

## **Progress Report to Pacific States Marine Fisheries Commission**

### **Using Pressurized Hot Water Spray to Kill Quagga Mussels on Watercraft and Equipment: Field Testing on the Effects of Water Temperature and Duration of Exposure**

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April 6, 2010

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Pacific States Marine Fisheries Commission

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Dear Mr. Phillips,

Our research project funded by USFWS is making good progress. From January to March 2010, we have finished Experiment 1 and most part of Experiments 2 and 3 as stated in our proposal. Below is the site where we conducted our Experiment 1.



Figure 1. Experimental site where quagga mussels mortality at different temperature x duration was determined

## Results

The results from Experiment 1 are shown in Figure 2. At all temperatures  $\geq 104^{\circ}\text{F}$ , 100% mortality rates were reached. At temperatures  $\geq 140^{\circ}\text{F}$ , 100% mortality rates were reached at the 5<sup>th</sup> second. At temperatures of  $130^{\circ}\text{F}$ ,  $122^{\circ}\text{F}$ , and  $104^{\circ}\text{F}$ , 100% mortality rates were reached at 10<sup>th</sup> second, 20<sup>th</sup> second, and 40<sup>th</sup> second, respectively. At  $68^{\circ}\text{F}$ , the mortality rate was always below 5% (with an average of 3%), which is close to the control treatment of 2% (ambient water temperature around  $54^{\circ}\text{F}$ ).

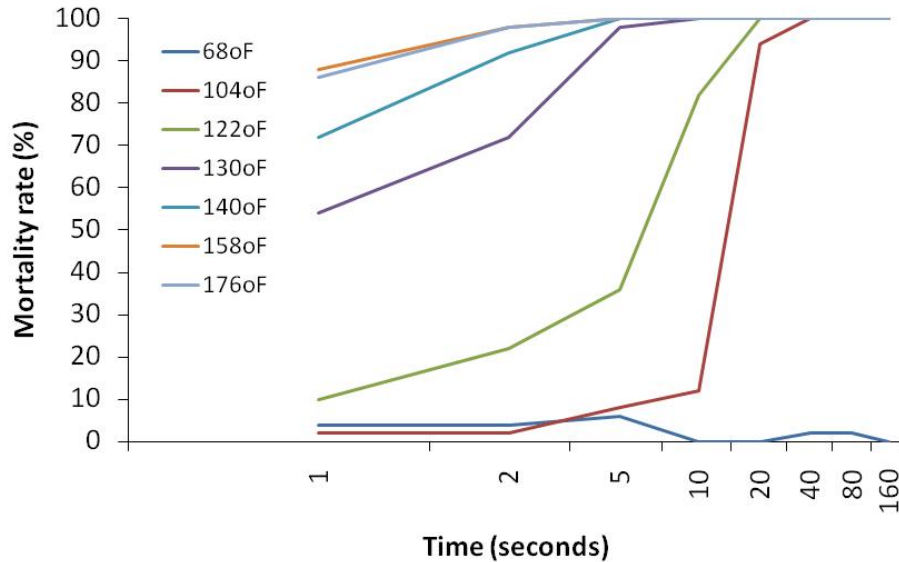


Figure 2. Mortality rates of quagga mussels at different combinations of high temperature x duration

We are collecting boats with infested quagga mussels for Experiment 4 and the data reported above will be further validated by decontaminating boats (Experiment 4). Other preliminary data from Experiments 2 and 3 are being analyzed and will be reported to you in the next report.

If you need more information, please let us know.

Sincerely,

David Wong

Shawn Gerstenberger

Wen Baldwin

Emily Austin