



## *U.S. National Ice Center*



**USN**



**USCG**



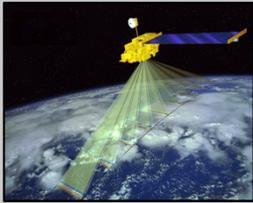
**NOAA**

*Director: CDR Heather Quilenderino, USN*  
*Deputy Director: Mr. Kevin Berberich, NOAA*  
*Presented By: LT Bryan Brasher, NOAA*

*22 June 2020*

# Domain Awareness

## Observation: Remote and In-Situ Sensing



Satellites



Buoys



Deployed Personnel

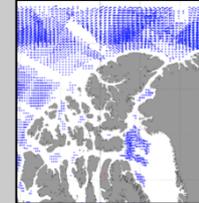


Surface Observations



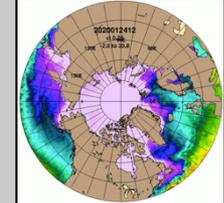
Radar

## Computing



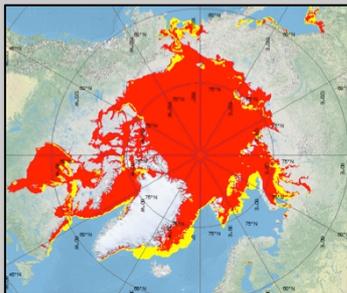
Extract Data from Satellite Imagery

## Modeling

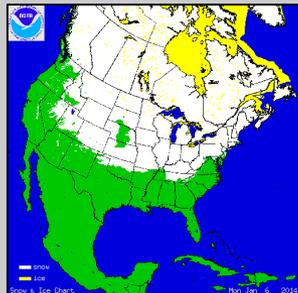


Nowcasting and Forecasting

## Characterization

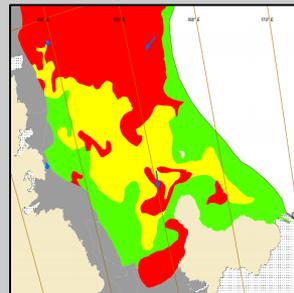


Sea Ice Extent, Concentration, and Thickness

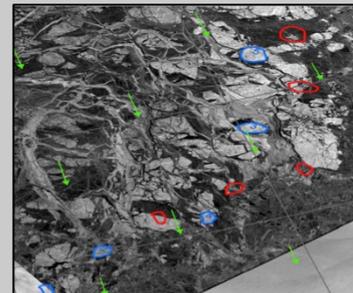


Gridded Snow and Ice Charts

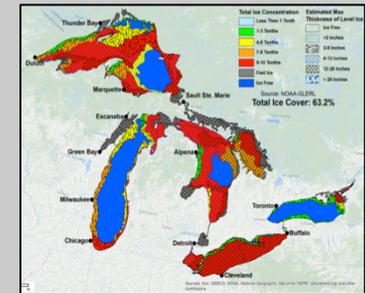
## Exploitation: Tailoring and Integration



Ice Navigation and Avoidance



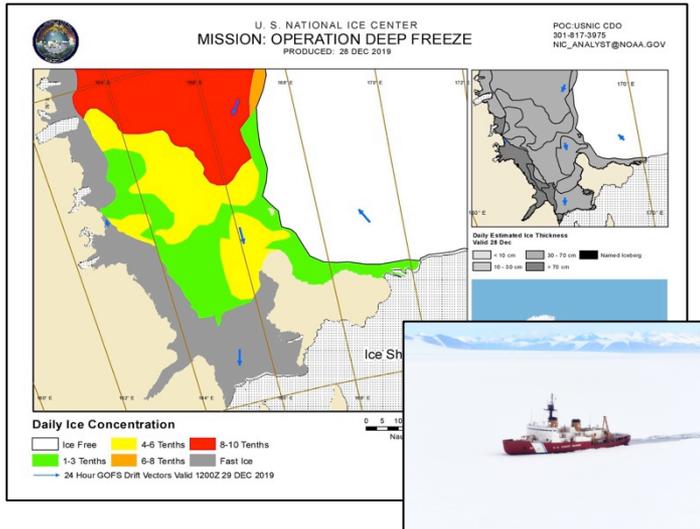
Environmental Intelligence



Operations Planning



# USNIC Tailored Support Program



Tailored Support Program provides critical situational awareness to U.S. interests (national defense, resupply, R&D) operating in or near sea ice.

