



## Climate Adaptation and Accelerated Sediment Buildup in Western Reservoirs

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The Northern California Power Agency (NCPA) operates the North Fork Stanislaus River Hydroelectric Development Project (FERC Project No. 2409) on the North Fork of the Stanislaus River in California’s Alpine, Calaveras, and Tuolumne Counties.

The Project, which has the capacity to generate 256 megawatts of power, includes McKay’s Point Reservoir. During the construction of this project, NCPA worked with the U.S. Forest Service (USFS) to obtain Special Use Permits for two sites to safely relocate the excavated sediment onto adjacent federal land.

When the reservoir was completed in 1989, the original sedimentation buildup rate estimates between 1989 and 2018 were projected to be a total of 43,560 cubic yards. However, the effects of climate change have led to an increased frequency of extreme weather events, including floods, droughts, and wildfires, leading to greater rates of erosion within the surrounding landscape—and causing substantially higher amounts of debris to flow into the project’s hydroelectric reservoirs. As a result, accumulated debris flows from USFS land recorded in 2018 amounted to a total of 519,040 cubic yards—nearly 12 times greater than anticipated. This sediment buildup has limited the reservoir’s water storage capability, degraded the water quality, and reduced the overall generation of a clean and renewable

resource that plays a key role in advancing the state’s clean energy and climate goals.

As well, the hydroelectric project provides environmental benefits for fish as well as numerous recreational opportunities for outdoor enthusiasts. NCPA abides by strict environmental standards to ensure the safety and sustainability of the local fish population. Ideal cold water releases during the spring and fall enable trout and other fish species to thrive—making the Stanislaus River a popular fishing destination. The Project creates a number of other recreational opportunities including swimming, boating, kayaking, hiking, and camping among others. NCPA also funds and manages the Spicer Reservoir Campground including cooking areas, fireplaces, restroom facilities, and roads through the campground. Lastly, it has provided critically important flows downstream during recent severe drought events—assuring the preservation of riverbed habitat that would have otherwise run dry absent this project and its storage capability.

### ***The Critical Need for Action***

In light of the rapidly increasing accumulation of sediment, it is imperative that the debris in the reservoir be removed, and a location for placement of this uncontaminated sediment be identified. Preliminary estimates for the cost of removing, hauling, and disposing of half of the

sediment ranges from \$50 million—\$80 million. The cost range in large part depends on whether the sediment can be relocated on the surrounding USFS landscape for beneficial uses—such as road reinforcement or the creation of fire breaks—or, alternatively, trucked long distances to private land. As well, these costs do not account for the economic impact of the loss in power generation from the facility or the air quality impacts during the excavation and sediment transportation phase of the project.

From both an environmental and cost perspective, redepositing the eroded debris on adjacent federal land from which the sediment came is the most workable, economic, and environmentally beneficial solution. NCPA has worked for years in good faith with the USFS to obtain a Special Use Permit allowing for the relocation of sediment back onto USFS lands as was the case during the construction of the project. To date, these efforts have yielded no beneficial outcome.

Dramatic changes in climate are affecting water quality, water supply, and hydroelectric production. As a result, water reservoirs and hydroelectric operations throughout California and the West are being seriously impacted. A lack of storage capacity impacts fishing and recreational access, and reduced reservoir water capability inhibits the generation of clean electric power which hamstrings California's clean energy goals and electricity reliability. If left unattended, this buildup can pose a threat to the safety of these critical facilities.

## ***Environmental and Grid Reliability Benefits***

NCPA proposes to remove 300,000 cubic yards of sediment from McKay's Point reservoir. The result would be an immediate increase in clean energy generation and water flow for recreation and fish habitat in addition to the implementation of an annual sediment removal program.

It is critical that California create and implement a programmatic funding system for sediment removal and disposal. The inability of the Federal government to adapt outdated permitting processes to address the urgent climate adaptation challenges that we are facing today requires the California Legislature to act. Immediate steps must be taken to evaluate the impact of this situation on all Californians and action is needed to resolve this growing challenge. Appropriate disposal of the sediment can result in important environmental improvements; restoration of previously disturbed lands, creation, restoration and expansion of fire breaks, road augmentation, land grading, habitat restoration, and increased and improved recreational opportunities.

***NCPA urges the California State Legislature to develop and adopt a long-term strategy for the removal and relocation of non-toxic debris from hydroelectric reservoirs to enhance grid reliability, maintain robust environmental standards, and address the impacts of climate change.***