

## YOPP PLANNING GROUP

The YOPP Planning Group consists of the members of the Steering Group of the WWRP Polar Prediction Project with subgroups focussing on the observational, modelling, societal and verification aspects, augmented by representatives from partners. The Planning Group is augmented by representatives from partner initiatives.

Among the key partners for YOPP are:

EC-PORS - WMO Executive Council Panel of Experts on Polar Observations, Research and Service

IASC - International Arctic Science Committee

SCAR - Scientific Committee on Antarctic Research

WCRP - Polar Climate Predictability Initiative (PCPI)

WGNE - Working Group on Numerical Experimentation

WGSIP - Working Group on Seasonal to Interannual Prediction

S2S - Subseasonal to Seasonal Prediction Project

GODAE - Oceanview Global Ocean Data Assimilation Experiment

WWRP SERA WG - Societal and Economic Research Applications Working Group

JWGFVR - Joint Working Group on Forecast Verification Research

APECS - Association of Polar Early Career Scientists

PSTG - Polar Space Task Group

GCW - Global Cryosphere Watch

AMOMFW (including AMPS) - Antarctic Meteorological Observation, Modeling and Forecasting Workshop

EUMETNET Observations Programme

IICWG - International Ice Charting Working Group



## YOPP MISSION

Enable a significant improvement in environmental prediction capabilities for the polar regions and beyond, by coordinating a period of intensive observing, modelling, verification, user-engagement and education activities.

YOPP is a contribution to the hourly to seasonal research component of the WMO Global Integrated Polar Prediction System (GIPPS).



Photos: G. Diekmann, S. Hendricks, M. Schiller, AWI

# The Year of Polar Prediction (YOPP)

## A Flagship Activity of the WWRP Polar Prediction Project



For more information,  
please contact:

International Coordination Office for Polar Prediction  
c/o Alfred Wegener Institute

Helmholtz Centre for Polar and Marine Research  
Am Handelshafen 12

D-27570 Bremerhaven - GERMANY

Tel.: +49 (0) 471 48 31 17 61 – Fax: + 49 (0) 471 48 31 17 97

E-mail: [office@polarprediction.net](mailto:office@polarprediction.net)

Website: <http://polarprediction.net>



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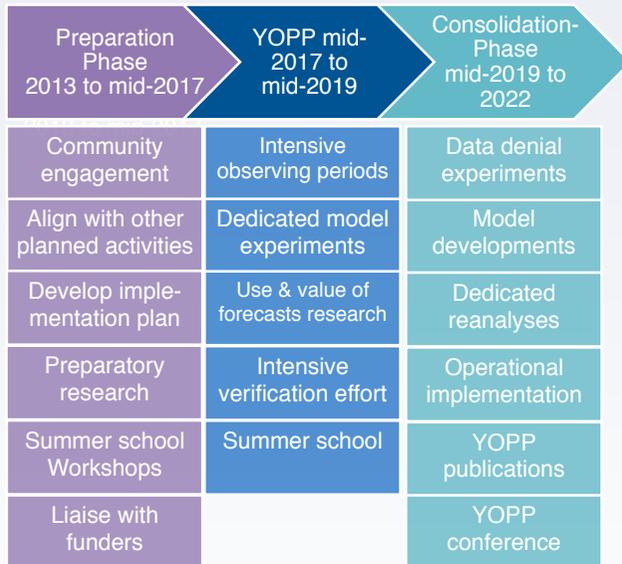
## BACKGROUND

The WWRP Polar Prediction Project (PPP) is a decadal effort to promote cooperative international research enabling development of improved weather and environmental prediction services for the polar regions, on time scales from hourly to seasonal.

The Year of Polar Prediction (YOPP) is one of PPP's flagship activities planned for the period from 2013 to 2022. YOPP will be carried out in close collaboration with the Polar Climate Prediction Initiative (PCPI) of WCRP and other related initiatives.

YOPP encompasses four major elements: an intensive observing period, a complementary intensive modelling and forecasting period, a period of enhanced monitoring of forecast use in decision making including verification, and a special educational effort.

YOPP is structured in three phases: the preparation phase, central YOPP and the consolidation phase.



## YOPP OBJECTIVES

- Improve the polar observing system to provide good coverage of high-quality observations in a cost effective manner.
- Gather additional observations through field programmes aimed at improving understanding of polar key processes.
- Develop improved representation of polar key processes in uncoupled and coupled models used for prediction, including those which are a particular hindrance to high-quality prediction for the polar regions, such as stable boundary layer representation, surface exchange, and steep orography.
- Develop improved data assimilation systems that account for challenges in the polar regions such as sparseness of observational data, steep orography, model error and the importance of coupled processes (e.g., atmosphere-sea ice interaction).
- Explore the predictability of sea ice on time scales from days to a season.
- Improve understanding of linkages between polar regions and lower latitudes and assess skill of models representing these.
- Improve verification of polar weather and environmental predictions to obtain quantitative knowledge on model performance, and on the skill of operational forecasting systems for user-relevant parameters; and efficiently monitor progress.
- Improve understanding of the benefits of using existing prediction information and services in the polar regions, differentiated across the spectrum of user types and benefit areas.
- Provide training opportunities to generate a sound knowledge base on polar prediction related issues.

## IMPLEMENTATION

The preparation phase of YOPP covers the period from 2013 to mid-2017 and is characterized by the following key activities: community engagement, coordination with other planned activities, preparatory experimentation, preparation of observational and modelling strategies, development of implementation plan, organisation of summer school and workshops, liaison with funders.

YOPP itself extends over the period from mid-2017 to mid-2019 and comprises periods of intensive observations, dedicated model experiments, research into the use and value of forecasts and intensive verification efforts.

A consolidation phase marks the end of the YOPP decade. Data denial experiments, model development, dedicated reanalyses, operational implementation and YOPP-specific publications are its main features.



For the implementation of YOPP special emphasis is placed on:

- Development of strong linkages with other initiatives.
- Strengthening of linkages between academia, research institutions and operational forecasting centres.
- Establishment and exploitation of special research data sets that can be used by the wider research community and forecast product users.
- Linkages with space agencies.
- Establishment of a common data archive.
- Promotion of YOPP with funding agencies.
- Promotion of interactions and communication between research and stakeholders.
- Fostering of education and outreach.