



Environmental Regulatory Workshop

Ocean Renewable Energy Conference XI
September 21-22, 2016



Risk Profiles

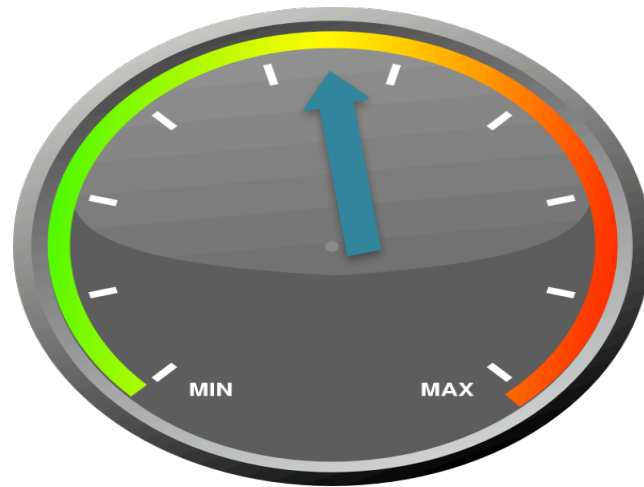
- What are Risk Profiles?
- How can we use them to move from small to commercial scale projects?
- Goal is to decrease uncertainty, move towards “retiring risk” => going into the green on dashboards
- What are the relative contributions to “getting to green”?
 - Knowledge sharing; Increased sharing of existing information
 - Modeling: Improved modeling of interaction
 - Monitoring: Monitoring data needed to verify findings
 - Research: New research needed

Interactions Assessed for Risk Profiles

- Acoustic output (noise)
- EMF
- Energy removal/changes in flow
- Changes in habitats/reefing
- Collision risk (tidal)
- Entanglement

Risk Profile

Effect of Acoustic Output on Animals



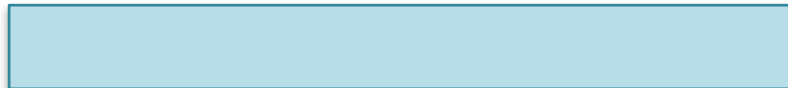
Increased sharing of existing information



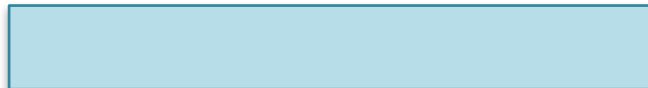
Improved modeling of interaction



Monitoring data needed to verify findings



New research needed



Risk Profile Electromagnetic Fields (EMF)



Increased sharing of existing information



Improved modeling of interaction



Monitoring data needed to verify findings

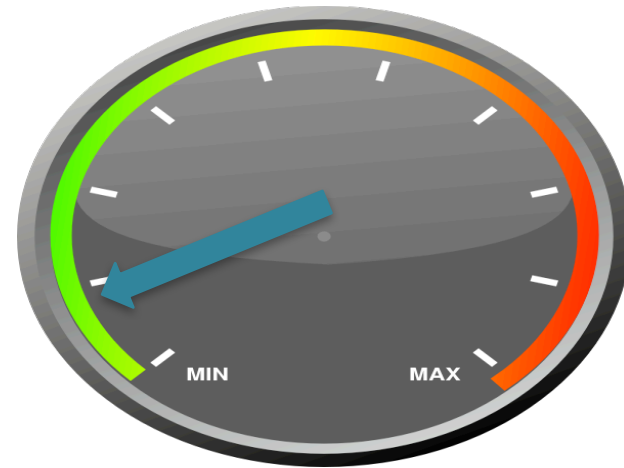


New research needed



Risk Profile

Physical Changes (energy removal and changes in flow)



