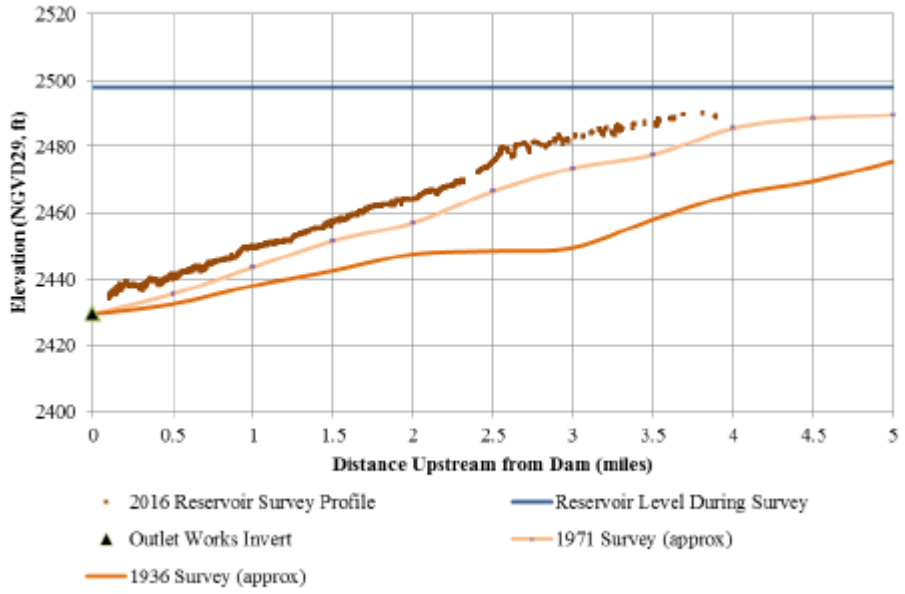
Example of Sediment Removal Site - Black Canyon Dam

Guardians of the Reservoir Sediment Removal Competition

- Example Description: This Reservoir provides an example where being able to move sediments downstream in a more environmentally friendly manner would be beneficial.
- Location: Payette River in west-central Idaho approximately 4.2 miles northeast of Emmett, ID.
- Reservoir Area: Normal area of 1.7 square miles with a shoreline of twelve miles.
- Reservoir Depth: Survey elevations provided to give detail of sediment depth and water depth as related to distance from dam, blue line in figure depicts water surface at the time of the 2016 bathymetry survey.



- Amount of Sediment: approximately 30,000 acre-feet accumulated since 1936? Or 1971?

- Sediment Type:

2016 Black Canyon Sediment Survey Summary			
Depth Below Soil Surface (ft)	Distance Upstream of Dam (mi)	Fines (percent passing #200)	Sand (#200 to #4)
0-0.3	0.5	60	40
0.5-0.6	0.5	87	13
0.6-0.9	0.5	84	16
0.9-1.1	0.5	6	94
0-0.3	2	82	18
0-0.3	3	41	59
0.3-0.9	3	2	98
0.9-1.1	3	37	63
1.1-1.8	3	1	99
1.8-2.5	3	0	100
2.5-2.7	3	6	94

- Sensitivity of Wildlife: Downstream fish populations are a concern, especially after a drawdown flushing event in 2013 damaged downstream fish habitats.
- Seasonal nature of water flow: High flows in spring may be up to 10,000 cfs downstream of the reservoir at USGS gage 13249500. The below table displays the monthly average.

Month	Average Discharge Flows (cfs)
October	1155
November	1314
December	1550
January	1640
February	1979
March	2980
April	5175
May	7085
June	6606
July	2387
August	1591
September	1294

- Access to roads and power supplies: Idaho state road 52 is just north of the reservoir, and powerlines run along this road.

- Other relevant information:
    - The report (Ubing, 2019) describes the ability to flush sediments from the reservoir is limited due to concern for the downstream environment. The downstream environment will likely be impaired if large amounts of sediment are flushed from the dam because flushing events are restricted to the low flow season, when the downstream environment is least resilient to large sediment loads. The timing of the flushing events is limited partially because of the timing of the irrigation season, but also because of the size of the gates. The low-level gates at this dam have a maximum capacity of about 2,200 cfs, while peak flows along this section of the Payette River may be as high as 10,000 cfs.