Report to the Oregon Watershed Enhancement Board

For work titled:
Development of physiological health criteria to assess habitat quality in degraded and recovering/restored stream systems

Covering the period from July 1, 2009 through December 31, 2009

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In terms of content, we ask that grantees document progress that has been made toward accomplishing project objectives and completing project deliverables described in the project work plan. Specifically the reports must include brief information about:

- *Summary of progress to date:*
  During this period (July 1-Dec 31, 2009) on the OWEB grant *"Development of physiological health criteria to assess habitat quality in degraded and recovering/restored stream systems"*, we accomplished all field-related components of this work. We conducted summer physiological sampling of redband trout in three different river basins (John Day, Crooked River, Bridge Creek) during the peak heat period (late August) and after system cool-down in August-September. This includes both collection of redband trout and invertebrate drift samples. All samples for laboratory analysis are now stored. We have completed the first round of laboratory temperature control experiments, and laboratory analysis of collected samples is ongoing. We have optimized the assays for hsp analysis (necessary each time the assay is restarted, and hsp analysis is now underway. In addition, energetic content (lipid analysis) is also ongoing at this time.

- *A comparison of the actual accomplishments to the tasks and timeline established in the Statement of Work*
  As established in the statement of work, field sampling was to happen during June (previous report period), July-August, and September-October. This work has been completed. Laboratory analyses of field-collected sampling should be proceeding at this time, with the intent that laboratory analyses are to be completed by the beginning of the subsequent field season. While all samples are on-hand for the laboratory work, these analyses have not yet begun.

- *Reasons for slippages if anticipated progress was not made*
  The anticipated progress has been, although we did run into two difficulties with the first round of laboratory experiments. In the first instance, some of the animals we obtained were infected with the fish disease *Ick*. This required us to treat these animals, reducing the number

of replicates in the first experiment, and also resulting in a higher than anticipated mortality. This issue was dealt with, and is one of the primary reasons why this aspect of the project was proposed to be run 3 times during the course of the project. The second problem was the result of a failure in the water heating system, necessary for the temperature control experiments to work. This also resulted in some mortality. We are currently addressing this issue, but may at a later date need to work with OWEB on a budget revision in order to cover the cost of a replacement water heating system in order to complete this aspect of the project.

- *Adjustment to the objectives, if any*
  We have not made any adjustments to the original objectives at this time; we anticipate that as laboratory results become available we may refine methodologies used to achieve our objectives but do not anticipate changes to the objectives themselves.

- *Preliminary findings (or a definitive statement of when these are anticipated)*
  As we are currently in the middle of laboratory analysis of samples, it is premature to report results at this time.

- *Expenditure reports documenting use of project funds*
  Expenditures and other accounting are officially to be provided directly by the Oregon State University Research Office (Sponsored Programs)

- *Progress toward meeting matching funds requirements*
  Expenditures and other accounting (including meeting matching fund requirements) are officially to be provided directly by the Oregon State University Research Office (Sponsored Programs).