



ANALYSIS OF 30 YEARS OF CASUALTIES IN THE ARCTIC AND SUB-ARCTIC WATERS

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2. METHODOLOGY USED
3. MAP OF ACCIDENTS
4. ACCIDENT ANALYSIS
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6. POLLUTION AND TOTAL LOSS
7. CONCLUSION



PRESENTATION OF THE DATABASE

- SOURCE: IHS MARKIT
- 30 YEARS OF ACCIDENTS IN THE ARCTIC AND SUB-ARCTIC (1992 – 2022)
- DATA UPLOADED VIA PDF FILES
- 3680 EVENTS EXTRACTED



DATA ANALYSED



ACCIDENT DAYS AND LOCATIONS



VESSEL TYPES AND IMO IDs



EVENT DETAILS



ACCIDENTS CLASSIFIED INTO 13 GROUPS



Complementary investigation:

Weather conditions

SAR area

Level of severity based on IMO taxonomy

EXAMPLE OF DATA

Ship Name	AJAKS-1	LR/IHS/IMO Ship No.	8620064	Flag	Russia
Registered Owner	Pacific Maritime Services Ltd	Country of Domicile	Belize		
Ship Status	IN SERVICE/COMMISSION	Detail Status	On Voyage	OfficialNumber	866024
GT	1,555	DWT	1,706		
		Ship Type	General Cargo Ship	Built	1986

VOYAGE DETAILS

Origin	Dudinka	Destination	Unknown
Removal Type	Towed/Transported Away		

EVENT DETAIL

LR/IHS/IMO Ship No.	8620064	Event ID	631257
Ship Name at time of Incident	AJAKS-1		
Event Type	Ship Casualties	Detail	Hull / Machinery Damage
Event Group	Hull / Machinery Damage	Significance	Serious
Start Date	2011-09-28	End Date	2011-09-28
Total Loss	No	Pollution	No

General Cargo Ship AJAKS-1 IMO No. 8620064 was involved in a hull/machinery incident on 28 Sep 2011

CARGO DETAILS

EVENT DETAILS

General Cargo Ship AJAKS-1 IMO No. 8620064 was involved in a hull/machinery incident on 28 Sep 2011

SUSTAINED GENERATOR FAILURE IN THE KARA SEA 34 MILES NORTHEAST OF BELYI ISLAND, RUSSIA IN LAT. 73 41N., LONG. 72 39E., AT 2100 HOURS LT ON 28/09/11 AND REQUESTED ASSISTANCE. SUBSEQUENTLY REPAIRED AND RETURNED TO SERVICE.

VESSEL SUSTAINED COMPLETE POWER LOSS AFTER EMERGENCY GENERATOR ALSO FAILED. TUG 'MB-1208' PROCEEDED TO ASSIST AND EFFECTED TOW TO NEARBY PORT FOR INSPECTION AND REPAIRS.

Significance	Serious	Component	GENERATORS/ALTERNATORS IN ER	Component Position	LOWER INNER
Detail	Hull / Machinery Damage	Load Status	Ballast	Weather	Unknown/No Reported
External Item	Other (unspecified)	Total Loss	No	Pollution	No
Action	Failure	Pollutant		Quantity	

LOCATION DETAILS

Context	Event	Start Environment	At Sea	End Environment	At Sea	5
Location		Town		Type		
Zone	Russia, Arctic & Bering Sea	MarsdenGridReference	281	POSITION	73 41 00 N, 72 39 00 E	

TYOLOGY OF VESSELS

Fishing	Fishing vessels / Fish carrier / fish factory ship / Factory trawler / seal catcher / Fish factory ship / Fish farm support / fishery patrol vessel / fishery research / fishery support vessel /fish carrier
Bulk Carrier	Bulk carrier / cement carrier / ore carrier / powder carrier
Container	Container Ship
Tankers	Tankers / Asphalt-bitumen tankers / bunkering tankers / chemical – product tankers / crude oil tankers / FSO oil / oil tankers / water tankers
Hopper/Dredger	Hopper/Dredger / trailing suction hopper
Ferry	General cargo-passenger ship / Passenger-RO-RO ship / Ro-Ro cargo ship /
Cruise vessel	Cruise ship – inland / Passenger ship – inland / passenger-cruise
Refrigerated cargo ship	Refrigerated cargo ship
Yacht	Houseboat / yacht / Sailing vessel
FPSO	FPSO/ Oil
Gaz carrier	LNG tanker / LPG chemical tanker
General Cargo	Aggregate carrier / deck cargo ship / general cargo / open hatch cargo ship / other activities, inland / palletised cargo ship / rail vehicles carrier / general cargo barge
Heavy Load Carrier	Heavy Load Carrier
Icebreaker	Ice breaker / Ice breaker-research
Military vessel	Military vessel / frigate / patrol vessel / minehunter / landing craft / submarine
Miscellaneous	Standby Safety Vessel / open hatch vessel / rail vehicles carrier / waster disposal vessel / work-repair vessel / pontoon / product tank – barge / crane vessel / pollution control vessel / deck cargo pontoon.
Obo carrier	Ore/Oil Carrier
Platform	Accommodation
Research Survey Vessel	Research Survey Vessel
SAR vessel	Search & Rescue Vessel / Salvage ship / Standby Safety Vessel
Suction Dredger	Suction Dredger
Supply vessel	Supply vessel / Buoy Tender / Buoy & Lighthouse / AHTS / PSS / Offshore tug supply / pipe layer / Diving support vessel / Crew-supply vessel / Drilling rig / cable layer / Offshore support / Pipe burying vessel / Utility vessel / Air cushion vehicle
Training Ship	Training ship
Tug	Tug / Articulated pusher tug / pusher tug / offshore tug – supply / Pilot vessel
Car carrier	Vehicles carrier

TYOLOGY OF EVENTS

Cargo Damage / Loss
Collisions
Contact
Crew Abandonment
Fire / Explosion
Foundered
Hull / Machinery Damage
Illness / Fatality / Injury
Maritime Arrest
Missing
Overboard
Stranded
Pollution

CLASSIFICATION OF EVENTS

Taxonomy	Marine incident	Marine casualty	
		Serious casualty	Very serious casualty
Definition	- Endangers the safety of the ship, its occupants or any other person or the environment	<ul style="list-style-type: none"> - Fire - Explosion - Collision - Grounding - Contact - Heavy weather damage - Ice damage - Hull cracking - Suspected hull defect - Material damage to a ship - Stranding or disabling of a ship - Material damage to marine infrastructure - Severe damage to the environment 	<ul style="list-style-type: none"> - Total loss of the ship - Death - Severe damage to the environment - Loss, presumed loss, or abandonment of a ship