Increased sharing of existing information



Improved modeling of interaction



Monitoring data needed to verify findings

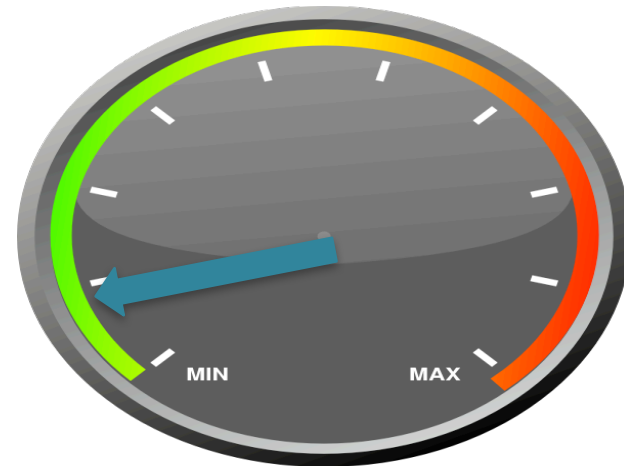


New research needed



Risk Profile

Changes in Habitats/Reefing



Increased sharing of existing information



Improved modeling of interaction



Monitoring data needed to verify findings

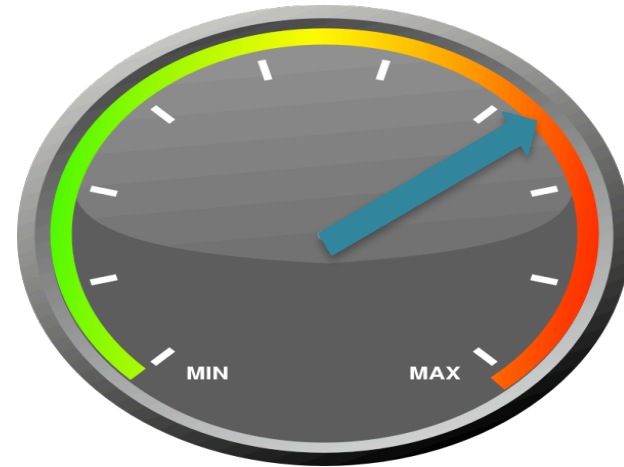


New research needed



Risk Profile

Collision Risk (tidal)



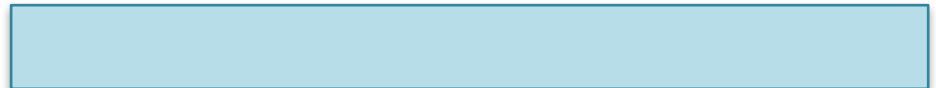
Increased sharing of existing information



