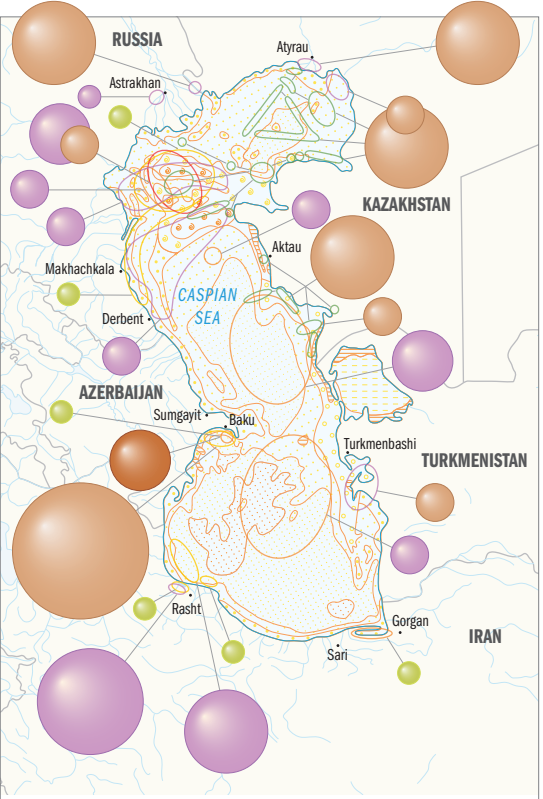


Sediment fraction

- Undivided sand
- Large silt
- Fine silt
- Clay silt
- Coquina
- Coquina with sand
- Ooids
- Salt
- Pre-Holocene deposits and outcrops of bedrock

0 100 km

Sampling areas and years in sediments

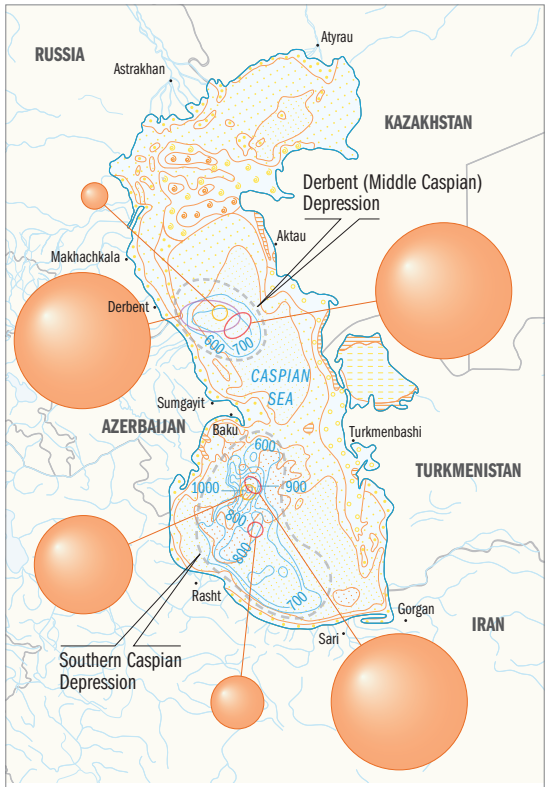
- 2012
- 2013
- 2014
- 2015
- 2016

Petroleum hydrocarbon concentration in ppm

- 16 014
- 1 585
- 100 - 1000
- 50 - 100
- 7 - 50
- < 1

- Total petroleum hydrocarbons
- Petroleum hydrocarbons
- Aliphatic hydrocarbon
- Polycyclic Aromatic Hydrocarbons

Sources: Araghi, 2015; Brekhovskikh et al., 2017; Ibadov et al., 2015; Karygina et al., 2016; Nemirovskaya, 2016; Nemirovskaya et al., 2017 and 2018; Ostrovskaya, 2016; Sadykhova, 2014; Shirneshan et al., 2017; Sokurova, 2016; Tulemisova, 2016; Varnosfaderany et al., 2015; Yancheshmeh et al., 2017; Zamani et al., 2015; National Atlas of Russia, 2007; SoE-Kazakhstan, 2017; SoE-Seaport Aktau, 2017.



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Sampling areas and years in deep waters

- 2012
- 2013
- 2015

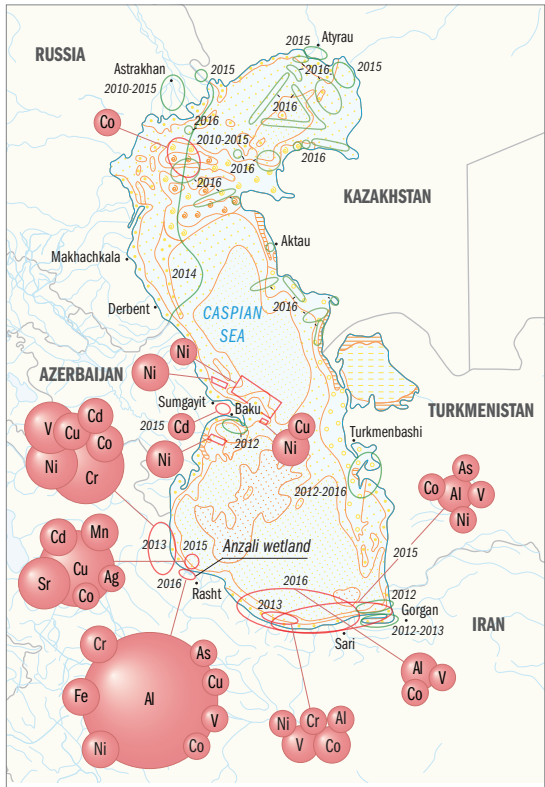
Degree of increase in the concentration of hydrogen sulfide by the NOAA-SQuiRTs indicator

- 160 000 times higher
- 120 000
- 85 000
- 60 000

0 100 km

Sources: Ambrosimov et al., 2016; Buchman, 2008; Dushkova et al., 2014; Ivanov et al., 2013; Klyuvitkin et al., 2015; National Atlas of Russia, 2007.

Maps by Manana Kurtubadze, GRID-Arendal, April 2018.



Sediment fraction

- Undivided sand
- Large silt
- Fine silt
- Clay silt
- Coquina
- Coquina with sand
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- Salt
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Sampling areas in sediments

- Toxic results
- Non-toxic results
- Oil fields, samples of 2013
- 2015 Sampling year

Degree of increase in the concentration of heavy metals by the NOAA-SQuiRTs indicators

- 26 times higher
- 8
- 5
- 3
- 2

Used ERL for marine and TEL for freshwater sediments

0 100 km

Sources: Bastami et al., 2014, 2015 and 2017; Brekhovskikh et al., 2017; Buchman, 2008; Guliyev et al., 2014; Jamshidi et al., 2016 and 2017; Khalilova et al., 2016; Makhlun, 2017; Pakzad et al., 2016; Salahova et al., 2015; Sokurova, 2016; Tulemisova et al., 2016; Vosoogh et al., 2017; Zaferani et al., 2015; National Atlas of Russia, 2007; SoE-Kazakhstan, 2017; SoE-Seaport Aktau, 2017.