

Pacific Ocean Planning Meeting #2

DRAFT & WORKING DOCUMENT 20232-06-07

www.ocean-ops.org

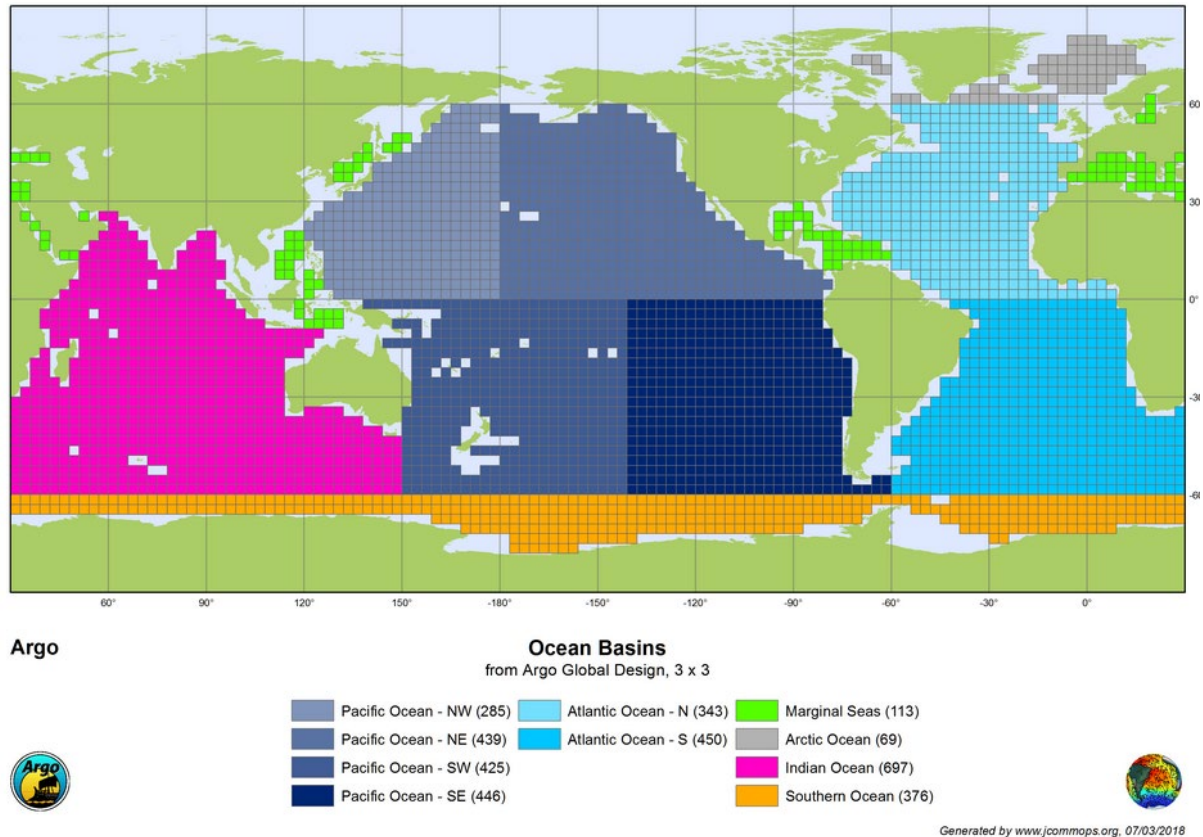
Pacific Ocean coordination meeting

- [1\) Status and deployment of Argo in Pacific region \(OceanOPS\) - June2023](#)
- [2\) Upcoming cruises and discussion on future deployment strategies](#)
- [3\) Deployment planning tools](#)
- [4\) Case study for float deployment in other PI cruise \(Example at JAMSTEC\)](#)
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- [6\) Open discussion:](#)

Status and deployment of Argo in Pacific region (OceanOPS) - June2023

A bit of background:

The Pacific design



This first figure aims to recall how the KPI are computed in the different Pacific Ocean Regions.

The implementation status

The implementation indicators in the Pacific are all good or very good with no warning trends.

