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Rutgers researcher: Complex patterns affect changing sea ice

By *KIRK MOORE*
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Warmer water and loss of sea ice along the west Antarctic peninsula is driven in part by a complex climate pattern that's also increased sea ice across the continent in the Ross Sea, says Jennifer A. Francis, a research professor at Rutgers University who specializes in satellite sensing of polar regions.

"The peninsula is warming very rapidly," she said. "It is a complicated situation, though."

Over decades, a hole in the atmospheric ozone layer blamed in part on industrial chemicals now banned in many nations was found by scientists to have strengthened winds of the polar vortex, Antarctica's overlying wind pattern, Francis said.

That increased low pressure over the Ross Sea and stormy weather, driving a buildup of sea ice on that side of Antarctica. More ice in the far southern hemisphere, as scientists documented a retreat of ice in other places around the globe, marked the complexity of climate change and predicting its effects.

"But's it's strengthened onshore winds along the west side of the peninsula, bringing in warmer air," Francis said.

Rutgers scientists spent a month at sea in that area, documenting ecosystem changes from the warming.

"Now, what we think is going to happen is, as the ozone hole recedes, the greenhouse gas warming effect will take hold and show more effects" in Antarctica, Francis said.