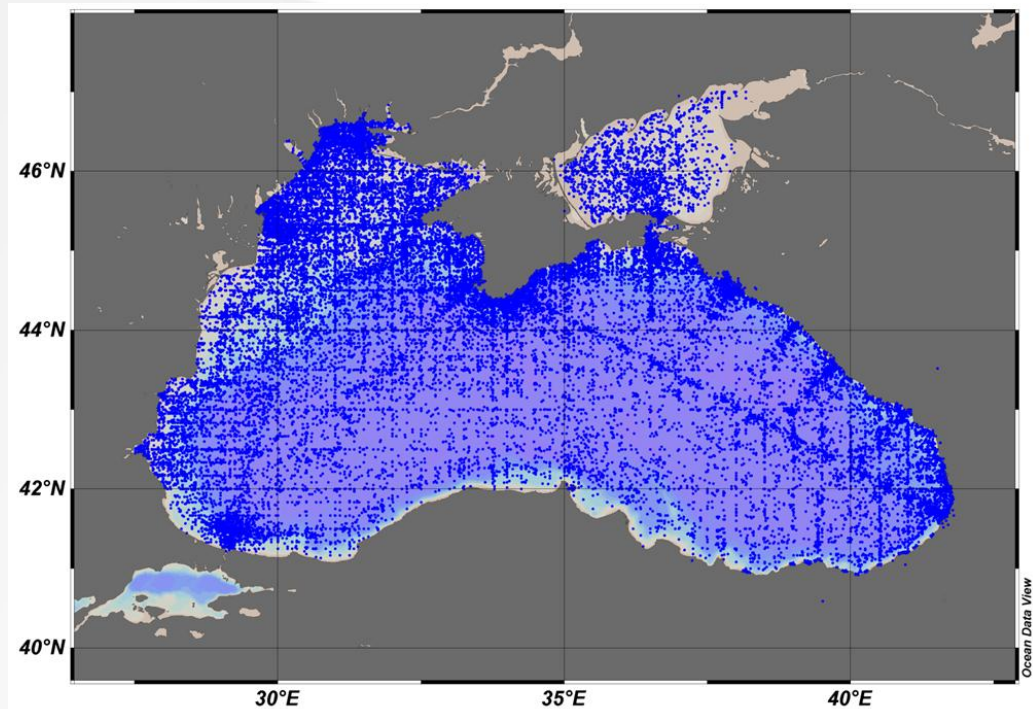PAN-EUROPEAN INFRASTRUCTURE
FOR OCEAN & MARINE DATA
MANAGEMENT

Report on the Black Sea V1.1 Historical Data Collection

Volodymyr Myroshychenko and Devrim Tezcan
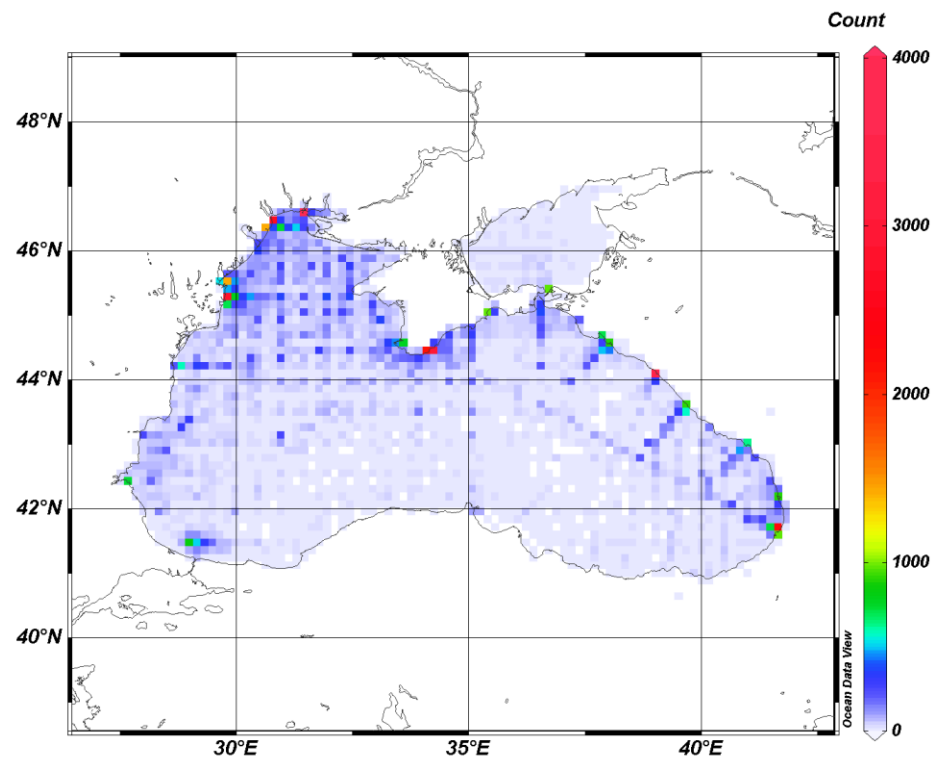
General Statistics

