



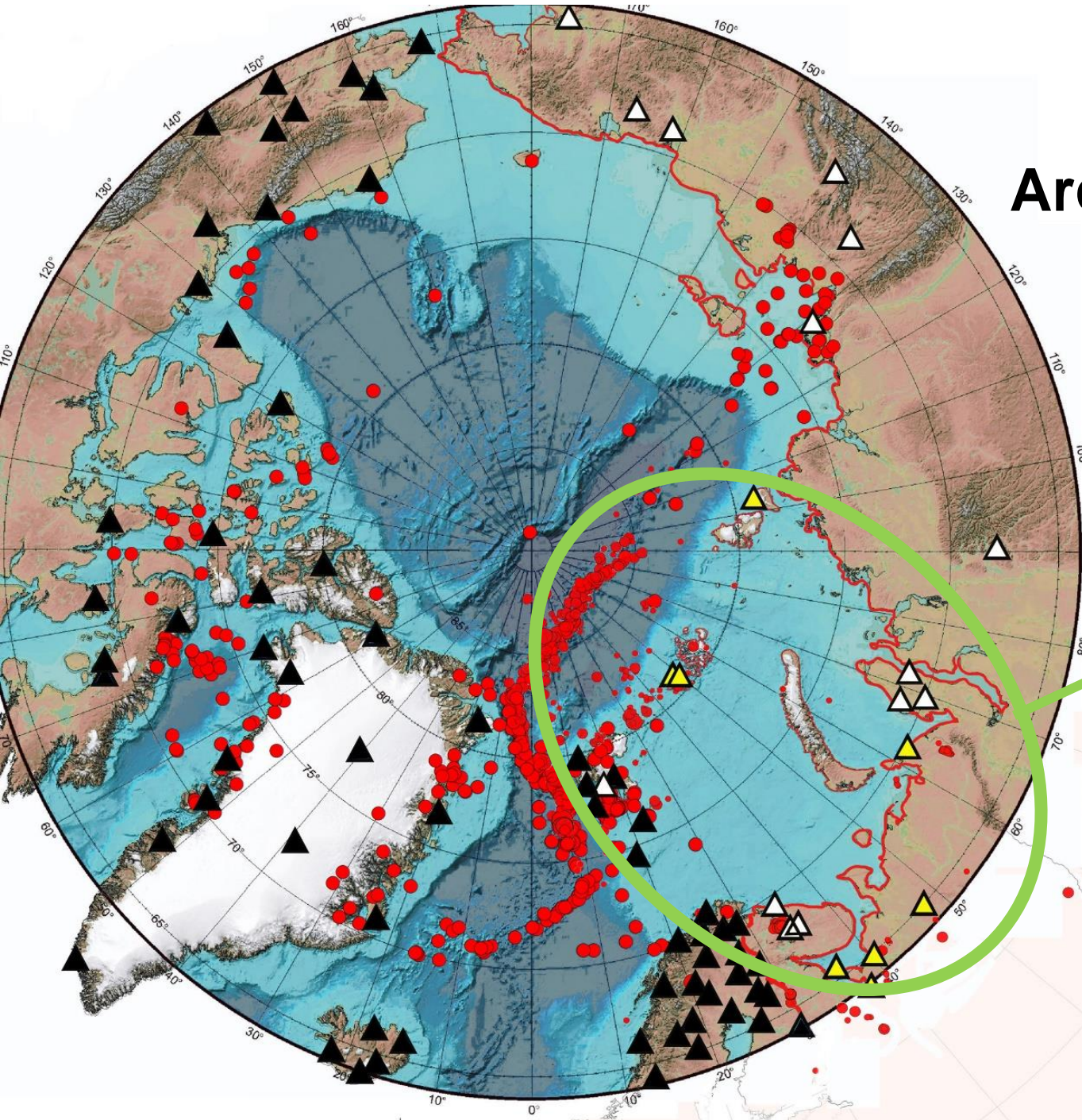
Recent seismicity of the Barents-Kara region

