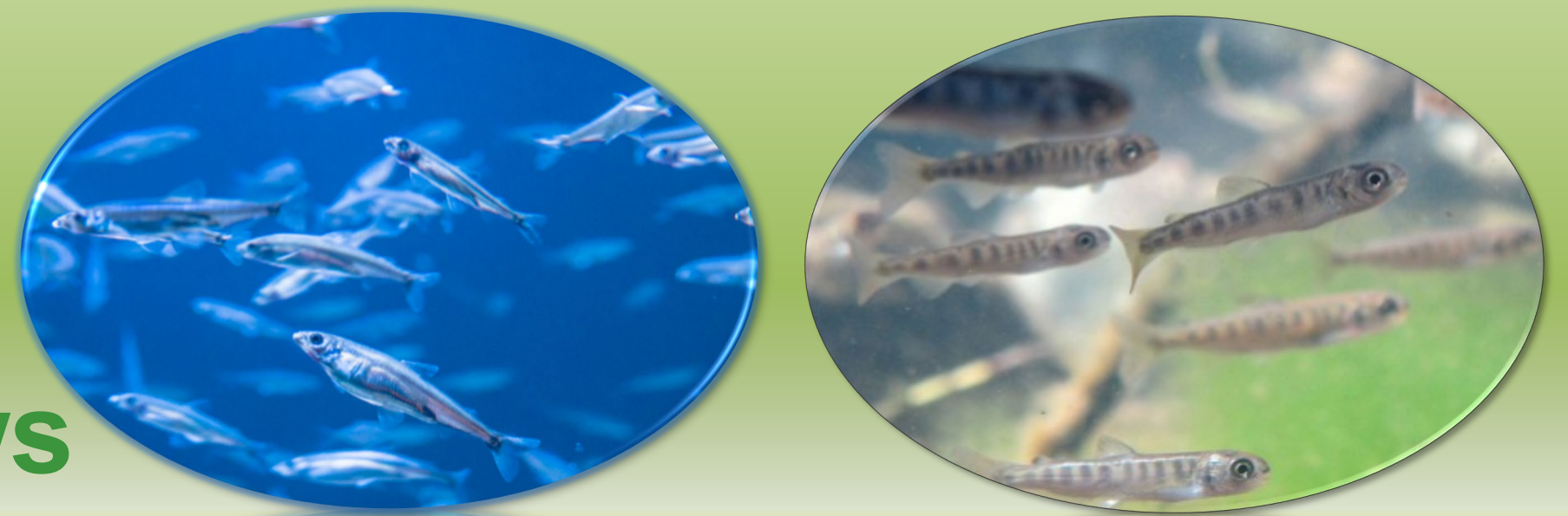


ECO-PTM -- An Individual Based Ecological Particle Tracking Model That Considers Tidal Flows

