

A Recovery Crediting System that Supports Conservation Banking for an Endangered Floodplain Minnow in the Willamette Valley, Oregon

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Abstract. — Conservation banking is a new tool for resource managers that has the potential to provide both ecologically and economically sound alternatives while providing mitigation for impacts to listed species and their habitats. We developed a recovery crediting system to assess conservation credits and debits for the endangered Oregon chub (*Oregonichthys crameri*) that can be used in conservation banking. Our concept, which can nest within mitigation banking or stand alone, is based on prior studies assessing relationships between population abundance and habitat parameters for the species. Habitat parameters included habitat type, water velocity, aquatic vegetation, maximum depth, and shoreline slope. The model also incorporates rankings for piscivory risk, chub population abundance at the site or at proximal locations, site location (proximity to existing populations), and the status of proximal populations. Our approach assigns more credits to functioning bank sites that support abundant, viable populations of Oregon chub and requires more credits when impacted sites negatively affect or have the potential to negatively affect viable populations. Furthermore, it assigns more credits to created or restored banks versus preservation-only sites. Our approach is simple to use and has a strong biological foundation; a real world example is used to show the credit value calculations for determining baseline conditions. We feel that as the demand to develop prime fish and wildlife habitat continues, there will be associated demands for compensatory mitigation and managers will benefit by developing similar species models to provide the adequate mitigation needed to ensure the long-term survival of imperiled species.