



U.S. National Ice Center



USN



USCG



NOAA

Director: CDR Heather Quilenderino, USN
Deputy Director: Mr. Kevin Berberich, NOAA
Presented By: LT Bailey Miller, USN

04 February 2021

Domain Awareness

Observation: Remote and In-Situ Sensing



Satellites

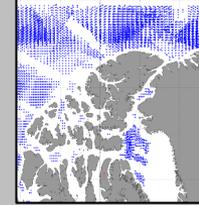
Buoys

Deployed Personnel

Surface Observations

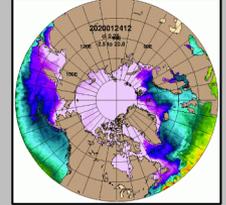
Radar

Computing



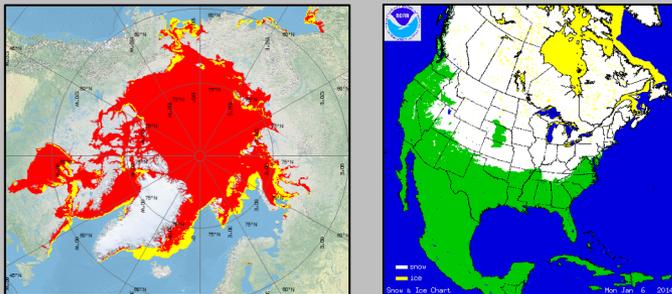
Extract Data from Satellite Imagery

Modeling



Nowcasting and Forecasting

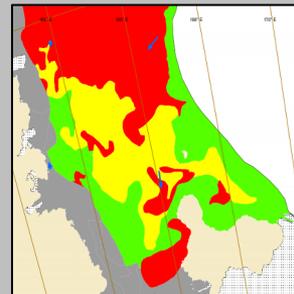
Characterization



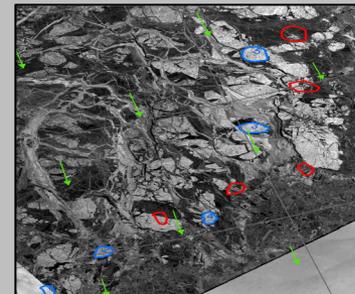
Sea Ice Extent, Concentration, and Thickness

Gridded Snow and Ice Charts

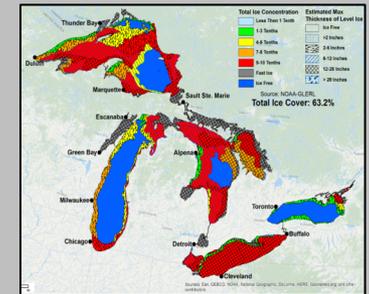
Exploitation: Tailoring and Integration



Ice Navigation and Avoidance



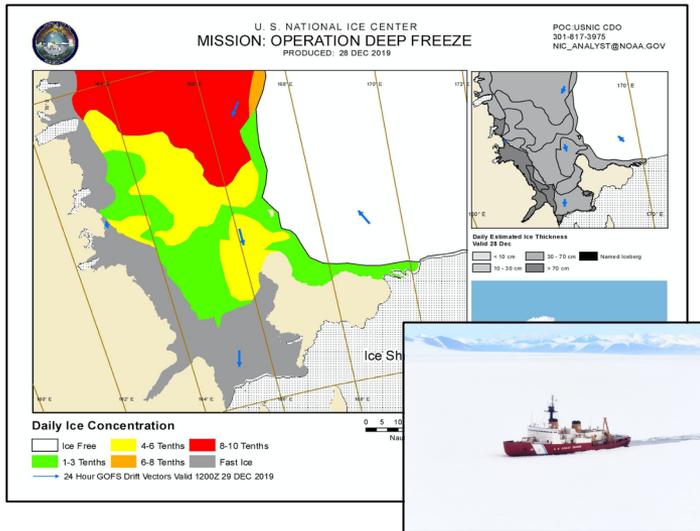
Environmental Intelligence



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:

