Dec 12th, 1:30 PM - 3:10 PM

Evaluating the placement of PIT tags in tropical river fishes: a case study involving two Mekong River species

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Optimising PIT tagging for Lower Mekong Species

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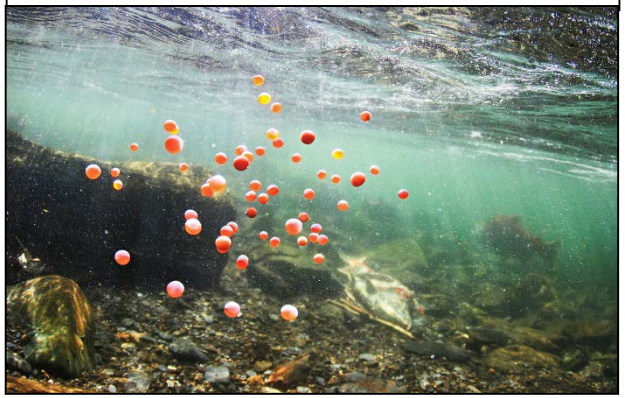
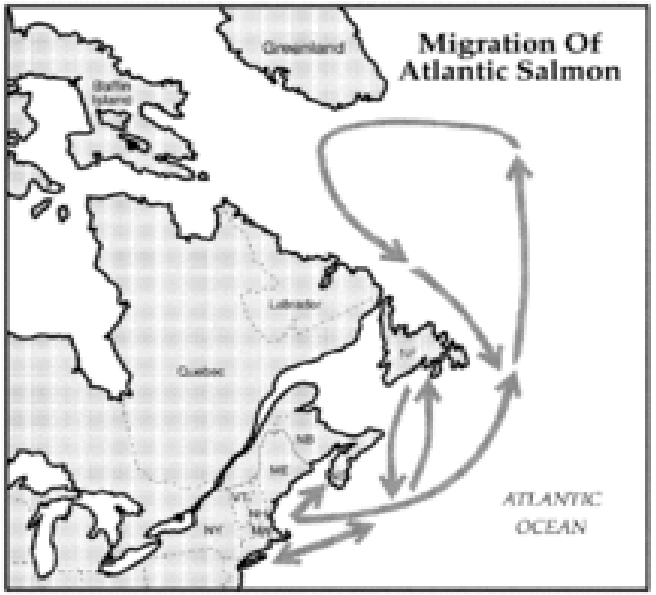
Why IS FISH MOVEMENT IMPORTANT?

