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Vignette 09: Derelict Fishing Gear

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09 | DERELICT FISHING GEAR

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Derelict fishing gear—those nets, pots, and other gear lost during fishing operations or vessel transit—has been implicated in several aspects of degradation in the Salish Sea. Derelict gear can degrade marine habitats by scouring or preventing habitat access through accumulation of gear or by fundamentally altering habitats by trapping fine sediments and changing the substrate. This gear has also been implicated in the deaths of countless fish, marine mammals, seabirds, and invertebrates in the Salish Sea, either from entanglement or “ghost-fishing”—whereby the gear is capturing both targeted and non-targeted organisms but is not retrieved (Good et al. 2010). The use of gillnets with monofilament fibers in once-booming salmon fisheries has resulted in thousands of lost monofilaments nets, but purse seines, trawls, and crab and shrimp pots also litter the substrate, especially in areas with high relief rocky reefs.

Where complex topography and ocean currents converge in the Salish Sea, gear accumulates in areas where it catches on rocky reefs or similar and entrains other gear.

The problem of derelict fishing gear in the Puget Sound region was identified as a high priority by the Northwest Straits Initiative (Initiative) in 2002. It was during this time that the Initiative worked collaboratively with the Washington Department of Fish and Wildlife, tribes, the fishing industry, and other partners to develop a no-fault reporting system that includes a 24-hour hotline, a database, and state-approved guidelines for the safe and environmentally sensitive removal of derelict fishing gear. The Initiative’s Derelict Gear Program, created to eliminate harm from derelict fishing gear in Puget Sound, was established and managed by the Northwest Straits Commission, and later passed on for management by their non-profit partner the Northwest Straits Foundation from 2009 to present.

Since 2002, the Initiative has removed 5,811 derelict fishing nets and 5,964 derelict crab pots from the marine waters of Puget Sound. The removal of derelict fishing gear provides immediate and long-term benefits to the Salish Sea ecosystem. Removal of derelict gear eliminates the present and future threat of entanglement to marine birds, fish, mammals, and invertebrates, and restores the full-service benefits of the marine habitat it has degraded. A post-derelict gear removal monitoring project showed that marine habitat dominated by kelp achieved 90% recovery over one growing season without further management actions (Northwest Straits Marine Conservation Initiative 2009). By removing 5,811 derelict nets, the Initiative has restored more than 860 acres of marine habitat.

Perhaps most compelling is the number of marine animals found entangled and prevented from entanglement through removal of this harmful gear. A total of 84 marine mammals, 1,119 birds, 5,717 fish, and 478,599 invertebrates were found entangled in the derelict fishing nets at the time of removal. These numbers provide only a snapshot of the long-term effects of derelict fishing gear. Observed entanglements do not account for previously entangled animals that have decomposed, been eaten by predators or scavengers, or fallen out during gear removal operations. Applying a catch rate model developed by researchers at University of California, Davis using data from the Initiative’s Derelict Gear Program, it can be estimated that the 5,811 derelict nets removed were entangling more than 11 million marine animals annually (Gilardi et al. 2009). See table for estimated annual catch rates by major animal groups and examples of species found.

The decline of commercial fishing in Puget Sound has largely reduced the number of nets lost each year. To prevent the re-accumulation of derelict fishing

nets in Puget Sound, the Initiative’s newly lost net Reporting, Response, and Retrieval Program was launched in 2012. This program allows fishermen, resource managers, and the general public to report lost fishing nets through a 24-hour hotline or online reporting system. The reports are subsequently investigated and verified derelict nets are removed at no-fault or cost to the fishermen. Since the program’s inception in 2012, 133 reports of potential derelict nets have been received, resulting in the verification and removal of 86 nets.

The issue of derelict fishing gear extends beyond the Puget Sound region to all reaches of the Salish Sea, albeit on different scales, and the Initiative has

provided its experience and expertise to others working to address the problem. The Province of British Columbia worked in collaboration with the Northwest Straits Initiative in 2011 on a pilot project to remove derelict fishing gear in Canadian waters, and recently DFO has initiated The Ghost Gear Fund, providing grants to support 26 projects across Canada over two years (2020-2022). Several non-governmental agencies and fishing industry groups are involved with derelict gear removal on both sides of the border, indicating that this issue has gained attention and prompted action. Fisheries have been reduced but are still active, which means the likelihood of gear loss remains and efforts to remove derelict gear and prevent gear loss will be needed into the future.

Numbers of animals estimated entangled annually by 5,811 derelict nets

Group	Annual catch for 5,811 nets	Examples of species found entangled
Marine Mammals	2,210	Harbor porpoise, Stellar sea lion, river otter
Birds	29,441	Cormorants, grebes, scoters, pigeon guillemots
Fish	163,459	Canary and other rockfish, Chinook salmon, lingcod
Invertebrates	11,781,085	Dungeness crab, red rock crab, octopus, geoduck
Total	11,976,195	