



# Developing Methods for Adding Supplemental Oxygen to Marine Salmon Farms on the South Coast of Nova Scotia



# Why do we need to add Supplemental Oxygen?

- ▶ Fish Health
- ▶ Fish Welfare
- ▶ Improved Food Conversions
- ▶ Better for the Environment

# Gulf Stream



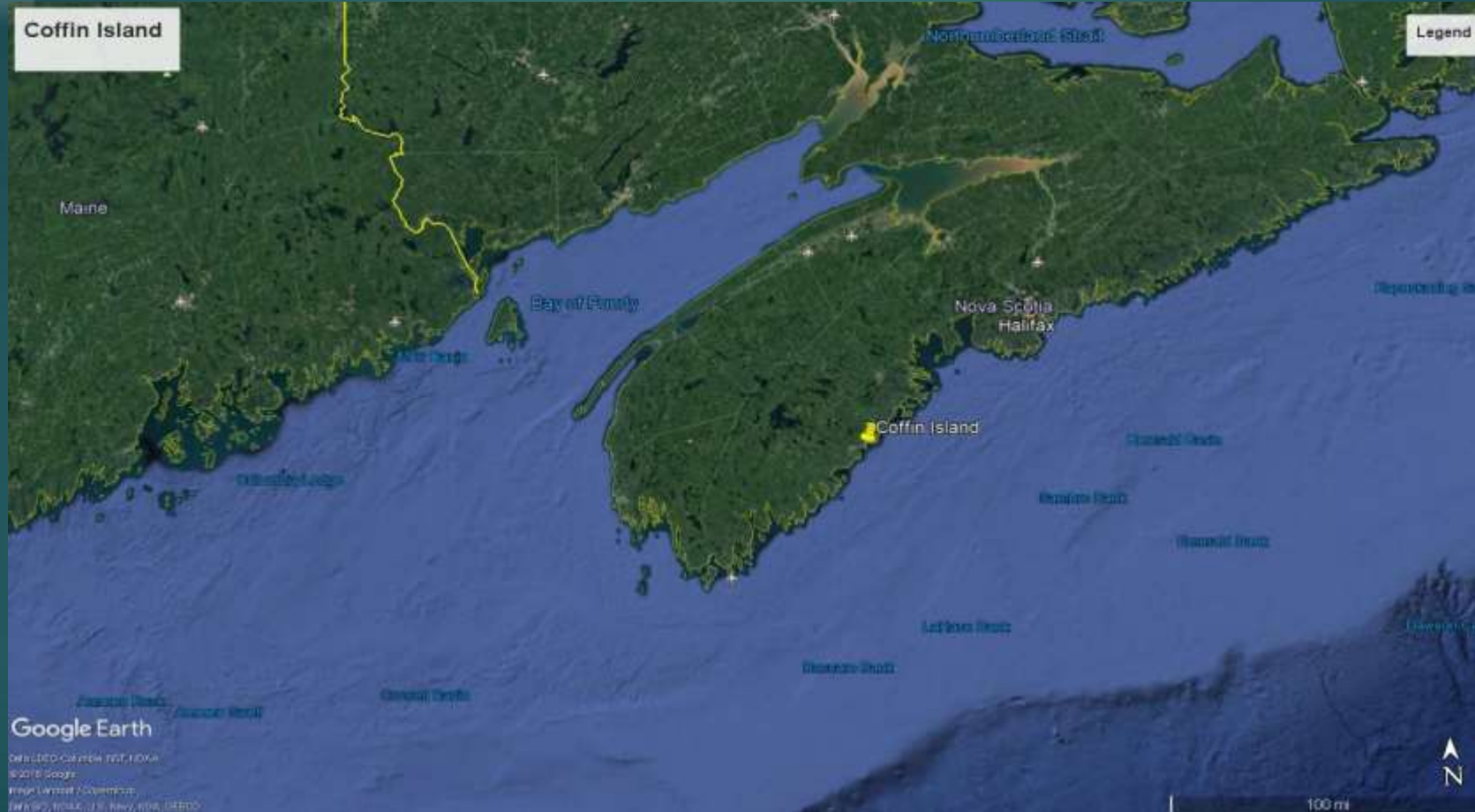


# No "off the Shelf" Solutions





# Coffin Island Site



NW Logger

NE Logger