## Products & Services:

- Graphical and GIS support
  - *Current conditions*
  - *48-hour forecast*
  - *45-day outlook*
- Annotated satellite imagery
- Spatial analysis
- Embarked analysts

## USNIC Requirements:

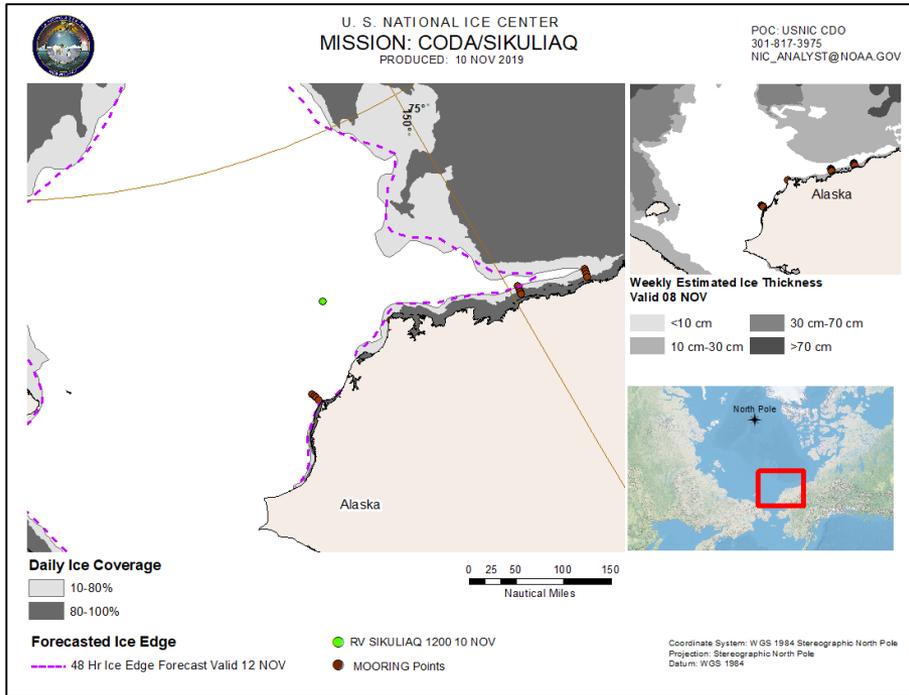
- Submit Request For Support
- Update USNIC on any mission changes (for imagery ordering)

## Embarked Analysts Requirements:

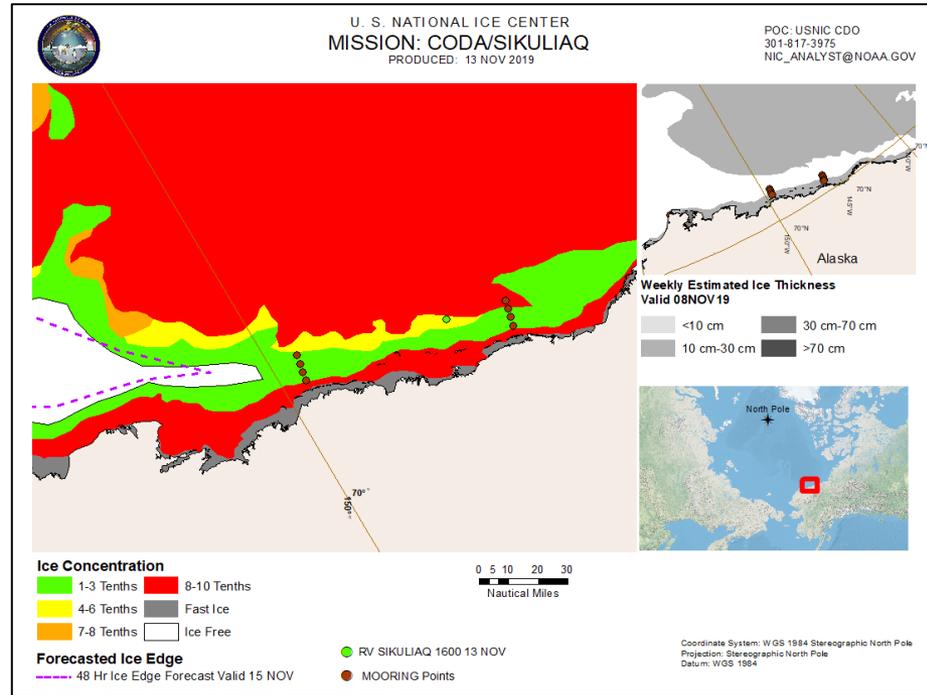
- Satellite data subscription (CERTUS)
- Travel costs (if possible)



