

REDISCOVERY OF WALRUSES IN THE PECHORA SEA

Semenova V., Boltunov A., Nikiforov V.,
Babushkin M., Svetochov V.



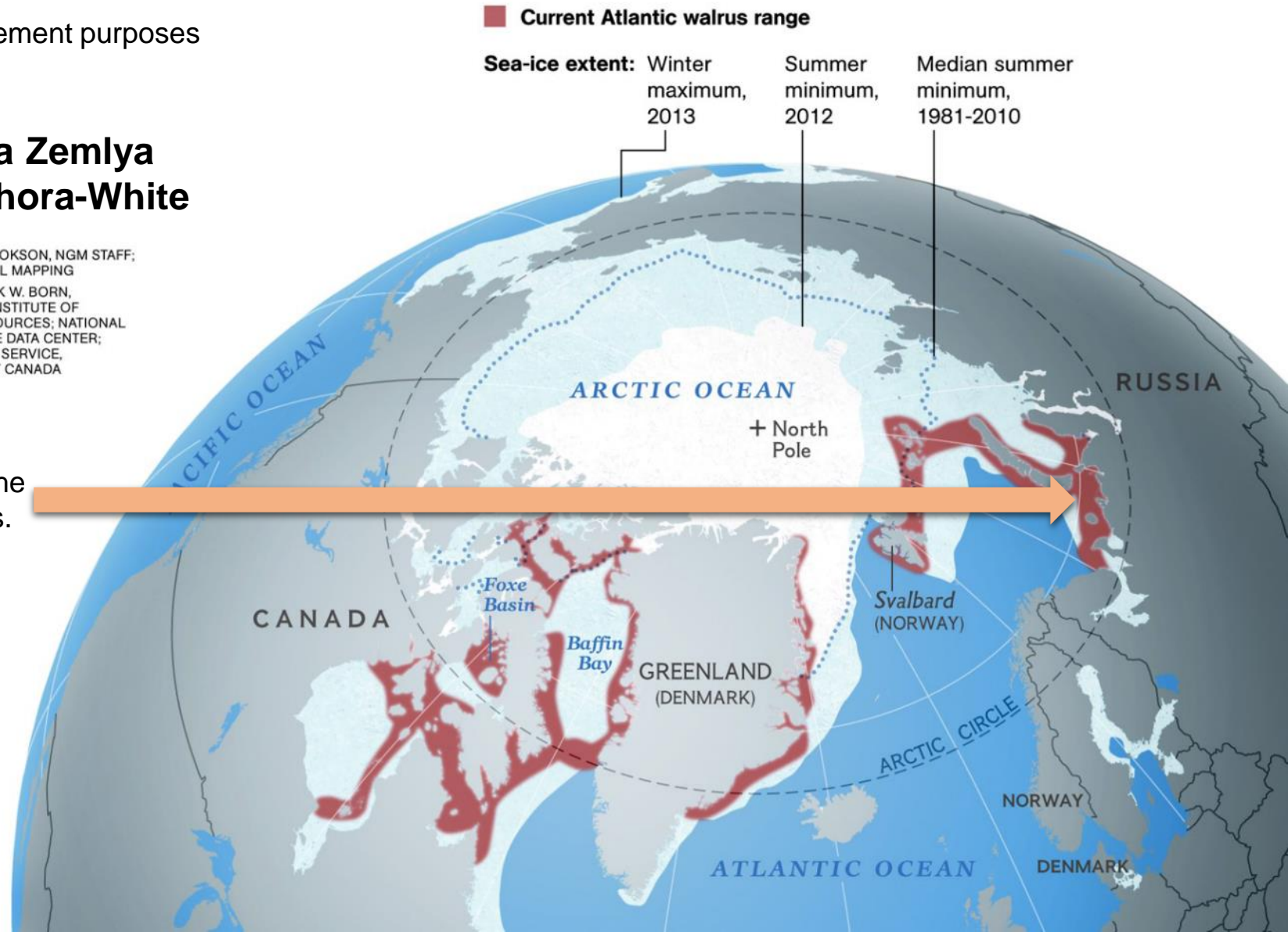
ATLANTIC WALRUS (*ODOBENUS ROSMARUS ROSMARUS*)

