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October 6, 2015

MEMORANDUM

TO: Fish and Wildlife Committee Members

FROM: Kendall Farley, Washington State Staff

SUBJECT: Restoring the Lower Columbia River Ecosystem – current status and future challenges in mitigating for climate change impacts

BACKGROUND:

Presenter: Catherine Corbett, Chief Scientist and Debrah Marriott, Executive Director, Lower Columbia Estuary Partnership (LCEP)

Summary: In 2011, LCEP completed a habitat change analysis comparing 1870s lands survey data with 2009 lands cover resulting in 114,050 acres (approx. 50%) of native habitat (inc.70% of vegetated tidal wetlands and 55% of forested uplands) had been converted to agriculture, industry and urban development. Results were used to identify priority habitats for restoration and protection for the eight river reaches, based on severity of loss.

They then identified 77,210 acres in the lower Columbia as “recoverable” areas, where low impact land use areas could be restored if landowners are willing, and LCEP provides guidance for restoring these habitats. An additional 68,231 acres have been converted to impervious surface, and are “recovery-challenged” and are much more costly to restore. Most of these acres lie within the Portland to Longview corridor where native habitats are scarce but critically important to providing refugia in migratory corridors as species make their way up and down the lower river.

LCEP then developed quantitative habitat coverage targets by river reach, focusing on protecting common species from becoming imperiled and do not yet include recovery targets for ESA-listed species. They include: 1) no net loss of native habitats per the 2009 baseline, 2) recover 30% of historic coverage of priority habitats by 2030 and 3) recover 40% of the historic coverage of priority habitats by 2050. In meeting these targets, they will reach 46-88% of historic habitat coverage by 2050, depending on river reach, with an overall average of 60% recovery.

The next step is to integrate the impacts of climate change into their restoration approach. These impacts include further loss of floodplain habitats through the submersion, conversion and erosion of estuarine habitats by rising sea levels; introduction of low dissolved oxygen (hypoxia) and ocean acidification through increased tidal exchange with sea level rise; reductions in cold water refugia, vital for cold water species such as salmon and steelhead; and alterations to habitat structure (ie: vegetation) by changing precipitation, temperature and CO₂. There is a lack of detailed data necessary to integrate climate change impacts into restoration approaches in the lower Columbia. These data gaps need to be filled in order to protect past restoration and current and future investments.

Relevance: 2014 F&W Program emerging program priorities #2: *Implement adaptive management (including prioritized research on critical uncertainties) throughout the program by assessing the effectiveness of ongoing projects, developing program objectives when appropriate and taking into account the effects of climate change.*

Workplan: 2. Promote regional fish and wildlife recovery - implement new 2014 Fish and Wildlife Program.

Background: The lower Columbia River and estuary is designated as an “estuary of national significance” by the EPA. LCEP, as a regional collaboration of stakeholders identified a primary goal of restoring *biological integrity* of the lower Columbia ecosystem. Integral to achieving this goal is reestablishing and maintaining native habitat *quantity* and *diversity*. Since 1999, LCEP and regional partners have restored 21,399 acres of habitat, mostly on habitat to recover ESA listed salmonids. Today, most projects on publically managed lands have been completed, and restoration now often requires purchasing lands from private landowners, or working with private landowners to improve conditions for native species. They are currently collecting and analyzing data to help the region strategically prioritize habitats to restore and developing quantifiable habitat coverage targets.