2012 PAN-ARCTIC OUTLOOK
June Report based on May Data

Morison

Continuing in the spirit of our previous outlooks, I am influenced, probably overly so, by a couple of things that we are fortunate to see earlier in the year than most other people and which may not enter into other analyses. These are central Arctic snow conditions and ocean conditions. Norbert and I have always felt that May to Sept weather conditions dominate ice extent, but we don't know what that weather will be and no one else does either. However, increased snow cover inhibits ice growth in winter and contributes to albedo lowering melt ponds in summer. The heat stored just under the mixed layer is important to slowing ice growth in winter and bottom melting of the ice in summer. First impressions from our 2012 North Pole Environmental Observatory (NPEO) deployment and initial Seasonal Sea Ice Zone Reconnaissance Survey (SIZRS) are that there is quite a bit more snow on the ice than in the last few years and there is more ocean heat than ever right below the mixed layer. Thus, even though the ice extent is about equal to the long term average right now, for summer weather typical of the past few years, the decline in ice area will be more rapid than in other years. I think this may show up initially in unusual declines in concentration in the northern Canada Basin and in the eastern part of the Amundsen Basin. When drift patterns compact the ice we should see reduced ice extent on both the Pacific and Atlantic side of the basin. Considering these and in the spirit of gamesmanship, the Morison and Untersteiner, June 1, 2012, sea ice outlook for average September 2012 sea ice extent is (drum roll please) 4.2 million sq km, slightly less than the 2007 minimum.