ASTD

HJALTI HREINSSON PAME SECRETARIAT

JON ARVE RØYSET NORWEGIAN COASTAL ADMINISTRATION





SHIPPING WORK

MAIN TOPICS

- The Polar Code
 - o Arctic Shipping Best Practice Information Forum
 - o Interpretation of the Polar Code
- Heavy Fuel Oil and other fuels
- Invasive Species
- Underwater Noise
- Wastewater from ships
- Arctic Tourism
- Port reception facilities
- POLARIS
- 2012 Cape Town Agreement
- Arctic Shipping Traffic Data





ASTD





ABOUT ASTD

- **Background:** Need to collect and distribute accurate, reliable, and up-todate information on shipping activities in the Arctic.
- Comprehensive Arctic shipping activity databaseSatellite and terrestrial AIS data from USA and Norway
- Detailed statistics on multiple aspects, including:
 - Number of ships in the Arctic
 - Types of ships in the Arctic
 - Fuel use and fuel consumption
 - Ship emissions
 - Traffic in specific areas in the Arctic (EEZ's, LME's, Polar Code Area, etc.)
 - Number of ships in Arctic Ports

ASTD GOAL

- Provide authoritative and reliable data for different analyses performed under the realm of the Arctic Council
- Promote Arctic research and development by offering high quality data

ASTD





USERS

- Around 350 users from over 80 affiliations
- Government Agencies and Ministries
 - Environmental agencies
 - Coast Guards
 - Transport Authorities
- Universities and researchers

EXAMPLES

- Understand shipping impacts on marine mammals
- Traffic patterns in specific areas
- Risk analysis of shipping routed
- Relationship between diminishing sea ice and Arctic shipping traffic



ASTD

Access to ASTD

No access fee

Participating
Arctic State
Approved
Government
Agencies and
Ministries

Arctic Council
Permanent
Participants,
Working
Groups and
Task Forces.

Full time students & Bona Fide Media Organizations (limited access).

Not-for-Profit Professional, Academic, Research, and Environmental Organizations. **Fee for Access**

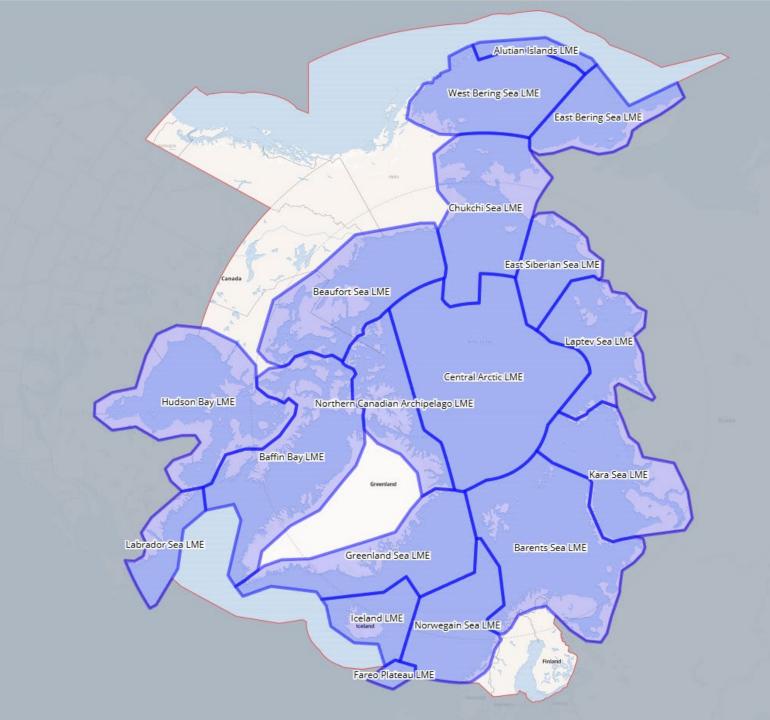
Arctic Council Observer States and Observer Organiztions.