Improved modeling of interaction



Monitoring data needed to verify findings

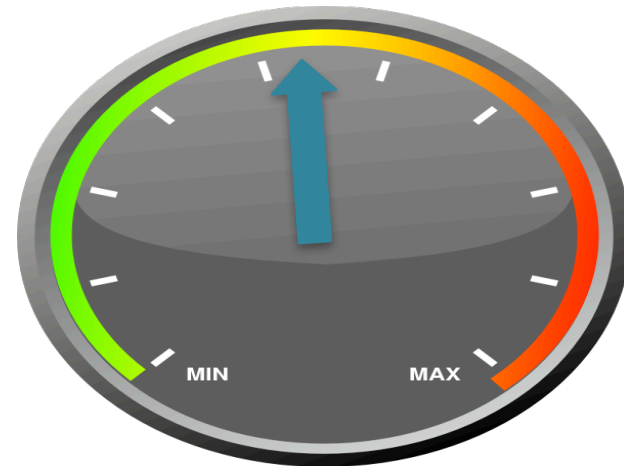


New research needed



Risk Profile

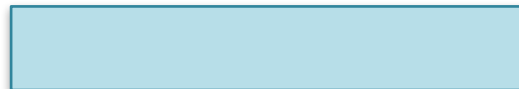
Entanglement/Debris



Increased sharing of existing information



Improved modeling of interaction

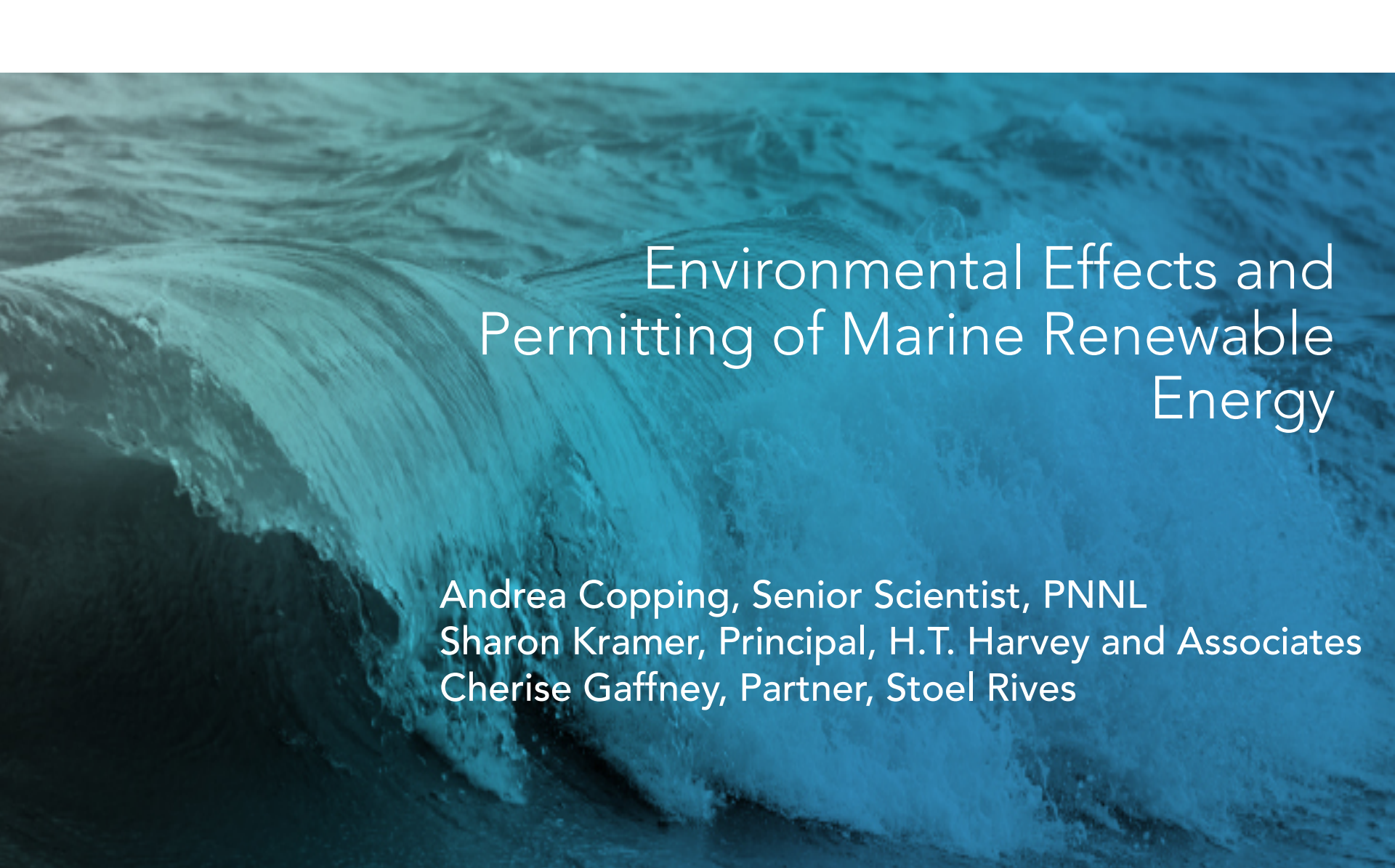


Monitoring data needed to verify findings



New research needed





Environmental Effects and Permitting of Marine Renewable Energy

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