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ICES/PICES Workshop Global assessment of the implications of climate change on the spatial distribution of fish and fisheries

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Acknowledgements

- Thank you to ICES and PICES for their support
- Thank you to our Russian Hosts
- Thank you to the PICES Secretariat
- Thank you to participants
- Thank you to the invited speakers
- Thank you to the breakout session chairs



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Day 1

- A variety of methods have been applied.
- Selection of approach dependent on scale of question.
- Responses at center, leading and trailing edges of distribution may vary
- Careful assessment of outcomes of different approaches within same system needed.
- Fisheries oceanography needed to verify mechanisms – dynamic and statistical frameworks allow informed deployment of process oriented studies. (OSE Ocean System Experiment)
- Tagging and fish behavior studies need to be revived.



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Days 1 and 2

- Availability of satellite data allowed skill assessments for lower trophic levels—skill assessments are more challenging for higher trophic (HT) levels.
- Data needed for HTs - Identify life history bottlenecks to guide auxiliary surveys for model verification.
- Techniques that provide a way to quantify attribution to multiple stressors are needed.
- 6 month now casts provide opportunity to test assumptions.
- Projections are uncertain and users must be informed. Sensitivity analyses needed.



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Days 2 and 3

- Database of observations good idea but complicated
- Apply vulnerability, statistical and dynamic simulation modeling to the same problem when possible.
- Within and between model comparisons are needed. Identify regions where multiple modeling approaches have been developed and compare.
- Best practices needed to allow comparison across regions. Consider methods used to compare GCMs for biological models. World modeling teams.
- Common currencies for comparison should be identified
- Managers need clear concise and reasonably accurate advice.
- Management strategy evaluations to illustrate implications of management actions on future state of nature will be useful.



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Future Directions

- White Papers – Database
- Develop research plans – distribute to member countries
- Theme session focused on GCM and ESM