



ANTARCTICA
INSYNC



THE EUROPEAN SPACE AGENCY

Follow-up Webinar on Antarctica InSync Science Planning

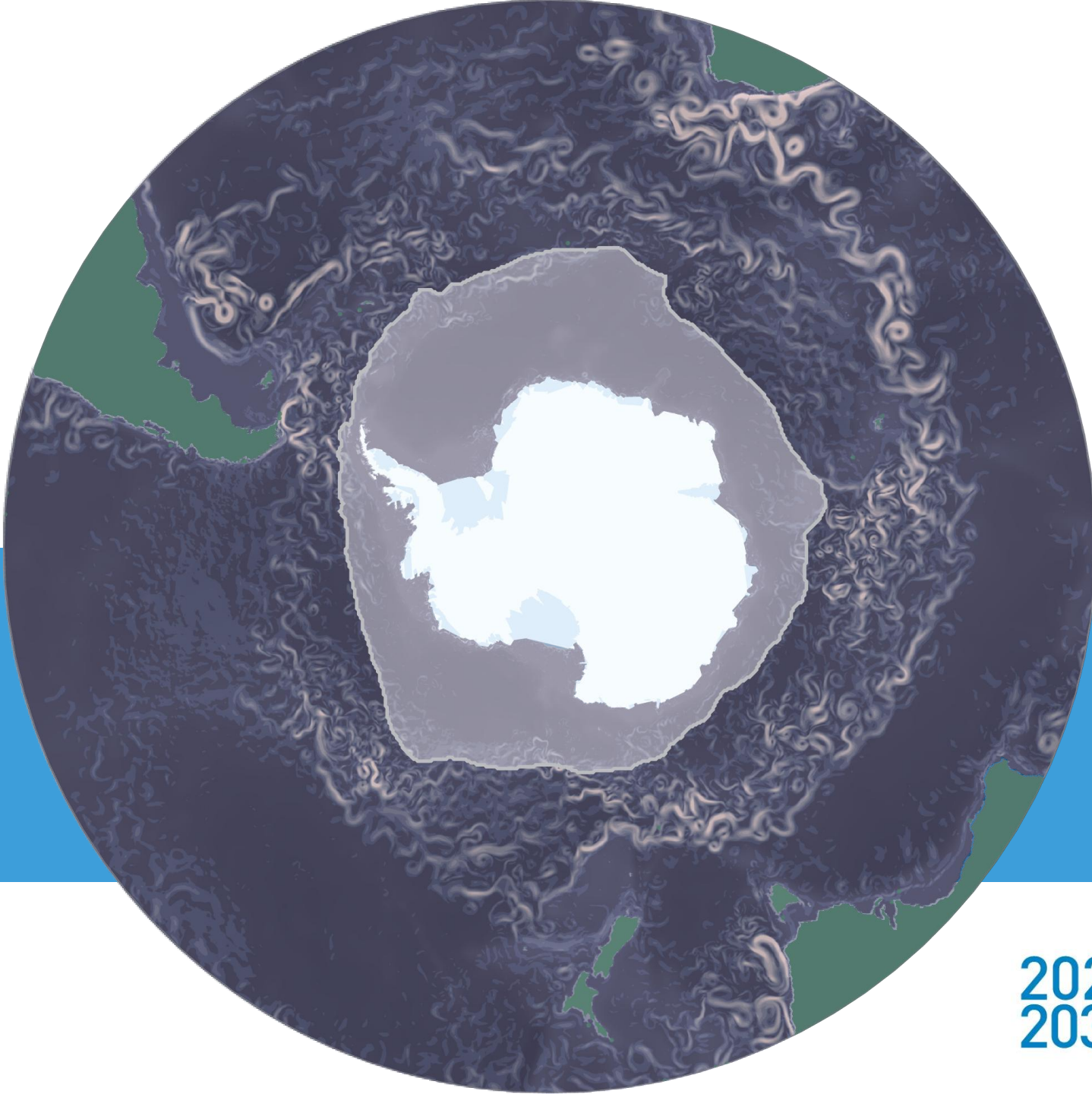
20–21 January 2026 | Online



Schedule of this webinar



Agenda item	Speaker
Welcome	Diego Filun, Alexander Haumann, Stefanie Arndt
Introduction	
Policy White Paper	Petra Heil
Southern Ocean Physical and Biogeochemical Cycles in a Changing Climate	Elisa Carli & Seb Swart
Rapid sea-ice decline: causes and consequences	Gunnar Spreen & Ruzica Dadic
Antarctic Ice Sheets and Ice Shelves: Processes driving rapid change, from observation to prediction	Anna Hogg, Gael Durand, Hendrik Huwald
Knowledge and protection of unique Antarctic life: land, ocean, and deep sea	Connor Bramford & Sian Henley - Friederike Weith & Yan Ropert-Coudert
Anthropogenic signatures in Antarctica: pollution and other pressures	Machiel Lamers & Zhiyong Xie
Aerosol-cloud-precipitation interactions and radiative feedbacks	Julia Schmale & Martin Radenz
Climate variability: extremes, weather, long-term variability, and global teleconnections	Martin Werner & Mathieu Casado
Cross-cutting White Paper on Earth Observation	Martin Wearing
Break-out group discussions (Thematic White Papers)	
Next Steps	Alexander Haumann, Stefanie Arndt



ANTARCTICA INSYNC

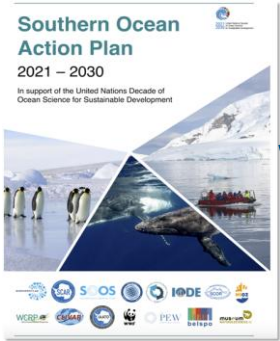
International Science &
Infrastructure for
Synchronous Observation

An internationally coordinated, circumpolar,
and year-round mission

2021
2030 United Nations Decade
of Ocean Science
for Sustainable Development



Antarctica InSync | Timeline



2023:
ATCM45 → Several countries initiated Antarctica InSync
UN Ocean Decade → Antarctica InSync established as a program
SOOS Symposium → International call for action

2023

2027

2030

2032

2033



Preparatory phase

Synchronous
scientific observation

Synthesis
and reporting

5th
IPY



2021
2030
United Nations Decade
of Ocean Science
for Sustainable Development



International
Polar Year
2032-2033



SOOS
SOUTHERN OCEAN
OBSERVING SYSTEM



1st SCAR

Antarctic and Southern Ocean Science
Horizon Scan



Antarctica InSync | Timeline



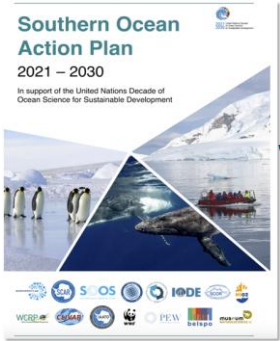
2024:

ATCM46 → More countries joined Antarctica InSync

EU Polar Science Week → EU and ESA support Antarctica InSync internationally

