30th January 2012 : Departmental Seminar

When will the Arctic lose its ice cover?

Seymour Laxon — twitter : cpom_news

Changes in sea ice. : surface albedo. feedback.
Global circulation in oceans.

Sea-ice feedback loop - melting ice - reduced albedo.
increased absorption of heat -
impede formation of sea ice

Ice recovery (Tietsche, JGR, 2011)

Melt alot of ice in summer.
Ice forms due to heat loss to atmosphere (-2°C)
Thin ice grows more quickly than thick ice,
therefore it can recover more quickly in winter.

What is happening at depth?

PIOMASS - sea ice volume

Gerdes-Köberle 2007 model comparison of sea ice thickness.

Sea-surface height increasing (15cm last 8 yrs)
Winds strengthening
Bringing up deep water due to increased rotation of beaufort gyre.

Arctic Ocean freshwater budget OSC news