Water and Natural Resources Committee Briefing

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Supporting Sierra County

Reviewed by R. Van Dran, SCO editor 7/27/2019

Three Key Players – Simple!

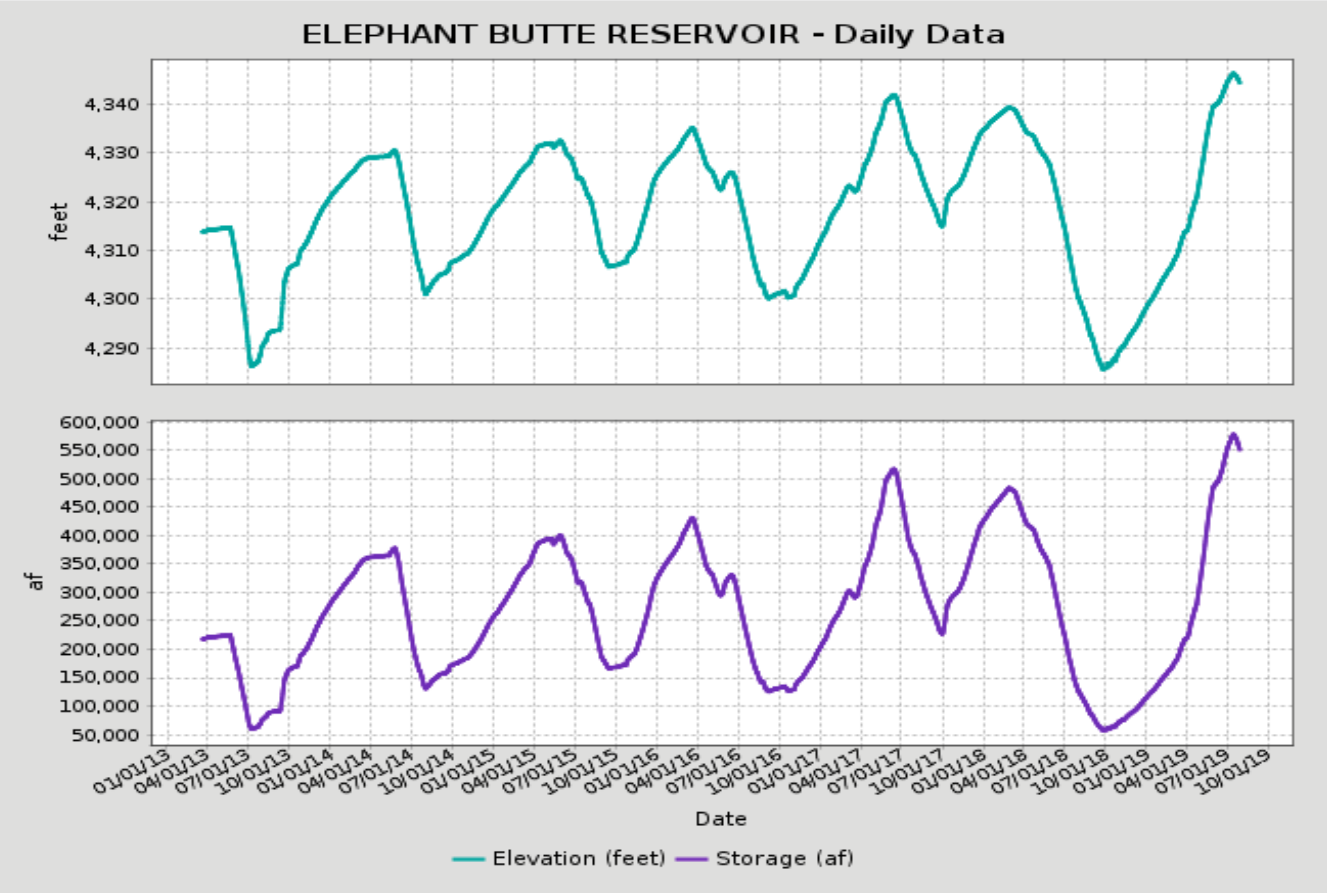
- Bureau of Reclamation
- New Mexico State Parks
- New Mexico Game and Fish Department
- And about 20 more…

Newton's Law of Inertia:
An object at rest stays at rest and an object in motion stays in motion with the same speed and in the same direction unless acted upon by an unbalanced force

Who is Earl Conway?

