



Advancing Environmental Prediction Capabilities for the Polar Regions and Beyond during The Year of Polar Prediction

Kirstin Werner (1,2), Helge Goessling (1,2), Winfried Hoke (1,2), Katharina Kirchhoff (1,2), Thomas Jung (1,2)

(1) Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, Bremerhaven, Germany, (2) WMO WWRP PPP/YOPP International Coordination Office for Polar Prediction

Environmental changes in polar regions open up new opportunities for economic and societal operations such as vessel traffic related to scientific, fishery and tourism activities, and in the case of the Arctic also enhanced resource development. The availability of current and accurate weather and environmental information and forecasts will therefore play an increasingly important role in aiding risk reduction and safety management around the poles. The Year of Polar Prediction (YOPP) has been established by the World Meteorological Organization's World Weather Research Programme as the key activity of the ten-year Polar Prediction Project (PPP; see more on www.polarprediction.net). YOPP is an internationally coordinated initiative to significantly advance our environmental prediction capabilities for the polar regions and beyond, supporting improved weather and climate services. Scheduled to take place from mid-2017 to mid-2019, the YOPP core phase covers an extended period of intensive observing, modelling, prediction, verification, user-engagement and education activities in the Arctic and Antarctic, on a wide range of time scales from hours to seasons. The Year of Polar Prediction will entail periods of enhanced observational and modelling campaigns in both polar regions. With the purpose to close the gaps in the conventional polar observing systems in regions where the observation network is sparse, routine observations will be enhanced during Special Observing Periods for an extended period of time (several weeks) during YOPP. This will allow carrying out subsequent forecasting system experiments aimed at optimizing observing systems in the polar regions and providing insight into the impact of better polar observations on forecast skills in lower latitudes. With various activities and the involvement of a wide range of stakeholders, YOPP will contribute to the knowledge base needed to managing the opportunities and risks that come with polar climate change.