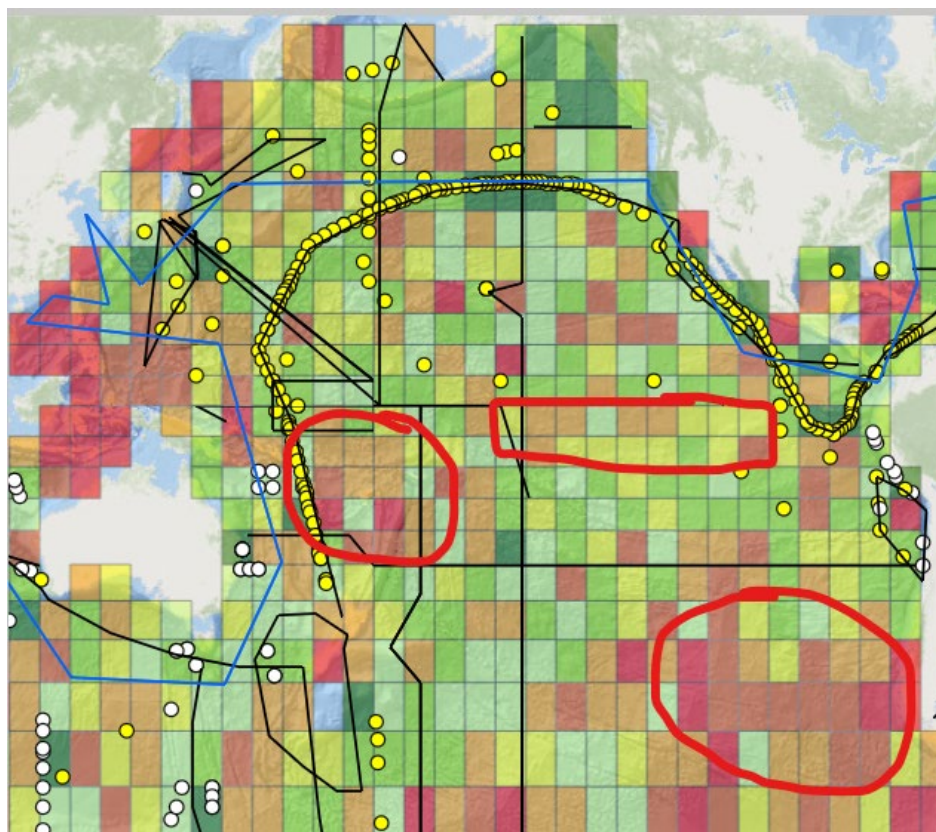
	PSE	PSO	PNE	PNO
Activity	104%	95%	113%	93%
Intensity	66%	87%	56%	84%

Density	92%	96%	95%	96%
Coverage	63% (Target > 60%) - stable trends			

Notes:

- Activity: Number of operational float in the region vs. target
- Intensity: Number of yearly deployment vs. target
- Density: measure the spatial distribution of the operational float vs. target.
- Coverage: Coverage exclude bad salinity

Cruise opportunity and priority regions



Float density map considering; the double density regions, the age of the floats and the plans. The red circles are the priority targeted regions. The dark lines are the academic cruises available from August 7th to the end of 2025 (available in the OceanOPS system).

Review of the upcoming cruises and discussion on future deployment strategies

Cruise name: MR25-XX	POC (Institution): A. Nagano (JAMSTEC)
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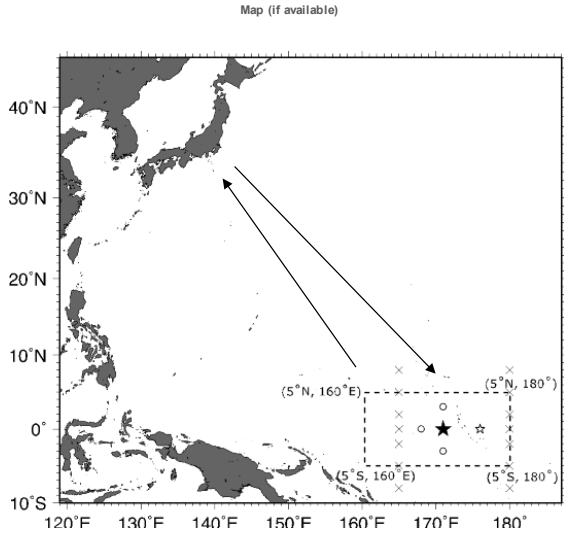
Details

- Ship: Mirai
- Cruise dates: January– February 2025
- Departure/arrival ports: Shimizu-Shimizu
- Number of floats: Not determined
- Float types: Core or BGC
- Looking for additional floats?

No. We have concerns about taking long times for various permissions such as MSR application.

- Other information (including EEZ): The Republic of Nauru, the Republic of Kiribati, the Marshall Islands, Tuvalu, the republic of Palau, The Federated States of Micronesia, the Republic of the Philippines, and USA

Link to additional information: (Optional, can place any relevant [info](#) and add a direct link)

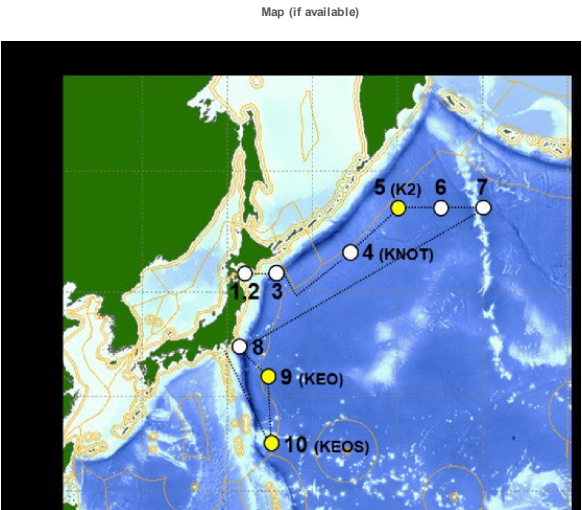


Cruise name: MR25-XX	POC (Institution): K. Kimoto (JAMSTEC)
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Details

