**Abstract for the 2023 Pacific Coast Steelhead Management Meeting**

**Presentation Title: Statewide Drought Management and Monitoring Actions for Salmonids in California**

Jonathan Nelson

Environmental Program Manager

California Department of Fish and Wildlife

Fisheries Branch

Anadromous Fishes Conservation and Management Program

[jonathan.nelson@wildlife.ca.gov](mailto:jonathan.nelson@wildlife.ca.gov)

California has been officially designated as Severe or greater in 16 of the past 20 years by the [US Drought Monitor](https://www.drought.gov/states/california) with the most recent drought periods (2014-17 and 2020-22) designated as Exceptional (the highest ranking) and both declared as State of Emergencies by the Governor. These prolonged drought periods have had significant impacts on the status of steelhead and salmon populations statewide. California’s anadromous salmonid monitoring programs are revealing down trending adult returns over the past decade and drought conditions can be linked to numerous declines. The California Department of Fish and Wildlife (Department) published a [Drought Stressor Monitoring Report](https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=168170&inline) summarizing actions and data collected from 2014-2017, which was critical in identifying the continued need for stressor monitoring and development of standardized field protocols and data collection across the state. With the onset of the 2020 drought period, the Department was able to reference the report and confirm funding/staffing needs for increased aquatic stressor monitoring and fish rescue resulting in ~$10 M from the State budget to hire an additional 20 biologist and 30 seasonal limited-term positions through June 2024.

The Department is implementing numerous actions to combat drought impacts and build future resiliency to extreme climate changes. The Department has received ~$200 M in State funds for multi-benefit ecosystem restoration and protection projects under [Drought, Climate, and Nature-Based Solutions Initiatives](https://wildlife.ca.gov/Conservation/Watersheds/Restoration-Grants/Concept-Application), of which $100 M is dedicated for salmon and steelhead restoration projects. In collaboration with National Marine Fisheries Service, the Department developed a [Voluntary Drought Initiative](https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=193837) with the purpose of providing a framework for taking collaborative actions with water users to protect aquatic species and encourage water conservation. The Department established a “[Hoot Owl](https://wildlife.ca.gov/Fishing/Inland/Hoot-Owl)” watch list to identify waters that anglers should consider not fishing after 12 pm during periods of increased temperatures. In addition, the Department implements low flow angling restrictions for many of the coastal streams which allow for discrete closures if flows drop below minimum flow criteria.

In April 2021, the Department began monitoring for aquatic habitat impacts from the current drought period. To date, a total of 110 staff have spent over 8570 hours monitoring 167 waterbodies in 36 counties across the state. In 2021-22, a total of 69 rescues have occurred in 34 anadromous waterbodies in 12 counties, totaling 16,840 individual anadromous salmonid species, of which 4426 were steelhead. The Department has developed an online interactive [Dashboard](https://www.arcgis.com/apps/dashboards/96f98c76b1284c76bc06c7034ac16e97) that the public can use to visually display fish rescue data using various query options.

While the future of climate change is difficult to predict, it is apparent that these events will continue to happen more frequently and for extended periods. California sits in the southern most range for anadromous salmonids and these population will continue to be impacted by extreme climate shifts. The Department will continue to advocate for protective measures for water management, support aquatic habitat restoration, and implement the monitoring and angling actions necessary to help conserve the State’s anadromous salmonid populations for future generations.