

**Patterns of bivalve mortality at sites occupied by sea otters (*Enhydra lutris*) in
subtidal sea grass beds on the central coast of B.C.**

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Sea Otters (*Enhydra lutris*) have extended their range back into historic areas. As keystone species, sea otters have major impacts on invertebrate soft-sediment subtidal communities. Studies conducted in other geographic regions indicate that bivalve species are a significant component of their diets in these communities. The primary objective of this study was to compare patterns of clam mortality over a gradient of otter occupation time from two to 34 years along the central coast of B.C. Shells of butter (*Saxidomus gigantea*) (n=202), horse (*Tresus spp.*) (n=66), and Pacific littleneck clams (*Leukoma staminea*) (n=241), were collected by SCUBA from subtidal sea grass beds at four locations along this gradient. These bivalves were then examined to determine cause of mortality based on shell damage. At older sea otter occupied sites, there was a decline in horse and butter clam shells recovered, while Pacific littleneck shells increased. These results may be explained by complex trophic interactions between otters and other bivalve predators (e.g., crabs, sea stars, and snails). Direct sea otter predation on the clam species was confirmed at all four sites; sea otter-damaged shells comprised 8.9% of the 509 clams sampled. These results indicate that sea otter predation did not influence patterns of mortality for these bivalve species. However, sample size discrepancies between the sites cannot be discounted. Since sea otter foraging extends beyond the sea grass beds, future studies should sample all habitat types (e.g., rocky sub and intertidal) within the four occupation sites.