National Ice Center – Antarctic Analysis

Last fall the National Ice Center made some major changes to the frequency and level of analytical detail of our weekly products. In the southern hemisphere, we doubled the frequency to 1x per week, and slightly decreased the level of detail by not including partial concentrations for all ice types. Many of the decisions were made primarily with the Arctic and Daily analyses in mind.

Below are the details of how we're creating our weekly Antarctic product now.

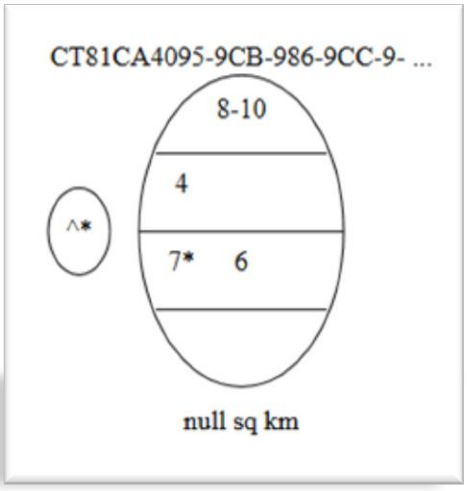
Frequency: Once per week. We usually complete it to be valid on Wednesdays, but if holidays, weather or staffing issues occur we will complete it on Thursday instead. Currently, if there is a major disruption to the production of ice charts then the Arctic product takes precedence and we may not complete the southern hemisphere for a given week. As the Antarctic lead here, I hope to eliminate this contingency. We have 3 analysts that specialize in the southern hemisphere, but one is usually tasked with daily projects during a given week leaving 2 to complete most of the work.

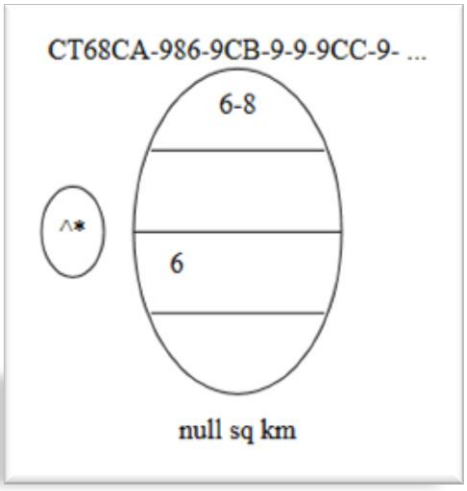
Imagery: So that we're using the most up-to-date imagery, when we analyze on Tues-Wed we do not pull imagery that is older than about 48 hours. Our primary sources of information are passive microwave – OSCAT or ASCAT, visible – MODIS, IR – OLS, and active microwave – RADARSAT-2 where we can get it. We also use weather and buoy data to help us draw our ice lines.

Type of Analysis: Concentration and Stage of Development.

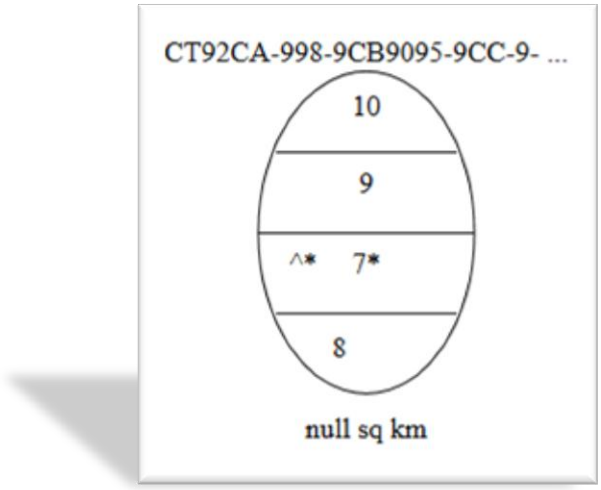
Concentration categories: Ice Free, 1-3, 2-4, 4-6, 6-8, 8-10, 10. In order to transition to more frequent analyses that may ultimately merge with our daily product we changed our concentration values to make that possible transition seamless in the future.

Stages of development: 1, 3, 6, 7, 7* and ^*. As I said above, to keep the analysis simpler and to save time the only ice type that we partial is the 7*. Here is an example of the eggs for a couple of current ice polygons. An algorithm on the webpage automatically converts our egg values into SIGIRD code, showin in partial above each egg.

