Sea Ice NOAA Indicators

January 23, 2019

Progress Update

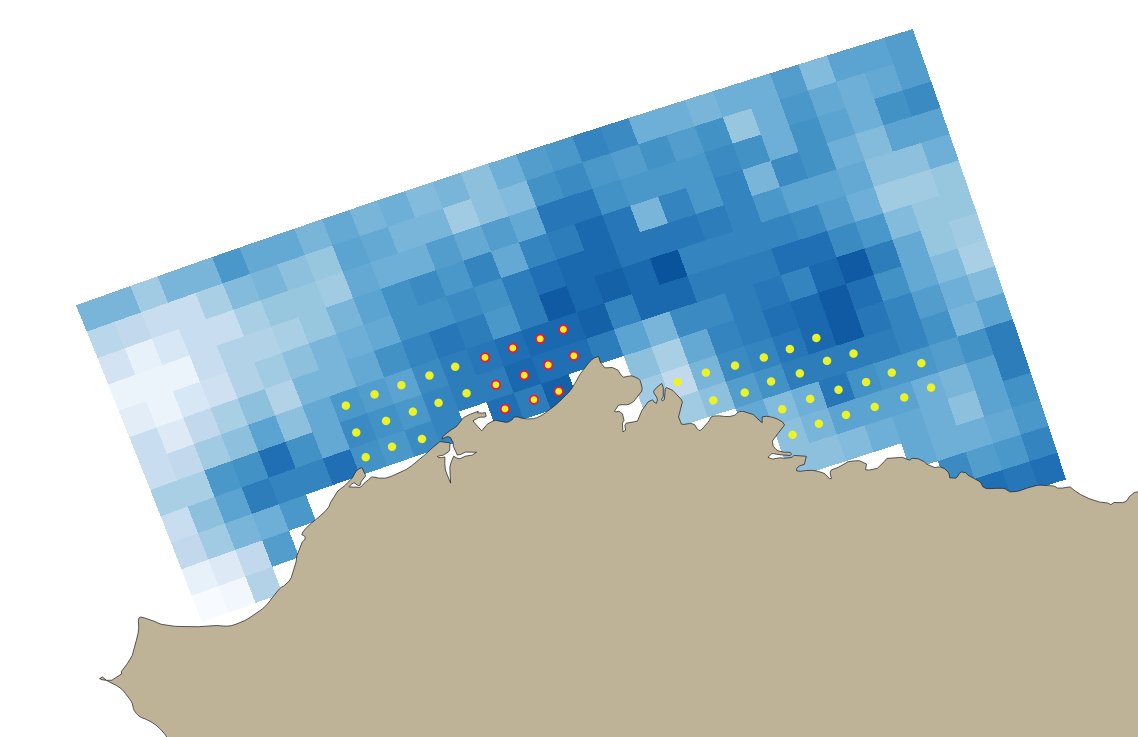
**CODEBASE:**

Processing pipeline has been completed and is a simple way for us to run the freeze-up/break-up (FUBU) dates from the NSIDC-0051 daily Sea Ice Concentration time-series. This code base covers all bases from download, prep, smoothing, FUBU, and plotting to mimick what was done in the paper.

Repository: <https://github.com/ua-snap/seaice_noaa_indicators>

**OUTPUTS:**

**Study Area:**

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**Table 2:**

Comparison of sea-ice cycle phenologies for the Chukchi/Beaufort Seas, 1979—2007

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | barrow | beaufort | chuckchi | chuckchi-beaufort |
| freezeup\_start | 10-18 | 10-14 | 10-20 | 10-16 |
| freezeup\_end | 11-11 | 11-01 | 11-17 | 11-07 |
| breakup\_start | 06-12 | 06-08 | 05-30 | 06-05 |
| breakup\_end | 08-17 | 08-17 | 08-05 | 08-13 |

**Table 3:**

Climatological freeze-up and break-up dates with seasonal durations for the Chukchi and Beaufort Sea coastal regions, 1979–2013

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | barrow | beaufort | chuckchi | chuckchi-beaufort |
| freezeup\_start | 10-07 | 10-05 | 10-15 | 10-08 |
| freezeup\_end | 11-30 | 11-16 | 12-08 | 11-24 |
| breakup\_start | 05-06 | 05-10 | 05-04 | 05-08 |
| breakup\_end | 08-09 | 08-13 | 07-28 | 08-07 |

