

Methods and Techniques for PIT tagging Large Numbers of Small Juvenile Salmonids



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Background

- Since 1991 USFWS and USGS have annually collected juvenile fall Chinook salmon by beach seine in the Snake River above Lower Granite Reservoir
- Often need to collect and tag >1,000 subyearlings/day
- Most areas only accessible by jet boat
- Efficient methods and workflow critical to tagging large numbers of small fish under difficult field conditions



Photo: Austin Johnson Lewiston Morning Tribune

Collection, Holding, and Personnel

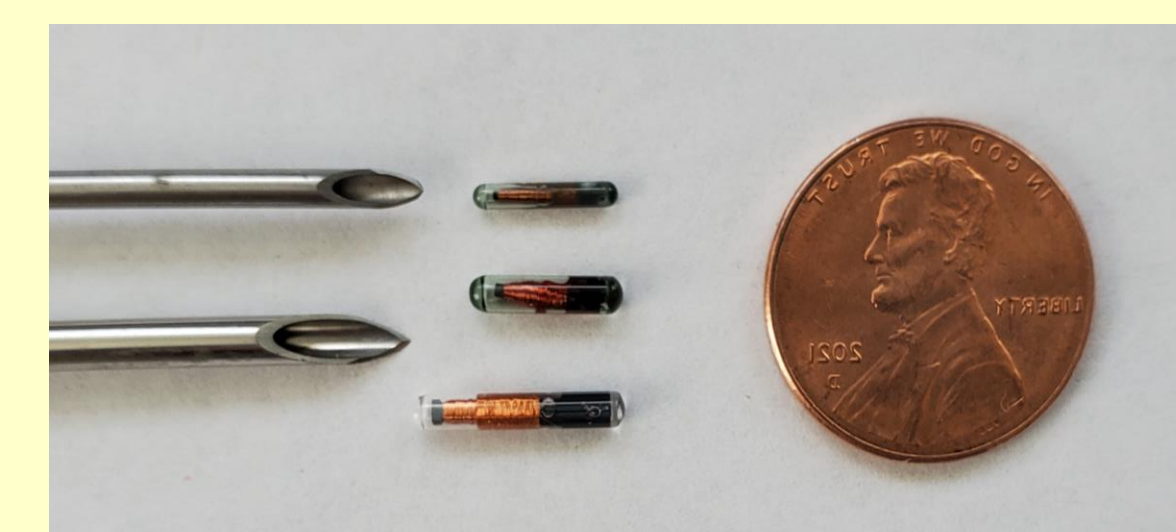
- *Objective:* Minimize mortality, stress, crowding, and handling of catch while maximizing number of fish tagged
- Equipment and protocols developed to limit stressors:
 - Sanctuary bucket inserts
 - Binned livewells to keep catches separate in rotomolded insulated cooler with a recirculation system
 - Maintain Temperature within 2° C of river
 - Dedicated crew resource roles
 - Tagger – tags, biological information, and samples
 - Data collector – P4, loads and sterilizes injectors, catalogs samples
 - Fish culturist – anesthetization, ensures constant supply of fish to tagger, tends catch, releases tagged fish



PIT tagging

- PIT tagging and anesthetization follow recommendations by Prentice et al. (1990) and PIT Tag Steering Committee
- Use 3 PIT tag sizes to minimize tag burden, incision size, healing time, and allow more of population to be represented