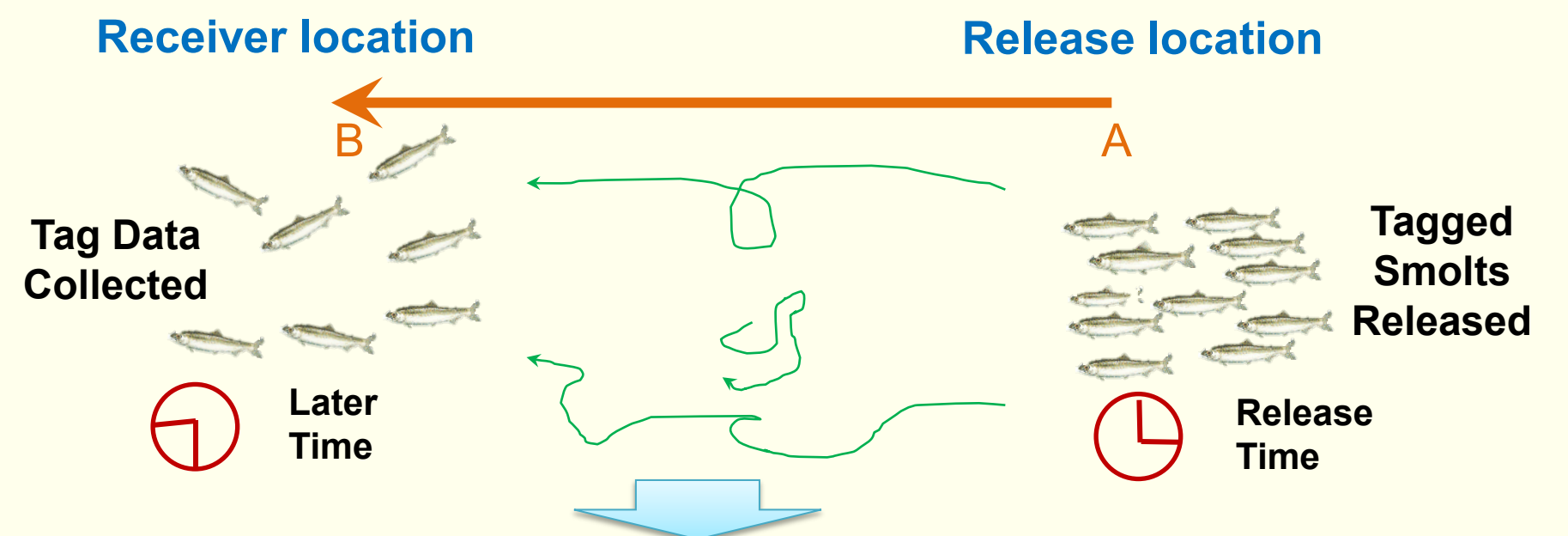


ECO-PTM FACTS

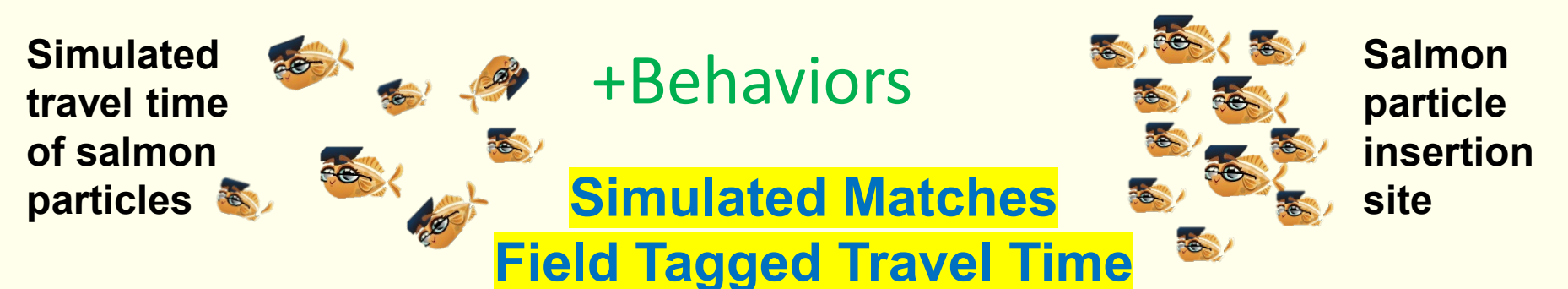
ECO-PTM is an individual-based ecological particle tracking model that tracks three types of particles, neutrally buoyant (Delta smelt larvae), position oriented (longfin smelt larvae), and salmon (Chinook salmon):

- Based on a random-walk particle-tracking method
- Utilizes flow information from a 15-minute-time-step hydrodynamic simulation of the Delta that captures the estuary's temporal and spatial tidal variations
- Used commonly for impact analyses of larvae entrainment of Delta smelt and longfin smelt into water project facilities
- Applied for analyses of juvenile salmon migration and survival through the Delta
- Attached fish-like behaviors to the salmon particles
- Calibrated and validated behavior parameters with field tag data: simulated outputs match observations

Field Tag Data for Salmon



ECO-PTM Calibrated and Validated with Tag Data



Model Applications

ECO-PTM can be an effective tool for quantitatively assessing water resources management actions, such as impacts on entrainment or fish survival from:

- Fish Barriers
- Project operation changes
- Restoration actions



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