

**Federal Energy Regulatory Commission** issues new Hydroelectric Project License, which contains license article 33 allowing short-term drainages in releases below dam for fishery management and requires the Licensee to maintain the following minimum flow releases:

- 150 cfs downstream of Coleman Powerhouse
- 5 cfs in South Fork Battle Creek below the South, Inskip, and Coleman diversions.
- 3 cfs in North Fork Battle Creek below diversions into Al Smith, Keswick, Wildcat, Eagle Canyon, and Cross Country Canals.
- 0.3 cfs from North Battle Creek Reservoir into North Battle Creek Feeder, and from McCumber Reservoir into North Fork Battle Creek.

**The California Legislature** passes Senate Bill 1086, Upper Sacramento River Fisheries and Riparian Habitat Management Plan, acknowledging that operations of the Coleman National Fish Hatchery and hydroelectric power facilities had contributed to the declining runs of naturally occurring salmon and steelhead (Nielsen 1989).

The Upper Sacramento River Fisheries and Riparian Habitat Advisory Council (Senate Bill 1086) called for increased instream flows and screens at Hydroelectric Project diversions and increased release of salmon and steelhead upstream of Coleman National Fish Hatchery while managing disease risks at the hatchery (Nielsen 1989).

**The U.S. Bureau of Reclamation (Reclamation), USFWS, DFG, and PG&E** enter into two interim agreements for immediate anadromous fish habitat improvement (Patterson 1996). The key provisions of these agreements include:

- Instream releases at Eagle Canyon and Coleman Diversion Dams increased to 30 cfs, 5 cfs, target flows or as subsequently modified by mutual agreement.
- Diversion to Wildcat Canal suspended.
- Partial compensation to the Licensee (PG&E) by Reclamation in the form of a water purchase based on value of the forgone energy production. Licensee bears initial loss of 12.5 cfs at Eagle Canyon and Coleman Diversion Dams; Wildcat Canal loss is shared equally.
- Blocking the downstream entrances to the fish passage facilities at Eagle Canyon and Coleman Diversion Dams.

Technical teams from state and federal agencies develop advisory reports for CVPIA program restoration actions that include detailed recommendations to restore Battle Creek that are consistent with past recommendations on flow and passage.

This partnership between PG&E, state and federal fisheries agencies, and restoration funding sources (CVPIA and Category III) allows interim increases in flows at one-half of the hydroelectric diversions affecting salmon and steelhead while a permanent or long-term arrangement can be reached. The basis for this agreement is an article in the FERC license allowing short-term changes to the license for fishery management upon mutual agreement between PG&E and DFG.

**Completion of the Battle Creek Salmon and Steelhead Restoration Plan**—the technical basis for the Battle Creek Salmon and Steelhead Restoration Project.

**Reclamation, NOAA Fisheries, USFWS, CDFG, and PG&E sign Agreement in Principle** to pursue a restoration project on Battle Creek involving modifications to the Hydroelectric Project.

**Reclamation, NOAA Fisheries, USFWS, CDFG, and PG&E sign a Memorandum of Understanding** for the Battle Creek Salmon and Steelhead Restoration Project.

**Reclamation submits proposal and approves \$28 million in directed funding for the Battle Creek Salmon and Steelhead Restoration Project**, contingent upon the development of a detailed, formal memorandum of understanding between parties in conformance with the Agreement in Principle and terms of the CALFED funding.

**USFWS receives CALFED Ecosystem Restoration Program** funding for improving the upstream ladder and barrier weir at the Coleman National Fish Hatchery.

**Federal fisheries agency salmon planning effort** recommends restoring natural streamflows throughout the Battle Creek system, primarily to meet the requirements for spring-run and winter-run chinook salmon.

**Pacific Gas and Electric Company (PG&E)** applies for a new license for the existing Battle Creek Hydroelectric Project (FERC License No. 1121).

**The U.S. Army Corps of Engineers** completed a flood control project on the lower 5 miles of Battle Creek below the Coleman National Fish Hatchery. Much of the spawning gravel was removed from the streambed by pushing the gravel into levee-like piles on the bank (O'Brien 1970).

**USFWS, PG&E, and DFG** cooperate in field trials to assess the potential success of fall-run Chinook salmon spawning in the North Fork, South Fork, and mainstem of Battle Creek. PG&E increased flows during spawning period.

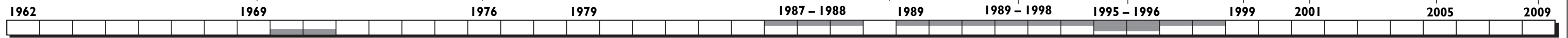
**Battle Creek Fish Passage** is identified as a priority in seven restoration plans.

**A Four Agency Letter** is prepared by Reclamation, USFWS, NOAA Fisheries, and DFG (Four Agency Letter, September 20, 2001) in response to the Battle Creek Watershed Conservancy's concerns over activities of the agencies in the Battle Creek Watershed (Appendix B).

**Under the Interim Flow Agreement**, USFWS, NOAA Fisheries, and DFG (Letter to PG&E, May 14, 2001) direct PG&E to reduce diversions and close the fish ladders at Eagle Canyon and Coleman Diversion Dams for the 2001 season (Appendix E).

**The Battle Creek Watershed Conservancy (BCWC)** supports the Restoration Project. (Appendix B)

**Completion of construction**



**California Department of Fish and Game (DFG)** statewide fisheries planning effort recommends restoration and utilization of natural salmon spawning area in Battle Creek.

**California Advisory Committee on Salmon and Steelhead Trout** (legislatively authorized in 1970) recommends restoring Battle Creek system.