- Outdoorsman with a passion for hunting and fishing in New Mexico
  - Long history with Elephant Butte (1973-present)
- Native New Mexican
  - Born in Carlsbad, raised in Las Cruces and Albuquerque
  - Very few areas I haven't fish or hunted
  - Father was a cotton farmer and potash miner before heading Workforce Solutions (Dep. Director)
- Retired engineer and geologist from Sandia National Labs
  - Environmental Program/project manager for 10 years
  - Engineering manager for 25 years
  - Facilities, infrastructure, safety and security, satellites, nuclear weapons, counterintelligence
- Conservation director for NM BASS Nation
  - Leader of the Elephant Butte Adapt-a-Cove fish habitat project
  - >400 members in adult, college, high school and junior fishing clubs
  - We attract anglers from Texas, Colorado and Arizona
  - Winner of two national Berkley Conservation Awards at Elephant Butte
  - Honorable mention for Roswell Golden Algae project
  - Built ADA fishing piers at Escondida and Roswell Zoo ponds
- Serve on Citizens Advisory Committee for NM wildlife habitat stamp program
- Serve the Southwest Tribal Fisheries Committee
- Currently Volunteering to lead Sierra County Conservation Pool Initiative

2018-2019 was a wild ride

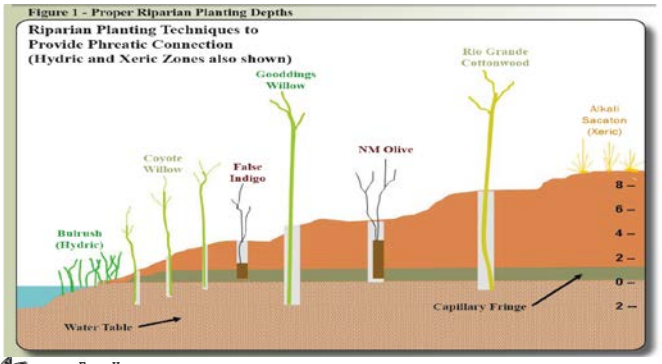


Providing Habitat as Best We Can

Vegetation

Floating Structures

Suspended Structures



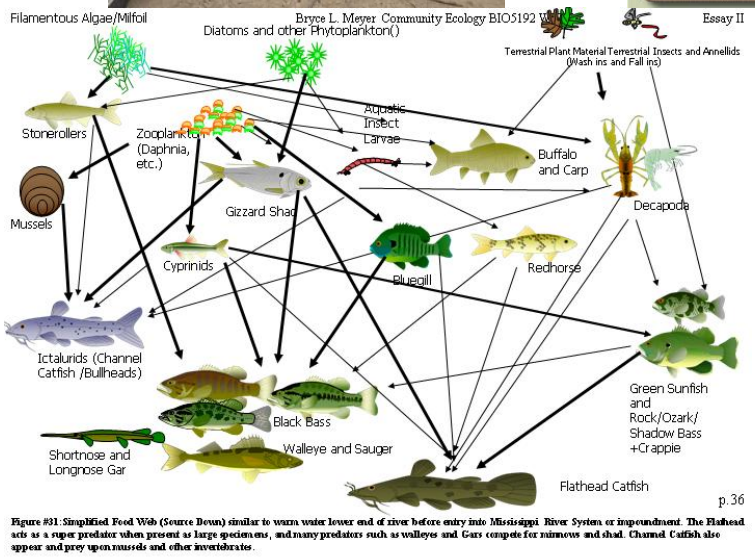
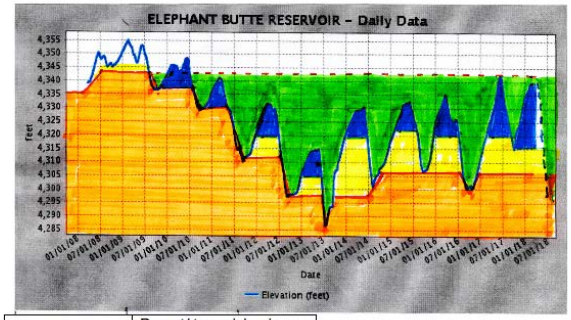


Figure #31: Simplified Food Web (Source Down) similar to warm water lower end of river before entry into Mississippi River System or impoundment. The Flathead acts as a super predator when present as large specimens, and many predators such as walleyes and Gars compete for minnows and shad. Channel Catfish also appear and prey upon mussels and other invertebrates.