SCAR Symposium → Initiation of alignment with SCAR strategies

Establishment of national committees and scientific themes



1st SCAR Antarctic and Southern Ocean Science Horizon Scan



2023

2027

2030

2032

2033

Preparatory phase

Synchronous scientific observation

Synthesis and reporting

5th IPY



2021-2030 United Nations Decade of Ocean Science for Sustainable Development



International Polar Year 2032-2033

Scientific themes and visions



Southern Ocean Physical and Biogeochemical Cycles in a Changing Climate



Improving knowledge and protection of the unique Antarctic life: from land to ocean and into the deep sea



Rapid sea ice decline and its causes and consequences



Anthropogenic signatures in Antarctica: the race against pollution and other pressures



Antarctic Ice Sheets and Ice Shelves: Processes driving rapid change, from observation to prediction



Aerosol-cloud-precipitation interactions and radiative feedbacks



Variability, extremes, and tipping points in a changing Antarctic climate



Science Steering Board



Elisa Carli, Jean-Baptiste Sallée



Stefanie Arndt, Ruzica Dadic, Letizia Tedesco



Anna Hogg, Hendrik Huwald, Gael Durand



Friederike Weith, Connor Bamford



Zhiyong Xie, Nicoletta Ademollo, Susan Bengtson Nash



Jessie Creamean, Markus Frey, Julia Schmale



Mathieu Casado, Irina Gorodetskaya, Louise Sime, Martin Werner



Petra Heil, Inga Beck (Co-chairs of SCAR Action Group)



Diego Filun (Coordination office Antarctica InSync)

Antarctica InSync | Timeline



2025:

ATCM47 → More countries joined
 UN Ocean conference → Events with policy and potential funders
 Forming of international Working Groups
 Development of Science Plan
 Expedition and project proposals

2023

2027

2030

2032

2033

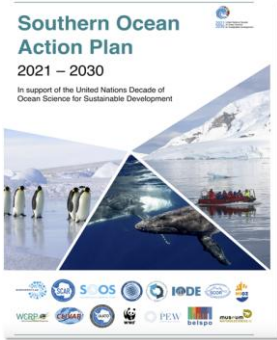
Preparatory phase

Synchronous
scientific observation

Synthesis
and reporting

5th
IPY

ESA Workshop
3 - 6 November 2025
Frascati (Italy)



1st SCAR
Antarctic and Southern Ocean Science
Horizon Scan



2021
2030
United Nations Decade
of Ocean Science
for Sustainable Development



International
Polar Year
2032-2033

White Paper Writing Process | Timeline



May 2025



Presentation of the **6 Scientific Themes**.