Fourteen stocks have been identified for management purposes

One of the stocks inhabits the **Novaya Zemlya Archipelago - Eastern Barents-Pechora-White Sea area.**

JEROME N. COOKSON, NGM STAFF;
INTERNATIONAL MAPPING
SOURCES: ERIK W. BORN,
GREENLAND INSTITUTE OF
NATURAL RESOURCES; NATIONAL
SNOW AND ICE DATA CENTER;
CANADIAN ICE SERVICE,
ENVIRONMENT CANADA

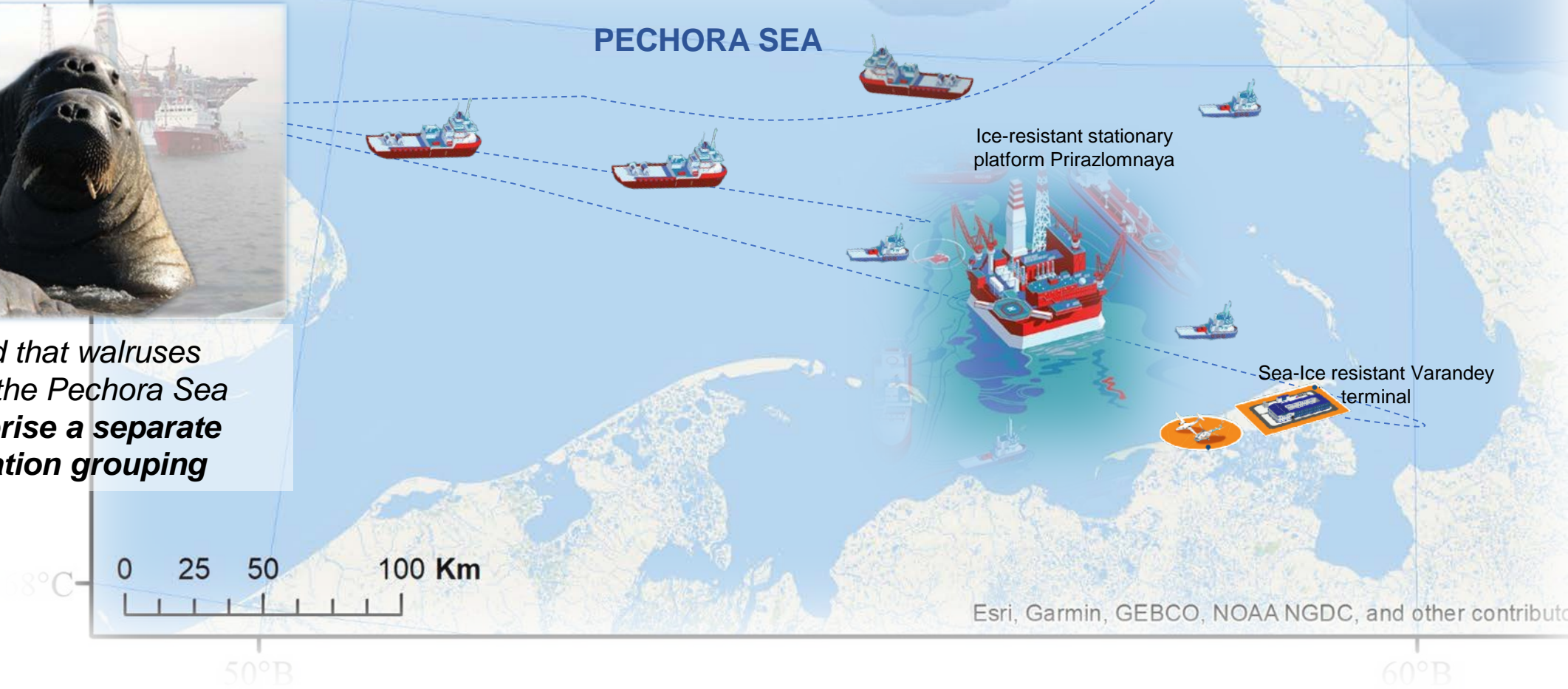
Until recently, walrus in this region remained the least studied stock within the Atlantic subspecies.



