

Marine Exchange of Alaska



Charette

Deep Draft Vessel Ports in Alaska

A non-profit maritime organization established to provide the Alaska maritime community information, communications and services to ensure safe, secure, efficient and environmentally responsible maritime operations.



Marine Exchanges

Exchange Maritime Information



Telegraph Hill San Francisco
1850

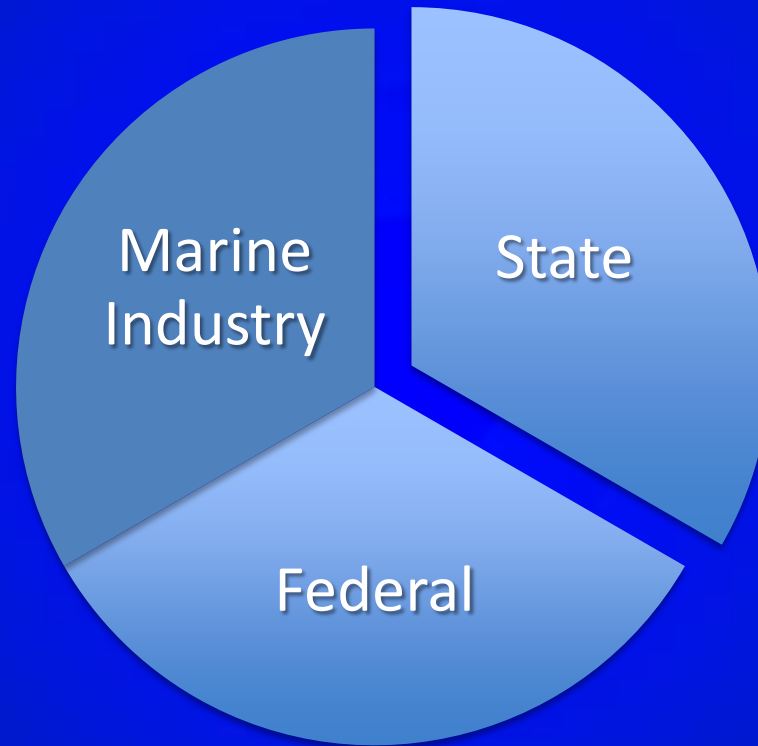
Marine Exchanges Date Back to 1800's

- Honest Brokers of Maritime Information
- Initially telescopes and semaphore
- Today radars, radios, AIS, e-mail, web, and satellites.



San Francisco Exchange 1857

Primary Sources of Marine Exchange of Alaska Funding

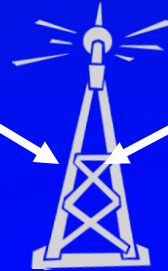


Maritime Safety, Security, Efficiency Environmental Protection

Vessels Tracked via AIS (Automatic Identification System) and Satellite Transponders in Alaska

- Cruise Ships
- Ferries
- Tank and Cargo Barges (satellite)
- Tank Vessels (AIS and satellite)
- Cargo Ships
- Tugs (satellite and AIS)
- Fishing Vessels (VMS and AIS)
- Coast Guard
- State Fish and Game Vessels
- Oil Spill Response Vessels



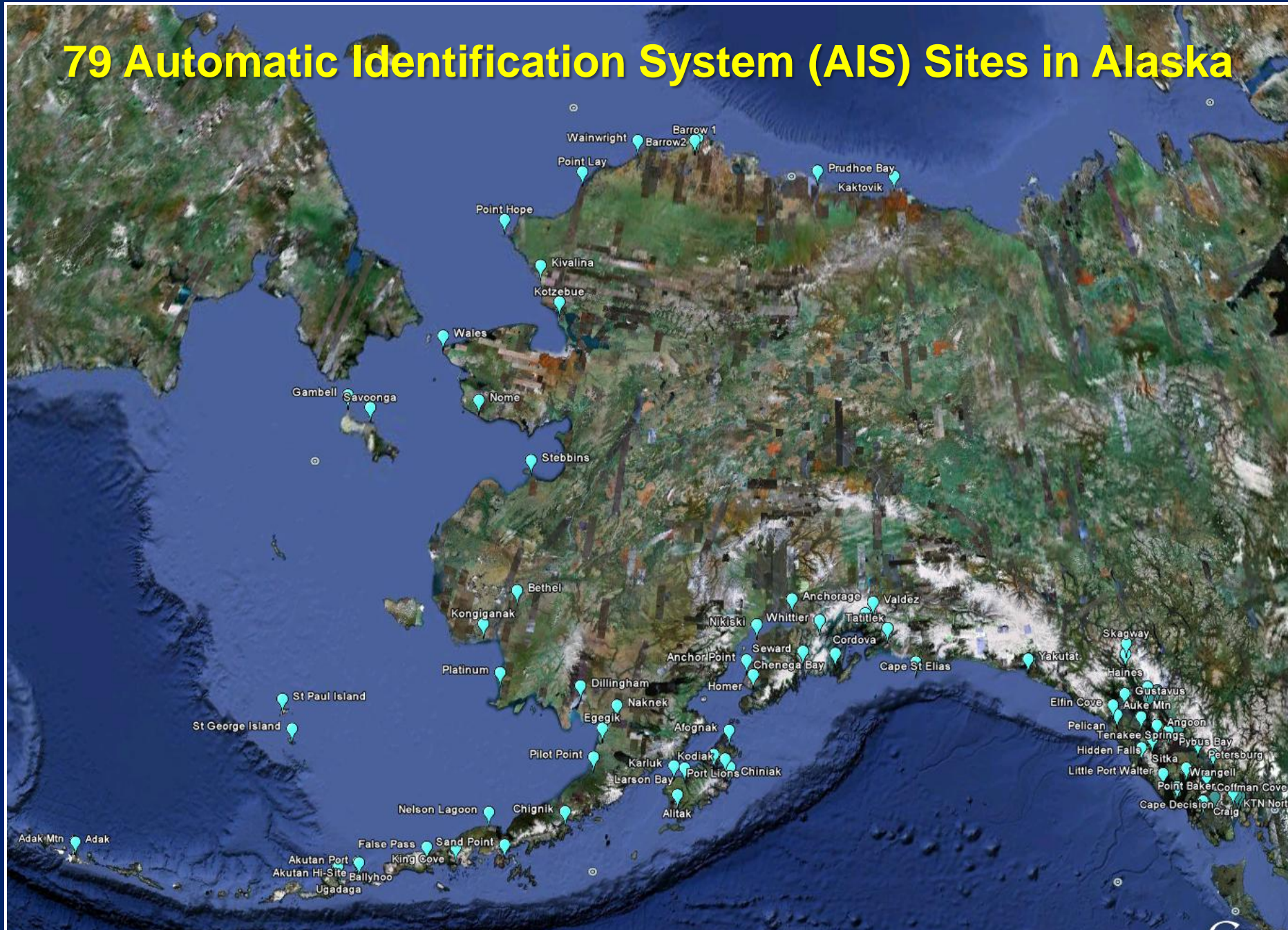


AIS Model



Marine Industry and Others
Ports, Vessel Operators, NGO's

79 Automatic Identification System (AIS) Sites in Alaska





AIS Hosts and Sites

- Harbor Offices
- Lighthouses
- Pilot Stations
- Tug Offices
- Schools
- Mountain Tops
- Fish Hatcheries
- Fish Processing Plants
- Tribal Offices
- Oil Facilities
- Science Centers
- Fishing Lodges
- Oil Spill Response Organizations
- Community Centers



