

# *Wetland Mitigation Evaluation Study: Phase 2*

## **Executive Summary**

The “Washington State Wetland Mitigation Evaluation Study” was conducted in two phases to evaluate the success of projects intended to compensate (mitigate) for wetlands lost to development activities in the state of Washington. Phase 1 of the study, conducted in the fall of 1999, examined the compliance of 45 randomly selected projects with their permit requirements. Phase 2 examined the ecological success of a subset of the projects from Phase 1. The study did not include any Washington State Department of Transportation mitigation projects.

Over all, 24 compensatory wetland-mitigation projects (at 31 sites) were evaluated in Phase 2. Eighteen projects were located west of the Cascade Mountains, and six projects were located east of the Cascade crest.

The goal of Phase 2 of the Wetland Mitigation Evaluation Study was to determine the success of wetland mitigation projects from an ecological perspective. The overall success of mitigation projects in Phase 2 was evaluated based on two factors, each with its own criteria.

- **Achievement of ecologically relevant measures:**
  - Establishing the required acreage of mitigation.
  - Attaining ecologically significant performance standards.
  - Fulfilling appropriate goals and/or objectives.
- **Adequate compensation for the loss of wetlands:**
  - Contribution of the mitigation activity to the potential performance of functions.
  - Comparison of the type and scale of functions provided by the mitigation project with the type and scale of lost wetland functions.

In addition to evaluating the success of mitigation projects, the Phase 2 study also examined:

- Wetland resource trade-offs (e.g., in-kind/out-of-kind, on-site/off-site, etc.).
- Ecological condition (e.g., surrounding land uses, buffer condition, extent of invasive species, etc.).
- Factors that were associated with project success (or lack of success).

**Over all, three projects (13 percent) were found to be fully successful; eight projects (33 percent) were moderately successful; eight (33 percent) were minimally successful; and five (21 percent) were not successful.**

The results of the Phase 2 study indicate that “created wetlands” are more successful than previous studies have shown, since 60 percent of them were at least moderately successful, and only one project (10 percent) was not successful. However, only 65

percent of the total acreage of wetlands lost was replaced by creating or restoring new wetland area, thereby resulting in a net loss of 24.18 acres of wetland area.

No enhancement projects were fully successful, while eight out of nine (89 percent) enhancement projects were minimally or not successful. Nearly two-thirds of the total acreage of mitigation that was established resulted from enhancement activities.

In addition, mitigation projects designed and implemented by public entities<sup>1</sup> fared worse than projects done by private entities: 71 percent of private mitigation projects were judged to be fully or moderately successful, while 35 percent of public mitigation projects were judged to be fully or moderately successful. However, the difference in level of success between public and private projects is not statistically significant, because the sample size was too small.

Seventy-nine percent of mitigation projects were at least somewhat achieving their ecologically relevant measures, while 63 percent of projects at least partially compensated for the permitted wetland losses. This implies that, although projects may be doing a reasonable job of achieving ecologically relevant permit requirements, these requirements are not always sufficient indicators of whether mitigation projects adequately compensate for the permitted loss of wetlands.

Phase 2 findings suggest that follow-up by regulatory agencies results in more-successful mitigation projects. Responses to a consultant questionnaire indicated that 75 percent of the fully and moderately successful projects experienced some degree of agency follow-up, while only 27 percent of the minimally and not-successful projects had some follow-up.

It was interesting to note that being out of compliance with permit requirements did not necessarily mean a mitigation project ultimately would be unsuccessful. In fact, 66 percent of the projects that ultimately were fully successful were not in compliance in Phase 1. However, all of the projects that ultimately did not succeed also were not in compliance with their permits. The primary key to success appears to be follow-up monitoring and maintenance to make sure the mitigation actions have a chance to work.

Based on these results, the authors recommend that Department of Ecology improve the follow-up on wetland mitigation projects by developing and implementing a compliance tracking system. Additionally, Ecology should work collaboratively with other regulatory agencies, applicants, and their consultants to come up with new guidance to improve mitigation at every step in the process, from choosing an appropriate site to monitoring and performing site maintenance. By working together, those involved in wetland mitigation can develop solutions and approaches that improve wetland mitigation, and thereby help to protect the state's valuable wetland resources.

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<sup>1</sup> Washington State Department of Transportation (WSDOT) projects were not included in this study.