- 2353 cruises

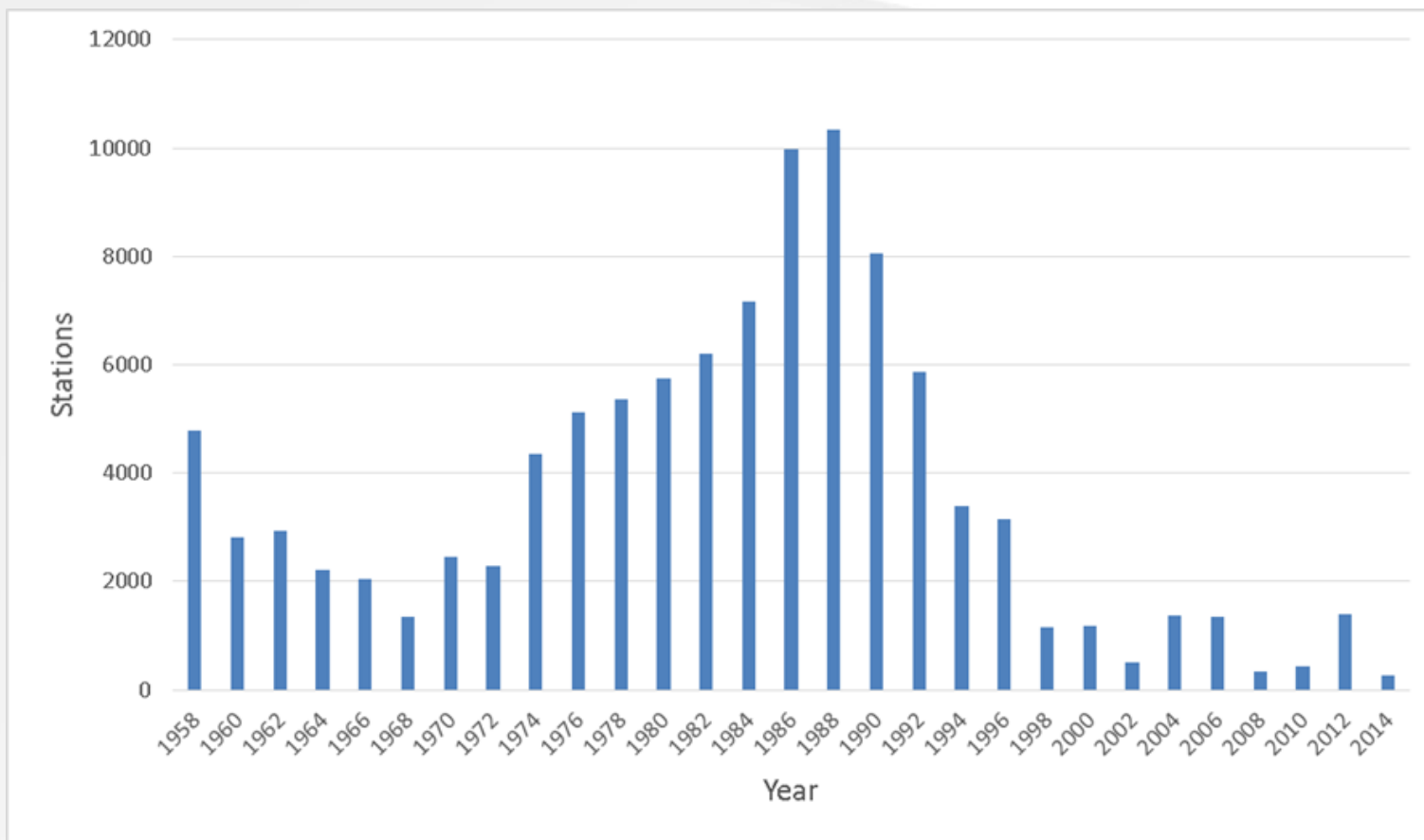- 125565 stations

- 3815118 samples
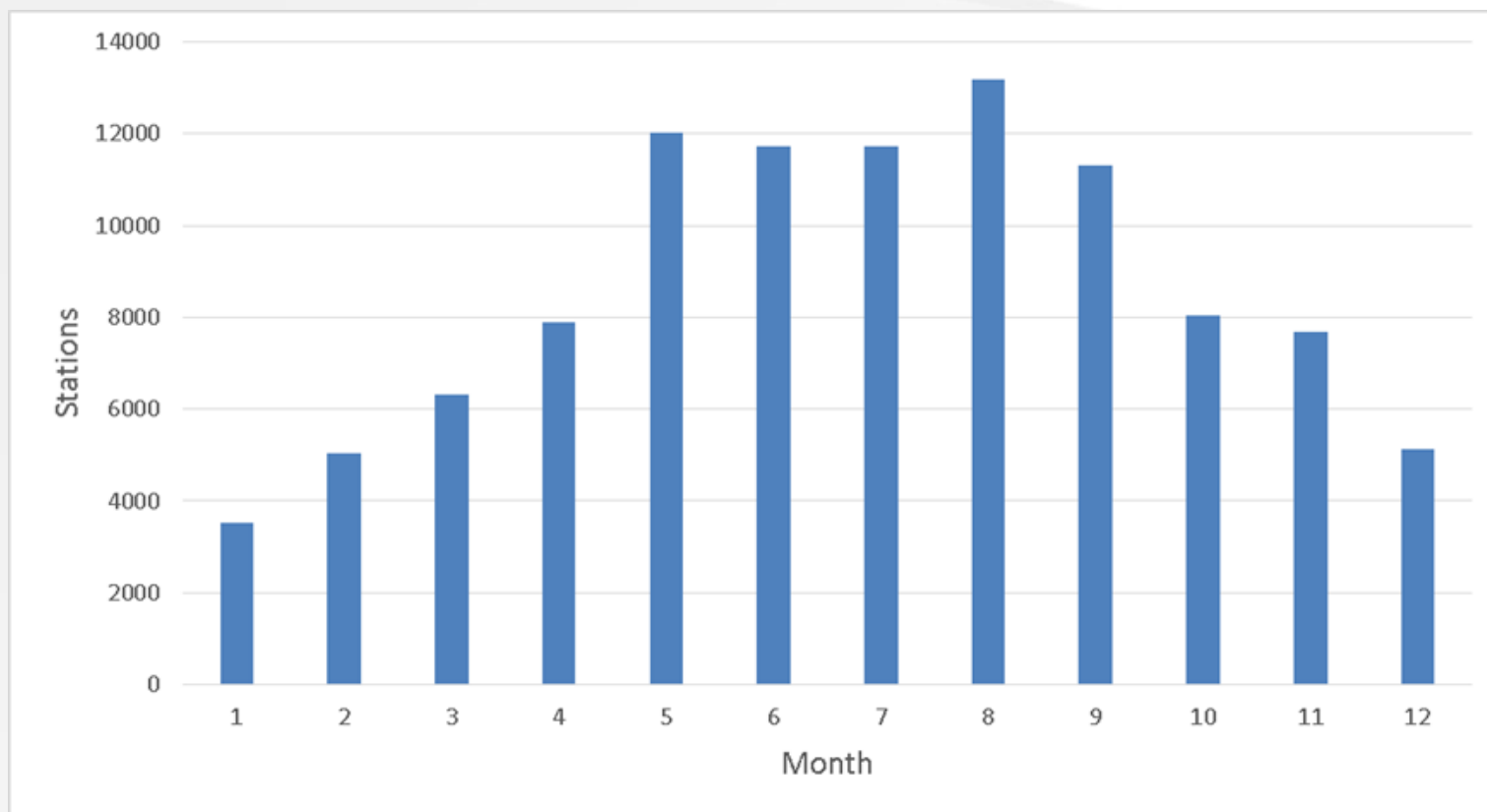
- Period: 1868-2013

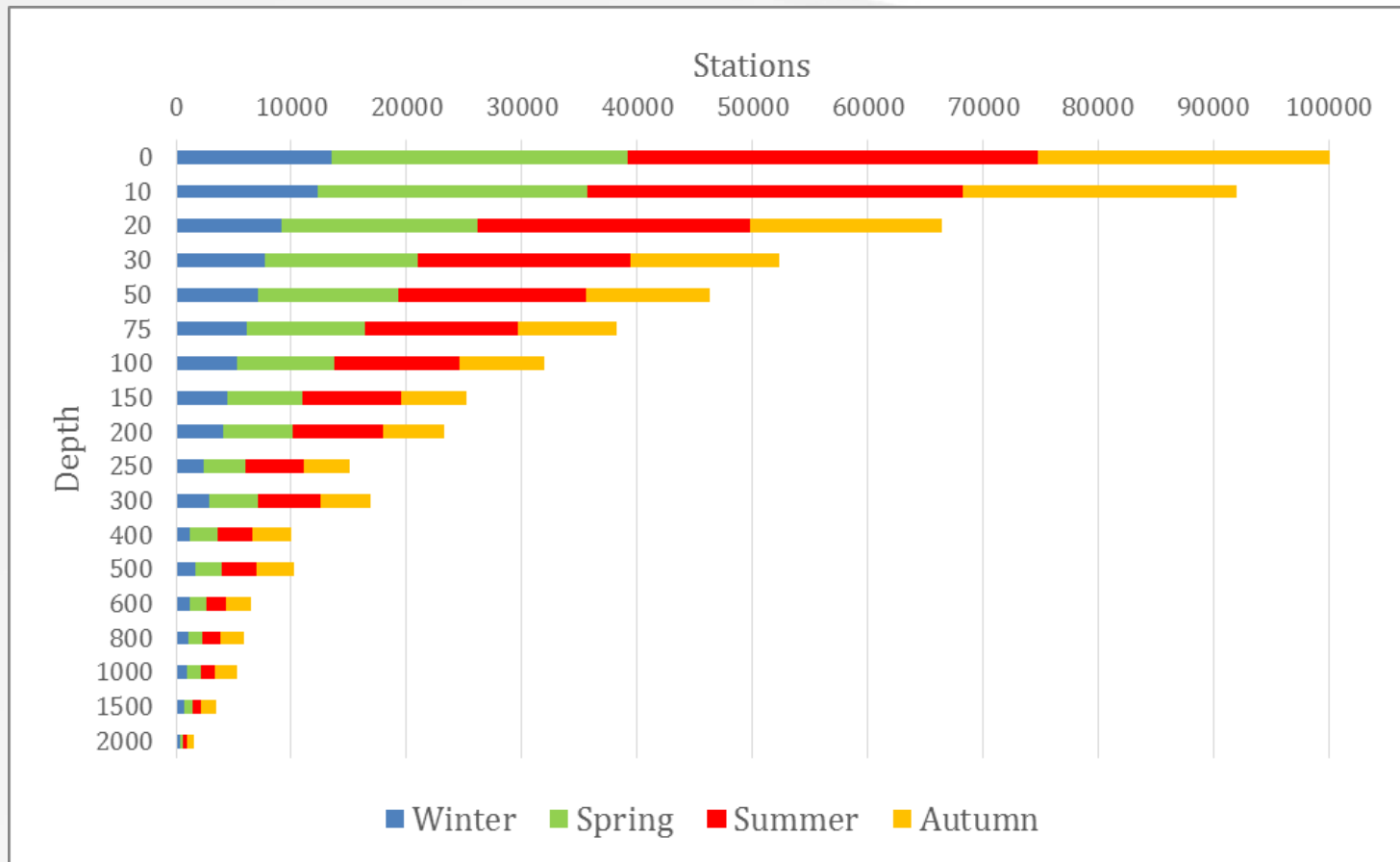After excluding Sea of Marmara