METHODOLOGY

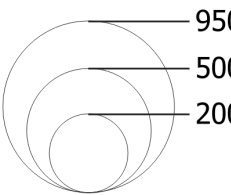
- LEVEL OF SEVERITY
- WE RELIED ON 3 LEVELS FOLLOWING THE IMO CASUALTY INVESTIGATION CODE:
 - **MARINE INCIDENT**
 - IF THE VESSEL IS ABLE TO SOLVE THE ISSUE ON ITS OWN WITHOUT ASSISTANCE
 - **SERIOUS CASUALTY**
 - TOWED
 - CONTACT OR COLLISION
 - FIRE
 - PROPULSION ISSUE
 - IMPACT ON THE INTEGRITY OF THE VESSEL
 - PASSENGER DISEMBARKED
 - **VERY SERIOUS CASUALTY**
 - EVACUATION OF THE CREW
 - DEATH / INJURIES / ILLNESS
 - POLLUTION
 - TOTAL LOSS

Arctic and sub-Arctic reported cases

— Arctic circle

Marine cases

- MI [625]
- SC [2505]
- VSC [519]



SAR centers

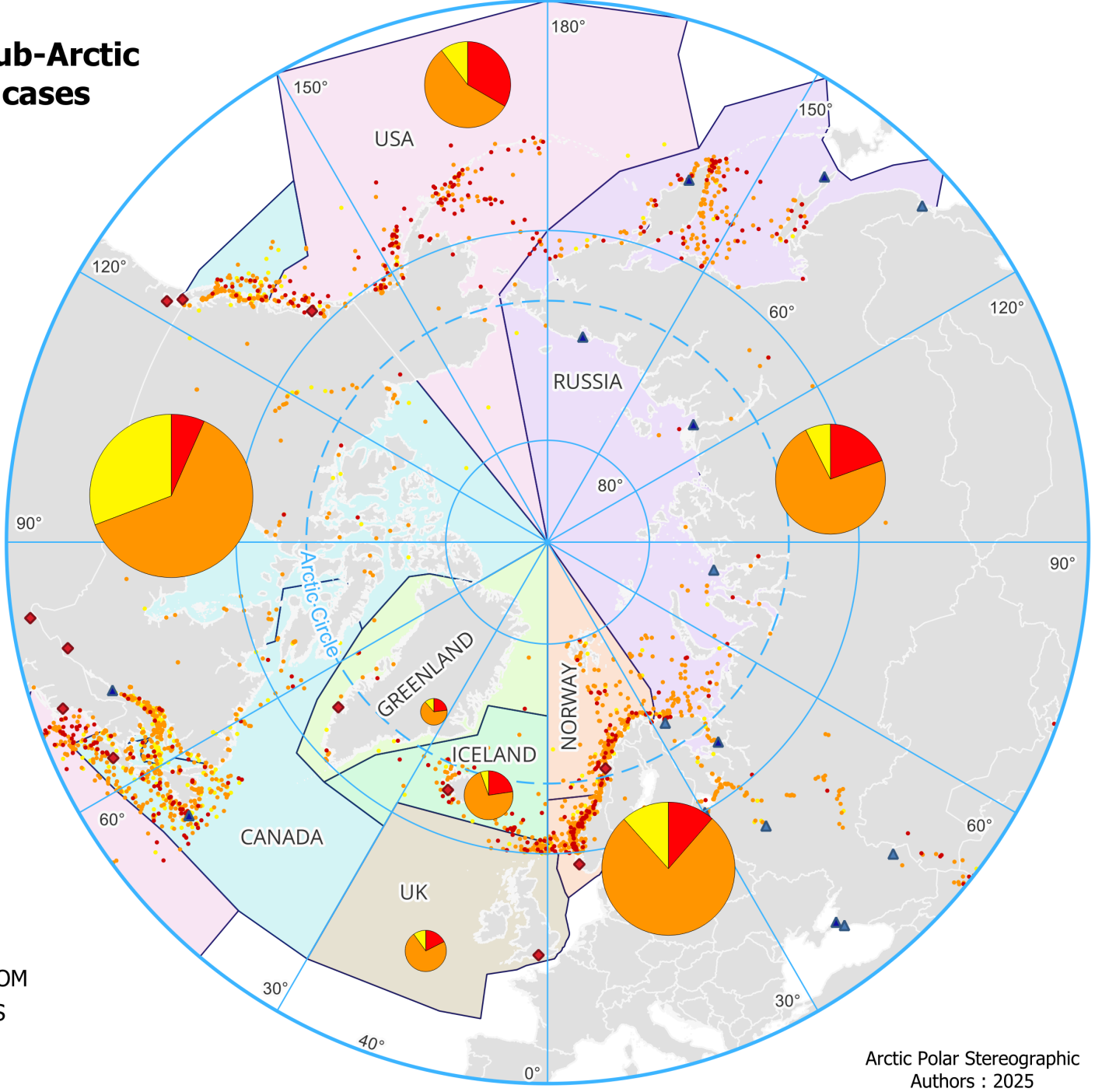
- ◆ JRCC
- ◆ JRSC
- ▲ MRCC
- ▲ MRSC

Countries

Countries SRR

- CANADA
- GREENLAND
- ICELAND
- NORWAY
- RUSSIA
- UNITED KINGDOM
