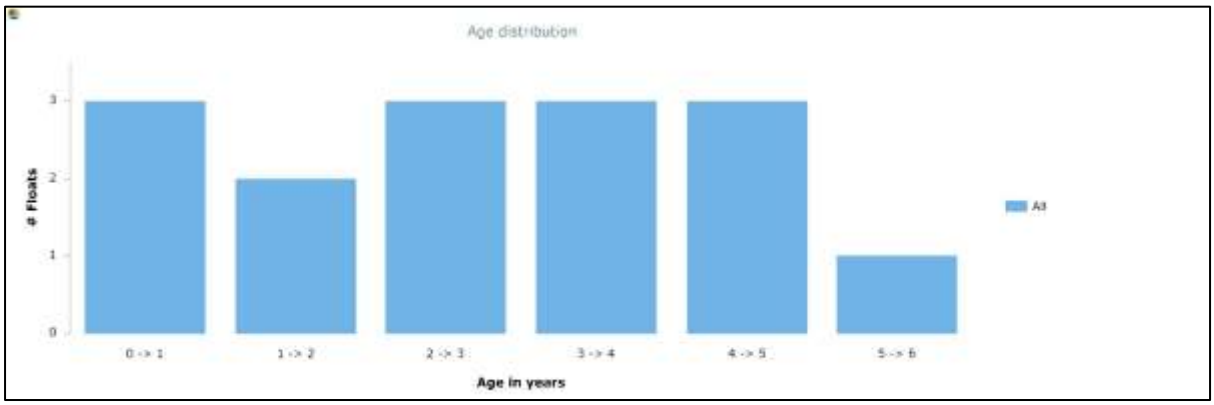
Argo National Report 2020: Ireland

1) The status of implementation (major achievements and any issues in 2020):

a) Irish Argo float Overview

In 2020, Ireland deployed a total of three Argo floats. The floats were all core T&S Arvor floats.

The Marine Institute deployed the most northerly float of its fleet in 2020. On the 5th of September 2020 float 6901937 was deployed at Lat: 74.998, Lon: -11.0933. This float was deployed by the Marine Institute research vessel RV Celtic Explorer during a month long cruise in the Greenland and Norwegian Seas. A further two floats, 6901934 and 6901035 were also deployed during the CIAAN cruise.



Above: *Age distribution of Irelands Argo Fleet.*

2020 saw the Irish fleet increase to 16 floats which is an all-time high number of profiling floats within the Irish Argo fleet. The planned deployment of a three further floats in 2021 will add considerably to the amount of data being received as well as to the research capabilities within the Irish Argo fleet. Some of the older floats in the fleet are now coming to the end of their life cycles and it is expected a number of these floats will stop transmitting in 2021.

There remains an ongoing data processing issue with regards to the data from float 6901933 which was deployed on the 28/05/2019. Work is ongoing to resolve the issue

Marine Institute Argo Float Overview (2020)					
Operational Floats (2020)					
Float	WMO #	Float Identifier	Make/ Model	Deployed	Status
1	6901919	7244	TWR/APEX	22/04/2015	OPERATIONAL
2	6901921	7243	TWR/APEX	23/03/2016	OPERATIONAL
3	6901922	7242	TWR/APEX	14/04/2016	OPERATIONAL
4	6901923	7241	TWR/APEX	09/04/2016	OPERATIONAL
5	6901924	7240	TWR/APEX	10/02/2017	OPERATIONAL
6	6901925	7841	TWR/APEX	11/02/2017	OPERATIONAL
7	6901926	7842	TWR/APEX	20/05/2017	OPERATIONAL

