

THORPEX Ongoing activities

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www.wmo.int/wwrp
www.wmo.int/thorpex

Background

- To accelerate improvements in the accuracy of one-day to two-week high impact weather forecasts for the benefit of society, the economy and the environment.
- International research and development programme to establish an organizational framework that addresses weather research and forecast problems
- Solutions accelerated through international collaboration among academic institutions, operational forecast centres and users of forecast products.

Background

- The 10-year THORPEX era is coming to a close this year
- Activities are concentrated on the post THORPEX era

WWRP Restructure

- Three THORPEX WGs will be moved to WWRP
 1. Predictability and Dynamical Processes (PDP) WG
 2. Global Interactive Forecast System – THORPEX Grand Global Ensemble (GIFS-TIGGE) WG
 3. Data Assimilation and Observing Systems (DAOS) WG
 - PDP and GIFS-TIGGE will combine into one new working group: Predictability and Ensemble Prediction (PEP, tentative)

- RCs will be disbanded. They could continue within the WWRP on the basis that they are self-funding and self organising.

THORPEX Legacy Projects

- Polar Prediction Project (PPP)
- Subseasonal to Seasonal Prediction (S2S)
- High Impact Weather (HIW)

- 5 year projects: 1/1/15 – 12/31/19
- Each project will have a WMO Trust Fund and International Coordination Office (ICO)

Relations among Projects

<p>S \ T</p>	<p>Hour - 2 weeks</p>	<p>2 weeks - Season</p>
<p>Regional</p>	<p>PPP</p>	
<p>Global</p>	<p>HIW</p>	<p>S2S</p>

Polar Prediction Project (PPP)

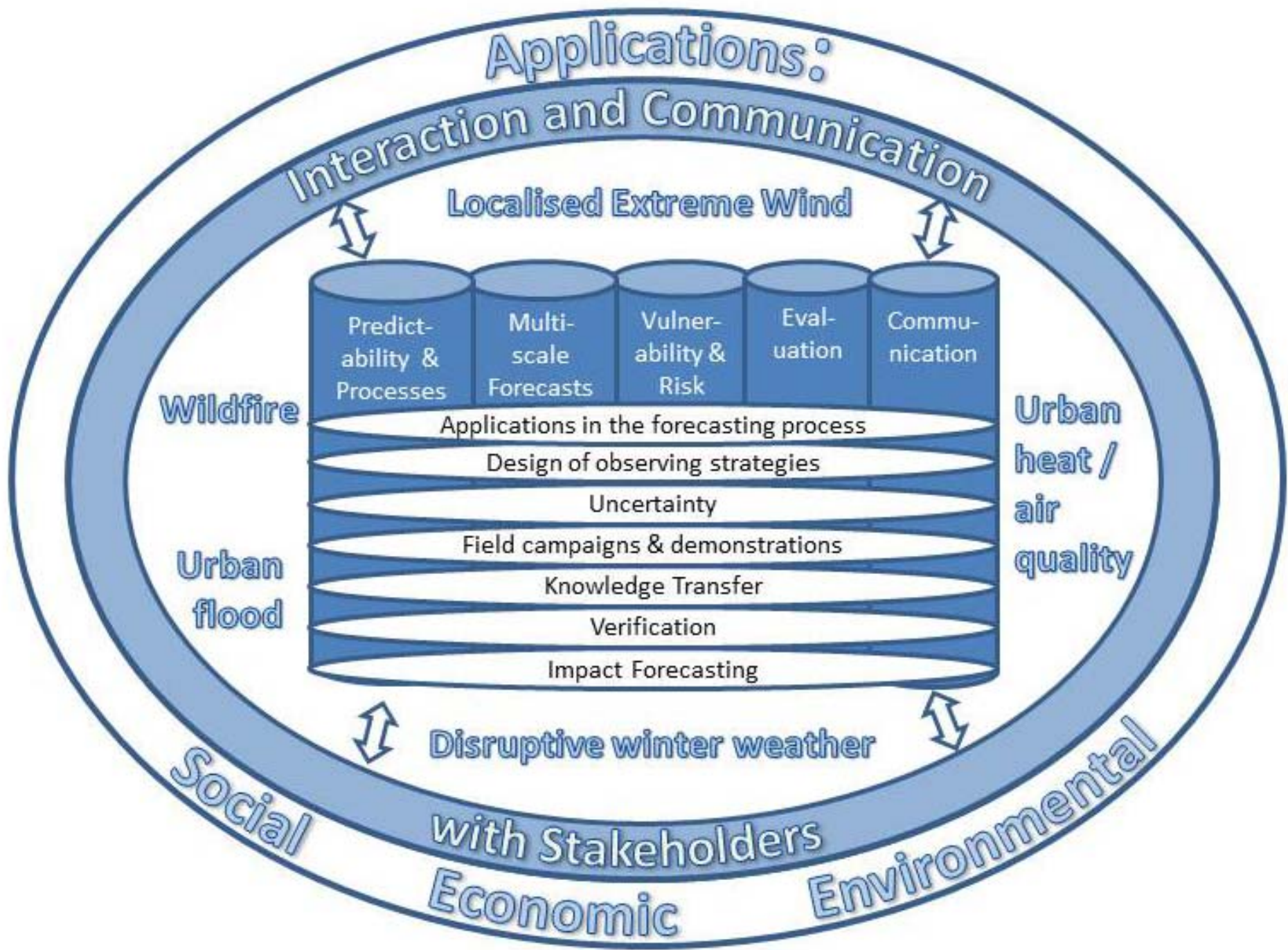
- <http://polarprediction.net/>
- Established in 2012, ICO in Germany
- Mission: “Promote cooperative international research enabling development of improved weather and environmental prediction services for the polar regions, on time scales from hours to seasonal.”
- “Year” of Polar Prediction scheduled mid-2017 to mid-2019 ... intensive observing periods, dedicated model experiments, research on use and value of forecasts, verification, summer schools, reanalyses, data denial experiments ...

