



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Julie Baker; Karen Nichols	Project Number S2001
Project Title Something Smells Fishy! The Study of Molly Fish, in Relation to the Chemical Migratory Phenomenon of Alaskan Salmon	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals If Molly Fish are raised in a controlled saline environment, then they will ultimately recognize their "home saline concentration" and swim back up stream, similarly to King salmon.</p> <p>Methods/Materials Once maze has been built and fish have been raised for 3 weeks in 3 separate tanks that hold 3 different saline concentrations, begin testing. Fill the maze with 10 Gallons of de-chlorinated water. Then, mix saline concentration in a separate of the fish's environment/ home tank#. Once all of the temperatures match and the water has been de-chlorinated take the group of fish being tested and place in the ocean# part of the maze. Wait two minutes for the fish to get acclimated to the water and at two minutes distribute two mL of home# saline concentration, into whichever stream being used. (At this point of the experiment only one stream# has the fish's home# concentration which is less than 1.012) After putting in the first application of saline concentration lift up the net and allow fish to swim around. Once the stopwatch reaches 3 minutes, every 30 seconds following until 5 minutes add an additional two mL of home# saline concentration (a total of 14 mL of saline concentration). At 7 minutes tack down the net and record the final destinations of each of the fish. The experiment should be conducted 3 times per group, changing the stream that holds their home# saline concentration.</p> <p>Results The majority of all 3 fish groups chose the correct home concentration# over the concentrations the fish had not been raised in. Group #1, raised in the highest salt concentration averaged 72% accuracy. Group #2 overall did the best job of recognizing the correct stream. The average identification of the correct stream for Group #2 was 83%. The final group, Group #3 identified the correct stream 77% of the time. All the Mollie's, no matter which saline concentration each were raised in, recognized the correct stream 77% of the time.</p> <p>Conclusions/Discussion Overall 77% of the Mollies tested were able to recognize the correct stream. The data supports the hypothesis that, like King Salmon, Molly fish were able to identify the saline concentration that each was raised in, a majority of the time. Migratory patterns of Molly fish were similar to King Salmon and a more extensive experimental design could allow the industry of fish farming to become more natural.</p>	
Summary Statement If Molly Fish are raised in a controlled saline environment, then they will ultimately recognize their home saline concentration#, and swim back up stream, similarly to King salmon.	
Help Received	