Assessing Potential Functions and Condition of Restored, Enhanced, and Created Wetlands in Idaho

Chris Murphy
Wetland Ecologist

Idaho Department of Fish and Game
600 S. Walnut
Boise, ID, 83705
Telephone: 208-287-2728
Email: chris.murphy@idfg.idaho.gov

During the last 40 years, dozens of wetland restoration projects costing many millions of dollars have been completed in Idaho. Objectives for most projects are to restore condition and function of wetlands so that habitat, water quality, and other services are improved. However, monitoring and assessment to determine if project are objectives are being met is often lacking or limited. Two goals of this project were to evaluate the potential functions and condition of restored, enhanced, and created wetlands across Idaho.

Between 2009 and 2013, we applied the Wetland Ecosystems Services Protocol for the United States (WESPUS) and documented stressors in a retrospective assessment of 37 restored, enhanced, and created wetlands that were > 4 years old since completion. This was the first broad application of WESPUS in Idaho. WESPUS proved useful for characterizing potential functions and condition. Aquatic and terrestrial habitat functions were greater for projects 5 to 10 years since completion than other ages, especially in seasonally flooded marsh sites and at enhancement projects.

Wetland mitigation projects provided the highest potential nitrate removal and retention, phosphorus retention, sediment retention and stabilization, water storage and delay, and waterbird feeding habitat functions of all types of sites assessed. Wetland Reserve Program projects also scored high for most of these potential functions. Habitat projects provided the greatest aquatic and terrestrial ecosystem support functions and were in the best overall condition. Although irrigation water treatment wetlands provided high phosphorus retention, water treatment wetlands, as well as S. 319 watershed restoration projects, lagged in support of many functions and had the most stressors. Created deep water marshes also supported high phosphorus retention potential.

Restored, enhanced, and created wetlands in Idaho are supporting numerous functions beyond those for which projects were designed. The levels of function vary depending on project design and resources invested.