

# The Oregon Community Foundation Grant Evaluation Form

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**Date: October 8, 2004**

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Amount of grant: \$10,000

Date received: November 18, 2003

Grant #: 2003-03654

1. Please describe the **progress** made to-date on your project objectives.

All field sampling has been completed successfully as planned, including quantitative measurement of plant community composition, analysis of soil physical and chemical characteristics, and monitoring of water table elevations at weekly intervals from March through June and biweekly during July through mid-September 2004. Data analysis completed to date includes consolidation of all hydrological data into a single electronic spreadsheet, and charting of water table elevation changes by location and date. Additional data analysis is under way and we anticipate that data analysis will successfully prove or disprove our hypotheses as described in the proposal narrative.

2. What are the anticipated or unanticipated **outcomes** of the project so far?

Results and preliminary data analysis indicate that there are highly significant differences between water table elevations and soil characteristics at the undisturbed site compared to the restoration site and the altered, unrestored site. This outcome supports Hypothesis I, "Human manipulation of the Wasson Creek site altered the site's soil and water table characteristics." The data analysis provides valuable details on the nature of those alterations. Briefly, human manipulation of the Wasson Creek site appears to have greatly reduced the organic matter content of the soils and lowered the water table.

Restoration at the Anderson Creek site appears to have successfully raised water tables to wetland levels in most areas, but not to the levels observed at the undisturbed reference site. These results provide preliminary support for Hypothesis II: "Restoration at Anderson Creek is re-establishing the physical soil and water table characteristics that support wetland functions." However, some portions of the Anderson Creek site remain fairly dry, with water table elevations below the expected range for riparian wetlands. These results will be useful in evaluating potential adaptive management techniques to further enhance floodplain connectivity.

An interesting and somewhat unexpected result is the stability of water table elevations at the undisturbed reference site (Tom's Creek). Water table elevations at every location within this site remained within 2" of the soil surface throughout the season. Clearly, this reference site provides high levels of wetland function throughout the summer, not just seasonally.

An additional interesting outcome is the strong effect of beaver dams at the Wasson Creek site. Areas affected by beaver dams show high and stable water tables, similar to those at the undisturbed site. However, their soil characteristics are markedly different from those of the reference site (lower organic matter, finer texture).

As expected, plant community composition and soil characteristics appear to be strongly linked to water table elevation. Analyses of these links are underway. These observations support Hypothesis III: "There are significant relationships between soil characteristics, hydrology and plant community composition."

Soils at the Anderson Creek site show lower organic matter content than at either the disturbed, unrestored site (Wasson Creek) or the reference site (Tom's Creek), probably due to soil disturbance during implementation of restoration which included the top 15-30 cm soil layer being used to fill the Anderson Creek ditch. Future monitoring will be important to track the trajectory of recovery of soil organic matter, since organic matter contributes strongly to wetland and riparian functions.

All of the above outcomes will provide important guidance for future restoration activities at Wasson Creek, as well as evaluation of existing restoration activities at Anderson Creek.



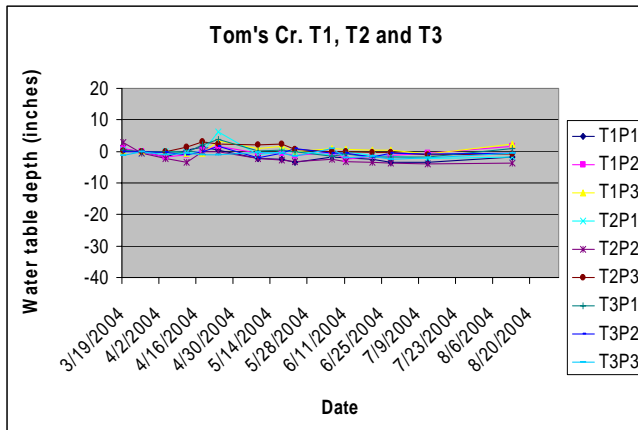
Wasson Creek, March 2004:  
Altered, unrestored site  
(ditched and cleared old pasture).



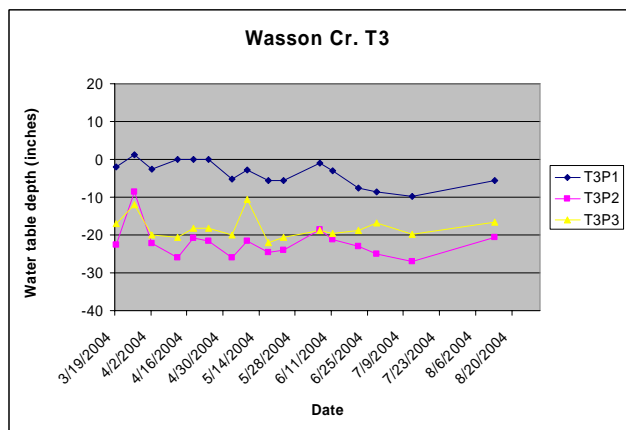
Tom's Creek, March 2004:  
Undisturbed reference site.



Anderson Creek, August 2004:  
Restored wetland site.



Water table depths from March through August at Tom's Creek reference site.



Water table depths from March through August at Wasson Creek unrestored site, Transect 3. Blue line is near ditch at base of hillslope.

3. What have been the **measurable results** to-date and what is the impact of this project on your organization's functioning or effectiveness?

See measurable results above discussed as outcomes. This project is contributing to the efforts of the South Slough NERR, in partnership with the University of Oregon Institute of Marine Biology (OIMB), to improve understanding of the physical and biological processes associated with the tidal and non-tidal wetland restoration activities undertaken by the Reserve since 1996. We anticipate that the results will be developed into a manuscript to be submitted to a peer reviewed journal for applied restoration science (Restoration Ecology, for example), which supports both the Reserve's and OIMB's missions. Results of the project will also become part of the National Estuarine Research Reserve System's Coastal Training Program which will provide the information to restoration practitioners and regulatory agency decision makers, and part of seminar presentations at restoration conferences and educational materials supporting at least one college-level restoration course offered at OIMB.

4. What has been the **measurable impact on the population** you serve?

Through many hours of work on this project, five students (two high school, three undergraduate) have gained valuable field-based knowledge of Oregon coastal freshwater wetland systems. They have closely observed development of plant communities and seasonal changes in hydrology. This experience gave all of the students a deeper understanding of the strong ecological links between the biological and physical components of Oregon wetlands. The effects of the project on restoration practitioners, agency representatives and students has yet to be measured.



Student workers Emma Johnsrude and Erin Richmond sampling soils at Wasson Creek, August 2004.

5. Attach a copy of your original **project budget** and identify both income and expenditures to-date.

See attachment.

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Signature and Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature and Title

\_\_\_\_\_  
Date

For an electronic version of this form, please email Megan Schumaker at [megans@ocf1.org](mailto:megans@ocf1.org) or call 503-227-6846.

**Please return the completed evaluation to:**

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