September 2025



Discussion about potentially working groups, interest about a **new Scientific Theme (Climate-variability)**.

November 2025



The Frascati meeting was a key in-person milestone to align the scientific themes, clarify open issues, and agree on next steps toward finalizing the White Papers and enhancing their visibility through SCAR.

December 2025

In **December 2025**, the process of receiving feedback from the **scientific community** was initiated. The **draft versions of the different White Papers** were uploaded to the **(SCAR)** website to allow open review and community input.

January 2026



Follow-up webinar to present the draft White Papers, facilitate thematic discussions, and encourage structured community input.



ANTARCTICA INSYNC

Working Groups



Working groups: Status update

Approved

In review



- To date, **13 Working Groups (WGs)** have been accepted within **Antarctica InSync**.
- In the coming days, information on the **Working Groups**, including their **descriptions** and **public points of contact**, will be implemented and made available on the **InSync website**.
- Additional **White Papers from individual working groups** are highly welcome.

Theme	Name Working Group	Contact
2	OAISIS: Observation system design with AI for Sea Ice Surveillance	Lauren Hoffman François Massonnet
4	Antarctica's lost giants: Global abundance and seasonal habitats of Antarctic blue	Jen Jackson Helena Herr Nat Kelly
4	InSync eDNA & OMICs – Towards a holistic assessment of Antarctic biodiversity: Essential variables for distribution, ecosystem structure & functioning across the Tree of Life	Charlotte Havermanns Matthias Wietz
4	DEEP BENTHIC: Mapping Biodiversity and Adaptation of Antarctica's Deep Seafloor Ecosystems	Eva Ramirez-Llodra Pedro Arbizu

Working groups

Approved

In review



Theme	Name Working Group	Contact
1	M&M's: Seasonal cycle of Micronutrients and Microbial interactions in the Southern Ocean	Thomas Ryan-Keogh Rob Middag Kathrin Wuttig
1	Improving Southern Ocean Surface Salinity Knowledge through Satellite-In Situ Synergy	Giuseppe Aulicino Antonino Ian Ferola
1	Coastal Connection and Hydrographic Drivers of Antarctic Biogeochemistry and Carbon Cycling (CO-CO2 sentinel)	Eduardo M. Ruiz Barlett Juan Höfer Emma Huertas Susana Flecha Alejandro Román Friederike Weith Irene R. Schloss Facundo Barrera
1	Carbon Cycling	Elise Droste Léa Olivier
3	Past, Present and Future Surface Mass Balance of the Antarctic Ice Sheet	Alexandra Zuhr Vincent Favier Vikram Goel
3	Ice Shelf–Ocean Interactions	Elin Darelus, Peter Davis, Yoshihiro Nakayama, Ken Zhao,
4	Assessing predator/prey energy fluxes in polar marine ecosystems through sentinel species monitoring (ECOSENT - Ecosystem Sentinels)	Álvaro Soutullo Ryan Reisinger Yan Ropert-Coudert

Theme	Name Working Group	Contact
4	Terrestrial Antarctic Biodiversity Change for Conservation Action (TAB-ACT) Exploring Niche, Neutral and Connectivity Concepts to Improve Biodiversity Forecasting and Conservation Action	Steven L Chown Antonio Quesada, Ian Hawes
4	Survey of spatial Southern Ocean biodiversity (SOBIS)	Chester Sands Sally Lau
4	SO-BEDS - Southern Ocean Benthic Ecosystem Dynamics and Services	Friederike Weith Vonda Cummings Natalia Servetto
4	Predator REsponses to seasonal krill DYnamiC and krill fishing activiTies (PREDYCT)	Bettina Meyer Andrew Lowther Álvaro Soutullo
4	MESO: Microbial Ecogenomics of the Southern Ocean – Analysis of the functional diversity, evolution and ecology of the Southern Ocean plankton, from genes and metabolites to Earth System Models	Lois Maignien A. Murat Eren,
6	Atmospheric Monitoring in the Northern Antarctic Peninsula: Understanding the Drivers of Climate Extremes	Raul R. Cordero Gino Casassa

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