



# Environmental Regulatory Workshop

Ocean Renewable Energy Conference XI  
September 21-22, 2016



# Risk Profiles

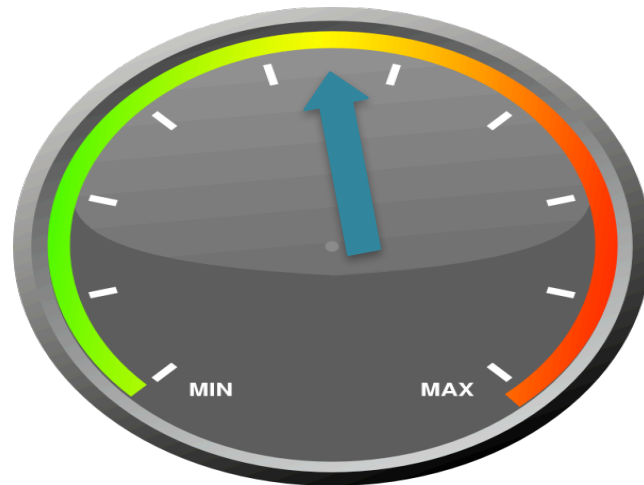
- What are Risk Profiles?
- How can we use them to move from small to commercial scale projects?
- Goal is to decrease uncertainty, move towards “retiring risk” => going into the green on dashboards
- What are the relative contributions to “getting to green”?
  - Knowledge sharing; Increased sharing 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



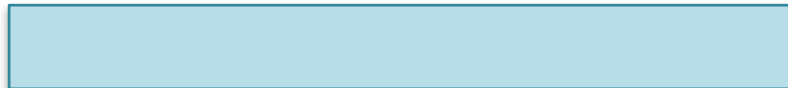
Increased sharing of existing information



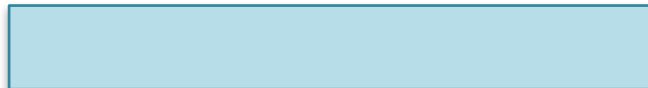
Improved modeling of interaction



Monitoring data needed to verify findings



New research needed



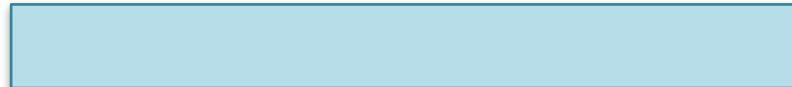
# Risk Profile Electromagnetic Fields (EMF)