8	6901928	7844	TWR/APEX	12/02/2018	OPERATIONAL
9	6901929	AI2600-17EU001	NKE/ARVOR	12/02/2018	OPERATIONAL
10	6901930	AI2600-17EU002	NKE/ARVOR	27/03/2018	OPERATIONAL
11	6901931	AI2600-17EU003	NKE/ARVOR	06/12/2019	OPERATIONAL
12	6901932	AI2600-17EU004	NKE/ARVOR	29/05/2019	OPERATIONAL
13	6901933	AI2632-18EU038	NKE/ARVOR + (O2)	28/05/2019	OPERATIONAL*
14	6901934	AI2600-18EU030	NKE/ARVOR	31/08/2020	OPERATIONAL
15	6901935	AI2600-18EU032	NKE/ARVOR	10/09/2020	OPERATIONAL
16	6901937	AI2600-18EU031	NKE/ARVOR	05/09/2020	OPERATIONAL

b) Irish floats deployed in 2020 and their status.

	WMO #	Float Identifier	Make/ Model	Deployed	Status
14	6901934	AI2600-18EU030	NKE/ARVOR	31/08/2020	OPERATIONAL
15	6901935	AI2600-18EU032	NKE/ARVOR	10/09/2020	OPERATIONAL
16	6901937	AI2600-18EU031	NKE/ARVOR	05/09/2020	OPERATIONAL

c) Technical problems encountered and solved

There is an ongoing issue with processing the data being returned from Core&O2 float WMO# 6901933. The float is a core & O2 float. The float is operational and data is being received as normal. The Marine Institute has been in contact with our colleagues in BODC and have been informed of a difficulty in processing the data being returned from this float. The Marine Institute will continue working with its partners in BODC and indeed in the Euro-Argo ERIC to solve this issue.

d) Status of contributions to Argo data management (including status of conversion to V3 file formats, pressure corrections, etc.)

Carried out by BODC for the Marine Institute (Ireland).

e) Status of delayed mode quality control process

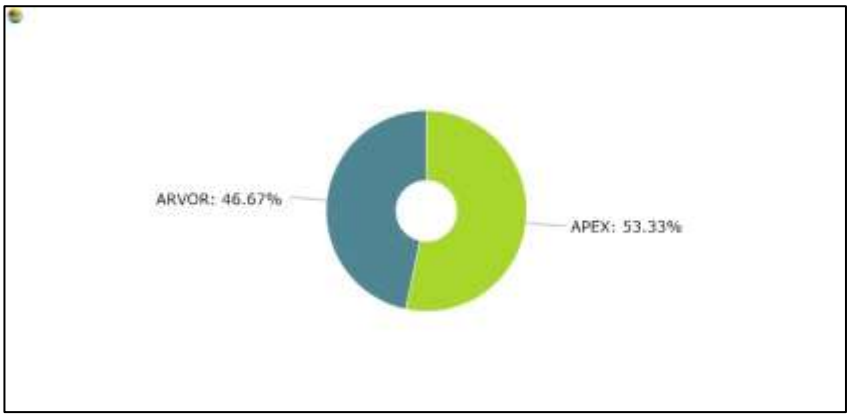
Carried out by BODC for the Marine Institute (Ireland).

2) Present level of, and future prospects for; national funding for Argo including a summary of the level of human resources devoted to Argo.

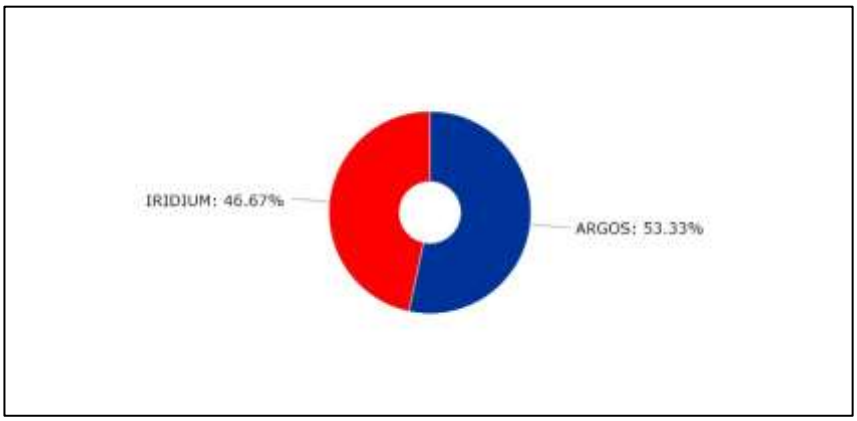
Ireland continues to be a committed member of the Euro-Argo ERIC and will comply with the minimum requirement of deploying 3 floats per annum. Ireland via the Marine Institute will deploy additional floats where funding allows and will also assist the ERIC in deploying project specific floats where appropriate.

