

## **September 2009 Sea Ice Outlook: July Report**

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**Best Guess: 4.528 million km<sup>2</sup>**

**Method: Heuristic/Statistical**

### **Update:**

The current conditions (figure 1):

Ice extent 10.554 million km<sup>2</sup>

Ice Area 9.135 million km<sup>2</sup>,

Avg concentration 86.6%

Multiyear ice extent 5.348 million km<sup>2</sup>

Multiyear ice area 2.612 million km<sup>2</sup>

Avg concentration: 48.8%

### **Methodology:**

Using the most current hemispheric ice chart and ArcGIS, the map is edited to select all parcels with MYI as the primary ice type. All other parcels are discarded. The remaining ice is edited following the assumptions below. A senior ice analyst (Mr. Holden) examines and approves the outlooks.

### **The Seasonal Outlooks:**

Conservative: Any area with MYI survives

Ice extent: 5.261 million km<sup>2</sup>

Ice area: 4.802 million km<sup>2</sup>

Avg concentration: 91.3%

MYI extent: 5.261 million km<sup>2</sup> (includes all parcels containing MYI)

MYI area: 2.600 million km<sup>2</sup>

Avg concentration: 49.4%

Moderate: Any area with 20% or more MYI survives

Ice extent: 4.528 million km<sup>2</sup>

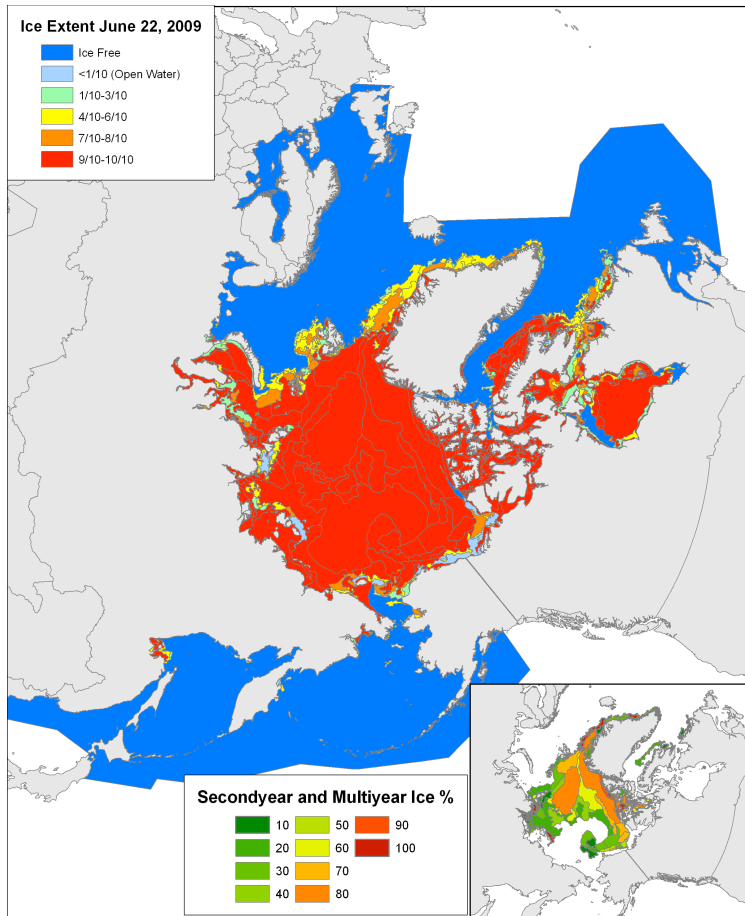
Ice area: 4.240 million km<sup>2</sup>

Avg concentration: 93.6%

MYI extent: 4.528 million km<sup>2</sup>

MYI area: 2.382 million km<sup>2</sup>

Avg concentration: 52.6%



