



**FRIENDS  
OF THE  
RIVER**

## Cottonwood Creek Dams

### Threats To The Sacramento River's Largest Undammed Tributary

Numerous proposals have been considered since the early 1940's to construct dams of varying sizes on Cottonwood Creek -- the Sacramento River's largest undammed tributary. State and federal dam engineers have resurrected two separate dam proposals on Cottonwood Creek for consideration in the CALFED program. Both projects would store Cottonwood Creek water for delivery to downstream water users.

CALFED is a joint federal/state program to develop a long term comprehensive plan intended to restore the ecological health and improve water management in the San Francisco Bay/Sacramento-San Joaquin Delta. The CALFED program was largely prompted by the decline of fish and wildlife species in the Delta and its tributaries caused by the massive system of state and federal dams that have harnessed the Central Valley's waterways. Ironically, the CALFED program is essentially proposing to solve an ecological problem caused by dams and water diversions by building yet more dams and water diversions.

CALFED has released a joint environmental impact statement and environmental impact report (EIS/EIR) for public review and comment by July 1, 1998. The CALFED EIS/EIR considers 12 alternatives for the improvement of the Bay-Delta system. Eight of the 12 alternatives propose additional surface water storage and conveyance facilities upstream and downstream of the Delta. Two of the 28 surface water storage projects considered by CALFED would be located on Cottonwood Creek.

The intent of the CALFED EIS/EIR is to compare the Cottonwood Creek dam projects against other projects that might be considered as part of a long term CALFED solution for the Bay-Delta system. Unfortunately, the CALFED program gives short shrift to the more efficient use, conservation, and reclamation of our existing water resources as viable alternatives to expensive and environmentally destructive new or enlarged dams. The two Cottonwood Creek dam projects considered by CALFED include:

Dutch Gulch/Tehama Project -- This plan calls for two relatively large dams located on the main stem and the South Fork Cottonwood Creek. The 247 foot high Dutch Gulch dam on the main stem of Cottonwood Creek would create a 900,000 acre foot reservoir. The 215 foot high Tehama dam on the South Fork Cottonwood Creek would create a 700,000 acre foot reservoir. The Tehama reservoir would also require construction of eight saddle dams ranging in height from 40 to 80 feet.

Dippingvat/Red Bank Project -- Located approximately 20 miles west of Red Bluff, the Red Bank project consists of two relatively large dams, two smaller dams, and several saddle dams, as well as a 1,800 foot long tunnel and 2.3 miles of conveyance canals connecting the various reservoirs. The project's primary facility would be the 251 foot high Dippingvat dam on the South Fork Cottonwood Creek, creating a 104,000 acre foot reservoir. This facility is designed to divert 800 cubic feet per second of winter flows from the South Fork Cottonwood Creek southward into the Red Bank Creek basin, through a series of tunnels, canals and two smaller reservoirs to create a 250,000 acre foot reservoir behind the 300 foot high Schoenfield dam on Red Bank Creek.

### Environmental Impacts Of Cottonwood Creek Dams

Aquatic Habitat & Species: The Dutch Gulch/Tehama project would inundate 130 miles of Cottonwood Creek and tributaries and the Red Bank/Dippingvat project would inundate up to 27 miles of Cottonwood and Red Bank creeks. Cottonwood Creek supports fall, late fall, and spring run chinook salmon, as well as a small run of steelhead trout. All three runs of chinook salmon and steelhead trout have been listed or proposed for listing as federal protected threatened or endangered species. The chinook salmon runs vary in size from 500 to 8,000 fish. There are no steelhead population estimates. CALFED technical reports estimate that the Dutch Gulch/Tehama project could result in an average annual loss of 1,600 chinook salmon and 1,000 steelhead, as well as adversely affect another 2,700 salmon downstream by blocking access to spawning areas, reducing downstream recruitment of spawning gravel, and modifying downstream flows. The Dippingvat dam on the South Fork Cottonwood Creek would block steelhead and spring run salmon migration, inundate critical spawning and holding areas for these stocks, and reduce downstream flows needed for migration and