INCREASING ECONOMIC DEVELOPMENT IN THE PECHORA SEA



*It has been assumed that walrus occur year-round in the Pechora Sea and **probably comprise a separate stock or subpopulation grouping***



INCREASING ECONOMIC DEVELOPMENT IN THE PECHORA SEA

X Seasonal distribution

X Population size

X Population structure

X Key habitats

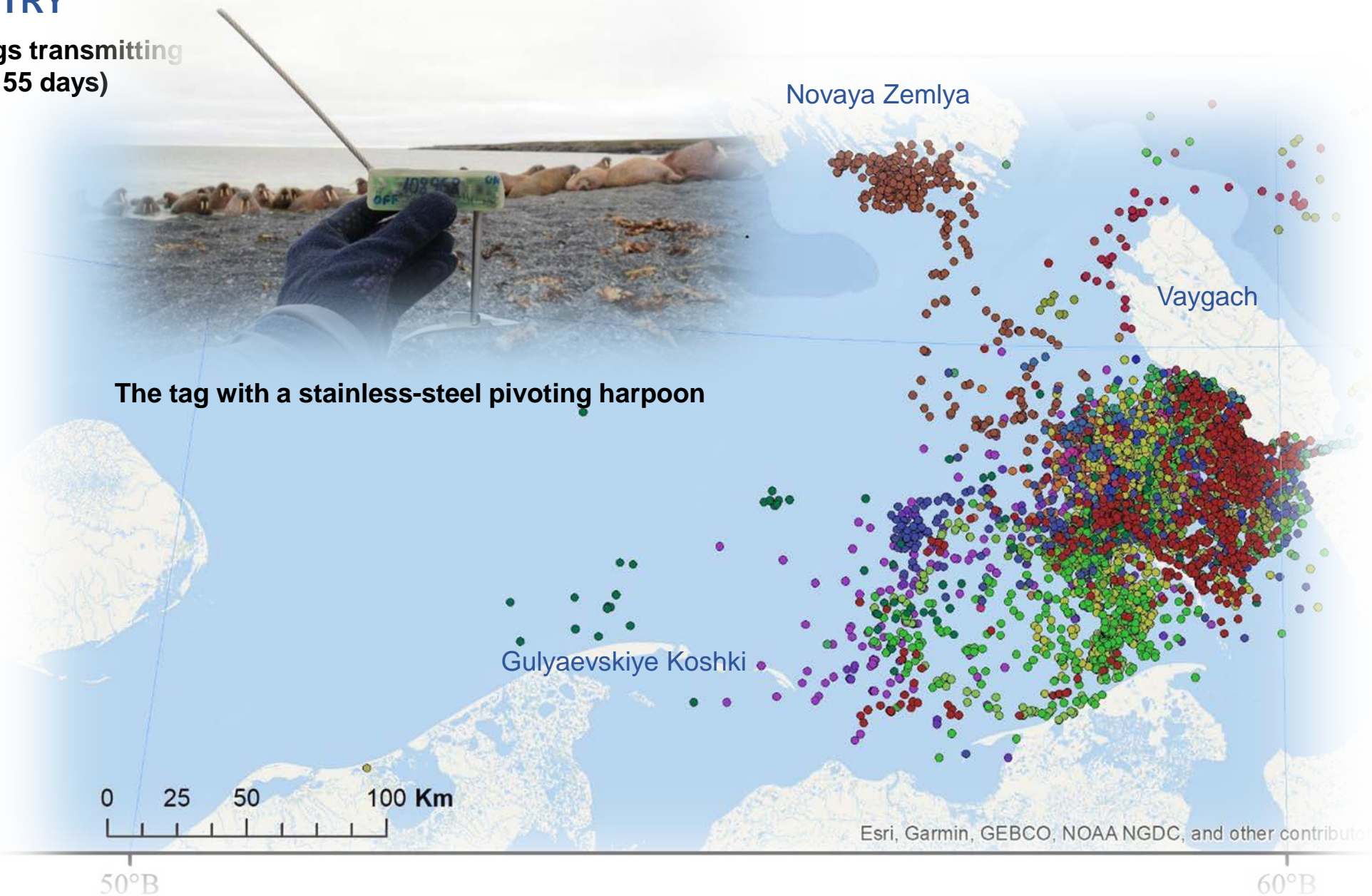
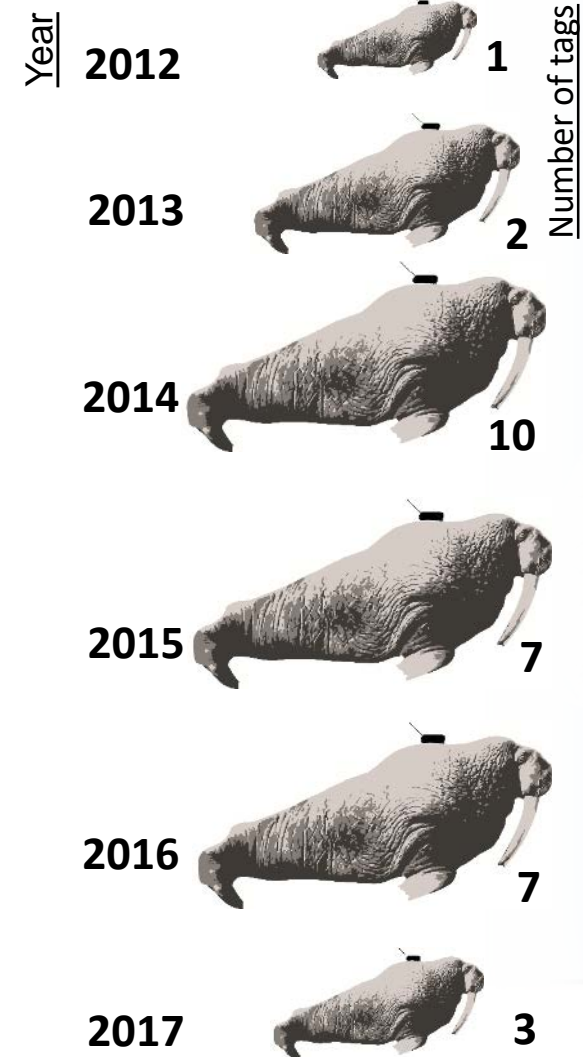
- Terrestrial haul-outs
- Feeding areas
- Reproduction areas
- Migration routes



Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

SATELLITE TELEMETRY

Average duration of the tags transmitting was 46.7 days (maximum 155 days)



SATELLITE TELEMETRY

- ✓ During ice-free season a local population of Atlantic walrus inhabits the eastern part of the Pechora Sea
- ✓ Within this area the core range occurs between the west coast of Vaygach Island and Matveev and Dolgiy islands
- ✓ This area includes a series of terrestrial haul-outs and marine area which is likely important feeding ground.

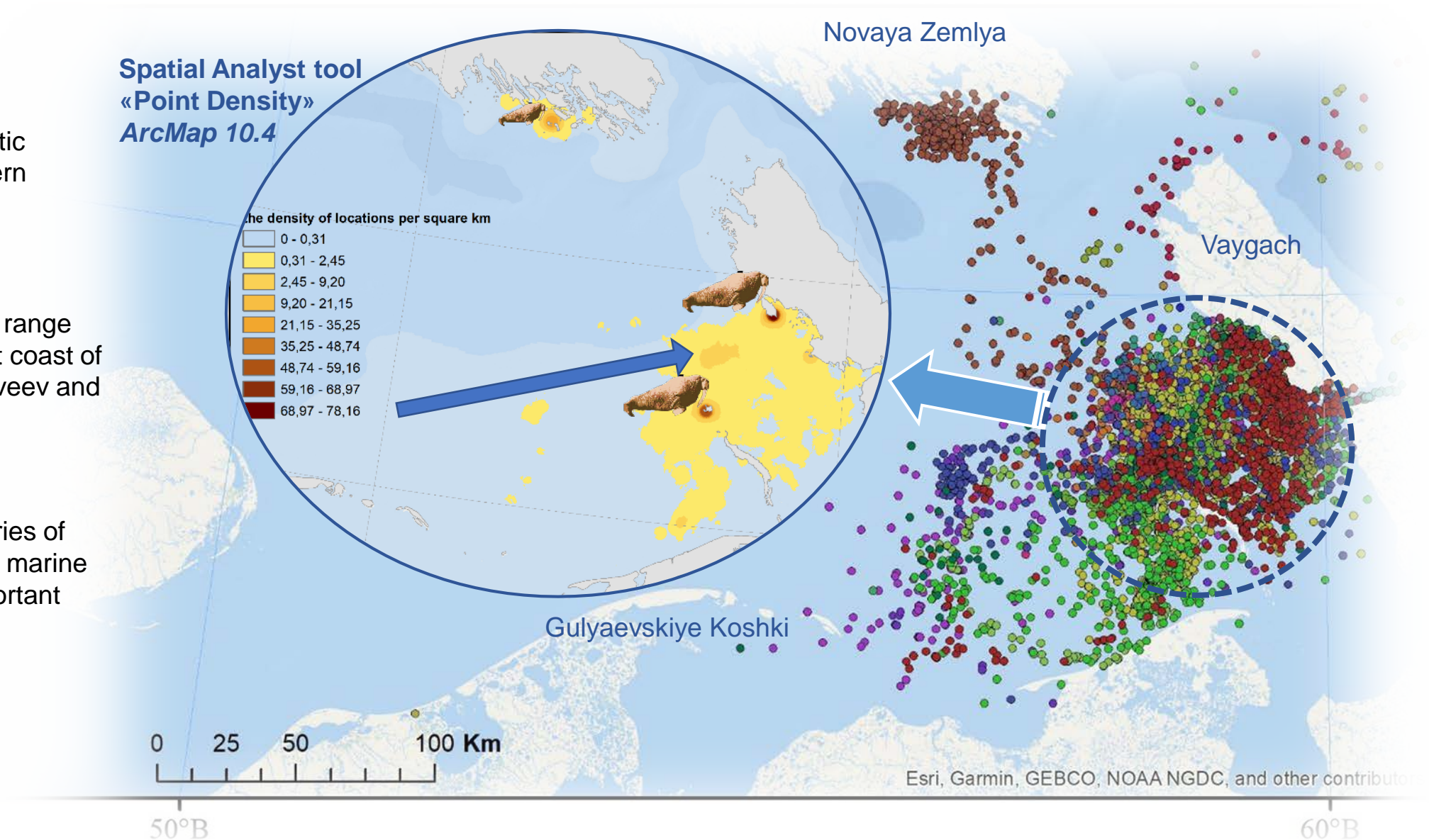


PHOTO TRAPS ON TERRESTRIAL HAUL-OUTS



Vaygach Isl

	Matveev Isl		Vaygach Isl	
	Number of photo traps	Number of photos	Number of photo traps	Number of photos
2014-2015	6	48499	2	19915
2015-2016	3	54918	6	34359
2016-2017	6	57898	4	38786
Total	15	161315	12	93060

Matveev Isl



CO, NOAA NGDC, and other contributors

60°B

PHOTO TRAPS ON TERRESTRIAL HAUL-OUTS

- Date of first walrus entering the shore
- Dynamics of walrus' number on the haul-out
- Identification of disturbance causes