LME'S



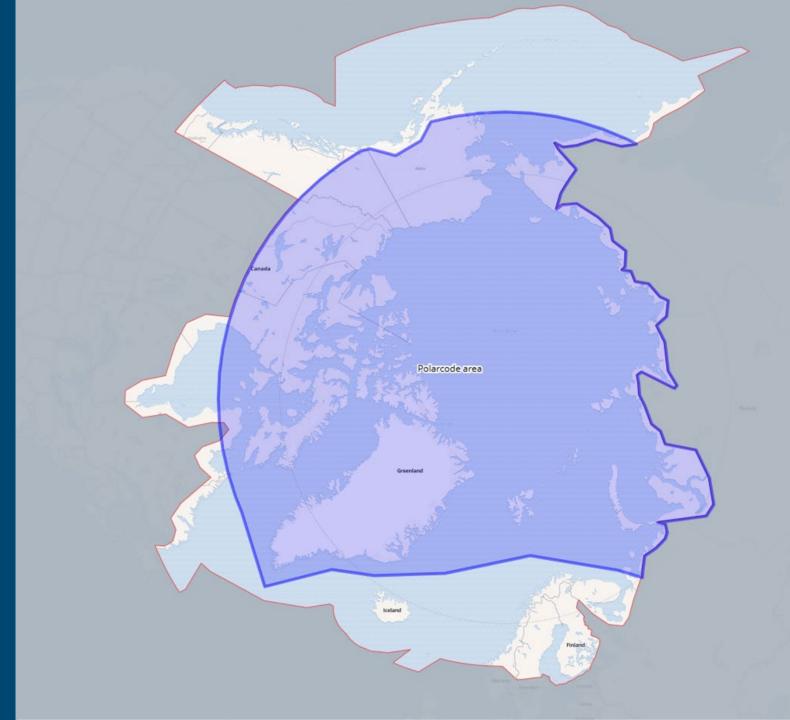


EEZ'S





POLAR CODEA AREA





ARCTIC PORTS



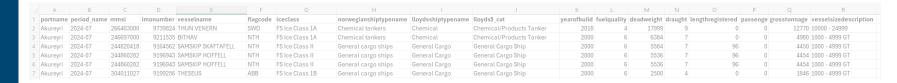


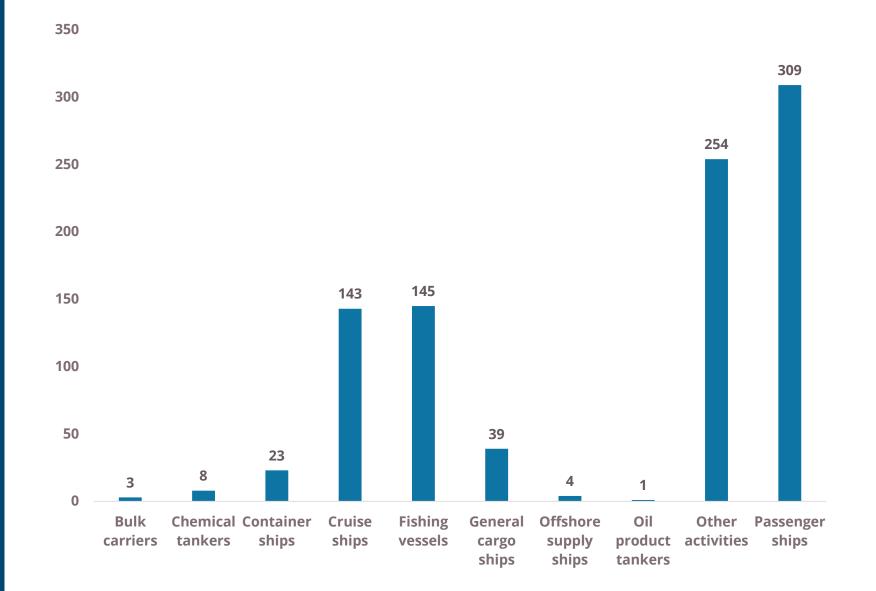
ARCTIC PORTS

AKUREYRI, ICELAND









	A	В	С	D	E	F	G	Н	1	J	K	L	M	N	0	Р	Q	R
1	portn	ame period_name	mmsi	imonumber	vesselname	flagcode	iceclass	norwegianshiptypename	lloydsshiptypename	lloyds5_cat	yearofbuild	fuelquality	deadweight	draught	lengthregistered	passenge	grosstonnage	vesselsizedescription
2	Akure	yri 2024-07	266463000	9739824	THUN VENERN	SWD	FS Ice Class 1A	Chemical tankers	Chemical	Chemical/Products Tanker	2018	4	17999	9	0	0	12770	10000 - 24999
3	Akure	yri 2024-07	246697000	9211535	BITHAV	NTH	FS Ice Class 1A	Chemical tankers	Chemical	Chemical/Products Tanker	2000	6	6384	. 7	0	0	4980	1000 - 4999 GT
4	Akure	yri 2024-07	244820418	9164562	SAMSKIP SKAFTAFELL	NTH	FS Ice Class II	General cargo ships	General Cargo	General Cargo Ship	2000	6	5584	. 7	96	0	4450	1000 - 4999 GT
5	Akure	yri 2024-07	244860282	9196943	SAMSKIP HOFFELL	NTH	FS Ice Class II	General cargo ships	General Cargo	General Cargo Ship	2000	6	5536	7	96	0	4454	1000 - 4999 GT
6	Akure	yri 2024-07	244860282	9196943	SAMSKIP HOFFELL	NTH	FS Ice Class II	General cargo ships	General Cargo	General Cargo Ship	2000	6	5536	7	96	0	4454	1000 - 4999 GT
7	Akure	yri 2024-07	304011027	9199256	THESEUS	ABB	FS Ice Class 1B	General cargo ships	General Cargo	General Cargo Ship	2000	6	2500) 4	0	0	1846	1000 - 4999 GT
/	Akure	yrı 2024-07	304011027	9199256	THESEUS	ADD	FS ICe Class 1B	General cargo snips	General Cargo	General Cargo Snip	2000	0	2000	4	U	U	1846	1000 - 4999 GT