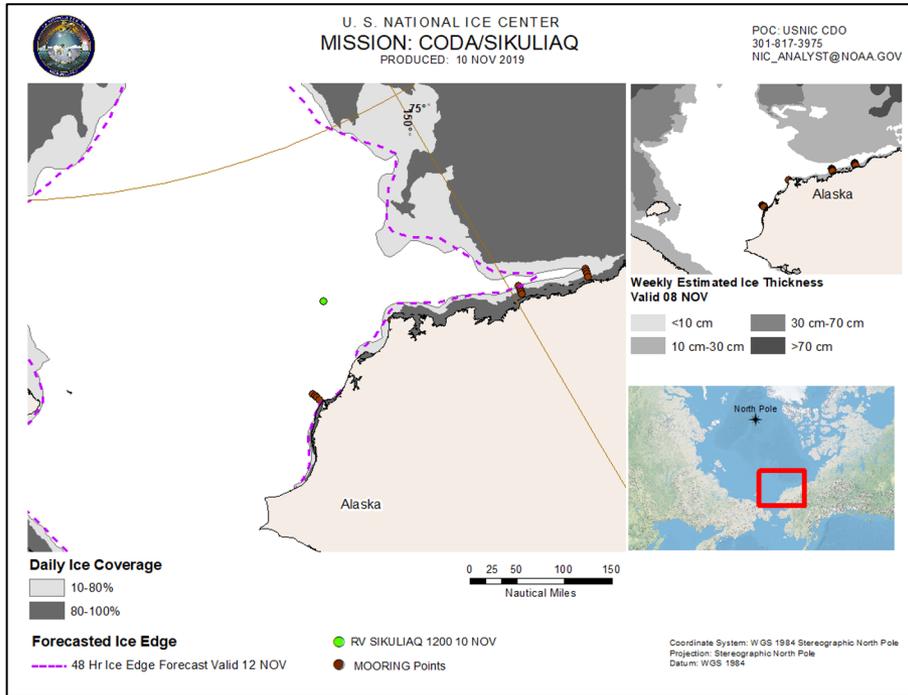
- Submit Request For Support
- Update USNIC on any mission changes (for imagery ordering)

Embarked Analysts Requirements:

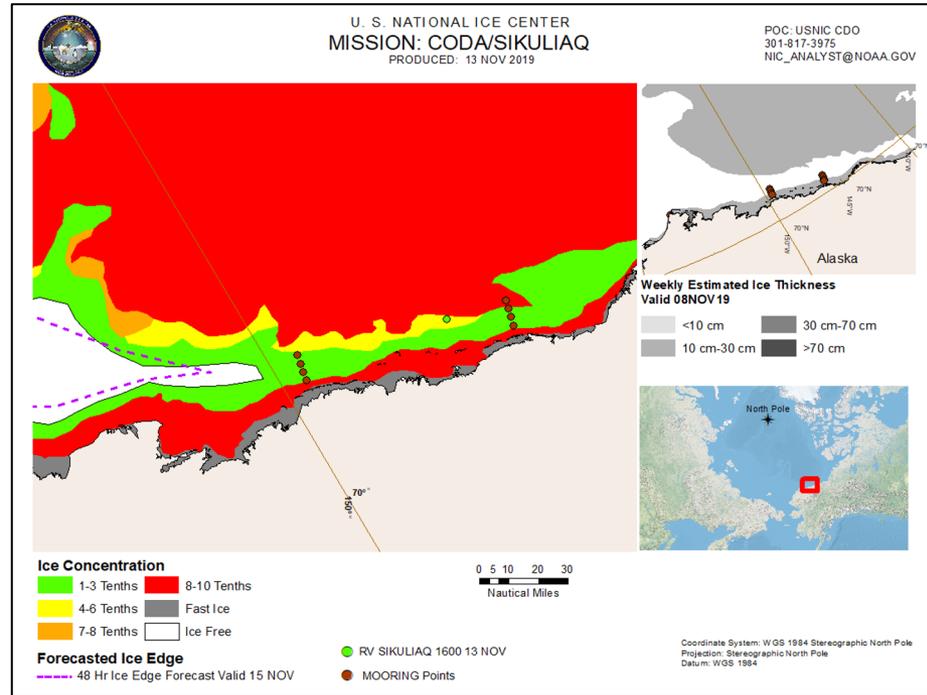
- Satellite data subscription (CERTUS)
- Travel costs (if possible)



