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1.1.1 Operational Impacts - Direct changes in river hydrology, hydraulics, sediment and nutrient availability and/or transport that cascade throughout the ecosystem to alter physical and ecological processes, vegetation communities, which directly affect fish and wildlife communities. Operational impacts can also occur within reservoirs as a result of fluctuating water levels which cause shoreline erosion. These impacts should be assessed and mitigated for in terms of extent, magnitude, duration, reversibility, timing, frequency, and cumulative effect. These impacts may exceed those of construction and inundation.

Examples:

- Reduction or elimination of spawning salmon in undammed tributaries above FCRPS projects.
- Erosion and degradation of riparian and wetland areas where operations of reservoirs and water flows erode and degrade these habitats.
- Changes from normal historical averages in water temperatures and flows due to water and power management needs of FCRPS projects.

1.1.2 Secondary Wildlife Impacts - The changes in ecosystem functions attributable to the construction and on-going operation of the hydropower system, such as contaminant concentrations in reservoir sediments, land use changes, and other systemic changes stemming from the construction, inundation, and/or operation of the hydropower system including its network of powerlines, power stations, canals, etc. Secondary impacts also include the changes in human land uses within the historic floodplain enabled by dam operations. All of these changes cause direct effects in wildlife communities and/or their habitats.

Examples

- Loss of marine derived nutrients from returning adult spawning salmon in tributaries.
- Changes in land use resulting from development of the hydropower system, for example, in floodplains below or above FCRPS projects.
- Changes in wildlife connectivity, wildfire frequency, noxious weeds and human disturbance resulting from development of FCRPS powerlines.