- UNITED STATES

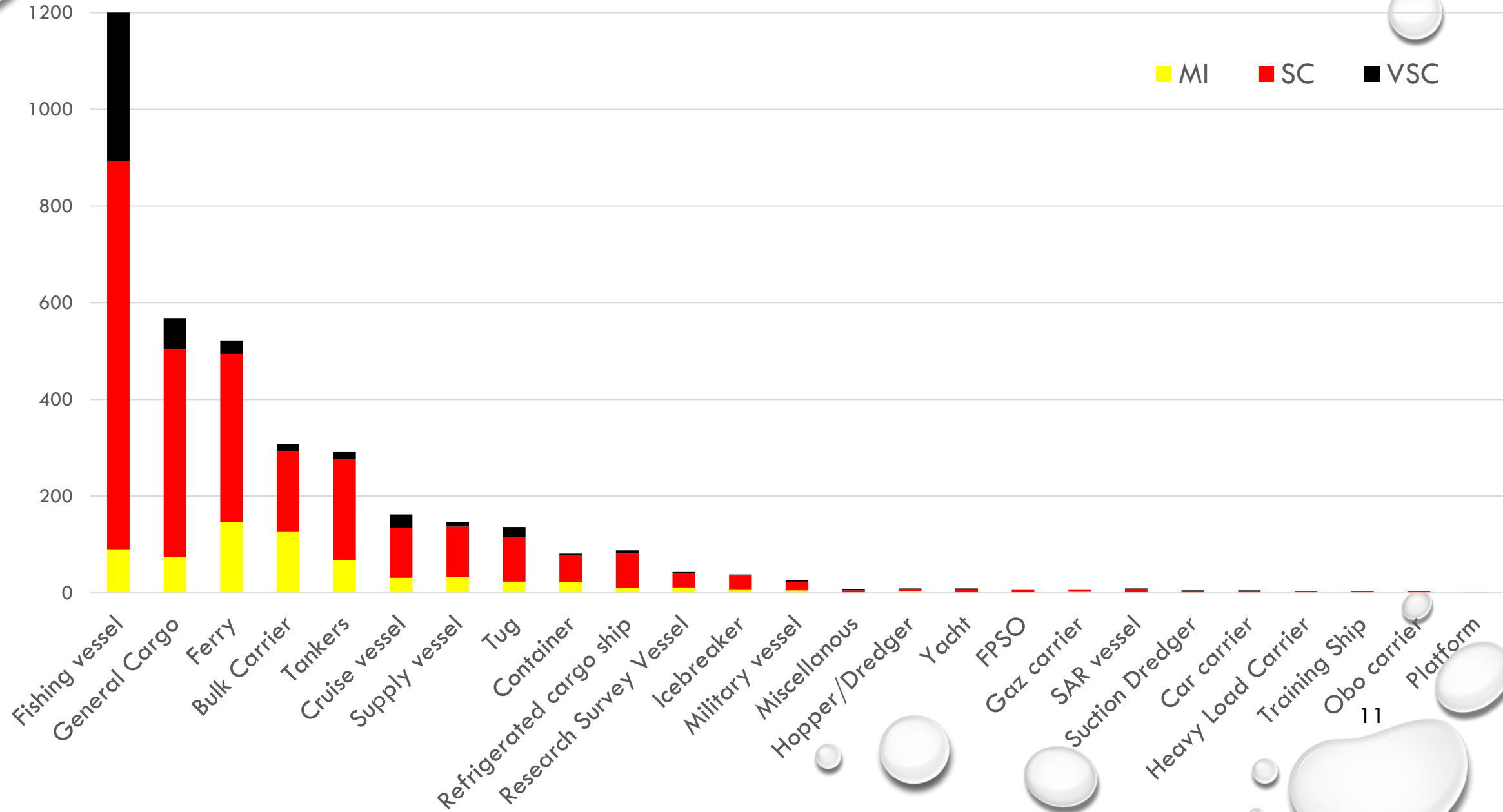
SRR borders



Arctic Polar Stereographic
Authors : 2025

MAP OF ACCIDENTS

ACCIDENT-PRONE SHIPS



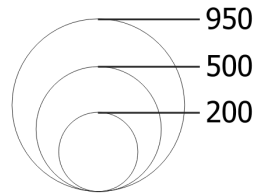
Arctic and sub-Arctic reported cases

Fishing vessels

— Arctic circle

Marine cases

- MI 87
- SC 780
- VSC 303



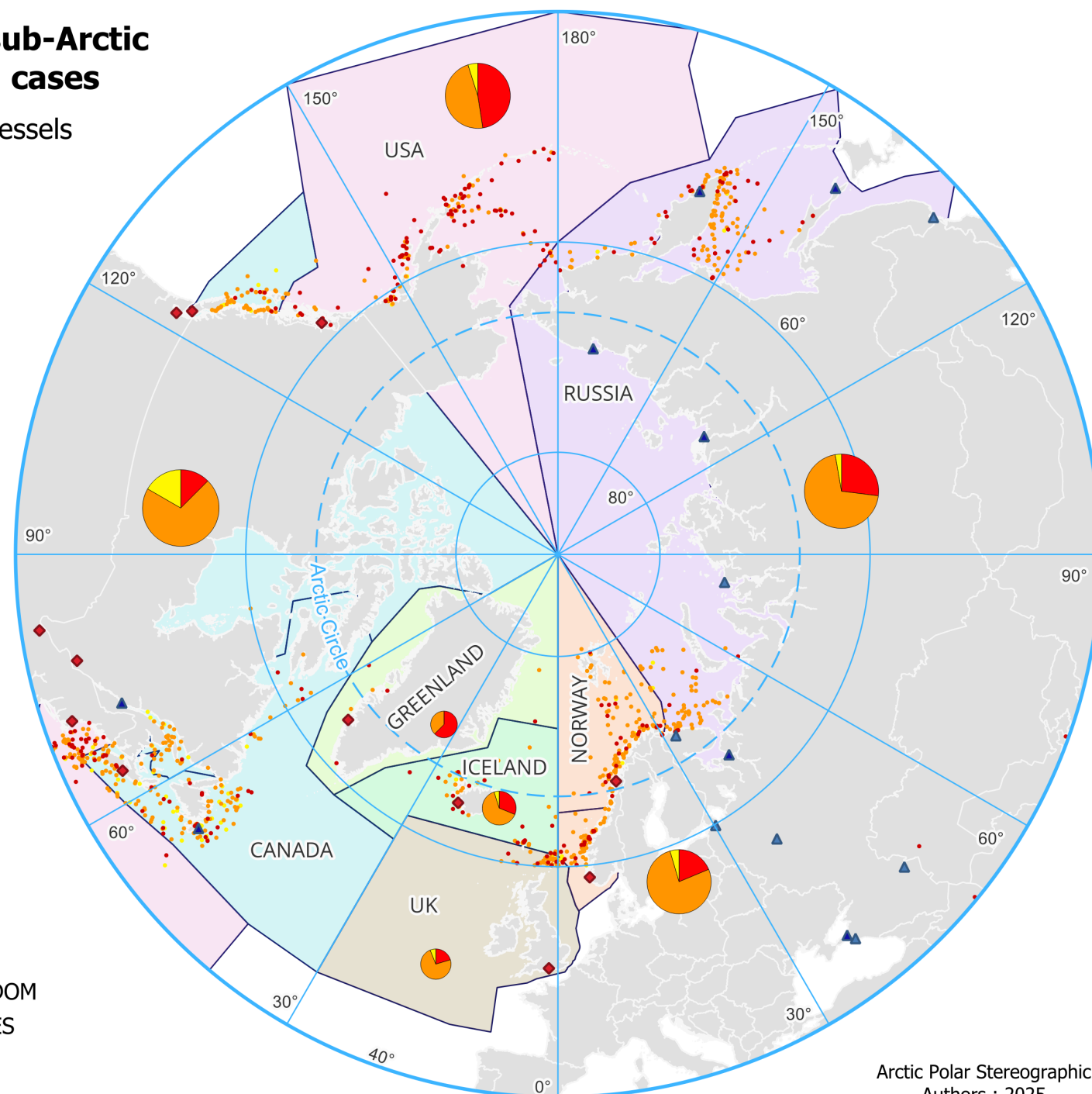
SAR centers

- ◆ JRCC
- ◆ JRSC
- ▲ MRCC
