

Researchers team up with some 'locals' in Greenland to study rising sea levels

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David Holland, a professor in NYU's Courant Institute of Mathematical Sciences, has been studying changes in the sea level off the coast of Greenland for years. His work involves collecting data on glacier formation, then developing computer models to project future global sea level change due to melting ice.

But many areas are hard to reach, historically complicating monitoring efforts.

In 2009, Holland and his colleagues contemplated ways to overcome these limitations. Aqqalu Rosing-Asvid, a senior scientist in the Department of Birds and Mammals at the Greenland Institute of Natural Resources, suggested that the researchers call in some additional local help—[ringed seals](#), who populate the area. Rosing-Asvid recommended tagging seals in the fjords of Greenland that Holland was trying to study.

Teaming up with the Greenland Department of Natural Resources, the researchers developed a safe, approved method of catch and release. The seals, which can dive to great depths in Greenland's Ilulissat and Sermilik fjords, were fitted with small tracking devices, attached with a two-component marine epoxy glue. As the seal surfaces after a dive, the tag it wears telephones a satellite and transmits information that includes [water temperature](#), salinity, and depth, as well as the seal's precise location. Recently, one tagged seal dove to a depth of 522 meters.

This research, funded by the NYU Abu Dhabi Research Institute, marks

the first time ringed seals have been tagged in Greenland outlet fjords and promises to contribute to both the understanding of [global environmental change](#) and ringed seal behavior.

"It's really quite astonishing to get these data, because the animals are going places that we as researchers find extremely difficult to reach due to heavy ice cover and large icebergs," Holland explains.

Last year, three transmitters were attached and deployed and the seals sent back a wealth of data. Earlier this year, three animals were tagged and released and are presently swimming up and down the fjords, transmitting back to Holland's weather station receiving unit on the rooftop of an NYU building in Manhattan.

"Seals are a natural choice in these harsh conditions," Holland adds, "and they are unharmed. It takes less than 15 minutes to secure the device, after which point the seal returns to the ocean. When the animal naturally sheds its outer coat, the transmitter simply falls off."

Holland plans to continue his efforts next season, when more seals will be enlisted to help monitor the ocean conditions off the coast of Greenland.

Provided by New York University

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