

Bighorn Lake Sediment 2016 Sediment Survey

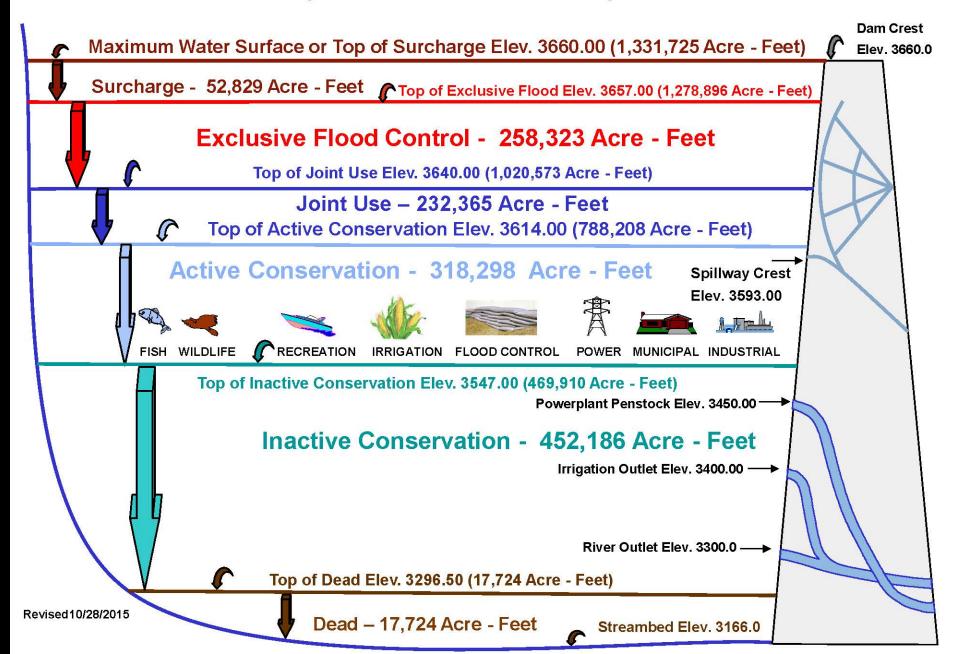
September 29, 2020 Clayton Jordan

Background

- Bathymetric survey conducted during July and August 2017
 - Last survey was 2007
- Report finalized by Technical Service Center in May 2020
 - Available to the public
 - https://www.usbr.gov/tsc/techreferences/reservoir.html
- Start using new capacity tables on October 1, 2020



BIGHORN LAKE (YELLOWTAIL DAM) ALLOCATIONS





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Elev. 3660.0- Maximum Water Surface (1,312,390 Acre - Feet)

Dam Crest Elev. 3660.0

Elev. 3657.0- Top of Exclusive Flood (1,263,682 Acre - Feet) Surcharge - 48,708 Acre - Feet

Exclusive Flood Control - 252,630 Acre - Feet

Elev. 3640.0- Top of Joint Use (1,011,052 Acre - Feet)

Joint Use - 232,735 Acre - Feet

Elev. 3614.0- Top of Active Conservation (778,317 Acre - Feet)

Spillway Crest Elev. 3593.0

Active Conservation - 310,844 Acre - Feet















IRRIGATION FISH

FLOOD CONTROL

POWER INDUSTRIAL

MUNICIPAL WILDLIFE RECREATION

Elev. 3547.0- Top of Inactive Conservation (467,473 Acre - Feet)

Powerplant Penstock Invert Elev. 3444.0

Inactive Conservation - 449,118 Acre - Feet

Irrigation Outlet Invert Elev. 3396.5

Elev. 3296.5- Top of Dead (18,355 Acre-Feet)