Subseasonal to Seasonal (S2S)

- http://www.wmo.int/pages/prog/arep/wwrp/new/S2S_project_main_page.html
- WWRP/THORPEX/ WCRP joint research project
- Improve forecast skill and understanding on the subseasonal to seasonal timescale
- Promote its uptake by operational centres and exploitation by the applications community.
- Risk of extreme weather, including tropical cyclones, droughts, floods, heat waves and the waxing and waning of monsoon precipitation

High Impact Weather (HIW)

- Endorsed by WMO but not yet formally established
- Current stage
 - Identifying activities that WMO can sponsor
 - Task team (led by Sarah Jones and Brian Golding) is completing proposal and implementation plan
- Mission: “Promote cooperative international research to achieve a dramatic increase in resilience to high-impact weather, worldwide, through improving forecasts for timescales of minutes to two weeks and enhancing their communication and utility in social, economic and environmental applications.”
- Driven by 5 hazards (next slide)
- Trust Fund and ICO will need to be established.



US THORPEX Science Steering Committee

- Created in 2013 charged to
 - Identify THORPEX scientific challenges
 - Expand efforts into the social sciences
 - Revise Science Plan. Collect recommendations. Align it with both the new US context and current International THORPEX legacy science initiatives
 - Facilitate U.S. research groups to engage in the three THORPEX international Legacy Projects

- New office and website location

<http://somas.stonybrook.edu/~na-thorpex/>



International Conference on Subseasonal to Seasonal Prediction

[Home](#) > International Conference on Subseasonal to Seasonal Prediction

WMO WWRP/THORPEX-WCRP joint S2S research project

- Organized by NCEP, IAO-NWS and the S2S Steering Group
- Brought together more than 150 participants from operational centers, the research and the applications communities.
- Program included 5 general themes
 - a. Relevant phenomenon for S2S prediction and predictability: MJO, stratospheric variability, land-atmosphere feedbacks, etc.
 - b. Prediction of extremes: Blockings, short-lived extremes, tropical cyclones, heat waves, etc.
 - c. Initialization and ensemble perturbation methods: Coupled breeding, ocean, land, snow initialization, etc.
 - d. Design of Forecast Systems: Multi-model ensembles, monthly forecasting systems, etc.
 - e. Approaches to Integrate S2S forecasts

NAEFS plans –related to TIGGE



- **Subseasonal NAEFS**

- Canada running ensemble forecasts with prescribed SST out to 32 days twice per week. NCEP currently generates ensemble forecasts out to 45 days based on coupled model. Currently, the GEFS extended is run experimentally.

- No agreement to exchange data operationally yet.

- **TIGGE-Subs (S2S)**

- Once per week exchange. Need to check formal protocols.

- The US and Canada operate a similar project (NMME) currently for seasonal forecasts. Similarly (EUROSIP+NCEP exchange). Phase 2 of the NMME to exchange subseasonal ensemble forecasts.

- **Subseasonal time scales: Different approach. Sufficiently long hindcast consistent with the model must be generated**

Upcoming meetings

- Working meeting organized by the USTSSC first week of June. Silver Springs, MD.
- World Weather Open Science Conference, 16-21 August, Montreal, Canada.