

Salish Sea Kelp Restoration Enhancing Habitat Connectivity

A. Kelp

A kelp forest is a type of nearshore aquatic habitat, found along rocky coasts with wave action or strong currents in depths of 4 to 20 metres.

In the Salish Sea the bull kelp (*Nereocystis luetkeana*) forms a floating canopy layer, while the broad blade Laminarian kelp provides an understory layer, not readily visible from the water surface. These kelp forests provide refuge for juvenile salmon and associated feed organisms.

Kelp forests are in noticeable decline in the Salish Sea in recent years. Water temperatures exceeding 18°C for prolonged periods (>1 mo.) during summer months and intensive grazing pressure from sea urchins are contributing factors.

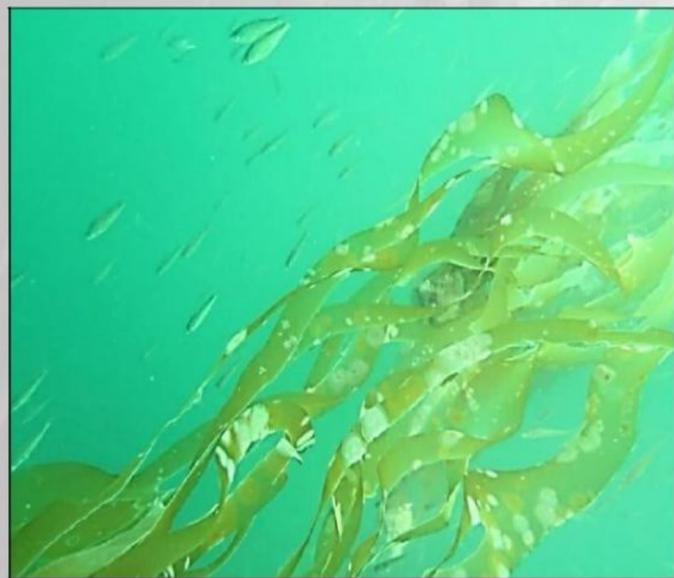


Photo: Juvenile fish among bull kelp plants at Maude Reef kelp restoration site (Photo: R. Zielinski)



B. Restoring Kelp Forest

Comox Valley Project Watershed Society is working with partners to restore kelp forests using three methods: planting seeded kelp lines, transplanting juvenile kelp, and monitoring grazing pressure by sea urchins. The study sites are at Maude Reef (grid site; Hornby Island) and reference sites at Eagle Rock on SE Denman Island (former natural kelp forest) and Oyster River estuary (current kelp forest site; see lower R).

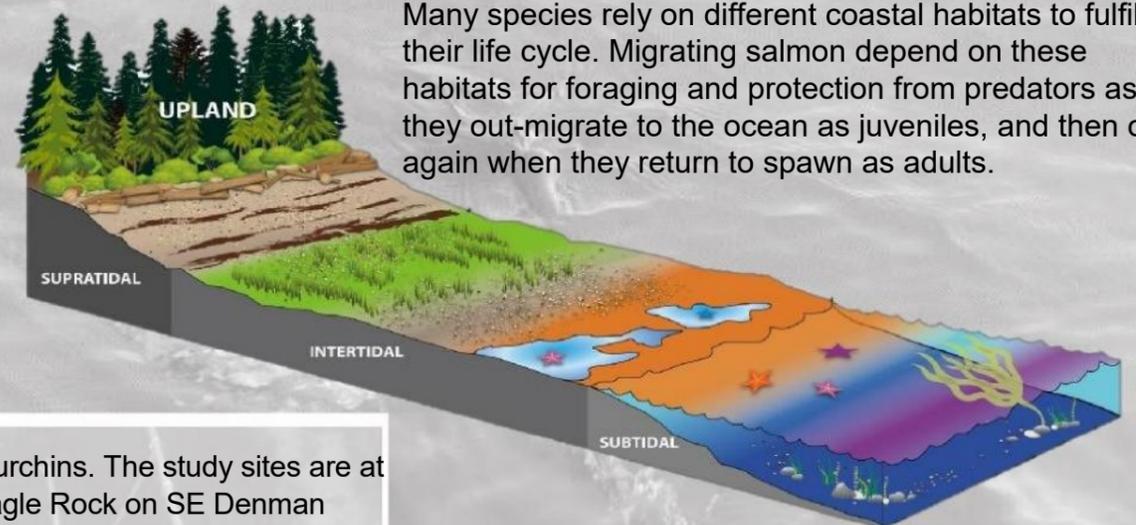
Lines seeded with young bull kelp and advanced juvenile kelp are deployed to facilitate natural recruitment of bull kelp in the surrounding area. As these kelps grow, they will release sori (reproductive structures) for dispersal on the seabed to replenish the annual kelp forest.

C. Urchin Grazing

To determine if grazing by sea urchins is negatively affecting kelp abundance in the area, urchin exclusion cages were deployed on the ocean floor. This will allow study of kelp recovery when sea urchin grazing is controlled.



Comox Valley Project Watershed is focusing on the restoration of three marine habitats - kelp, eelgrass and saltmarsh - to facilitate connectivity between the subtidal, intertidal and foreshore zones in the estuary. Striving to re-establish habitat connectivity is an important element of restoration design since human activity and alteration of the landscape has caused an increasingly fragmented habitat.



Many species rely on different coastal habitats to fulfil their life cycle. Migrating salmon depend on these habitats for foraging and protection from predators as they out-migrate to the ocean as juveniles, and then once again when they return to spawn as adults.

Kelp, saltmarsh and eelgrass also provide crucial habitats for a variety of other fish, birds, mammals and invertebrates.

The net productivity of these three habitats exceeds that of most ecosystems and they are vital to sustaining the “salmon highway”, the migration routes for five species of Pacific Salmon.



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