Butte Creek
DeSabla-Centerville Hydro Project - Decommission or Retool? Salmon Want to Know (We do too!)

Allen Harthorn
Friends of Butte Creek

Butte Creek Canyon Town Hall
August 24, 2023

Photo collage by Michael Smith 2008
Upper West Branch
Feather River
Butte Creek Spring Run Salmon Population

- Red: Pre-spawn mortality
- Yellow: Salmon spawners
DeSabla-Centerville Hydro Timeline

1907 Centerville PH operational-From the Library of Congress: The Centerville installation of the Francis turbine generation unit in 1907 was only the fifth Francis turbine installed on the Pacific Coast, and the first relatively high head turbine installed in the west, representing an innovative approach to long distance, high-voltage transmission. The success of the Centerville project encouraged further high head turbine installations throughout California and contributed significantly to the development and expansion of hydroelectric power generation throughout the nation.

DeSabla Powerhouse in 1910. Caretaker home is in the upper left of the picture.
Hendricks Head Dam-West Branch Feather River
3200 feet elevation
Butte Head Dam    2912 feet elevation
Butte Canal: Instream flow release gate
Butte Canal Elevated Sections
Centerville Head Dam 1150 feet elevation
Centerville Head Dam, Early 1900’s: Tailings of Butte Creek, 1972
Wooden Elevated Flume, Lower Centerville Canal: Tailings of Butte Creek 1972
Lower Centerville Canal in 2017 (above)

Lower Centerville Canal 2023 (right)
Centerville PH Update 2015
Powerhouse originally started in 1906

- Main Turbine offline since early 2010
- Repairs completed 2011
- Start-up attempted Feb. 2011
- Penstock pressure fluctuations indicate failing integrity
- Both units taken offline
- Project decommissioning in near future (hopefully)
“The most important conclusion of this work is that long-term survival of SRCS in Butte Creek is unlikely in the face of climate change and that simple changes to water operations are not likely to dramatically change vulnerability to extinction.”
Salmon Pool July 12, 2003
Salmon Pool August 12, 2003
Video clips from August 19th
New debris bar (above)
Downstream water quality with continuing erosion (right)

Justin Cox, Kory Eldridge
Suave Aerial Solutions
Silt layer on all the rocks and covering the bottom

Silt covered rocks and dead crawfish
As sediment accumulates in the gills, fish respond by excessively opening and closing their gills to try to remove the silt. If irritation continues, mucus is produced to protect the gill surface, which may impede the circulation of water over gills and hence interfere with respiration (Berg 1982).

Impacts to Salmonids:
• Sediment deposits account for the greatest mortality of salmon eggs
• Sediment can reduce hyporheic upwelling reducing oxygen exchange for the eggs
• Sediment can reduce survival by infilling the interstitial spaces where the eggs hatch into alevins
• Salmonid gills are very delicate and easily affected by excess sediment
• Turbid water induces a stress response in salmonids and can lead to compromised immune systems and reduced osmoregulatory competence

Butte Creek Retool

Using tunnels (bold white lines) to deliver the valuable West Branch Feather River water would eliminate over 20 miles of unstable canals and expand habitat for Spring Run Chinook Salmon at the same time.
Butte Creek
Problems and Promise

Mostly promise, but serious problems will persist……

Quartz Bowl
June 2021

21,580 SRCS returned
19,773 died before spawning

Photo by John Sherman
Butte Creek
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Salmon Want to Know

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Friends of Butte Creek 2023
Take Action Today!

Write to the Federal Energy Regulatory Commission and share your experiences and demand the FERC hold PG&E accountable for this disaster.

Action Alerts handouts have been distributed and electronic versions are available on our website.

www.buttecreek.org

And....join our mailing list, donate if you can, and please join us for our 17th Annual Wild and Scenic Film Festival
SYRCL's WILD & SCENIC® FILM FESTIVAL
where activism gets inspired

Friends of Butte Creek presents the
17th Annual Wild and Scenic Film Festival
Friday October 6th, Doors open at 5:30, Films at 6:30
ARC Pavilion, 2040 Park Avenue
12 films, Silent Auction, Beer, Wine, and other beverages.

Tickets on Eventbrite, Virtual $15, live $20, at the door $30

www.buttercreek.org