Brush Piles

Artificial Habitats

Precipitation is in Nature's Hands, Annual Fluctuations are in Ours



Desert/ tamarisk mix
Riparian / tamarisk mix
Inundated vegetation
Dead plant debris
Dead Lake Bottom

Water rights, policies, practices, compacts, infrastructure, and operational plans drive the decisions on when and how fast water is released

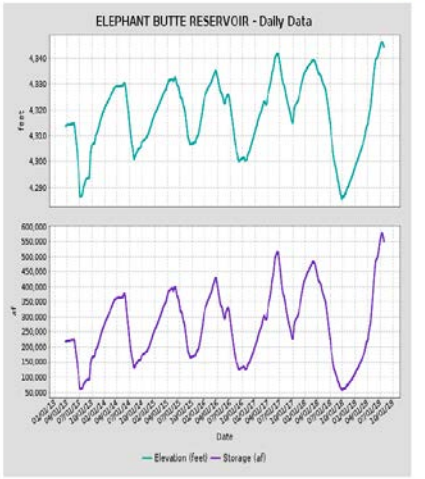
The Butte would be better if:

- There was a multi-year drought contingency plan
- *Reservoir storage didn't fall below 100,000 acre-feet.*
  400,000 acre-feet is the minimum for Economic stability and growth
- The reservoir didn't drop or rise more than 6 inches a day
- Upriver areas were accessible and usable for OHV recreation & rearing fish
- Sediments were no longer filling and killing the reservoir
- A comprehensive life extension project was developed and implemented
- Recreation was acknowledged and funded by Reclamation as a reservoir mission
- There was a better prevention plan and contingency plan for invasive species
- Critical bird and fish habitat was recognized and funded by Reclamation
- Existing sediments were removed to create and restore habitat and rangeland
- Native terrestrial vegetation was propagated instead of removed or trampled

Effects of severe water fluctuations

- Negatively impacts tourism and property values
- Increases fish disease and mortality
- Kills any aquatic vegetation
- Devastates the bass and bluegill spawn
- Increases boating hazards
- Increases cost of marina and park operations
- Kills riparian vegetation (floods or de-waters)
- Disconnects shoreline habitat from water
- Interrupts native natural vegetation propagation
- Increases erosion and sedimentation
- Increases turbidity during draw downs

Highest Use State Park



Minimum Pool

- Absolute minimum pool of 60,000 AF.
- Doable, devastating, but recoverable!

Conservation Pool

- Runnels created one in 1974 (H.R. 1677) but it went away when the water spilled over in 1994
- Should be relatively easy to re-establish with Reclamation authority to store 50,000 acre feet or more of San Juan-Chama Project water

Rock Canyon 2018

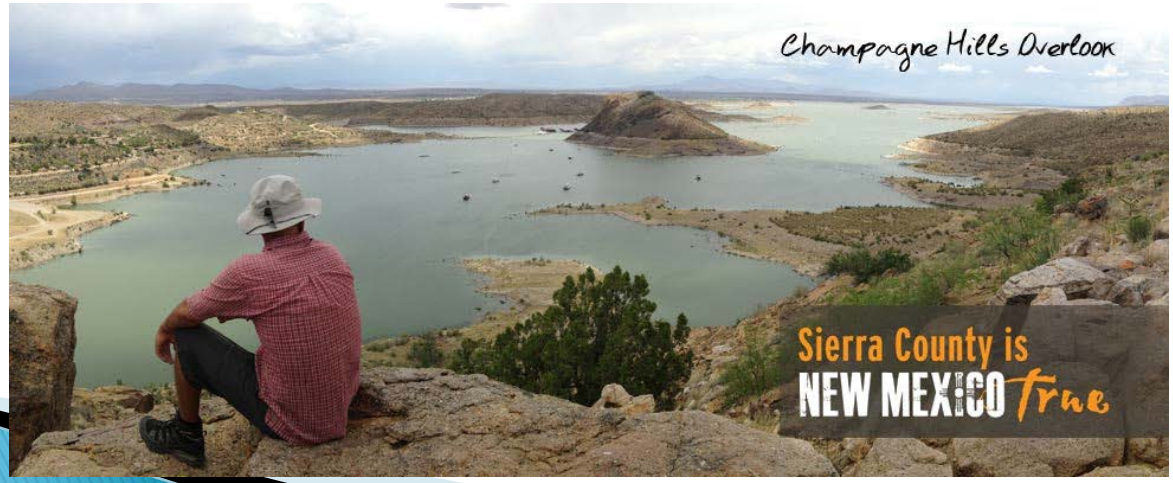
We believe that a minimum storage level of 50,000 acre-feet is desirable. When storage is less than 50,000 acre-feet, recreational usage of the reservoir has been impaired, with resultant economic losses to the recreation industry of the State of New Mexico. Furthermore, low storage levels have been extremely damaging to the fishery of the reservoir with considerable time being required for the fish resources to recover.