**Table 4:**

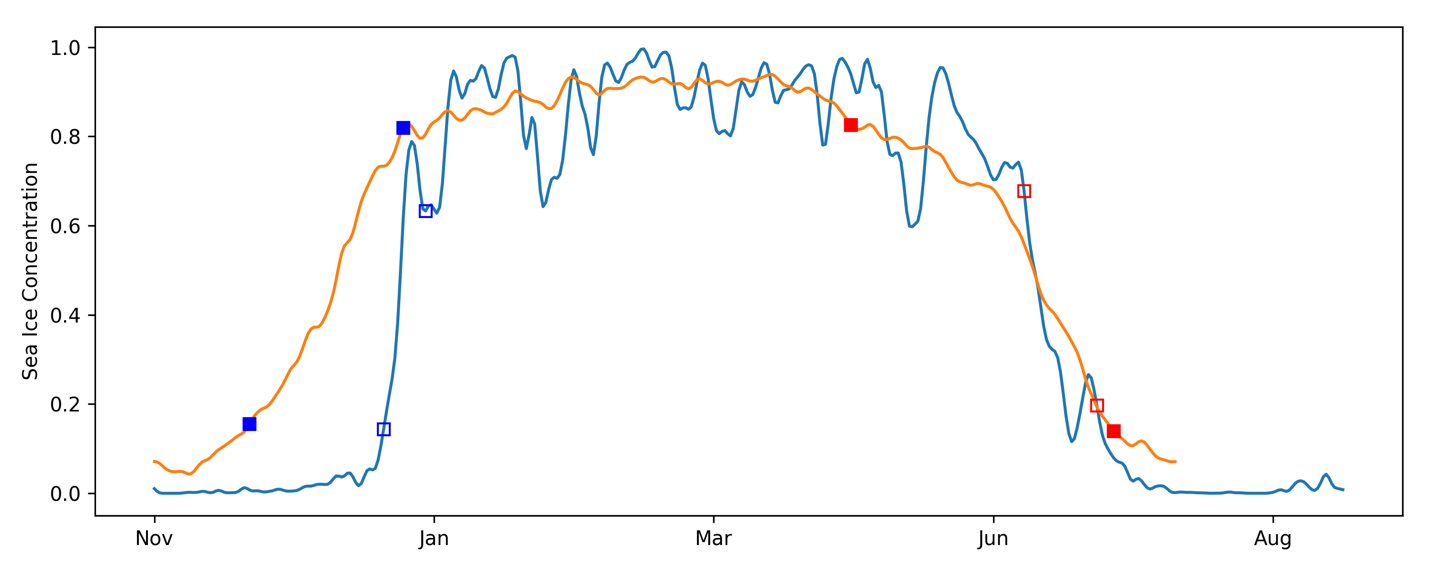
Mean freeze-up and break-up dates and trends for the Chukchi and Beaufort Sea coastal regions, 1979–2013

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | barrow | beaufort | chuckchi | chuckchi-beaufort |
| freezeup\_start | 10-21 | 10-16 | 10-24 | 10-19 |
| freezeup\_end | 11-12 | 11-04 | 11-18 | 11-09 |
| breakup\_start | 06-07 | 06-06 | 05-27 | 06-03 |
| breakup\_end | 08-12 | 08-12 | 07-31 | 08-07 |

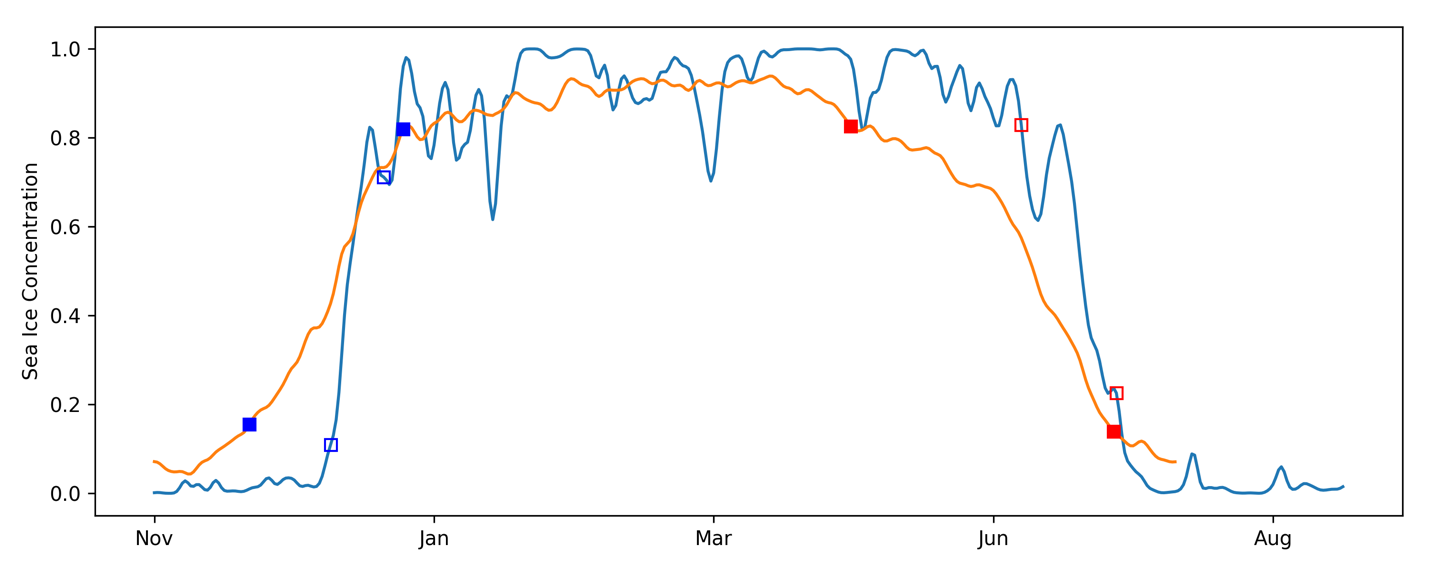
**Figure 4:**

Sea-ice concentration record of Barrow, Alaska.

1997-1998:

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2005-2006:



**Figure 5:**

Freeze-up and break-up with two summer ice events.