

Objectives: water component

Measure changes in water quality & water budget in representative areas subjected to Framework/SPLATS treatment

Estimate the impact of forest treatments on water quality, water budget & aquatic habitat at three levels: fireshed/watershed, forest, bioregion

Provide basis for continuing operational assessment of how Framework treatments will impact streams, water cycle & forest health

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Tasks: water component

Field measurement program

- before/after treatment
- control measurements in parallel w/ treatment

Spatial scaling

- analysis of larger-scale data
- modeling responses across larger watershed/fireshed

Measurements & response variables (~1 km² footprints)

- stream water quality: temperature, turbidity, dissolved oxygen, electrical conductivity
- basin water quantity: stream stage/discharge, soil moisture
- supporting physical measurements: meteorological, erosion, soil temperature, snowpack, precipitation
- aquatic biota: macroinvertebrates

Justification: water component

- Water quality: Clean Water Act & Safe Drinking Water Act
- Species viability: habitat, native & invasive species
- Plant & animal community diversity: riparian areas, wetlands & meadows
- Special habitats: Maintain & restore special aquatic habitats
- Watershed connectivity: within and between watersheds
- Floodplains & water tables: connections to distribute flood flows & sustain habitats
- Watershed condition: infiltration characteristics, vegetative cover & stream flows
- Streamflow patterns & sediment regimes: in-stream flows, sediment regimes, conditions of riparian, aquatic, wetland & meadow habitats
- Stream banks & shorelines: physical structure & condition of stream banks & shorelines

Response to comments: water component

Elevation range & climate regime: critical mixed conifer zone crosses the rain-snow transition, ~1200-2000 m in central Sierra & 1500-2200 m in southern Sierra

Response variables: water yield & water quality both important indicators, also water timing & peak flows

Time scale: especially for erosion, short-term measurements need to be in a longer-term context

Variability: consider physical, historical, management factors in selecting sites