NMG&F Congressional testimony, 1974

60,000 Acre-Feet

Where does the water come from?

- Stored San Juan-Chama waters for Albuquerque and Santa Fe
- Donated waters for fish, bird and habitat
- Reducing the “leakage” in the MRGCD
- Future purchases of water rights
- Stored credit and ESA waters



Lake Mead did it!

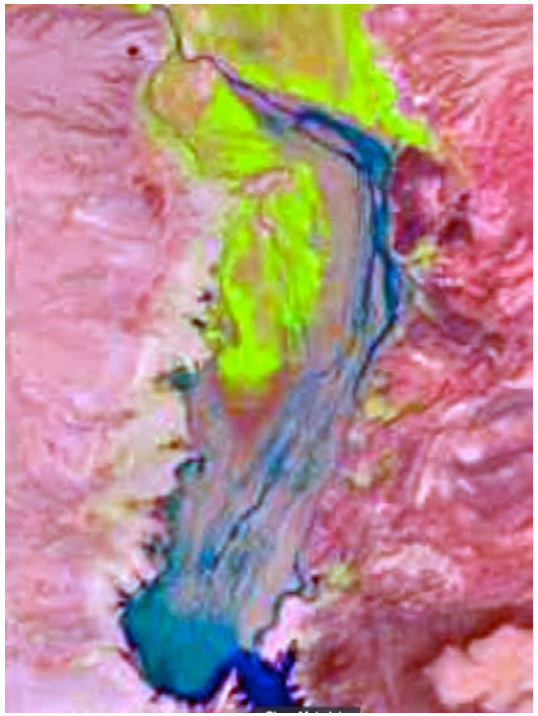
"These agreements represent tremendous collaboration, coordination and compromise from each basin state, American Indian tribes, and even the nation of Mexico."

Dams don't last forever

- Concrete and iron age and weaken
- Sediment fills and kills
- Problems ignored become big problems
- We need a life extension project for the Elephant Butte Project (includes Caballo)
  - Dam maintenance and improvement
  - Sediment prevention and removal
  - Cost effective channel design and maintenance

Sedimentation – The elephant under Elephant Butte's table

- The reservoir needs a life extension project
- The reservoir could be impaired or inoperable in as early as 75 years
- EB has the highest sedimentation rate of the large Bureau of Reclamation reservoirs
- Pilot projects are needed to demonstrate technologies and solutions within and above the reservoir
- A conservation pool could play a big role in heading off expensive sediment removal operations by holding the fine clay silt and sediments upstream



The bright green represents the growing southern sediment delta

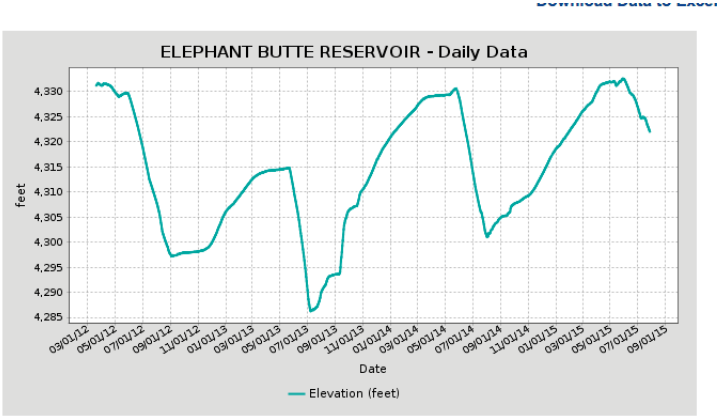
Take Away – Elephant Butte Conservation Pool