- They need to move



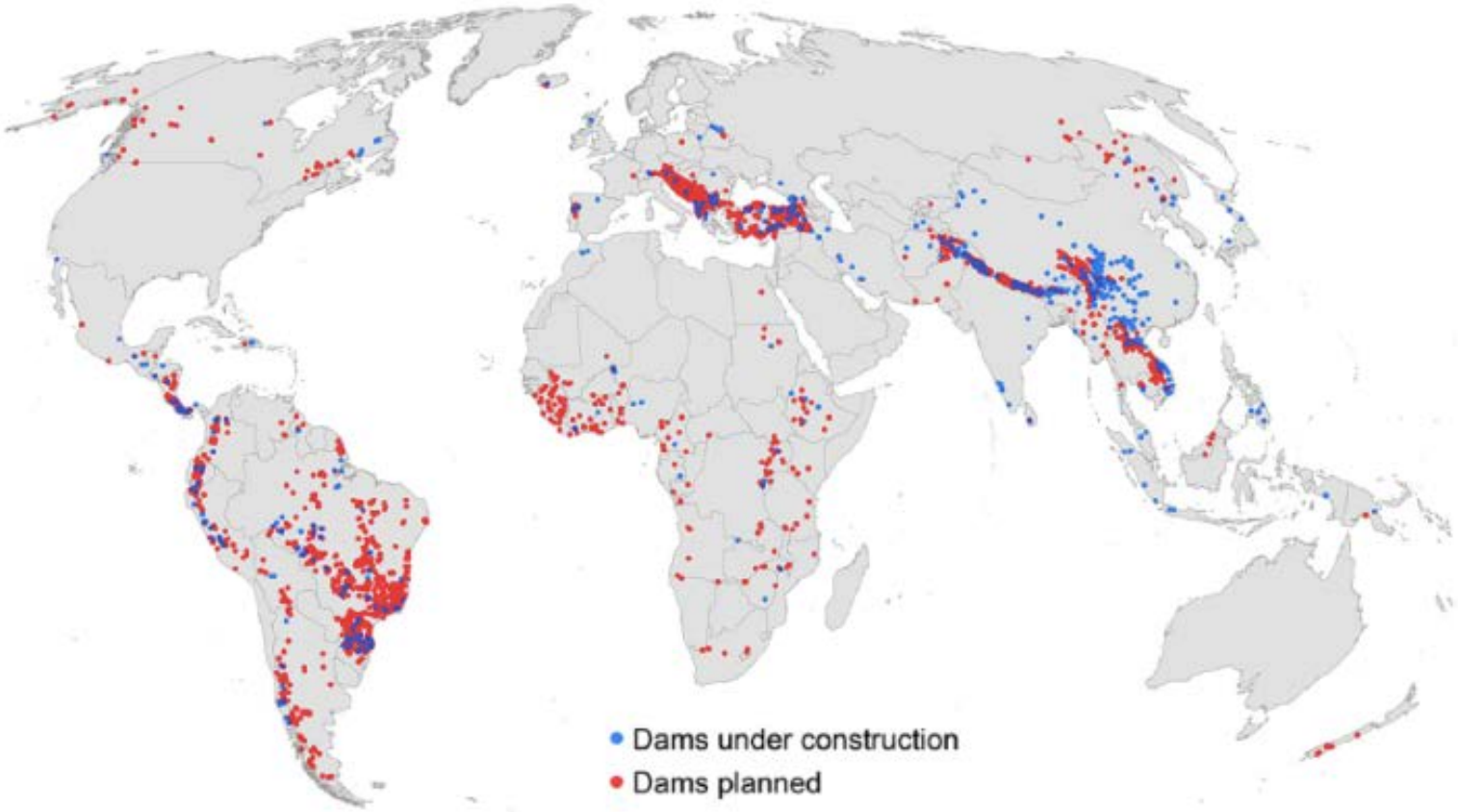
- Hard to study



Tagging can help!

