Argo National Data Management Report – Norway 2021

Institute of Marine Research (IMR), Norway

1. Status

- **Data acquired from floats**

Presently there are **38 operative Norwegian floats,** all in the Nordic Seas/Barents Sea. In 2021, **4158 profiles** were acquired (DM: 2015; DM-pending: 771). The left figure below shows the latest Argo locations while right figure shows the number of deployments in the Nordic Seas/Barents Sea/Arctic Ocean (north of Svalbard). Argo Norway deployed 14 floats in 2021.

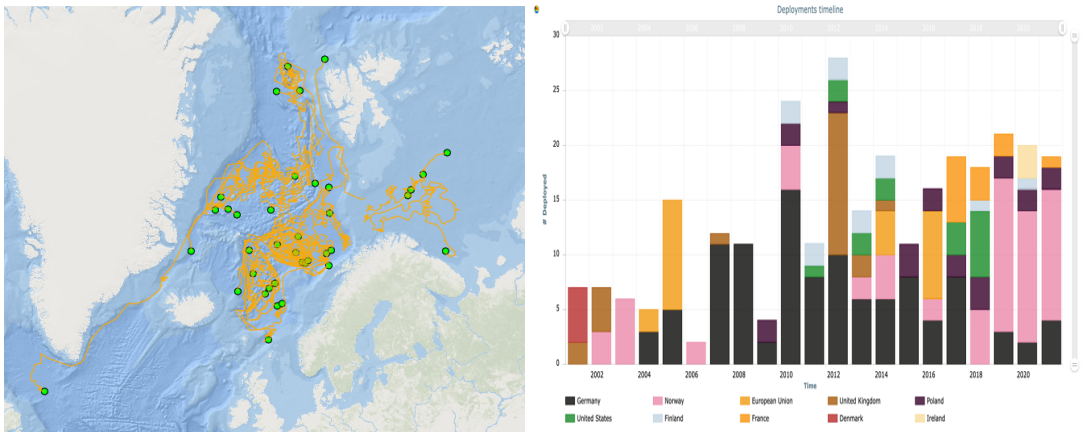


Figure 1*. Left: Last registered position of the active floats in Argo Norway. Right: Number of deployed floats in the Nordic Seas and Barents Sea for each year country.*

Data from all operational floats are available from the GDACs. Since 2002 Norway has in total deployed 70 Argo floats.

<u>The 38 operative floats consist of:</u>

- 4 BGC floats (all 6 variables)
- 10 Bio floats (1-4 BGC variables: DO, chla, bbp, irradiance)
- 7 Deep floats with DO.
- 17 core floats

- **Data issued to GTS**

All Norwegian floats are processed in real-time by Coriolis and delivered to GTS.

- **Data issued to GDACs after real-time QC**

All profiles from Norwegian floats are processed in real-time by Coriolis and exchanged with GDACs.

- **Data issued for delayed QC**

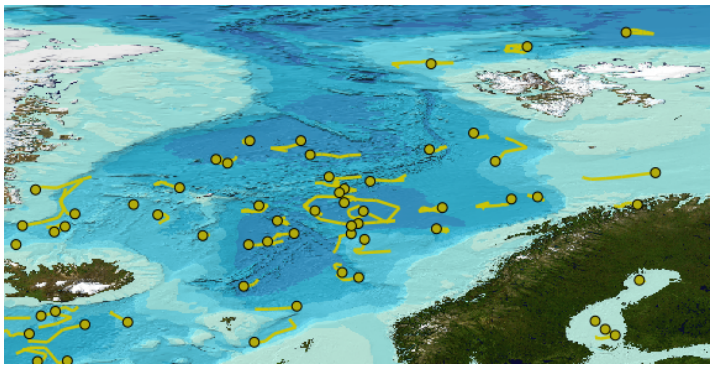
At present (6.12.2021) the Norwegian Argo fleet comprises 70 floats. According to Argo Information Center the floats have so far sampled 8217 profiles with 5966 DM-profiles and 879 DM-pending profiles. In 2021 (1. Jan - 6. Dec), **4158 profiles** were acquired (DM: 2015; DM-pending: 771).

- **Delayed data sent to GDACs**

BSH (Germany) has done the Quality Control of core data from Norwegian floats deployed in 2018 and earlier, and the D-files are submitted to Coriolis with a short summary and diagnosis figures. Norway do now DMQC of floats deployed in 2019 and later. Norway do also DMQC of BGC-floats.

- **Web pages**

A web page for NorArgo (https://norargo.hi.no) has been developed that IMR updates. The web page has a link to daily updates of all operational Argo floats in the Nordic Seas and Arctic Ocean (see figure) and profiles can be visualized.



- **Statistics of Argo data**

IMR uses the data as part of the monitoring program for the marine environment in Norwegian waters. The NERSC routinely assimilates the data into their TOPAZ4 model and assimilation system for operational monitoring and forecast of the ocean climate. The data are used in many research projects and in master and Dr. thesis.

We perfomed a user survey in Norway, and some of the results are shown in the table.

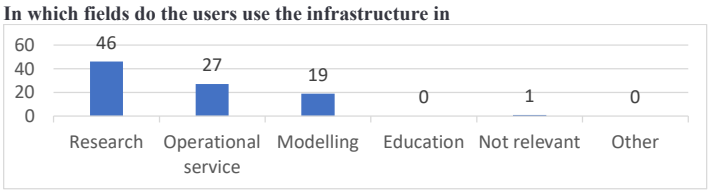


Table 3. Number of users for different fields (several choices can be ticked).

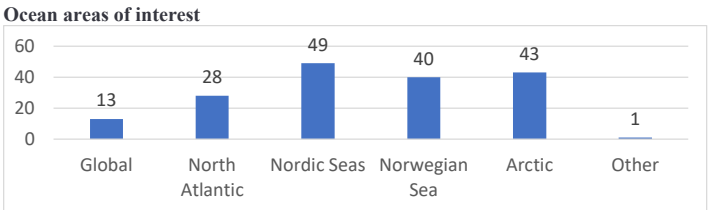


Table 4. Number of users in which the infrastructure are used for in different ocean areas (several choices can be ticked).

- **Products generated from Argo data …**

The ocean heat and fresh water contents of the Norwegian Sea are regularly updated.

2. Delayed Mode QC

BSH has adopted older floats from Norway for DMQC (see report for Germany). Norway do now DMQC of 40 floats deployed in 2019-2021.

There are **3405 profiles for these 40 floats with 1301 DM and 840 DM-pending.** Most of the floats have been QC.

BGC-variables:
DMQC has been performed on the oxygen (NORCE) for 16 Argo floats (in total 1182 profiles), on the pH (NORCE) for one float (125 profile) and on nitrate (IMR) for 4 BGC-floats (398 profiles). We plan to do DMQC on the other BGC-variables (IMR) in near future.

3. GDAC Functions

4. Regional Centre Functions

5. References