# Graphical Tailored Support



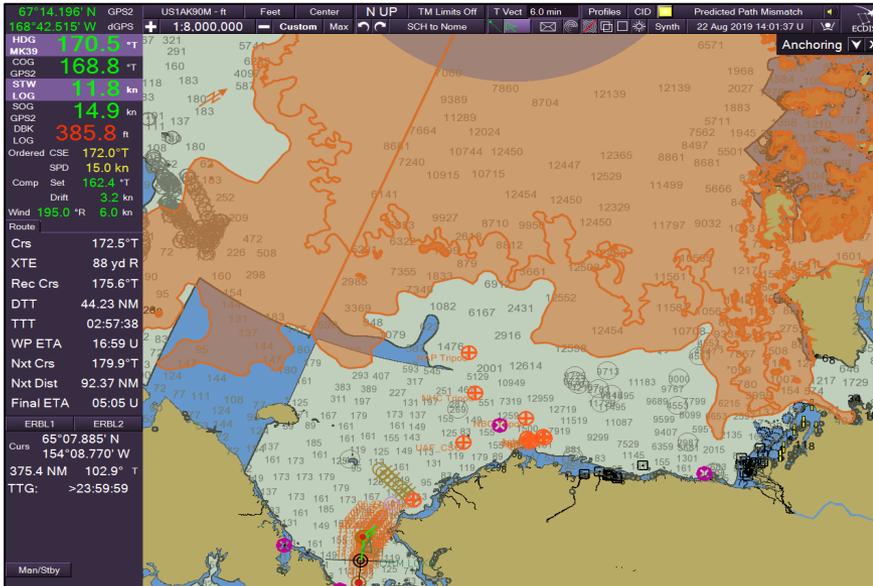
Support for a vessel not in the ice



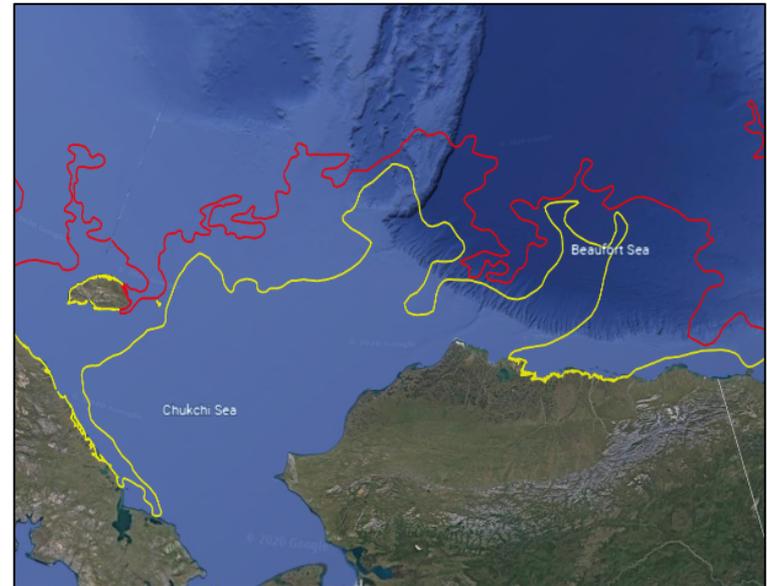
Support for a vessel in the ice