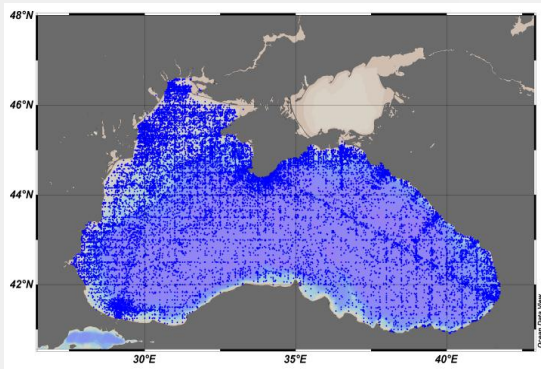# Spatial data distribution

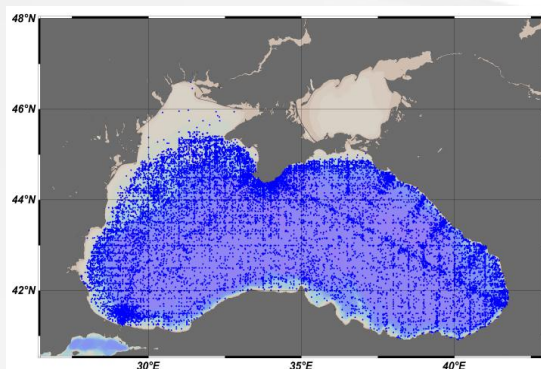# Data distribution by Years

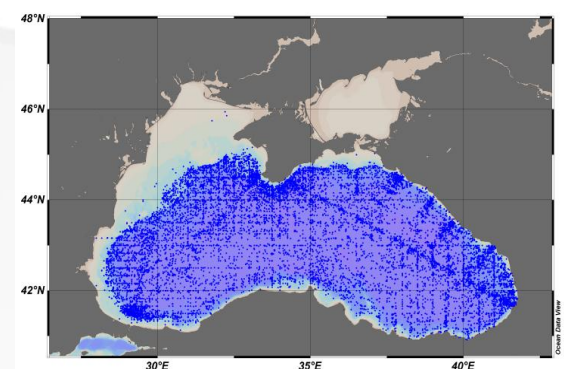# *Data distribution by Seasons*

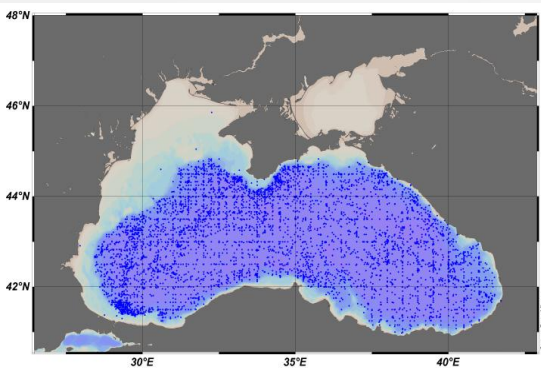# Data