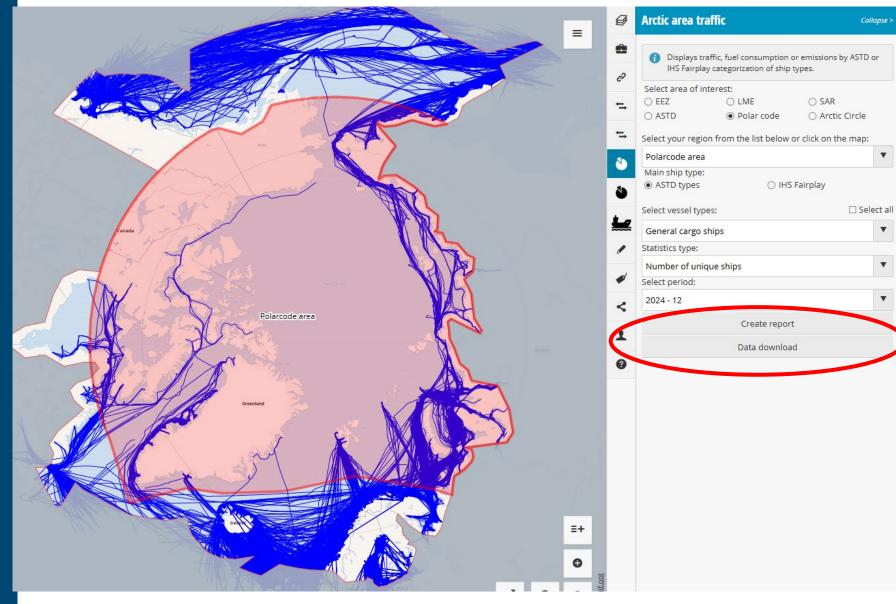
AKUREYRI, ICELAND







DOWNLOAD CAPABILITY



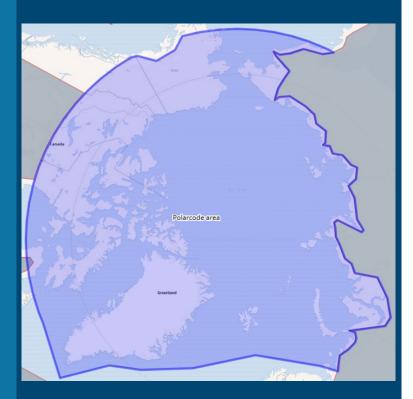


ASTD SYSTEM: DATA DOWNLOAD FUNCTION

The example shows a part of ships in the Polar Code area in March 2023.