Graphical Tailored Support



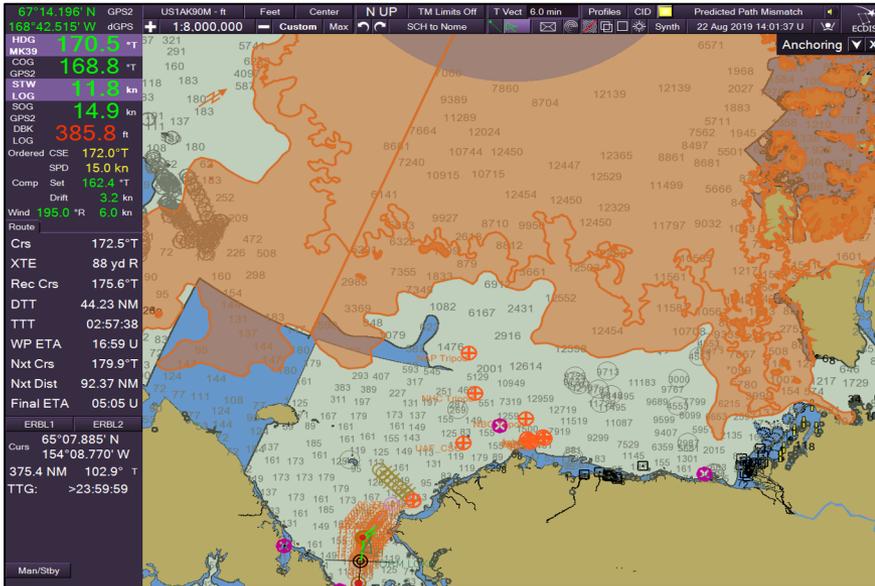
Support for a vessel not in the ice



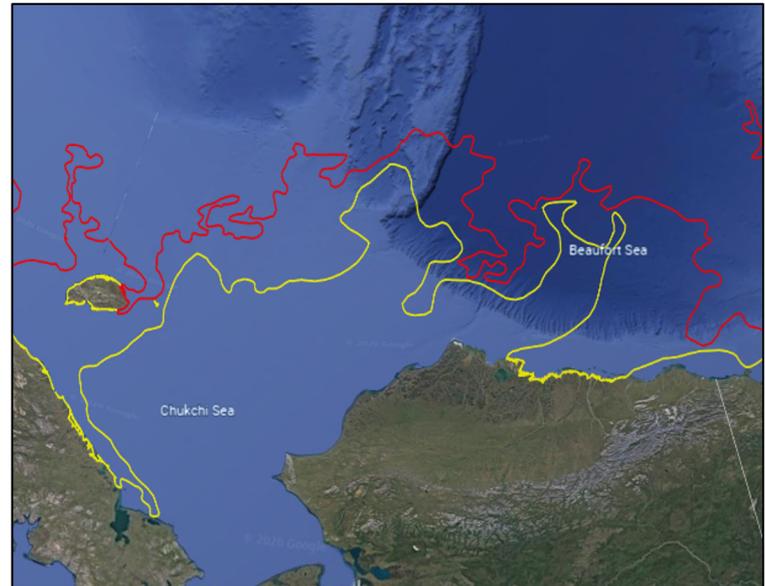
Support for a vessel in the ice



GIS Format Applications