3) Summary of deployment plans (level of commitment, areas of float Deployment, low or high resolution profiles, extra sensors, Deep Argo) and other commitments to Argo (data management) for the upcoming year and beyond where possible.

The Marine Institute has ensured a minimum of three profiling floats were deployed during 2020 in alignment with the requirements of the Euro Argo ERIC. It was envisaged that 2020 would see the deployment of Ireland's first BGC sensing float. Impacts on survey schedules due to the Covid-19 pandemic did not allow for this. A new opportunity to deploy the float will be investigated in 2021. Efforts continue towards securing multi-annual funding for Ireland's Argo programme on the national level.



Above: *Illustrating the breakdown of Irish floats (NKE (ARVOR) and Teledyne Webb (APEX). With NKE being the Euro-Argo ERIC tender winning bid, Ireland is seeing the number of ARVOR deployed floats increase.*



Above: *Graph showing the number of Irish floats using ARGOS or Iridium communications. With floats procured via Euro-Argo ERIC having Iridium communication systems the number of Irish floats with iridium communications will continue to increase over the coming years.*

4) Summary of national research and operational uses of Argo data as well as contributions to Argo Regional Centres. Please also include any links to national program Argo web pages to update links on the AST and AIC websites.

Argo data is primarily used to validate ROMS models in the Oceanographic Services section of the Marine Institute. Argo data will also be utilised by a number of PhD students within the Marine Institute and 3rd level institutes across Ireland. Irish deployed Argo float data may also be used by researchers on an international level as all data is open and freely available.

Irish Argo National Webpage (hosted by the Marine Institute):
https://www.marine.ie/Home/site-area/areas-activity/oceanography/euro-argo

Irish Argo Float Data*:
https://www.digitalocean.ie/
*May not visualise correctly via Internet Explorer web browser

5) **Issues that your country wishes to be considered and resolved by the Argo Steering Team regarding the international operation of Argo. These might include tasks performed by the AIC, the coordination of activities at an international level and the performance of the Argo data system. If you have specific comments, please include them in your national report.**
N/A. Any issues are dealt with via the Euro-Argo ERIC office.

6) **To continue improving the quality and quantity of CTD cruise data being added to the reference database by Argo PIs, it is requested that you include any CTD station data that was taken at the time of float deployments this year. Additionally, please list CTD data (calibrated with bottle data) taken by your country in the past year that may be added to the reference database. These cruises could be ones designated for Argo calibration purposes only or could be cruises that are open to the public. To help CCHDO track down this data, please list the dates of the cruise and the PI to contact about the data.**
No CTD data are uploaded to the CCHDO website.

However, all CTD data are emailed to Else Juul Green (else@ices.dk) who checks the data before it is uploaded to the ICES Oceanographic data portal annually:
http://ocean.ices.dk/HydChem/HydChem.aspx?plot=yes

7) **Keeping the Argo bibliography (http://www.argo.ucsd.edu/Bibliography.html) up to date and accurate is an important part of the Argo website. This document helps demonstrate the value of Argo and can possibly help countries when applying for continued Argo funding. We reached more than 2000 papers published using Argo data! To help me with this effort, please include a list of all papers published by scientists within your country in the past year using Argo data, including non-English publications.**
N/A.