Α	В	D D	Е	F	G	н	I I	J	К	L	М	N	0	Р	Q	R	S	Т	U	V	W	Х	Υ	Z	AA	AB	AC
period	rea_type area	_id mmsi	imonumber	fishingvess	vesselname	flagcode	iceclass	norwegianshiptypeid	norwegianshiptypename	lloydsshiptypeid	lloydsshiptypename	lloyds5_cat	yearofbuild	deadweight	draught	lengthregistered	passengercapaci	ty grosstonnage	vesselsizedescription	fuelquality	distance_nm	consumption	co2emission	coemission	noxemission	so2emission	operationhour
2023-03	olarcode 1	273379890	8711306	Cindinaci	ANDREY OSIPOV	RUS	FS Ice Class 1A Super	5	General cargo ships	A31	General Cargo	A31A2GX	1994	7346	6.880000114	0	0	7085	5000 - 9999 GT	6	832,2724914	84.44921599	266.9381169	0.512577706	3.238342484	0.354686709	670.0091667
	oolarcode 1	273327220	8801632		BILIBINO	RUS	FS Ice Class 1A	5	General cargo ships	A31	General Cargo	A31A2GX	1989	9590	8.541000366	106.4199982	0	6030	5000 - 9999 GT	6					0.925907956		358.0872222
2023-03	oolarcode 1	273218890	9368340		MYS DEZHNEVA	RUS	FS Ice Class 1A	5	General cargo ships	A31	General Cargo	A31A2GX	2008	17349	9,68999958	133,3600006	0	11835	10000 - 24999	6	1233.719158				6.438240461		141.1466667
	oolarcode 1	273382350			NIKIFOR BEGICHEV	RUS	FS Ice Class 1A	5	General cargo ships	A31	General Cargo	A31A2GX	1991	12150	8.609999657	124.9899979	0	7949	5000 - 9999 GT	6	1438.276755		280.9690431				
	oolarcode 1	273359470			VALERI VASILIEV	RUS		5	General cargo ships	A31	General Cargo	A31A2GX	1991	13565	8.18999958	0	0	10374	10000 - 24999	6	1865,214298					0.459938444	
2023-03	oolarcode 1	273437510	9267297		BERING	RUS	FS Ice Class 1A	5	General cargo ships	A31	General Cargo	A31A2GX	2003	10649	7.673999786	0	0	7737	5000 - 9999 GT	6	576,4596274	25,65720632	81.295356	0.189863327	1.341799646	0.107760266	49.88888889
2023-03	oolarcode 1	219027854	9854636		SIUANA ARCTICA	DIS	FS Ice Class 1A Super	5	General cargo ships	A31	General Cargo	A31A2GX	2020	2300	5,699999809	62,40000153	0	2613	1000 - 4999 GT	6	920.9318861	44.8426176				0.188338994	742.9891667
	oolarcode 1	219027908	9854648		MALERAQ ARCTICA		FS Ice Class 1A Super	5	General cargo ships	A31	General Cargo	A31A2GX	2021	2300	5.699999809	62.40000153	0	2613	1000 - 4999 GT	6	684.1032781	0					742.7922222
2023-03	olarcode 1	273326150	8502119		ERMAK	RUS	FS Ice Class 1A Super	5	General cargo ships	A31	General Cargo	A31A2GX	1998	7049	7	122.5500031	0	6418	5000 - 9999 GT	6	2482.842096	143,439136	454.1850391	1.004587354	6.914539305	0.602444371	558.7341667
2023-03	olarcode 1	273218690	9368338		YAMAL BERKUT	RUS	FS Ice Class 1A	5	General cargo ships	A31	General Cargo	A31A2GX	2008	17158	9.68999958	0	0	11825	10000 - 24999	6	1141.073989	156.8722361	496.0189948	1.038763579	8.593365312	0.658863393	724.49
2023-03	olarcode 1	273216130	9366110		MYS ZHELANIYA	RUS	FS Ice Class 1A	5	General cargo ships	A31	General Cargo	A31A2GX	2008	17300	9.710000038	133.3600006	0	11864	10000 - 24999	6	3346.52176	228.9072085	724.6821109	1.644950378	15.73654608	0.961410276	585.0605556