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

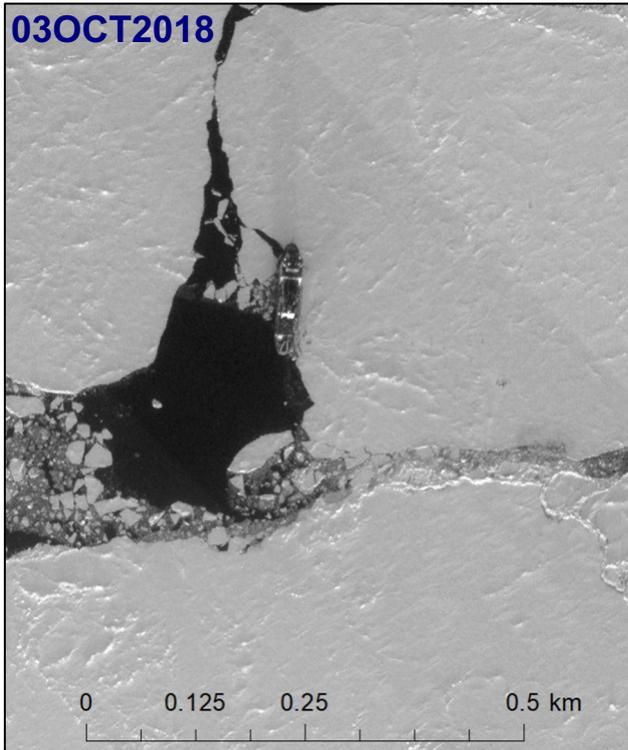


MIZ and Ice Edge KML on Google Earth

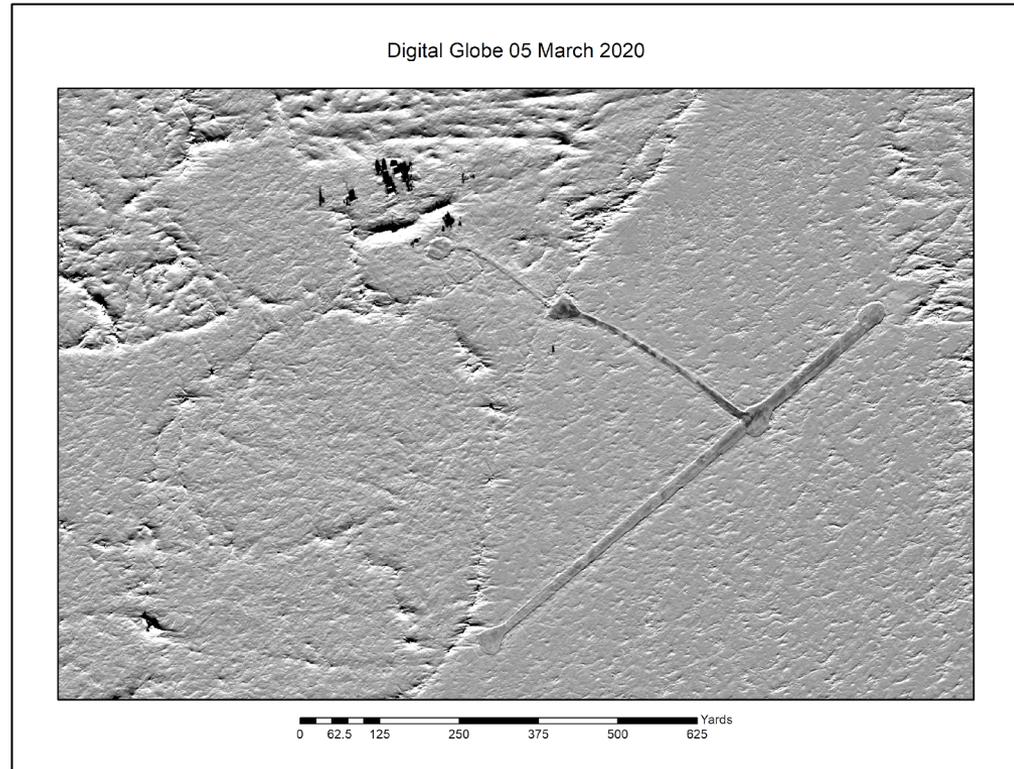
USNIC can provide products in common GIS file formats



