



Potter Valley Project / Huffman Ad Hoc Committee Fish Passage Working Group

## **WORKING DRAFT Fish Passage Objectives**

**V2 – 5/7/2018**

The Fish Passage Working Group (FPWG) is developing information and recommendations on fish passage for the Potter Valley Project Ad Hoc Committee. The FPWG is composed of Potter Valley Project stakeholders charged with identifying a prioritized list of conceptual-level passage options that would meet three fish passage objectives for targeted anadromous fish species beyond Cape Horn and Scott dams, located within the upper mainstem Eel River, California. If these fish passage objectives are achieved, recommended fish passage options will promote the recovery and long-term viability of currently depressed fish populations in the Eel River. The FPWG strives to identify fish passage options that meet the following objectives for each targeted fish species:

### **Objective #1 Population Viability of Upper Eel River Anadromous Fishes**

Evaluating passage and reintroduction of anadromous Chinook salmon, Pacific Lamprey and steelhead trout to historically occupied habitats above Scott Dam is one of the primary goals of the Potter Valley Project Two-Basin Solution Committee. To achieve the goal of successful reintroduction, the Fish Passage Working Group (FPWG) recommends that fish passage objectives promote the viable fish population (VFP) concept (an expansion of the viable salmonid population (VSP) concept used in NMFS' salmonid recovery planning documents to be inclusive of non-salmonid fishes). These population viability concepts (VFP/VSP) are based on four parameters fundamental to evaluating population viability status: abundance, productivity, spatial structure, and diversity. Abundance can be enhanced by increasing the carrying capacity of existing populations. Increased population productivity (number of downstream migrating juvenile fish per spawner) can result from improved survival rates in newly accessible high quality habitat. Enhancing spatial structure, or the ability of individuals to disperse across a landscape, can be a direct benefit of improved fish passage. Enhanced spatial structure promotes life history diversity as fish populations adapt to new environments. These four parameters could constitute independent objectives; however, the timeframe required for each of these objectives varies and not all may need to be improved to achieve overall population viability for the targeted species. The FPWG suggests using the VFP concept as a guiding principal to investigate fish passage alternatives for Scott and Cape Horn dams.

### **Objective #2 Access to Abundant High Quality Habitat**

Allow anadromous fish access to historically occupied streams with sufficient habitat quantity and quality to complete essential life stages and promote long-term population viability. Accessible streams should provide habitat and water quality conditions that allow for timely seasonal spawning and juvenile rearing opportunities. Where possible, provide opportunities for fish to reside and access stream networks with seasonally interconnected high quality habitat. Avoid exposing fish to low quality habitat that harbor introduced predatory fish species.

### **Objective #3 Functional Fish Passage**

Provide safe, timely, reliable, and effective upstream and downstream passage at Scott and Cape Horn dams for all targeted adult and juvenile anadromous fish life-stages.. Employ fish passage options and technologies that minimize stress, injury, and mortality, while maximizing passage efficiency, and minimizing migratory delay. Consider each targeted species life stage requirements, needs for timely seasonal movements, and habitat quality and quantity in affected lake and stream environments.