# GIS Format Applications



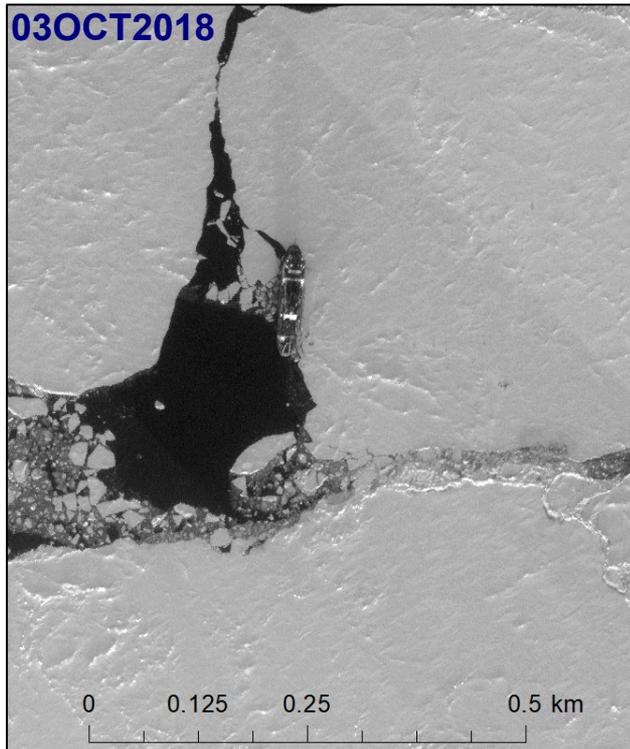
**MIZ and Ice Edge shapefiles on USCGC HEALY (WAGB-20) ECDIS**



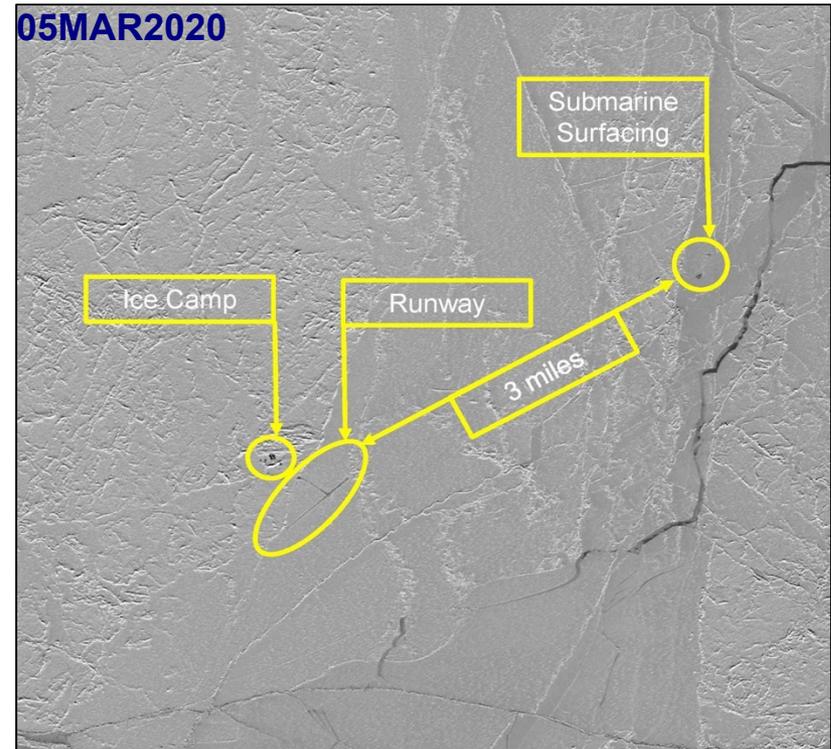
**MIZ and Ice Edge KML on Google Earth**

