



U.S. Arctic Nautical Charting Plan

Supporting Sustainable Marine Transportation in Arctic Alaska

**Office of Coast Survey
Marine Chart Division**

August 10, 2016





231-foot NOAA survey ship *Fairweather*
Commissioned in 1968

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On the cover: NOAA Ship *Fairweather* in the Gulf of Alaska with namesake Mt. Fairweather. NOAA Photo at <http://www.noaanews.noaa.gov/stories2012/images/noaashipfairweatherinfrontofmtfairweather.jpg>

Forward for the 2016 Edition

A draft of the third edition of the U.S. Arctic Nautical Charting Plan was released in June 2015 for public comment. This edition reflects the input received from private citizens, shipping companies, as well as local, state and federal agencies.

In addition to information about planned new raster ("traditional paper"¹) charts, this plan also provides information about existing and proposed new Electronic Navigational Chart (ENC) coverage in U.S. Arctic waters. Existing coverage is shown in a series of graphics depicting the extent of different usage (or scale) bands of ENC coverage. Proposed new ENC coverage is based on existing or proposed raster chart footprints. However, the final extent and display scale of the ENCs may vary slightly from their corresponding raster chart counterparts.

Please be sure to read the new "How to Use This Document" section and "How to Provide Feedback on the U.S. Arctic Nautical Charting Plan." These provide details on how information in the document is organized and how you can submit questions, comments and recommendations regarding the Plan.

¹ "Traditional" chart formats include the centuries old paper nautical chart, as well as digital images of paper chart information, such as Raster Navigational Charts (RNCs) and Portable Document Format (PDF) versions of charts. These forms, made up of dots of ink or pixels on a display screen, are collectively known as "raster charts." The "new" or "non-traditional" format of NOAA nautical charts is the Electronic Navigational Chart (ENC). ENCs, made up of digital files that describe chart features using the geographic coordinates for points, lines and areas, are in "vector," as opposed to "raster," format. More information about the differences between raster and vector charts is available at http://www.nauticalcharts.noaa.gov/mcd/learn_diffRNC_ENC.html.

How to Use this Document

This document provides information about existing, recently released, and proposed new charts and ENC's in the following three sections:

1. Proposed New Electronic Navigational Chart (ENC) Coverage
2. Progress Report on Publishing New Charts
3. Proposed New Raster (Traditional) Charts

The top of each section is set apart with a red banner.

The ENC section describes how ENC's are organized into "Usage Bands" and provides information about existing, recently released, and proposed new ENC coverage. The proposed coverage is based on the proposed footprints and scales for raster charts that are described in detail in the raster chart section.

The Progress Report section provides information about the three raster charts from the Plan that have now been published and a link to the Online Viewer for each chart.

The Proposed New Raster Charts section provides detailed specifications for each of eleven proposed new charts. Please review this section carefully and provide any recommendations for improving the design of any of the charts by following the instructions for providing feedback below.

How to Provide Feedback on the U.S. Arctic Nautical Charting Plan

You are invited to comment on the U.S. Arctic Nautical Charting Plan through NOAA's Nautical Discrepancy Report System at <http://ocsdata.ncd.noaa.gov/idrs/discrepancy.aspx>

- In the "OTHER PRODUCTS" box, enter "U.S. Arctic Nautical Charting Plan."
- Enter your comments, suggestions or questions in the "DESCRIPTION OF DISCREPANCY" box.

Feedback may also be sent to:

National Ocean Service, NOAA (N/CS2)
Attention: U.S. Arctic Nautical Charting Plan
1315 East West Highway
Silver Spring, MD 20910-3282

Introduction

The Arctic is rich in natural resources and inherent beauty. Alaska has 6,640 miles of coastline,² much of which lies north of the Alaska Peninsula. It is a treasure that contains considerable economic resources, including oil, natural gas, fisheries, and minerals. Off the Alaskan coast, the Bering and Chukchi Seas lead to the Northwest Passage past Canada and the Northern Sea Route past Russia, routes that significantly reduce the time and cost of transiting between the Pacific and Atlantic Oceans.

The U.S. *National Strategy for the Arctic Region* was published in May 2013. One of the three "lines of effort" within the strategy is to "Pursue Responsible Arctic Region Stewardship." The description of the objective to chart the arctic region is quoted below:

We will continue to make progress in charting and mapping the Arctic region's ocean and waterways, so long obscured by perennial ice, and mapping its coastal and interior lands according to reliable, modern standards. Given the vast expanse of territory and water to be charted and mapped, we will need to prioritize and synchronize charting efforts to make more effective use of resources and attain faster progress. In so doing, we will make navigation safer and contribute to the identification of ecologically sensitive areas and reserves of natural resources.³

The U.S. Arctic Nautical Charting Plan helps facilitate meeting this objective. To ensure sustainable marine transportation throughout the Arctic, the infrastructure that supports safety, environmental protection, and commercial efficiency must be enhanced. Modern nautical charts of the appropriate scale can provide the foundation for improving transportation in the area. They will also supply the base geospatial data used by federal, state, and local entities in fishery stock assessments, coastal zone management, energy exploration, and other uses.

This nautical charting plan is devoted exclusively to the Arctic. It provides detailed specifications for the layout of additional nautical charts that will fill important shortfalls in existing chart coverage in Alaska.

Additional NOAA nautical chart coverage will enhance the American Arctic Marine Transportation System by depicting shoreline, depths, hazards and recommended routes throughout the region. Currently, charting data in much of the Arctic is inadequate or nonexistent. According to the *U.S. Coast Pilot*, much of the Bering Sea area is "only partially surveyed, and the charts must not be relied upon too closely,

especially near shore. The currents are much influenced by the winds and are difficult to predict; dead reckoning is uncertain, and safety depends upon constant vigilance."⁴

The U.S. Arctic Nautical Charting Plan also supports the recommendations of the Interagency Ocean Policy Task Force⁵ and NOAA's *Arctic Vision & Strategy*.⁶

² State of Alaska, "Alaska Information," at http://www.commerce.state.ak.us/ded/dev/student_info/learn/facts.htm

³ The White House, *National Strategy for the Arctic Region* at https://www.whitehouse.gov/sites/default/files/docs/nat_arctic_strategy.pdf, page 8.

⁴ NOAA, "Bering Sea: Chart 16006," *U.S. Coast Pilot, Alaska: Cape Spencer to Beaufort Sea*, (NOAA, Washington: 2010), Chapter 8, paragraph 3.

⁵ White House Council on Environmental Quality, *Final Recommendations of the Interagency Ocean Policy Task Force, July 19, 2010* at http://www.whitehouse.gov/files/documents/OTPF_FinalRecs.pdf

⁶ NOAA, NOAA's Arctic Vision & Strategy, at www.arctic.noaa.gov/docs/arctic_strat_2010.pdf

Office of Coast Survey

The Office of Coast Survey is the nation's oldest federal science agency, established as the "Survey of the Coast" by President Thomas Jefferson in 1807. Coast Survey maintains over a thousand nautical charts covering U.S. and territorial waters to the limits of the Exclusive Economic Zone (EEZ), an area of about 3.4 million square nautical miles. Throughout that vast expanse, Coast Survey and its sister navigation services offices provide the navigation products and assistance that reduce the risk of marine accidents and support the nation's economy.⁷

Automatic Identification System (AIS) Data

Ships using the Automatic Identification System transmit their position and other information several times per minute. The Coast Survey has found these position reports useful in determining ship transit patterns and uses this data as one of many inputs when considering where to create new nautical charts. Ship positions extracted from AIS data are shown on several of the graphics in the charting plan as magenta dots. Lines of dots indicate ship tracks. Dense concentrations of dots show areas of heavy vessel traffic.

⁷ NOAA, *Office of Coast Survey, 2010 - 2015 Strategic Plan*, "OCS Purpose and Past," page 4.

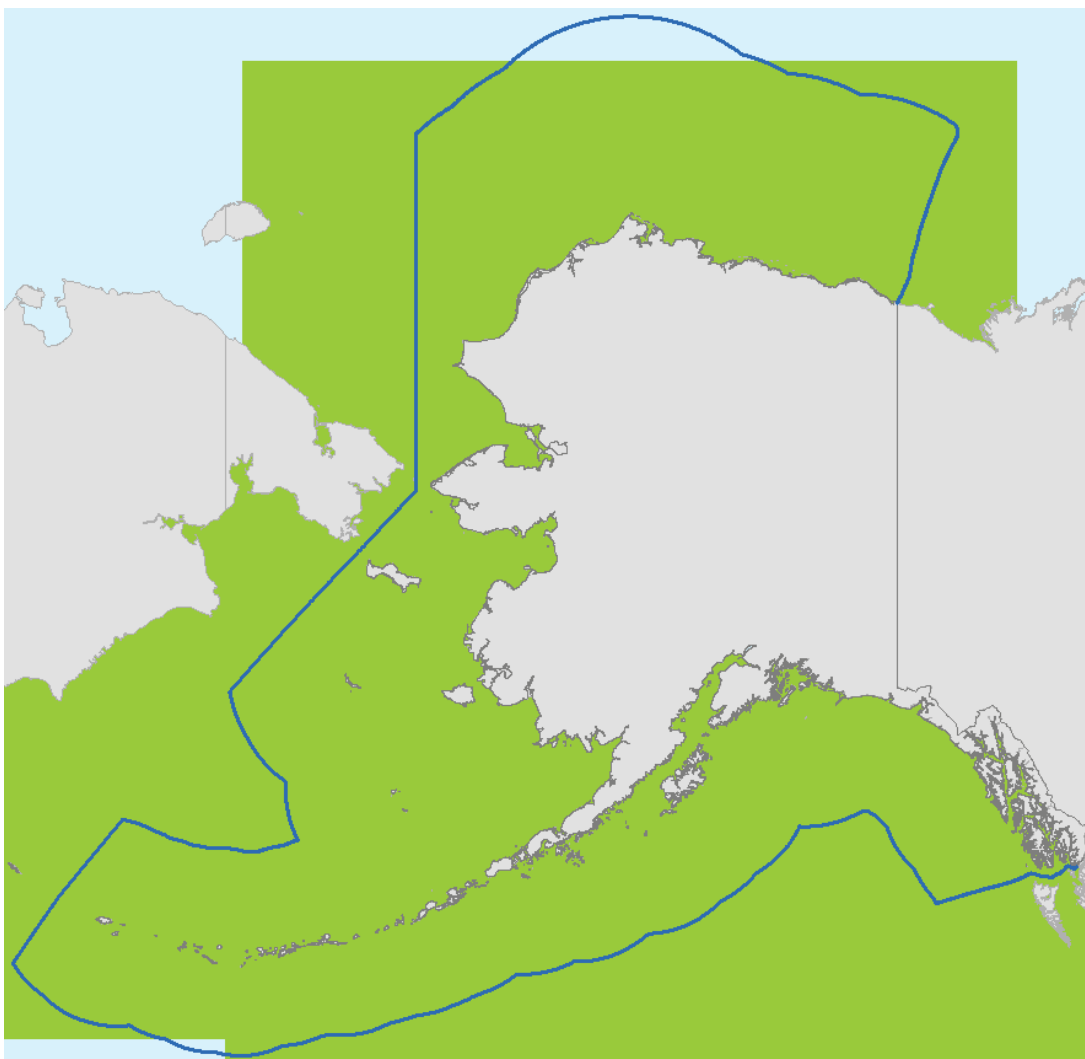
Proposed New Electronic Navigational Chart (ENC) Coverage

ENC cells are categorized into "usage bands" based on their scale and intended use. This section describes the existing and planned new ENC coverage within each of the bands. The scale ranges and names of the ENC usage bands, as implemented by NOAA, are shown in the table below.

