Evaluating Effectiveness of Camera-Captured Morphometric Data

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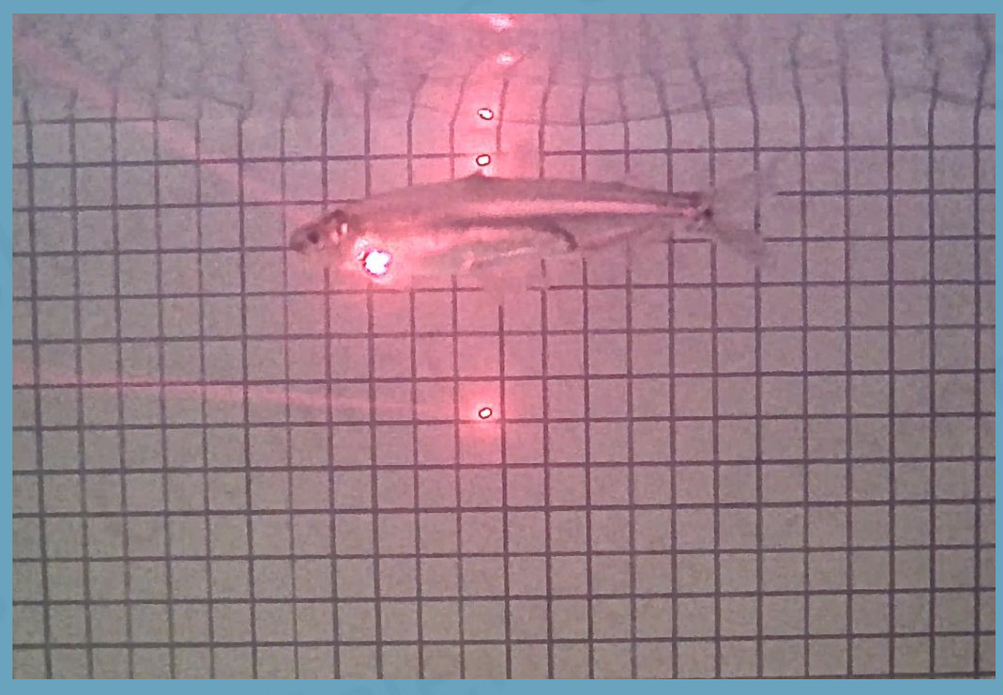
Video sampling is an effective tool for sampling fragile and imperiled species because it requires limited or no handling of fish.



INTRODUCTION

Fragile, threatened and endangered species are at risk of greater human impacts when sampled using techniques that require handling.

Goal: Determine if video sampling is reliable and effective for monitoring Delta Smelt (*Hypomesus transpacificus*), an imperiled and fragile species.

Study Questions:

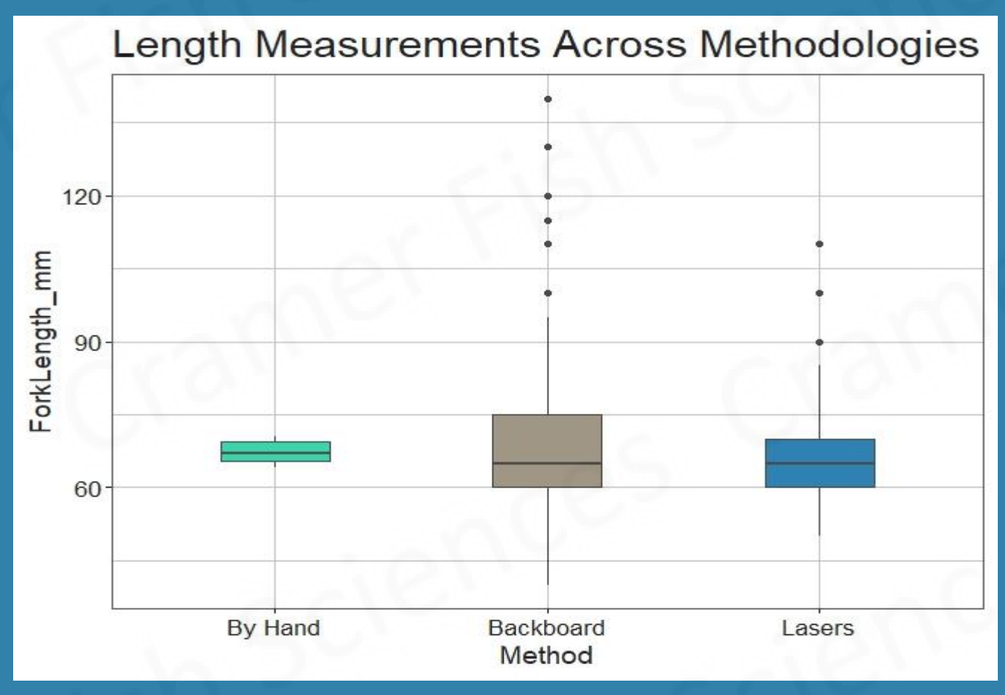
1. Can we accurately measure Delta Smelt from video?
2. Can we accurately visualize and identify Delta Smelt under varying turbidities?
3. Does velocity affect Delta Smelt orientation in front of the cameras?