**USNIC can provide products in common GIS file formats**

# Imagery Sources



WorldView image of USCGC HEALY

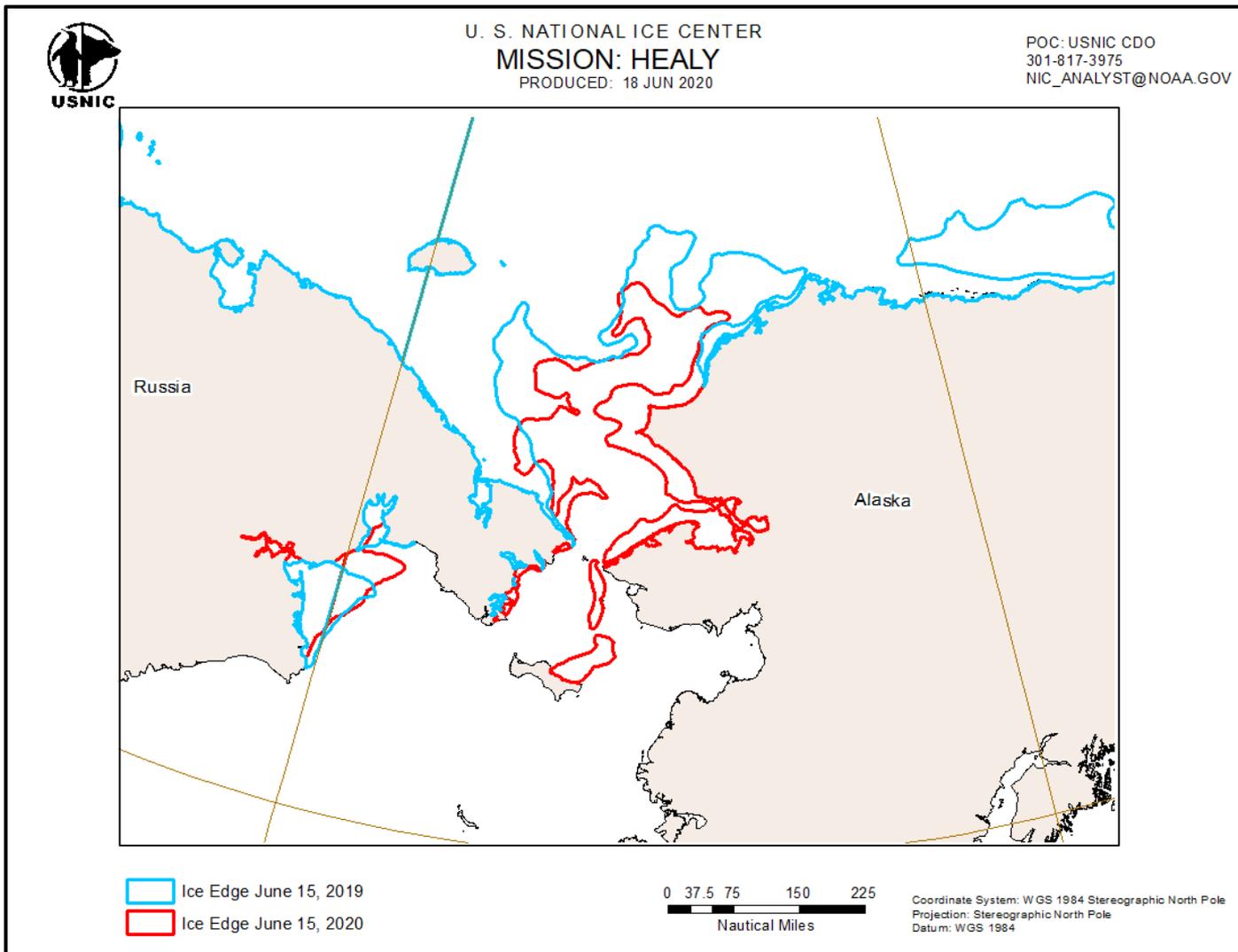


WorldView Image of Ice Camp SEADRAGON

Through various partnerships, USNIC *may* be able to provide high resolution optical imagery