- Ship: Mirai
- Cruise dates: October – November 2024
- Departure/arrival ports: Sekinehama-Shimizu (Japan)
 - Other cruise details:
- Number of floats: Not determined
- Float types: Core or BGC or Deep
- Looking for additional floats? No.
- Other information (including EEZ): No

Link to additional information: (Optional, can place any relevant [info](#) and add a direct link)

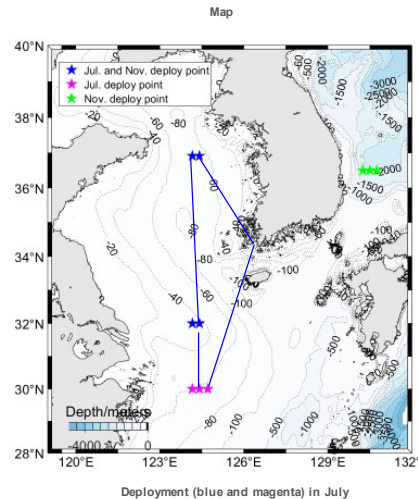


Cruise name: *The Gisang1's 11th Voyage*

POC (Institution): NIMS/KMA

Details

- Ship: Gisang1
- Cruise dates: 7/9/2023 7/20/2023
- Departure/arrival ports
 - Mokpo - Mokpo, Korea
- Number of floats:
 - 7 Core Argo floats (ARVOR, shallow)
- Looking for additional floats? No.
- Other information (including EEZ)



Link to additional information: (Optional, can place any relevant [info](#) and add a direct link)

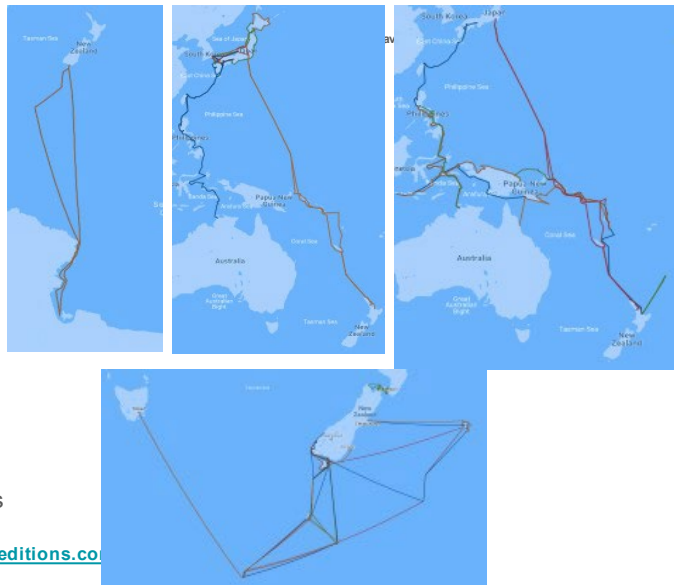
Cruise name: *Heritage expeditions eco-tourism*

POC (Institution):

Nathan Russ, Director of Operations for Heritage Expeditions
Nathan Bindoff (Univ of Tasmania, Australia) is gathering interest to schedule meeting
Gabriela Pilo has put interest from Argo community to deploy floats

Details

- Ship: Heritage Adventurer
- Cruise dates: several, for the next 8 years
- Departure/arrival ports
 - See list here: <https://www.heritageexpeditions.com/calendar/>
- Number of floats: Heritage expeditions is gathering information from different groups (e.g., Argo and SOOP)
- Float types: opportunity deployment (no CTD cast, but there might be possibility for testing on deck)
- Looking for additional floats? UTAS is still waiting to hear if Heritage Expeditions will be able to deploy floats