- ▲ MRSC

Countries

Countries SRR

- CANADA
- GREENLAND
- ICELAND
- NORWAY
- RUSSIA
- UNITED KINGDOM
- UNITED STATES
- SRR borders



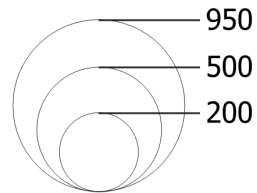
Arctic and sub-Arctic reported cases

Ferry and Cruise ships

— Arctic circle

Marine cases

- MI 176
- SC 451
- VSC 55



SAR centers

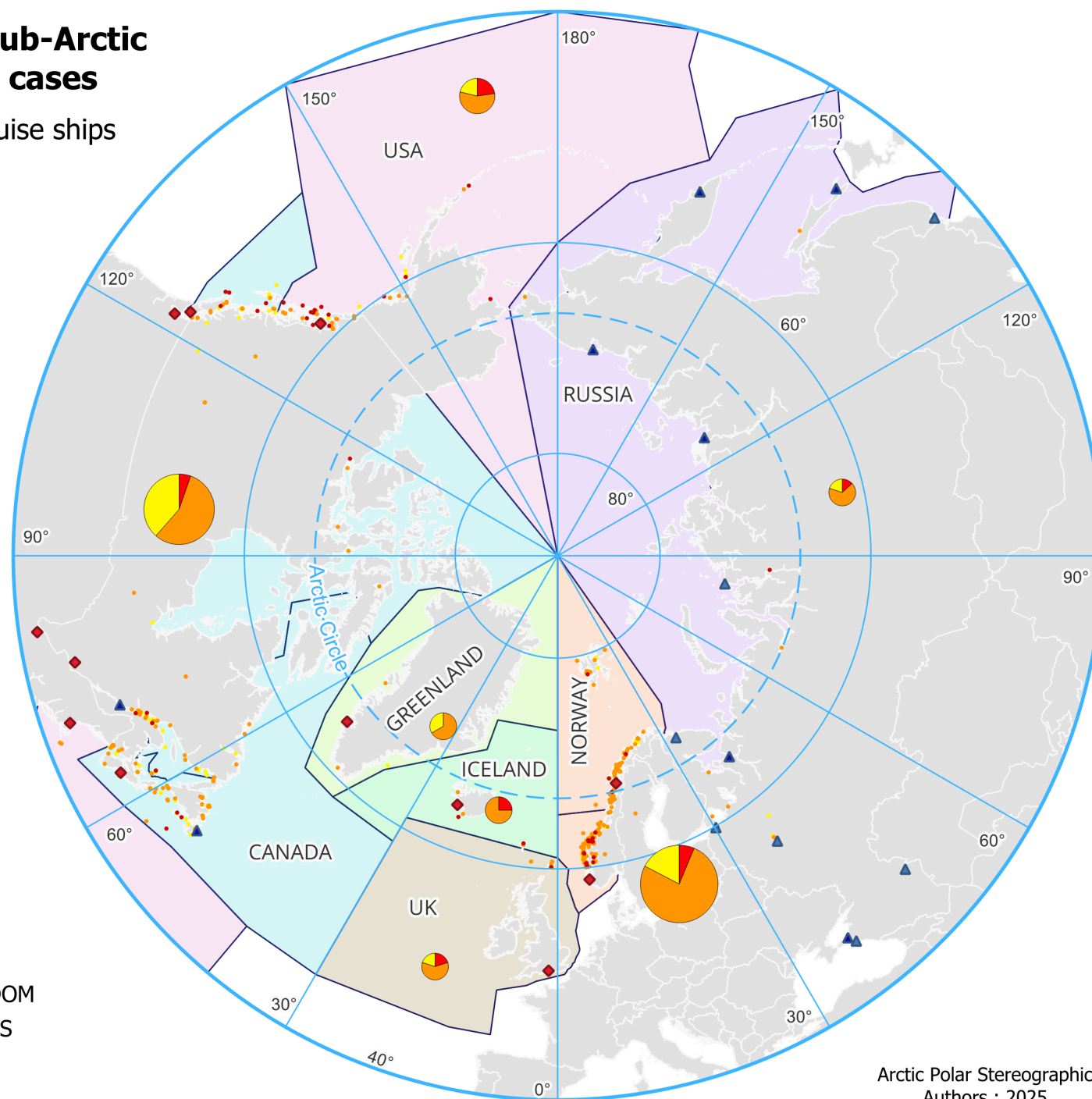
- ◆ JRCC
- ◆ JRSC
- ▲ MRCC
- ▲ MRSC

Countries

