Microtrolling: A Novel, Flexible, and Economical Method to Sample and Tag Juvenile Salmon in the Salish Sea

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How do we study juvenile salmon at sea?

- Capture fish to investigate distribution in space and time and sample for size, diet, health, and stock of origin.
- Tag fish to determine survival and/or movements.
- Traditionally we use large vessels (trawlers or seiners); these are essential tools but do have some limitations.

What is Microtrolling?

- Small, economical vessels
- Miniature recreational gear
- Multiple lines fished
- Short gear deployments
- Fish any current, any depth
- Fish released unharmed
- Low mortality

Microtrolling to study fine scale ecology

Why?
- Habitat varies at fine scales
- SSMSP Hypotheses:
  - Water Quality - Prey Availability
  - Metabolic Effects
  - Predation Intensity
  - Residency

How?
- Five sites, 16 weeks
- Sample across space and tide
- Simultaneous oceanography
- Sample stomachs, muscle and scales

Results?
- CPUE varies with space and tide
- Most analyses still to come – stay tuned!

Microtrolling to apply PIT tags

Why?
- Test SSMSP Critical Period Hypothesis – survival by:
  - Size
  - Location
  - Time
  - Origin (hatchery/wild)

How?
- Apply PIT tags at 4 distinct stages in early life
- Create inventory of tag ID’s
- Detect tags in adults returning to spawn

Results?
- Over 22,000 PIT tags applied (2014 and 2015)
- Over 60 tagged fish have returned so far
- Bulk of tags expected in 2016-2018