Five Finger Lighthouse

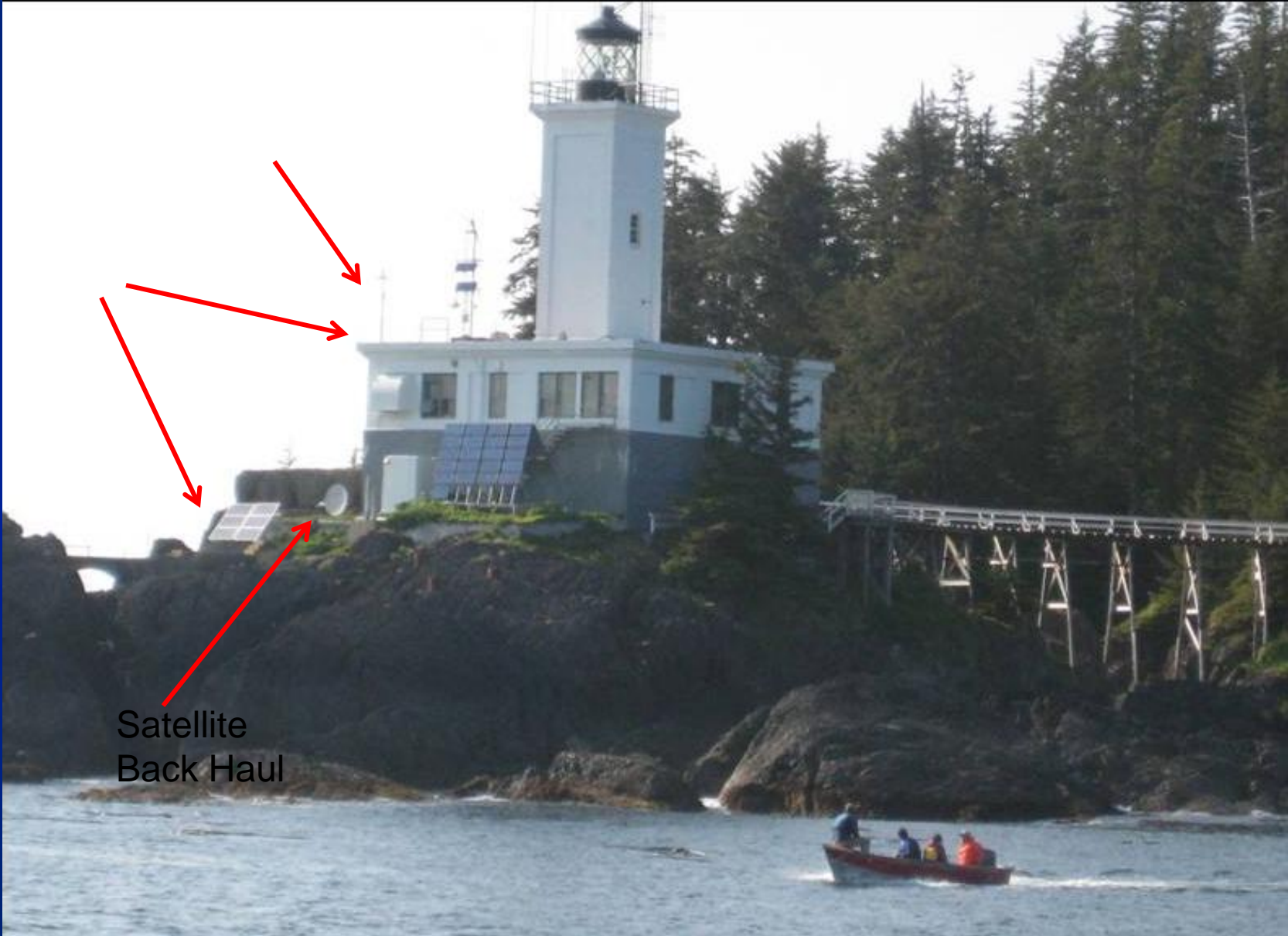


Cape Decision Lighthouse

Installation and Servicing 79 Sites

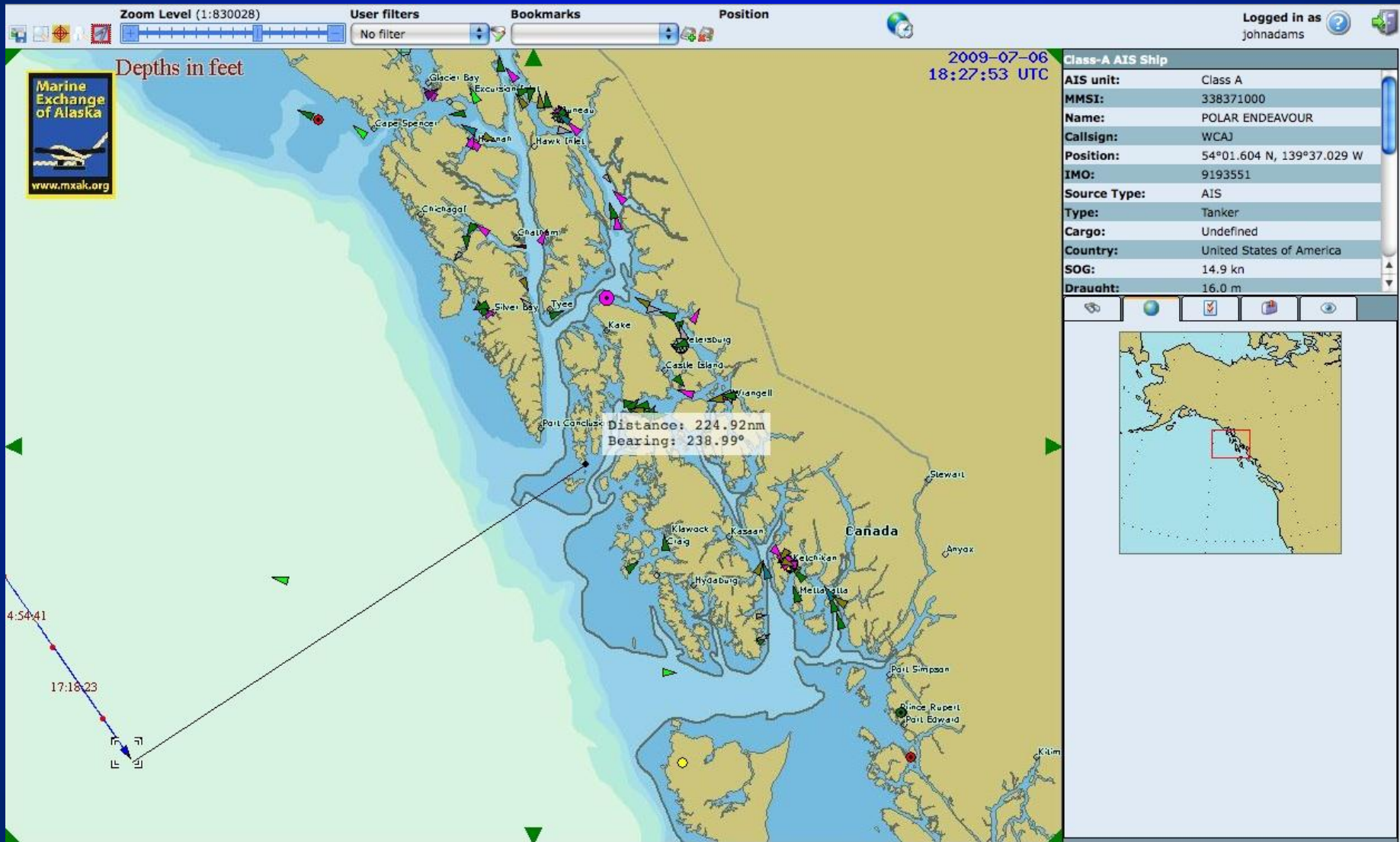


Cape Decision



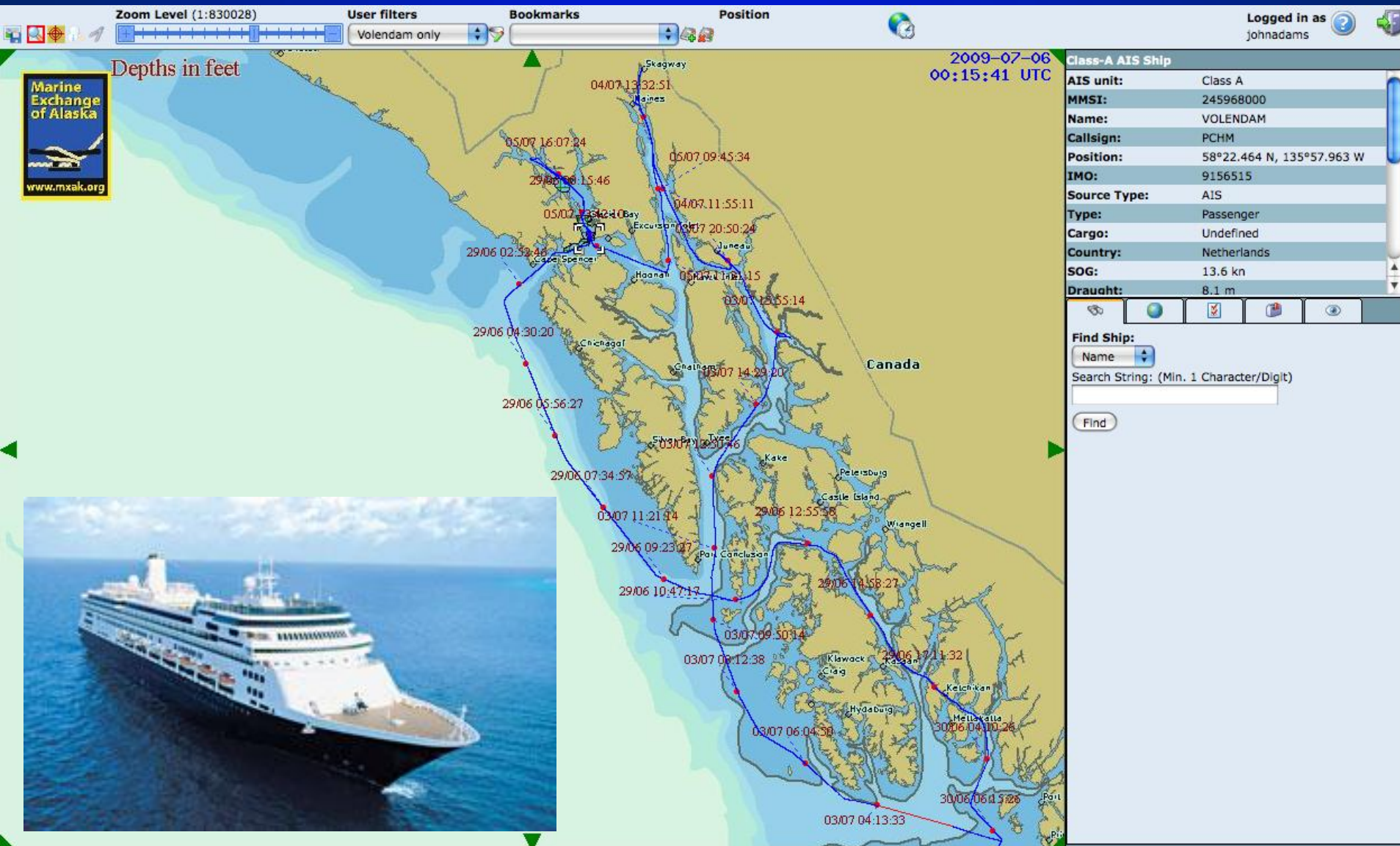
Satellite
Back Haul

Cape Decision AIS

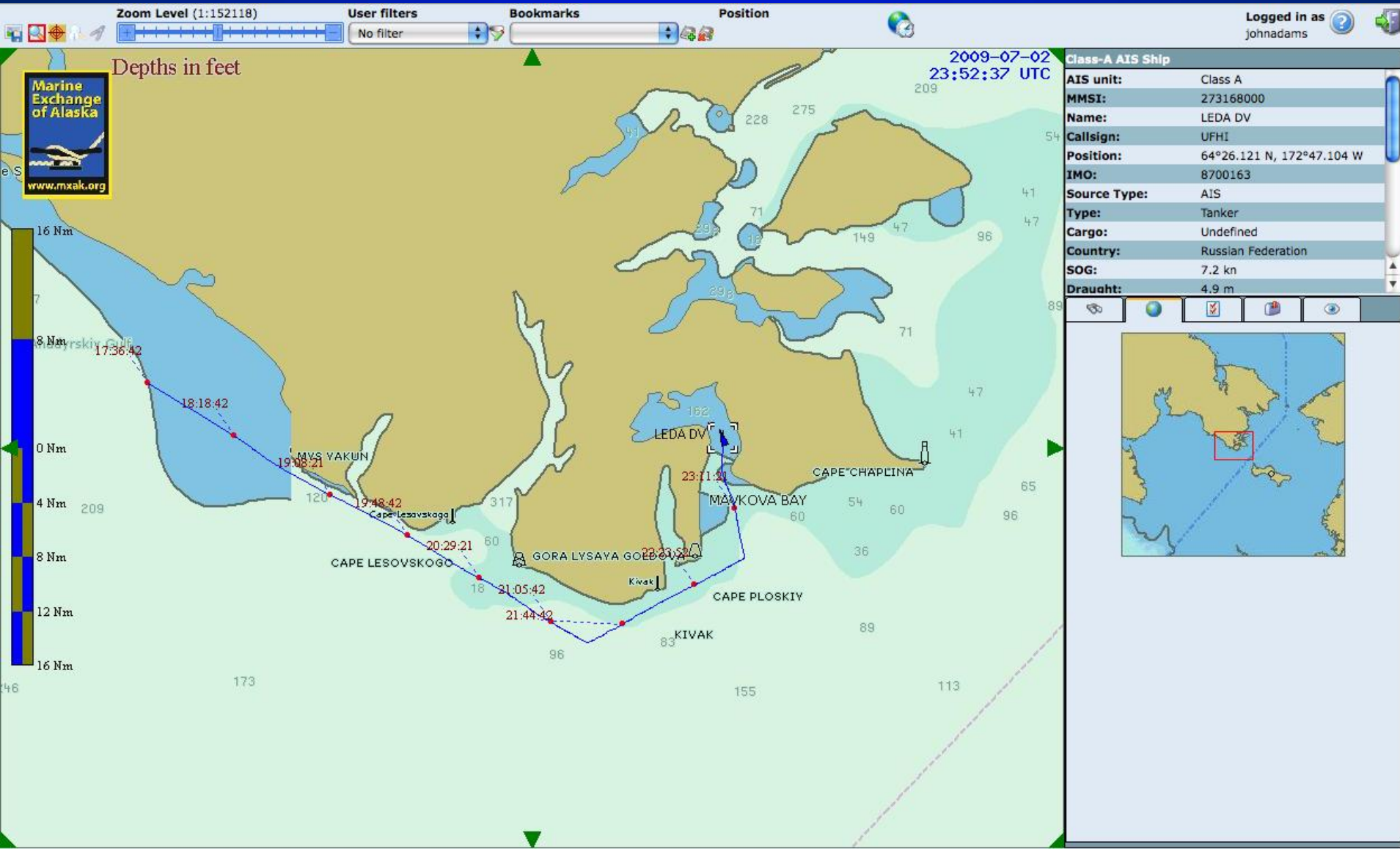


Polar Endeavour tracked 225 nm from Cape Decision

Cruise ship track in Southeast Alaska



Russian tanker tracked from Gambell AIS site

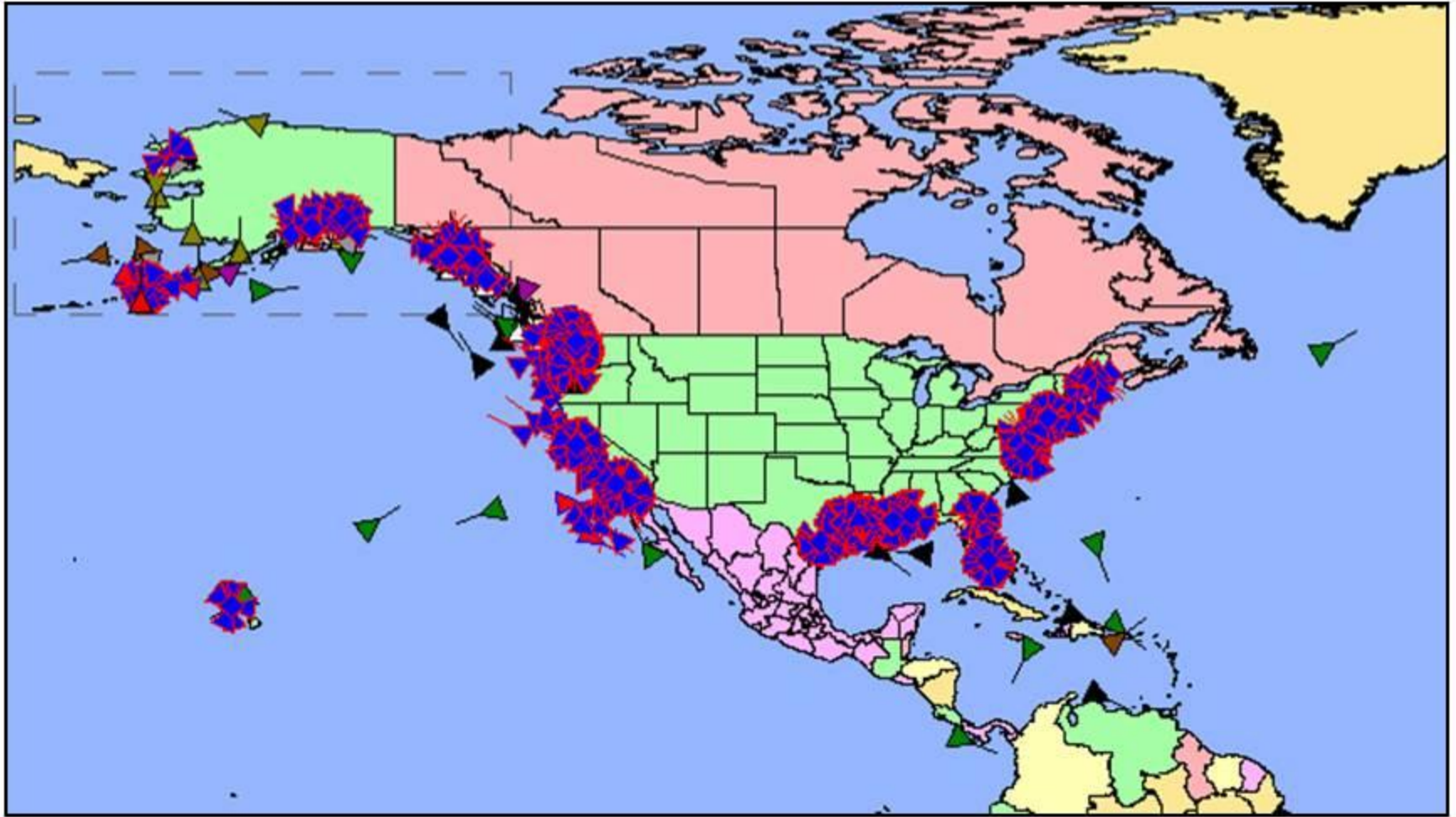




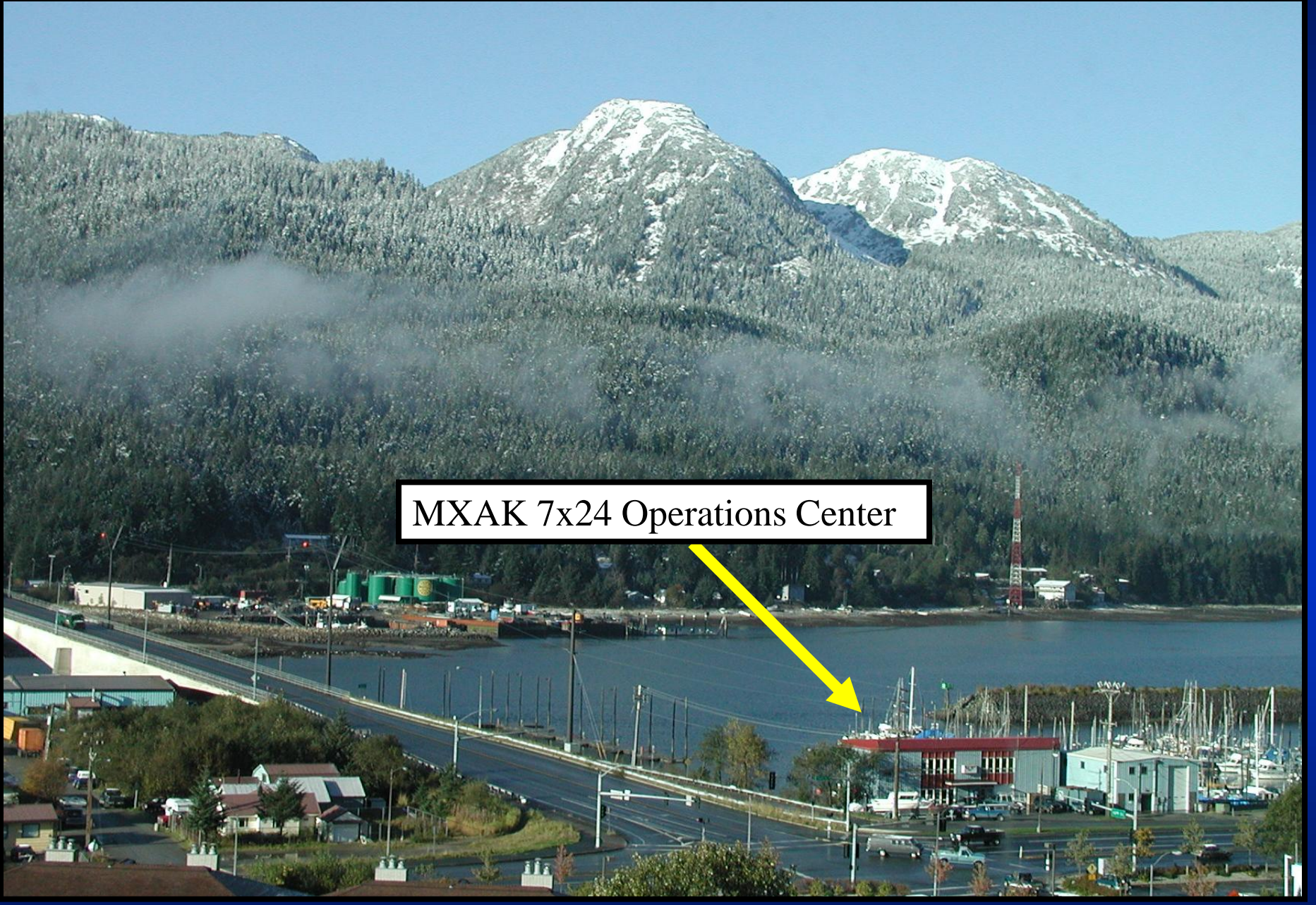
MISNA Vessel Tracking

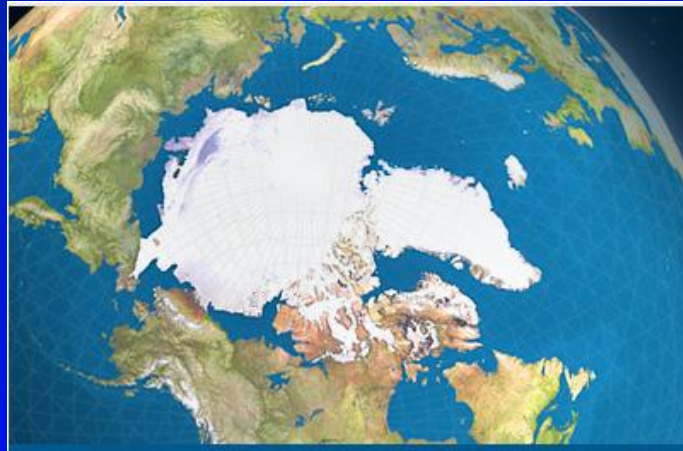
North America AIS and Satellite Tracking

150+ AIS Sites - 3,500+ vessels daily

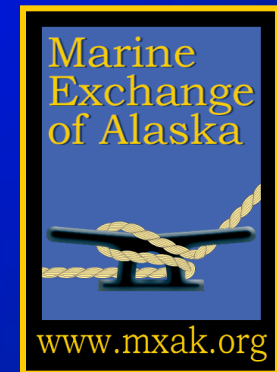


MXAK 7x24 Operations Center





Shared Marine Industry, Government and Public Interest and Commitment



