



OREGON DEPARTMENT OF TRANSPORTATION

Research Unit
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Salem, OR 97301

SPR Quarterly Progress Report
July 1, 2007 through September 30, 2007

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Date October 1, 2007

TO: Technical Advisory Committee Members:

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

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
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4. Progress

- Two graduate students, Donald Bloomquist and Matthew Sprick, have been hired and began working on the project at the beginning of the term (9/24). Both students are currently working on the literature review that will summarize 1) copper concentrations and copper speciation in surface waters and highway stormwater runoff in Oregon and around the US; 2) available analytical methods for determining copper speciation; 3) stormwater hydrology and stormwater sampling procedures; and 4) general information on the sources of copper, and copper toxicity to aquatic organisms.

- With the help of Dr. Mohammad Azizian, our laboratory manager, we are reviewing available analytical methods for copper speciation and developing an experimental protocol for measuring other water quality parameters (pH, temperature, conductivity, total suspended solids, anions, cations, dissolved organic carbon, alkalinity, etc.)
- Graduate students began training on the laboratory techniques that will be used to characterize the stormwater samples.

5. Problems

- No major problems have been encountered this quarter. However, as part of the OTREC review process there was some criticism of the large scope and lack of detail regarding the proposed stormwater sampling plan. Based on those comments, we are closely reviewing stormwater sampling methodologies and sample requirements. Based on these considerations, we hope to propose a more detailed sampling plan that will ensure high quality data and yield meaningful scientific results.

6. Work Planned for Next Quarter

- Complete the literature review and submit to the TAC for review.
- Based on the literature review, develop a preliminary sampling plan and submit to the for TAC review. Upon review we will work with ODOT and the TAC to determine specific sampling locations.
- Continued graduate student training on analytical methods
- Begin purchasing necessary sampling and analysis instrumentation and equipment.
- Preliminary sampling and testing of analytical methods. Graduate students will collect actual stormwater and surface water samples and/or prepare synthetic waters for testing and selection of analytical methods.

7. Finances

SPR Project Summary

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

ODOT	FY'08	FY'09	FY'10	FY11	TOTALS
ORIGINAL BUDGET	\$ 4,000	\$ 5,000	\$ 3,000		\$ 12,000
REVISED BUDGET	\$ 4,000	\$ 5,000	\$ 3,000		\$ 12,000
EXPENDITURES - ODOT	\$ 2,012	\$ -	\$ -	\$ -	\$ 2,012
BALANCE	\$ 1,988	\$ 5,000	\$ 3,000	\$ -	\$ 9,988

PROJECT	FY'08	FY'09	FY'10	FY11	TOTALS
ORIGINAL BUDGET	\$ 124,000	\$ 245,000	\$ 31,000	\$ -	\$ 400,000
REVISED BUDGET	\$ 136,555	\$ 185,846	\$ 77,803	\$ -	\$ 400,204
EXPENDITURES - PROJECT	\$ 2,012	\$ -	\$ -		\$ 2,012
BALANCE	\$ 134,543	\$ 185,846	\$ 77,803	\$ -	\$ 398,192