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## Are Lopez shorelines changing?



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Land Bank steward Tim Clark checks a shoreline benchmark

Contributed photo

Volunteers from Kwiáht's Fisherman Bay Marine Health Observatory and the San Juan County Land Bank installed four benchmarks to measure changes in erosion and the shape of Fisherman Bay.

Kwiáht researchers say there is an urgent need to determine where roads, homes, utilities, and critical habitats such as salt marshes are in danger of flooding or damage as the islands experience a trend towards stormier winters. According to Kwiáht director Russel Barsh, wave erosion, accelerated by stormier winters and higher storm tides, will be most severe along low-lying south and southwest facing shorelines.

In the islands, Barsh explains, it is important to distinguish between sea level rise, storminess, wave fetch, and the zone of marine influence. Changes in sea level affect the height and location of the highest tides of the year. Storminess can make high tides much higher, however. During stronger storms, wind speed is greater, and wind travels farther ("fetch") over the water, pushing waves. As a result, waves gain more energy and height before they crash onto shore. More energetic waves carry away more sediment, and can throw driftwood and trash farther ashore, increasing the land area affected by salt spray and battering.

Nathan Hodges, landscape architect at Kwiáht, has made maps of Fisherman Bay showing where flooding and beach recession seem most likely. His preliminary forecasts will be included in an Ecological Atlas of Fisherman Bay, scheduled for publication this winter and public release at Lopez Library on Feb. 3.

Homeowners and businesses around Fisherman Bay are invited to participate in the study by establishing benchmarks on their property, and measuring the distance from their own benchmarks to the water's edge on each year's highest tides. The Fisherman Bay Marine Health Observatory will provide special copper posts for benchmarks, data forms, and gift certificates to buy rustproof measuring tape from Sunset Building Supply. If you are interested, contact [fishermanbaymho@gmail.com](mailto:fishermanbaymho@gmail.com).

An automated weather station for Weeks Wetland is also under consideration as a high school project to provide rainfall, wind speed and wind direction data to accompany tide data