Safe, Secure and Efficient Maritime Operations

FOCUS
on
PREVENTION



Maritime Safety Process



1. *Obtain Information on Vessel Activities*
2. *Conduct Risk Assessment*
3. *Develop and Implement Risk Reduction Measures*
4. *Monitor Compliance*



Broken Maritime Safety Process



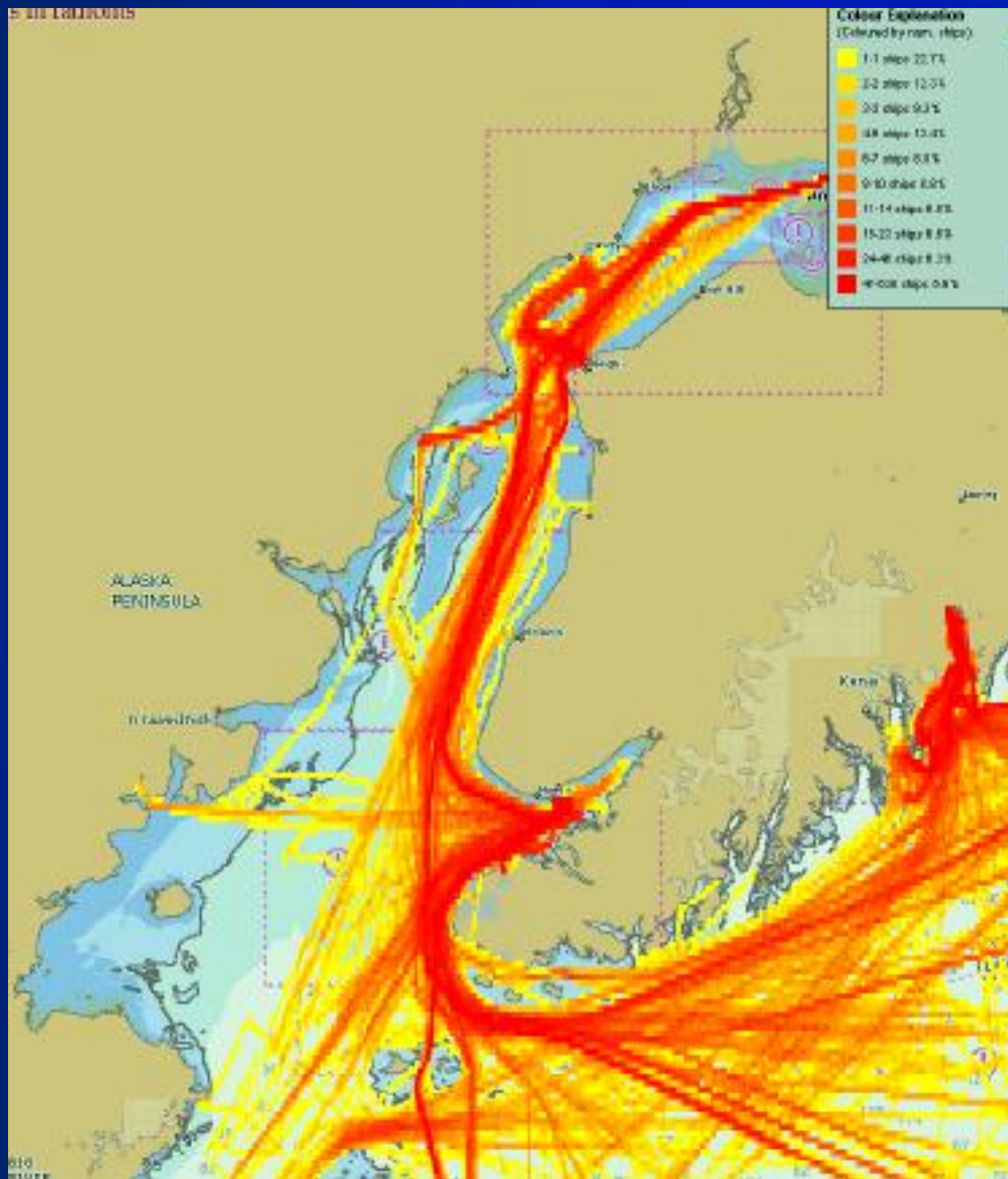
Limited Monitoring and Oversight

- *T/V GLACIER BAY – Cook Inlet*
- *T/V EXXON VALDEZ – Prince William Sound*
- *M/V SELENDANG AYU – Aleutian Islands*

Holistic Port Planning

Vessel Transit – Vessel Arrival – Port Call – Cargo - Departure

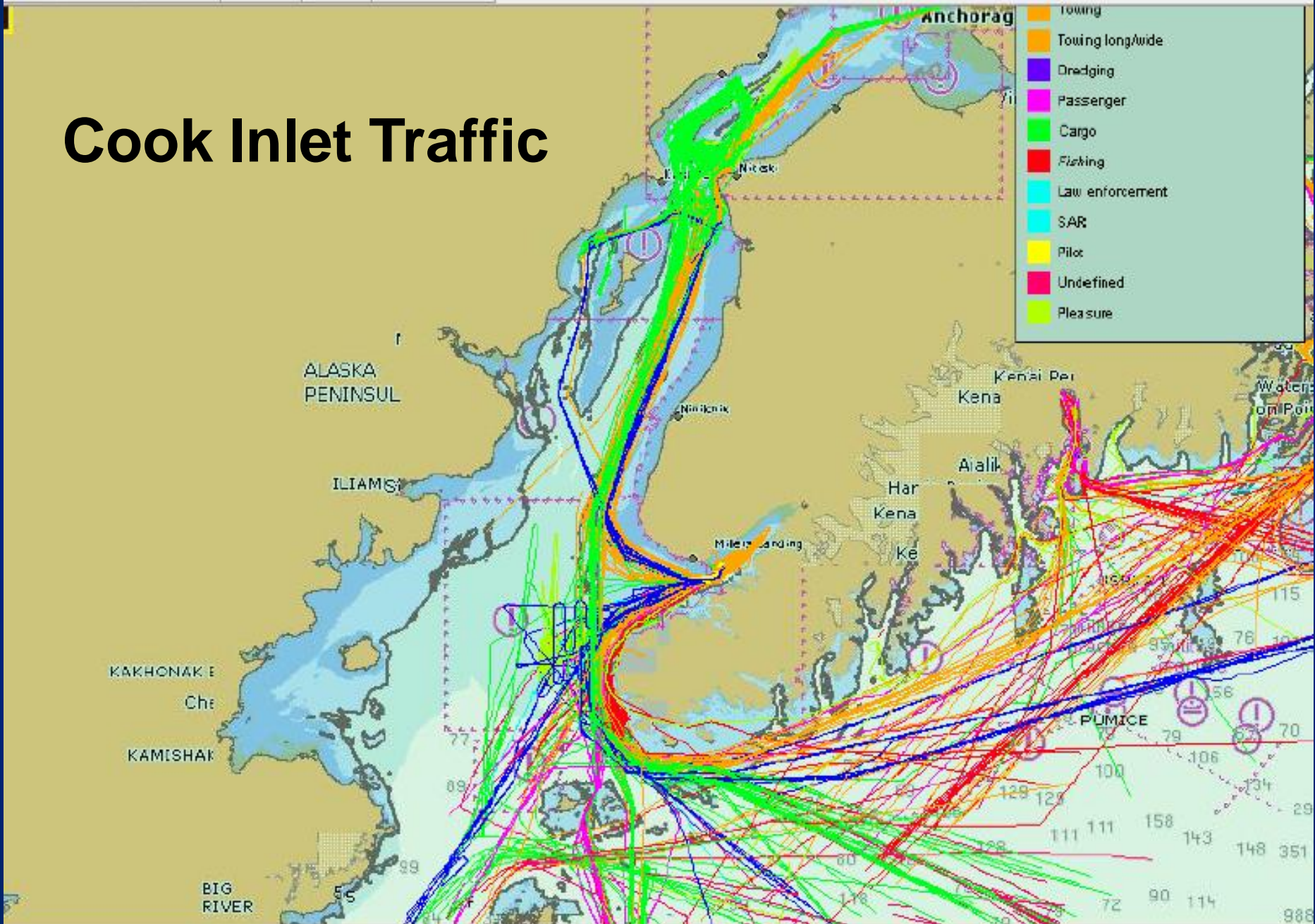
- International Maritime Organization (IMO) – Ships and Crews
 - Flag States
 - Port States
- Marine Industry – Ship Owners, Pilots, Tugs, Facilities
- Safe Waterways – CG and NOAA
- Risk Management - Regulations – ATBA's, TSS, VTMS
- Docks and Port
- Infrastructure