Impacts on fish

Global river development



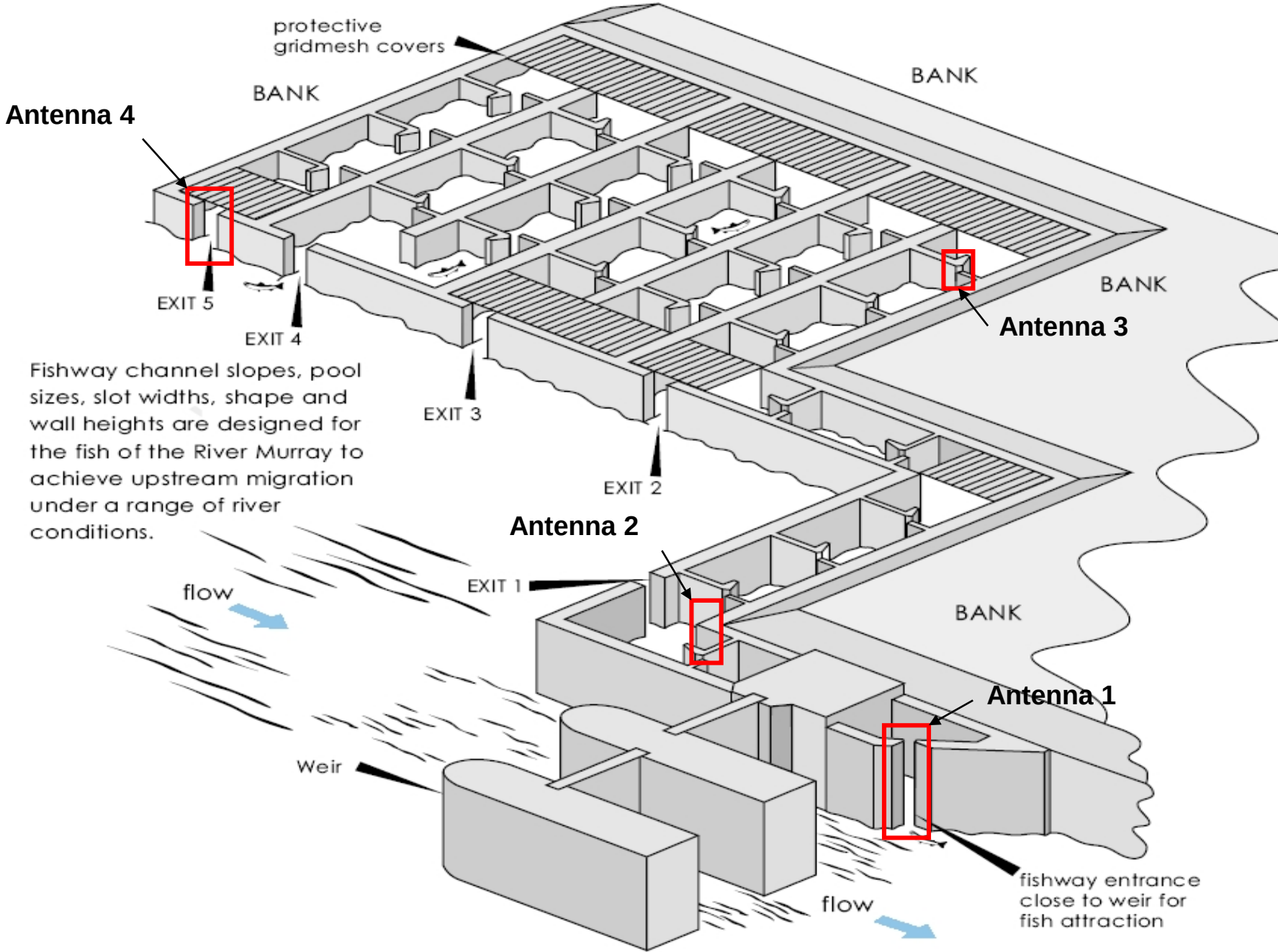
PIT tagging Widely Used in the USA

From PSMFC

From PSMFC

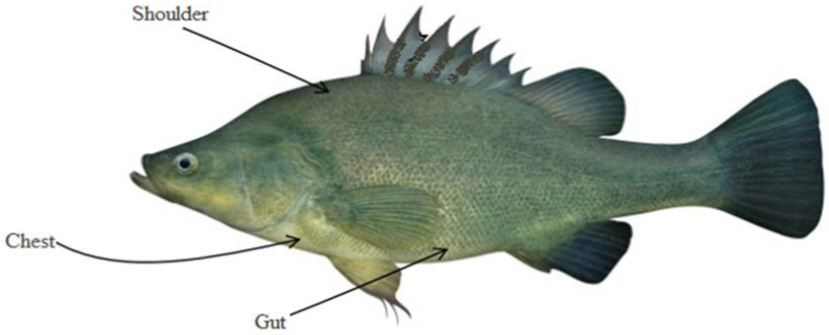

From PSMFC

Conceptual layout of a vertical-slot fishway



Tagging technique <u>IS</u> important

