



## A day in the life of a Sea Cucumber

by Stefan Linquist

Looking like a chubby brown sausage adorned with soft fleshy spines and growing up to two feet in length, the California sea cucumber bears little superficial resemblance to its cousin the sea star. On closer examination however their ancestry becomes apparent. All members of this family, the Echinoderms, have bodies that radiate in five equal directions from their center. The center of a sea cucumber runs through the length of its body. So if you were to chop one in half and look at it end-wide, you'd find a star shaped arrangement of muscles radiating outwards. Like a sea star, the sea cucumber also has several rows of tube feet on its belly and a mop of tentacles in its mouth.

Several animals prey on sea cucumbers, most notably the sunflower sea star. With up to 24 arms bearing thousands of tube feet a sunflower star can easily outrun the more cumbersome cucumber. But cucumbers have a few behavioral tricks up their sleeve. First, it responds to the olfactory signature of its predator by violently stretching and contracting its body. It can be rather amusing to see an otherwise lethargic cucumber suddenly swing into action. Like a determined teenager on a wrestling mat, the cucumber can sometimes wriggle its way out of the predator's grasp. The cucumber's second mode of defense is even more peculiar. As a last ditch escape effort a cucumber extrudes its stomach and contents onto the sea floor. This stringy intestinal mass is presented to the predator as a decoy meal while the animal clammers away to safety. Sea cucumbers also tend to congregate in large groups of several hundred in a small area. This "schooling" behaviour is another way that individual cucumbers minimize the likelihood that they will be consumed.

The California sea cucumber has been harvested for food by First Nations communities for millennia. With the relatively recent development of underwater harvesting techniques, these animals now sustain an important commercially fishery. Their muscles and skin are prized in Chinese cuisine and the estimated haul of California sea cucumber in B.C. is worth over \$1 million annually. An experienced fishing crew can land thousands of pounds of sea cucumber each day. Without strict fishing restrictions this species could easily be depleted. Little is known about the life span or reproductive rates of this species (they are impossible to age) so managing their fishery is a challenge. Currently, less than five percent of the estimated California sea cucumber population is harvested each year in British Columbia and scientists are closely monitoring their abundances.

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