Number	Usage Band Name	Scale Range
1	Overview	Smaller than 1:1.5M
2	General	> 1:600K to 1:1.5M
3	Coastal	> 1:150K to 1:600K
4	Approach	> 1:50K to 1:150K
5	Harbor	> 1:5K to 1:50K
6	Berthing	Larger than 1:5K

Overview Coverage – ENC Band 1

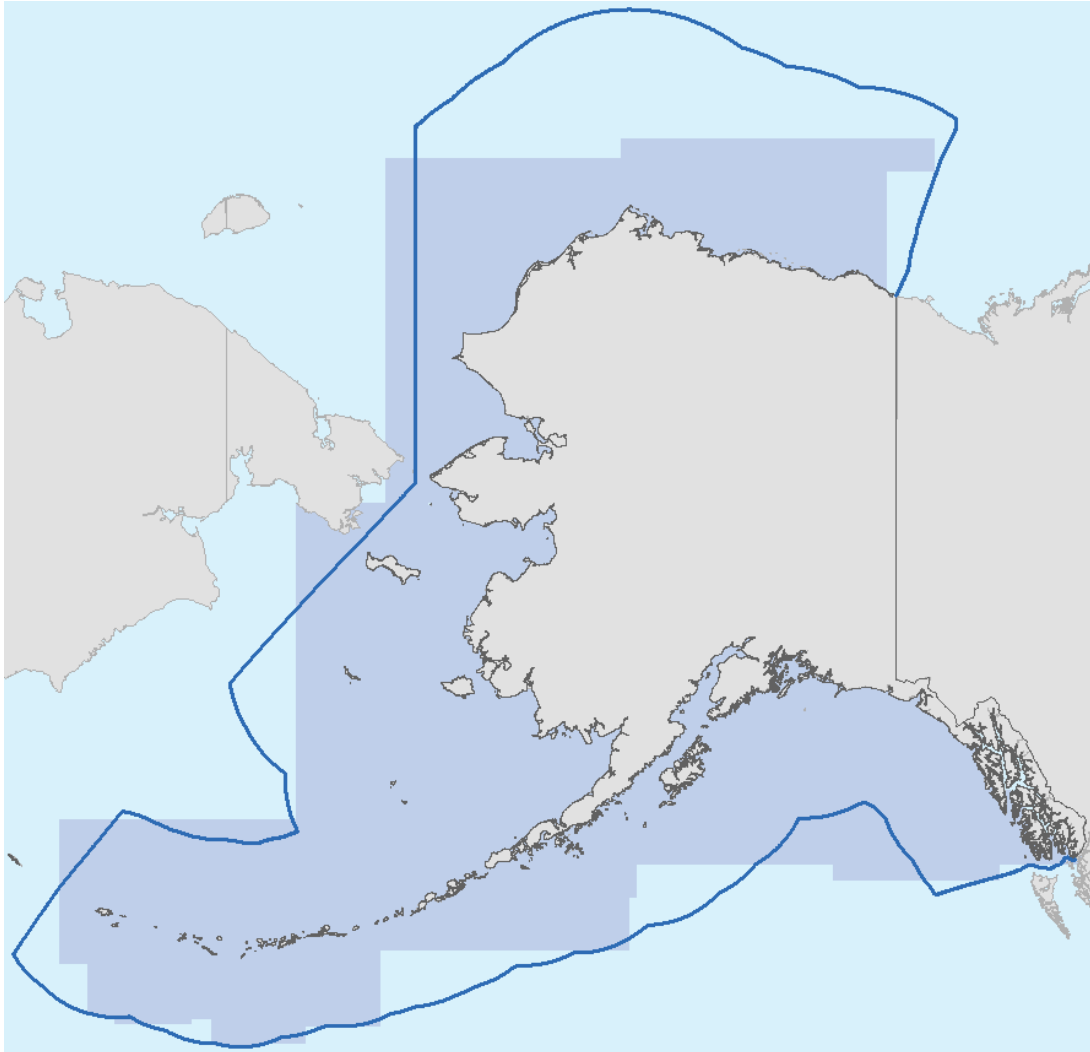
Complete ENC Usage Band 1 coverage is available over all Alaskan waters. The green tint in the graphic below shows the extent of the existing overview usage band ENC cells in Alaska. Their scales vary from about 1:1.5 million to about 1:5 million. The dark blue line shows the U.S. EEZ.



ENC Band 1 Coverage

General Coverage – ENC Band 2

A significant gap in ENC Band 2 coverage in western Alaska, centered on Norton Sound was recently filled by the conversion of Chart 16006, at a scale of about 1:1.5 million. This completes ENC usage band 2 coverage for the entire state. The dark blue tinted area in the graphic below shows the extent of the existing general usage band 2 ENC cells in Alaska. The dark blue line shows the U.S. EEZ.



ENC Band 2 Coverage

Coastal Coverage – ENC Band 3

Seven new coastal scale charts and ENCs are planned for the Alaskan Arctic waters. These ENC cells will complete the Usage Band 3 coverage in western Alaska from Point Hope to Bristol Bay and for all of the Aleutian Islands.

The blue tinted area in the graphic on page 11 shows the extent of the existing coastal usage band ENC cells in Alaska. The new chart footprints, which will also define the extent of the new ENC coverage, are outlined in blue.

New ENC coastal coverage for St Matthew Island has recently been added when data from the inset on the existing Chart 16006 was converted into an ENC cell.

Two new 1:300,000 scale charts planned to cover the eastern portion of Kotzebue Sound and all of Norton Sound, respectively, will be the bases of improved ENC coverage in western Alaska. These charts will replace the existing 1:400,000 scale chart 16200 and the 1:300,000 scale chart 16240.

Planned New NOAA ENC Coverage

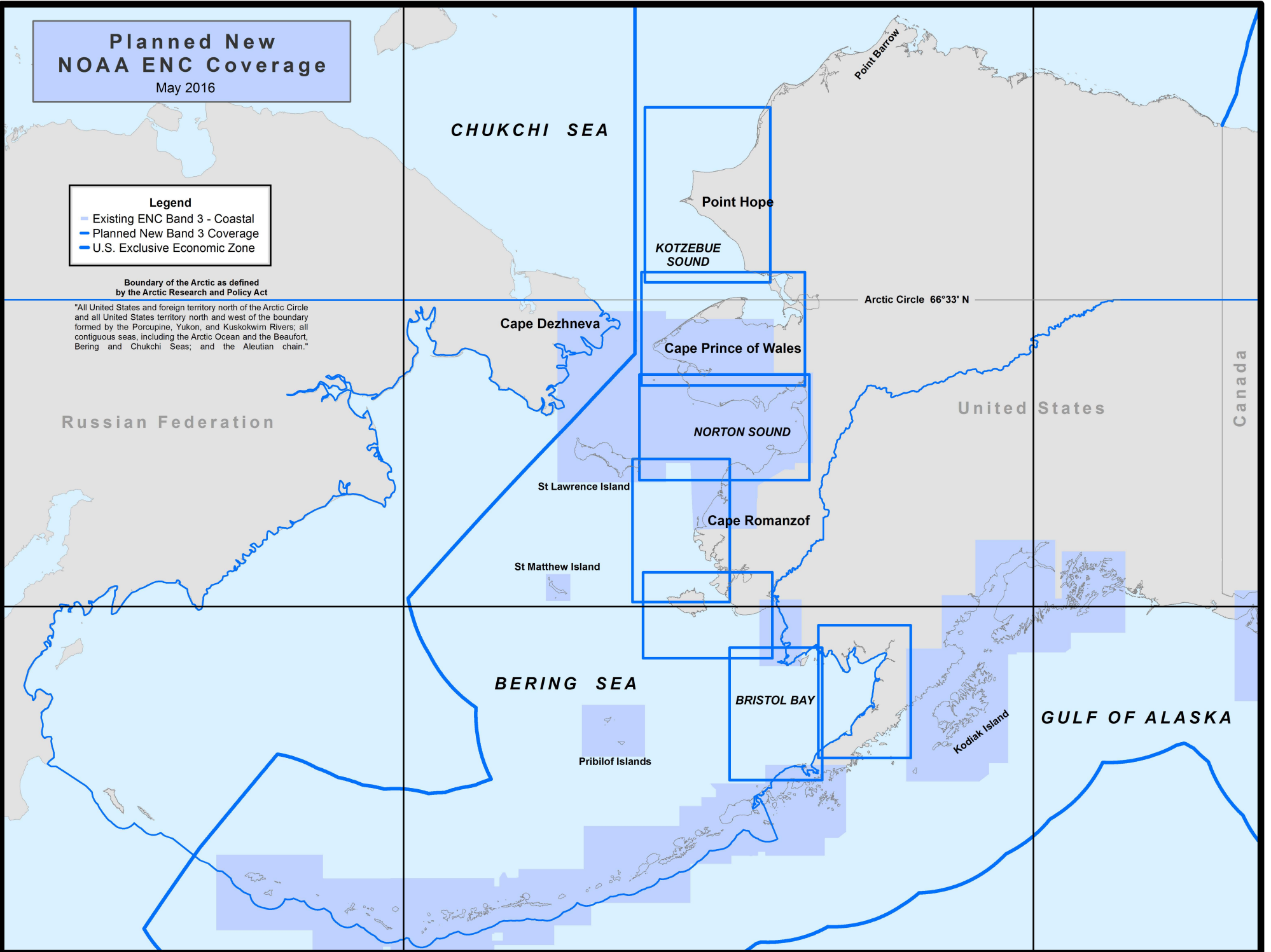
May 2016

Legend

- Existing ENC Band 3 - Coastal
- Planned New Band 3 Coverage
- U.S. Exclusive Economic Zone

Boundary of the Arctic as defined by the Arctic Research and Policy Act

"All United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering and Chukchi Seas; and the Aleutian chain."



CHUKCHI SEA

Point Hope

KOTZEBUE SOUND

Point Barrow

Cape Dezhneva

Arctic Circle 66°33' N

Cape Prince of Wales

United States

Russian Federation

NORTON SOUND

Canada

St Lawrence Island

Cape Romanzof

St Matthew Island

BERING SEA

BRISTOL BAY

Pribilof Islands

Kodiak Island

GULF OF ALASKA

60°N

180°

150°W

60°N

Approach Coverage – ENC Band 4

Page 13 shows the extent of the existing Harbor and Approach ENC Usage Bands 4 and 5 ENC cells in Arctic Alaska.

The new approach scale chart of the northern portion of the Bering Strait has been published, which provides much needed ENC Band 4 coverage for this vital passage. Another chart and ENC is planned just south of Little Diomed Island as well. Three new charts and ENCs are also planned over Nunivak Island and east of the island in Kuskokwim Bay.

A set of three provisional ENCs covering the Yukon River delta and upriver to Russian Mission was released in the fall of 2015. These ENCs provide new 1:90,000 scale coverage, which updates the delimitation of the riverbank and identifies shoals within the river passage, based on satellite derived bathymetry.

New ENC data has also been made available from insets on existing charts 16200 and 16240, which provides new ENC Band 4 coverage for Golovnin Bay and Cape Romanzof.

Harbor Coverage – ENC Band 5

New harbor scale charts and ENCs have recently been published for Kotzebue Harbor and the DeLong Mountain Terminal. These provide additional ENC Band 5 coverage in Kotzebue Sound. The Little Diomed Island Inset on the recently published Bering Strait North chart has also been released as a Band 5 ENC.

The inset for St. Michael Bay on the existing chart 16240 has also be converted to new ENC Band 5 coverage.

Although there is complete ENC Band 5 coverage along the North Slope, the planned new chart and ENC over Point Barrow will increase the scale of the coverage for this area from 1:47,943 to 1:20,000.

Planned New NOAA ENC Coverage

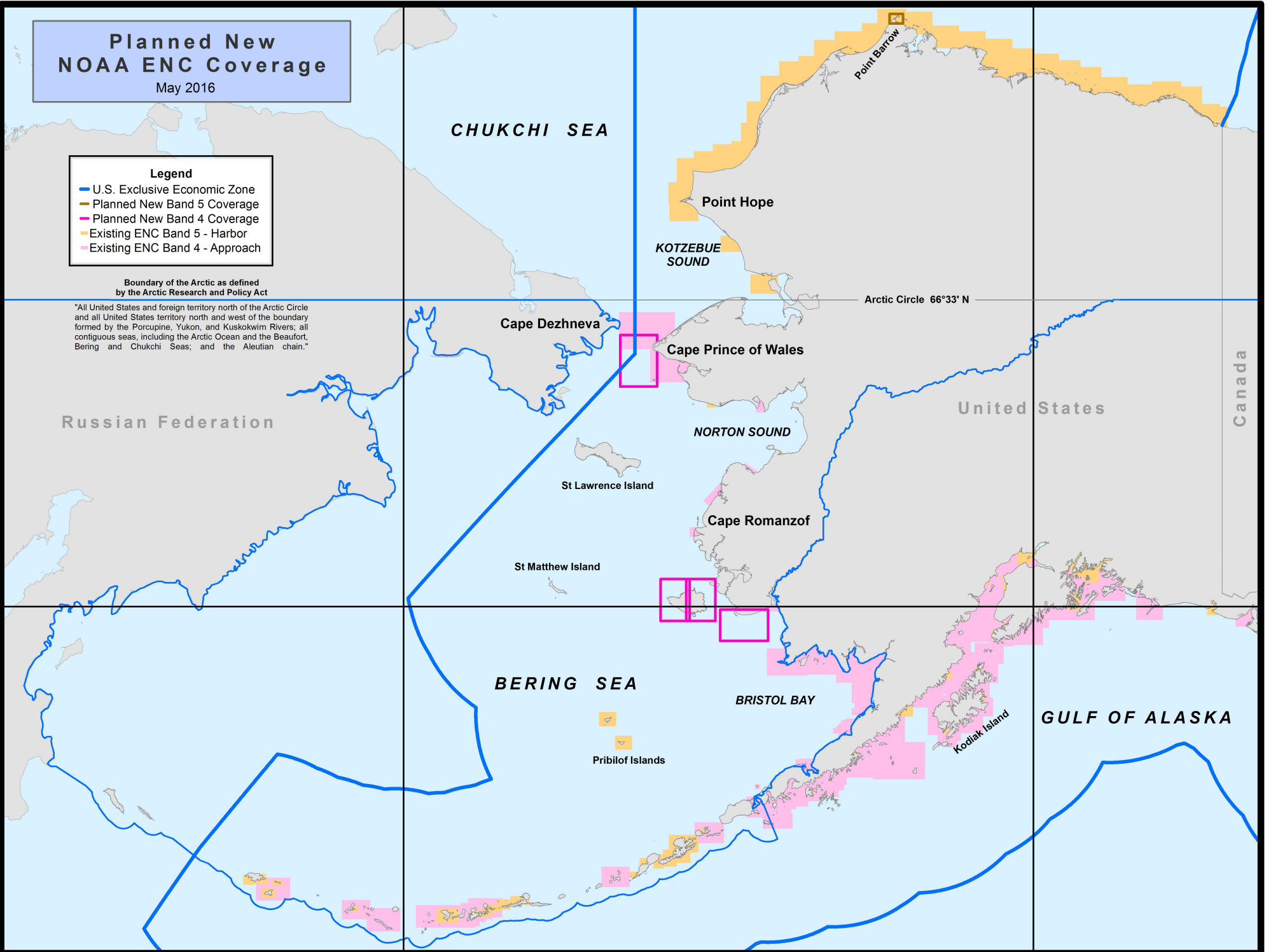
May 2016

Legend

- U.S. Exclusive Economic Zone
- Planned New Band 5 Coverage
- Planned New Band 4 Coverage
- Existing ENC Band 5 - Harbor
- Existing ENC Band 4 - Approach

Boundary of the Arctic as defined by the Arctic Research and Policy Act

"All United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering and Chukchi Seas; and the Aleutian chain."



