

## The Evaluation of Wetland and Riparian Restoration Projects

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Although we have applied and continue to apply State and Federal Laws to eliminate or minimize development and human-use impacts to aquatic systems, these systems continue to be altered. Restoration projects are conducted in order to compensate or mitigate for direct and indirect impacts. However, little work has been directed toward determining the effectiveness of past restoration efforts. This paper outlines proposed methods to be used to measure the effectiveness of restoration projects. The underlying

tenet of the evaluation procedure and goal of restoration projects is to restore natural ecological structure and function. To meet this restoration goal, project objectives are to replace or modify individual physical, chemical, or biological characteristics of the

***Restoration. “the return of an ecosystem to a close approximation of its condition prior to disturbance. In restoration, ecological damage to the resource is repaired. Both the structure and functions of the ecosystem are recreated” (National Research Council 1992 p.18)***

system and the interactions among these characteristics, or both. The measurement of these characteristics and comparison to the undisturbed reference condition are used to determine how close the projects come to meeting the restoration goal. Comparisons between pre-project assessments at impacted and reference locations, identify differences in characteristics and processes. These differences become the project objectives that must be addressed during project design and become the post-project parameters measured. Assessment includes the evaluation of constructed features, biological structure and function, and physical structure and processes. The methods used to measure these parameters are tiered to allow for increasing levels of analyses. Thus, assessment begins with simple qualitative measures of structure, and progresses to detailed quantitative measures of function and processes. This approach provides flexibility so that an evaluation can be tailored to fit the experience, capabilities, budget, time, and needs of the investigators.

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