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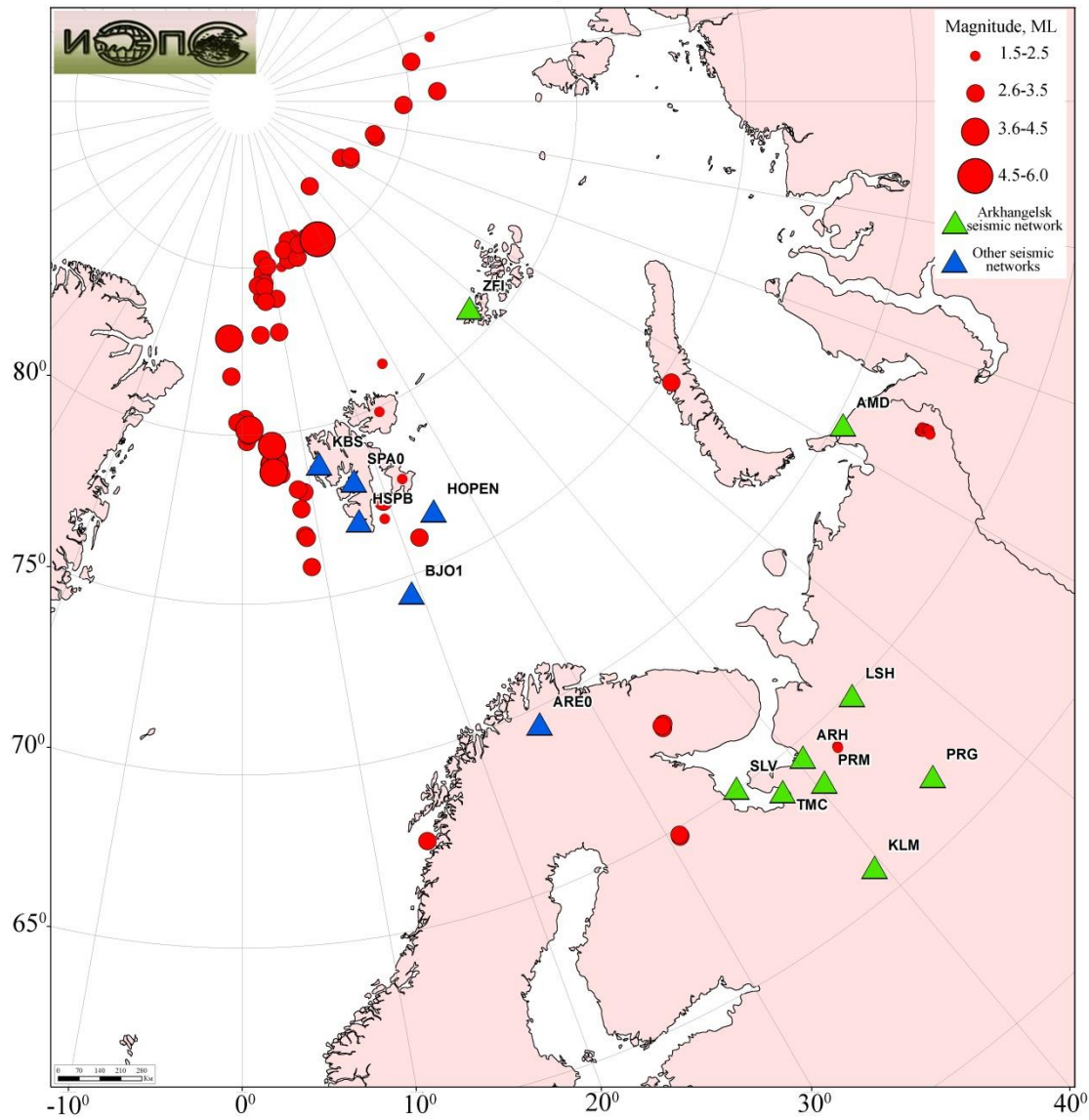
Arctic Seismicity (2013)



Study region

Triangles are permanent seismic stations: black ones are other countries', white ones are the Russian's, yellow ones belong to the Arkhangelsk seismic network