CHUKCHI SEA

Point Hope

KOTZEBUE SOUND

Point Barrow

Arctic Circle 66°33' N

Cape Dezhneva

Cape Prince of Wales

United States

Canada

Russian Federation

NORTON SOUND

St Lawrence Island

Cape Romanzof

St Matthew Island

BERING SEA

BRISTOL BAY

Pribilof Islands

GULF OF ALASKA

Kodiak Island

60°N

180°

150°W

60°N

Progress Report on Publishing New Charts

The original Arctic Nautical Charting Plan, published in 2011, proposed 14 new charts. We are pleased to report that three of these charts have been produced and released for use by the public. Each of these is described in the sections below, which include a small image of the chart. There is also a link in each section header that will open the chart in the NOAA Online Chart Viewer. A new 1:300,000 scale chart has been added to the plan to replace the existing 1:400,000 scale chart 16200, covering Norton Sound. Thus, the current plan proposes an even dozen new charts.

Additionally, a new set of three provisional ENC's covering the Yukon River from its delta upstream to Russian Mission were produced in 2016. These innovative products were created using LandSat satellite derived bathymetry. This remote sensing technique enabled the Coast Survey to update the Yukon River shoreline and identify shoals that would not be safe or practical to survey using conventional methods.

Building a new nautical chart is a considerable accomplishment, which usually requires undertaking new hydrographic and topographic surveys to gather updated depth and shoreline data appropriate for the scale of the chart being constructed. This data, along with other existing data for aids to navigation, tides, regulatory limits and other boundaries, and many other items must then be compiled into one unified presentation. The efforts to provide increased chart coverage in the Arctic must also compete with the need to maintain and enhance chart coverage in other parts of the Nation's 95,000 nautical miles of shoreline.

There is no definite schedule to produce the 12 charts in the Plan, but each is expected to be built as the appropriate data and other resources needed to compile each chart become available. Release of the ENC product will usually precede the publication of the corresponding raster chart product by a number of months.



231-foot NOAA survey ship *Rainier*
Commissioned in 1968

Delong Mountain Terminal
New [Chart 16145](#) has been completed

**1ST EDITION
 PUBLISHED
 JULY 2014**

1:40,000

Previous largest scale chart: 16005, 1:700,000



Delong Mountain Terminal Pier,
 Photo: Rob Stapleton⁸

The Delong Mountain Terminal is a shallow draft port with an open shipping season of approximately 100 days. It was constructed to service the Red Dog Mine. The mine, in operation since 1989, is the world's largest producer of zinc concentrate, representing 79% of all U.S. zinc mine production. It is also the second largest lead producing mine in the country, accounting for a third of all U.S. production.⁹ The mine uses self-loading barges to pick up the ore and lighter it to the ships anchored offshore.¹⁰

Chart Details

Chart Number: 16145

National Stock Number: 7642016100574

KAPP Number(s): 0000

NGA Reference Number: 16BHA16145

Title: Alaska – West Coast
 Delong Mountain Terminal

Scale: 1:40,000

at Latitude: 67° 36' 00.0"N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: 12, 18, 30

Blue Tint Curve(s): 18

Limits

67° 44' 08.0" N

164° 54' 00.0" W

163° 49' 42.0" W

67° 26' 33.0" N

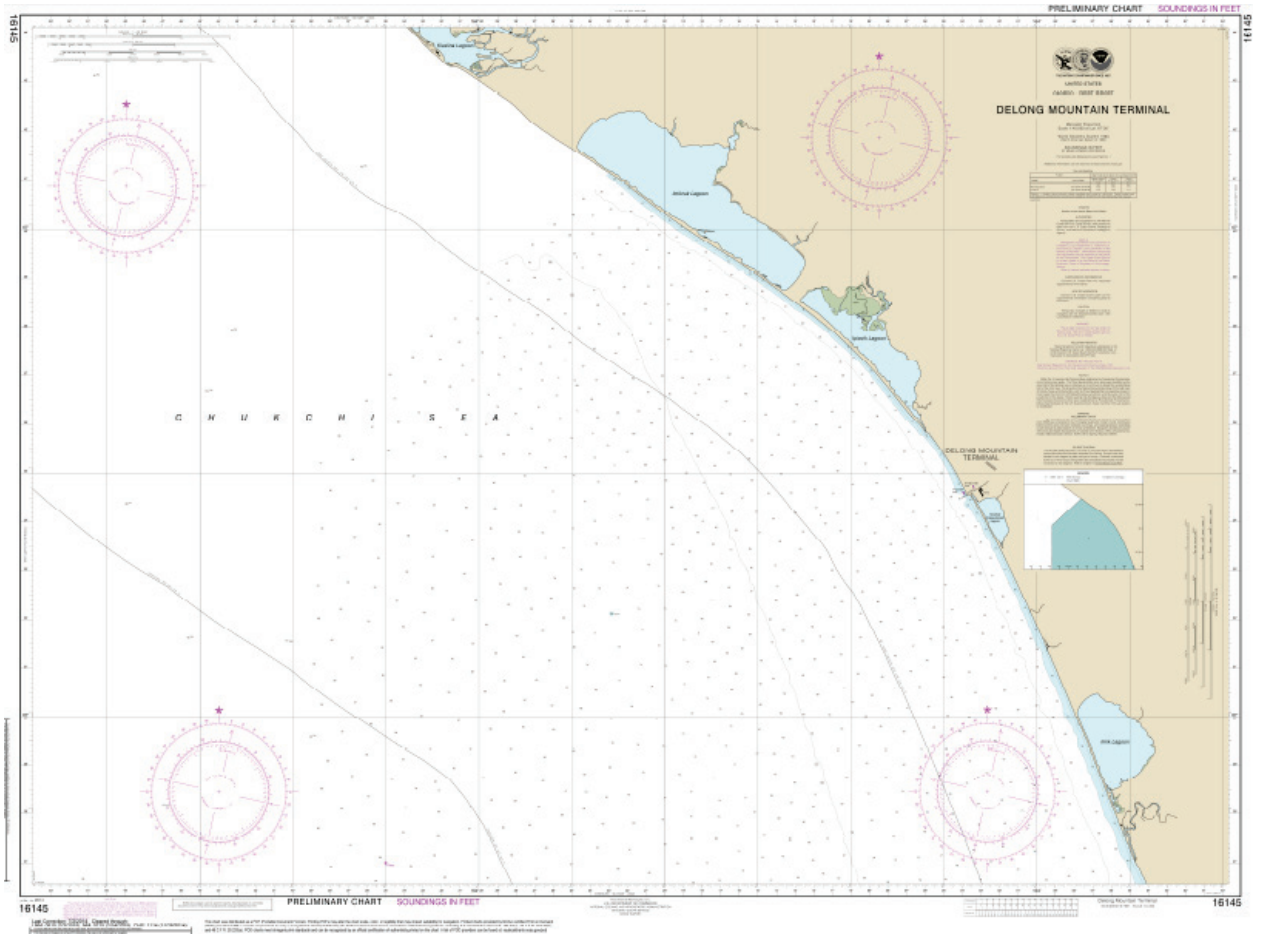
Total Latitude: 17' 35"

Total Longitude: 01° 04' 18"

⁸ Alaska Journal of Commerce, "Northwest borough makes offer to buy Red Dog road, port," July 2, 2009, at www.alaskajournal.com/stories/070209/loc_10_002.shtml

⁹ Teck, "Red Dog Operations," web site at <http://www.reddogalaska.com>.

¹⁰ FOSS, "Creating the World's First Open Lighterage for Alaska's Red Dog," at http://www.foss.com/stories_teck.html



Kotzebue Harbor and Approaches
New [Chart 16161](#) has been completed

**1ST EDITION
PUBLISHED
APRIL 2012**

1:50,000

Previous largest scale chart: 16005, 1:700,000.



Kotzebue¹¹

Kotzebue lies on a sand spit at the end of the Baldwin Peninsula where the Noatak, Kobuk, and Selawik rivers empty into Kotzebue Sound.

“Kotzebue serves as the transportation hub (both air and sea) for the whole of the Northwest Alaska. There are 11 villages that require barge shipments and the large transport ships must be anchored at least 14 miles out in the Kotzebue Sound due to shallow waters, inadequate charts and navigational aids. The transport ship's freight must be lightered by smaller barges to Kotzebue. Our port of call is the second most costly in the world with the exception of Antarctica.”¹²

Chart Details

Chart Number: 16161

National Stock Number: 7642016009631

KAPP Number(s): 2573, 2575

NGA Reference Number: 16BHA16161

Title: Alaska – West Coast
Kotzebue Harbor and Approaches

Scale: 1:50,000, inset 1:25,000

at Latitude: 66° 54' N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Feet

at: MLLW

Depth Curve Values: 6, 12, 18, 30, 60

Blue Tint Curve(s): 18

Limits

67 01' 43" N

163° 28' 26" W

162° 10' 12" W

66° 39' 42" N

Total Latitude: 22' 01"

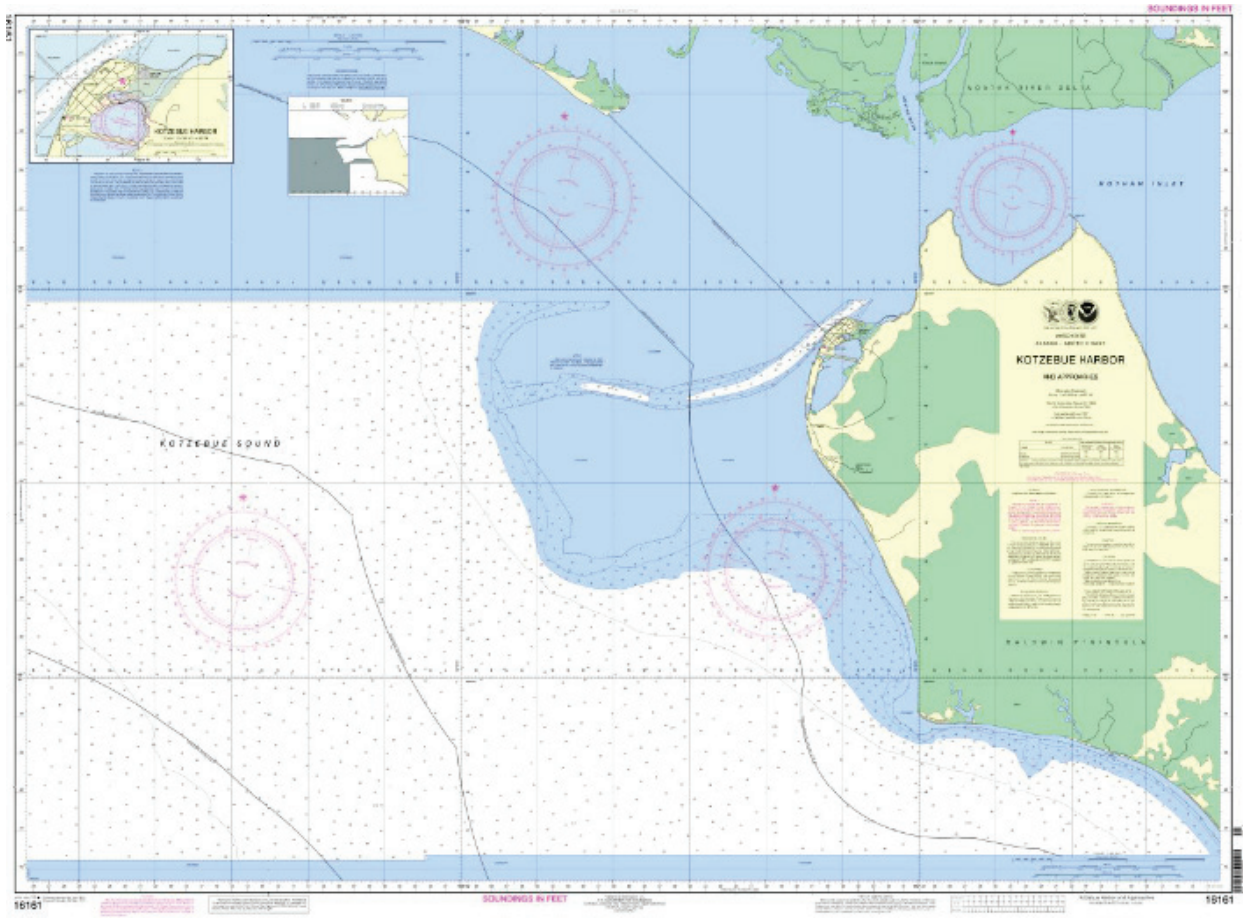
Total Longitude: 1° 18' 14"

Neatline Height: 818 mm

Neatline Width: 1142 mm

¹¹ City of Kotzebue, "Photographs of Kotzebue Alaska," <http://kotzpdweb.tripod.com/kotzpics11.html>

¹² Chuck Greene, Mayor of Northwest Arctic Borough, Letter to NOAA, "Regarding: Survey of Kotzebue Sound," April 13, 1998



Bering Strait North
Little Diomedede Island Inset
New [Chart 16190](#) has been completed

**1ST EDITION
 PUBLISHED
 MAY 2013**

1:100,000
1:40,000

Previous largest scale chart: 16005, 1:700,000



Village of Inalik on Little Diomedede Island¹⁴

The Bering Strait is 44 miles wide between Cape Prince of Wales, Alaska, and Cape Dezhneva, Siberia. It is the gateway from the Bering Sea in the Pacific Ocean to Chukchi Sea in the Arctic Ocean.¹³ The Russian island of Big Diomedede and the American island of Little Diomedede lie just three nautical miles apart. These islands divide the two major passages through the strait, which lie to the east and west of the islands with depths of about 20 to 30 fathoms. Much of the Alaskan vessel traffic clings close to the shore rounding Cape Prince of Wales, as shown by the clustering of AIS returns on the chart graphic below. New chart coverage includes a 1:40,000 scale inset of Little Diomedede Island on the Bering Strait North Chart.