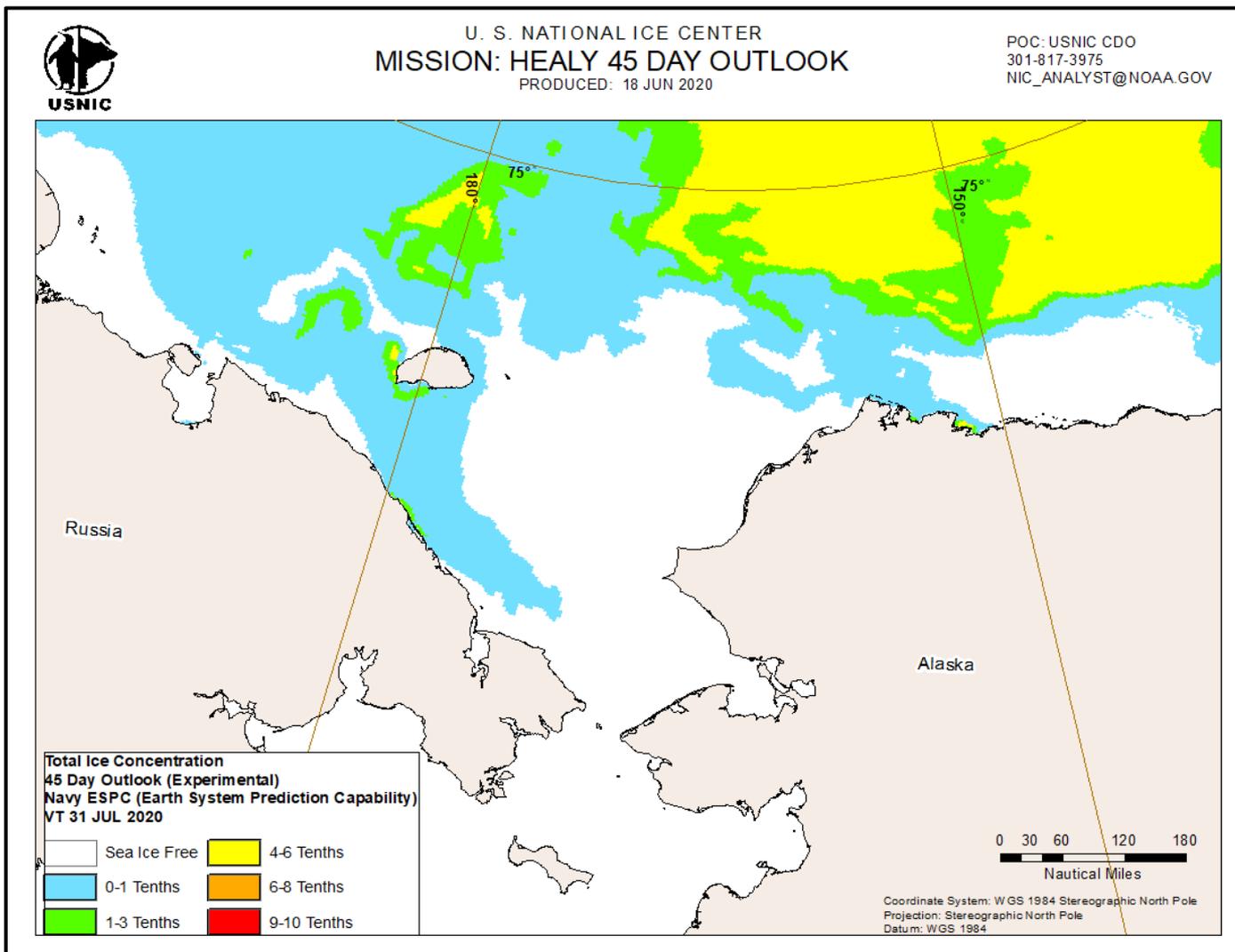


# 15 June Ice Edge Comparison



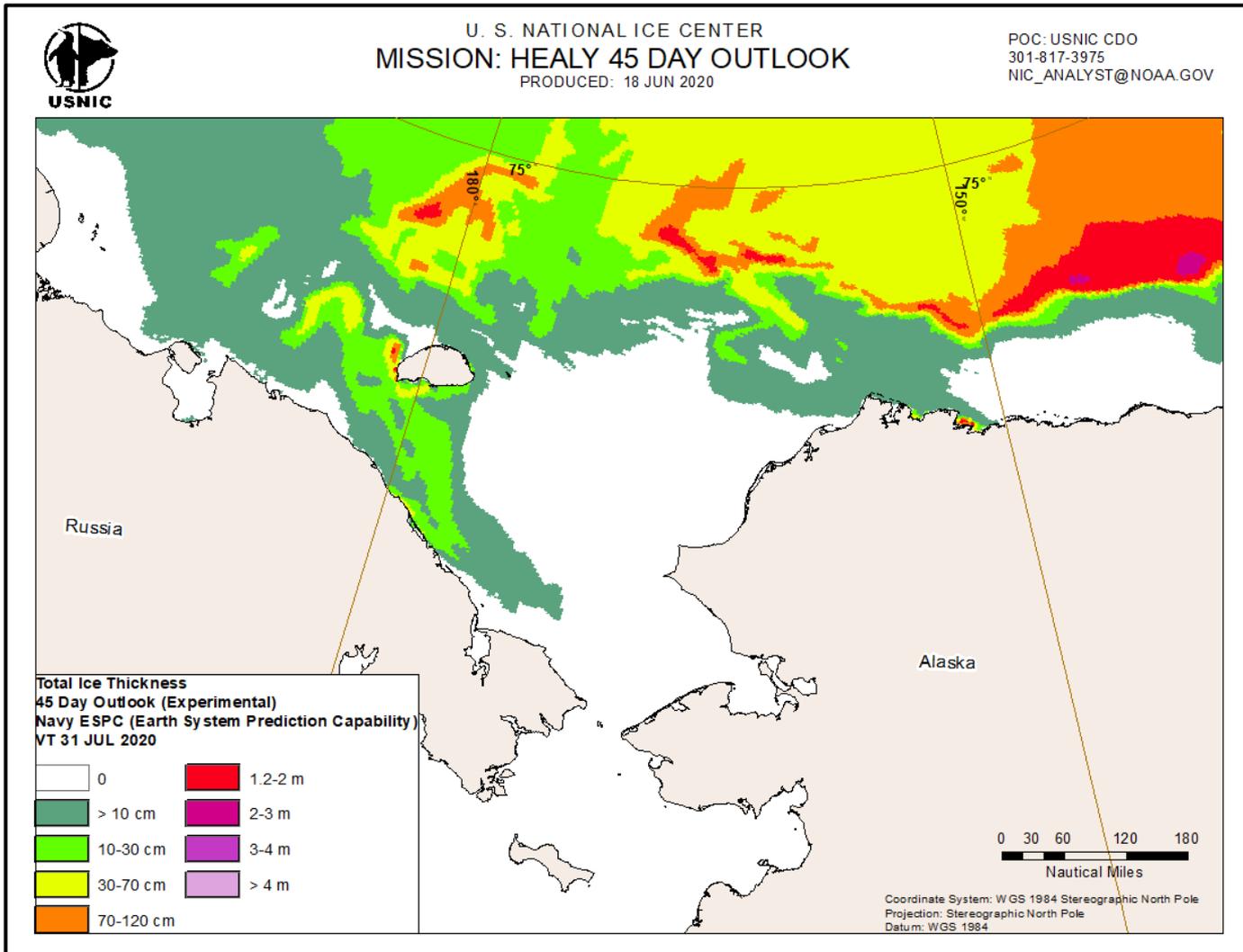


# 45-Day Ice Concentration Outlook





# 45-Day Ice Thickness Outlook





# FWC-N Weather Support



**UNCLAS FOUO**  
**UNIT: USCGC HEALY**  
 24 HR Model Guidance (VT:16/12Z SEP 2019)

48 HR Model Guidance (VT:17/12Z SEP 2019)

**SYNOPTIC SITUATION VALID 15/12Z SEP 2019**  
 HIGH PRESSURE OVER THE BEAUFORT SEA IS INTERACTING WITH AN ARCTIC LOW GENERATING A GENTLE TO FRESH EASTERLY BREEZE AND SLIGHT SEAS WITH PERIODS OF SNOW THROUGHOUT THE FORECAST PERIOD.

**REMARKS**  
 A. LAST WEATHER OBSERVATION RECEIVED: WX OBSERVATION (BBXX) 090610ZSEP19.  
 B. VISIBILITY UNRESTRICTED OUTSIDE OF PRECIPITATION.

