

Ronald Kwok
2008 Sea Ice Minimum Summary Report

Preconditioning and forcing of the summer ice cover:

1. This past winter and summer was cooler than the year before. In addition, even though the seasonal ice cover was formed later in the fall of 2007, the mean thickness of the seasonal ice cover at the end of March was comparable to that of the previous two seasons. This can be attributed to the shallower snow depth (only slightly more than half of previous year) leading to faster growth i.e., higher ice production. This allowed the seasonal ice to survive the summer of 2008. So we expect some replenishment of the multiyear ice area this summer.

2. Except for higher than average ice export (at the Fram Strait) in June, the rest of the summer had been about average, i.e., low. During June, the Transpolar drift was tilted towards the Beaufort Sea partially explaining the larger than normal retreat/melt of the ice edge north of the Alaskan Coast/Beaufort Sea. Again, ice advection plays a role in removing ice coverage, exposing more of the ocean to the input of heat from the atmosphere, and adding to the ice albedo feedback. The export through the Nares Strait was comparable to last year (i.e., higher than usual), which also served to remove thick ice from the Arctic Ocean.