March, 2014

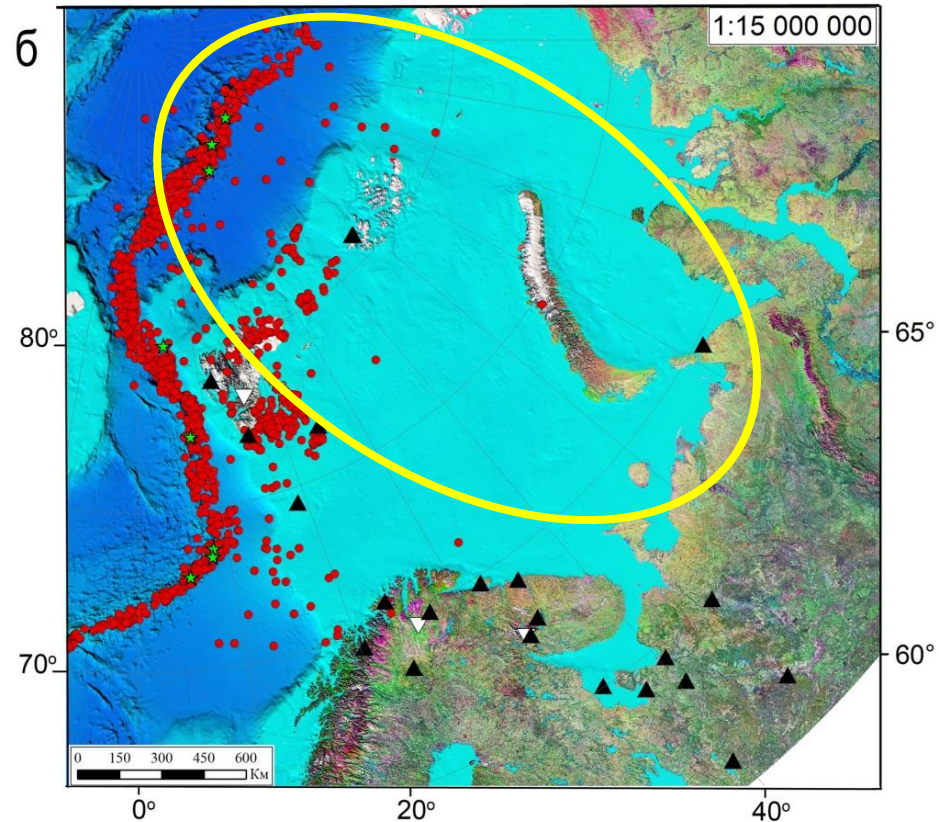
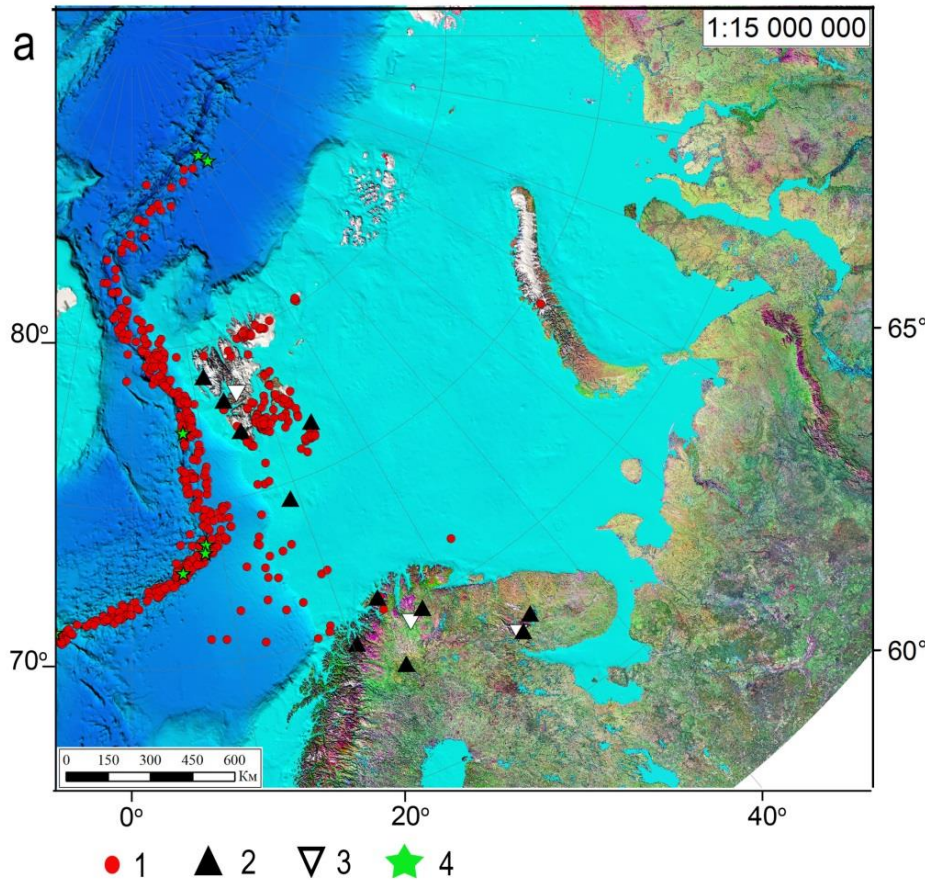