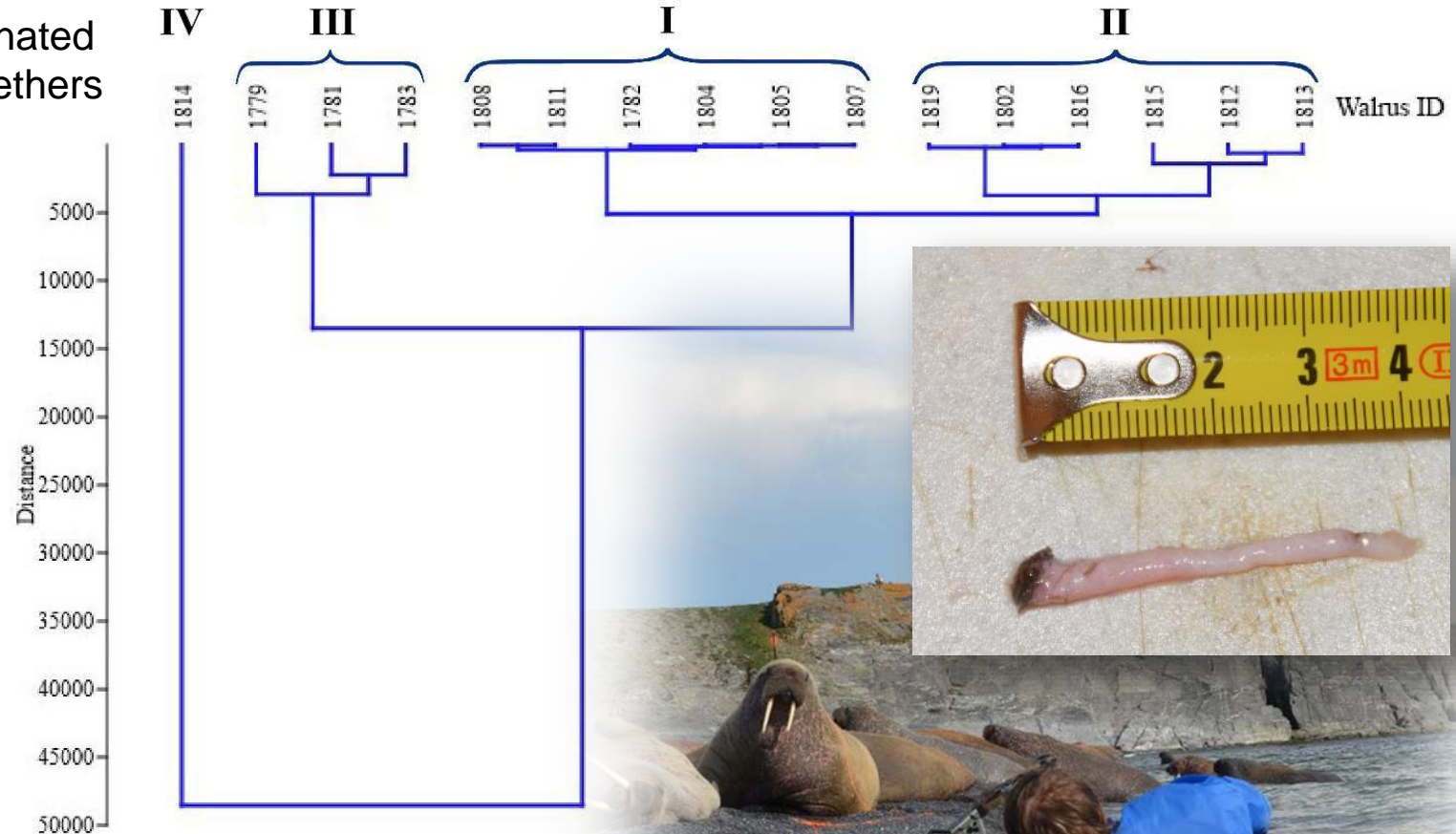
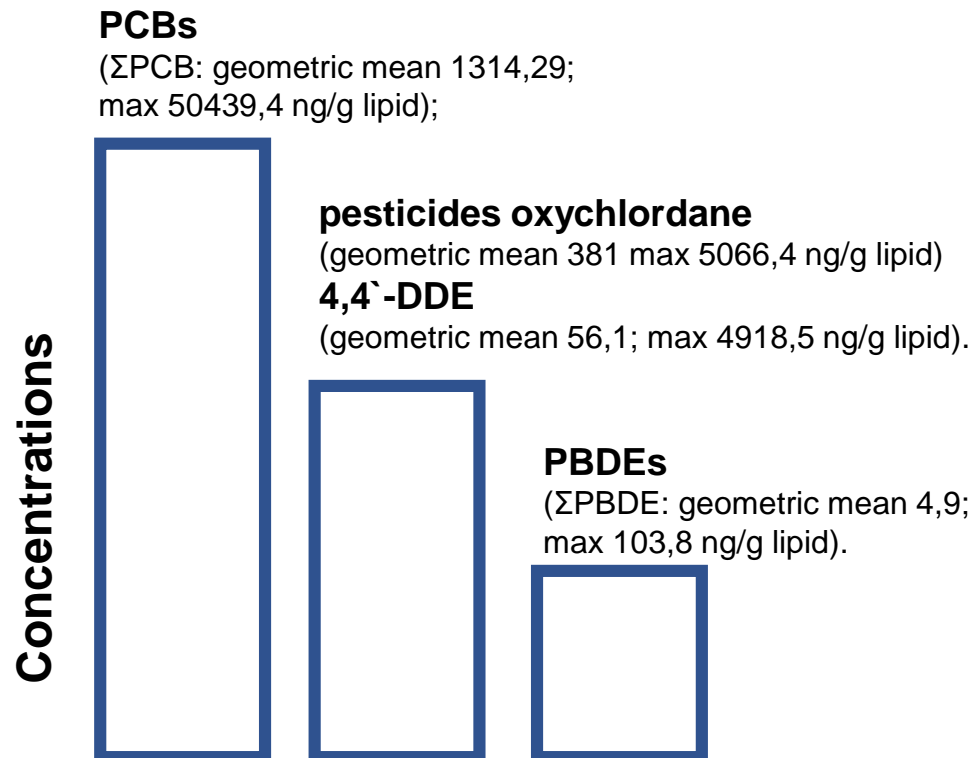
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ORGANIC POLLUTANTS IN THE ADIPOSE TISSUE OF THE PECHORA SEA WALRUSES

