

IMPLEMENTATION

The planning for YOPP is carried out by the members of the Steering Group of the WWRP Polar Prediction Project, thematic subcommittees, and the International Coordination Office for Polar Prediction (ICO). Representatives from key partners, programmes and initiatives as well as broad community engagement play a crucial role in the planning.



Following a major kick-off planning event - the YOPP Summit, held 13-15 July 2015 at WMO in Geneva - the further development of dedicated aspects is undertaken by subcommittees focussing on: Arctic Observations; Southern Hemisphere Aspects; Modelling; Data Strategy; Societal & Economic Research and Applications; Sea Ice Prediction; Education.

ENDORSEMENT

YOPP offers endorsement for projects that are related to the goals of YOPP. The aim of endorsement is to:

- increase the visibility of YOPP-related research activities
- to set the international framework for research projects to help to leverage support and funding
- to contribute to improving the coordination between different activities
- enhance networking and communication.

FURTHER READING

- Jung, Thomas, et al. "Advancing polar prediction capabilities on daily to seasonal time scales." *Bulletin of the American Meteorological Society* (2016).
- Goessling, Helge F., et al. "Paving the Way for the Year of Polar Prediction." *Bulletin of the American Meteorological Society* (2015).
- PPP Steering Group & co-authors, "WWRP Polar Prediction Project Implementation Plan for the Year of Polar Prediction (YOPP)." *WWRP-PPP Nr. 3* (2014).

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, AWI, N. Gordon

The Year of Polar Prediction (YOPP)

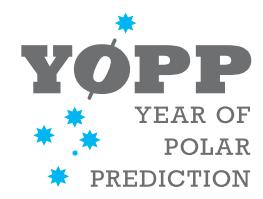
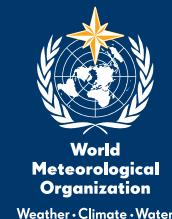
A Flagship Activity of the WWRP Polar Prediction Project



v2.0

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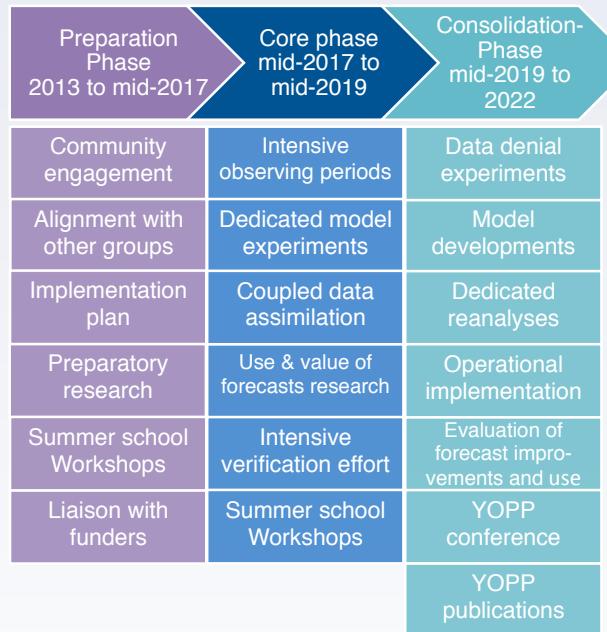
BACKGROUND

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 and beyond, 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 WCRP (CliC/PCP) 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, the core phase and the consolidation phase.



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.

STRATEGY

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.

The YOPP core phase 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 and education efforts.

A consolidation phase marks the end of the YOPP decade. Data denial experiments, model developments, dedicated reanalyses, operational implementation, the evaluation of forecast improvements and use as well as YOPP-specific publications are its main features.



The YOPP strategy places special emphasis 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.