METHOD

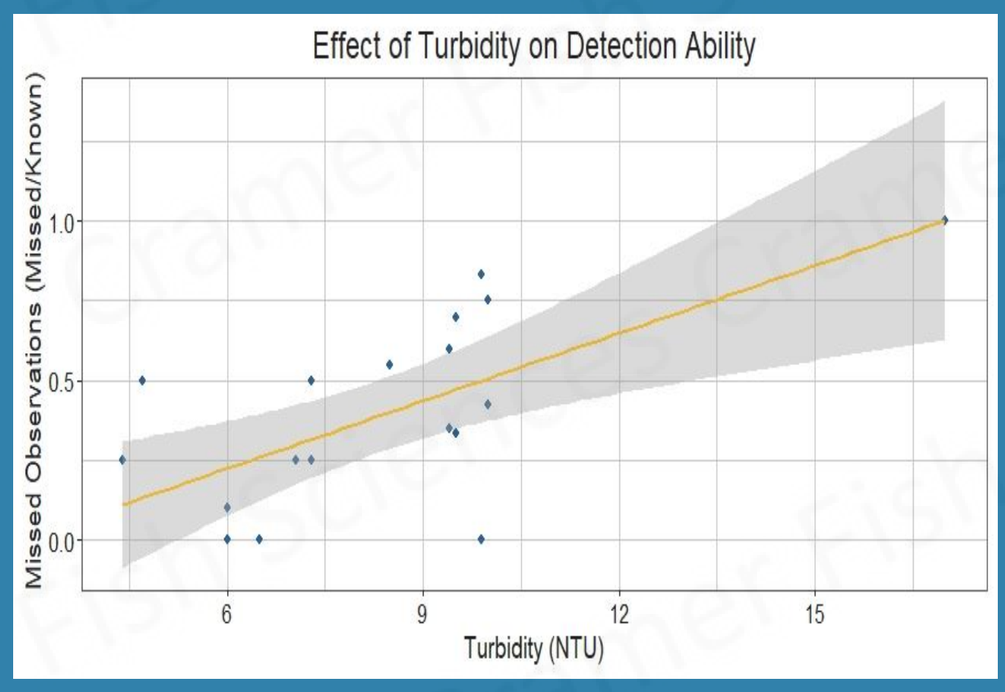
Experiment was performed inside a custom-made, closed-system flume (left).

RESULTS

1. Measurement methodologies were comparable to long-standing method (hand-held measuring board)

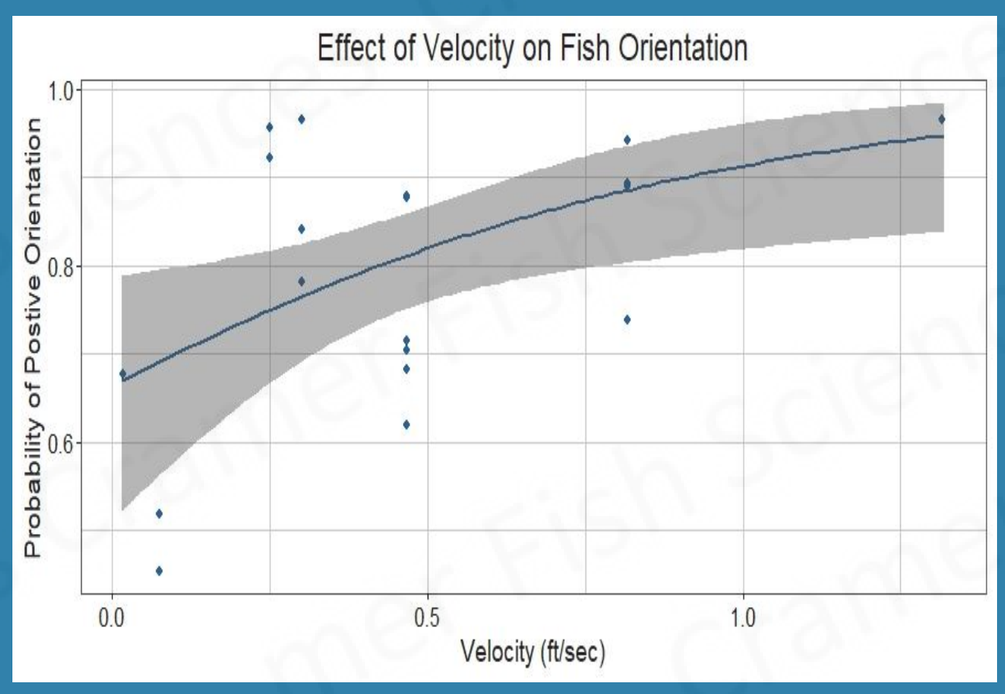


2. While turbidity affects our ability to see and ID Delta Smelt, we can still ID smelt in turbidities typical of its native habitat



3. Velocity affects Delta Smelt behavior (in our favor!)

*The line plotted on top of the raw data comes from predictions generated from a generalized linear model with quasibinomial error distribution.



This experiment was performed to directly inform the design and function of our patented Aquatic Habitat Sampling Platform (below).

www.fishsciences.net/expertise/sampling-platform

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