Prioritizing Wetlands in Oregon for Mitigation, Restoration, and Rehabilitation.

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Understanding the locations and characteristics of wetlands is key to promoting conservation and mitigation that makes sense at both the ecosystem scale and the local scale. With funding from EPA, through the efforts of The Wetlands Conservancy, The Nature Conservancy, the Institute for Natural Resources, and the Oregon Biodiversity Information Center (ORBIC), wetlands in Oregon have been prioritized for their utility as high priority places to do wetland rehabilitation activities.

In 2009, the team created a priority wetland layer for the Willamette Valley that subjectively identified priority wetlands in each fourth-field subbasin (HUC4) based on wetland concentration and proximity to existing investments in wetland conservation and restoration. In 2010, we adapted methods developed by the Virginia Natural Heritage Program for the federal Transportation Research Board (TRB) to score all wetlands in each HUC4 according to their conservation status, ecosystem services provided, and both site-specific and landscape-level condition. Using the modified Virgina methodology, we then prioritized wetlands in four pilot basins in Oregon, and had the results reviewed by the conservation and regulatory community. Each wetland was evaluated based on four primary values: 1) conservation significance, 2) ecosystem service provisioning, 3) existing wetland condition, and 4) restoration and mitigation potential. In addition, a value for landscape integrity was developed for each wetland as a critical piece of information in defining each of the four values above.

Based on comments, methods were updated, and prioritizations were for completed for the entire state. The results indicate that the best prioritization strategy for wetlands depends strongly on the reasons for prioritizing and the needs of the information users. Categories of ecosystem service types were expanded to meet the regulator's needs. Balancing the needs for local scale projects with wide ranging coverage continues to be challenging, but the attribution of all wetlands in the statewide wetlands geodatabase appears to be the best methodology for success.

Conservation significance represents the wetland's current impact in terms of conservation. It focuses on wetland ability to provide plant and wildlife habitat based on assessments completed at state and federal levels. Data include USFWS-designated Critical Habitat and wetland proximity to these habitats. Shown here is a section of the Closed Lakes Basin.

Ecosystem services is a measure of a wetland's ability to provide resources and the tangible benefits that people derive from the resources. It summarizes geospatial factors that may influence provision of services by a wetland, such as occurrence in a FEMA-designated 100-year floodplain or proximity to a water body with a 303(d)-listed water quality limitation. It also identifies if an area is used for education, hunting, hiking, or other recreation.

Existing wetland condition represents the current condition of a wetland using factors that highlight the chief indicators of wetland disturbance: hydrology alteration, soil disturbances, and exotic plant cover. Variables in this key area decrease wetland rank, with the exception of beaver activity which is considered to be a positive contributor to wetland condition.

Restoration and mitigation potential is a measure of a wetland's potential to be successfully restored or used for mitigation. It combines factors such as proximity to a wetland mitigation or restoration site, wetland size, and size of wetlands within 300 ft. For restoration purposes, larger wetlands are presumed to be of more interest than smaller wetlands. Also, building on previous investments in wetland restoration is assumed desirable.

Landscape integrity for wetlands represents the amount of fragmentation close to a wetland complex. Fragmentation is measured using landscape metrics such as land cover class richness and diversity, as well as amount of edge in natural land cover patches. Values attributed were based on a correlation matrix of fragmentation metrics calculated for the project, although not all were used.