

# 2015 CHaMP Camp Workshop

## The HabRate Limiting Factors Model

**June 4, 2015**

**7:45 a.m. – 8:45 a.m.**

Presenter Ted Sedell, Oregon Dept. of Fish & Wildlife

**Objectives:** Provide an overview of the utility and process of a limiting factors model (HabRate) to assess the quality of stream habitat using CHaMP data for each juvenile life stage of salmon and steelhead.

**Software needs:** None. Software discussed is MS Office Access database

**Additional Resources:** Strong coffee, doughnuts, and Advil.

### **Abstract:**

The original HabRate model developed by ODFW's Aquatic Inventory Project was modified to accommodate CHaMP metrics at the site-level scale. The model was parameterized from literature, field data, and crossed-walk metrics. Habitat criteria were developed for discrete life history stages (i.e. spawning, egg survival, emergence, summer rearing, and winter rearing) and used to rate the quality of stream reaches as poor, fair, good, or excellent based on attributes relating to stream substrate, habitat unit type, cover, and gradient. Site level summaries of stream habitat data were entered into MS Access, and interpreted by a series of algorithms and logic statements to provide a limiting factor assessment of potential egg-to-fry and fry-to-parr survival for each reach. Model output lists habitat quality by species and life stage for each CHaMP monitoring site. This presentation will cover the model inputs, the logic statements made for a relational database, and the importance of comparing the outputs to fish densities or abundance.