spawning. Either project could adversely impact gravel recruitment from Cottonwood Creek critical to spawning for the endangered winter run and threatened (proposed) fall and late fall run chinook salmon in the Sacramento River. The Dutch Gulch/Tehama project would also eliminate approximately 40 miles of smallmouth bass habitat and adversely impact several other resident aquatic species, including rainbow trout, Pacific lamprey, Sacramento squawfish, prickly sculpin, and California roach. Other protected or sensitive species which could be impacted by the projects include green sturgeon, red legged frog, yellow legged frog, western spadefoot toad, northwestern pond turtle, fairy shrimp, and possibly Valley elderberry longhorn beetle. Approximately 1,600 acres of riparian habitat, 27 miles of perennial streams, 53 miles of intermittent streams, and 39 acres of riverside wetlands would be affected by the Dutch Gulch/Tehama project. The Red Bank/Dippingvat project would affect up to 6.5 miles of perennial stream, 20 miles of intermittent streams, and five acres of riverside wetlands.

Terrestrial Habitat & Species: Approximately 21,400 acres and 4,200 acres of terrestrial wildlife habitat would be respectively lost to the Dutch Gulch/Tehama and the Dippingvat/Red Bank projects. The habitat consists primarily of foothill oak woodland, grassland, chaparral, yellow-pine forest, and riparian vegetation. This area provides important habitat for deer, waterfowl, 15 species of furbearers, approximately 130 species of songbirds, several birds of prey, and eight species of amphibians and reptiles. Federally protected or sensitive wildlife species which could be impacted by the projects include American peregrine falcon, Aleutian Canada goose, northern spotted owl, two species of beetles, three species of bats, San Joaquin pocket mouse, western burrowing owl, ferruginous hawk, little willow flycatcher, and white-faced ibis. Six sensitive plants could also be impacted by the projects.

Human Habitat: The project areas are sparsely populated. Approximately 18 miles of roads would have to be relocated for the Dutch Gulch/Tehama project, including a segment of State Highway 36. No estimate of required road relocation was provided for the Dippingvat/Red Bank project, although at least three county roads would be inundated. Up to 251 archeological sites, 236 historic sites, and 19 ethnographic sites could be inundated or affected by the projects.

Public Land Resources: A few thousand acres of scattered public lands administered by the Bureau of Land Management (BLM) would be inundated by the projects. The upper segments of the North Fork, Middle Fork, and South Fork Cottonwood Creek, as well as Beegum Creek (a Middle Fork tributary), have been determined by the BLM to be eligible for National Wild & Scenic River status in recognition of outstanding scenic, recreational, and geological values. A portion of the eligible segment of the South Fork Cottonwood Creek would be inundated by the Dippingvat reservoir. BLM guidelines require the protection of the creek's free flowing character and outstanding values of eligible river segments until a suitability study is completed and recommendation concerning whether the segment should be added to the system is made to Congress.

Seismic Impacts: Previous government studies have identified few seismic concerns. However, the region where the Sacramento Valley meets the Coast Range has been identified as a "fundamental tectonic boundary" with hidden faults capable of producing moderate size earthquakes such as the 1892 Winters quake and 1983 Coalinga quake (both 6.7 on the Richter scale). Seismic concerns increase the cost of the proposed dams and raise the possibility of reservoir induced seismicity (such as the 1975 Oroville quake caused by Oroville dam and reservoir).

Costs: The Dutch Gulch/Tehama project could cost up to \$1.3 billion. The Dippingvat/Red Bank project could cost up to \$247 million.

For more information about the CALFED program, call (800) 700-5752. To comment on the CALFED EIS/EIR, contact CALFED for a list of scheduled public hearings and/or send your written comments by July 1 to Lester Snow, CALFED Bay-Delta Program, 1416 Ninth Street - Suite 1155, Sacramento, CA 95814. For more information about the environmental impacts of CALFED's proposed dam projects, contact Steve Evans at Friends of the River at (916) 442-3155 Ext. 221, email: sevans@friendsoftheriver.org.



Sources: CALFED Storage and Conveyance Components Facility Descriptions and Cost Estimates, October 1997; Restoring Central Valley Streams -- A Plan For Action, Dept. of Fish and Game, November 1993; Journal of Geophysical Research, 1988.

Friends of the River ~ 128 J Street - 2nd Floor ~ Sacramento, CA 95814 ~ (916) 442-3155