

Predictability, Prediction, Applications Interface Panel (PPAI)

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US CLIVAR
Summit 2015
PPAI Panel



2015 PPAI Breakouts

Linked to US CLIVAR Research Challenges (RC) & Cross Cutting Strategies (CCS)

RC: Decadal Variability & Predictability & CCS: Communication of Climate Information

Systems Sensitive to Decadal Variations

RC: Climate & Extreme Events

Climate & Extreme Events: Dynamics & Predictability

CCS: Quantifying Improvements in Predictions & Projections

Quantifying Improvements in Prediction/Projections (Joint w/PSMI)

RC: Climate and carbon/biogeochemistry

Predictability of Coastal/Shelf (Eco)systems (Joint w/POS)

CCS: Communication of Climate Information

Applications Interface

ENSO Monitoring, Analysis, and Prediction

Action Item: Disseminate Questionnaire to PPAI and then hold telecon to provide expert guidance on a set of questions that we developed specific to improvements in predictions and applications

Warming Hiatus

Identified the following question as most relevant to our panel:

How can U.S. CLIVAR best participate in the dialogue to better inform the public the difference between long-term global warming and interruptions such as the Hiatus?

- Connect with organizations such as Climate Central, UCAR (Climate Voices), National Climate Assessment: Provide them with information, briefings, etc.
- CLIVAR FAQ site
- Hiatus “fact” sheet
- Inform NCA

Systems Sensitive to Decadal Variations: PPAI Actions

- Identify and prioritize strategies that aid in the *Assessment of Decadal Sensitivity of Coupled Natural/Human Systems*
- The main goals of these strategies are the following
 - Determine what natural and human systems are most sensitive and responsive to decadal scale climate variability
 - Review literature, solicit expert assessment and produce white paper/BAMS article
 - Identify, evaluate and develop improved climate-prediction metrics (including those related to probabilities/uncertainties) for applications-based use
 - Review literature, solicit expert assessment and produce white paper/BAMS article
 - Provide/solicit guidance on methods to assess conditional skill of decadal climate-impact predictions and the release, dissemination, and use of “outlooks of opportunity”
 - TBD

Coastal Shelf: PPAI/POS Actions

- Look at basins other than EBUS – e.g., W. Atlantic, Inter-American Seas
- Connect with International CLIVAR efforts
- Form partnerships with marine biology, fisheries, marine ecosystem science communities
- Workshop = short-term mechanism to move forward
- Engage IMBER, PICES managers, as well as U.S. federal agencies to garner funding
- Test the Applications Process Team in this setting
 - Science questions are compelling
 - Clear need to bridge between science and applications & human dimensions (e.g. food security, economics activities, etc.)
- No mechanism for interdisciplinary research
- Issue of CLIVAR Variations

Applications: PPAI Actions

- Managing forecast expectations
 - Train the trainers → COMET
 - S2S is an opportunity to inform a new product line
 - Produce NMME skill masks as basis to dialogue with decision-making communities
- “Assessment” of CLIVAR science at various stages of readiness
 - Continuum of use of science information
 - AGU, AMS sessions
 - Survey, White Paper
 - Solicit input from all panels to inform applications opportunities for next set of PPAI applications actions
- Applications Process Team
 - Coastal shelf activity is ideal
- Build applications into other initiatives to demonstrate societal relevance of CLIVAR science (GFCS)
- CLIVAR more directly engage with NCA; framing uncertainties, new insights

Climate & Extremes Events: Dynamics & Predictability

Subseasonal Predictability & Prediction

- There is a relationship between subseasonal “sources” of predictability and extreme events
- S2S is a high priority in the community
- CPC will begin issuing week 3-4 outlooks in Sep
- Intraseasonal modes (MJO, CCKWs) impact TC activity in all basins
- Several groups are making subseasonal TC predictions based on these modes

Predicting Warm Season Extremes

- Is increasing global temperature due to changes in mean and/or variability?
See shift in mean, but no shift in variability -> more heat waves
- How is this manifested regionally? Small change in GPLLJ in global context, but have large regional impacts
- Global climate change: changes in springtime regional precipitation, more heavy precip.
- NMME models do not have much/any precipitation skill summer. Need to look at large scale circulation factors with these models; can look at dominant modes related to summer precip
- To get convective structures need convective resolving models
- High inconsistencies between NARCCAP summer precip even when driving model is the same

Climate & Extremes Events: Dynamics & Predictability

What can PPAI do to advance the prediction of extremes?

Potential Actions

- Webinars to review the NRC ISI Report and the new NRC report when it comes out to identify critical research areas that PPAI can endorse, promote, lead
 - Review NRC Report at Review time as a group
- MAPP FY15 NMME extremes evaluation projects: sponsor journal special issue or CLIVAR Variations
- Given community focus both nationally and internationally on S2S, should train the next generation: ASP workshop? Climate/seasonal/subseasonal forecasting camp/internship/training program?
 - Make sure to identify both warm season and cool season predictability issues
- Utilize US CLIVAR Project Office to highlight extremes work by PPAI panel members on website, social media.
- Webinar and follow-up mtg to get feedback from subseasonal on needs & challenges fcsters (CPC will start week 3-4 outlooks in Sep)
 - Hold next year's panel meeting at NCEP so we can connect with forecasters
- COMET modules to teach users how to use week 3-4 outlooks.
- Identify how we can interact with International S2S

Plans for moving forward as a Panel

Work plan

How to interact

- Quarterly PPAI teleconferences
- GOOGLE docs (plus workaround for China/Xin-Zhong)

How to keep momentum

- Task groups
 - S2S/Extremes
 - Coastal Shelf
 - Decadal
 - Applications Assessment (and coordinate with other teams)
- Next year's foci
 - Possibly connected to meeting at NCEP in 2016
 - Dedicated CLIVAR CPU
 - MRED-like activity

How to highlight what we are doing

- In acknowledgments in papers "Inspired by/facilitated by US CLIVAR..."
 - CLIVAR contribution number
 - CLIVAR could attribute these on website
 - Make sure every CLIVAR pub has a DOI