<http://fciarctic.ru/index.php?page=geoss>

The role of the Arkhangelsk seismic network in seismic monitoring of Arctic region

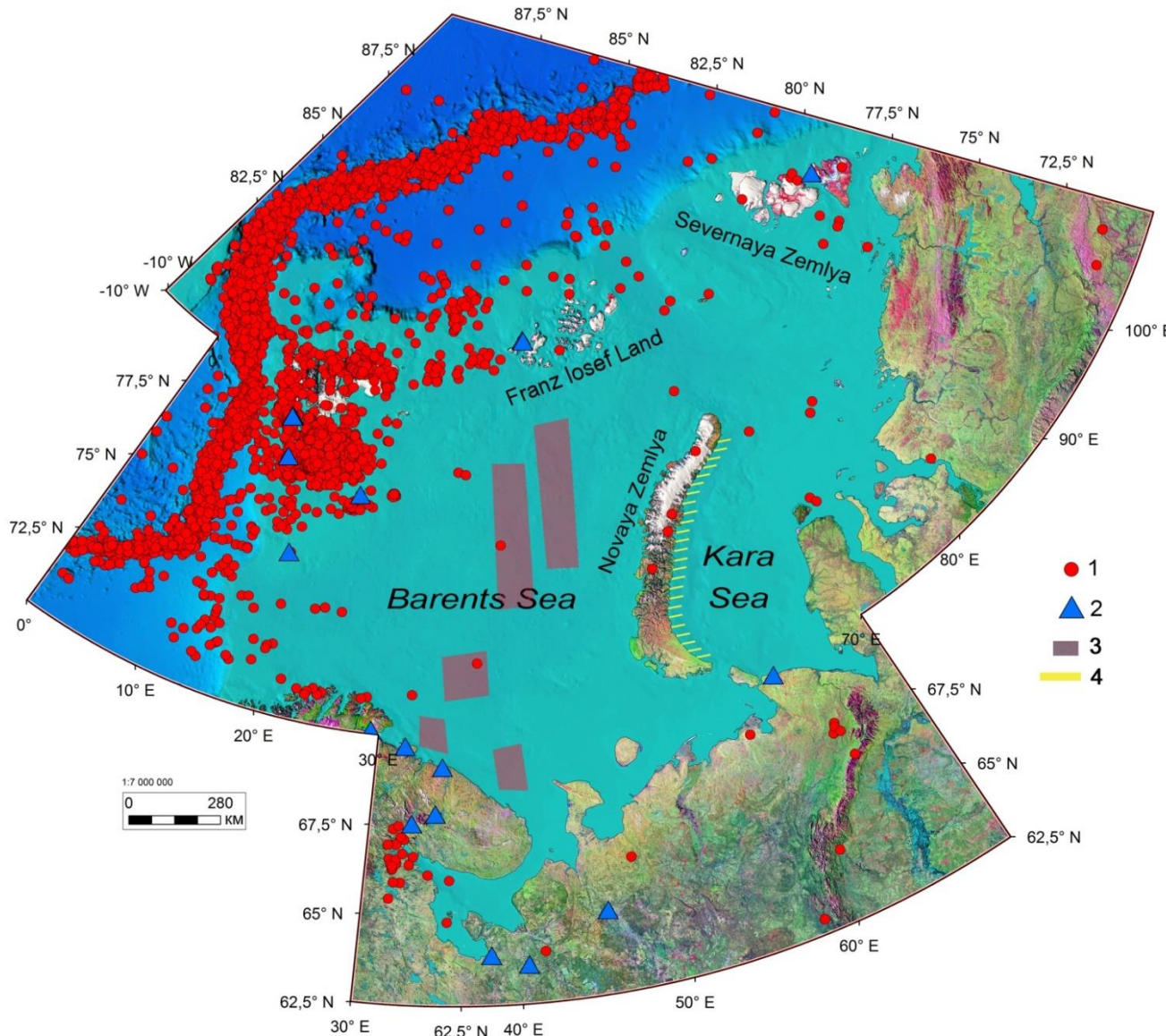
NORSAR, Norway

Cooperation of the Barents-Kara region networks, including the Arkhangelsk network



Earthquake epicenters 2012-2015

Seismic Map of the Barents-Kara region and adjacent waters according to Generalized catalogue 2010 - February 2019