Imagery Sources



**WorldView image of USCGC
HEALY**

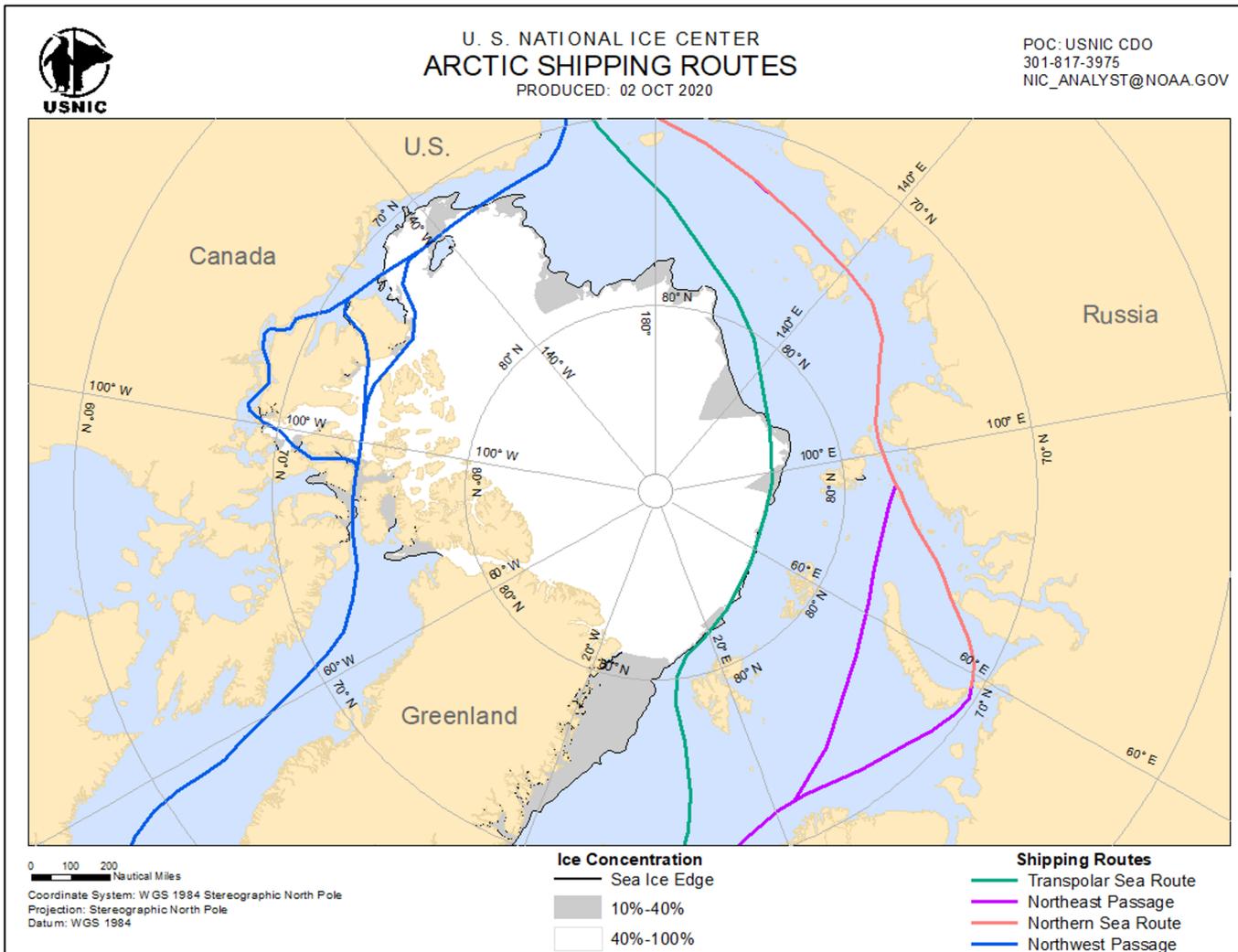


Digital Globe image