Essential criteria

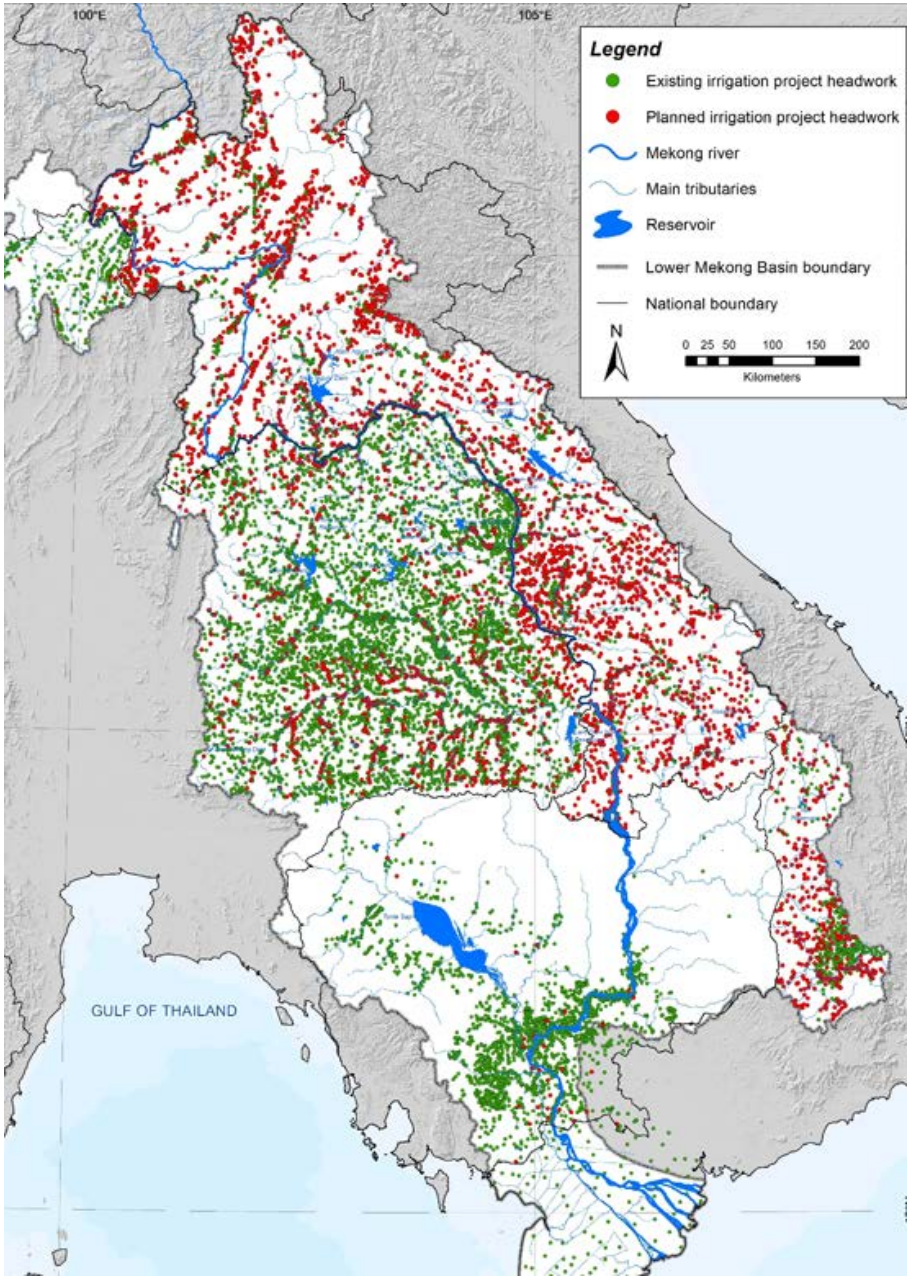


<u>Essential Criteria for tagging study</u>

1. Fish retain the tag
2. Tagging does not influence welfare (growth/survival)
3. Tagging does not affect behaviour
4. The tag is detectable