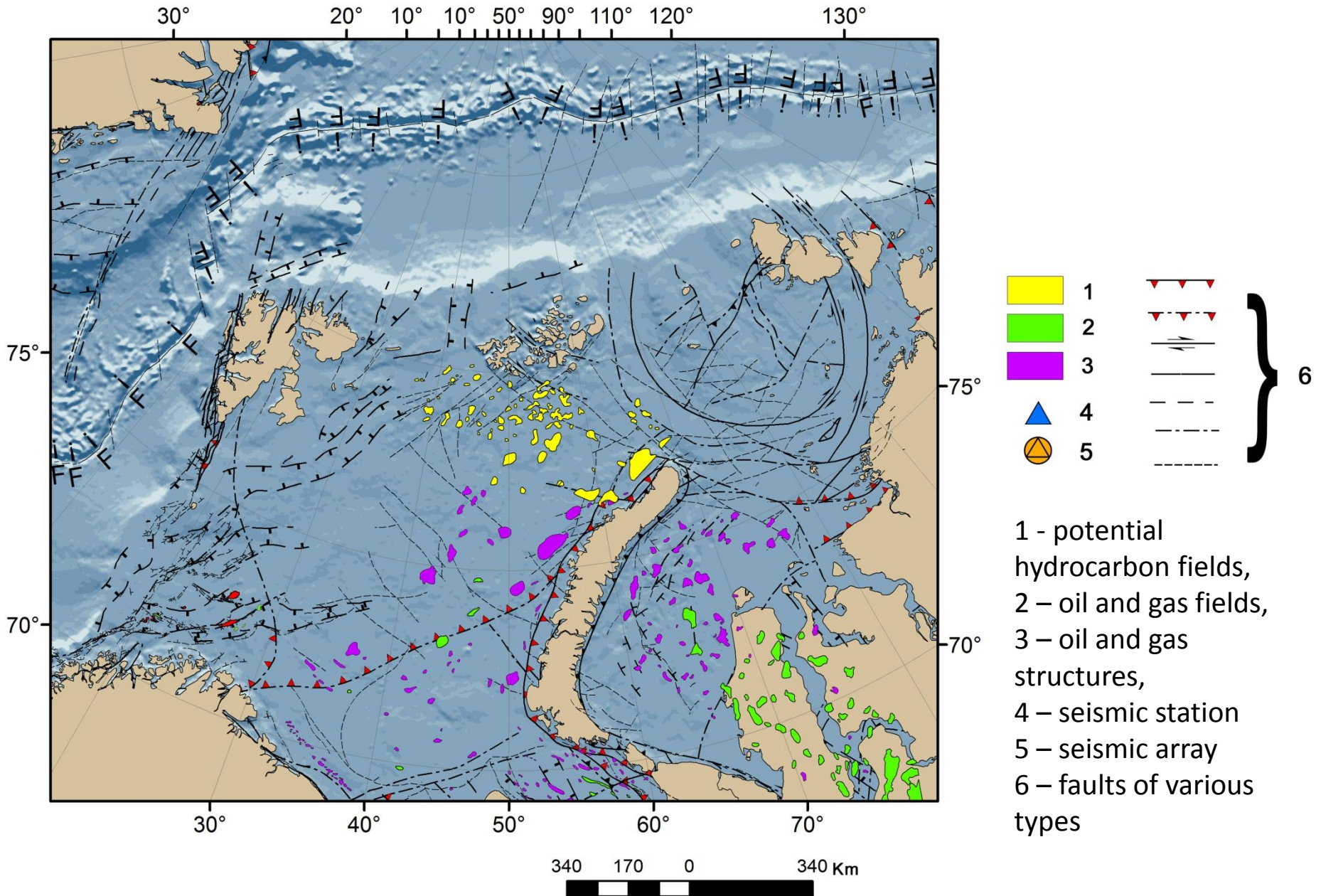


1 – earthquakes,
2 – seismic stations of
different networks