Link to additional information <https://www.heritageexpeditions.com/>

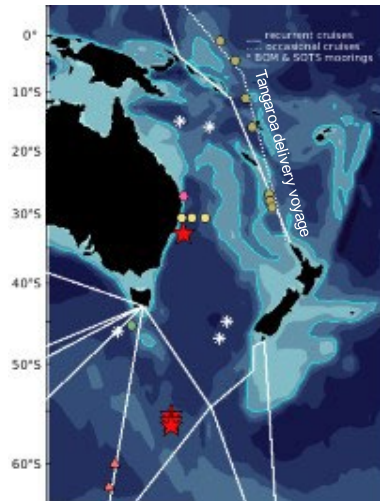
Cruise name: *Several, RV Investigator*

POC (Institution): Gabriela Pilo (CSIRO, Australia), can put you in contact with

PI

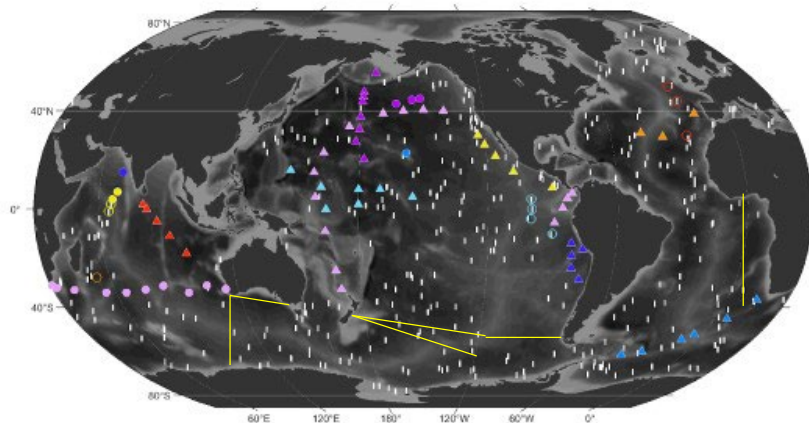
Details

- Ship: RV Investigator
- Cruise dates: several
- Departure/arrival ports
 - See list here:
<https://mnf.csiro.au/en/Voyages/Schedules>
- Number of floats & types:
 - INV2023_v06 (EAC): 4 core (pink dots) + 1 BGC (red star)
 - INV2023_v07 (ACC, S. Tasmania): 3 BGC (red stars)
 - INV2024_v04 (EAC): 3 core (yellow dots)
- Looking for additional floats? No; only if you are interested in a specific region (BGC?)



Link to additional information: Argo australia plans [here](https://argo.csiro.au/en/argo310/deployment-plans/)

GO-BGC and SOCCOM overview



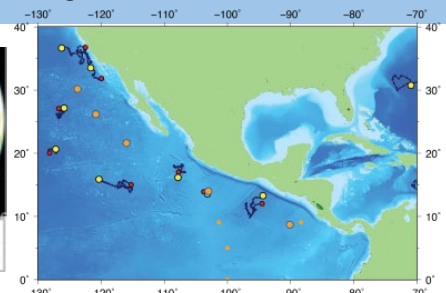
From Lynne Talley

Cruise: R/V Packard delivery cruise

POC: Ken Johnson

Details

- Ship: Thompson
- Cruise dates: September, 2023
- Departure/arrival ports
 - Vigo to Monterey, CA
- Number of floats:
 - 3 WHOI (Atlantic),
 - 5 UW (Pacific)
 - German floats potentially (oxygen)
- Looking for additional floats? Maybe?
- Other information :No EEZs



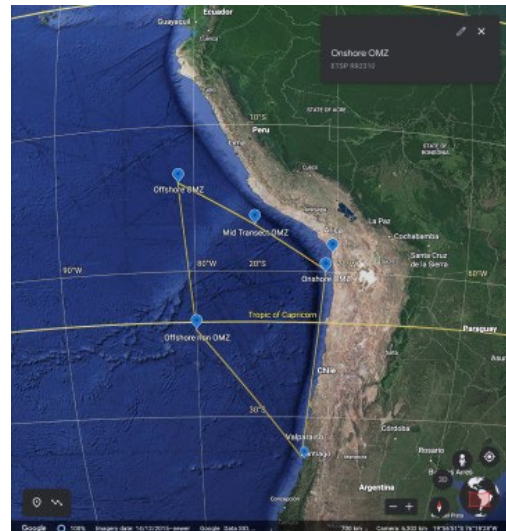
Cruise: SE Pacific Nitrifying Enzymes (RR2310)

POC : Lynne Talley/ Rick

Details

- Ship: Revelle
- Cruise dates: 10/18 - 10/20/2023
- Departure/arrival ports
 - Valparaiso to Valparaiso
- Float types:
 - 5-6 UW GO-BGC floats
- Looking for additional floats?
- Other information (including EEZ):
 - Chief scientist: Bess Ward (Princeton)

Station	Lat (S)	Long (W)	NM	NM	h	days
Valparaiso	32.55	71.36	Valpo - onshore	728	63.3	2.6
Arica	18.41	70.14	onshore - mid	372	32.3	1.3
Onshore OMZ	20.4	70.4	mid - offshore	355	30.9	1.3
Mid Transsect OMZ	16.4	75.4	offshore - non OMZ	603	52.4	2.2
Offshore OMZ	14	81	non OMZ - Valpo	686	59.7	2.5
Offshore non OMZ	24	80		2744.0	238.6	9.9