of Ice Camp SEADRAGON

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

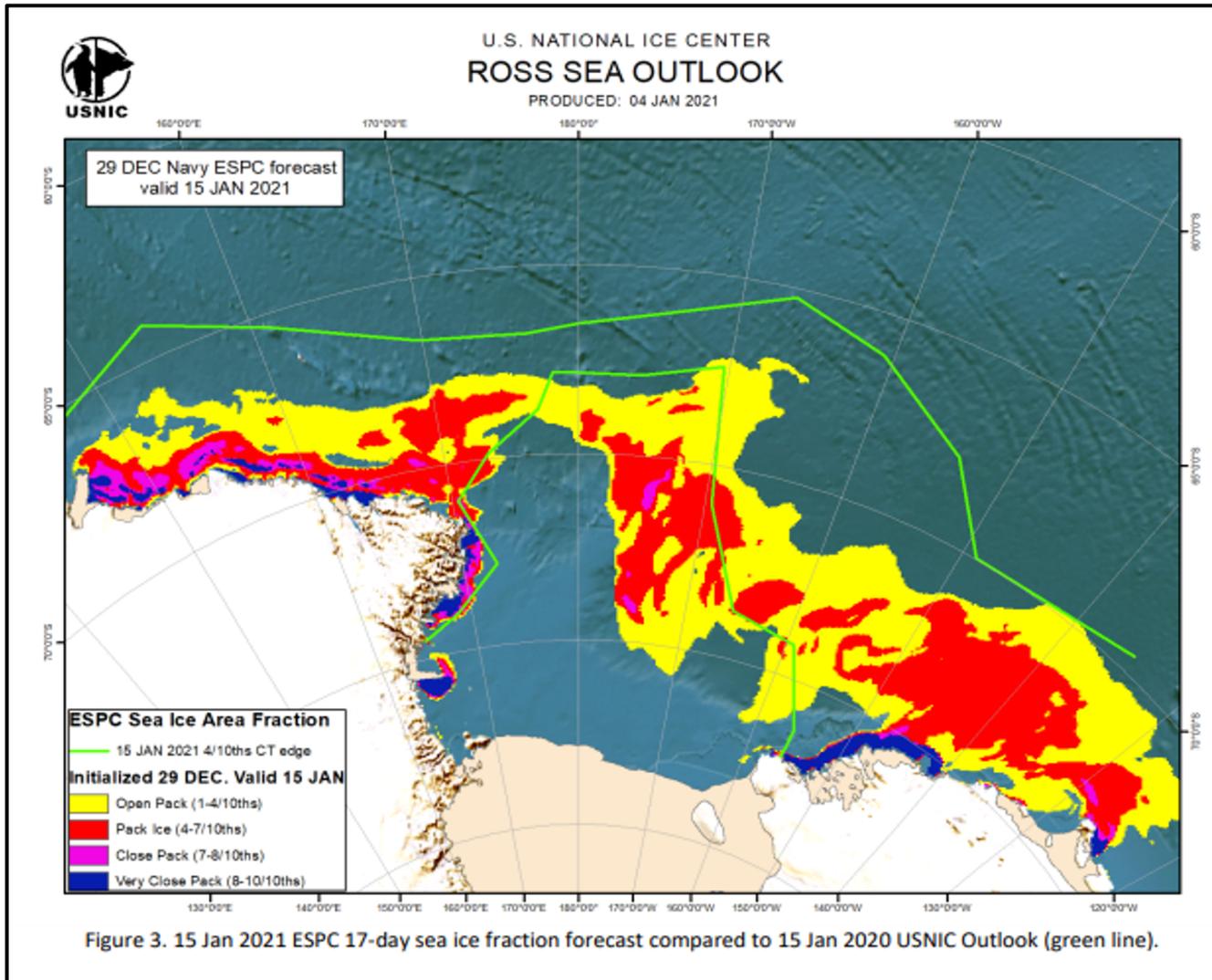


