Alaska EPSCoR researcher Eran Hood, an Associate Professor of Environmental Science at the University of Alaska Southeast, is lead author on a study that has calculated the amount of organic carbon being deposited into the world’s oceans by melting glaciers.

Hood and his co-authors determined that by 2050, 48 million tons of organic carbon will be deposited in the sea via glacial melt. The carbon load consists of the remains and byproducts of plants and animals that have been absorbed or covered by the moving ice and are now being released. That’s one and a half times the amount of carbon runoff each year from the Amazon, which has the world’s largest flow. Almost a third of this total – about 15 million metric tons – can be attributed to climate change and accelerated glacial melt, the study states.

The authors of the study examined available data for glaciers in Alaska, Greenland, Antarctica, Norway and elsewhere and built the information into a model that could estimate runoff and carbon deposits from all the world’s glaciers. “This is the first time it’s been done in a comprehensive, data-driven way,” said Hood.

Hood, who is a researcher for EPSCoR’s Southeast Test Case, said increased carbon deposits could have a significant effect on water chemistry and nearshore food webs. Organic carbon sits below microbes at the base of the marine food web, and can also break down into inorganic carbon, which has other effects on marine chemistry.

“When you’re putting more of this stuff in from the glacier melt, you can change the downstream food web. But we don’t really know what the changes are,” he said. “It could be a good thing in some areas, but we’re not at the point of understanding this.”

One expected impact of glacial melt on water chemistry is accelerated acidification in the Gulf of Alaska and similar nearshore waters close to tidewater ice.

This highlight is based on an article by Yereth Rosen in the Alaska Dispatch News.