- It has been done before and can be done again
- It is needed to maintain a quality fishery
- It can be a win-win for farmers and other water rights owners
- There are many safety reasons to create the pool
- There are many economic reasons to create the pool
- There is potential to make it much bigger than before with donated water and stored San Juan-Chama water storage
- It will hold off sediment movements until a solution is found
- It makes more of the reservoir available for recreation
- Only down side is the increased evaporation over storage upriver but that isn't allowed by rule.
- We need your support for legislation and funding

Estimating Economic Impacts

- Very difficult to tease out the facts
  - Lack of collected data
  - Lag between drought and effects
  - Transfer of commerce between EB and TorC
  - State Parks visitation skewed by multiple entries and annual passes.
  - Northern reservoir visitation is not managed or monitored

Fourth of July visits
2013 – 47,000
2014 – 98,000
2015 – 125,325



Ward and Pulido-Velasquez Studies

- *Value of Elephant Butte Reservoir recreation = 379.82 + 2.21 X – 0.0005030852 X2*
  - *(Pub. 2012)*
  - where *X equals the average annual storage in thousand acre-feet and the economic value is in thousand dollars. (Reclamation 2015c, Appendix C).*
  - *Influencing storage makes more sense than buying water rights!*

Visitation Impacts

- Historical Trends Indicate ~ 30% visitor decrease with decreased reservoir level

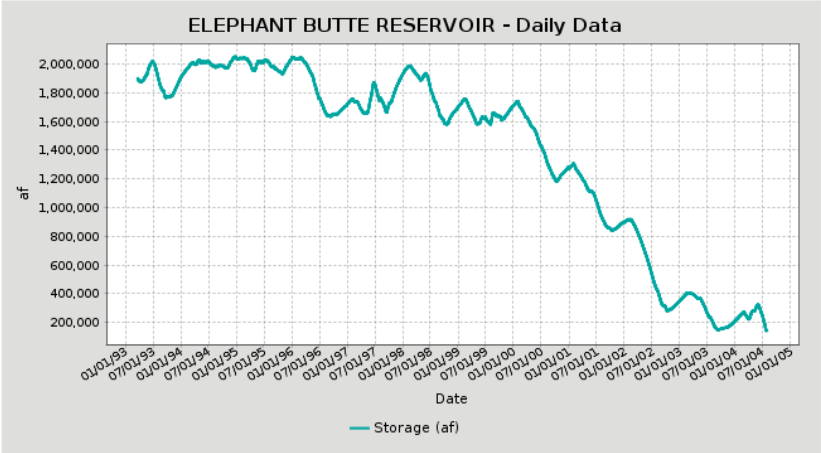


Table 5.1: Visitors to Elephant Butte Lake

Year	Number of Visitors
2003	1,271,790
2002	1,499,855
2001	1,357,637
2000	1,624,220
1999	1,605,520
1998	1,826,944
1997	1,788,716
1996	1,775,079
1995	1,797,008
1994	1,754,550
1993	1,478,004

Source: Elephant Butte State Park

Recreational Benefit$

- Very difficult to tease out the facts
  - Lack of collected data
  - Lag between drought and effects
  - Transfer of commerce between EB and TorC
  - State Parks visitation skewed by multiple entries and annual passes.
  - Visitation outside of EB and Caballo state parks
  - Northern reservoir areas are not monitored

Improvements Needed

- Balanced multi-use/benefit model
- Flexibility for Water Managers
- Watershed approach for sedimentation
- Prevention and containment of AIS
- Attractive recreational facilities
- Integrated planning and execution
- Full access to the reservoir

Misaligned Operational Framework

- Rio Grande Compact
- Water rights adjudication and allocation (D3)
- Court Orders
- EB Project Operational Plan
- State parks 5-Year Operational Plan
  - An example:

"EBLSP lands and waters offer precious habitat for several species of animals listed as endangered in New Mexico, such as the common black hawk, peregrine falcon, western ribbon snake, and the Rio Grande subspecies of the bluntnose shiner. In order to preserve these conditions, there are no plans to expand or develop areas north of the South Monticello Point Recreation Area". NMSP

Desired Actions

- Work with BOR to create conservation and drought contingency minimum pools
- Seek policy for more water management flexibility
- Eliminate the “use it or lose it” policies and mindset
- Don’t be fooled by “water conservation” measures that just use water (re-allocation, evaporation or transpiration) instead of returning it to the stream or groundwater
- Control sediments to extend the life of the reservoir – demand a life extension plan
- Develop plans for when mussels invade