2023-03	olarcode 1	273211090	9081291		TERIBERKA	RUS		5	General cargo ships	A31	General Cargo	A31A2GX	1995	12754	8.512999535	0	0	8448	5000 - 9999 GT	6	4.77363121	75.45781527	238.2347121	0.409977395	2.386016392	0.316922826	743.8888889
2023-03	oolarcode 1	257785000	9197404		NORBJORN	NIS	FS Ice Class 1A	5	General cargo ships	A31	General Cargo	A31A2GX	2000	3389	5.546000004	0	0	2528	1000 - 4999 GT	6	2188.888444	59.33616793	187.8589473	0.439087649	2.657643124	0.249211902	396.2730556
2023-03	oolarcode 1	273386650	9044748		GRIGORY SHELIKHOV	RUS	FS Ice Class 1A	5	General cargo ships	A31	General Cargo	A31A2GX	1992	12150	8.609999657	0	0	7949	5000 - 9999 GT	6	1154.363836	65.14462329	206.2487619	0.449573065	3.076607874	0.273607419	270.6183333
2023-03	oolarcode 1	273137100	8729810		SEVMORPUT	RUS		5	General cargo ships	A31	General Cargo	A31A2GX	1988	34615	11.80000019	0	0	38226	25000 - 49999	6	694.7870562	96.7418375	306.1731314	0.713991379	6.726065627	0.81492564	96.76722222
2023-03	oolarcode 1	273312530	9310018		ANTEY	RUS		10	Offshore supply ships	B21	Offshore Supply	B21B2OA	2006	3867	8.5	0	85	5871	5000 - 9999 GT	0	579.9455227	61.03984976	193.5983452	0.451694888	3.20960668	0.10987173	59.66416667
2023-03	oolarcode 1	273348020	9402407		TOBOY	RUS		10	Offshore supply ships	B21	Offshore Supply	B21B2OA	2008	1930	9.300000191	75.19999695	0	4406	1000 - 4999 GT	0	283.9422678	106.2700622	337.9024871	0.78639846	4.753641966	0.191286111	745.395
2023-03	oolarcode 1	273384430	9720720					10	Offshore supply ships	B21	Offshore Supply								1000 - 4999 GT	0	1505.676443	263.0464613	834.6134815	1.946543814	11.81608523	0.47348363	570.2105556
2023-03	oolarcode 1	273394350	9777101		ALEKSANDR SANNIKOV	RUS		10	Offshore supply ships	B21	Offshore Supply	B21B2OT	2018	4581	8	116.5	35	11295	10000 - 24999	6	208.0456566	222.0766098	702.014981	1.191371228	7.320016125	0.932721762	743.8216667
2023-03	oolarcode 1	257843000	9645932		ARCTIC PEARL	NOR	FS Ice Class 1C	10	Offshore supply ships	B21	Offshore Supply	B21A2OS	2013	3750	6.099999905	0	0	3963	1000 - 4999 GT	0	722.5979433	47.83856177	151.9831838	0.354005371	2.143431284	0.086109417	531.8216667
2023-03	oolarcode 1	273318120	9307724		SCF SAKHALIN	RUS	FS Ice Class 1A Super	10	Offshore supply ships	B21	Offshore Supply	B21A2OS	2005	4298	7.5	93.93599701	40	6882	5000 - 9999 GT	0	1255.844924	284.8175071	904.589266	1.78598764	12.16378218	0.512671513	625.8408333
2023-03	oolarcode 1	273319940	9338230		HERMES	RUS		10	Offshore supply ships	B21	Offshore Supply	B21B2OA	2006	3949	8	0	85	5871	5000 - 9999 GT	0	22.42004482	161.1578465	513.3752897	0.676865401	3.903653247	0.290084124	744.275
2023-03	oolarcode 1	257564000	9690949		POLARSYSSEL	NOR	FS Ice Class 1B	10	Offshore supply ships	B21	Offshore Supply	B21A2OS	2014	3700	6.400000095	0	0	4324	1000 - 4999 GT	0	527.2313067	43.23310981	138.0482989	0.319924948	1.917730486	0.077819641	743.9625