Cook Inlet Traffic

Density Graphics

Cook Inlet Traffic





Depths in metres

R
(Replay)

Point Hope

Kivalina

(Red Dog)

Kotzebue



Lotus Sun bulker

26/08 20:07:58

27/08 01:38:19

27/08 05:39:33

Fairweather NOAA survey

SCF Baltica tanker

Wales

Nome

Gambell

Savoonga

Stebbins

64 Nm

0 Nm

32 Nm

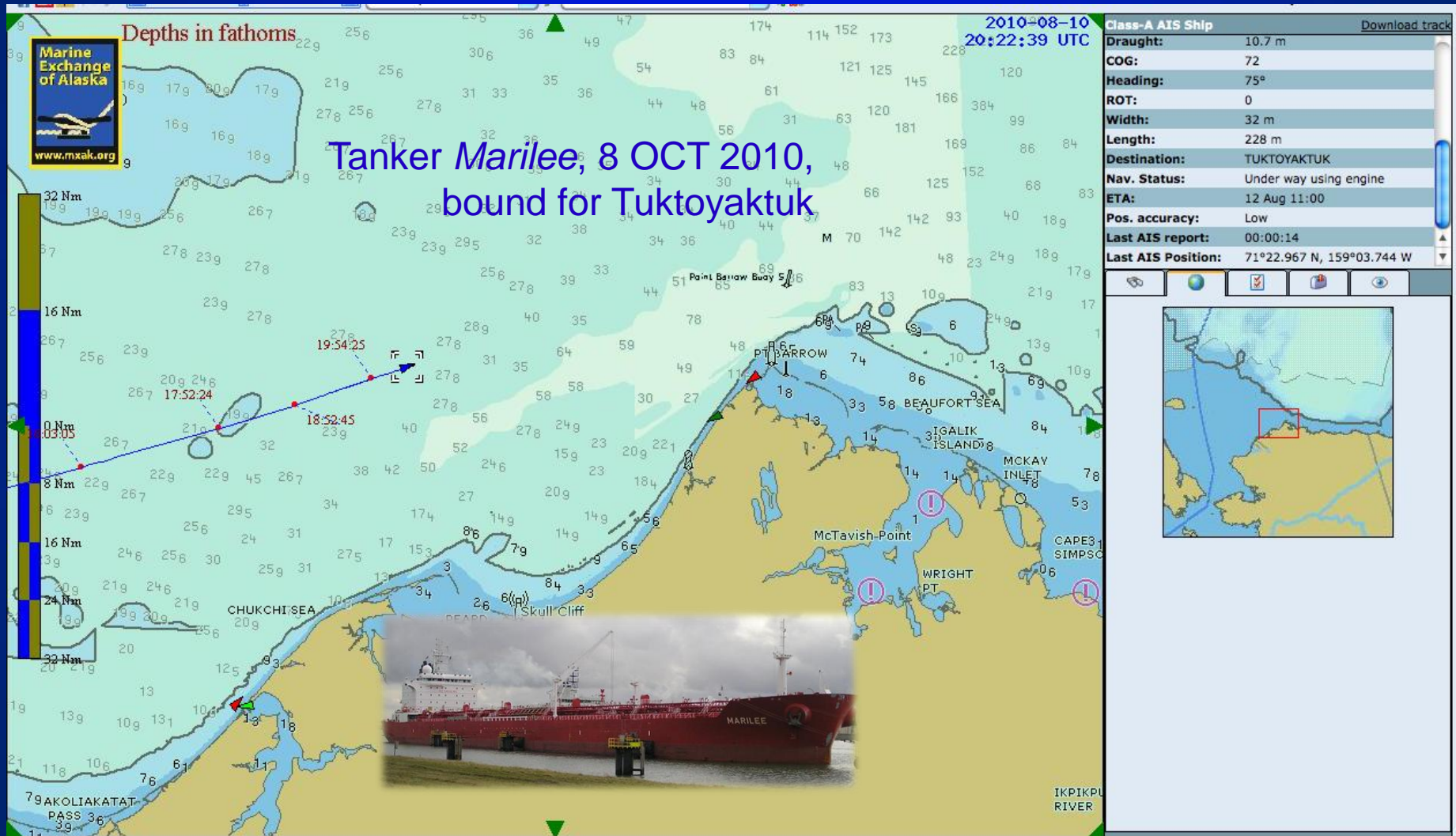
64 Nm

96 Nm

128 Nm

8/27/2010
5:12:08 AM UTC

Identifying and Tracking Vessels



Marine Exchange of Alaska



www.mxak.org

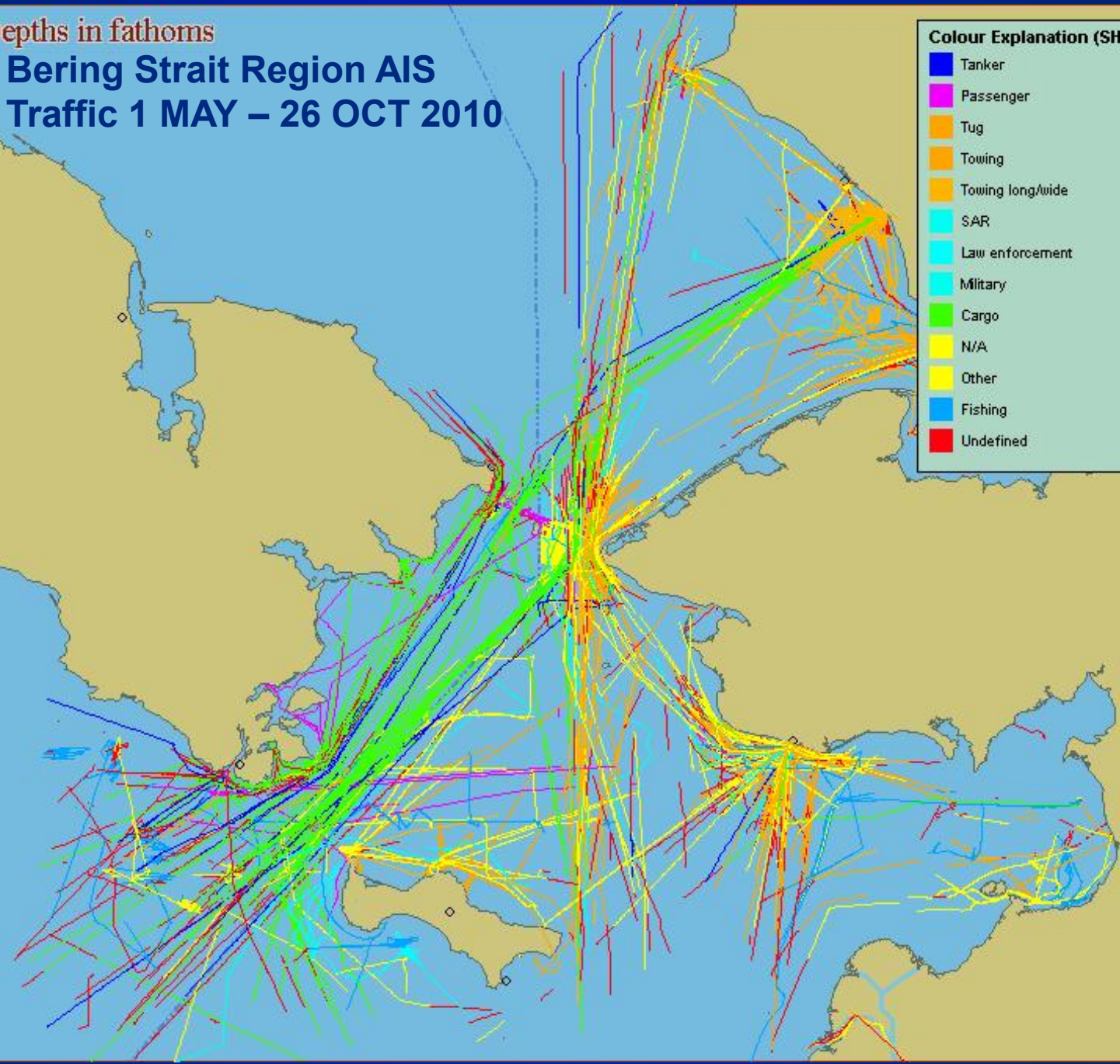
Depths in fathoms

Bering Strait Region AIS Traffic 1 MAY – 26 OCT 2010



Colour Explanation (SHIP_TYPE)

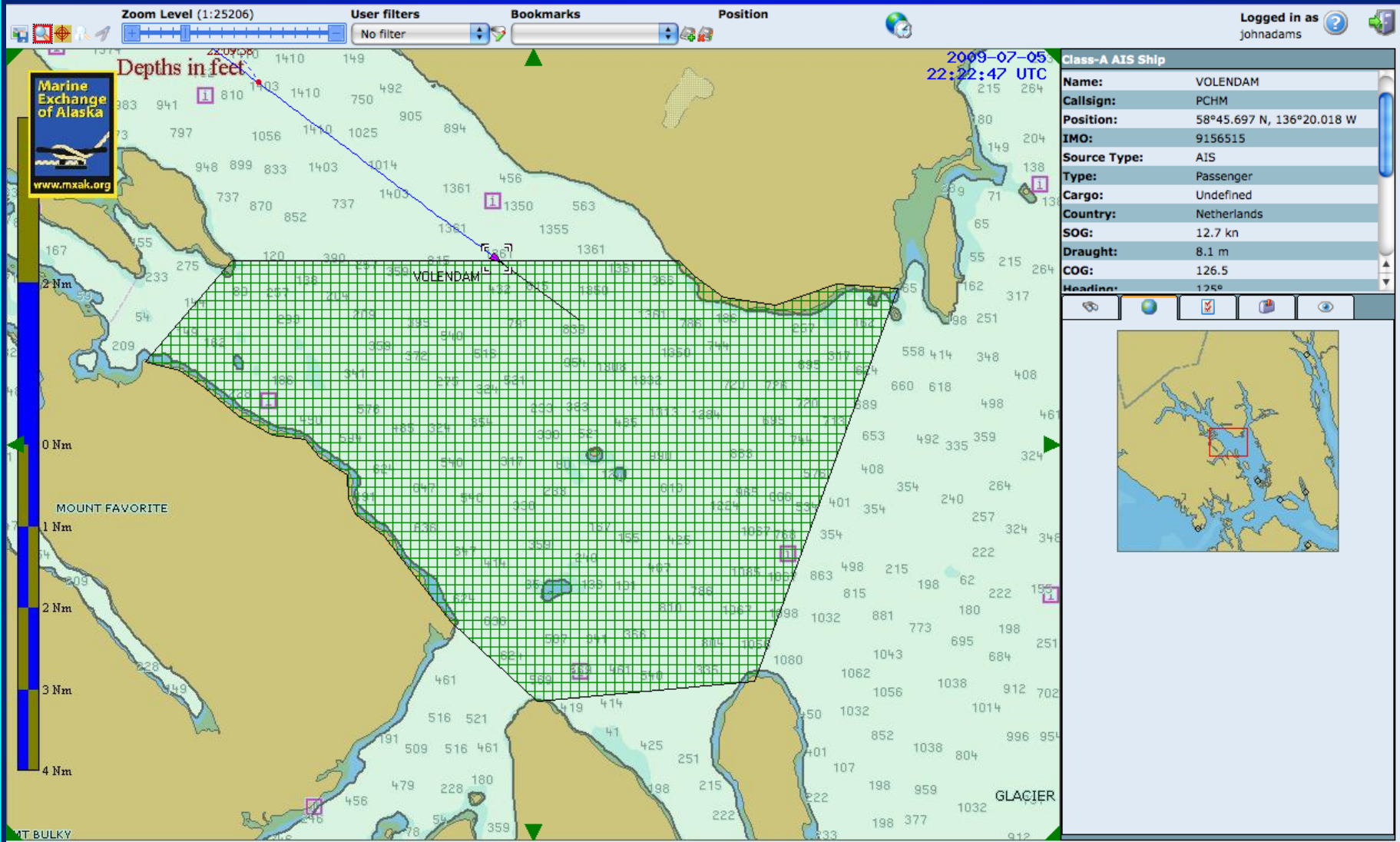
- Tanker
- Passenger
- Tug
- Towing
- Towing long/wide
- SAR
- Law enforcement
- Military
- Cargo
- N/A
- Other
- Fishing
- Undefined