	16/00Z 77.8N/144.2W	16/06Z 77.8N/144.2W	16/12Z 77.8N/144.2W	16/18Z 77.8N/144.2W	17/00Z 77.8N/144.2W	17/06Z 77.8N/144.2W	17/12Z 77.8N/144.2W	17/18Z 77.8N/144.2W	18/00Z 77.8N/144.2W
SKY	CLDY								
WEATHER	SNOW	SNOW	SNOW	SNOW	SNOW	NO SIG WX	SNOW	SNOW	NO SIG WX
VIS(NM)	2NM	2NM	2NM	2NM	2NM	>7NM	2NM	2NM	>7NM
WIND(KT)	VRBL 2-5	VRBL 2-5	VRBL 2-5	SE 8-13	ESE 13-18G23	E 10-15G20	ENE 13-18G23	ENE 10-15G20	ENE 10-15G20
SEAS(FT)	ESE 1-3								
MAX/MIN TEMP(F)	27/25				25/23				
SST(F)	29	29	29	29	29	29	29	29	29

**MOVREP: 100348ZSEP19 FORECASTER: AG2 WU (U/I) / AG1 WIGGIN**  
**UNCLAS FOUO**

To receive: submit MOVREP to FWC-N (fwc.nrfk.cdo.01.fct@navy.mil) requesting GWEAX



# Questions and Comments



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