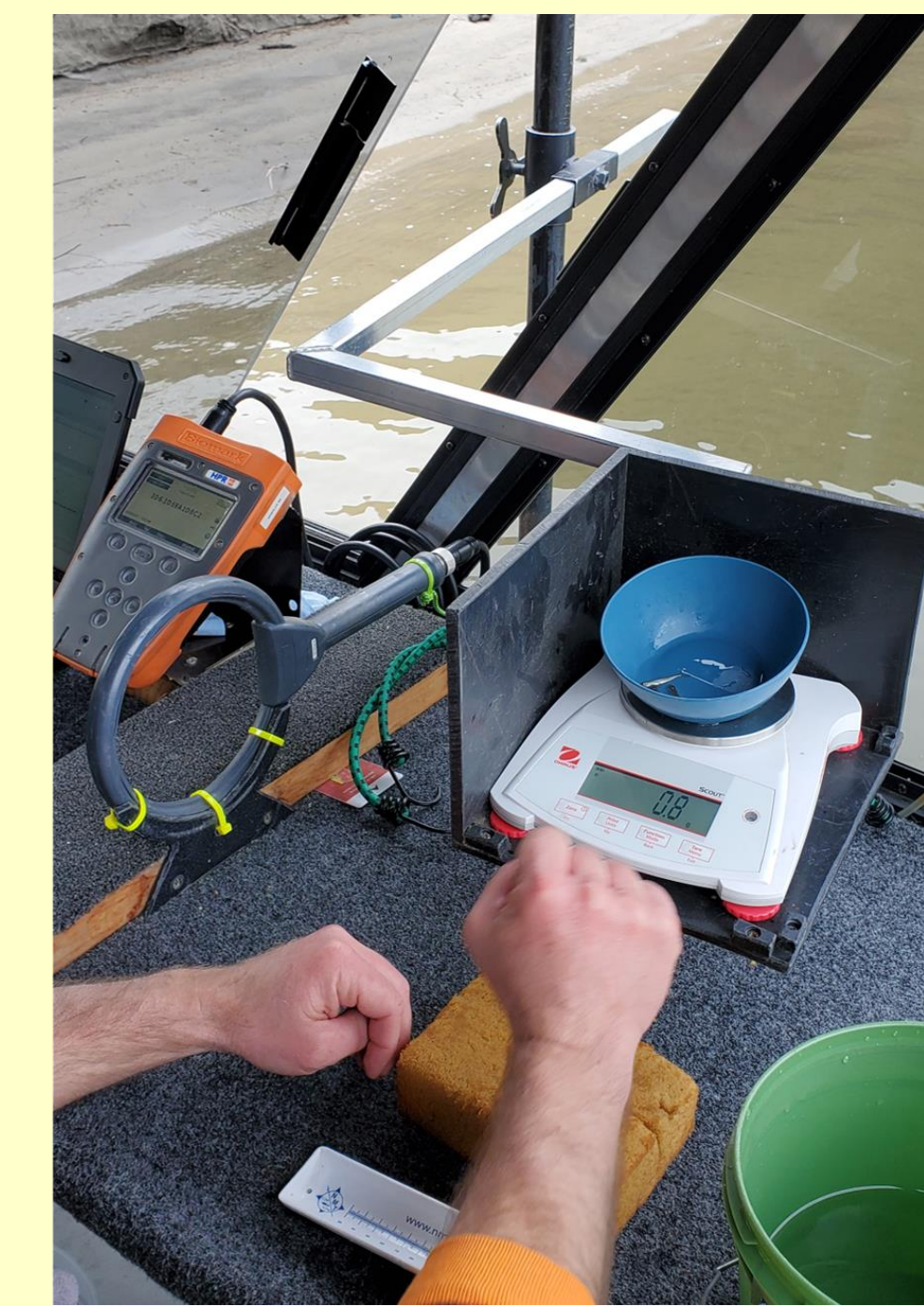
- 8mm tags for 45 to 49 mm
- 9mm tags for 50 to 59 mm
- 12mm tags for ≥ 60 mm



- Adapted equipment and strategies for tagging:
 - Notched, wet sponge for placement of fish stabilizes them for increased control of tag insertion
 - Stabilizing forearms on tagging table aids in insertion control
 - Smaller needle injectors for 8 mm tags (14 ga.)



- Custom, stabilized weighing stand that allows weighing fish when the boat is rocking due to wave action



- An organized workspace is essential to aid workflow during fish processing in the small confines of a boat



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