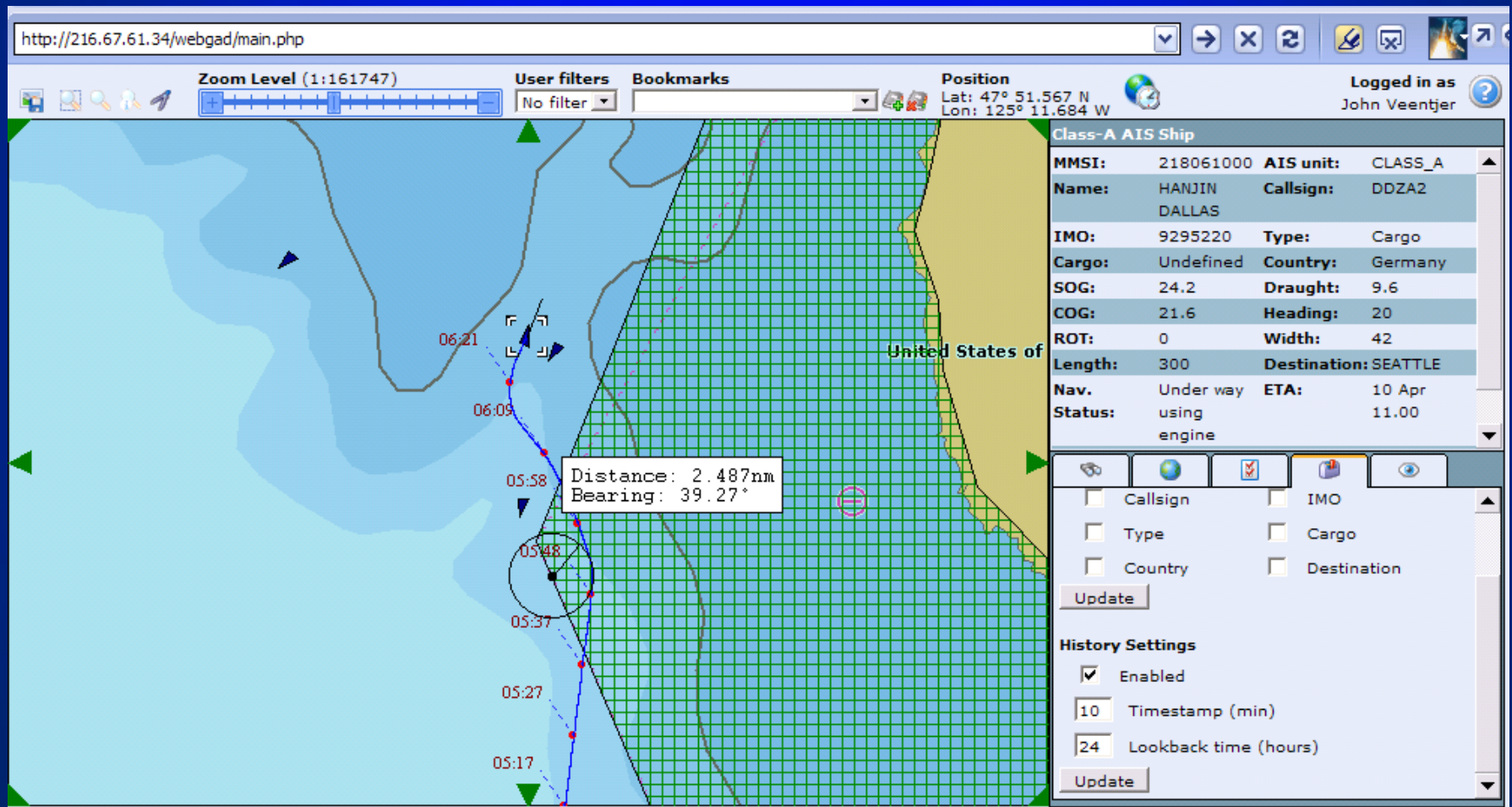
3							
4	Name of Ship	Call Sign	Flag	Type of ship	Date & Time of transit	Next Port	Last Port
5	ALASKA ROSE	WCW900	USA	fishing	26 Sep 2007 08:12:32	DUTCH HARBOR	
6	ALASKAN COMMAND	WCX731	USA	fishing	29 Sep 2007 10:10:56	UNKNOWN	
7	ALEUTIAN MARINER	WDC842	USA	fishing	27 Sep 2007 01:22:53	DUTCH HARBOR	
8	ALEUTIAN SPRAY	WDD624	USA	fishing	24 Sep 2007 11:08:16	DUTCH HARBOR	
9	AMERICAN BEAUTY	WBP585	USA	fishing	20 Sep 2007 02:51:04	FISHING GROUNDS	
10	AMERICAN EAGLE	WDD552	USA	fishing	26 Sep 2007 21:11:01	Unavailable	
11	AMSTERDAM	PBAD	Netherlands	passenger	26 Sep 2007 00:33:58	PETROPAVLOVSK	Juneau Alaska
12	ANITA J	WCZ647	USA	fishing	29 Sep 2007 12:54:35	Unavailable	
13	ANSAC LEGACY	HPTR	Panama	bulk carrier	21 Sep 2007 06:03:31	INCHON	Vancouver Washington
14	APL ITALY	A8GK6	Liberia	container ship	18 Sep 2007 17:46:20	DUTCH HARBOR	Oakland California
15	APL EMPEROR	MDWP6	United Kingdom	container ship	26 Sep 2007 08:43:27	DUTCH HARBOR	Oakland California
16	APL GENERAL	DSEM3	Korea	container ship	21 Sep 2007 00:59:13	YOKOHAMA	Vancouver Canada
17	APL JAPAN	S6TS	Singapore	container ship	17 Sep 2007 09:17:42	SEATTLE	Hong Kong
18	APL PHILIPPINES	WCX888	USA	container ship	24 Sep 2007 15:21:49	UPS YOKOHAMA	Oakland California
19	APL SINGAPORE	WCX881	USA	container ship	17 Sep 2007 10:33:49	YOKOHAMA	Oakland California
20	ARCTIC EXPLORER	WCZ900	USA	fishing	28 Sep 2007 23:47:33	AKUTAN	
21	ARCTIC WIND	WDB603	USA	fishing	27 Sep 2007 12:20:05	FISHING	
22	ARCTIC MARINER	WDC887	USA	fishing	26 Sep 2007 10:09:31	DUTCH HARBOR	
23	ASTRAL EXPRESS	HOSL	Panama	product tanker	20 Sep 2007 14:14:38	ULSAN,S.KOREA	Puerto Quetzal Guatemala
24	AURIGA	WTE678	USA	fishing	30 Sep 2007 11:12:59	DUTCH HARBOR	
25	AURORA	WTE677	USA	fishing	30 Sep 2007 21:03:21	Unavailable	
26	BALAENA	WDC381	USA	fishing	29 Sep 2007 20:14:04	TACOMA	
27	BARANOF	WBB484	USA	fishing	22 Sep 2007 06:50:15	FISHING GROUNDS	
28	BARBARA J	WBC509	USA	fishing	30 Sep 2007 21:07:02	TENDERING	
29	BERING ROSE	WCW900	USA	fishing	16 Sep 2007 12:47:43	Unavailable	
30	BIRTHDAY	C6SH6	Bahamas	bulk carrier	27 Sep 2007 07:55:17	NANTONG,CHINA	Vancouver Canada
31	BLUE ARIES	3FRH8	Panama	bulk carrier	16 Sep 2007 04:13:18	SHIMIZU PSTN/JAPAN	Vancouver Canada
32	BLUE LEO	3FOK8	Panama	bulk carrier	18 Sep 2007 06:05:33	CHIBA, JAPAN	Vancouver Canada
33	BRISTOL MARINER	WCX905	USA	fishing	27 Sep 2007 17:32:42	SEATTLE	
34	BRISTOLEXPLORER	WCZ901	USA	fishing	28 Sep 2007 02:19:19	DUTCH HARBOR	
35	BULLDOG	WBY519	USA	fishing	27 Sep 2007 03:22:55	DUTCH HARBOR	
36	BUM SHIN	DSOE3	Korea	chemical tanker	25 Sep 2007 16:28:03	ULSAN	Vancouver Canada
37	C.S. ENTREPRENEUR	3EIU6	Panama	bulk carrier	27 Sep 2007 12:26:04	POHANG-S.KOERA	Port Angeles Washington
38	CAITLIN ANN	WDC646	USA	fishing	24 Sep 2007 11:05:37	DUTCH,HBR.AK.	
39	CAPE CAUTION	WBP706	USA	fishing	29 Sep 2007 05:26:37	HOME	
40	CAPE HORN	WDC425	USA	fishing	29 Sep 2007 19:28:49	Unavailable	
41	CASCADE MARINER	WDA640	USA	tug	26 Sep 2007 06:09:12	DUTCH HARBOR AK	
42	CG ACUSHNET	Unavailable	USA	WMEC	29 Sep 2007 17:05:22	Unavailable	
43	CGC SPAR	NJAR	USA	buoy tender	20 Sep 2007 05:39:32	Unavailable	
44	CHELSEA K	WDD564	USA	fishing	29 Sep 2007 16:37:51	DUTCH HARBOR	

Glacier Bay

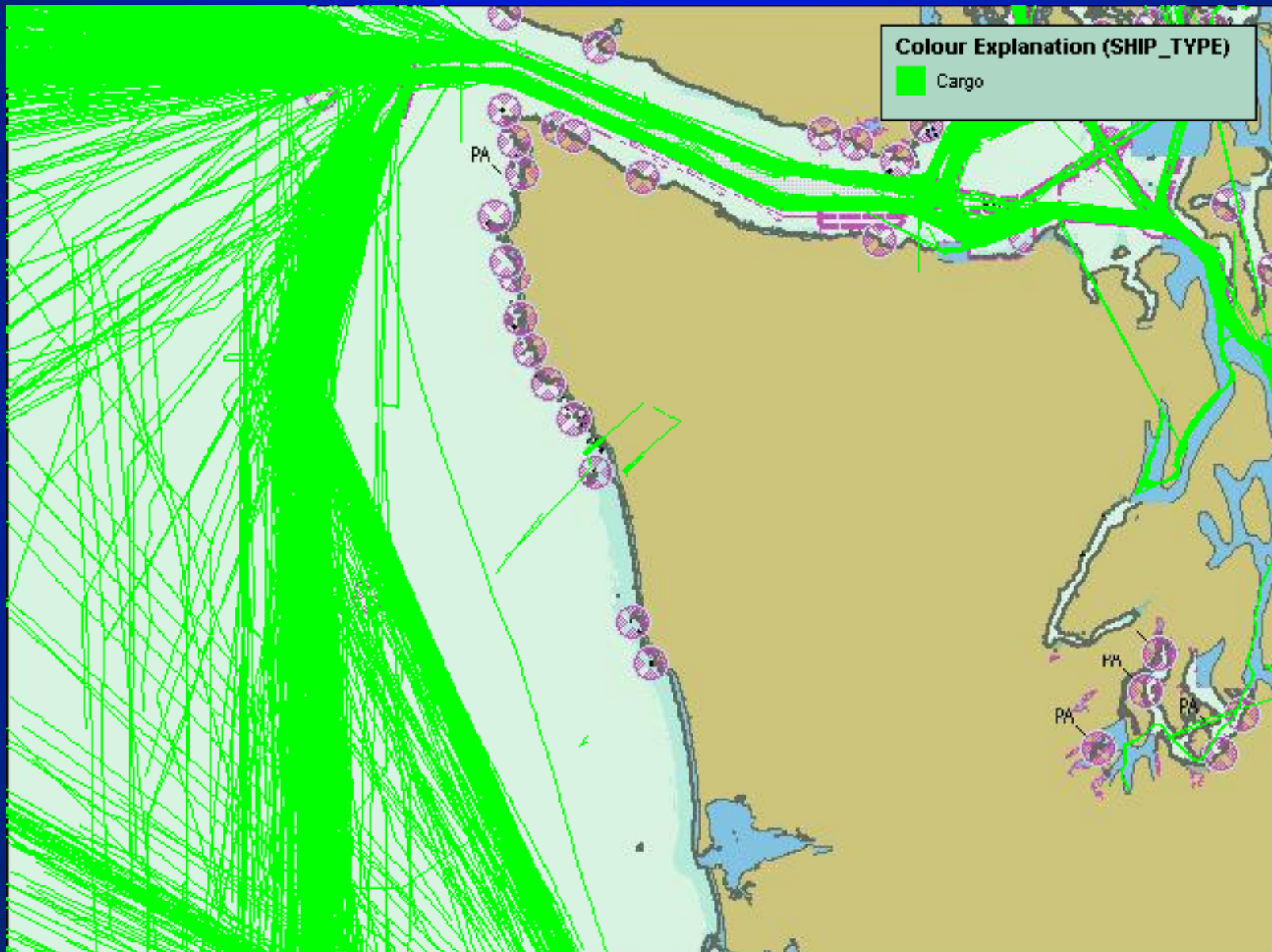
Cruise ship enters Whale Waters at less than 13 knots