Need to ensure that technique is correct

Mekong River Development



PIT systems can provide a tool to help monitor fish within fish ladders

SPECIES USED

Pangasianodon hypophthalmus

(Striped catfish)

Hypsibarbus malcolmi

(Goldfin tinfoil barb)

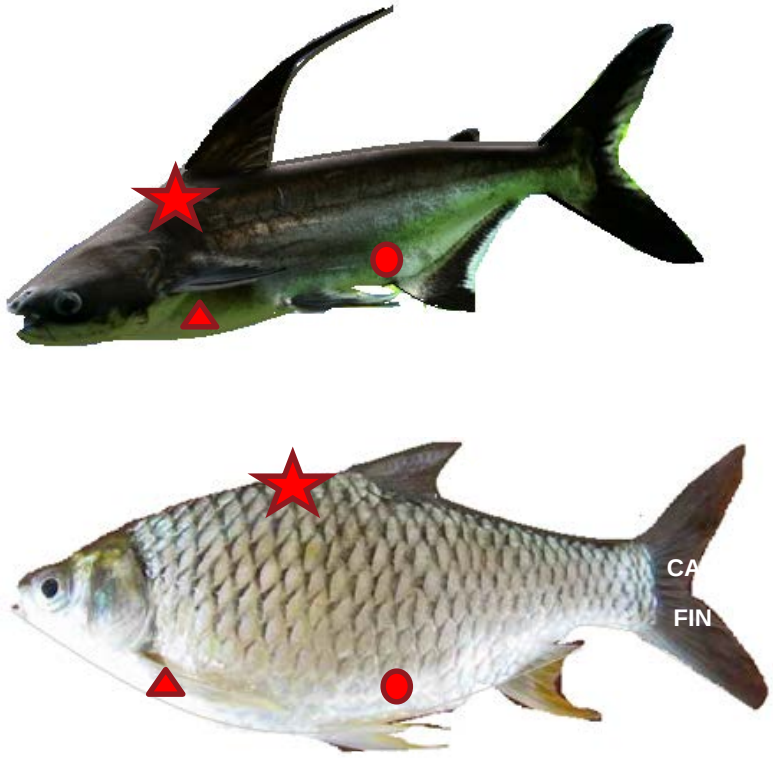
PIT tagging location

SHOULDER TAG

CHEST TAG

GUT TAG

CONTROL



DORSAL FIN CLIPPED

PELVIC FIN CLIPPED

ANAL FIN CLIPPED

CAUDAL TAIL FIN CLIPPED

Experimental Set up over 50 days

Total no. fish: 320 fish

Species: (160) Catfish/(160) Barbs

Tanks: Tank 1 Tank 2 Tank 3 Tank 4

Treatments: Chest Gut Shoulder Control

Sample size: 10 fish per treatment

Response Variables:
- Shedding
- Survival
- Change in weight

Insertion of PIT tags process

1) Fish anesthetised using AQUI-S

2) Measured (cm)

3) Weighed (grams)

