

JANUARY 2025 SPEAKER

HEIDI GARTNER - PROTECTING THE DEEP SEA

“Canada’s Pacific is the best deep sea in the world. That’s cool,” Heidi, a Canada’s Pacific marine biologist at Fisheries and Oceans Canada, began her Zoom talk from Vancouver on the importance of studying and protecting the deep sea’s special ecology. “The best because it has the world’s smallest tectonic plates, enabling us to study more about deep sea ecology. Canada’s Pacific has naturally occurring oxygen and variable currents and water flow and lots of biodiversity in marine life. Canada’s only known living coral reef is in Canada’s Pacific, discovered earlier this decade by local First Nations members.”

Canada’s Pacific extends from Juan de Fuca Strait, south of Victoria, B.C., to north of Prince Rupert, B.C. and is home to many First Nations with whom Fisheries and Oceans Canada collaboratively studies the deep sea.

Heidi was invited to speak in furtherance of UWCNY supporting a 2024 CFUW resolution “urging the federal government to protect deep sea ecosystems in Canadian coastal waters by immediately extending the current moratorium on deep seabed mining until research has been completed and a robust regulatory regime has been developed and implemented.”

Heidi explained that the “deep sea” is 200 metres below the ocean’s surface. “As you descend from the top the light changes from red and yellow, the higher color wavelengths, to blue, the lowest, and then no light.” Heidi is participating in the North East Pacific Deep-Sea Exploration Project (NEPDEP), a collaboration begun in 2023 of marine biology experts from federal and Indigenous governments, non-profits, and academia “to discover, explore, monitor, and conserve” deep sea biodiversity. It’s part of “30 x 30,” a worldwide effort to conserve 30 percent of terrestrial and marine habitat by 2030.

“We know more about the surface of the Mars than about oceans,” Heidi startlingly said. Fortunately, new technology is speeding up the process. “Camera technology is much better today- robotic-operated with robotic arms that collect samples, waterproof, capable of working under the incredible intense pressure, high definition, instant relay. We also do temperature probes using robots.” Boats are equipped with labs.

Heidi showed images and graphs of the deep sea’s glorious composition, all of which is filled with sea animals: Seamounts, underwater mountains, remnants of extinct underwater volcanoes, rising 1,000 metres, sometimes more, above the seafloor; Corals and Sponges, “In Canada’s Pacific they look like trees or bushes.” Glass Sponges, ocean creatures that may not have mouths and eyes but are alive with their skeletal structure resembling glass sculptures—gorgeous!! Chemosynthetic, ecologically rich habitats powered by chemical energy, not light energy. Include hydrothermal vents, short-lived openings in the sea floor that send super-heated, chemical-rich fluids into the water; also Cold Seeps, chemical-rich fluids and gases escape through cracks and fissures in the ocean floor due to pressure; Tuzo Wilson Twins (named after Canadian geophysicist and geologist John Tuzo Wilson, 1908-1993, an expert on tectonics)- nearby look-alike seamounts with similar depth and currents but different internally.

She closed by reviewing the worsening impact of climate change, carbonation and deep sea mining.

Susan Goldenberg