distribution along IODE standard levels
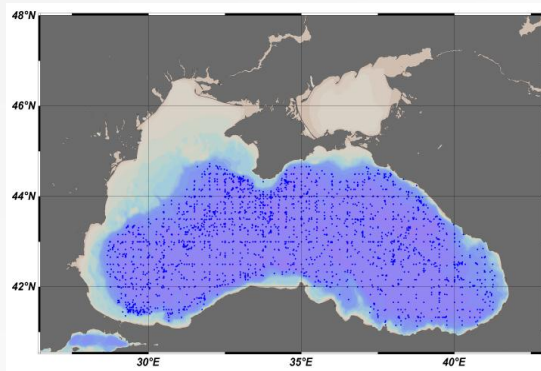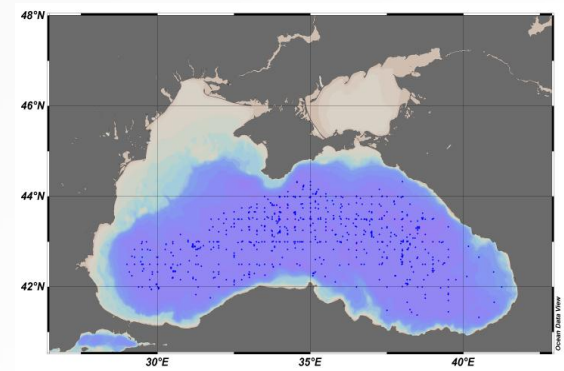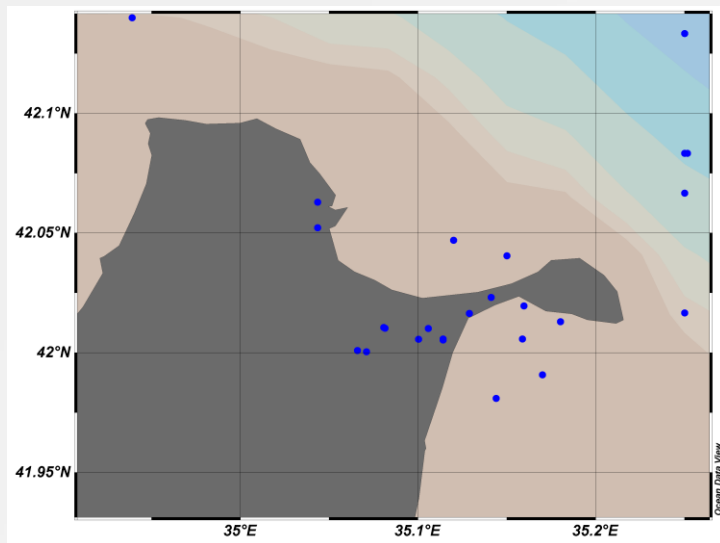
Data availability vs depth

20m

50m

100m

500m

1000m

2000m

