

Changes in the brown seaweed *Ascophyllum nodosum* (L.) Le Jol. plant morphology and biomass produced by cutter rake harvests in southern New Brunswick, Canada.
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Abstract

Shoots and clumps of shoots of the commercial brown seaweed *Ascophyllum nodosum* (“rockweed”) add to the benthic complexity of the intertidal environment, providing important habitat for invertebrates and vertebrates. To protect the structure of this habitat, management plans for the rockweed harvest of southern New Brunswick include restrictions on gear type and exploitation rates limited to 17% of the harvestable biomass. However, owing to physical and environmental factors, the harvest is not homogenous, creating patches of exploitation ranging from 15 to 50%.

A direct relationship existed between clump vulnerability, weight and length in a controlled harvest at 50% exploitation within 8m by 8m plots. At this exploitation rate, the gear rarely impacted clumps below 50 g or 60 cm in length. Clumps larger than 300 g and 130 cm were reduced up to 55% of their length and 78% of their biomass. The overall impacts of the harvest on intertidal habitat is however of short duration as biomass recovers after a year of the experimental harvest. The rapid recovery is mostly due to a stimulation of growth and branching of the suppressed shoots of the clumps. Some harvested plots showed biomass even higher than initial levels, suggesting an increase in productivity at least during the first year after the harvest