

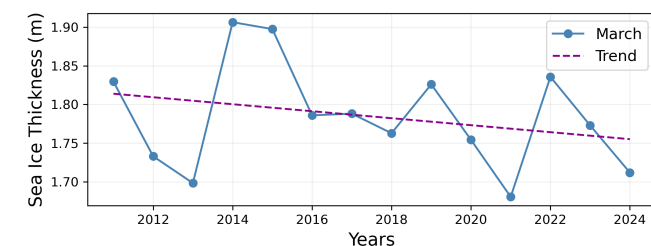
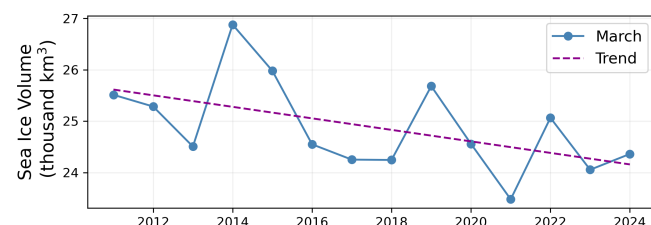
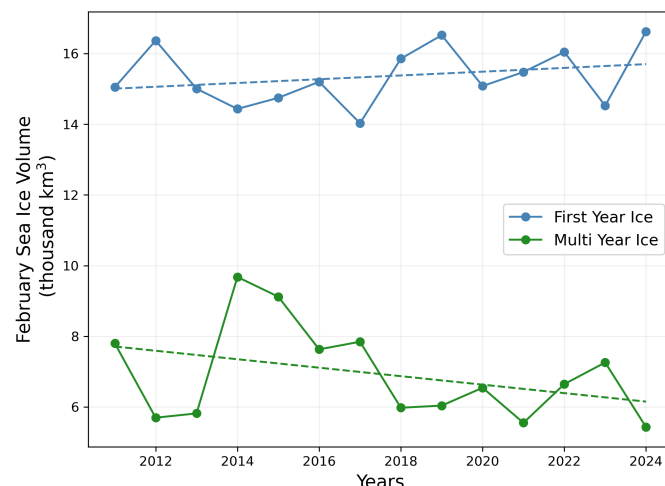
Report: Amy Swiggs (CPOM)

Sea Ice Volume

At the beginning of the first quarter of 2024, sea ice volume was above average for the CryoSat-2 record (2010-present), at 19.1 thousand km³. This was likely driven by an unusually high sea extent, which at 13.2 million km² was one of the highest since 2010, while sea ice thickness for January was the fourth lowest since 2010 at 1.4 m.

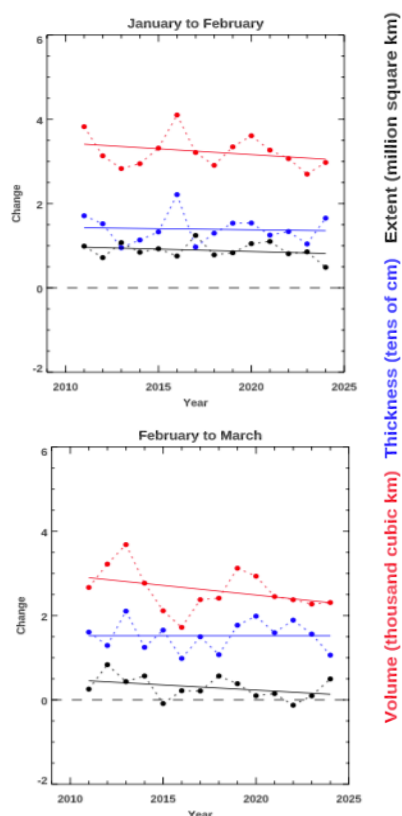
In February and March of 2024, sea ice volume was below average for the CryoSat-2 record, at 22.1 thousand km³ and 24.4 thousand km³ respectively. Similarly to the start of the year, this can be attributed to below average sea ice thickness.

A notable trend throughout the first quarter of 2024 was the low volume of multi-year ice (MYI), which is generally thicker than first-year ice (FYI) and may therefore indicate a younger, thinner ice pack that is contributing to below average sea ice volume. MYI volume was the lowest on record in February at 5.4 thousand km³ (average of 6.9 thousand km³), and the third and fourth lowest on record in January and March, respectively. The volume of FYI, on the other hand, was the highest on record for February and second highest in January, furthering indicating a potential transition to a younger ice pack. The record low volumes of MYI are contributed to by the extremely low sea ice thicknesses of MYI recorded which were below average throughout the first quarter of 2024.



Sea Ice Thickness

Trends in sea ice thickness indicate a younger, thinner ice pack, with below average sea ice thickness throughout the first quarter of 2024. This could be attributed to extremely high temperature anomalies for January and February across much of the Arctic, thought to be caused by exceptionally low sea level pressure over the Bering Sea. This may be the cause of negative ice thickness anomalies in the Central Arctic and Northern Canadian Arctic Archipelago (CAA). The negative growth anomaly north of the CAA has largely persisted since October 2022. This region is an area that generally hosts thicker, older MYI, and the reduction in sea ice thickness in this area may therefore be contributing to the below average MYI thicknesses and volumes during the first quarter of 2024.



February 2024 anomaly compared with 2010-2023