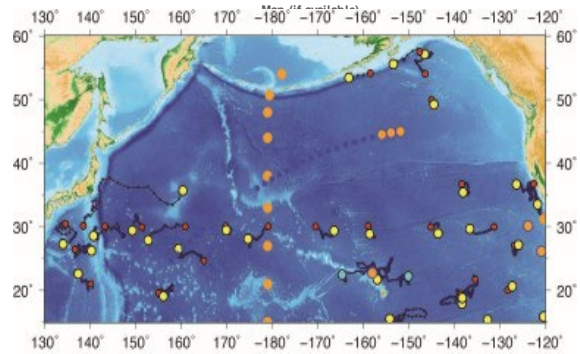


Cruise name: *Thompson TN-481*

POC: UW

Details

- Ship: Thompson
- Cruise dates: June 11, 2023
- Departure/arrival ports
 - Other cruise details: Guam to Seattle
- Number of floats:
 - 21 Core Argo (blue)
 - 3 BGC Argo test floats with
 - SBE83, FL2BB, OCR
- Looking for additional floats? no
- Other information (including EEZ):



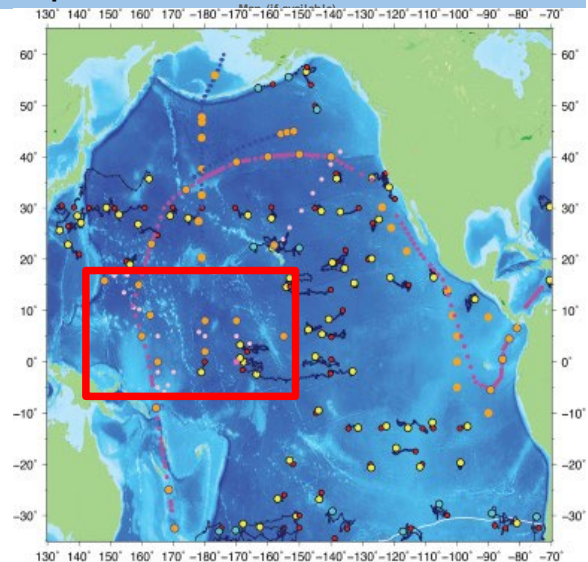
Status TBD due to typhoon

Cruise name: Bluefin TAO mooring cruise

POC: Elizabeth Steffen, Rick Rupan

Details

- Ship: Bluefin
- Cruise dates: Aug 4 + -3 days 2023
- Departure/arrival ports: Guam
- Number of floats:
 - 7 US GO-BGC
 - Core?
- Looking for additional floats? ?
- Other information (including EEZ):



Link to additional information: (Optional, can place any relevant [info](#) and add a direct link)

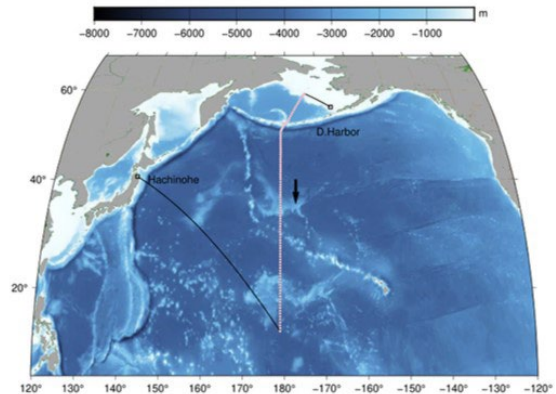
Cruise name: GO-SHIP P14N

POC : JAMSTEC

Details

- Ship: Miral
- Cruise dates: Oct 2023
- Departure/arrival ports
 - Dutch Harbor to Shimizu
- Number of floats:
 - Some GO-BGC floats
- Looking for additional floats? No, ship
- Other information (including EEZ)

4. 申込先 : E-mail: k.katsumata(at)jamstec.go.jp
(at)を@に置き換えてください

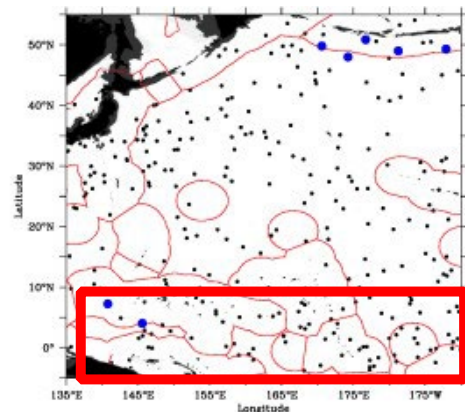


Cruise name: BlueFin 2024

POC (Institution): PMEL

Details

- Ship: Blue Fin
- Cruise dates: summer ~Feb 2024
- Departure/arrival ports: Seattle/San Diego
- Cruise region: equator for some TAO lines
- Number of floats: ?
- Float types: Core+ others
- Looking for additional floats?
Maybe, but need to coordinate early with Elizabeth Steffen



Cruise name: Kilo Moana2024 POC (Institution): PMEL

Details

- Ship: Kilo Moana
- Cruise dates: soon
- Departure/arrival ports: Honolulu to Seward
- Number of floats: 5 or 6 core
- Looking for additional floats? No

