Researcher says warmer waters in Nova Scotia 'ocean hotspot' killing off kelp forests

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Once rich forests of willowy kelp that stretch along Nova Scotia's coast have been decimated by warming water temperatures, says a marine biologist who warns that the loss could harm other species that rely on them for food.

Karen Filbee-Dexter of Dalhousie University in Halifax said Thursday that over the last three decades kelp biomass has dropped by 85 to 99 per cent in areas that stretch along 110 kilometres of coastline.

She found that water has been heating up .06 degrees a year over the last 35 years, making the marine ecosystem a less hospitable environment for kelp.

"This is one of the most important ecosystems that we have," she said. "I'm deeply troubled by it....The fact that these changes are happening so suddenly and are only projected to get worse is of great concern."

Filbee-Dexter said the warmer waters are causing kelp to weaken and break, leaving blankets of algae turf where fronds measuring up to four metres used to stand and are now only about a half-metre long. The warming temperatures have allowed for the proliferation of an invasive species that coats the kelp in an armour and causes it to break.

She says the warming temperatures have also led to an increase in the population of certain herbivores that feed on the fronds, adding another stressor to the compromised plant.

Filbee-Dexter says the steady loss of the kelp removes an important habitat for other species and has a cascading effect through the marine environment by contributing to a depletion of food sources for fish. She describes the fronds as "a conveyor belt of food as they are always growing and break off," providing a steady supply of nutrients for other ecosystems.

The discovery of the kelp's diminished abundance is in stark contrast to one of the earliest studies by another researcher in St. Margaret's Bay, she says.

"He saw these underwater forests of kelp that were so lush and so productive that he couldn't believe it...he measured how quickly they were growing and how much energy was in that area and found that was equivalent to a tropical rain forest," said Filbee-Dexter, whose research was part of her thesis and a paper published earlier this year.

"It's one of the most fast growing and productive ecosystems in the entire world."

She said the kelp loss was worst in bodies of water that had warmed the most, like St. Margaret's Bay, Mahone Bay and protected bodies of water that heat up faster.

Her work comes on the heels of another recent study that found kelp forests off western Australia were becoming extinct following a marine heat wave that laid waste to the plants.

Provided by Dalhousie University

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