Arctic Shipping Routes



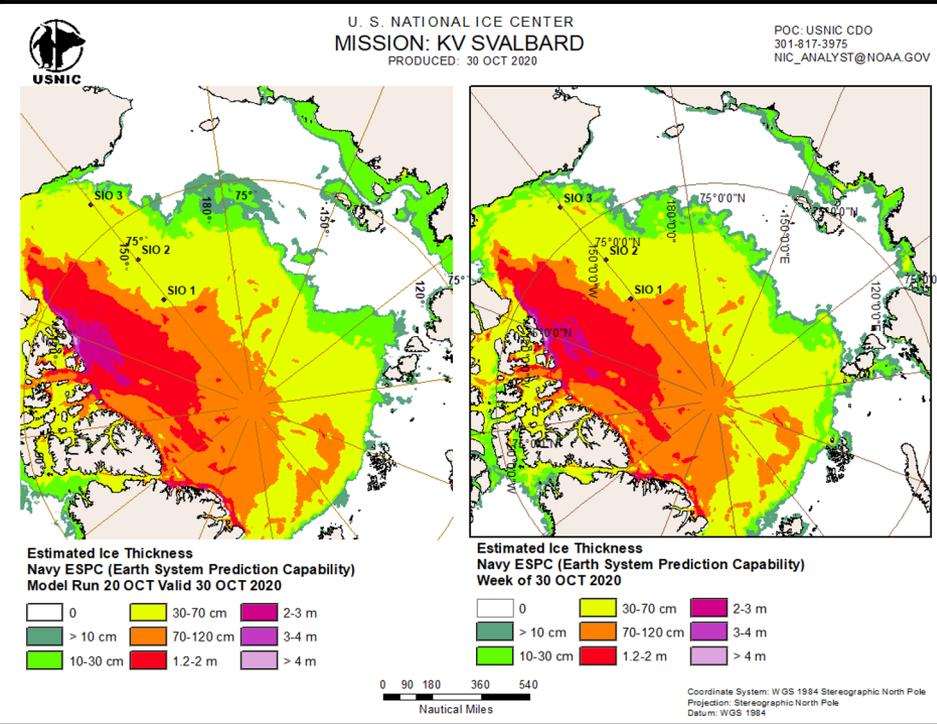
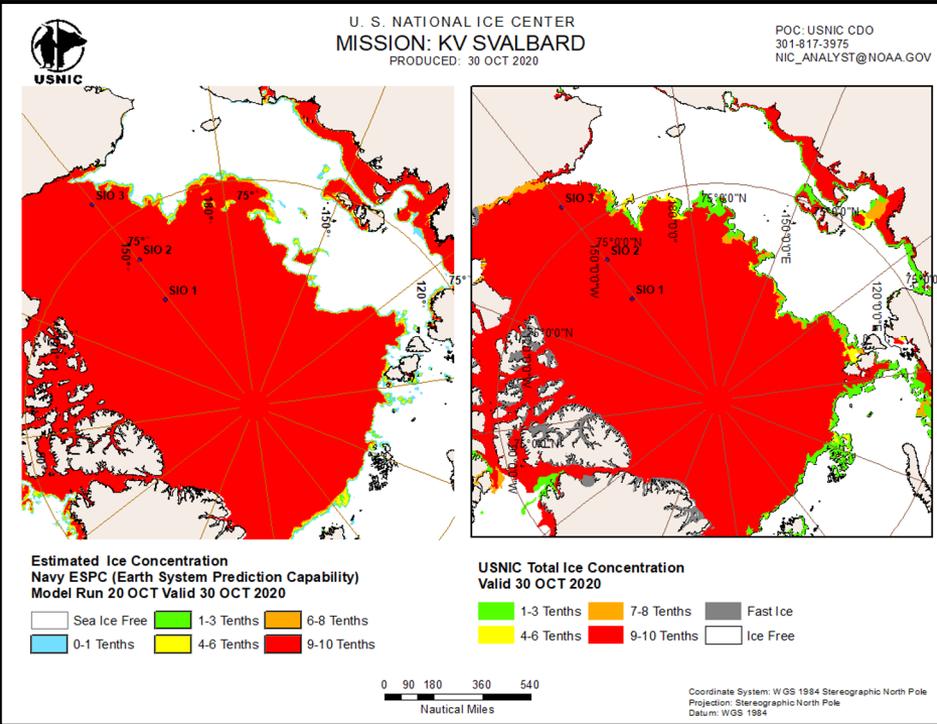


