



**SPR Quarterly Progress Report**  
October 1, 2007 through December 31, 2007

Date December 31, 2007

**TO:** Technical Advisory Committee Members:

Miguel Estrada, ODOT  
Michele Eraut, FHWA  
William Fletcher, ODOT, Research Proposer  
Charlotte Kucera, ODOT  
Devin Simmons, NMFS

**FROM:** Matthew Mabey, Research Coordinator (ph: (503) 986-2847)

**1. Project**

Copper Toxicity and ESA Listed Salmon  
SPR # 663

**2. Key Dates**

Start Date for ODOT: September 10, 2007  
Completion Date for ODOT: October 31, 2009

**3. Principal Investigator**

Jeffrey A. Nason  
Department of Chemical, Biological and Environmental Engineering  
Oregon State University  
102 Gleeson Hall  
Corvallis OR 97331

**4. Progress**

- Work in the last quarter was focused on completing the literature review (to be submitted to ODOT in the coming weeks). Through our review of the literature we have: 1) selected an appropriate analytical technique for the measurement of copper speciation; 2) summarized typical concentrations of total, dissolved, and free copper ion in fresh, marine, and stormwaters in Oregon and the US; and 3) developed recommendations for the field sampling portion of the work.

- A voltammetric analyzer (Metrohm computrace 797) was purchased; the instrument is capable of measuring both the free copper ion concentration and binding constants between copper and various competing ligands present in environmental samples.
- We continued work on the development of an experimental protocol for measuring the necessary water quality constituents and graduate students continued training on the laboratory techniques that will be used to characterize the stormwater samples.
- We made contact with William Fletcher and Jeff Moore about coordinating sampling with their ongoing effort to characterize stormwater from three sites around the state.

## 5. Problems

- No major problems have been encountered this quarter. We are slightly behind the schedule that was laid out at the beginning of the project, but are continuing to make steady progress in all areas.

## 6. Work Planned for Next Quarter

- Installation of the new voltammetry instrument, graduate student training, and preliminary copper analyses.
- Preliminary sampling and testing of other analytical methods. Graduate students will collect actual stormwater and surface water samples and/or prepare synthetic waters for testing and selection of analytical methods.
- Meet with the TAC for input on the literature review and field sampling plan.
- Selection of field sites and finalization of field sampling plan with input from the TAC.
- Coordination of sampling and analysis with Herrera.

## 7. Finances

SPR Project Summary

<b>VENDOR</b>	<b>FY'08</b>	<b>FY'09</b>	<b>FY'10</b>	<b>FY11</b>	<b>TOTALS</b>
ORIGINAL BUDGET	\$ 120,000	\$ 240,000	\$ 28,000		\$ 388,000
REVISED BUDGET	\$ 132,555	\$ 180,846	\$ 74,803		\$ 388,204
EXPENDITURES - VENDOR	\$ -	\$ -	\$ -	\$ -	\$ -
<b>BALANCE</b>	\$ 132,555	\$ 180,846	\$ 74,803	\$ -	\$ 388,204

<b>ODOT</b>	<b>FY'08</b>	<b>FY'09</b>	<b>FY'10</b>	<b>FY11</b>	<b>TOTALS</b>
ORIGINAL BUDGET	\$ 4,000	\$ 5,000	\$ 3,000		\$ 12,000
REVISED BUDGET	\$ 4,000	\$ 5,000	\$ 3,000		\$ 12,000
EXPENDITURES - ODOT	\$ 2,452	\$ -	\$ -	\$ -	\$ 2,452
<b>BALANCE</b>	\$ 1,548	\$ 5,000	\$ 3,000	\$ -	\$ 9,548

<b>PROJECT</b>	<b>FY'08</b>	<b>FY'09</b>	<b>FY'10</b>	<b>FY11</b>	<b>TOTALS</b>
ORIGINAL BUDGET	\$ 124,000	\$ 245,000	\$ 31,000	\$ -	\$ 400,000
REVISED BUDGET	\$ 136,555	\$ 185,846	\$ 77,803	\$ -	\$ 400,204
EXPENDITURES - PROJECT	\$ 2,452	\$ -	\$ -		\$ 2,452
<b>BALANCE</b>	\$ 134,103	\$ 185,846	\$ 77,803	\$ -	\$ 397,752