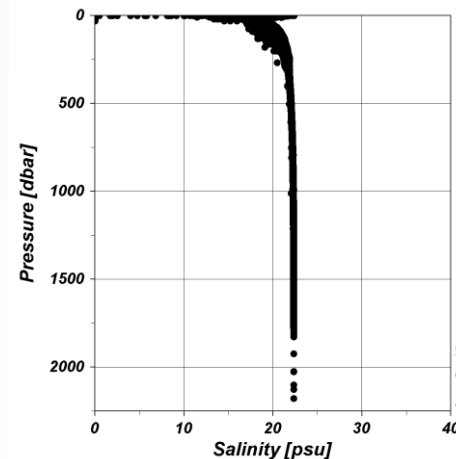**Stations on land**

Data to correct

Outliers flagged as "good"
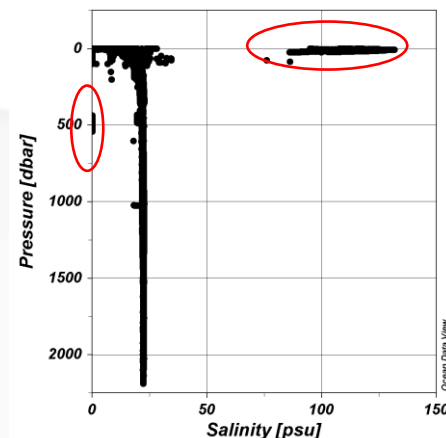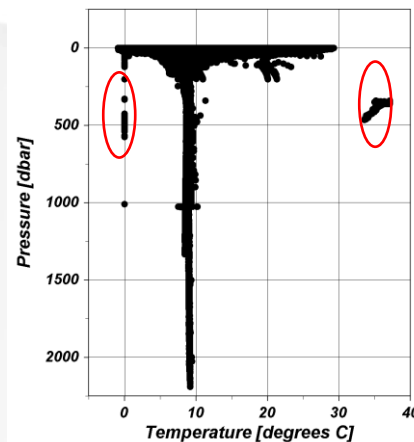
Non QC-ed data
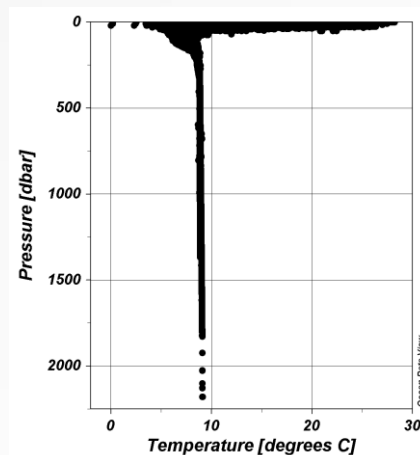
Stations on land