2023-03	oolarcode 1	273296430	9576181		MURMAN 1	RUS		10	Offshore supply ships	B21	Offshore Supply	B21A2OS	2010	1536	4.900000095	0	0	1840	1000 - 4999 GT	0	1612.019965	65.47443444	207.7876572	0.484510815	2.939857883	0.117853982	328.2266667
2023-03	oolarcode 1	982575640	9690949				FS Ice Class 1B	10	Offshore supply ships	B21	Offshore Supply								1000 - 4999 GT	0	5.09337797	0.39983492	1.270742835	0.002958778	0.017901845	0.000719703	3.017777778
2023-03	oolarcode 1	258430000	9257591		NORSEL	NIS	FS Ice Class 1B	15	Oil product tankers	A13	Oil	A13B2TP	2003	3535	5.75	0	0	2490	1000 - 4999 GT	6	3641.963633	132.2731252	418.2903612	0.978821125	5.898733372	0.555547119	560.7677778
2023-03	oolarcode 1	273340490	9000235		PANDAR	RUS	FS Ice Class 1A	15	Oil product tankers	A13	Oil	A13B2TP	1991	6810	7.510000229	108.4199982	0	5025	5000 - 9999 GT	6	1901.495325	79.18340774	250.5628149	0.560616653	3.78666741	0.332570313	350.4205556
2023-03	oolarcode 1	273443770	7635347		ALISA	RUS		15	Oil product tankers	A13	Oil	A13B2TP	1977	2174	4.776000023	0	0	1384	1000 - 4999 GT	6	76.20343844	24.062772	75.86017632	0.178064513	1.060735558	0.101063643	665.3344444
2023-03	oolarcode 1	257702000	9200158		POLAR VIKING	NIS	FS Ice Class II	15	Oil product tankers	A13	Oil	A13B2TP	2000	2713	5.179999828	71.90000153	0	1685	1000 - 4999 GT	6	2187.703918	58.66143597	185.6379498	0.434094626	2.622950145	0.246378027	498.5580556
2023-03	oolarcode 1	273312850	9353058		URARTU	RUS	FS Ice Class 1A	15	Oil product tankers	A13	Oil	A13B2TP	2009	3500	4.5	0	0	2897	1000 - 4999 GT	6	1266.716562	92.93691553	293.6355867	0.687733177	4.130766918	0.390335045	743.8936111
2023-03	oolarcode 1	273357330	9585273		ENISEY	RUS	FS Ice Class 1A Super	15	Oil product tankers	A13	Oil	A13B2TP	2011	18902	10	160.2400055	0	16110	10000 - 24999	6	1157.088907	120.9470489	386.6987296	0.895008162	9.317604035	1.170160934	138.1163889
2023-03	oolarcode 1	273453010	8912508		ZALIV KRESTA	RUS	FS Ice Class 1B	15	Oil product tankers	A13	Oil	A13B2TP	1991	23480	10.32999992	160.8300018	0	14332	10000 - 24999	6	898.7694336	90.79252218	289.3301882	0.626890388	5.774707764	0.765071459	193.7133333
2023-03	oolarcode 1	273292090	9183831		NP DUDINKA	RUS	FS Ice Class 1A	15	Oil product tankers	A13	Oil	A13B2TP	2000	21871	8.81000042	155.8699951	0	14400	10000 - 24999	6	2601.954112	180.8474436	577.2758474	1.332686824	13.1938813	1.638363379	316.9430556
2023-03	oolarcode 1	331356000	6617790		MASIK SIORAQ	DEN		12	Other activities	B33	Dredging	B33B2DT	1966	711	0	0	0	407	< 1000 GT	0	198.6444703	1.48720178	4.750525763	0.011005294	0.065436878	0.002676963	742.9341667
2023-03	oolarcode 1	331197000	5026619		HOLMI	DEN		12	Other activities	B33	Dredging	B33A2DG	1961	457	3.503999949	0	0	335	< 1000 GT	0	0.799082073	5.964222844	19.12129843	0.04413525	0.262425807	0.0107356	745.1552778
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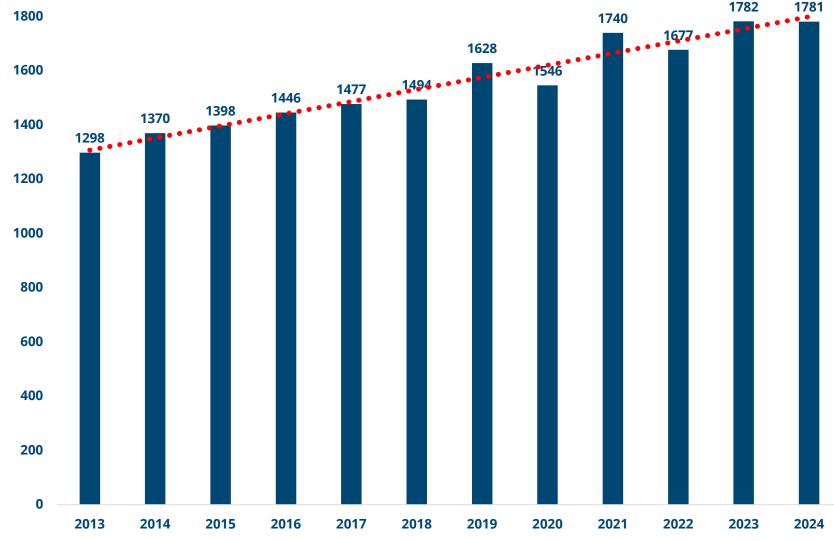
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UNIQUE SHIPS ARCTIC POLAR CODE AREA

