Olin Fellowship Progress Report

Physiological and behavioural aspects of exercise in larval salmon

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With the first installment of the Olin Fellowship, my students and I have run several experiments addressing the respirometric costs of exhaustive exercise in larval/early juvenile salmon. Through our research, we have found that larval salmon have severe respirometric costs associated with exercise, but larval fish quickly recover the oxygen debt associated with burst activity. For example, the post-exercise oxygen consumption rates exceed 20umol/g/hr, but they return to pre-exercise conditions within the first hour following the exercise stress. Ammonia excretion patterns mirror the results of the oxygen consumption rates. Over a six month period, we also processed most of the tissue for the metabolite assays (for example: whole body glycogen, lactate and ATP levels), but have not yet done the metabolic assays. During the past year we have also begun to examine the behavioural aspects of the recovery process in larval salmon. We were particularly interested in whether larval fish would recover faster from exercise if they had access to food. These experiments were going well until we lost a tank of fish. I hope to continue this research this spring, when larval fish become available.

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