

Columbia Estuary Ecosystem Restoration Program (CEERP) - Overview

Goal: *Understand, conserve and restore ecosystems in the lower Columbia River and estuary.*

Program Objectives:

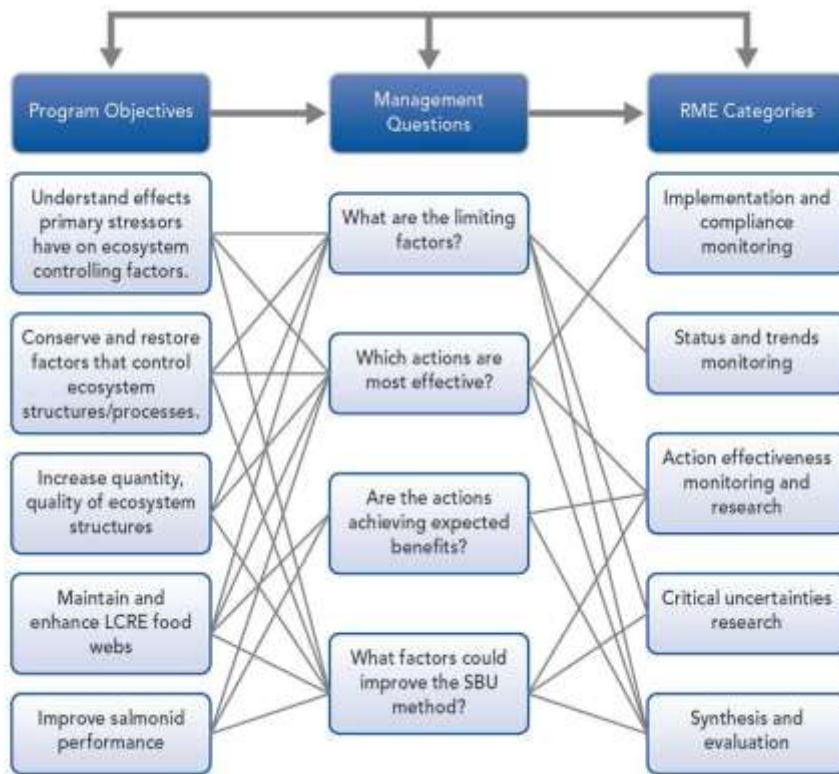
1. Understand what effect primary stressors (e.g., flow) have on ecosystem controlling factors (e.g., water properties, topography).
2. Conserve and restore primary stressors and controlling factors that affect ecosystem structures (e.g., habitats) and processes (e.g., sediment deposition, prey production).
3. Increase quantity, quality of ecosystem structures (e.g., habitats) for juvenile salmon.
4. Maintain and enhance LCRE food webs to benefit salmon performance (e.g., growth).
5. Improve salmonid performance in terms of life-history diversity, foraging success, growth, and survival.

RME Management Question:

1. What are the limiting factors or threats (i.e., stressors and controlling factors) in the estuary preventing the achievement of desired habitat or fish performance?
2. Which actions are most effective at addressing the limiting factors?
3. Are the estuary habitat actions achieving the expected biological and environmental benefits?
4. What adjustments should be made, if any, to improve the ability of the SBU crediting method to predict benefits to ESA-listed fish from ecosystem protection and restoration in the LCRE?

Categories of Research, Monitoring and Evaluation:

- **Implementation and Compliance Monitoring (ICM)** – Determines whether restoration projects were implemented as planned;
- **Status and Trends Monitoring (STM)** – Provides environmental baseline from which to compare action effectiveness results, *e.g., are ecosystems degrading irrespective of habitat restoration?*
- **Action Effectiveness Monitoring and Research (AEMR)** – Determines the success of the CEERP restoration projects - *inform decisions regarding the next generation of habitat projects.*
- **Critical Uncertainties Research (CUR)** – Fill knowledge gaps – *builds state-the-science.*
- **Synthesis and Evaluation (SE)** – *Assesses progress to inform adaptive management*



Columbia Estuary Ecosystem Program (CEERP) Adaptive Management Process:

