INTEGRATING ENVIRONMENTAL EFFECTS INTO MARINE RENEWABLE ENERGY DEVELOPMENTS: A CASE STUDY OF TIDAL TURBINES & MARINE MAMMALS

MARINE RENEWABLE ENERGY

- Marine Energy Converters (including tidal & wave energy) are a predictable & promising source of renewable energy in coastal regions of Canada & around the world.
- The MEC industry is in its infancy & presents a variety of potential environmental impacts.
- There are numerous logistical & technological difficulties with studying tidal energy sites so they are less well understood than other environments (Benjamins et al. 2015).
- As a result, our limited understanding of environmental effects means that the industry faces regulatory hurdles.

IMPACTS ON MARINE MAMMALS

- Tidal energy sites are ‘biological hotspots’.
- Tidal sites create predictable feeding opportunities for top marine predators, including seabirds & marine mammals

KNOWLEDGE GAPS

- Tidal energy sites are ‘biological hotspots’.
- Tidal sites create predictable feeding opportunities for top marine predators, including seabirds & marine mammals

IMPROVED KNOWLEDGE

- The behavioral effects of marine energy converter sound & the probability of collision risk are not well-understood.
- Knowing more about marine mammal behavior around marine energy converters could streamline environmental impact monitoring for pilot and early commercial projects

REFERENCES:

The Marine Ecology Lab, Biological Sciences, Simon Fraser University, Burnaby. Department of Statistics & Actuarial Science, Simon Fraser University, Burnaby.

SMRU Consulting, 1529 West 6th Ave, Vancouver