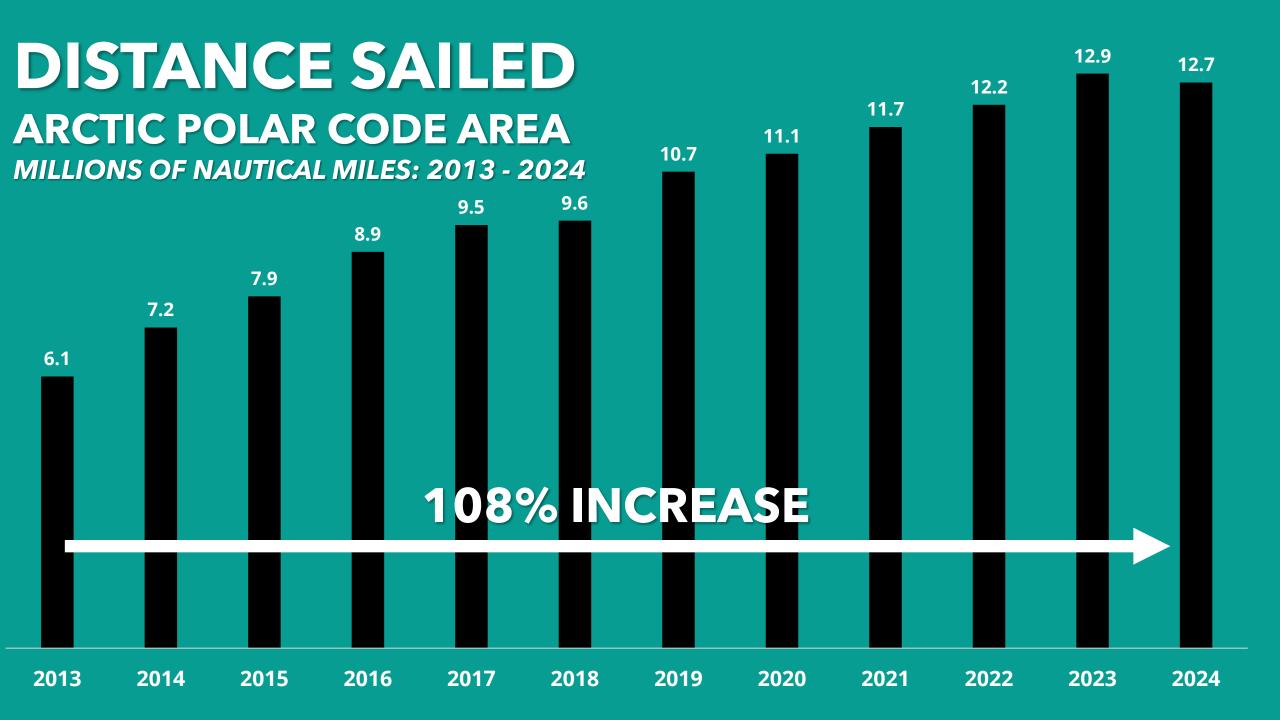
2013 - 2024



UNIQUE SHIPS BY TYPE

ARCTIC POLAR CODE AREA

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Ro-Ro cargo ships	6	8	12	6	7	6	6	6	9	9	8	8
Dredging vessels	11	14	12	12	4	3	7	19	16	6	9	11
Other service offshore vessels	10	16	12	8	13	10	10	12	13	8	11	11
Container ships	12	6	8	8	12	9	6	11	7	8	13	15
Yachts	7	9	9	12	8	9	14	5	10	21	19	26
Passenger ships	10	14	12	17	14	17	17	9	13	15	20	18
Crude oil tankers	12	10	9	14	17	19	26	24	18	16	31	46
Gas tankers	1	0	1	0	4	13	24	26	26	26	31	43
Offshore supply ships	25	52	41	25	36	45	45	51	52	31	44	38
Chemical tankers	42	45	54	50	50	60	60	53	47	55	53	58
Oil product tankers	62	70	58	47	58	53	55	55	58	54	53	54
Research vessels	62	70	59	58	60	53	48	47	50	51	54	56
Refrigerated cargo ships	71	68	77	76	92	81	81	89	83	81	90	89
Cruise ships	58	58	55	63	63	65	73	7	12	78	96	87
Other activities	55	65	60	72	67	67	67	69	85	81	104	98
Bulk carriers	71	66	78	78	75	86	106	98	96	114	119	111
Towing / Pushing vessels	76	71	87	79	79	80	93	97	119	104	121	133
General cargo ships	141	160	164	199	182	155	174	187	219	183	181	187
Fishing vessels	566	568	590	622	636	663	716	681	807	736	725	692
Total	1298	1370	1398	1446	1477	1494	1628	1546	1740	1677	1782	1781



CASE STUDY: MARY RIVER MINE



Mary River Mine	~
Health and Safety	>
Our Operation	>
Life at Mary River	>
Ship Locations	>

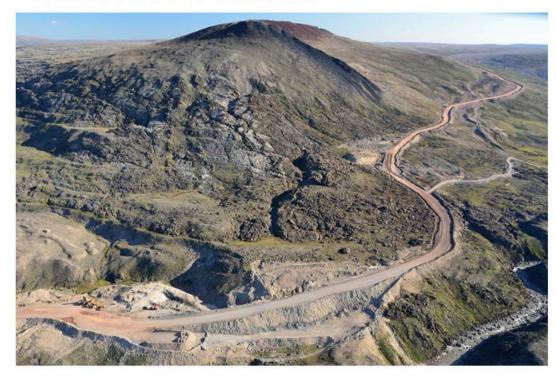




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Mary River Mine

Baffinland Iron Mines Corporation (Baffinland)'s Mary River mine site on Baffin Island, Nunavut, Canada, is one of the most northern mines in the world. Amongst the richest iron ore deposits ever discovered, the Mary River Property consists of nine-plus high-grade iron ore deposits that can be mined, crushed, and screened into marketable products.

