

# Non-lethal blood sampling from Rainbow trout in the laboratory and in situ



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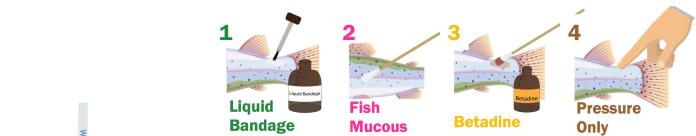


## Study Goal

To determine if currently available non-lethal blood sampling protocols are in fact non-lethal, and determine if improvements could be made to reduce infection and improve healing rates.

## Methods

80 rainbow trout were tagged with 4 coloured Floy tags (n=20) near the dorsal fin. After four weeks' acclimation, blood was sampled from the caudal vein ( $1\mu\text{L/g}$ ) with mild sedation and a syringe. There were four post-treatments:

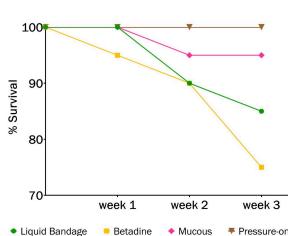


Following blood sampling, the fish were returned to 1000-L fiber-glass tanks (n=20 per tank) to recover. Each tank contained 5 fish from each treatment. Fish were monitored daily for swimming behavior and signs of distress. Fish were lightly sedated and physically examined weekly for three weeks post-sampling.

We followed up with a three-week caging study in August to discern if fish would also survive blood sampling under natural conditions. There were 5 fish per cage and 8 cages total. After 1 week acclimation, blood was sampled with pressure to half of the fish (N=20). Cages were monitored daily and fish were examined weekly for two weeks.



Pressure only was the most successful post-treatment method for blood sampling with 100% survival, and the shortest recovery rates. We chose to repeat this treatment in the field caging.



Betadine caused more tail infections and significantly greater mortality than all other post-treatments (Chi-square p-value = 0.0389)



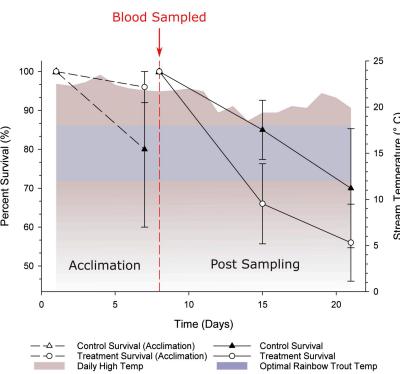
Cages at the Oshawa Creek  
Caging Location

## Laboratory Results

Tail infections often lead to mortality



## Field Caging Results



In the caging study, there were no significant differences between the control and blood sampled rainbow trout at all time points.

Of the blood sampled fish, 48 % experienced full recovery

## Key Findings

1. Of the four post-treatment recovery techniques, pressure only resulted in the greatest survival.
2. There were no significant differences between control and sampled fish in the caging experiment. However, survival rates were low in both groups
3. Low survival in the caging experiment may have been due to high stream temperature and/or the cage size

## Future Plans

1. We plan to repeat the caging experiment in the spring, when the temperatures are cooler.
2. We will increase cage size and eliminate any abrasive surfaces

## Acknowledgments