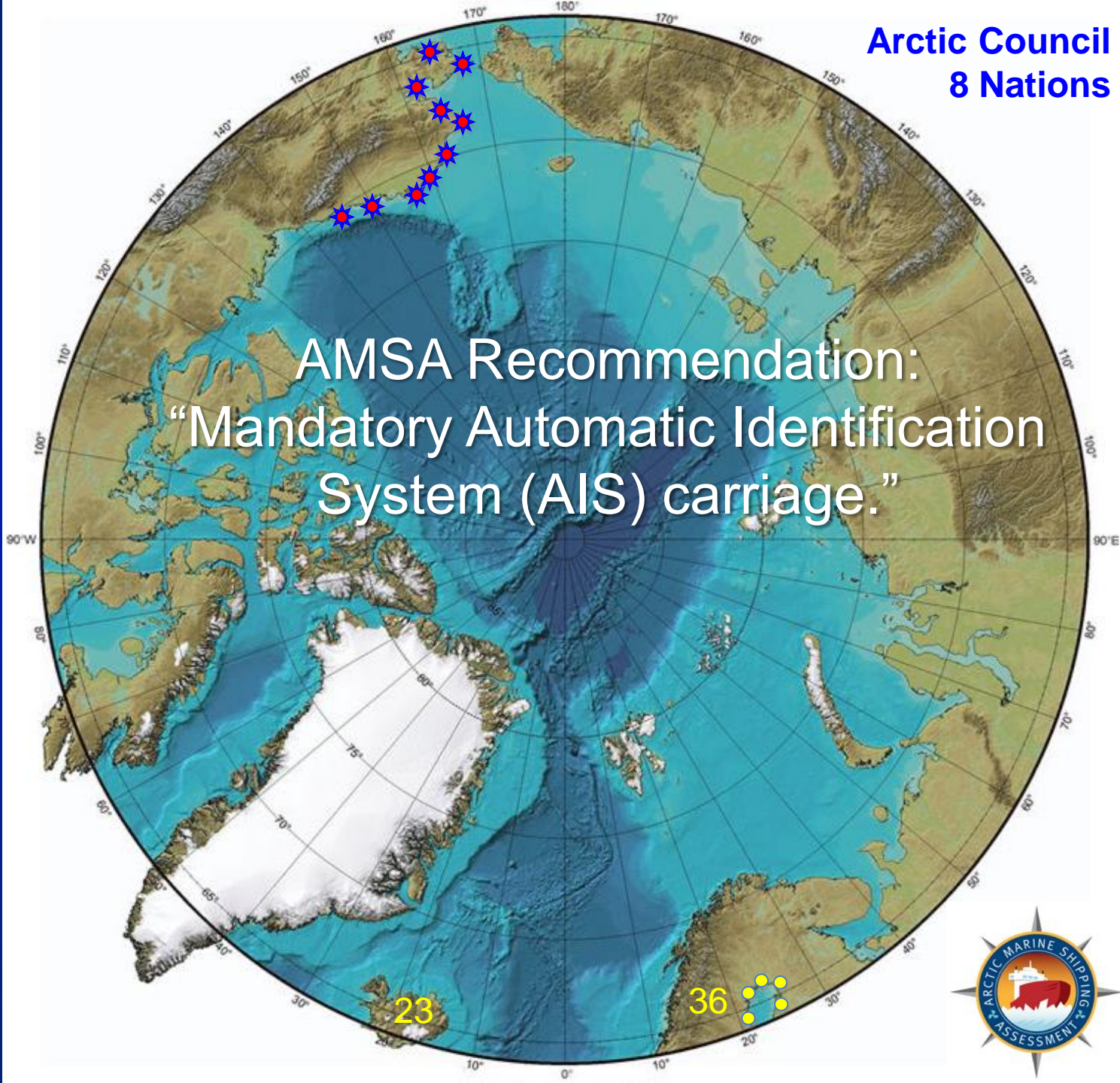
Area To Be Avoided (ATBA) Monitoring Olympic Coast Marine Sanctuary



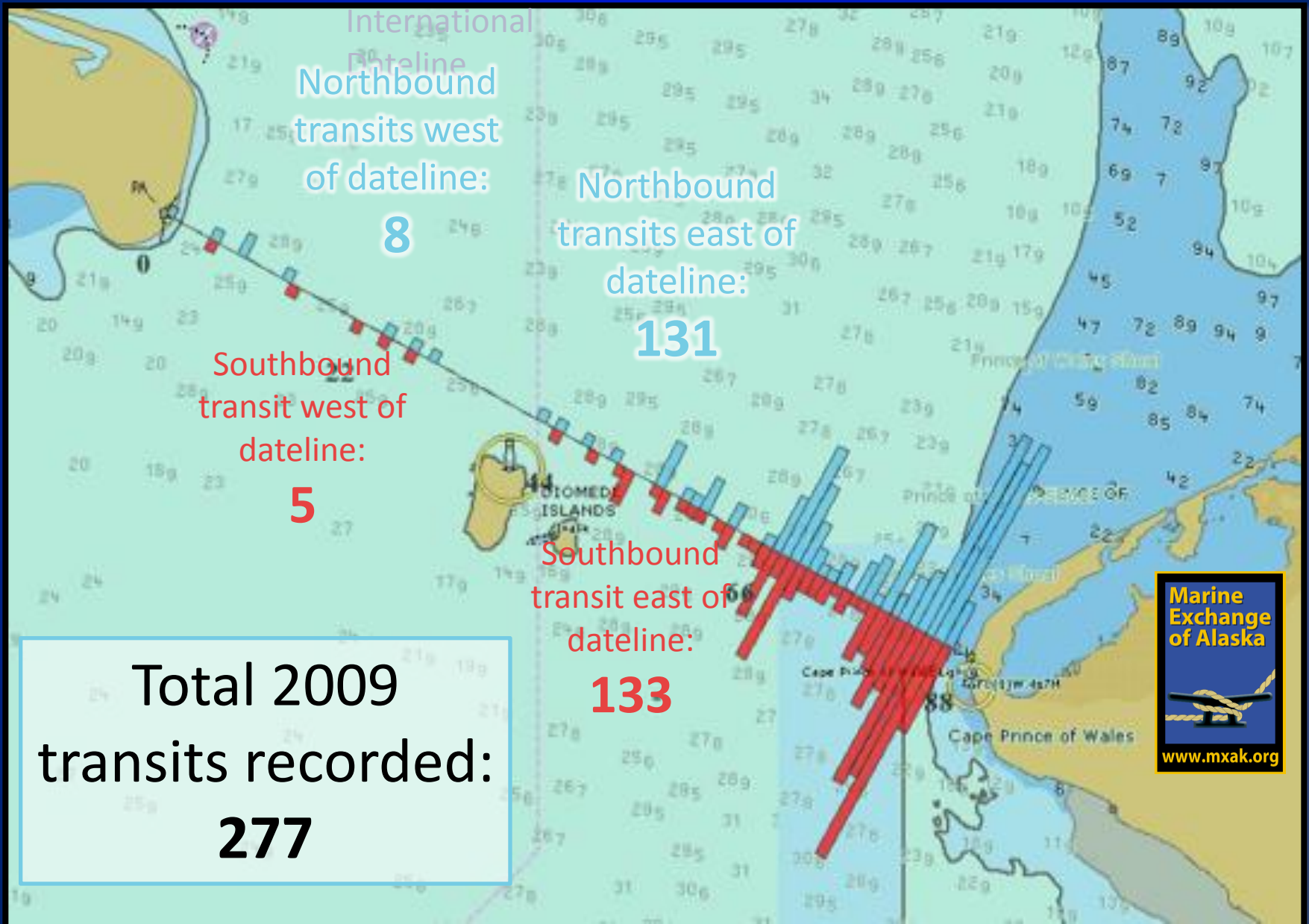
Long Term Voluntary Compliance with ATBA



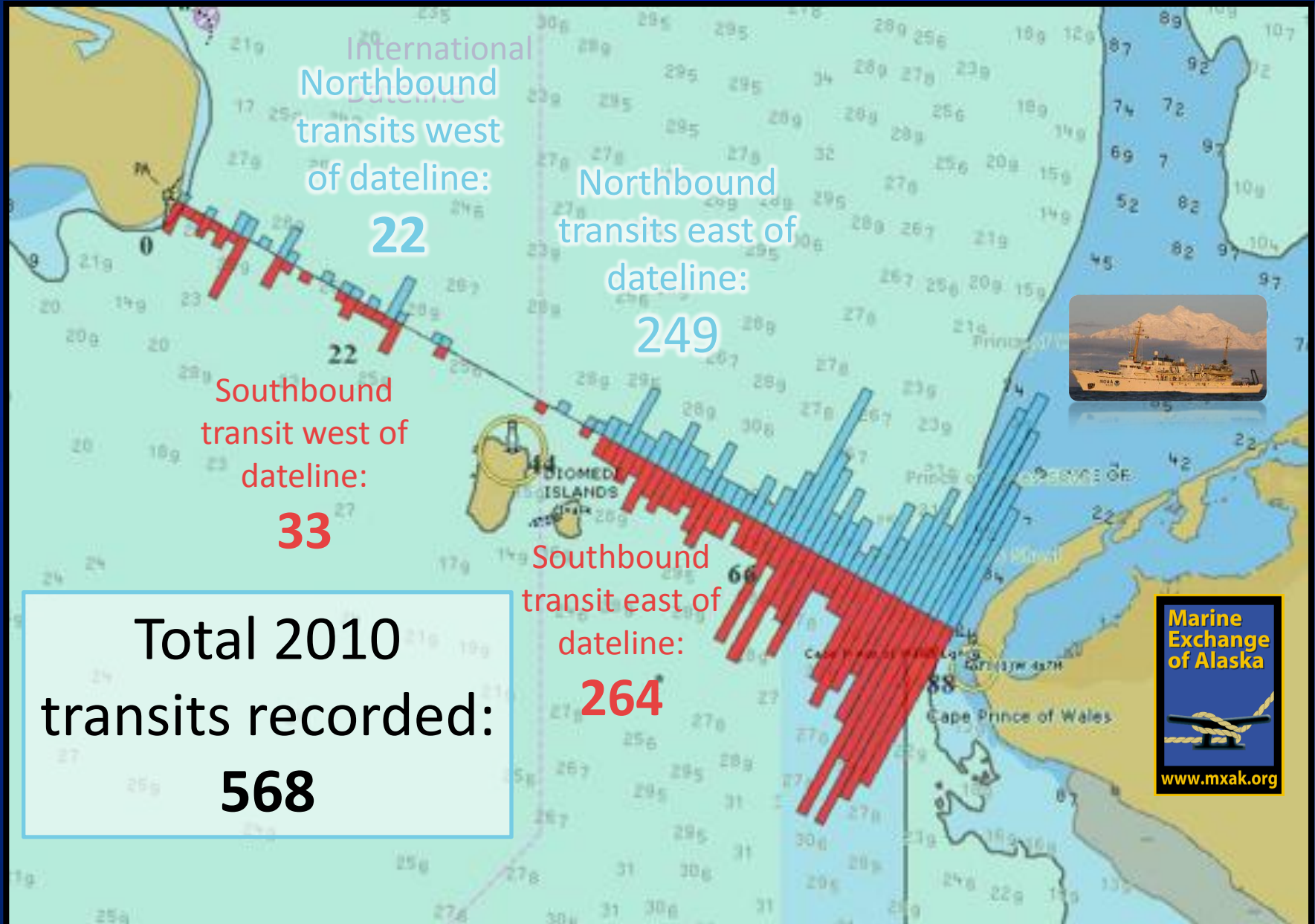
AMSA Recommendation:
“Mandatory Automatic Identification
System (AIS) carriage.”