Map (if available)

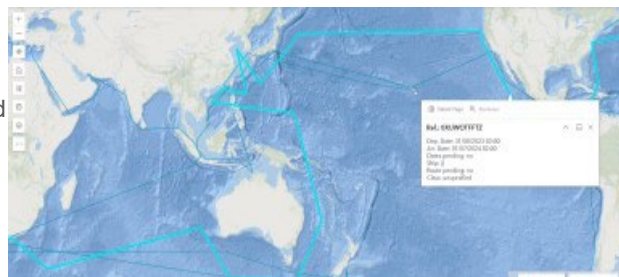


Cruise name: *Clipper race leg 5* POC (Institution): Martin Kramp

Details

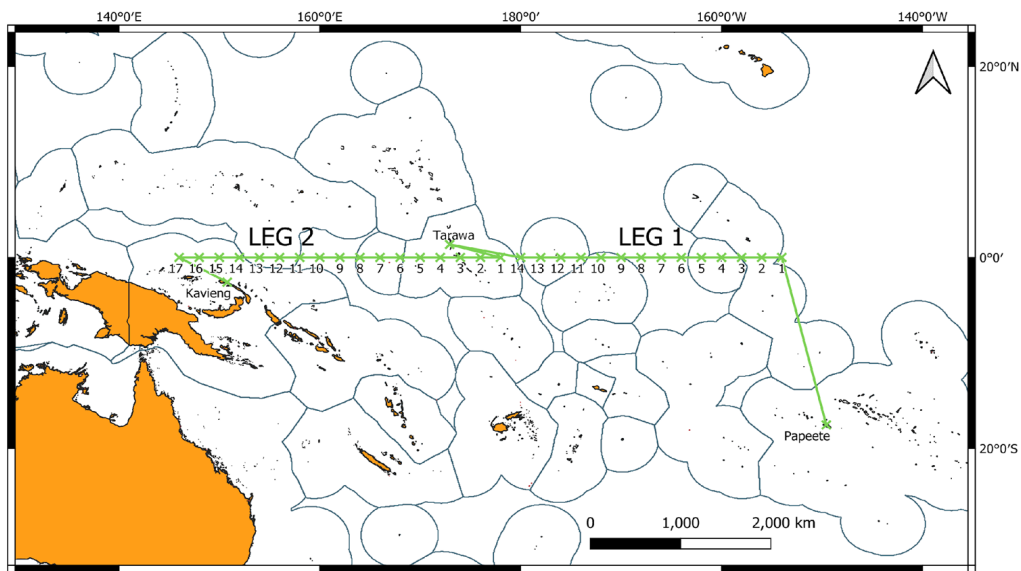
- Ship: ~10 sailing vessels
- Cruise dates: Jan - Feb 2024
- Departure/arrival ports
 - East Australia / China to be confirmed
- Number of floats:
- Float types: Core
- Looking for additional floats? 1 float in each vessels
- Other information (including EEZ):
 - container following the race. FLoad can be loaded in Southampton (short notice), Cape Town, Perth.

Map (if available)



Link to additional information: (Optional, can place any relevant info [here](#) and add a direct link)

- Argo floats deployments for TPOS in the equatorial Pacific (input from Sophie Cravatte, Ifremer)
- ✓ The cruise WARMALIS (French R/V Antea) will sail in the Equatorial Pacific from the end of September to October (see attached).
- ✓ This could be an excellent opportunity to contribute to the TPOS initiative and deploy some floats.
- ✓ However, it is difficult to send the five floats that France owns and can provide to New Caledonia and French Polynesia.
- ✓ Please let us know if any institute can send a float that can be deployed during a WARMALIS cruise

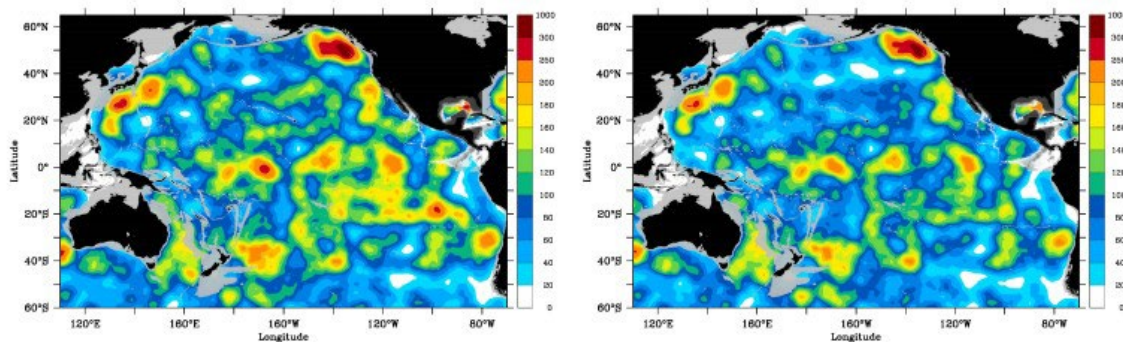


Deployment planning tools

- Current and predicted temperature and salinity coverage maps (SIO)