QC assessment results

- Stations on land: 2506
- Stations without data: 1474
- Stations with Bottom Depth < 0: 6. No action was applied - for attention of providers.
- Stations with profile depth > Bottom Depth: 18314
- Stations with missing time: 2362.
- Range checks:
  - Depth < 0: found at 26 stations.
  - Temperature < 0 and QF<>4: 45
  - Temperature > 30 and QF<>4: 209.
  - Salinity < 0 and QF<>4: 104.
  - Salinity S > 39 and QF<>4: 286.
  - Salinity > 23 out of Bosporus area :286.
  - Temperature < 6 at depth > 200: 131.
  - Temperature > 10 at depth > 200: 256.
- Duplicates: 19064 duplicate groups were identified with the help of ODV. 17503 already confirmed

Conclusions

- After excluding duplicates the number of stations decreased on 16%. Since duplicates are related mostly to historical bottle data, the decrease in samples is much less - ~ 4%

- Approximately 5% of data are not QC-ed, but unfortunately some QC-ed data appeared to be wrong, therefore the whole dataset needs to be re-analyzed

- Availability of data drastically decreases with depth

- Considering data availability following products are planned:
  - seasonal climatic maps of Temperature and Salinity for depth levels 0, 10, 20, 30, 50, 75, 100, 150, 200, 250 m
  - annual maps for depth levels 300,400, 500, 600, 800, 1000, 1200, 1500, 2000 m

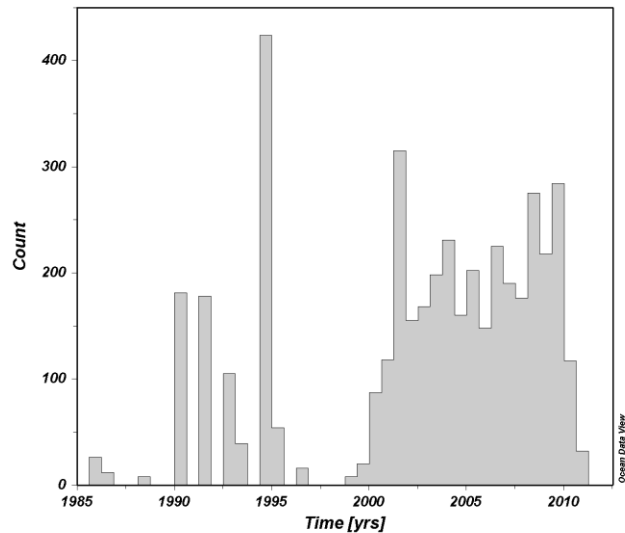# *Black Sea aggregated T-S dataset - restricted data*