Chart Details

Chart Number: 16190	National Stock Number: 7642016122021
KAPP Number: 0000	NGA Reference Number: 16BCO16190
Title: Alaska – West Coast Bering Strait North	
Scale: 1:100,000	at Latitude: 65° 57' 00.0" N
Horizontal Datum: NAD83	Projection: Mercator
Soundings In: Fathoms and Feet	at: MLLW
Depth Curve Values: 1, 2, 3, 6, 10, 20	Blue Tint Curve(s): 10
Main Chart Panel Limits	66° 18' 45.0" N
	169° 43' 51.0" W
	167° 04' 10.0" W
	65° 35' 46.0" N
Total Latitude: 42' 59"	Total Longitude: 02° 39' 41"

¹³ NOAA, "Bering Sea: Chart 16006," *U.S. Coast Pilot, Alaska: Cape Spencer to Beaufort Sea*, (NOAA, Washington: 2010), Chapter 8, paragraph 379.

¹⁴ Alaska Department of Commerce, Community, and Economic Development, "Alaska Community Database Photo Index," at www.dced.state.ak.us/dca/commdb/images/diomedede_aerial1.jpg

Chart Details

Chart Number: 16190

National Stock Number: 7642016122021

KAPP Number: 0000

NGA Reference Number: 16BCO16190

Title: Alaska – West Coast
Little Diomede Island (inset)

Scale: 1:40,000

at Latitude: 65° 45' 00.0" N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values:

Blue Tint Curve(s):

Limits

65° 47' 21.0" N

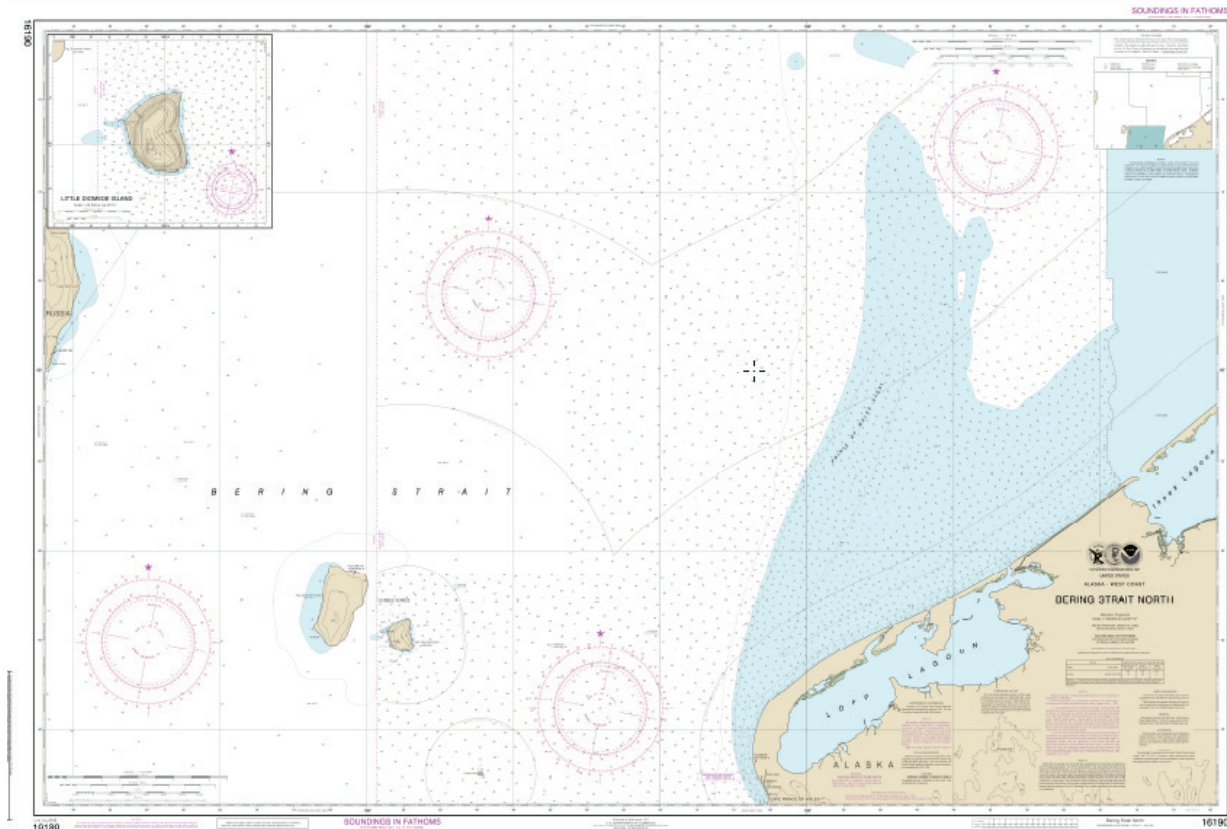
169° 01' 04" W

168° 49' 26.0" W

65° 43' 14.0" N

Total Latitude: 04' 07"

Total Longitude: 11' 38"



Proposed New Raster (Traditional) Charts

Each proposed new chart is described in a separate section below. The banner at the top of each section shows the chart's title, NOAA chart number and proposed scale. The line directly below the banner lists the chart number and scale of the largest scale nautical chart that is currently available for the area.

The items listed under the "Chart Details" banner provide information about how the chart will be constructed, including the scale, extent of the chart footprint under "Limits."

All of the charts will be based on the North American Datum of 1983 (NAD83) and use the Mercator Projection. Depths will be shown in fathoms and feet at the Mean Lower Low Water (MLLW) tidal datum. Some details, such as the values at which depth curves will be compiled or the depth of water which will be tinted blue are yet to be determined (TBD).



Sunset aboard the 231-foot NOAA survey ship *Fairweather*
Commissioned in 1968

Barrow: Chart 16079**1:20,000**

Largest scale chart currently: 16082, 1:47,943

City of Barrow, photo: Dave Cohoe¹⁵

Barrow is the northernmost community in the U.S. and is the “economic, transportation and administrative center for the North Slope Borough.”¹⁶ Vessel traffic, heaviest during the summer after the subsistence whaling season ends, consists of tugs carrying fuel and supply barges. Barrow has no pier facilities. Marine cargo bound for Barrow is lightered from barges to landing craft. Anchorage can be had 1200 yards off Barrow in 30 feet of water to receive supplies and to transfer personnel by small boat. The anchorage is exposed to weather from all directions. Barrow is a destination for small cruise ships carrying as many as 400 passengers. A seasonal U.S. Coast Guard station is active from July to August.¹⁷

Chart Details**as of February 1, 2013**

Chart Number: 16079

National Stock Number: 7642016157924

KAPP Number(s): 0000

NGA Reference Number: 16XHA16079

Title: Alaska – Arctic Coast
Barrow

Scale: 1:20,000

at Latitude: 71° 19' 30.0"N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: TBD

Blue Tint Curve(s): TBD

Limits

71° 25' 00.0" N

156° 50' 28.0" W

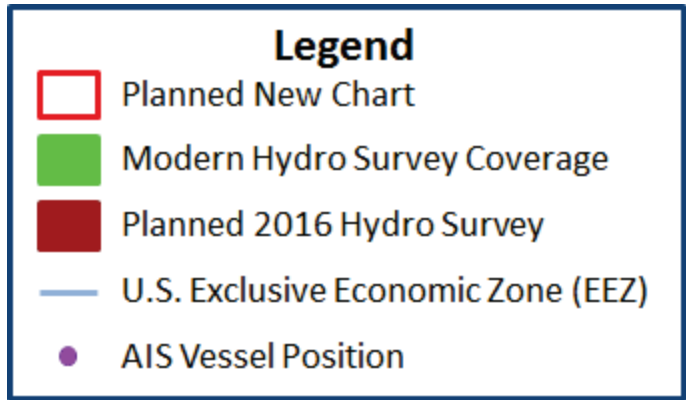
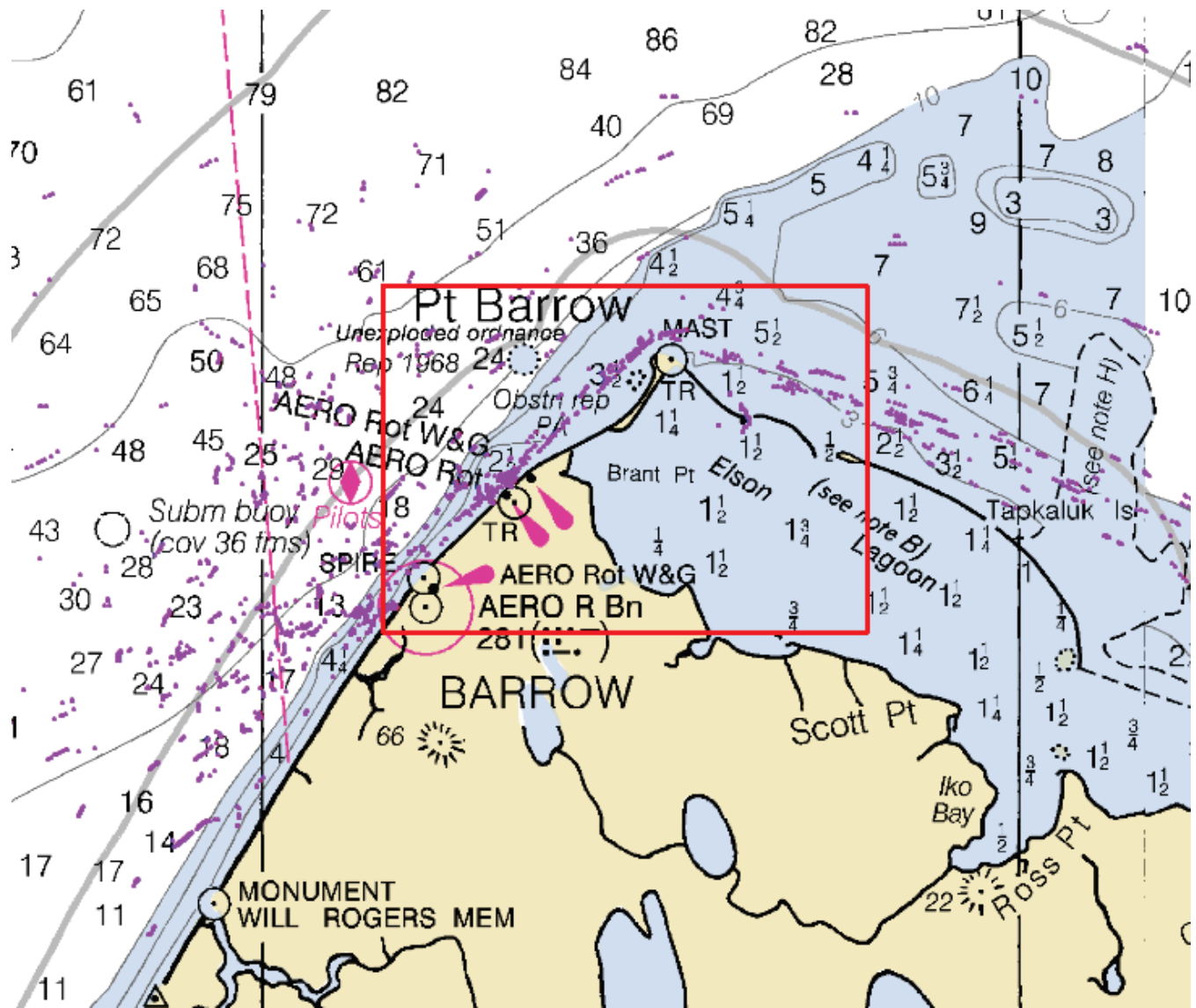
156° 12' 07.0" W

71° 16' 12.0" N

Total Latitude: 08' 48"

Total Longitude: 38' 21"

¹⁵ Wikipedia, "Barrow Alaska,": at http://en.wikipedia.org/wiki/Barrow,_Alaska¹⁶ City of Barrow, "Welcome," at www.cityofbarrow.org¹⁷ NOAA, "Bering Sea: Chart 16006," *U.S. Coast Pilot, Alaska: Cape Spencer to Beaufort Sea*, (NOAA, Washington: 2010), Chapter 8, paragraphs 127 and 129.