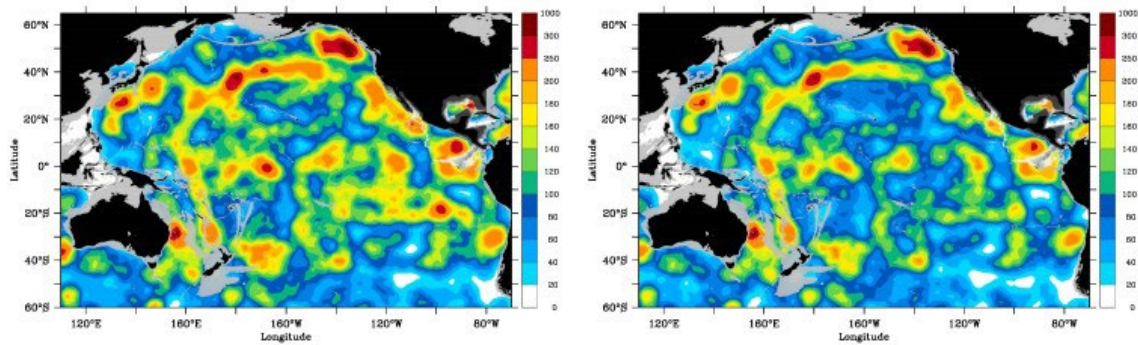
SIO provides coverage maps for temperature and salinity in the Pacific. Method was explained in 1st coordination meeting (John Gilson). All floats with good salinity flag are used.

Current Coverage



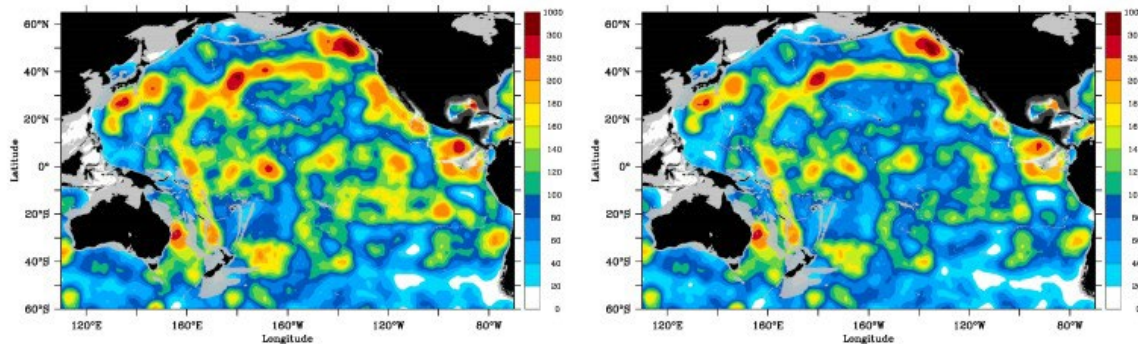
All floats
Good Salinity only

+1 year



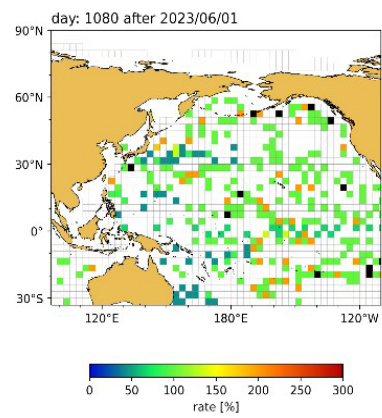
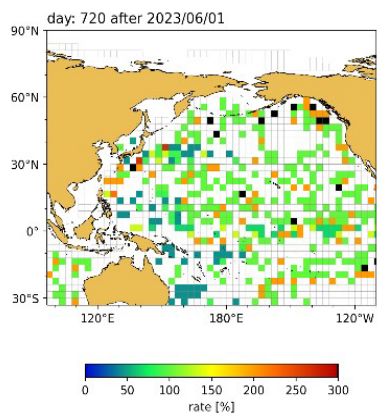
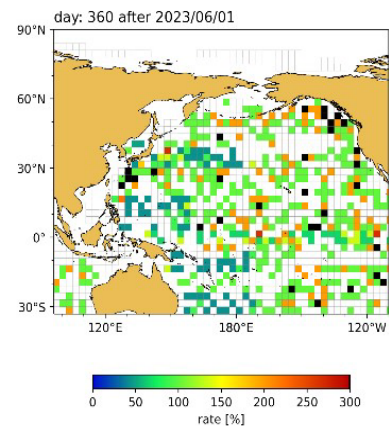
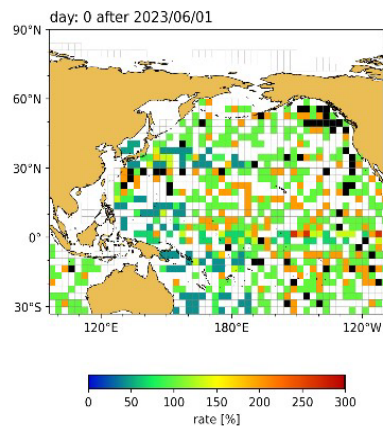
All floats
Good Salinity only