Bering Strait Transits by Section – 2009

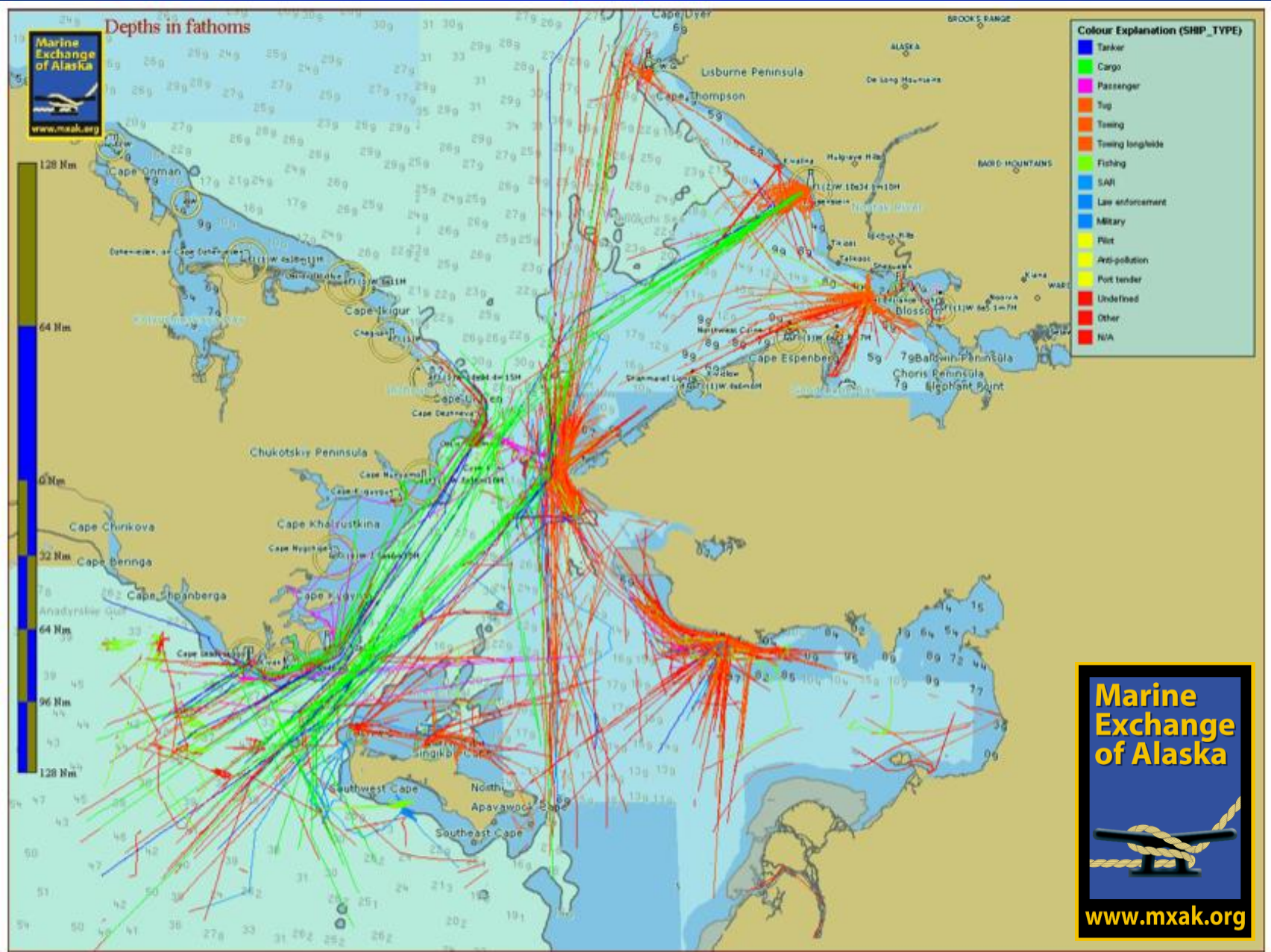


Bering Strait Transits by Section – 2010

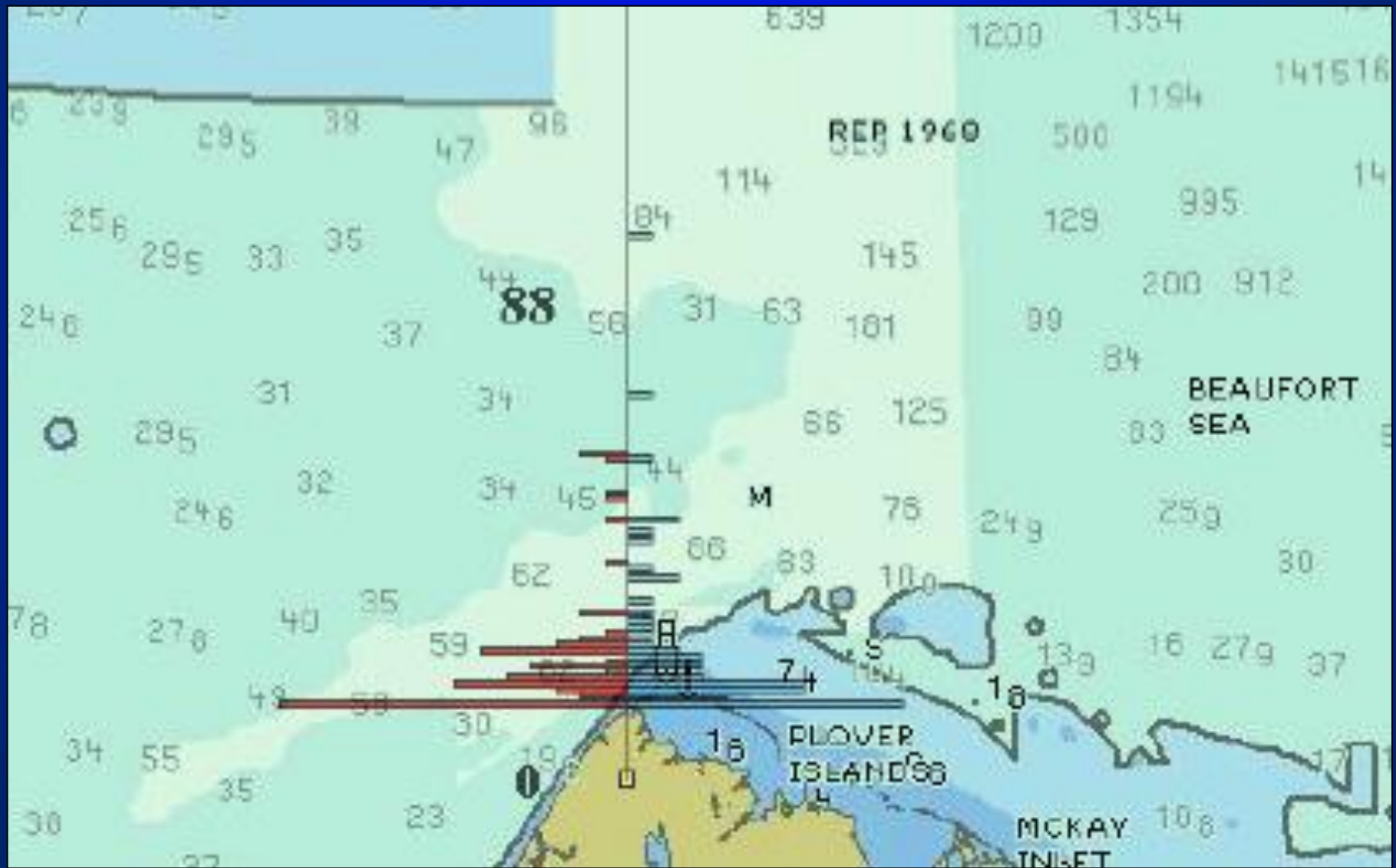


All crossings detected, including NOAA Survey Ship *Fairweather* and her launches.

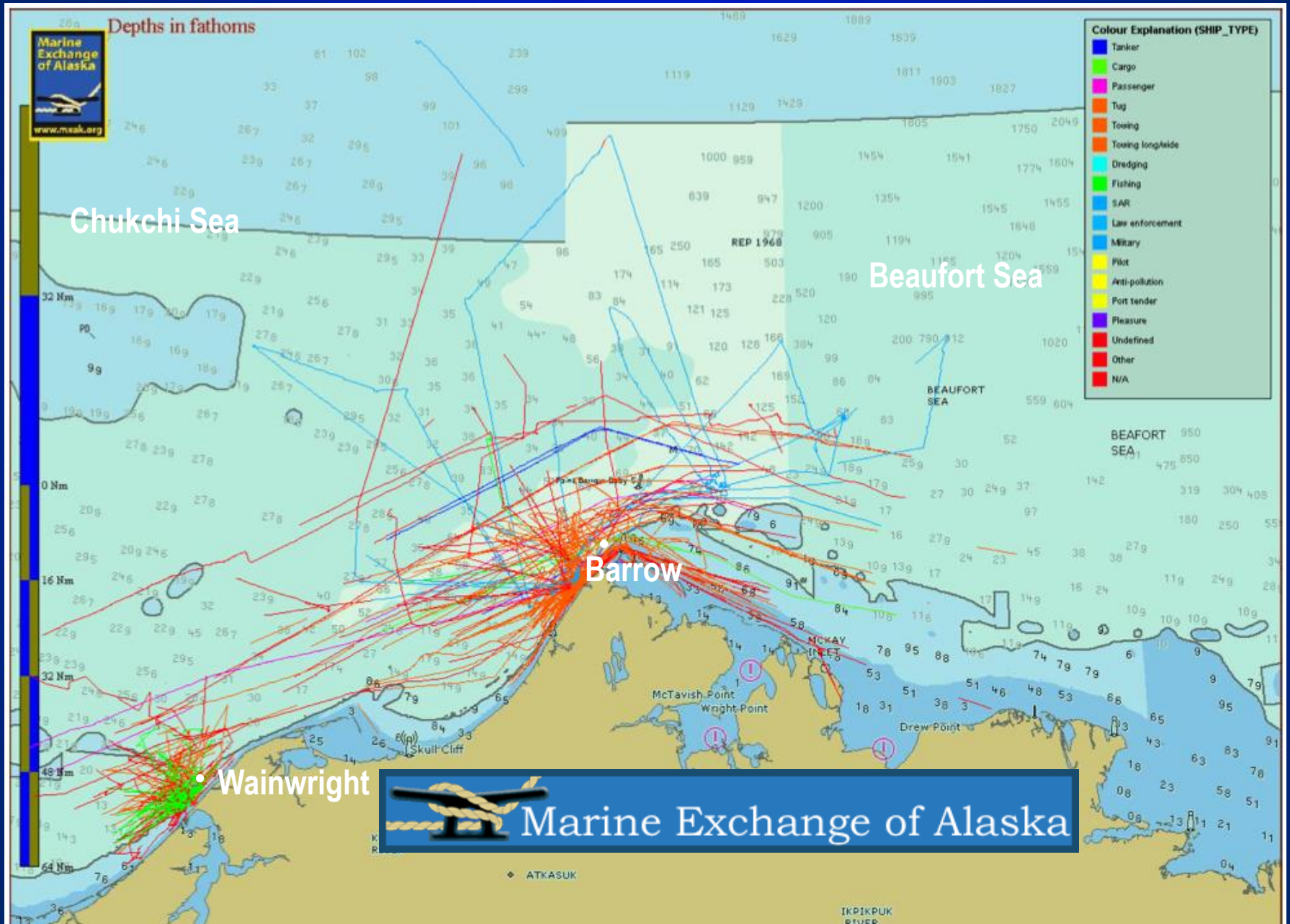
Bering Strait Region Vessel Tracks, Q3 2010



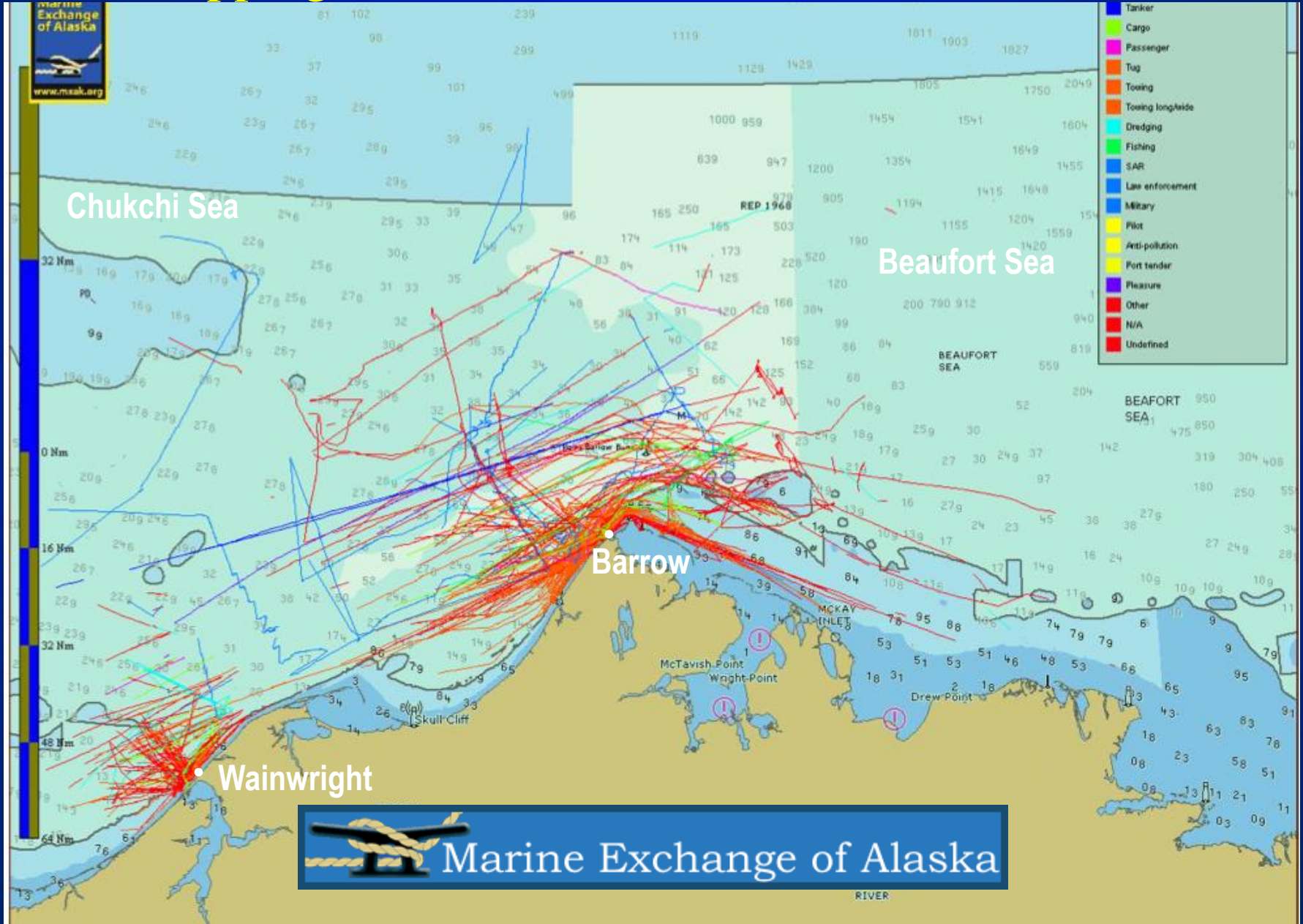
Barrow Passage Line



Arctic Shipping Routes: AIS vessel traffic near Barrow, 2009




























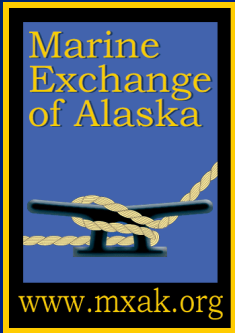
Arctic Shipping Routes: AIS vessel traffic near Barrow, 2010