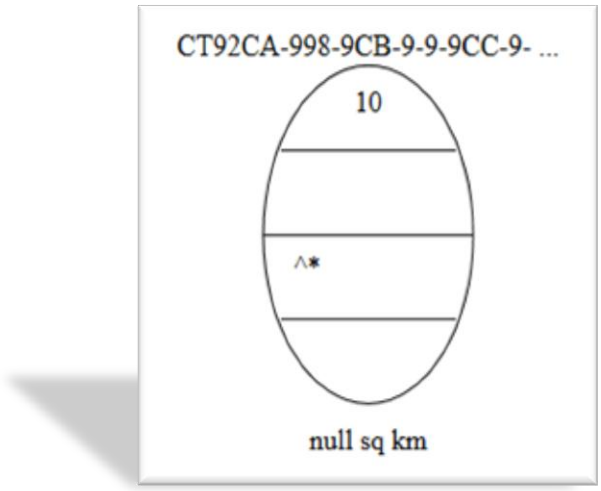




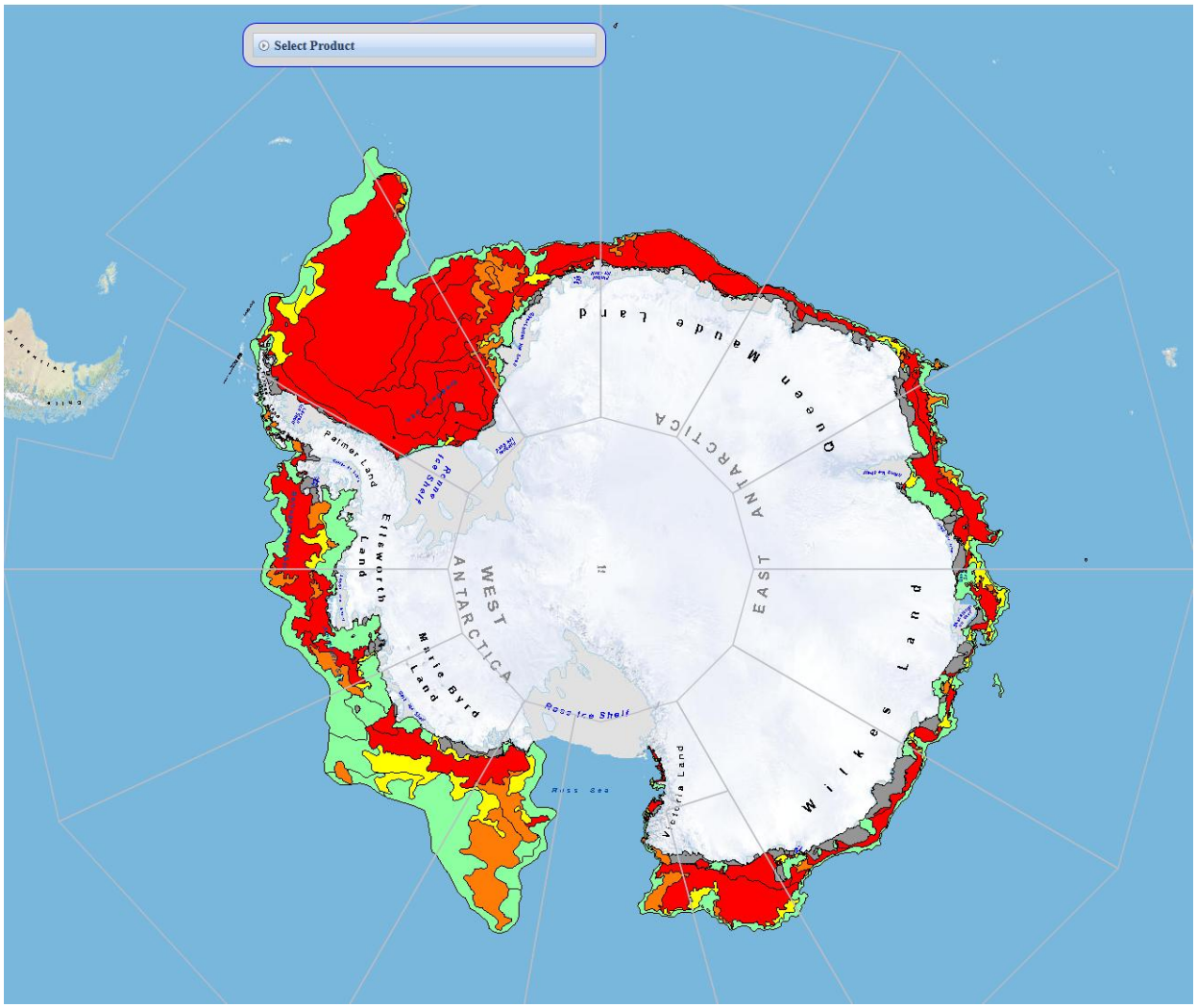
As you can see, we also carry a **trace** of iceberg in every polygon except for Ice Free, fast ice and the large icebergs. Below is an example of fast ice. For the sake of logic, we bring the trace amount of iceberg inside the polygon so that all of the partials are guaranteed to add up to 10/10ths.



The last type of polygon we analyze is 10/10ths iceberg. Currently we track 34 icebergs around Antarctica that exceed 10NM on their longest axis. We track these icebergs with a table that is updated weekly, and found on our website. In addition, we draw these icebergs into our Antarctic analysis. The polygons for the icebergs are simply labeled 10/10ths of iceberg. Many of the icebergs are either grounded or stuck in fast ice, but this is not indicated in the egg.



Below is our analysis from January 30th, 2014.



This is how we analyze currently, but with a partnership that would save each of us time, manpower and money, it would be helpful to bring back some of the detail we lost by switching to a more frequent analysis.