

Portable submersibles, like remotely operated vehicles (ROVs), are particularly useful for community-led studies of coastal environments from the shore (or under ice), due to their small size and ease to control underwater. While useful to visually explore the seafloor, there are multiple limitations restricting quantitative studies of the habitats. To improve measurements, this study developed a new technique of image analysis from videos captured by portable mini-ROVs. This novel technique was used to precisely measure the quantity and size of sea cucumbers in three locations inside Qikiqtait: the harbour of Sanikiluaq, and the Kataaluk and Katak channels. This study found that Sanikiluaq harbour contained a large amount of sea cucumbers (25 individuals per meter square) compared to both Kataaluk and Katak (3 individuals per meter square). On average, bigger sea cucumbers were found in Kataaluk (11 cm long) compared to the ones found in Sanikiluaq (6 cm). In Katak, either small sea cucumbers of 3 cm or bigger ones of 10 cm were found. Also, bigger individuals were found in deeper waters, implying that young sea cucumbers are moving down when growing bigger. With this study, the usefulness of mini-ROVs has increased immensely. By gaining more knowledge on the populations of sea cucumbers, and migrations related with age, more sustainable fisheries can be developed.

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