O2 logger

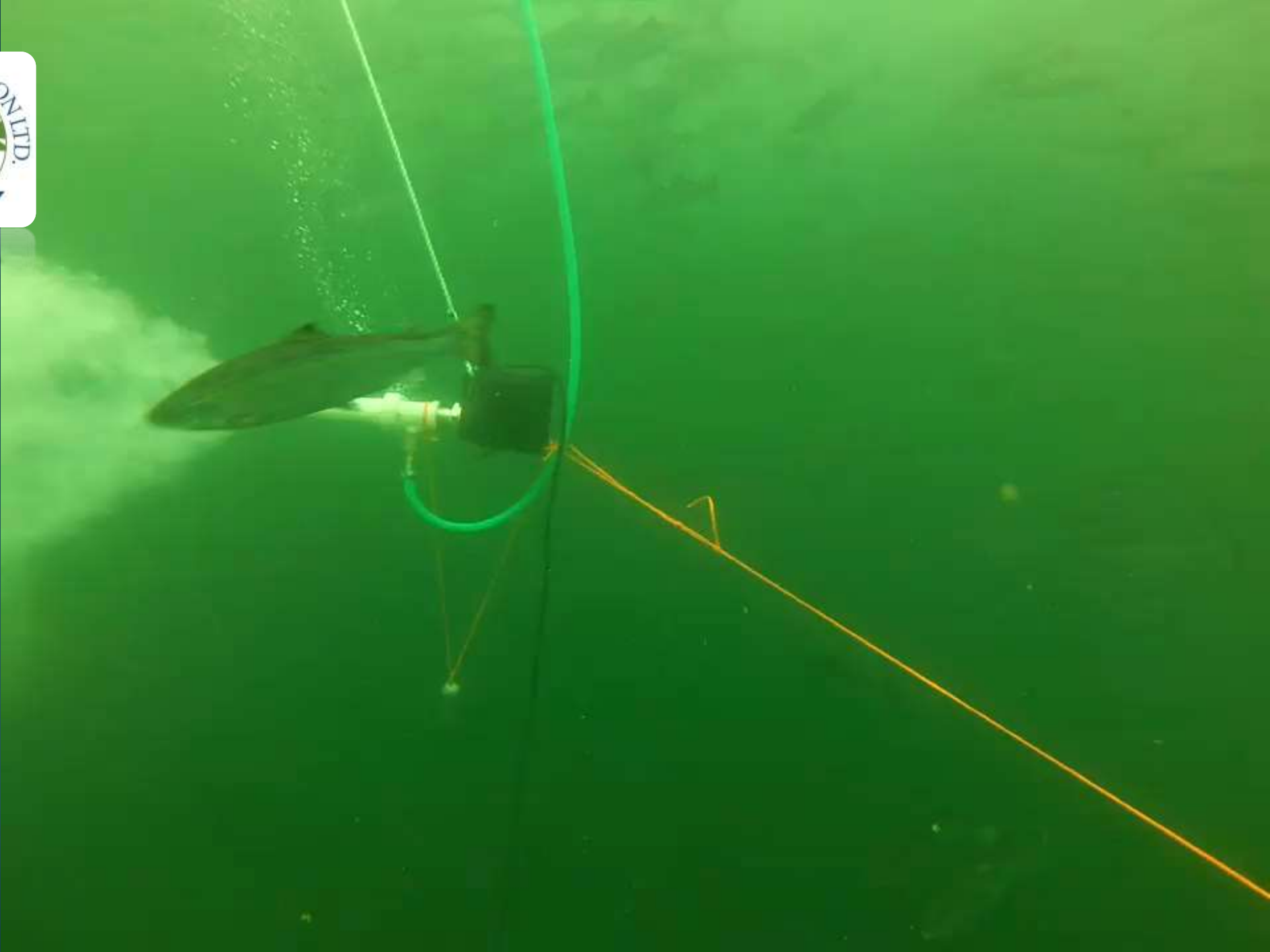


cage with supplemental O2



SW Logger

SE Logger







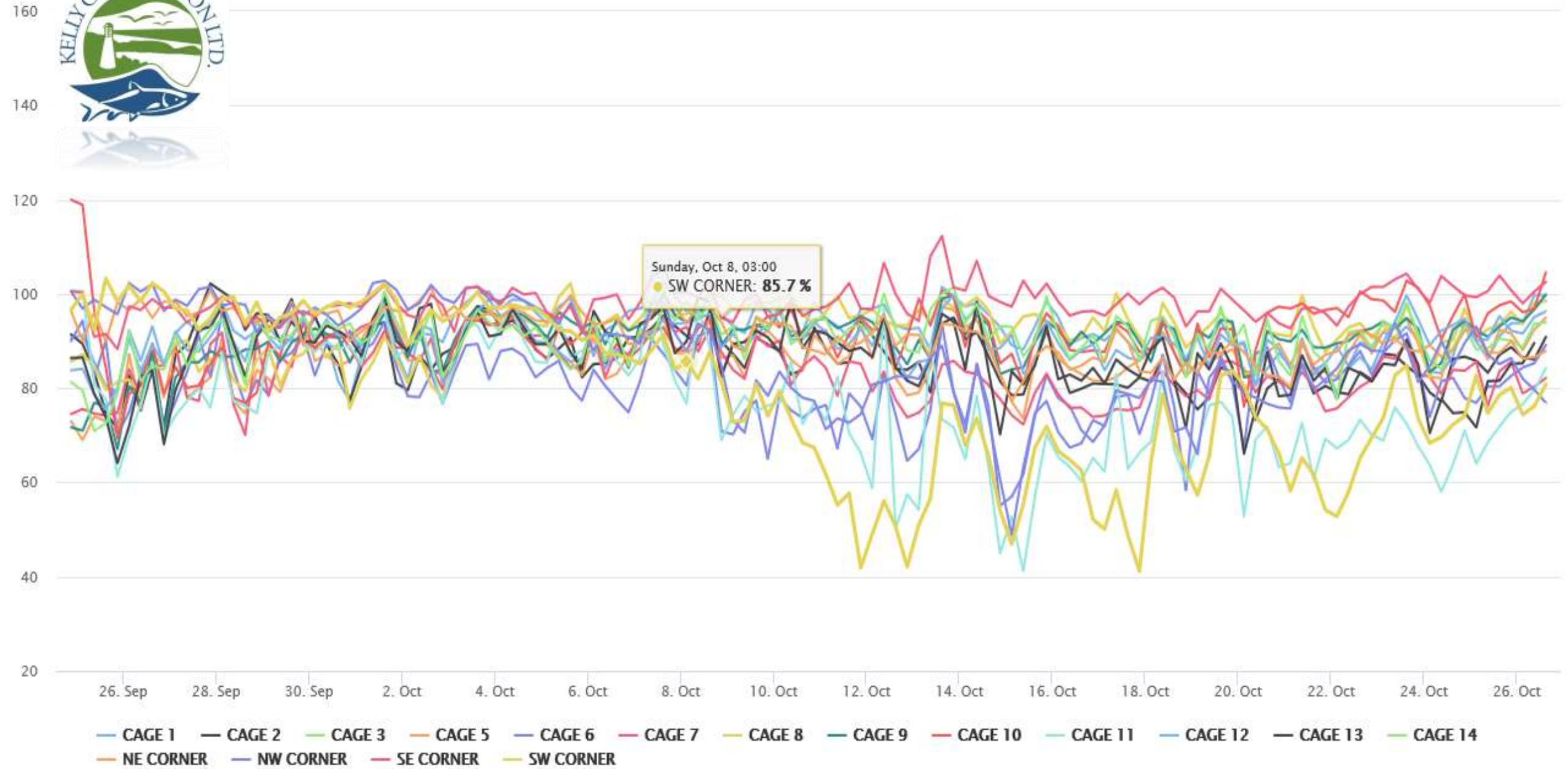


# Challenges

- ▶ Regulating  $O_2$  to each valve equally
- ▶ Difficulty regulating volume
  - ▶ solved with Mass flow meter
- ▶ Salt deposits building up in GAIA valves

# Liverpool

Dissolved Oxygen





# Summary

- ▶ High ambient  $O_2$  all summer combined with low biomass made for difficult trial.
- ▶ We were able to stay at same DO levels in supplemented cages during feed metabolism as ambient.
  - ▶ Weren't able to do that in untreated cages.
- ▶ Evened the DO levels - Not as many peaks and valleys
- ▶ Created a good baseline for Phase 2



# Partners

- ▶ Dalhousie University
- ▶ Realtime Aquaculture
- ▶ Poseidon Marine