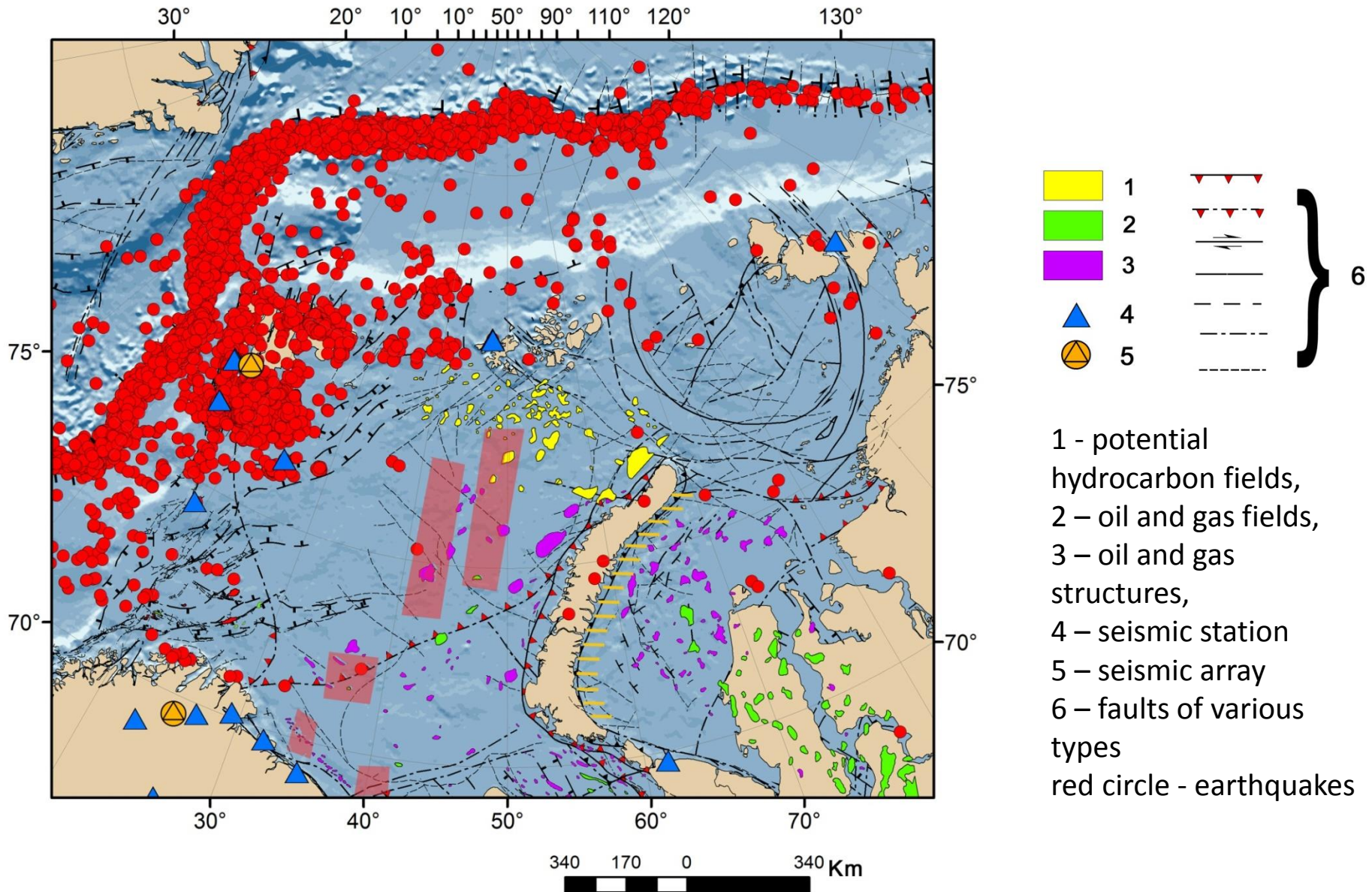
Radioactive waste
disposal areas:
3 – liquid and
4 – solid