Point Hope: Chart 16140**1:300,000**

Largest scale chart currently: 16005, 1:700,000

Point Hope, photo: Zachariah Hughes¹⁸

One of the oldest continuously occupied settlements in North America, Point Hope is a subsistence village dependent upon fishing, gathering and hunting of marine mammals for food. The subsistence activities throughout the year revolve around whales, other marine mammals and land mammals. The spit of land jutting into the Chukchi Sea resembles an index finger and Tikigaq, the Inupiaq language name for the village, means index finger. Average ice breakup at Point Hope is in late June and average freezeup is about the second week of November. Navigation is difficult from the latter part of November until mid-July and usually is suspended from early December until the latter part of June.¹⁹

Chart Details**as of May 10, 2016**

Chart Number: 16140

National Stock Number: 7642016157931

KAPP Number(s): 0000

NGA Reference Number: 16BCO16140

Title: Alaska – West Coast
Point Hope

Scale: 1:200,000

at Latitude: 68° 05' 00.0"N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: TBD

Blue Tint Curve(s): TBD

Limits

69° 56' 42.0" N

168° 29' 55.0" W

162° 31' 17.0" W

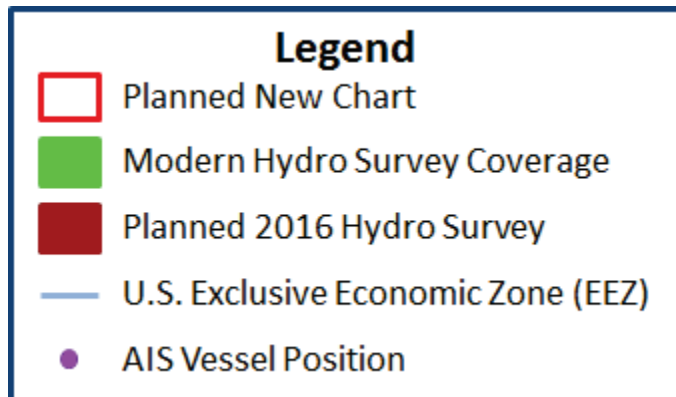
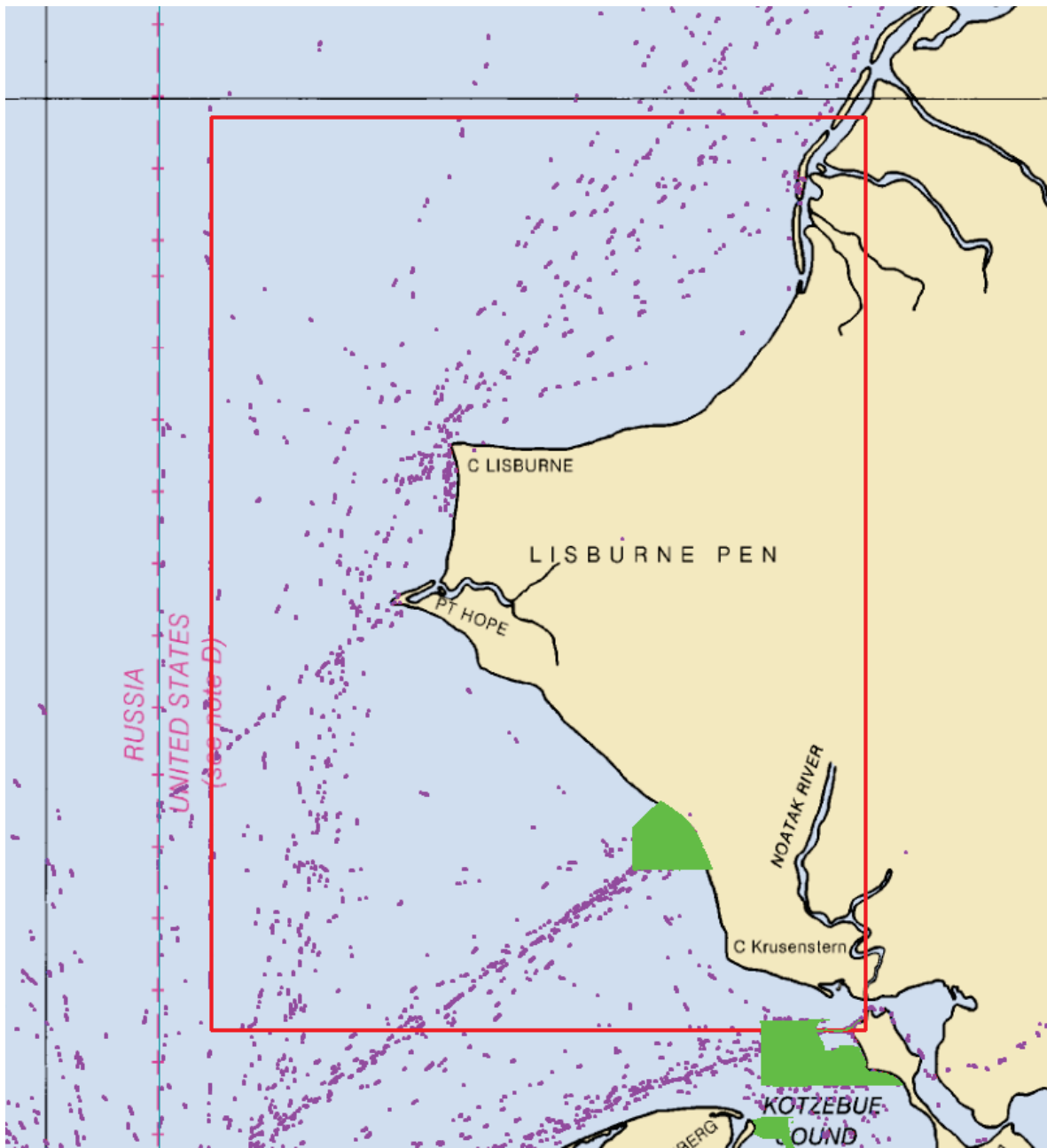
66° 52' 38.0" N

Total Latitude: 03° 04' 04"

Total Longitude: 05° 58' 38"

¹⁸ KNOM Radio Mission, "A Story 50 Years in the Making," photo by Zachariah Hughes, <http://www.knom.org/wp/blog/2014/09/29/a-story-50-years-in-the-making>

¹⁹ Tikigaq [Native Village] Corporation, "Point Hope Overview," at <http://www.tikigaq.com/category/shareholder/point-hope>



Kotzebue Sound: Chart 16160**1:300,000**

Largest scale chart currently: 16005, 1:700,000



Bearded seal in Kotzebue Sound,
photo:Mike Cameron²⁰

Iñupiat Eskimos have lived in the Kotzebue area for at least 600 years. Its coastal location at the terminus of three major rivers made Kotzebue a major Arctic trading hub long before European contact. Iñupiat from interior communities as well as visitors from the Russian Far East traveled to Kotzebue to trade furs, skins and seal oil, among other valuables. Commerce activity increased following the arrival of whalers, Russian fur traders, gold miners and missionaries. The federal government introduced reindeer herding to Kotzebue in 1897. Expanding economic activities and services in the area enabled Kotzebue to develop at a rapid pace to become the largest community in Northwest Alaska.²¹

Chart Details**as of May 10, 2016**

Chart Number: 16160

National Stock Number: 7642016157930

KAPP Number: 0000

NGA Reference Number: 16BCO16160

Title: Alaska – West Coast
Kotzebue Sound

Scale: 1:300,000

at Latitude: 66° 45' 00.0" N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: TBD

Blue Tint Curve(s): TBD

Limits

67° 04' 06.0" N

168° 39' 34.0" W

160° 52' 35.0" W

64° 52' 04.0" N

Total Latitude: 02° 12' 02"

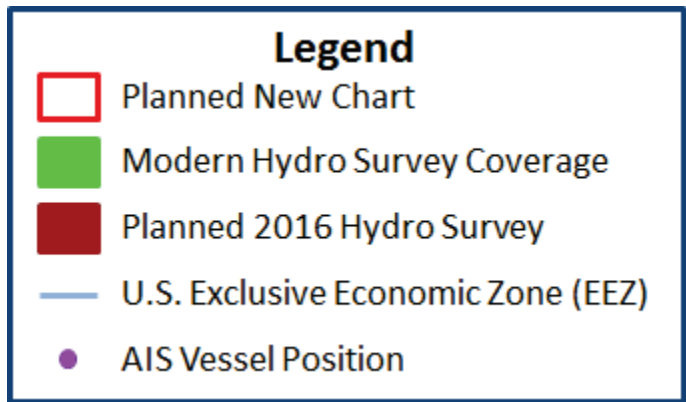
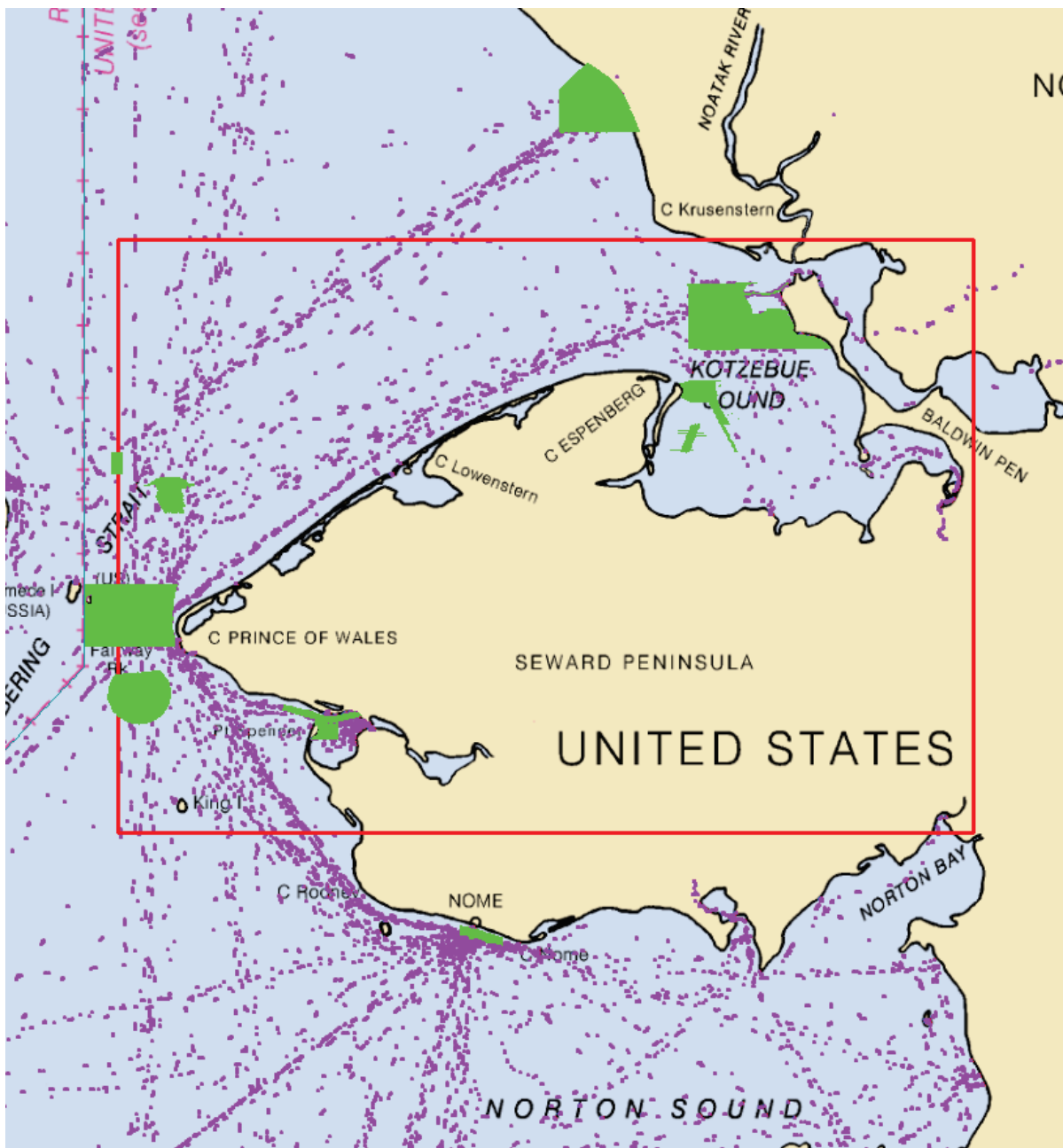
Total Longitude: 07° 46' 59"

Neatline Height: 000.00mm

Neatline Width: 000.00mm

²⁰ NOAA, "Habitat Use and Seasonal Movements of Adult and Sub-Adult Bearded Seals," photo by Mike Cameron, <http://www.afsc.noaa.gov/Quarterly/ond2009/ond09featurelead.htm>

²¹ NANA Regional Corporation, "Kotzebue," <http://nana.com/regional/about-us/overview-of-region/kotzebue>



Bering Strait: Chart 16210**1:100,000**

Largest scale chart currently: 16005, 1:700,000

Village of Inalik on Little Diomedede Island²³

The Bering Strait is 44 miles wide between Cape Prince of Wales, Alaska, and Cape Dezhneva, Siberia. It is the gateway from the Bering Sea in the Pacific Ocean to Chukchi Sea in the Arctic Ocean.²² The Russian island of Big Diomedede and the American island of Little Diomedede lie just three nautical miles apart. These islands divide the two major passages through the strait, which lie to the east and west of the islands with depths of about 20 to 30 fathoms. Much of the Alaskan vessel traffic clings close to the shore rounding Cape Prince of Wales, as shown by the clustering of AIS returns on the chart graphic on page 31. New chart coverage includes a 1:40,000 scale inset of Little Diomedede Island on the Bering Strait North Chart.