4) PIT tag injected

5) Fin clip applied

Daily tasks

Water quality testing

- **Changing 25% of the water & clean flow-through pipes**

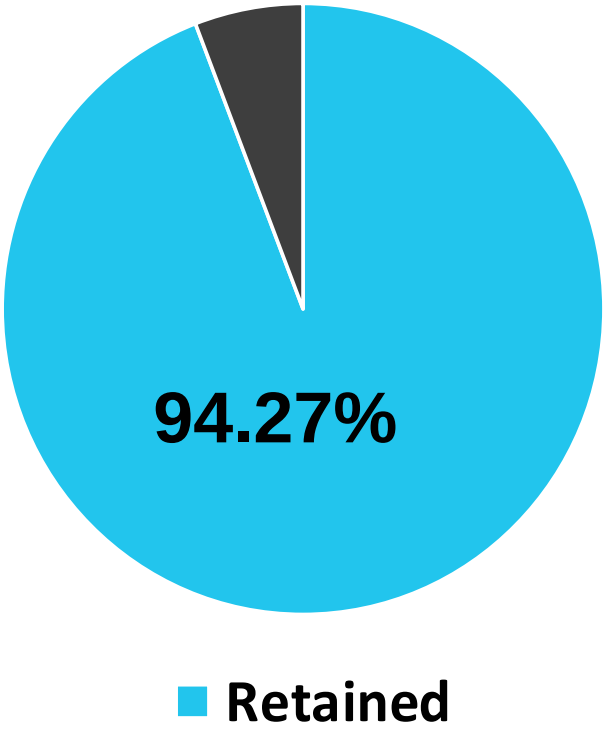
Daily tasks

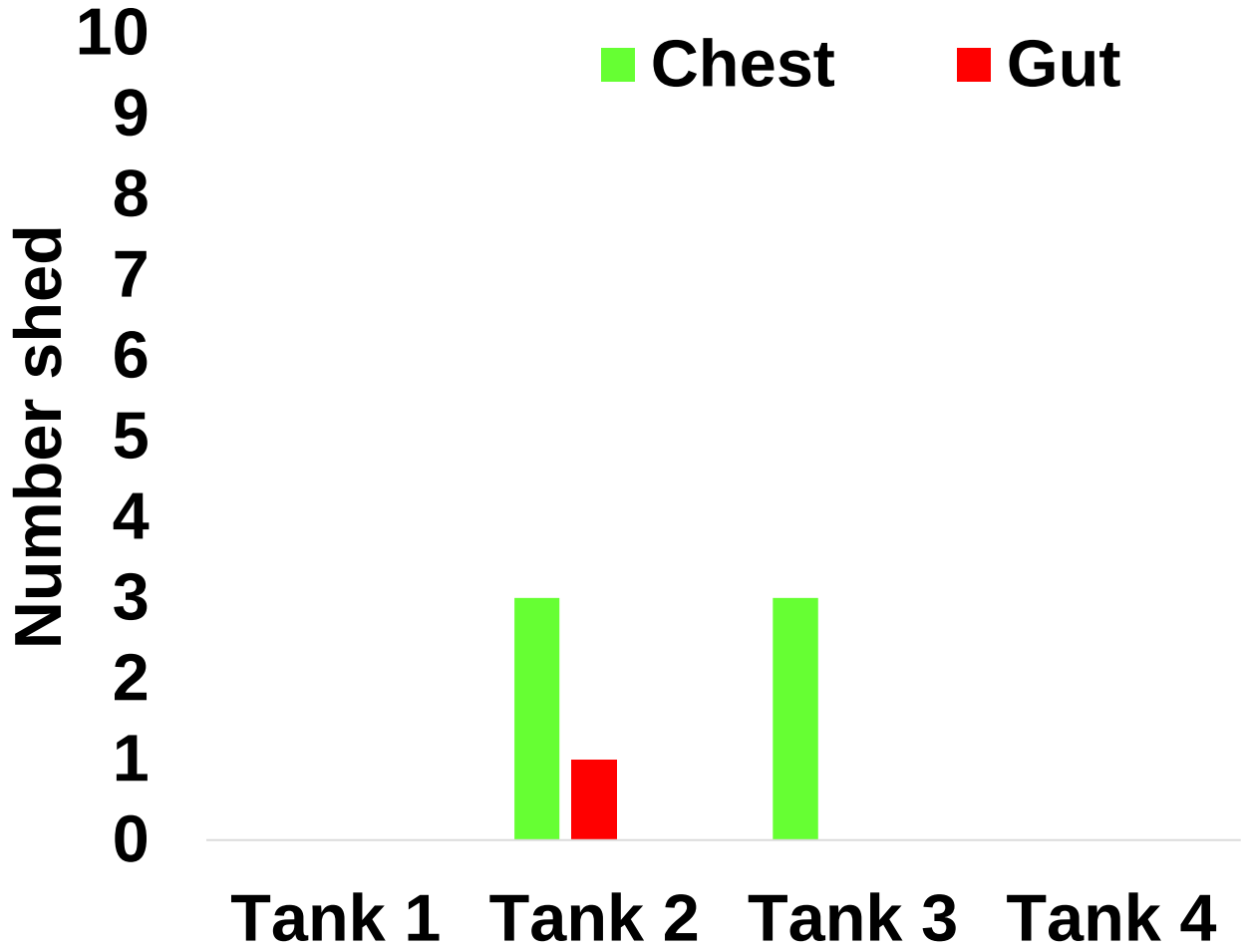
- **Finding tags with magnetic device**

End of experiment – day 50

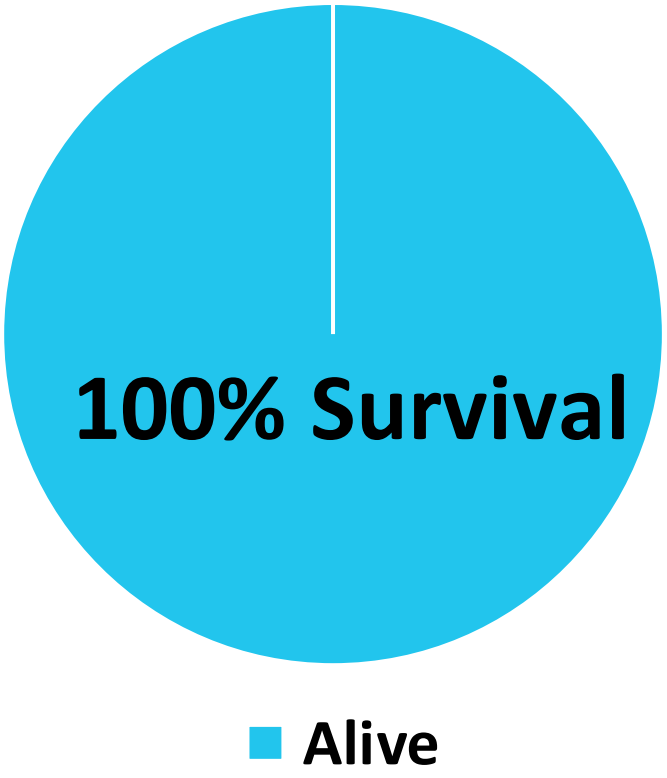
- Ice slurries
- End lengths & weights recorded
- Tag removed