- Adipose tissue samples were collected from 16 Atlantic walruses in 2011-2017
- These samples were analyzed for polychlorinated biphenyls (PCBs), polybrominated diphenyl ethers (PBDEs) and pesticides.

Clusters distinguished basing on levels of main POPs (Σ PCB, Oxychlordane, 4,4'-DDE and Σ PBDE)



ESTIMATE OF THE POPULATION DURING ICE SEASON IN THE PECHORA SEA

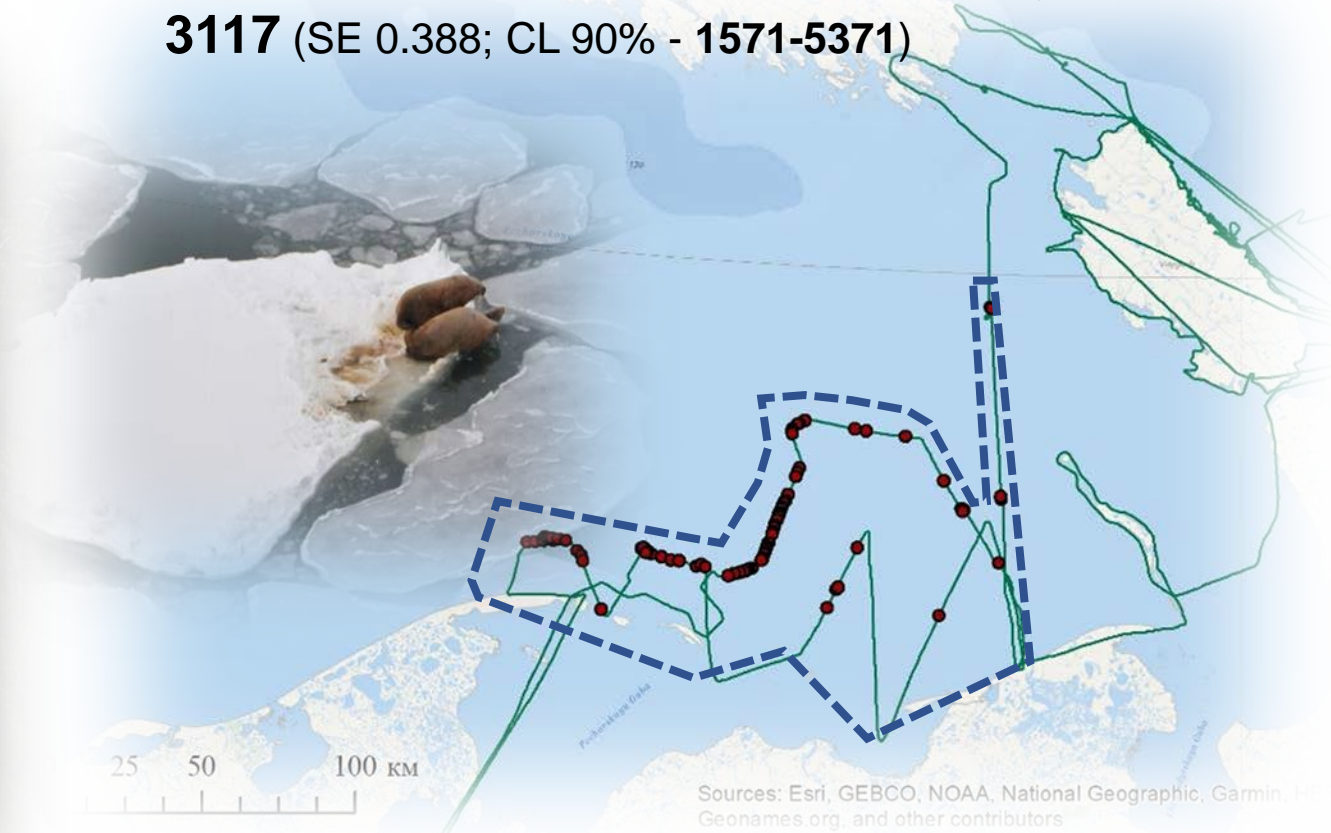
Ice-free season

Lydersen C, Chernook VI, Glazov DM, Trukhanova IS, Kovacs KM (2012) Aerial survey of Atlantic walrus (*Odobenus rosmarus rosmarus*) in the Pechora Sea, August 2011. Polar Biol 35:1555-1562

- Aerial survey (**August 2011**, fixed-winged aircraft)
- **3943** (95% CI 3605-4325) walrus were estimated to occupy the Pechora Sea

Sea-ice period

- Aerial survey (**April 24-27 2014**, helicopter flight)
- Extrapolated number of walrus on the surveyed area **3117** (SE 0.388; CL 90% - **1571-5371**)



DNA STUDY

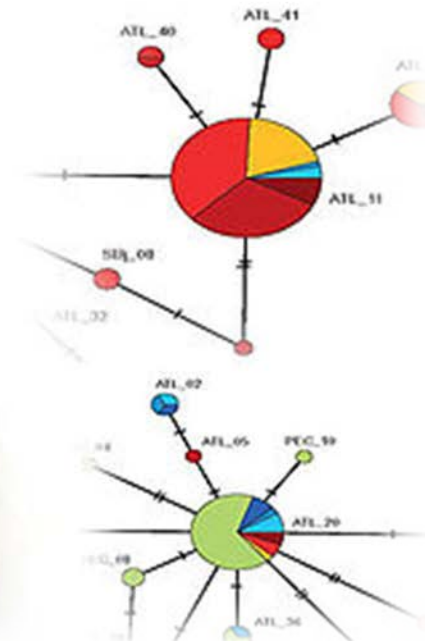
The principal finding suggests that PECHORA walrus show low, but significant genetic distinction from walrus in SVALBARD–FRANZ JOSEF LAND and should be managed conservatively, as a separate, small population.



Walrus (*Odobenus rosmarus rosmarus*) in the Pechora Sea in the context of contemporary population structure of Northeast Atlantic walrus

Liselotte W Andersen Magnus W Jacobsen Christian Lydersen
Varvara Semenova Andrei Boltunov Erik W Born Øystein Wiig
Kit M Kovacs

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23 November 2017, Pages 897–915




RESULTS

- ✓ Key habitats are identified
- ✓ Number estimate of walrus in the region during different seasons is updated
- ✓ Current POPs burden in walrus is revealed
- ✓ DNA studies of the stock have been started

The small area occupied by this genetically **unique group of walrus** makes them sensitive to **human-related impacts**

Walrus in this part of the species range **should be managed with precaution under the economic development** that has already taken place in this region.



A photograph of several walrus heads emerging from the water. The walruses have dark, wrinkled skin and prominent white tusks. They are looking towards the camera. The water is blue and slightly rippled.

A number of companies operating in the Pechora Sea, as well as the Norwegian Polar Institute and WWF Russia financed different components of the field studies. The Norwegian-Russian Environmental Commission facilitated the study of walruses in the Barents Sea.

Thank you for
attention



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