Chart Details**as of May 10, 2016**

Chart Number: 16210

National Stock Number: 7642016122022

KAPP Number: 0000

NGA Reference Number: 16BCO16210

Title: Alaska – West Coast
Bering Strait

Scale: 1:100,000

at Latitude: 65° 24' 00.0" N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: 1, 2, 3, 6, 10, 20

Blue Tint Curve(s): 10

Limits

65° 52' 17.0" N

169° 40' 25.0" W

167° 55' 00.0" W

64° 50' 50.0" N

Total Latitude: 01° 01' 27"

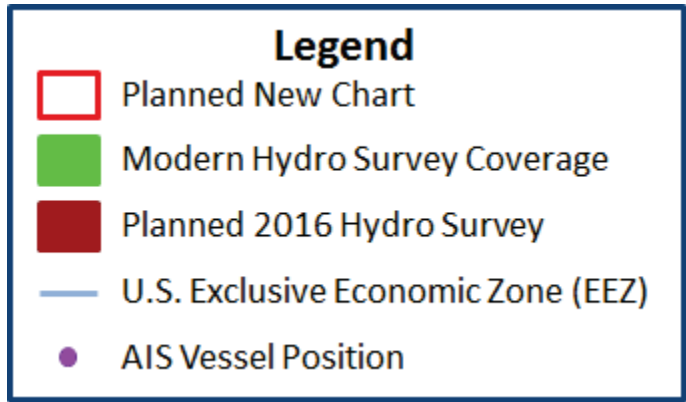
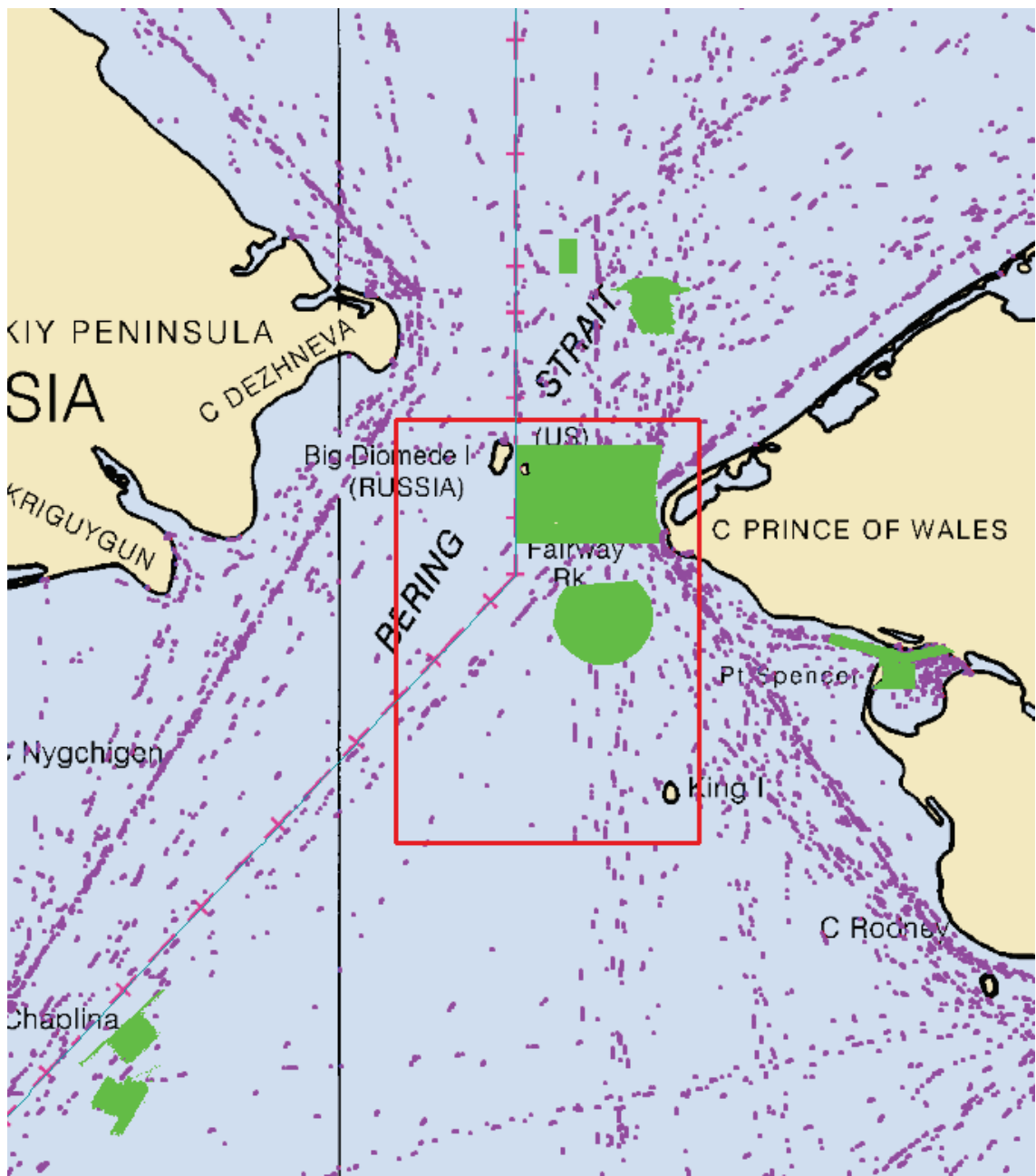
Total Longitude: 01° 45' 25"

Neatline Height: 847.725 mm

Neatline Width: 1206.5 mm

²² NOAA, "Bering Sea: Chart 16006," *U.S. Coast Pilot, Alaska: Cape Spencer to Beaufort Sea*, (NOAA, Washington: 2010), Chapter 8, paragraph 379.

²³ Photo by Petty Officer Richard Brahm, United States Coast Guard.



Norton Sound: 16270**1:300,000**

Largest scale chart currently: 16006, 1:1.534.076

Nome, AK²⁵

The City of Nome was incorporated in April 1901. Nome is located on the south coast of the Seward Peninsula facing Norton Sound. The city is the commercial hub of northwestern Alaska, as well as the site for the finish of the 1049-mile Iditarod Trail Sled Dog Race from Anchorage each March.²⁴

Chart Details**as of May 10, 2016**

Chart Number: 16270

National Stock Number: TBD

KAPP Number(s): 0000

NGA Reference Number: TBD

Title: Alaska – Norton Sound

Scale: 1:300,000

at Latitude: 64° 00' 00"N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: TBD

Blue Tint Curve(s): TBD

Limits

65° 05' 23.0" N

168° 45' 27.0" W

160° 39' 54.0" W

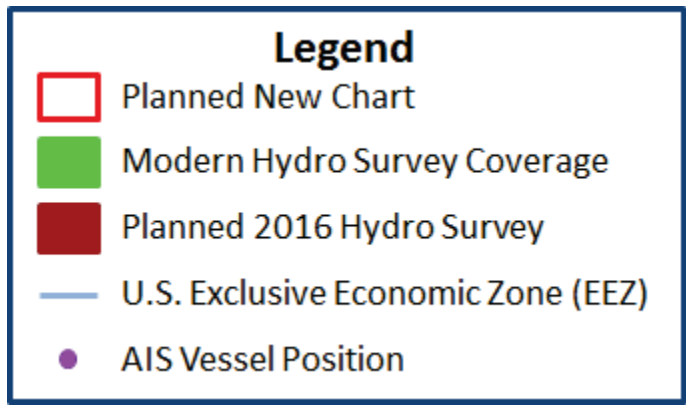
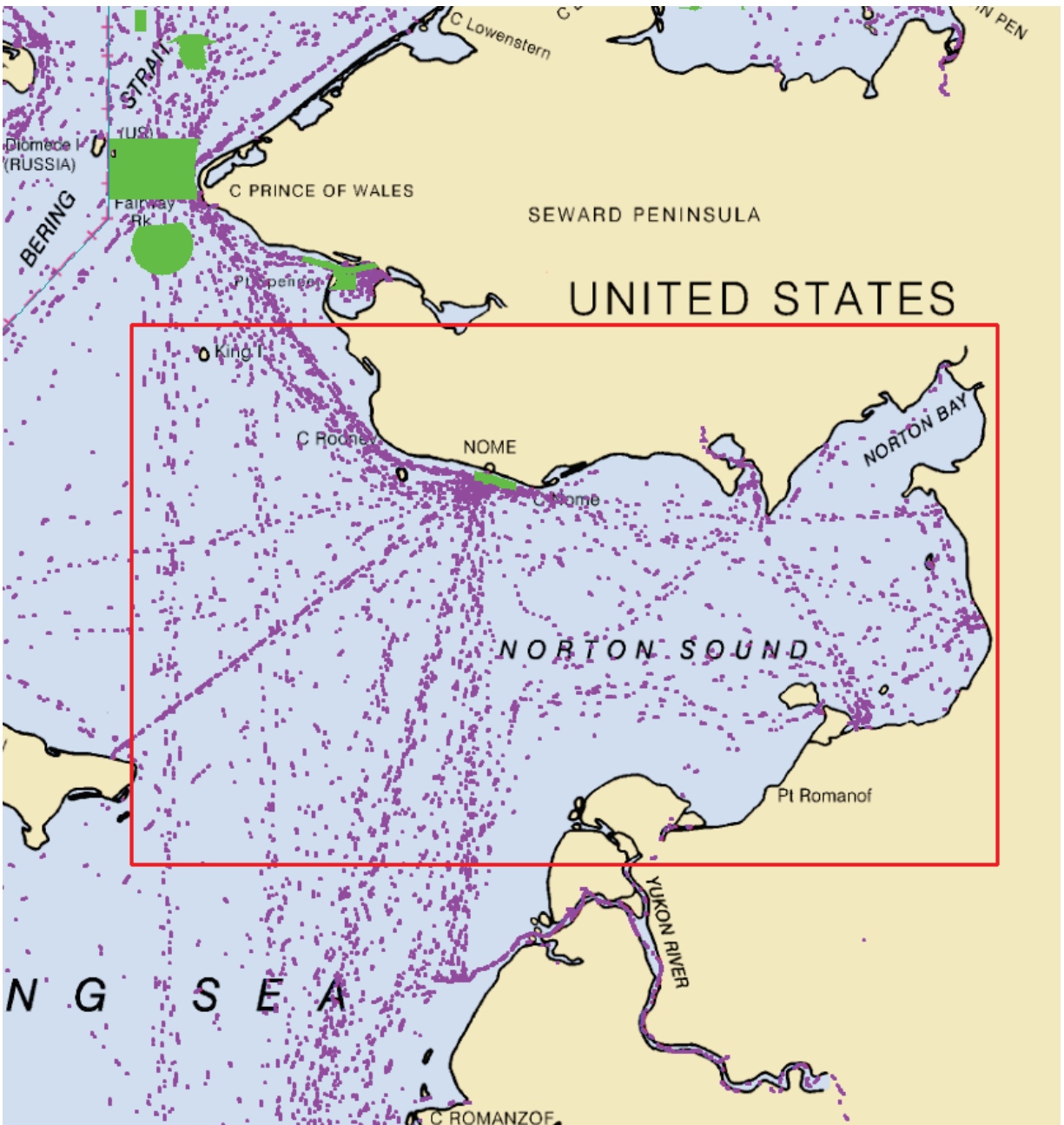
62 52 40.0" N

Total Latitude: 02° 12' 43"

Total Longitude: 08° 05' 33"

²⁴ Marine Exchange of Alaska, "Welcome to Nome, Alaska," www.mxak.org/ports/northern_west/nome/nome.html.

²⁵ Ibid.



West Yukon Delta/Nunivak Island to Norton Sound: Chart 16260**1:300,000**

Largest scale chart currently: 16006, 1:1.534.076

Hooper Bay²⁶

Hooper Bay, also known by its Yup'ik name, Naparyarmiut, is on the Yukon-Kuskokwim Delta. Chart 16260 will provide enhanced coastal scale coverage north of Nunivak Island for transits to St. Lawrence Island or Norton Sound.

