

#1 Promote Population Viability of Upper Eel River Anadromous Fishes

Evaluating passage and reintroduction of anadromous fish 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 recommends that fish passage objectives promote the viable salmonid population concept (VSP) as defined by McElhany et al. (2000). An important tenant of NMFS recovery planning efforts, VSP is based on four characteristics: abundance, productivity, spatial structure, and diversity. Anderson et al. (2014) defined VSP as it pertains to anadromous fish passage and reintroduction efforts. Abundance can be enhanced by increasing the carrying capacity of existing populations. Increased population productivity (recruits 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 VSP characteristics could constitute independent objectives, however, the timeframe required to achieve each objective varies and not all need to be improved to promote viability. The Fish Passage Working Group suggests using the VSP concept as a guiding principal to vet fish passage alternatives.

#2 Provide Access to Abundant High Quality Habitat

Allow anadromous fish access to historically occupied streams with sufficient habitat quantity and quality to promote population viability. Accessible streams should provide habitat and water quality characteristics that allow spawning and juvenile rearing in spring, summer, and winter. Where possible, provide opportunities for fish to reside in stream networks with seasonally interconnected high quality habitat. Avoid low quality habitat with introduced predators.

#3 Provide Functional Fish Passage

Provide safe, timely, and effective upstream and downstream passage past Scott and Cape Horn dams for adult and juvenile life-stages of anadromous fish. Employ methods that minimize stress, injury, and mortality, maximize efficiency, and reduce migratory delay. Consider fish life history requirements, needs for seasonal movements, and habitat quality in affected lake and stream environments.