River Outlet Invert Elev. 3296.5

Elev. 3166.0- Streambed

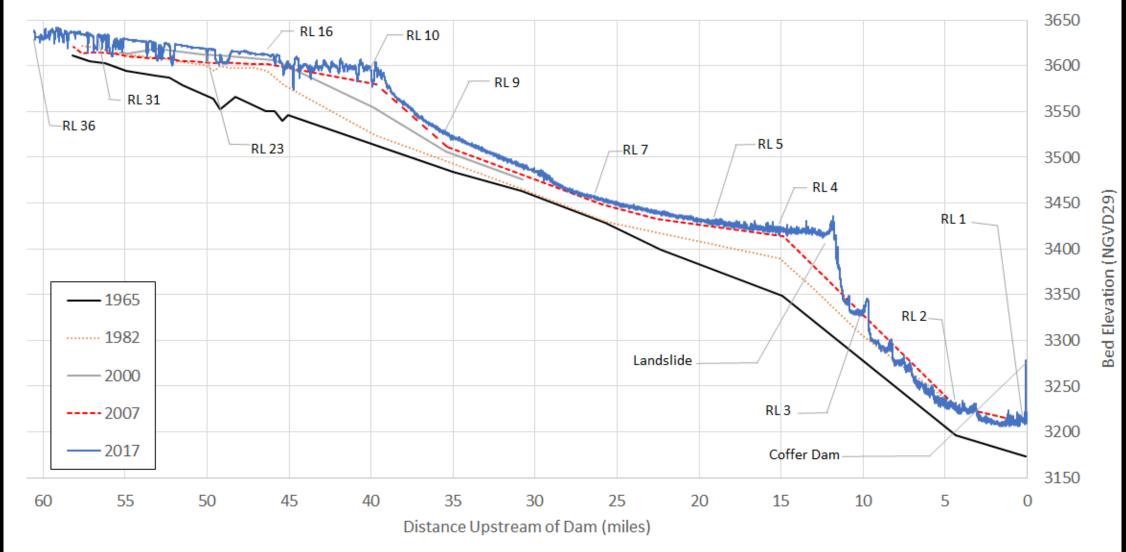
Dead - 18,355 Acre - Feet



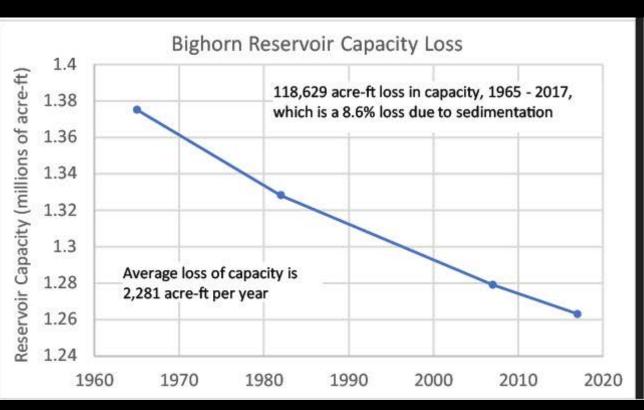
Name	2007 Survey (AF)	2017 Survey (AF)	Difference (AF)
Dead Storage	17,724	18,355	+631
Inactive Storage	452,186	449,118	-3,068
Active Conservation	318,298	310,844	-7,454
Joint-Use	232,365	232,735	+370
Exclusive Flood Control	258,323	252,630	-5,693
Surcharge	52,829	48,708	-4,121
Total	1,331,725	1,312,390	-19,335

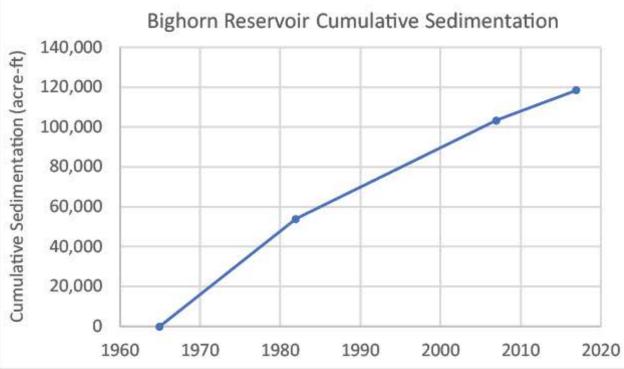


Bighorn Reservoir Longitudinal Profile

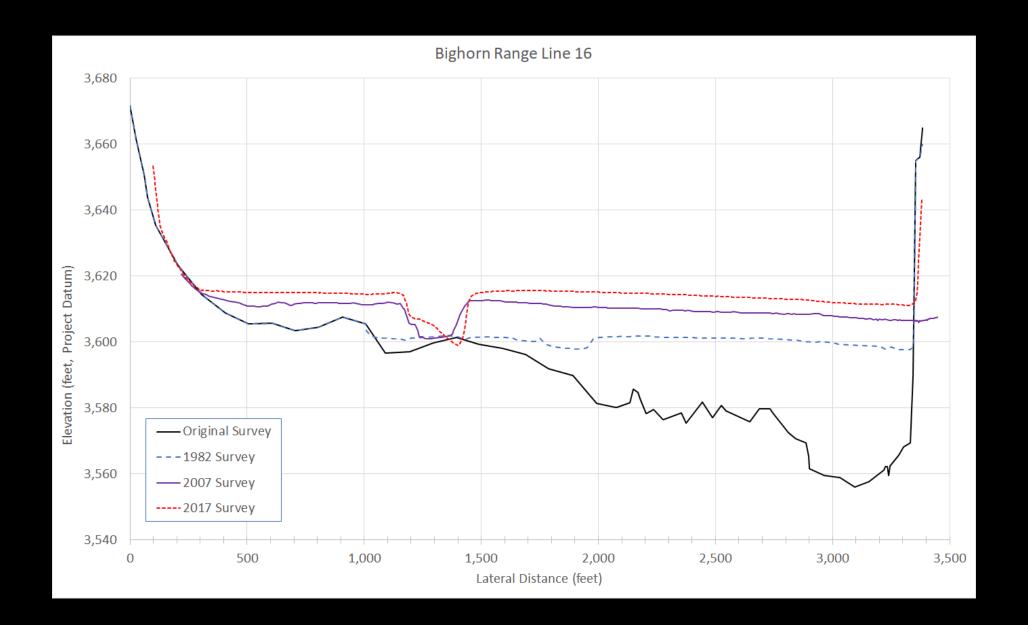














Next Steps

- Update Hydromet database and models with new capacity tables
- Update Chapter 4 of the SOP
- Update Yellowtail Operating Criteria
 - Review elevation targets
 - Update rule curves
- Update models with new elevation targets and rule curves
- Next survey recommended within the next 20 years
- Obtain above-water topography via photogrammetry or LiDAR