Chart Details**as of February 1, 2013**

Chart Number: 16260

National Stock Number: 7642016157933

KAPP Number(s): 0000

NGA Reference Number: 16BCO16260

Title: Alaska – West Coast
West Yukon Delta / Nunivak Island to Norton Sound

Scale: 1:300,000

at Latitude: 61° 55' 00"N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: TBD

Blue Tint Curve(s): TBD

Limits

63° 26' 47.0" N

170° 22' 27.0" W

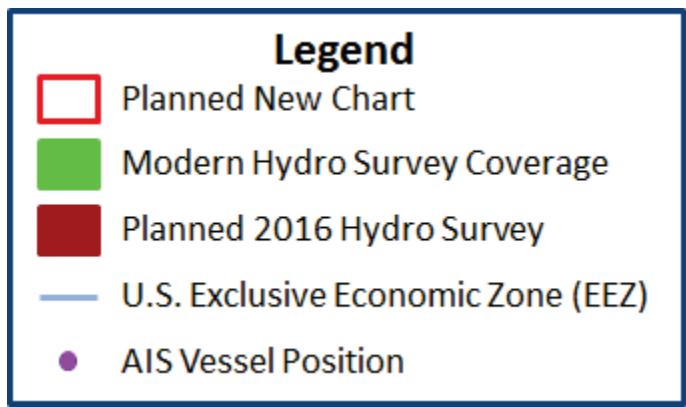
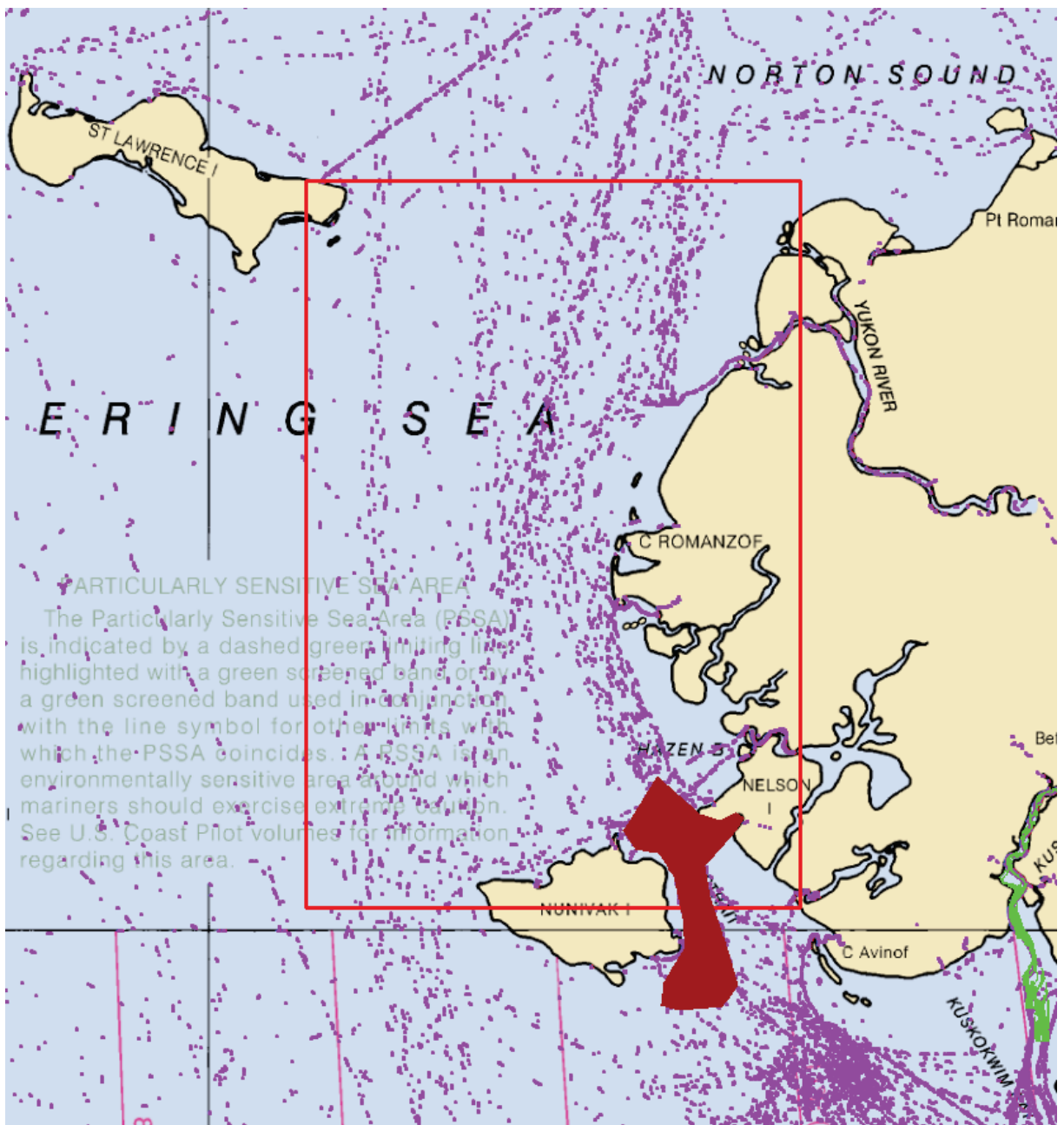
165° 44' 52.0" W

60 15' 44.0" N

Total Latitude: 03° 11' 03"

Total Longitude: 04° 37' 35"

²⁶ Jana's Journey to Alakanuk, "My journey as a new teacher to a Yu'pik Eskimo village on the Yukon River near the Bering Sea," <http://janaalaska.blogspot.com/2012/10/hooper-bay-teacher-in-service.html>.



Nunivak Island: Chart 16280**1:300,000**

Largest scale chart currently: 16006, 1:1,534,076

Nunivak Cliffs²⁷

Nunivak Island is about 330 miles north of Unimak Pass. The latest edition of the *U.S. Coast Pilot* notes that “dangerous shoals and uneven bottom have been reported and are shown on [the 1:1.5 million scale chart 16006]; the island should be approached with extreme caution.”²⁸

The currency of the navigational information known about Nunivak Island is betrayed by the same edition of the *Coast Pilot* which reports “in 1899 the U.S.S. CORWIN cruised completely around Nunivak Island, following the shore and outlying islands at a distance of about 2 miles, and found general about depths of 7 to 10 fathoms,”²⁹

Chart Details**as of February 1, 2013**

Chart Number: 16280

National Stock Number: 7642016157932

KAPP Number: 0000

NGA Reference Number: 16BCO16280

Title: Alaska – West Coast
Nunivak Island

Scale: 1:300,000

at Latitude: 59° 55' 00.0" N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: TBD

Blue Tint Curve(s): TBD

Limits

60° 48' 14.0" N

168° 34' 58.0" W

162° 25' 45.0" W

58° 44' 26.0" N

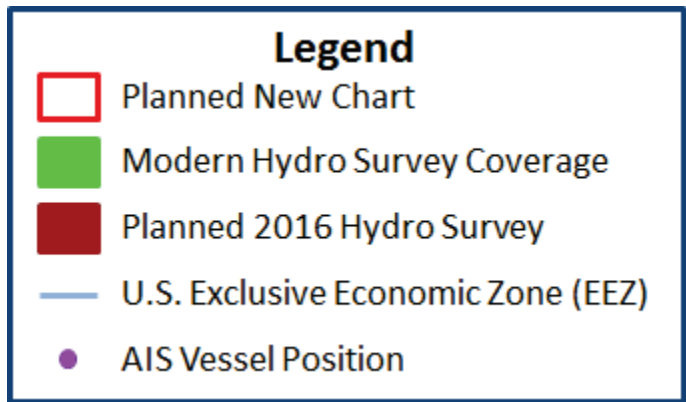
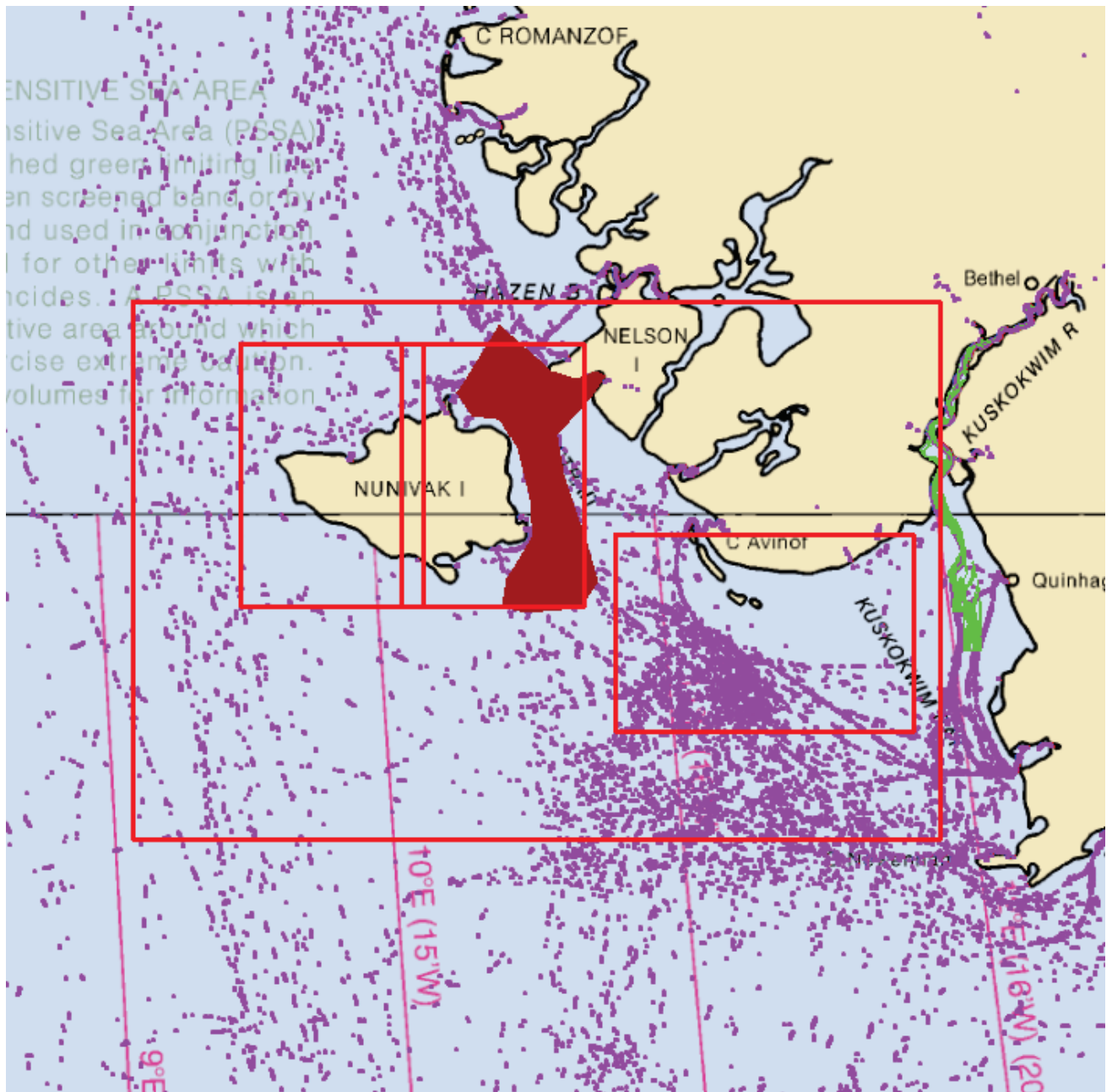
Total Latitude: 02° 03' 48"

Total Longitude: 06° 09' 13"

Neatline Height: 000.00mm

Neatline Width: 000.00mm

²⁷ Photo: U.S. Fish and Wildlife Service atwww.fws.gov/digitalmedia/cdm4/item_viewer.php?CISOROOT=/natdiglib&CISOPTR=696&CISOBX=1&REC=1²⁸ NOAA, "Bering Sea: Chart 16006," *U.S. Coast Pilot, Alaska: Cape Spencer to Beaufort Sea*, (NOAA, Washington: 2010), Chapter 8, paragraph 379.²⁹ *Ibid*, Chapter 8, paragraph 386.



West Nunivak Island: Chart 16281

1:100,000

East Nunivak Island: Chart 16282

1:100,000

Largest scale chart currently: 16006, 1:1,534,076



Musk Ox on Nunivak Island³⁰

Introduced to the island in 1935 with 31 animals,³¹ there are now about 500 Muskox on Nunivak Island, more than twice the number of people.

Deep draft vessels used for supply lightering to coastal communities seek shelter on the east side of Nunivak Island. Due to the vintage of chart data available to mariner, navigating in and out of Etolin Strait poses significant risks for vessels constrained by maneuverability and draft.

Chart Details

as of February 1, 2013

Chart Number: 16281

National Stock Number: 7642016157928

KAPP Number: 0000

NGA Reference Number: 16BCO16281

Title: Alaska – West Coast
West Nunivak Island

Scale: 1:100,000

at Latitude: 60° 10' 00.0" N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: TBD

Blue Tint Curve(s): TBD

Limits

60° 38' 53.0" N

167° 45' 06.0" W

166° 21' 57.0" W

59° 39' 11.0" N

Total Latitude: 59' 42"

Total Longitude: 01° 23' 09"

³⁰ Wikimedia, "File:Ovibos moschatus (Nunivak Island).jpg," [http://commons.wikimedia.org/w/index.php?title=File:Ovibos_moschatus_\(Nunivak_Island\).jpg&redirect=no](http://commons.wikimedia.org/w/index.php?title=File:Ovibos_moschatus_(Nunivak_Island).jpg&redirect=no)

³¹ David L. Spencer and Calvin J. Lensink, "The Muskox of Nunivak Island," Alaska, The Journal of Wildlife Management, Vol. 34, No. 1 (Jan., 1970), pp. 1-15

Chart Details**as of February 1, 2013**

Chart Number: 16282

National Stock Number: 7642016157927

KAPP Number: 0000

NGA Reference Number: 16BCO16282

Title: Alaska – West Coast
East Nunivak Island – Etolin Strait

Scale: 1:100,000

at Latitude: 60° 10' 00.0" N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: TBD

Blue Tint Curve(s): TBD

Limits

60° 38' 53.0" N

166° 31' 56.0" W

165° 08' 46.0" W

59° 39' 11.0" N

Total Latitude: 59' 42"

Total Longitude: 01° 23' 10"

See chart graphic on page 41

Northern Kuskokwim Bay: Chart 16301**1:100,000**

Largest scale chart currently: 16006, 1:1,534,076

Kwigillingok, Alaska³²

Kuskokwim Bay is filled with many flats, and hard steep-to shoals. The channels through the bay are not always apparent by the surface indications of the water. At times the channels will be smooth with rips on the shoals, and at other times the reverse will be true.