Increased sharing of existing information



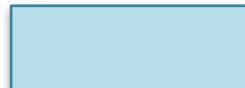
Improved modeling of interaction



Monitoring data needed to verify findings

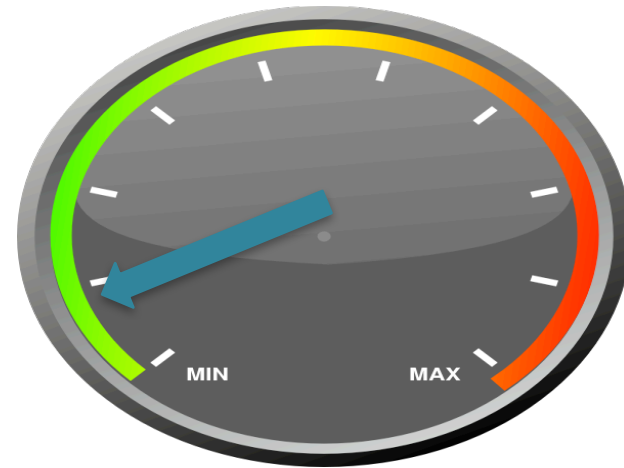


New research needed



# 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

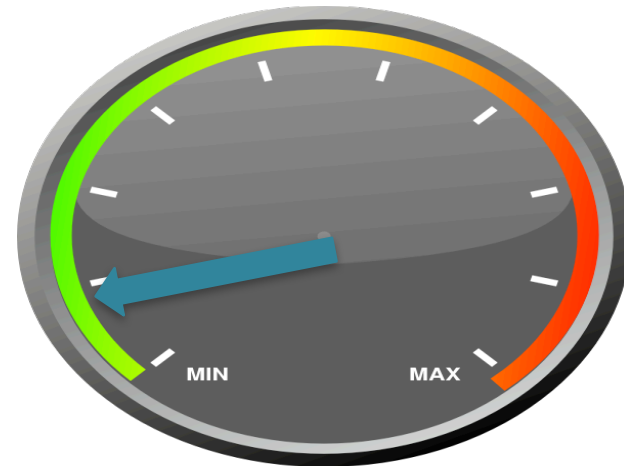


New research needed



# Risk Profile

## Changes in Habitats/Reefing



Increased sharing of existing information



Improved modeling of interaction



Monitoring data needed to verify findings

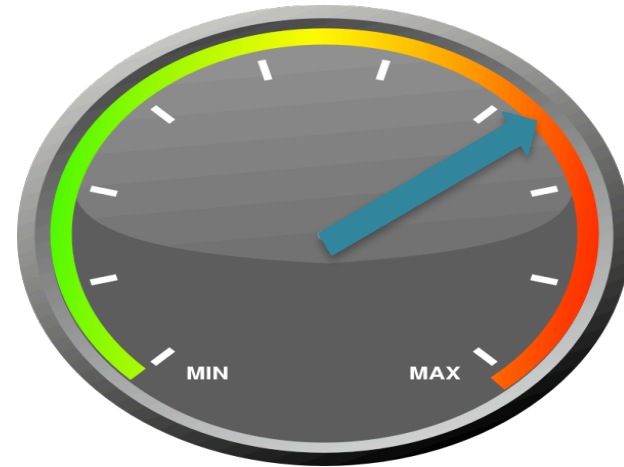


New research needed



# Risk Profile

## Collision Risk (tidal)



Increased sharing of existing information



Improved modeling of interaction



Monitoring data needed to verify findings



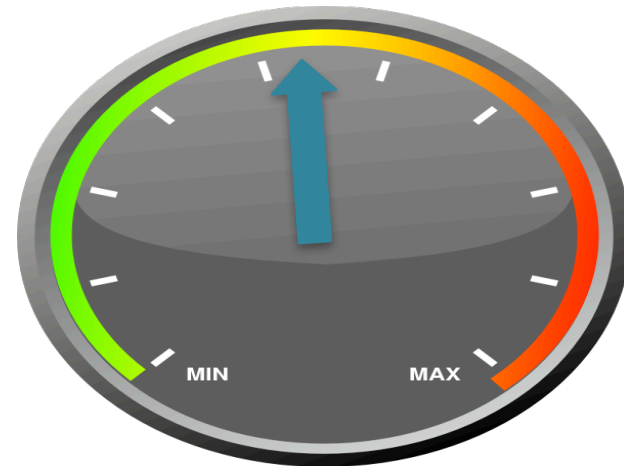
New research needed





# Risk Profile

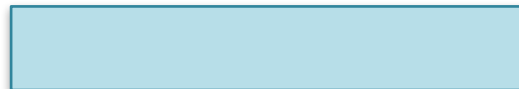
## Entanglement/Debris



Increased sharing of existing information



Improved modeling of interaction

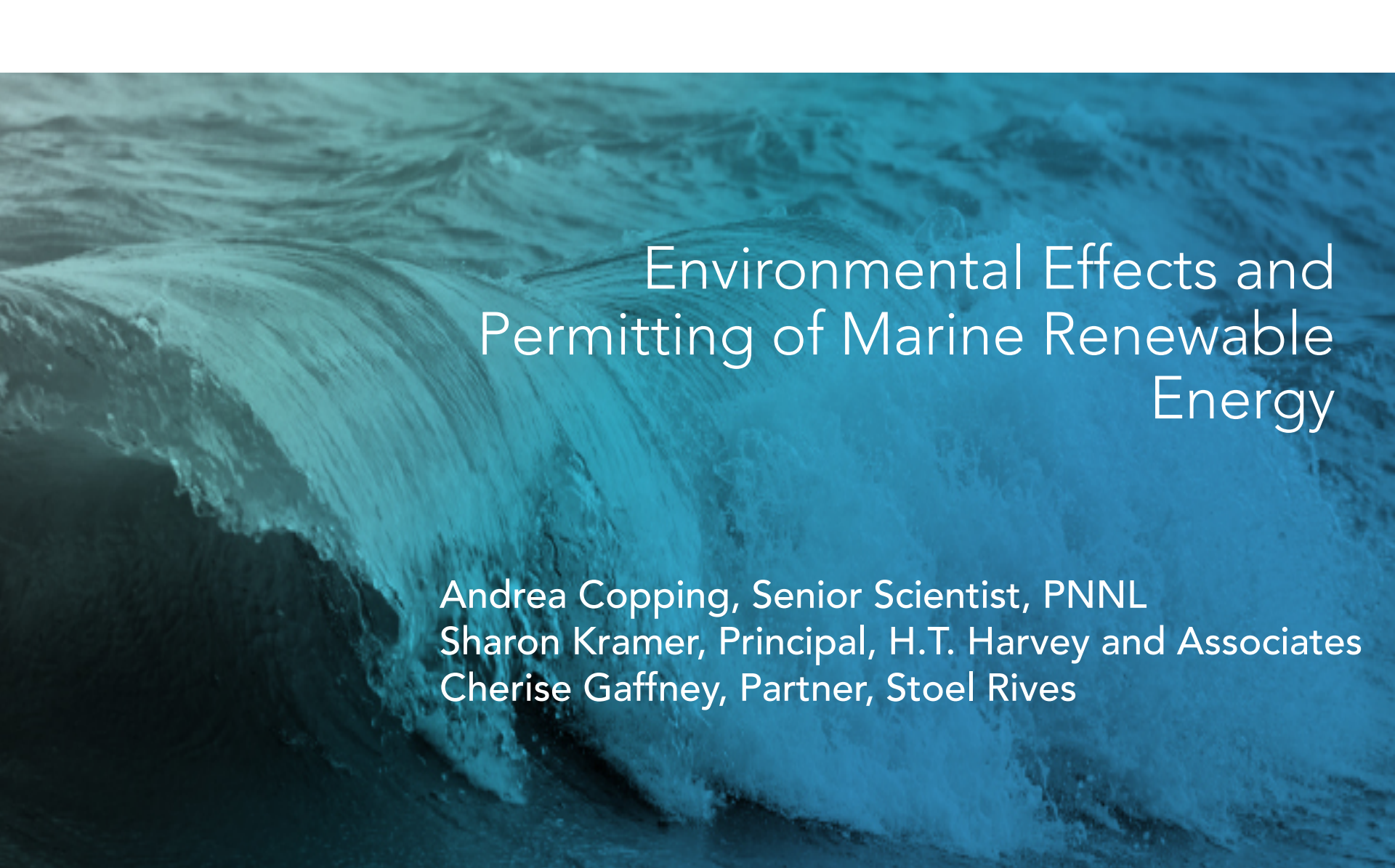


Monitoring data needed to verify findings



New research needed





# Environmental Effects and Permitting of Marine Renewable Energy

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