**The DFG prepares a draft fisheries restoration action item for the Upper Sacramento River Fisheries and Riparian Habitat Management Plan** (Senate Bill 1086 Plan) recognizing hatchery operation and hydroelectric power development as combining to drastically reduce natural spawning of Battle Creek salmon and steelhead trout. Short- and long-term solutions recommended by CDFG included continued releases of salmon to Battle Creek upstream of the Coleman National Fish Hatchery, flow augmentations, fisheries studies, development of a Battle Creek anadromous fish restoration plan with the U.S. Fish and Wildlife Service (USFWS), increased diversion bypass flow releases, fish screens at diversions, and improved gravel management.

**The DFG Central Valley basin planning effort** for salmon and steelhead (Senate Bill 2261) makes recommendations to restore Battle Creek consistent with those in the 1989 Senate Bill 1086 process.

**The Battle Creek Spawning Restoration Project**, funded by Proposition 70, protected against bank erosion and channel migration threatening important spawning riffles in lower Battle Creek.

**The Inland Fisheries Division** of CDFG reported on the successful use of streambank stabilization, gravel loosening, and the replacement of armoring cobbles with clean spawning-sized gravels to improve Battle Creek spawning habitat. CDFG, USFWS, and the National Marine Fisheries Service (NOAA Fisheries) met to develop a conceptual long-term fisheries management plan for Battle Creek upstream of the Coleman National Fish Hatchery.

**DFG Central Valley fisheries restoration "Plan for Action"** (advisory to the federal Central Valley Project Improvement Act of 1992 [CVPIA]) makes detailed recommendations to restore Battle Creek consistent with past recommendations on flow and passage.

**The DFG Steelhead Restoration Plan** – advisory to the CVPIA of 1992 – recommends increasing the instream flow at Hydroelectric Project diversions and allowing steelhead to ascend above Coleman National Fish Hatchery.

**The Pacific Fisheries Management Council** passes a resolution to examine the feasibility of reintroducing winter-run chinook salmon into Battle Creek.

Discussions between PG&E and resource agencies begin regarding long-term fisheries restoration in Battle Creek.

**Formation of the Greater Battle Creek Working Group**, composed of stakeholder representatives from the state and federal resource agencies and fishery, environmental, local, agricultural, power, and urban stakeholder communities and established by interested and affected parties associated with implementation of the CVPIA to develop an implementation plan for Battle Creek that is effective and has community acceptance.

**NOAA Fisheries Proposed Recovery Plan for the Winter-Run Chinook Salmon** recommends conducting a feasibility analysis of reestablishing winter-run salmon populations in Battle Creek.

**The USFWS AFRP revised plan for implementing the CVPIA** recommends more detailed actions to restore Battle Creek that are consistent with past recommendations on flow and passage.

**CALFED awards a Category III contract to Battle Creek Working Group** agencies for the development of a comprehensive technical plan to guide implementation and to receive advice from interested and affected parties.

**CALFED and CVPIA award a contract to foster the development of a Battle Creek Watershed Conservancy** through the joint efforts of the Western Shasta and Tehama Resource Conservation Districts.

**The Battle Creek Watershed Conservancy** is formed and a newsletter is initiated.

**USFWS is awarded CALFED Ecosystem Restoration Project funding** for the monitoring of adult and juvenile spring- and winter-run chinook salmon in Battle Creek. Funding is continued in 1998.

**The California Department of Water Resources (DWR) receives CALFED Category III funding** for studying spawning gravel replacement in the lower reaches of Battle Creek.

**The Greater Battle Creek Working Group** becomes a technical advisory committee for the technical plan developed under the CALFED Category III grant. Working Group Subcommittees are convened to focus on biology, power loss, and regulatory issues. Presentations are developed on alternative methods of providing flow and passage.

**CALFED awards Ecosystem Restoration Program contract with DWR** to perform an engineering investigation of anadromous fish passage in upper Battle Creek.

**Reclamation is awarded an Ecosystem Restoration Program Grant** to investigate costs associated with removing Wildcat, Eagle Canyon, and Coleman Diversion Dams.

**Efforts by USFWS to develop a disease-free water supply at Coleman National Fish Hatchery** enter final construction phases.

**Reclamation prepared and circulated a Draft Environmental Assessment** for the continuance of the temporary flow agreement augmenting streamflow in the lower half of Battle Creek.

**The Battle Creek Watershed Conservancy receives CALFED Ecosystem Restoration Program funding** for improved Battle Creek watershed stewardship activities.

**Under the Interim Flow Agreement**, USFWS, NOAA Fisheries, and DFG (Letter to PG&E, March 21, 2002) direct PG&E to reduce diversions and close the fish ladders at Eagle Canyon and Coleman Diversion Dams for the 2002 season (Appendix E).

**A Four Agency Letter** prepared by Reclamation, USFWS, NOAA Fisheries, and DFG (Four Agency Statement, October 31, 2002) allows for a process of passing adult steelhead above the Coleman National Fish Hatchery barrier weir (Appendix E).

**A new Interim Flow Agreement** is signed to continue the flow agreements that augment streamflow in the lower half of Battle Creek until December 2004 or the start of instream construction.

**Start of construction**

**March—Revisions to May 2004 PSP** submitted to CBDA ERP to seek additional funding for the Restoration Project.

**March—Public review** of the Restoration Project Draft Supplemental EIS/Revised EIR

**Summer—Completion of the Restoration Project Biological Opinions** by USFWS and NOAA Fisheries

**Summer—Completion of Restoration Project Final EIS/EIR and issuance of NEPA ROD and CEQA findings**

**April—Completion of the Draft Action Specific Implementation Plan**

**May—Proposal Solicitation Package (PSP) submitted to California Bay Delta Authority (CBDA) Ecosystem Restoration Program (ERP)** to seek additional funding for the Restoration Project.