The information of radioactive waste disposal areas was taken from Atlas Ministry of Emergency Situations (2011)

Tectonic Map of the Barents-Kara region



Tectonic Map and Seismicity of the Barents-Kara region



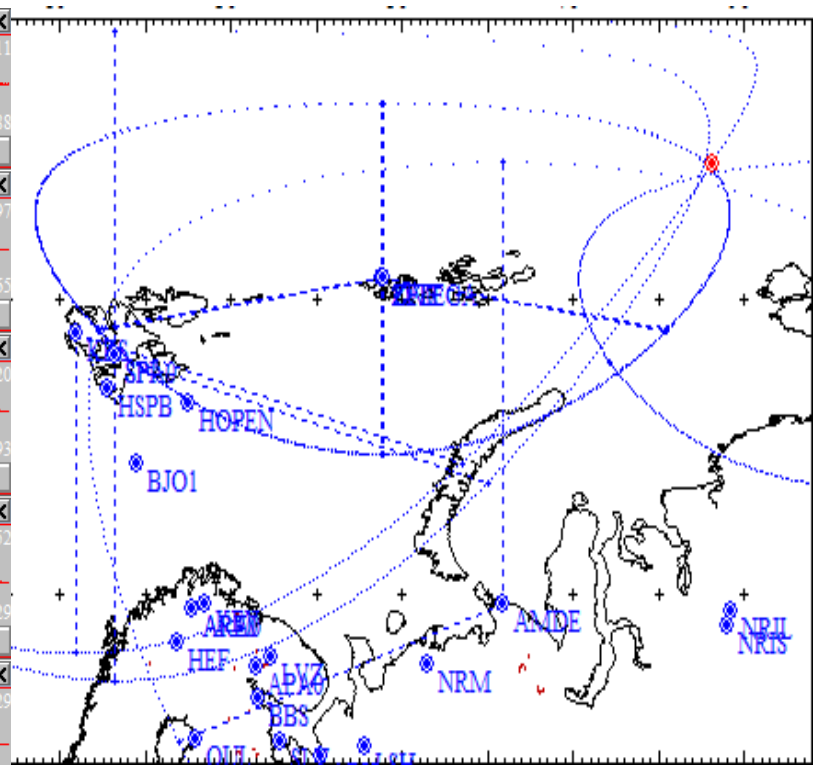
The information of radioactive waste disposal areas was taken from Atlas Ministry of Emergency Situations (2011)

Results seismic monitoring of the Barents-Kara region taking into account the opening of a new seismic station



Years	Number of earthquakes in the Barents-Kara region according to the Arkhangelsk seismic network	
	without station SVZ	including work stations SVZ
2017	281	340
2018	215	314