**Figure 1:** Sea ice conditions for June 22, 2009, and multiyear ice by percentage (inset).

Aggressive: Any area with 40% or more MYI survives

Ice extent: 2.881 million km<sup>2</sup>

Ice area: 2.736 million km<sup>2</sup>

Avg concentration: 95.0%

MYI extent: 2.881 million km<sup>2</sup>

MYI area: 1.992 million km<sup>2</sup>

Avg concentration: 69.1%

Extreme: Any area with 70% or more MYI survives

Ice extent: 1.956 million km<sup>2</sup>

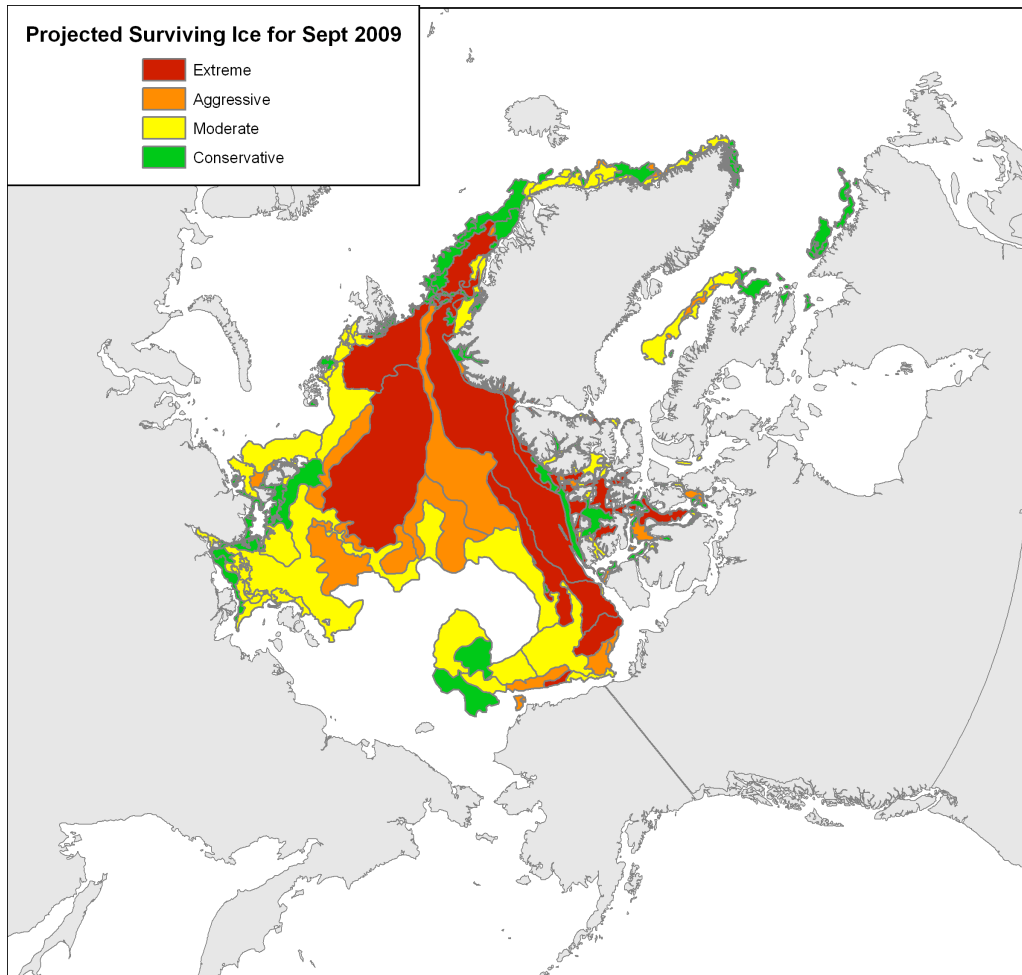
Ice area: 1.857 million km<sup>2</sup>

Avg concentration: 94.9%

MYI Extent: 1.956 million km<sup>2</sup>

MYI Area: 1.523 million km<sup>2</sup>

Avg concentration: 77.9%



**Figure 2:** Surviving ice parcels. Extreme = red, Aggressive= red + orange, Moderate= red + orange + yellow, Conservative=red + orange + yellow + green.

As was the case last year, the charts represent the *parcels* of ice that we believe will survive the summer. However it *does not* represent their final location. Drift due to wind and water will transport along the Beaufort Gyre out of the Beaufort and Chukchi Seas. Some ice in the Amundsen Basin will be transported out into the Barents Sea. The picture of the ice in September 2009 will be somewhat different than the current (June 22) conditions.

From the spread of prognostications, we believe the Moderate case (4.528 million km<sup>2</sup>) is the most likely, although at this point it is too early to tell how the atmosphere and ocean will set up.