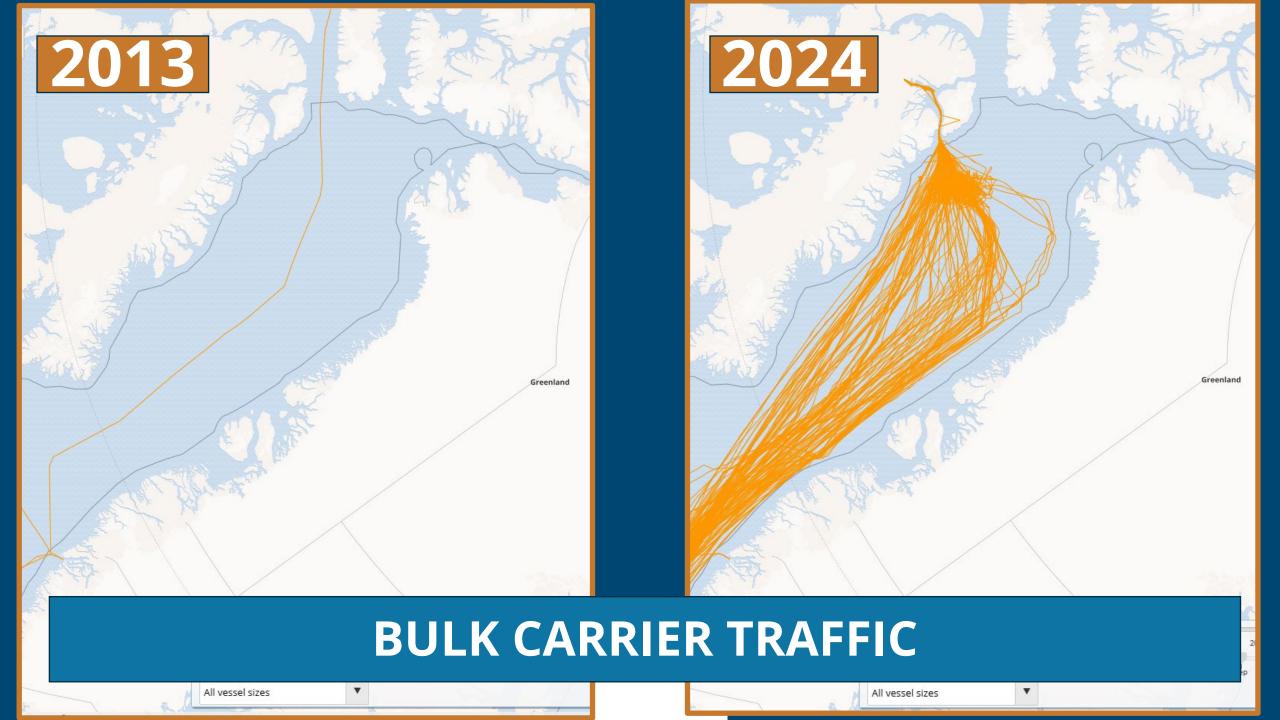




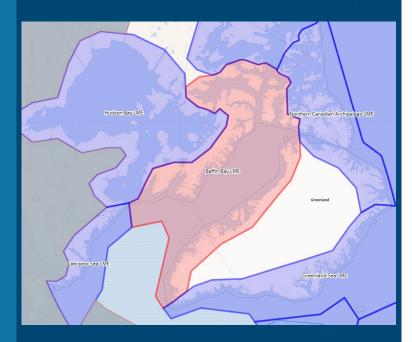
CASE STUDY: MARY RIVER MINE







CASE STUDY: MARY RIVER MINE





SAILED DISTANCE – BULK CARRIERS BAFFIN BAY LME

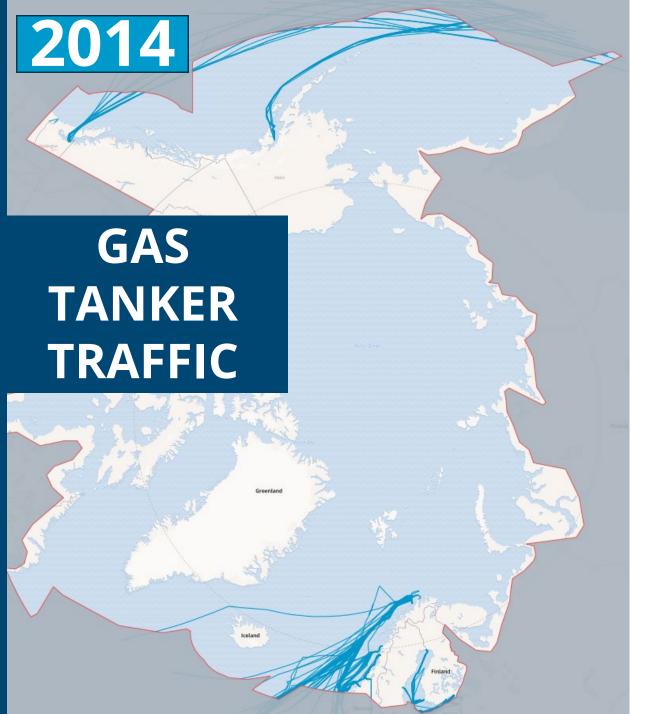
2013

3.559 nm.

2024

191.453 nm.







CASE STUDY: GAS TANKERS



SAILED DISTANCE – GAS TANKERS ARCTIC POLAR CODE AREA

2014

0 nm.

2024 877.650 nm.



ASTD

HJALTI HREINSSON PAME SECRETARIAT

JON ARVE RØYSET NORWEGIAN COASTAL ADMINISTRATION