General statistics

- **261 cruises**
- **4370 stations (4.1% to total)**
- **168980 samples (4.5% to total)**
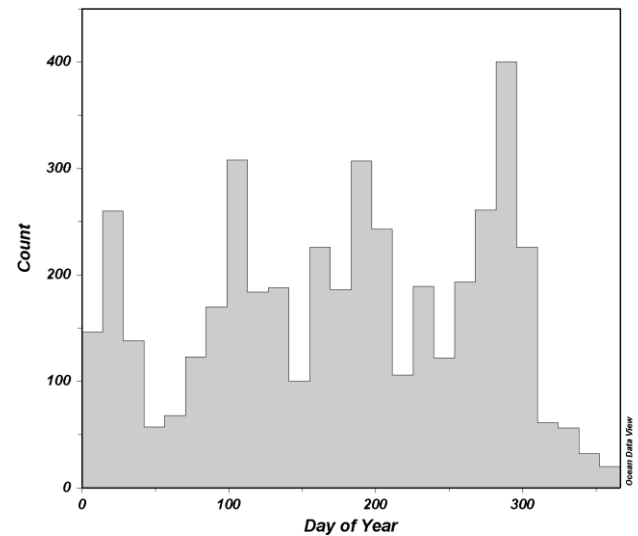- **Period: 1985-2010**
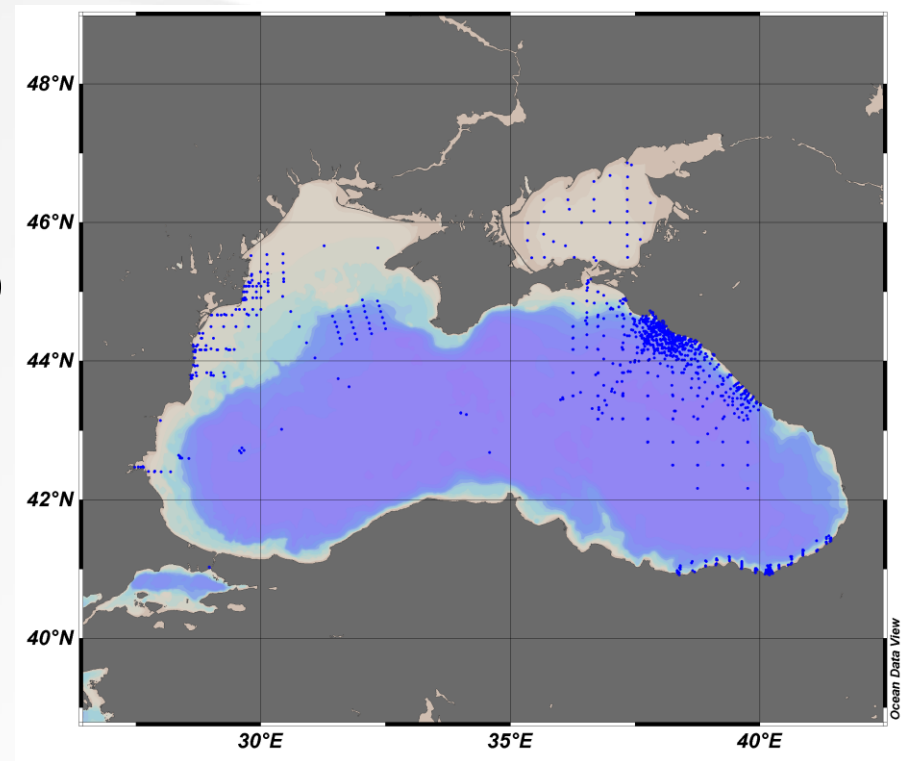
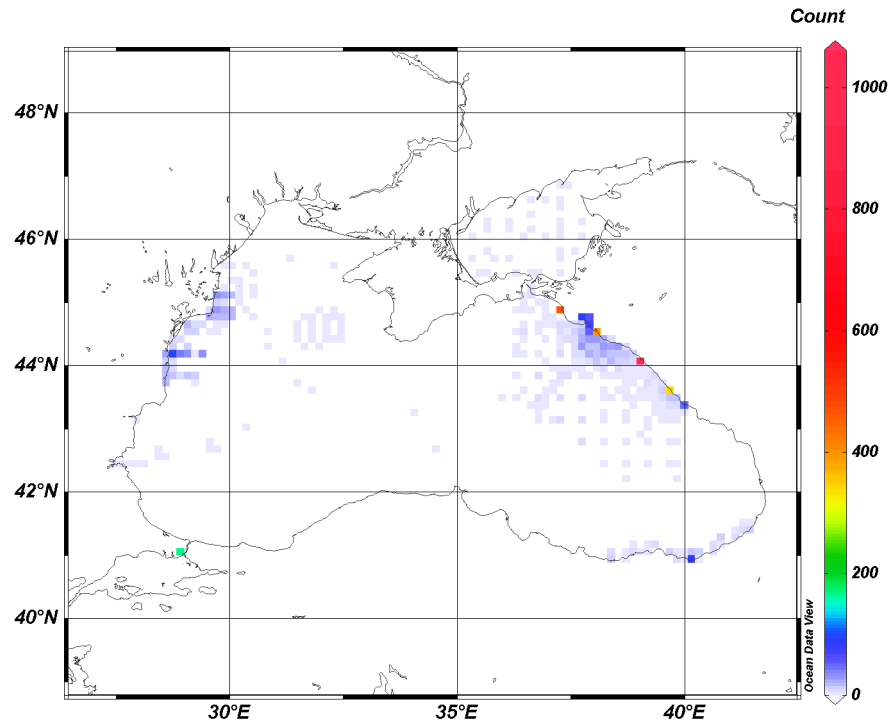* After excluding data from Bosporus
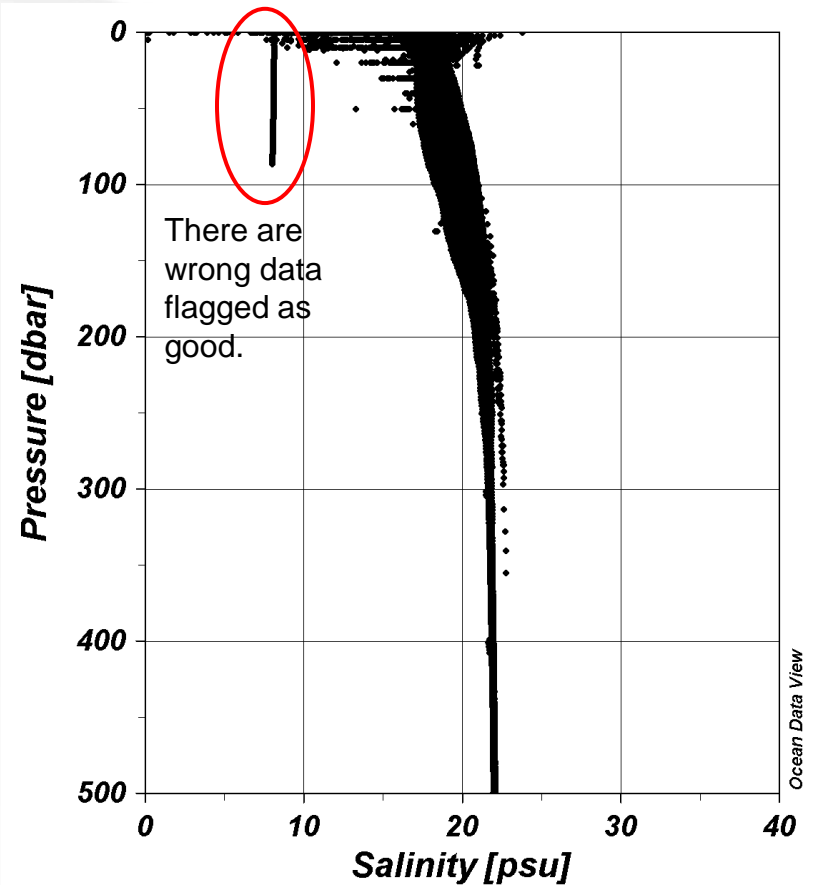
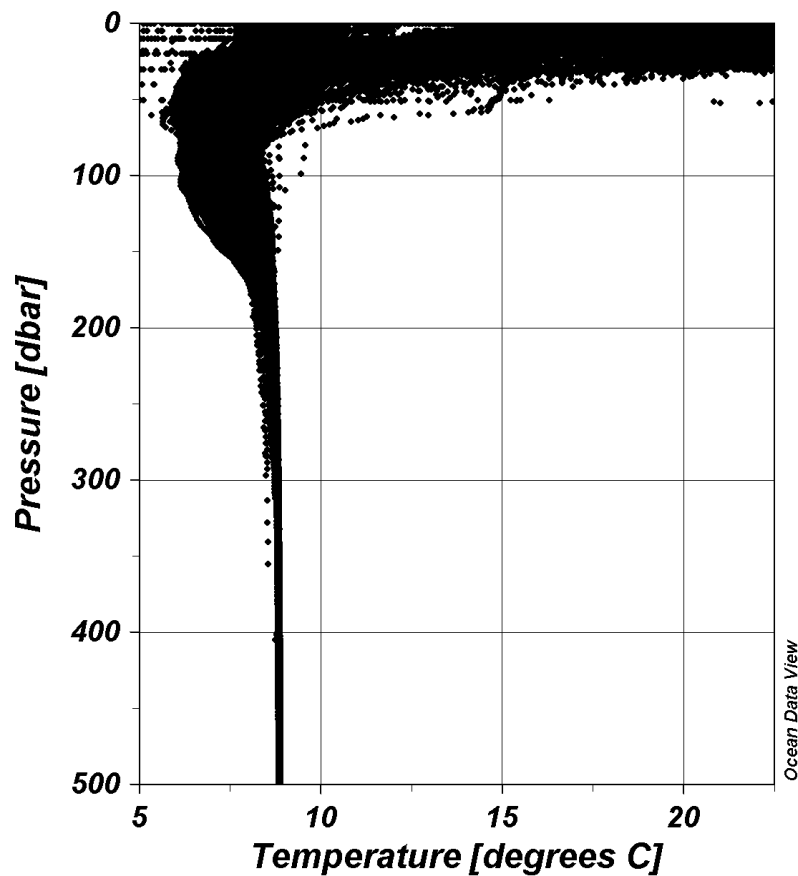# *Restricted Data distribution*

Data distribution by Years

Data distribution by Season

Spatial data distribution

Scatter plots

There are wrong data flagged as good.

Summary

- Stations on land: 3

- Stations without data: 1287

- 25% of data are not QC-ed

- Almost all data are within ranges

- Duplicates: 1165 in initial dataset, only 12 after deleting stations without data

After deleting stations without data and eliminating duplicates the contribution of restricted data to total will be ~4%.

Improvements during SDN Project

V1 ➡️ **V1.1**

Black Sea Stations distribution