The result of the Arctic earthquake joint processing



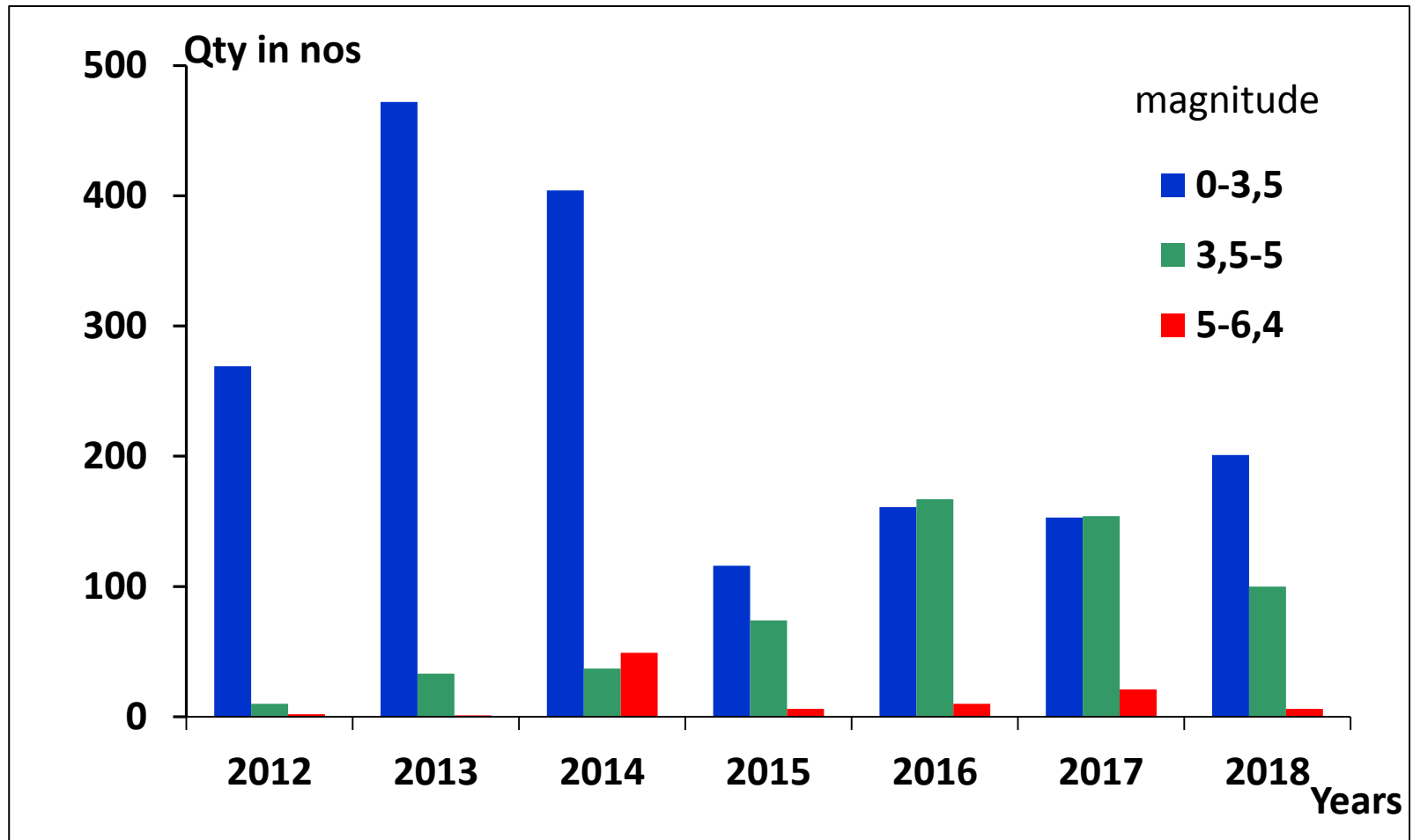
23.12.2017, $t_0=22:13:05$

$\varphi=84.98^\circ\text{N}$, $\lambda=88.47^\circ\text{E}$

ML=5.2

Region: **GAKKEL RIDGE**

Distribution of earthquakes number by magnitude for 2012-2018



Conclusions:

The low magnitude seismic activity in the Barents-Kara region is poorly known, but can be significantly improved by establishing the appropriate seismic networks.

We have revealed the correspondence of seismicity to both the most geodynamically active structures and zones of concentrated tectonic stresses.

Earthquakes were recorded in the areas of hydrocarbon structures and radioactive waste disposal areas. So, the future seismic investigation will be important for establishing the level of earthquake hazard in this environmentally sensitive region, in particular when considering possible future exploration activities for oil and gas.

The cooperation among seismic networks to contribute to a significantly improved mapping of the seismicity in the Barents-Kara region and to achieving a more accurate baseline for background seismicity in the region.



Thank you for attention!