Detailed Data on Vessels

DATE: 1/1/2010

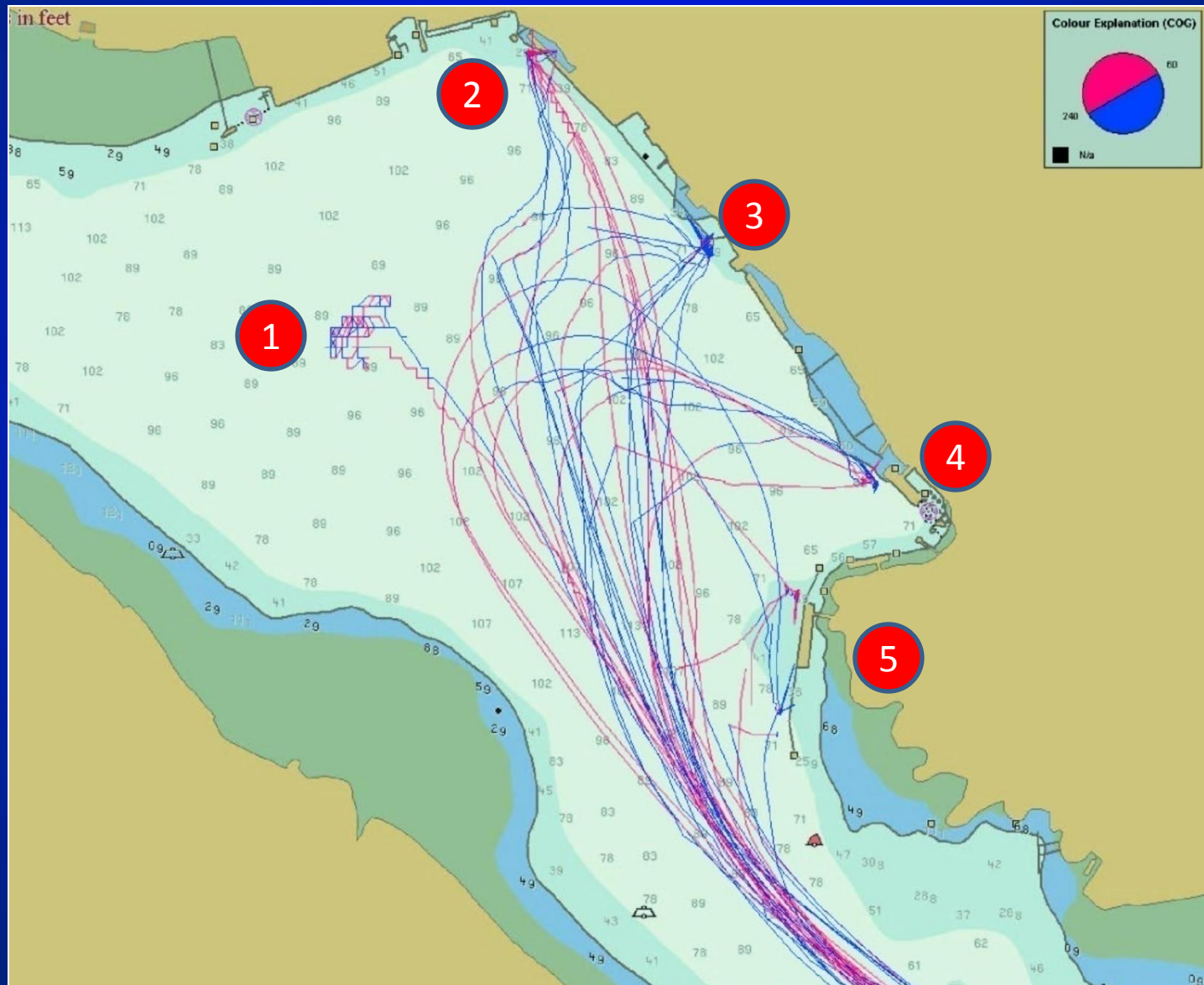
Time	MMSI	IMO	Name	Latitude	Longitude	Course	Nav. Status	Pos. A	ROT	SOG	COG	Heading	Draught	Ship Type	Direction	Destination	Cargo Type	Country
04/06/2010 10:56	366197000	0		71.3508	-155.629		Engine	68	0	8.8	44.6	41	0	N/A	East		Undefined	
04/06/2010 11:50	366687950	7506003	GUARDSMAN	71.6359	-155.63	WBN5978	Engine	68	0	4.7	63.7	0	6.1	Tug	East	PORT CLARENCE	Undefined	
06/06/2010 02:16	316003678	6722325	SEASPAN PACER	71.4058	-155.629	VXSS	Engine	68	0	8.3	43.5	39	5.2	Towing long/tug	East	DUTCH HRB	Undefined	
06/06/2010 02:49	366766580	7390911	TUG GLADIATOR	71.4319	-155.629	WBN5982	Engine	68	0	10.5	60	64	6.5	Tug	East	PRUDHOE	Undefined	
07/06/2010 07:37	259765000	8804034	BOS ATLANTIC	71.6063	-155.63	LAEW7	Engine	68	8	11.1	360	79	8.4	Other	East	TUKTOYAKTOK	Undefined	
08/06/2010 08:48	366197000	0		71.3538	-155.629		Engine	68	0	5.2	54.4	52	0	N/A	East		Undefined	
08/06/2010 22:43	366197000	0		71.3508	-155.629		Engine	68	0	4.1	64.8	56	0	N/A	East		Undefined	
11/06/2010 00:42	257617000	9326861	MARLEE	71.635	-155.63	LAHJ6	Engine	68	0	12	70	72	10.7	Tanker	East	TUKTOYAKTUK	Category B	
12/06/2010 18:25	369190000	6710932	MT MITCHELL	71.6016	-155.63	WDA9674	Sailing	68	10	10.2	71.2	74	6	Other	East	PRUDHOE BAY	Undefined	
13/06/2010 02:34	366981750	0	ARCTIC SEAL	71.4753	-155.629	WCF4174	Anchor	68	0	9.6	51	55	2	Cargo	East	WAINWRIGHT	Undefined	
17/06/2010 21:09	366822140	0	MAIA H	71.4173	-155.629	WYX2079	Moored	68	-127	4.7	45.3	39	4	Towing long/tug	East	BARROW	Undefined	
17/06/2010 22:00	366197000	0	NUNANIQ	71.3492	-155.629	WRC2049	Engine	68	0	5.1	40.3	32	2	Other	East	BETHEL	Undefined	
18/06/2010 00:30	366688940	7367148	SEA ROBIN	71.3858	-155.629	WYT8432	Engine	68	0	4.1	36.4	35	17	Towing	East	POINT BARROW	Undefined	
18/06/2010 04:25	367447730	7319008	MOANA WAVE	71.3915	-155.629	WC28065	Restricted	68	-128	11.2	41.5	511	5	Dredging	East	NOME	Undefined	
18/06/2010 04:33	366688910	9107837	SIKU	71.3794	-155.629	WCG8174	Engine	68	0	3.7	37	30	2.5	Towing long/tug	East	NOME AK	Undefined	
18/06/2010 05:11	366822140	0	MAIA H	71.4214	-155.629	WYX2079	Moored	68	0	4.8	30.7	33	4	Towing long/tug	East	BARROW	Undefined	
18/06/2010 10:39	366688940	7367148	SEA ROBIN	71.3843	-155.629	WYT8432	Engine	68	0	5	47.5	41	17	Towing	East	POINT BARROW	Undefined	
18/06/2010 14:25	366822140	0	MAIA H	71.4109	-155.629	WYX2079	Moored	68	0	5.3	36.9	31	4	Towing long/tug	East	BARROW	Undefined	
18/06/2010 19:51	366197000	0	NUNANIQ	71.3507	-155.629	WRC2049	Engine	68	0	7.6	40.8	34	2	Other	East	BETHEL	Undefined	
18/06/2010 20:23	366688940	7367148	SEA ROBIN	71.3847	-155.629	WYT8432	Engine	68	0	5.5	41.9	38	17	Towing	East	POINT BARROW	Undefined	
18/06/2010 22:36	366822140	0	MAIA H	71.3748	-155.629	WYX2079	Moored	68	0	7.5	37.7	35	4	Towing long/tug	East	BARROW	Undefined	
18/06/2010 23:26	367438220	0	GRETA	71.349	-155.629	WCF3298	Engine	68	0	8.5	42.5	43	2	Other	East		Undefined	
19/06/2010 02:29	366688940	7367148	SEA ROBIN	71.3813	-155.629	WYT8432	Engine	68	0	5.5	43	39	17	Towing	East	POINT BARROW	Undefined	
19/06/2010 03:08	366688910	9107837	SIKU	71.3751	-155.629	WCG8174	Engine	68	0	5	38	32	2.5	Towing long/tug	East	BARRO	Undefined	
20/06/2010 17:16	366688940	7367148	SEA ROBIN	71.3862	-155.629	WYT8432	Engine	68	0	7.1	45	43	17	Towing	East	POINT BARROW	Undefined	



City of Juneau Proposed Dock Expansion Alternatives Navigation Study



Port of Juneau Vessel Activity



Port of Juneau Historical Vessel Tracks



1



2



3



4



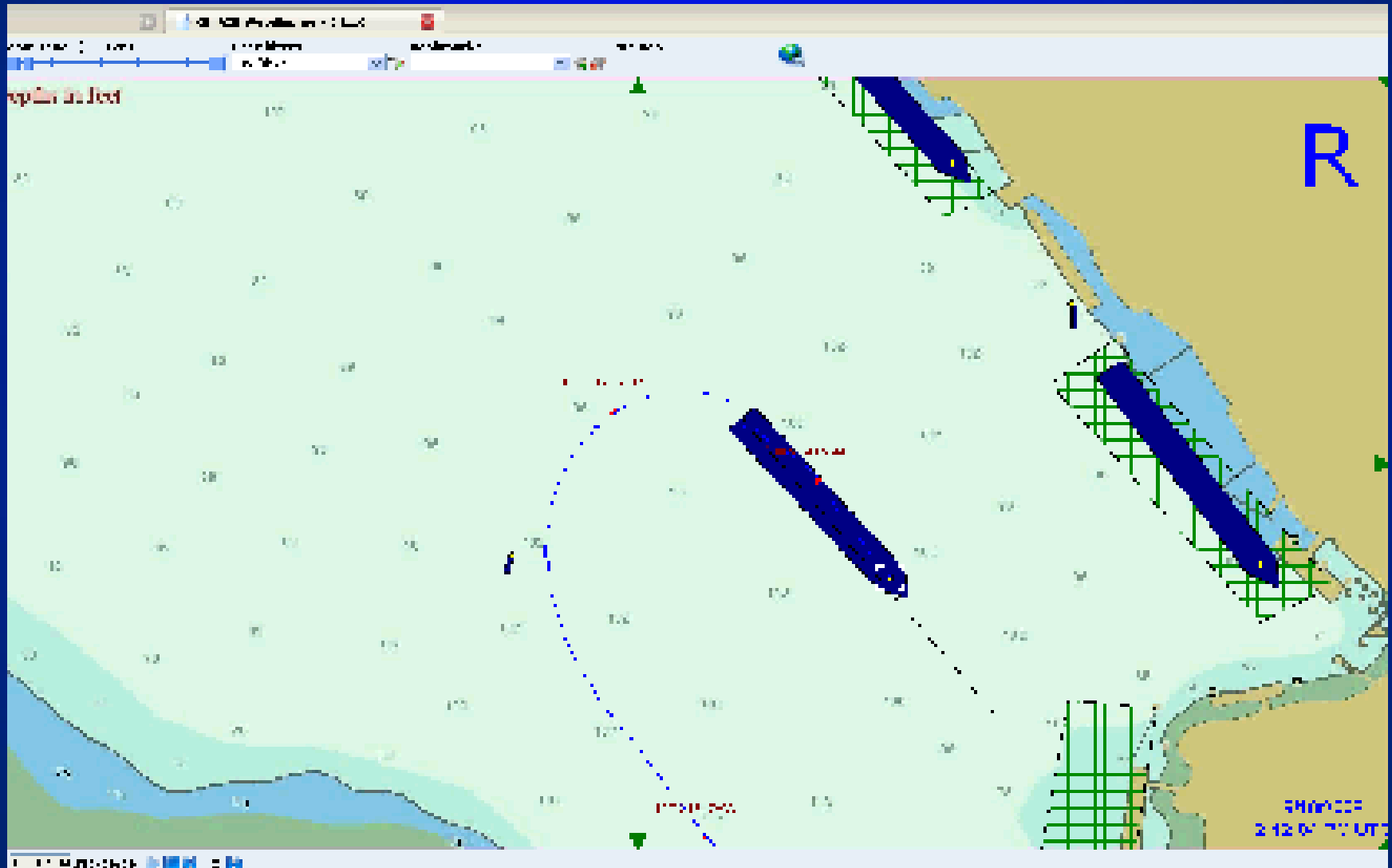
5



6

Unassisted Mooring - Maneuverability

- Movie of Cruise Ship Norwegian Sun Arrival at the AJ Dock.

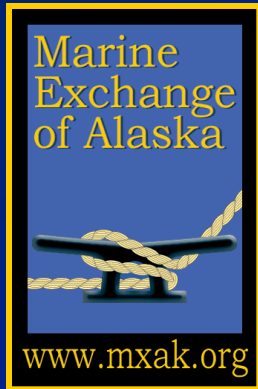


Port Development Check List

- Sufficiently Deep Waters
- Adequately Charted Waters
- Aids to Navigation
- Development of Risk Reduction Measures
- Monitor Compliance (VTMS)
- Pilots
- Tugs
- Facility
- Infrastructure (Cranes, Staging, Land Transport)

Summary

- AIS Vessel Tracking Exists Today
- AIS Traffic analysis can aid port planning
- AIS can compel compliance with risk reduction measures
- AIS can monitor and validate compliance
- AIS can identify high risk operations



Marine Exchange of Alaska

Providing information, communications and services to ensure maritime operations are safe, secure, efficient and environmentally sound