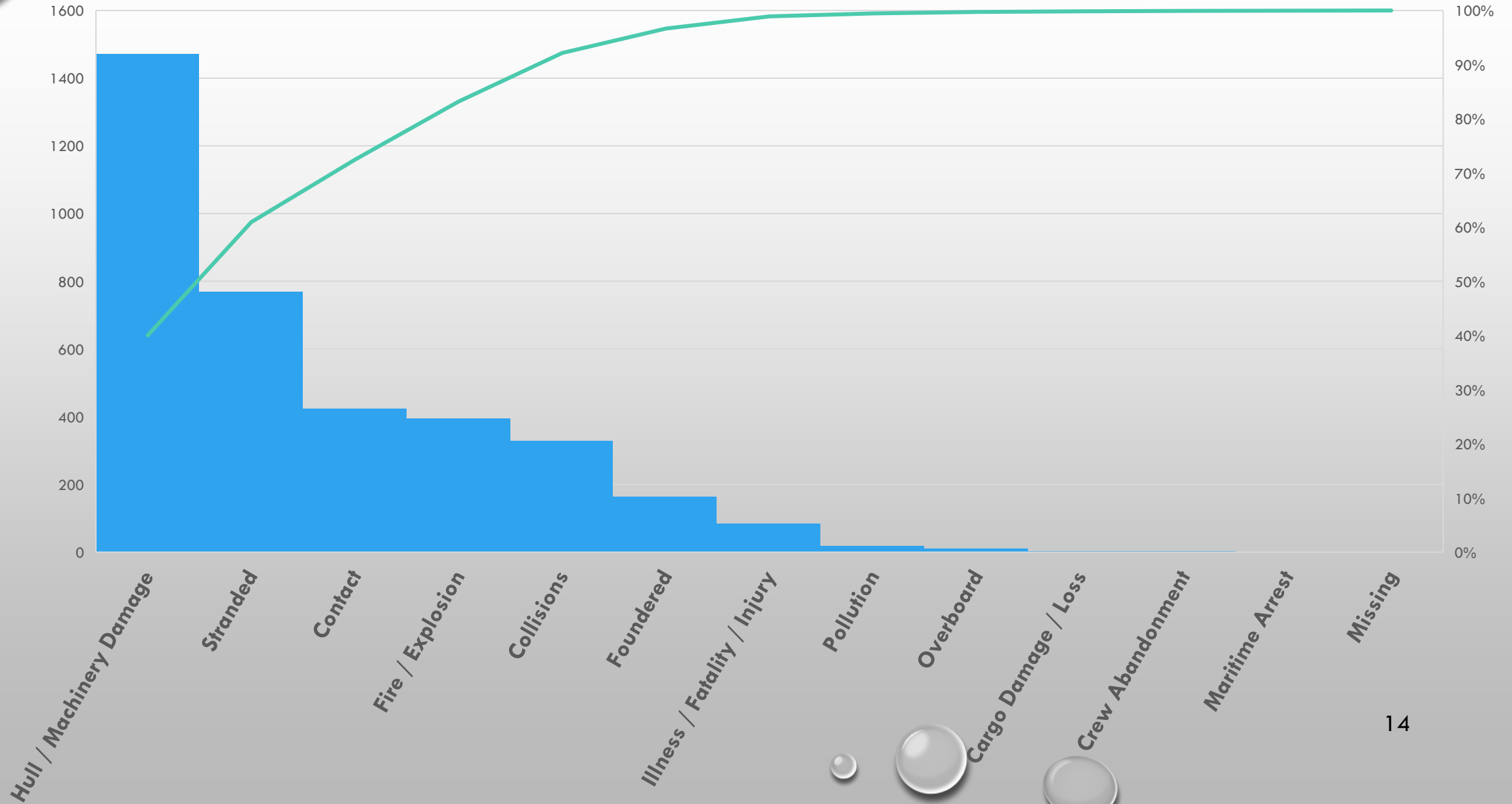
Countries SRR

- CANADA
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- UNITED STATES

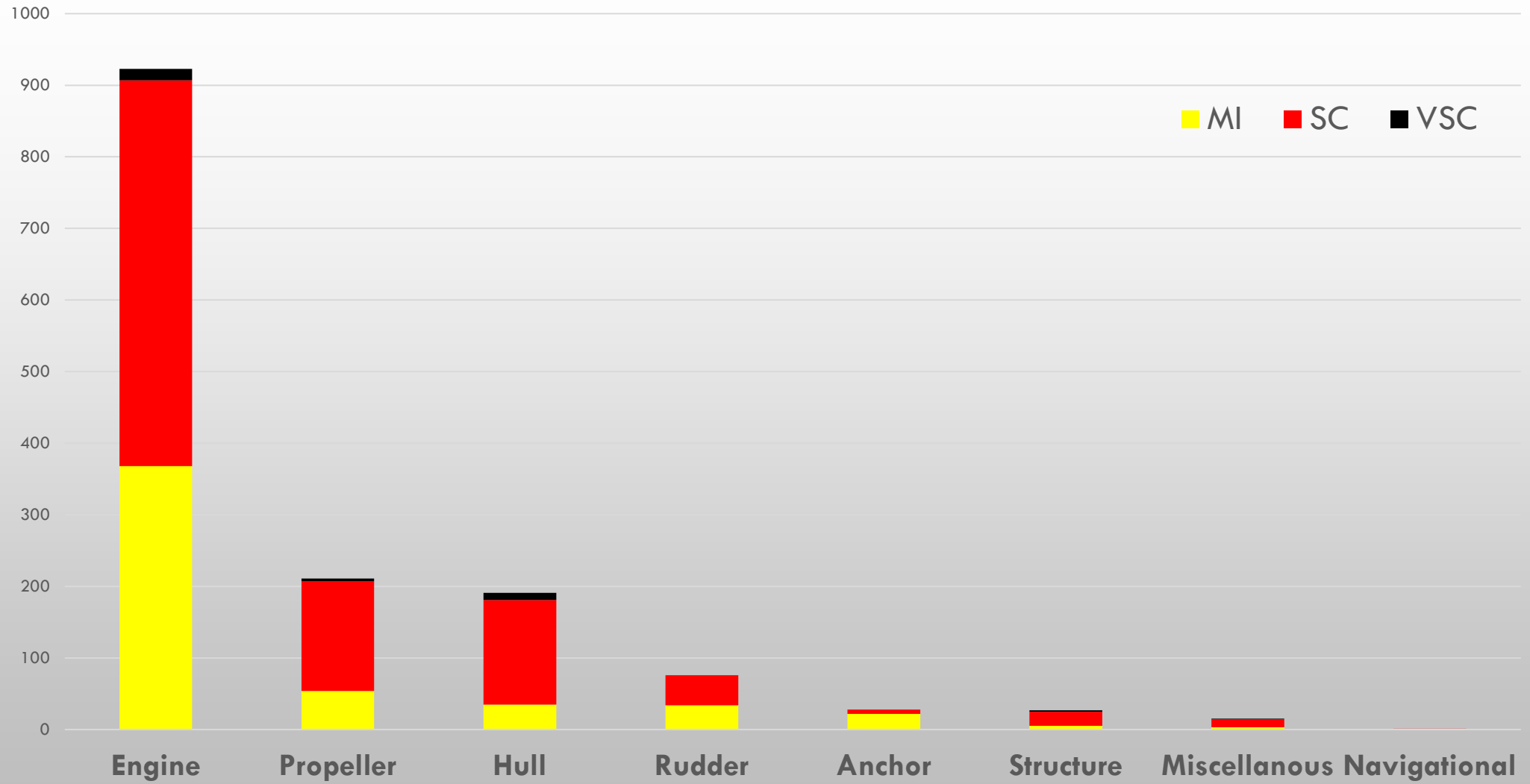
SRR borders



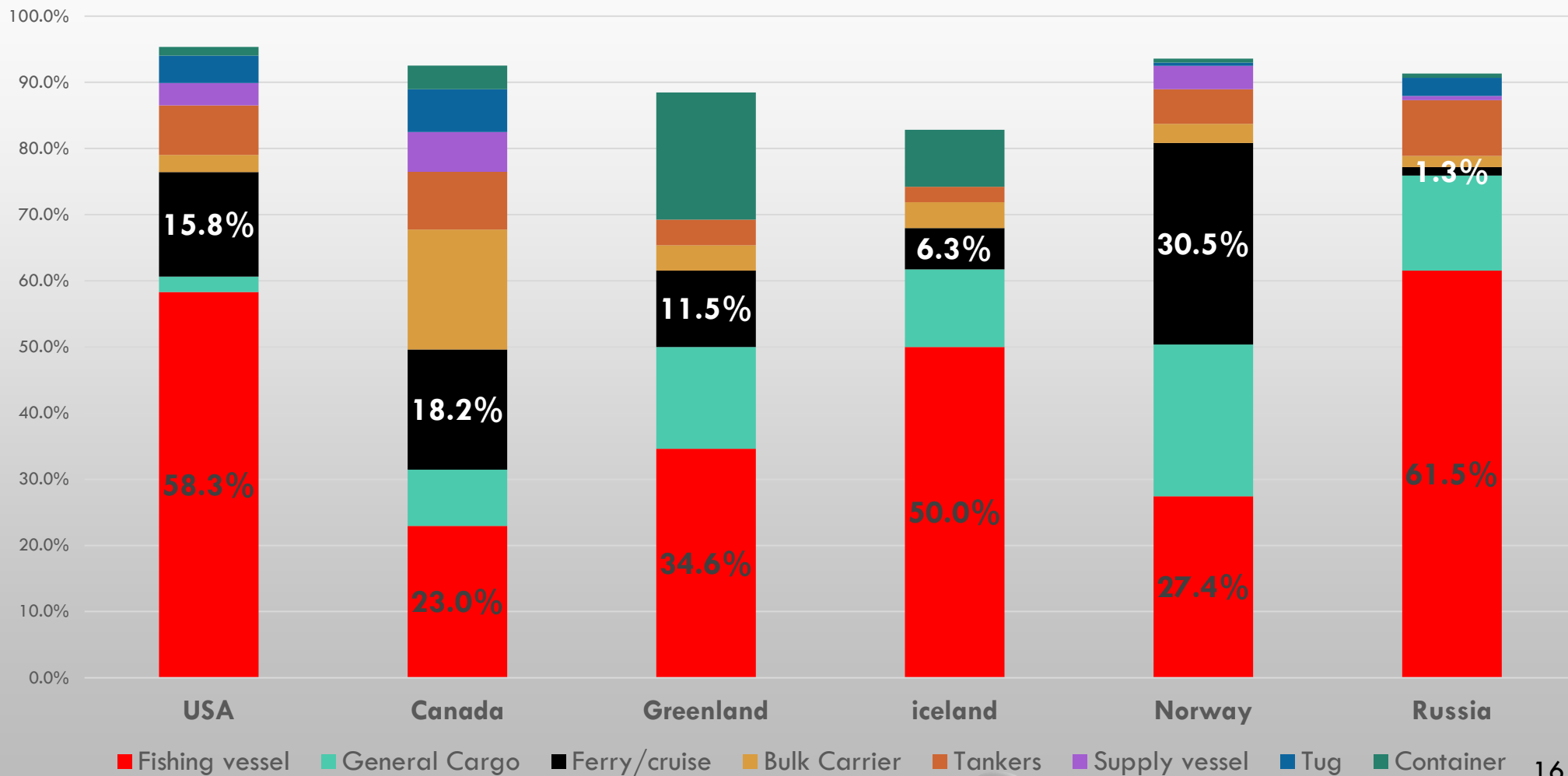
ACCIDENT CAUSES



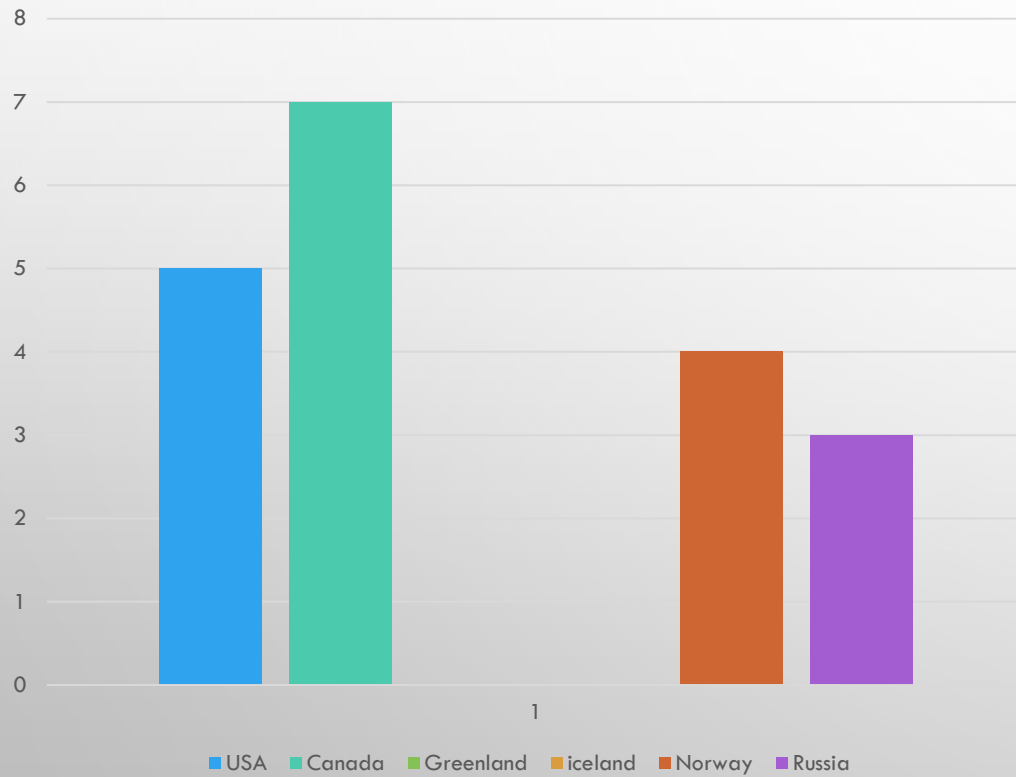
HULL/MACHINERY ANALYSIS



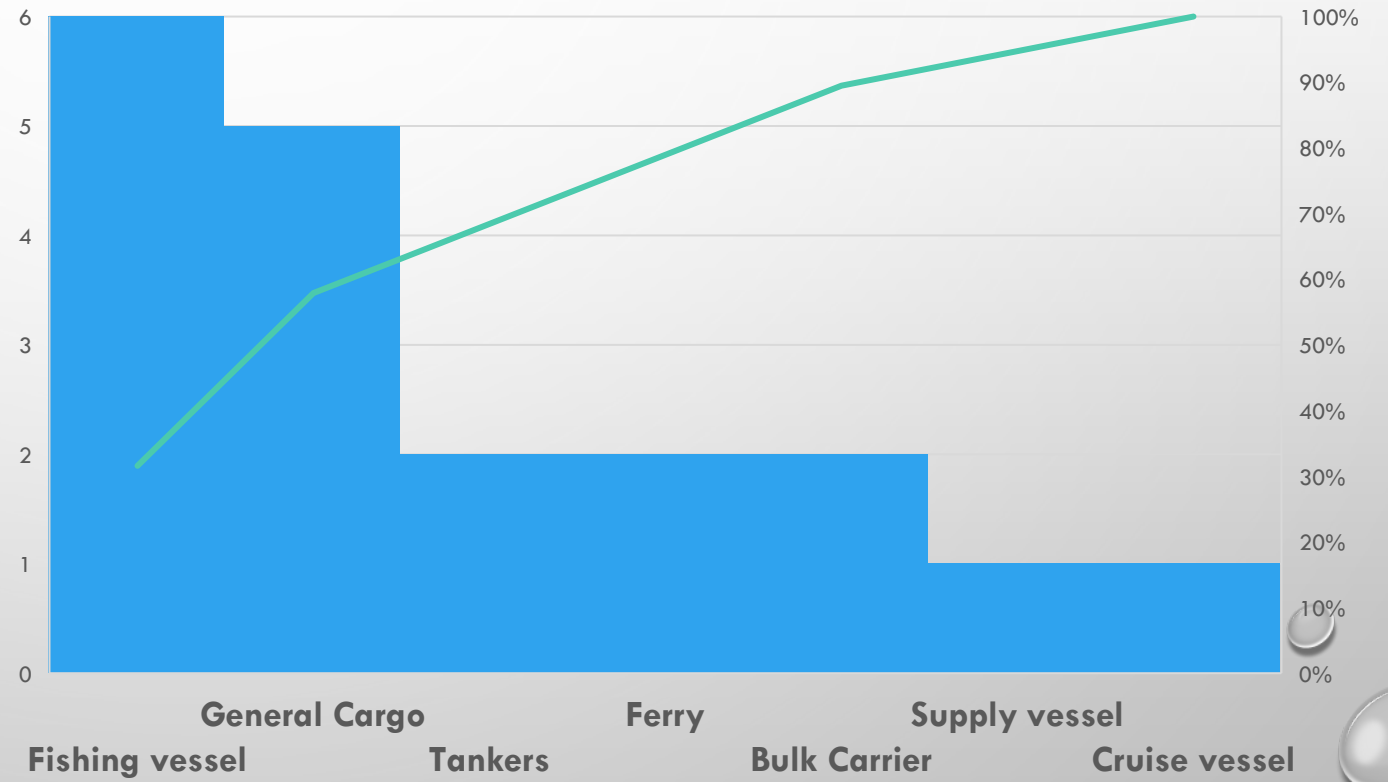
VESSEL TYPES REPRESENTING 80% OF ACCIDENTS PER COUNTRY



