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Antarctic Climate Change: A Model to Communicate about Global Warming

The Antarctic Peninsula is among the most rapidly warming regions on earth. Glaciers are in retreat, major coastal ice sheets are disintegrating, and annual sea-ice is declining. Marine ecosystems are being dramatically restructured. Populations of key species including krill and Adélie penguins are disappearing. Some important species of phytoplankton are being replaced by salps. Gentoo and chinstrap penguins, along with elephant and fur seals, are exhibiting range extensions as temperatures warm. And for the first time, deep-sea king crabs have been discovered on the Antarctic slope where they threaten to invade vulnerable shelf communities that harbor seafloor species that may unlock new cures to human disease. Ocean acidification uniquely threatens life in Antarctica as atmospheric CO₂ is more soluble in colder seas and marine invertebrates are poorly calcified. Dramatic alterations in the Antarctic Peninsula marine ecosystem speak loudly to the need to address anthropogenic climate change. Fortuitously, the story of the discovery and mitigation of the hole in the ozone over Antarctica offers a poignant model of hope. The lecture concludes with a brief overview of the speaker's multifaceted efforts to educate the general public about the timely and sometimes contentious issue of global climate change.