections.

### THE ROLE OF PUBLIC EDUCATION

About 57% of Puget Sound's 2500 miles of shoreline is privately owned, creating a clear need to reach out to property owners and developers. Public education can play an important role for improving compliance especially as factors like population growth and sea level rise put further pressure on the nearshore environment.

#### EXEMPTIONS

Many shoreline stabilization projects do not require permits because of exemptions built into state law. A review of armoring permits issued over 5 years in Kitsap and San Juan counties found that 70-90% of armoring projects fell under statutory exemptions.<sup>5</sup> The high volume of shoreline armoring exemptions—particularly repair and replacement exemptions—has been called a significant threat to habitat but also an opportunity for enhancement and restoration.<sup>6</sup>

### NOTES

1. King County. 2014. The WRIA 9 Marine Shoreline Monitoring and Compliance Pilot Project. Prepared by Kollin Higgins, Water and Land Resources Division.
2. Key, S. 2013. T.A.C.T. Troubleshooting Report, Attachment A: Results of an Analysis of the San Juan Initiative's Measures of Success. San Juan County Department of Community Development, Friday Harbor, WA. Deliverable to the Marine and Nearshore Grant Program.
3. Dionne, P.E., H. Faulkner, W. Dezan, K. Barnhart, S. Key, and T. Quinn. 2015. *Tracking and Monitoring of Marine Shoreline Stabilization Permits Final Report*. Habitat Program, Washington Department of Fish and Wildlife, Olympia, WA.
4. Talebi, B. and J. Tyson. 2014. *Puget Sound Marine and Nearshore Grant Program Compliance Assessment Project*.
5. Barnhart, K., S. Key, and P.E. Dionne. 2015. *Shoreline Permitting Effectiveness through T.A.C.T. Final Report*. Kitsap County, San Juan County, and Washington Department of Fish and Wildlife.
6. Friends of the San Juans. 2014. *Healthy Beaches for People and Fish: Protecting Shorelines from the Impacts of Armoring Today and Rising Seas Tomorrow*. Final Report to WDFW and the U.S. EPA. Friday Harbor, WA.