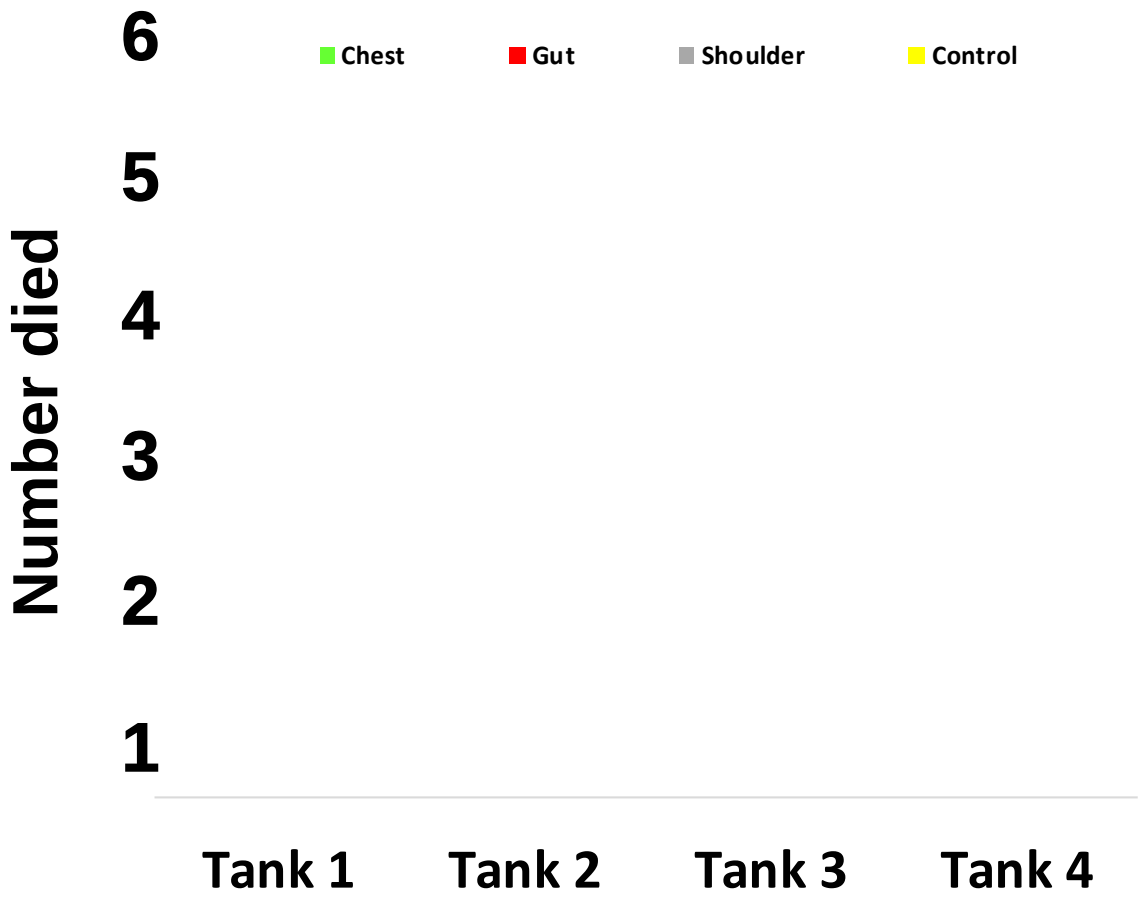
Striped Catfish - RETENTION



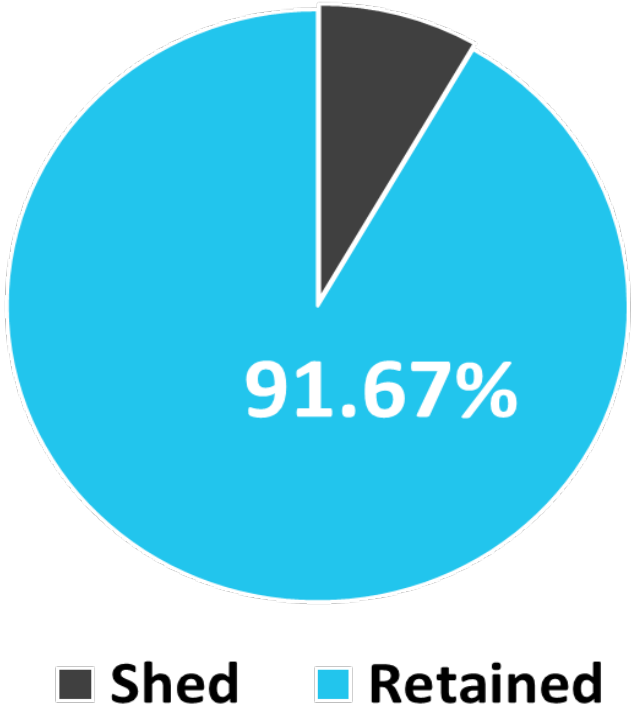


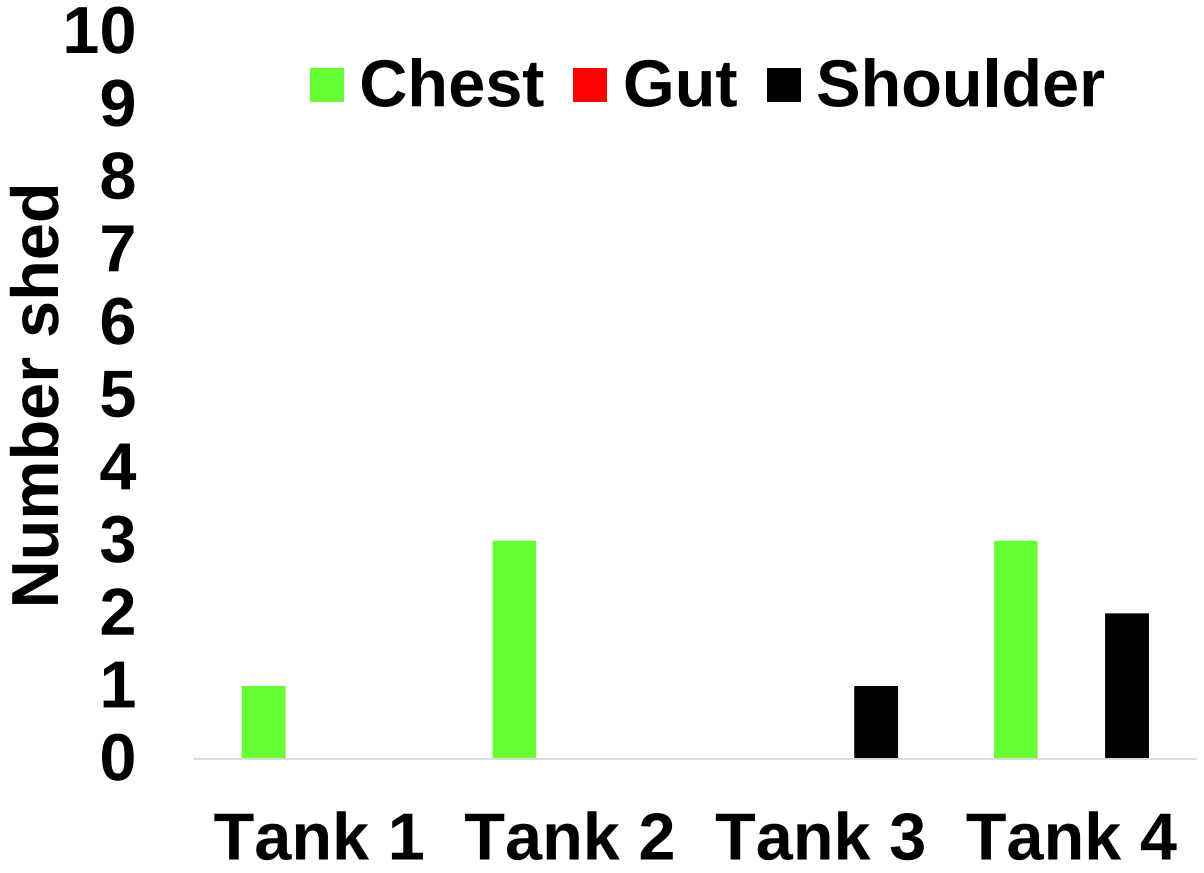
STRIPED CATFISH - SURVIVAL



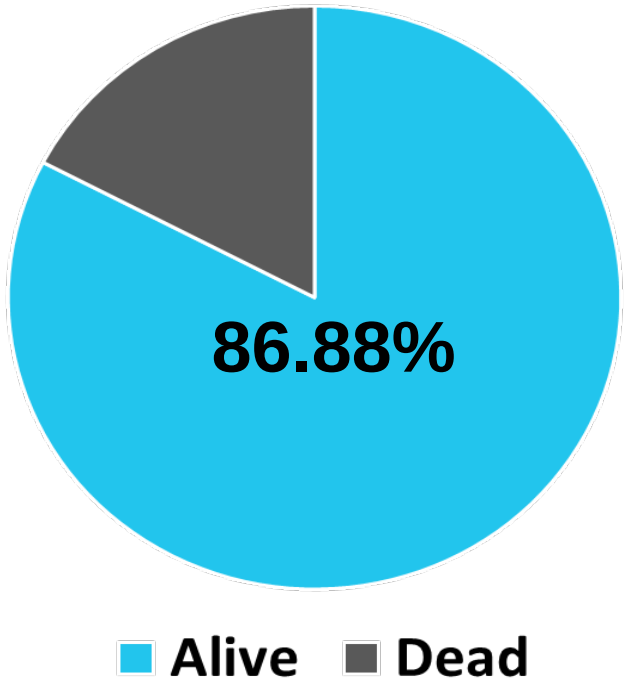


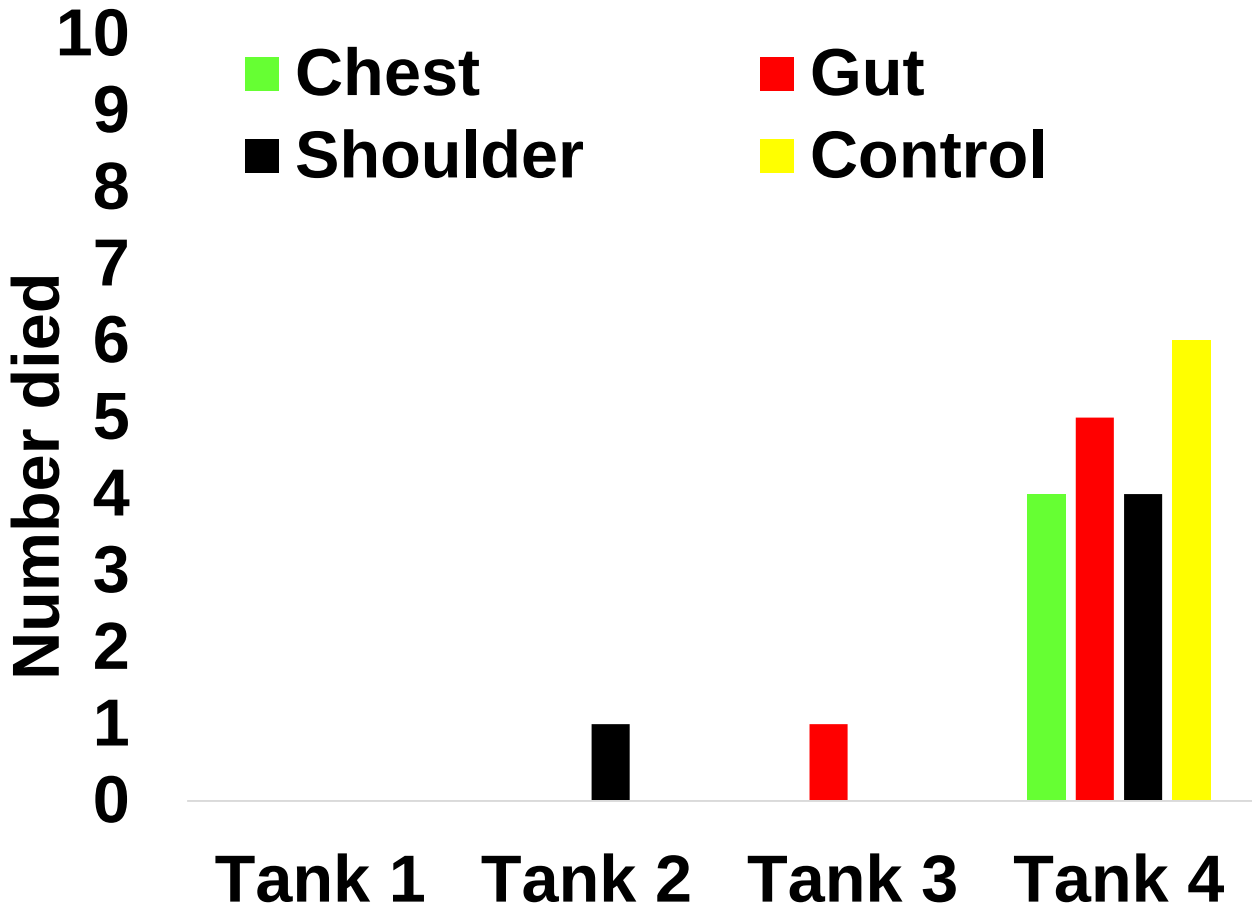
GOLDFIN TINFOIL BARB-RETENTION





GOLDFIN TINFOIL BARB-SURVIVAL





Fin recovery after tagging

Conclusion

- **Q1: No diff. in retention rates**
- **Q2: No diff. in mortality rates**
- **Q3: Growth was unaffected**
- **Q4: The study was long enough**
- **Q5: Which tag location is best?**

Where to from here?

Acknowledgements

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