POLLUTION ISSUE PER COUNTRY AND PER VESSEL TYPE

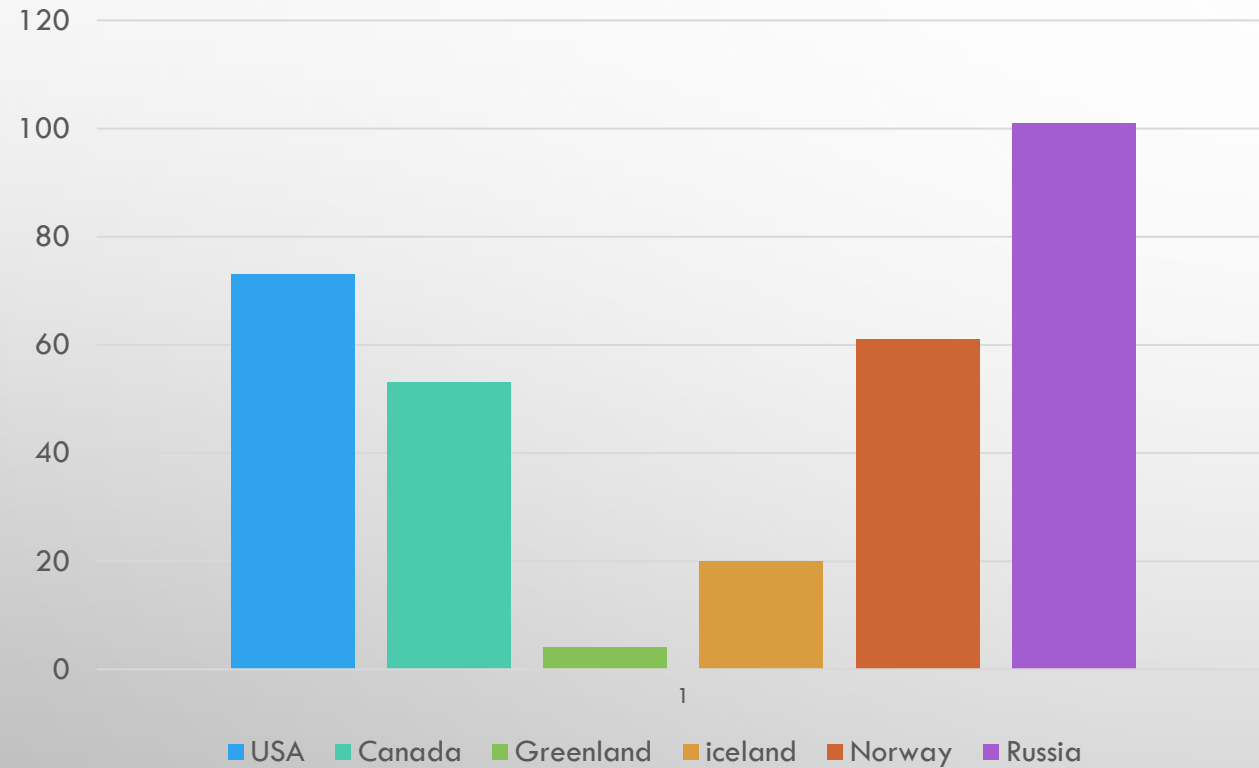


POLLUTION PER COUNTRIES

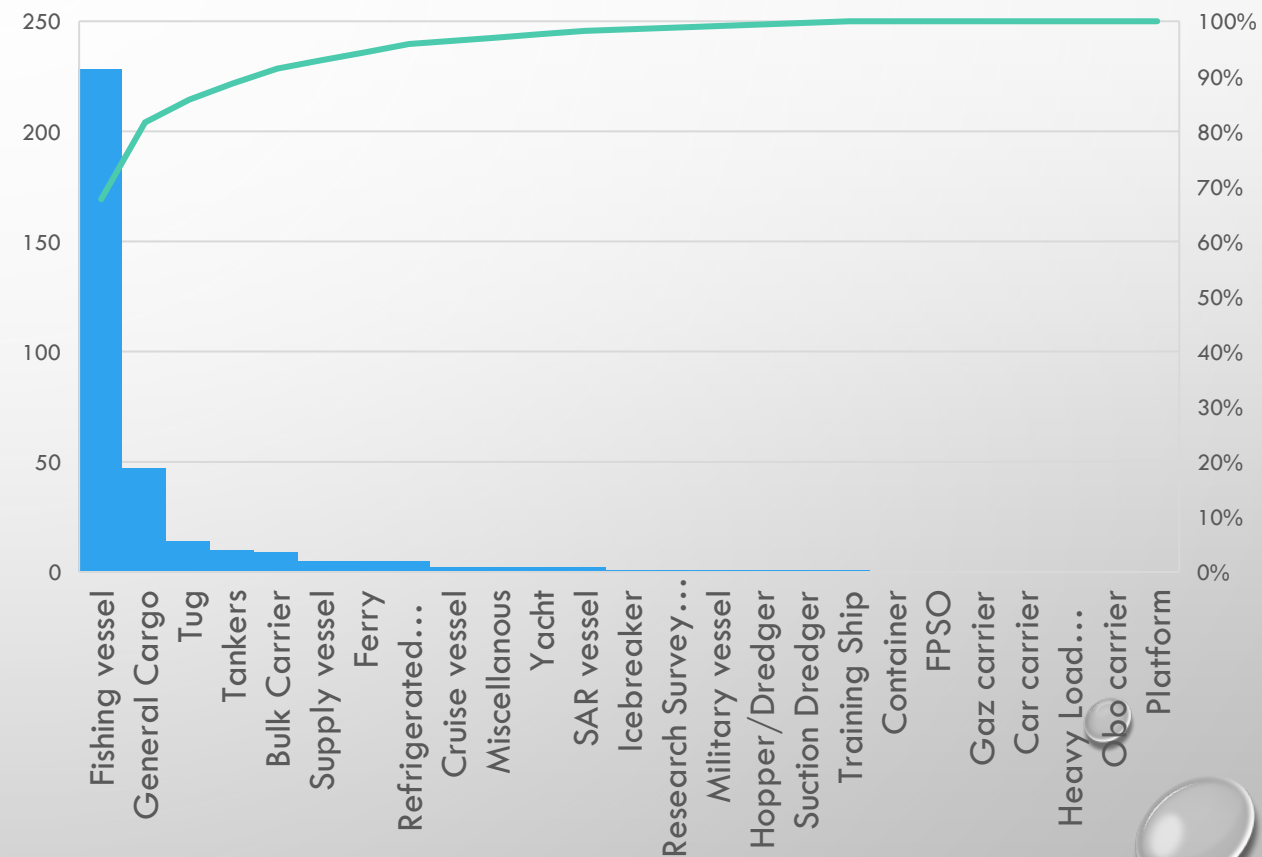


POLLUTION PER TYPE OF VESSELS

TOTAL LOSS PER COUNTRIES AND PER TYPE OF VESSELS

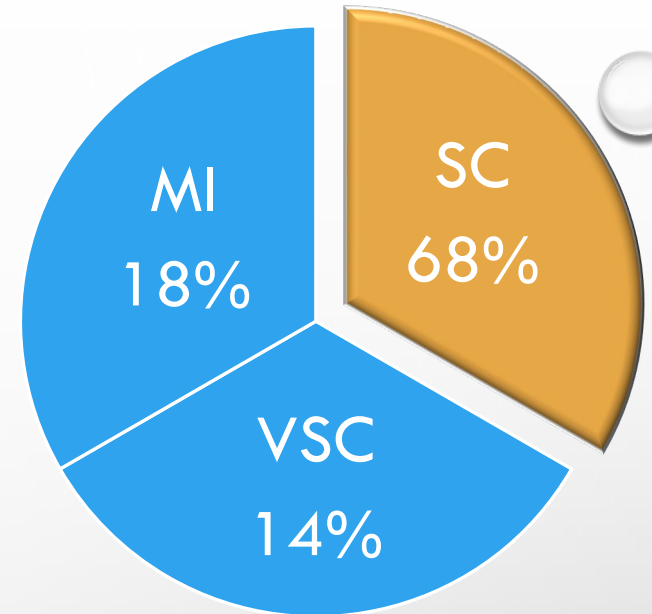


TOTAL LOSS PER COUNTRIES



TOTAL LOSS PER VESSELS

CONCLUSIONS



- ACCIDENTS ARE MAINLY DUE TO ENGINE RELATED ISSUES
- FISHING VESSELS REPRESENT THE HIGHEST THREAT FOR BOTH THE ENVIRONMENT AND SEAFARERS, AND THUS QUESTION THE MANAGEMENT OF VESSELS BELOW 500 GT
- FISHING AND PASSENGER VESSELS CONSTITUTE AROUND 40% AND 74% OF CASES PER COUNTRY
- CONCERNING THE POLLUTION: FISHING VESSELS REPRESENT THE MAIN SOURCE OF POLLUTION

QUESTIONS



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