Because of the inequality of the tides, a vessel grounding at high water may not be refloated for several days.³³ Operating costs for tugs and barges are about \$20,000 per day, which make groundings and other delays costly.

Chart Details**as of February 1, 2013**

Chart Number: 16301

National Stock Number: 7642016157929

KAPP Number(s): 0000

NGA Reference Number: 16BCO16301

Title: Alaska – West Coast
Northern Kuskokwim Bay

Scale: 1:100,000

at Latitude: 59° 33'00.0"N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: TBD

Blue Tint Curve(s): TBD

Limits

59° 55' 38.0" N

164° 54' 36.0" W

162° 38' 02.0" W

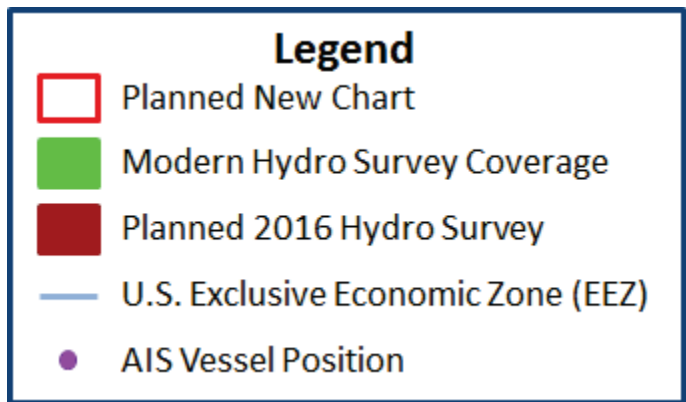
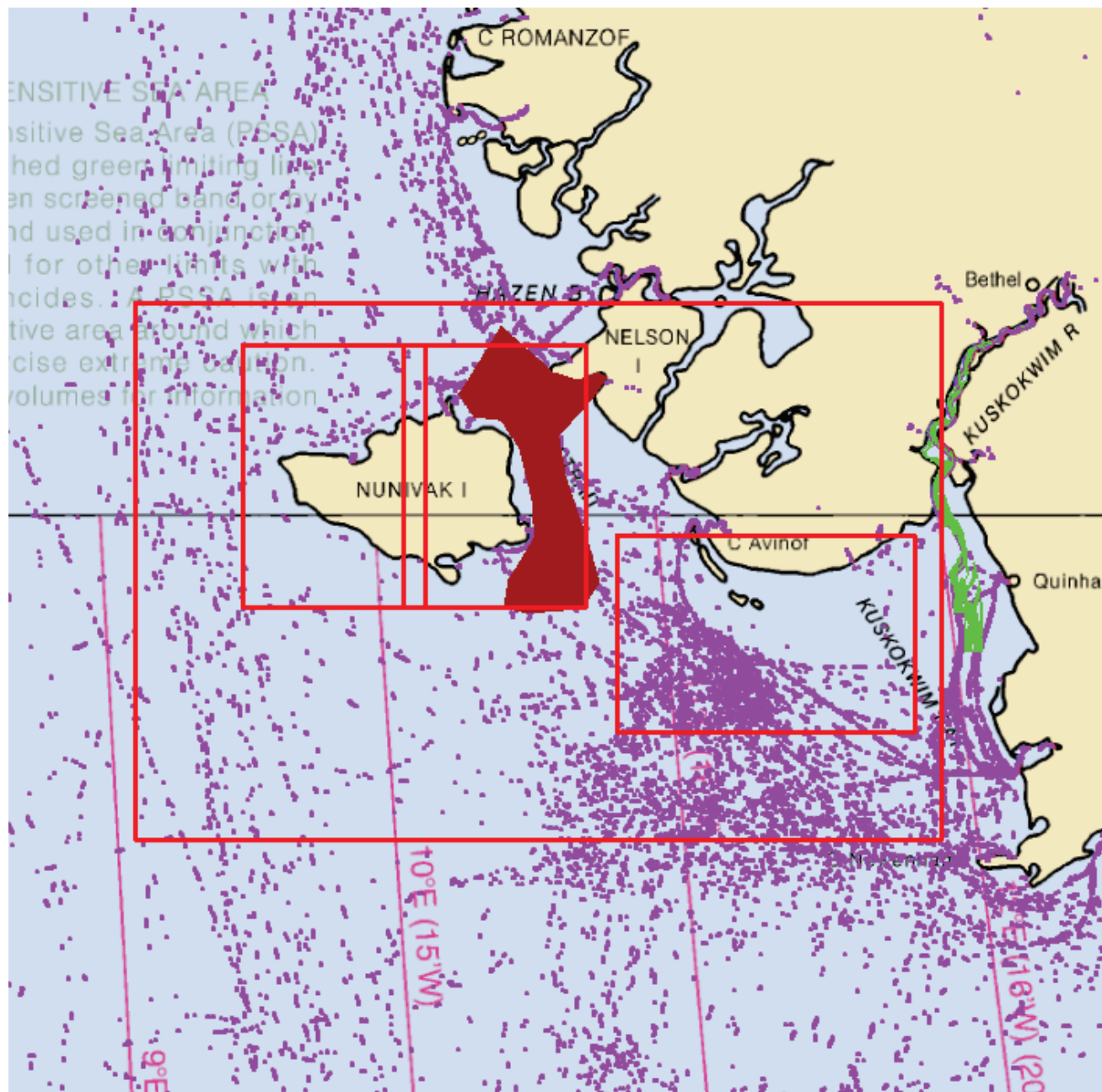
59° 09' 55.0" N

Total Latitude: 45' 43"

Total Longitude: 02° 16' 34"

³² ALT/SPACE, "Really Worth Something," <http://tajaltspace.com/really-worth-something>

³³ NOAA, "Bering Sea: Charts 16300, 16006, 16305," *U.S. Coast Pilot, Alaska: Cape Spencer to Beaufort Sea*, (NOAA, Washington: 2014), Chapter 8, paragraph 288.



West Bristol Bay: Chart 16310

1:300,000

East Bristol Bay: Chart 16320

1:300,000

Largest scale chart currently: 16011, 1:1,023,188



Britol Bay salmon fishing boats³⁴

Bristol Bay covers over 50,000 square miles. All five species of Pacific salmon live in the bay and it has the largest sockeye salmon run in the world, producing approximately 46% of the world's wild sockeye harvest. In 2009, Bristol Bay's wild salmon ecosystem generated \$480 million in direct annual economic expenditures in the region and sales per year, and employed over 14,000 full and part-time workers.³⁵

Chart Details

as of February 1, 2013

Chart Number: 16310

National Stock Number: 7642016157934

KAPP Number(s): 0000

NGA Reference Number: 16BCO16310

Title: Alaska – West Coast
West Bristol Bay

Scale: 1:300,000

at Latitude: 57° 20' 00.0"N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: TBD

Blue Tint Curve(s): TBD

Limits

59 00' 12.0" N

164° 27' 43.0" W

160° 03' 19.0" W

55° 35' 06.0" N

Total Latitude: 03° 25' 06"

Total Longitude: 04° 24' 24"

³⁴ Juneau Empire, "Alaska Wildlife Troopers keeping Bristol Bay fishermen in line," <http://juneauempire.com/local/2011-07-24/alaska-wildlife-troopers-keeping-bristol-bay-fishermen-line>

³⁵ EPA, "About EPA's Bristol Bay Assessment," <http://www2.epa.gov/bristolbay/about-epas-bristol-bay-assessment>

Chart Details**as of February 1, 2013**

Chart Number: 16320

National Stock Number: 7642016157935

KAPP Number(s): 0000

NGA Reference Number: 16BCO16320

Title: Alaska – West Coast
East Bristol Bay

Scale: 1:300,000

at Latitude: 57° 54'00.0"N

Horizontal Datum: NAD83

Projection: Mercator

Soundings In: Fathoms and Feet

at: MLLW

Depth Curve Values: TBD

Blue Tint Curve(s): TBD

Limits

59° 32' 54.0" N

160° 14' 22.0" W

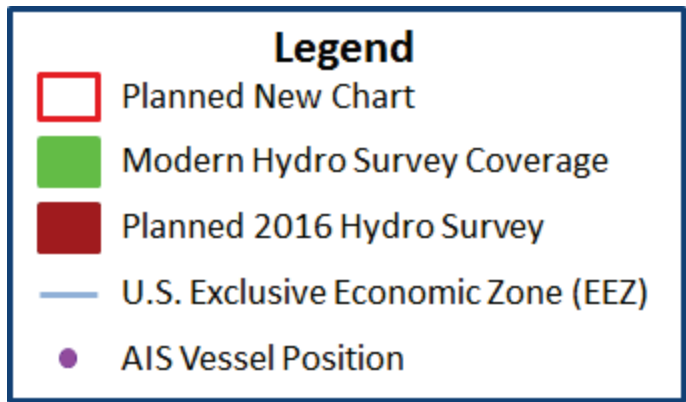
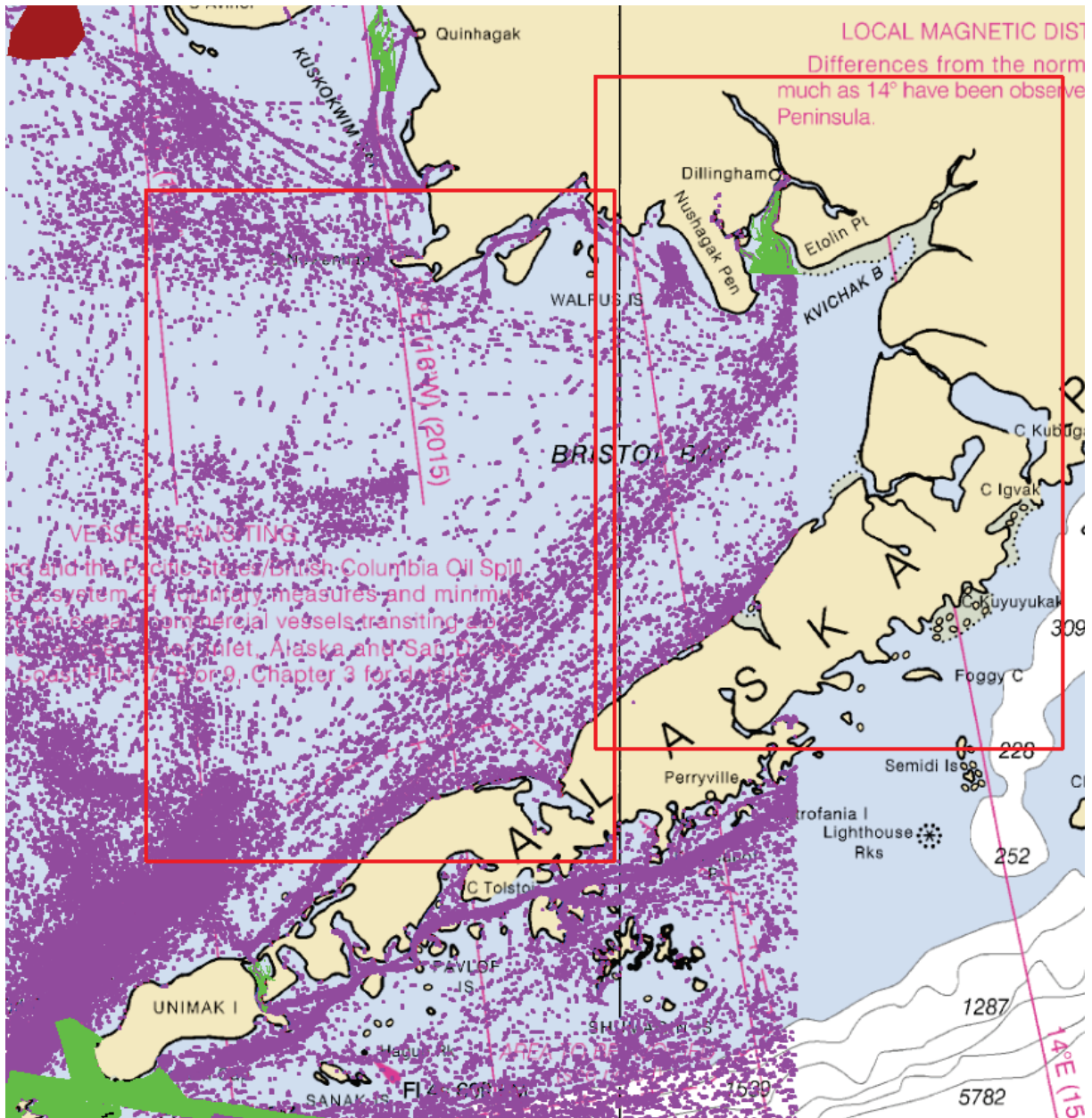
155° 49' 58.0" W

56° 11' 01.0" N

Total Latitude: 03° 21' 53"

Total Longitude: 04° 24' 24"

See chart graphic on page 44



Arctic Nautical Charting Plan

