

Arctic Report Card 2018

Effects of persistent Arctic warming continue to mount

2018 Headlines

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Continued warming of the Arctic atmosphere and ocean are driving broad change in the environmental system in predicted and, also, unexpected ways. New emerging threats are taking form and highlighting the level of uncertainty in the breadth of environmental change that is to come.

Video



Highlights

- **Surface air temperatures** in the Arctic continued to warm at twice the rate relative to the rest of the globe. Arctic air temperatures for the past five years (2014-18) have exceeded all previous records since 1900.
- In the **terrestrial system**, atmospheric warming continued to drive broad, long-term trends in declining terrestrial **snow cover**, melting of the **Greenland Ice Sheet** and **lake ice**, increasing summertime Arctic **river discharge**, and the expansion and greening of Arctic tundra **vegetation**.
- Despite increase of vegetation available for grazing, herd populations of **caribou and wild reindeer** across the Arctic tundra have declined by nearly 50% over the last two decades.
- In 2018 Arctic **sea ice** remained younger, thinner, and covered less area than in the past. The 12 lowest extents in the satellite record have occurred in the last 12 years.
- Pan-Arctic observations suggest a long-term decline in **coastal landfast sea ice** since measurements began in the 1970s, affecting this important platform for hunting, traveling, and coastal protection for local communities.
- Spatial patterns of late summer **sea surface temperatures** are linked to regional variability in sea-ice retreat, regional air temperature, and advection of waters from the Pacific and Atlantic oceans.
- In the Bering Sea region, **ocean primary productivity** levels in 2018 were sometimes 500% higher than normal levels and linked to a record low sea ice extent in the region for virtually the entire 2017/18 ice season.
- Warming Arctic Ocean conditions are also coinciding with an expansion of **harmful toxic algal blooms** in the Arctic Ocean and threatening food sources.
- **Microplastic contamination** is on the rise in the Arctic, posing a threat to seabirds and marine life that can ingest debris.



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