+2 year



All floats
Good Salinity only

- Deployment planning tool (JAMSTEC ; by Kanako Sato and Mizue Hirano)
 - ✓ JAMSTEC provides expected float density maps based on particle tracking of currently active floats position to estimate the location of 360, 720, 1,080 days using G-YoMaHa dataset (https://www.jamstec.go.jp/argo_research/dataset/gyomaha/gyomaha_en.html), which is velocity climatology at 1,000 dbar using YoMaHa'07.
 - ✓ The tool then calculates and illustrates the sufficiency ratio based on Argo2020 on the 3-degree grid.
 - ✓ The particle tracking is performed assuming that the average lifetime is 2,450 days (about 6.7 years) based on lifetime of inactive floats in the Argo GDAC snapshot.
 - ✓ The time interval of particle tracking is 1day.



Case study for float deployment in other PI cruise (Example at JAMSTEC)

Once a float is decided to deploy in other cruise, some procedures are needed for float PI and cruise PI. Here is an example in a JAMSTEC cruise based on our experience. The procedure should depend on countries, institutes and cruises.

- EEZ clearance: Required before 9 months if float will be deployed in EEZ in any countries or expected to drift into EEZ without Argo FP country. (if float deploys in the high sea, EEZ clearance for deployment is not required)
- Contact person: Confirm both contact person. In some case PI and contact person is different and communication is not well established.
- International transport: Recommend to find a transport agent before 3-4 months to smoothly conduct complex paper works (Incl. Tax payment, amount of iridium battery etc.).
- Trade export control regulations: In the case if floats deliver into Japan and then deploy in the sea. No need when floats pick up at foreign port during cruise.

If some checks and procedures do not proceed, either the PI or the person in charge on both sides will be frustrated. **Communication is very important!**

Coordination group Web page (PARC)

Activities and contents for Pacific coordination group can be shown in the PARC web page to share information and to help Argo PI. Items, figures and documents will be improved. Please suggest any comments or ask questions.

5. Float's deployment coordination group Web site

PARC

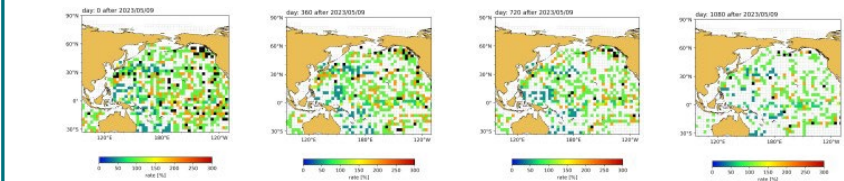
Pacific Argo Regional Center

[Home](#) [Float status](#) [Data](#) [Products](#) [Documents](#) [Tools](#) [Contact](#) [Float's Deployment](#)

Pacific Deployment Coordination Group for Argo Float

Argo program has achieved to deploy over 3000 active Argo floats as a global ocean observing system, and strongly required to maintain the observing network. OneArgo, which has been adopted as the UN Decade Project since 2021, aims to maintain and enhance the Core Argo observation network, including the Deep Argo and BGC Argo missions. To achieve this, it is necessary to realize an efficient and regionally unbiased Argo observing network for each country, project and mission. As the Pacific Ocean is the world's largest ocean basin, it is necessary to strongly coordinate the deployment opportunities of Argo floats, being supported by OceanOPS. As a portal site for exchanging variable kinds of information, the Pacific Ocean Deployment Coordination Group website has been established at PARC web site.

Tools to assist planning Argo floats deployment



PARC

Pacific Argo Regional Center

[Home](#) [Float status](#) [Data](#) [Products](#) [Documents](#) [Tools](#) [Contact](#) [Float's Deployment](#)

Best practices providing deployment opportunities

Under construction

Meeting reports

- 1st meeting (July. 26, 2022; Virtual)
- 2nd meeting (June. 7, 2023; Virtual)

Members

[Member List](#)

URL: https://www.jamstec.go.jp/PARC/float_deployment
(This page will be renewed 2 times a year)

Open discussion:

- ✓ Next meeting will be held in Jan.-Feb. 2024. Announcement will be done to the group in advance.
- ✓ If you want to add a member of this group, please let us know the name, e-mail and affiliation, or fill out in the google docs: <https://docs.google.com/forms/d/1bmpqqKHc-sRH7v0qDrMNHqfwp1o7Lj8j1spKgA4C0Pk/edit>