Navy ESPC





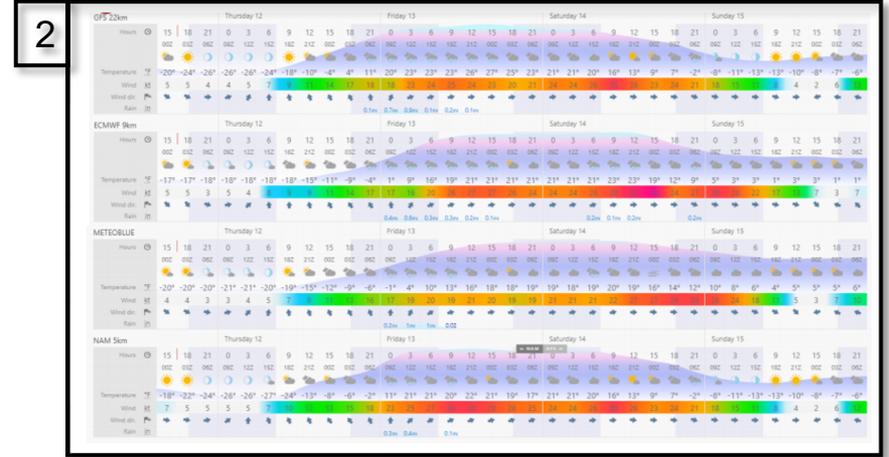
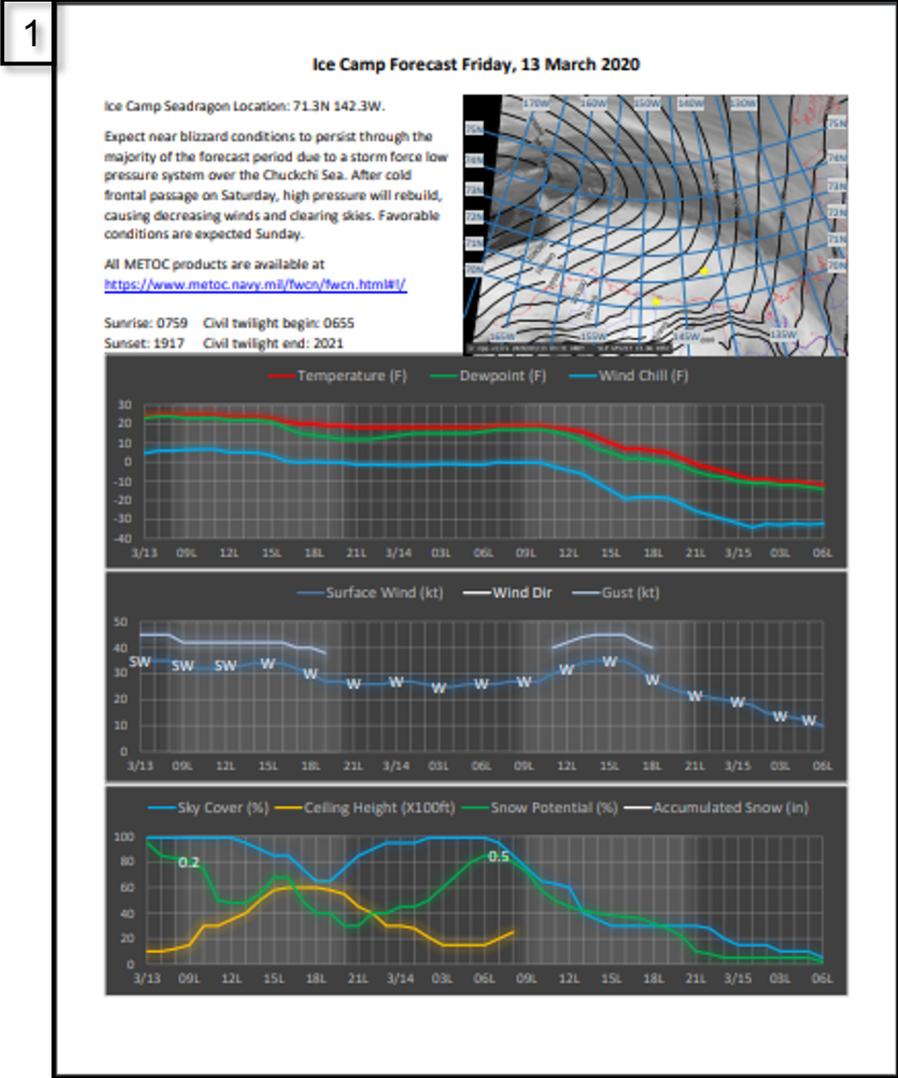
KV Svalbard Comparisons



USNIC analysts are just beginning to discover all of the ways to use ESPC



FWC-N Weather Products



3

Flight	22MAR Sun		23MAR Mon		24MAR Tue		25MAR Wed		26MAR Thu		27MAR Fri		28MAR Sat	
	DH	SD	DH	SD	DH	SD	DH	SD	DH	SD	DH	SD	DH	SD
Morning		Wind	Snow Icing		Snow	Snow	Celling		Chance Snow			Wind		
Afternoon		Wind	Snow Icing	Chance Snow	Snow	Snow	Celling		Chance Snow					
Evening		Wind	Snow Icing	Chance Snow	Icing	Snow			Chance Snow					

TAF P053C 032355Z 0300/0400 20005KT 9999 SKC QNH2973INS
 BECMG 0305/0307 18008KT 9999 VCSH SCT040 BKN120 QNH2975INS
 TEMPO 0308/0314 6000 -SN BKN020 OVC050
 BECMG 0314/0316 26010G15KT 9999 NSW FEW050 QNH2985INS
 TN33/0317 TN29/0400



NWP Planned Support



USCG:

- Request For Support
- Mission changes (for imagery ordering)
- Satellite data subscription (CERTUS)

USNIC:

- Multi-center coordination and collaboration
 - AK Sea Ice Desk, NWS, CIS, IIP, FWC-N
- Potentially allowing 3 analysts' deployment opportunity
- Test long range models
- Integrate charts into navigational systems
- USIABP buoy deployment
- NAVO sensor deployment



Questions and Comments



Command Duty Officer
nic.cdo@noaa.gov
nic.cdo@navy.smil.mil

Operations Floor: (301) 817-3975
CDO: (301) 943-6977

<https://usicecenter.gov>

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