

YOU CAN'T PUT TOO MUCH WATER IN ELEPHANT BUTTE

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You can take the title of my talk -- "You Can't Put Too Much Water in Elephant Butte" -- two ways. You can't put to much water in Elephant Butte or you can't put too much water in Elephant Butte.

It reminds me of a sketch on "Saturday Night Live" where Ed Asner played the part of a nuclear powerplant operator back east who retired. At his going-away dinner he told his successors, "There's only one thing you have to remember about this powerplant. You can't use too much cooling water." The next day the new operators were sitting there scratching their heads wondering - does that mean keep pouring it on or don't use very much? The next scene shows Ed Asner on a beach in Bermuda, watching the sunset, sipping a margarita. He gets an emergency phone page from the United States just as he sees this big bright glow on the horizon from a nuclear explosion.

That's now my favorite expression. "You can't put too much water in Elephant Butte." If we get it too full we'll be sorry and if we keep on sending it down the river we'll always have room for more.

The statutory authority and purposes of the U.S. Bureau of Reclamation are spelled out by Congress starting with the Reclamation Act of 1902. The Rio Grande Project was authorized in 1905. Elephant Butte Dam was completed in 1916. The irrigation facilities were constructed by 1929 to serve roughly 160,000 acres in the Elephant Butte Irrigation District and in the El Paso County Water Improvement District.

Caballo Dam was added in 1938 for flood control. The International Boundary and Water Commission (IBWC) contributed \$1 million for 100,000 acre-feet of flood space, which they control.

Our primary objective is to deliver water to the two irrigation districts. The districts place water orders twice a week, Tuesdays and Fridays. We consolidate the orders of the two districts and Mexico and determine the release needed from Caballo Dam to meet the orders.

Our office has the responsibility of determining the water allotment at the beginning of each year for the districts and Mexico based on the amount of water in storage. The past eight years have been a full supply, but prior to that there were shortages declared in 15 of the previous 30 years. Because of this fact we have always concentrated on water conservation.

We also measure and account for all water deliveries to

the districts. We must ensure that each district's use does not exceed its allotment. Not that they would, mind you, but just for the record.

The Power and Storage Division at our Elephant Butte office operates and maintains the 23-megawatt powerplant. There are three units that generate up to nine megawatts each. A release of 2,100 cubic feet per second (cfs) is needed to generate at maximum capacity. In 1985 and 1986 we have been operating the power plant at 115 percent of rated capacity.

To the extent we have space, we operate Elephant Butte and Caballo reservoirs to provide flood protection. However, there is no flood space allocation in Elephant Butte. During the 1942 flood, we had a target elevation of 4396 by mid-February. This provided about 500,000 acre-feet of space. In 1985, we operated in cooperation with the U.S. Army Corps of Engineers to provide 100,000 acre-feet of flood space in Elephant Butte. Cochiti Dam has been constructed since 1942 upstream of Elephant Butte, which provides 450,000 acre-feet of flood space.

We are not authorized to regulate releases for power generation or recreation. A 1938 law states that "... the use of Elephant Butte Dam, project works, and water supply for power purposes shall not deplete or interfere with the use thereof for irrigation purposes..." A 1962 law

specifically states "... the construction of recreation facilities at Elephant Butte and Caballo Reservoirs shall not provide in any manner whatsoever a basis for allocation of water for recreation use or for the allocation of reservoir capacity for recreation use..."

Our basic management priority during the last two years has been simply, "You can't put too much water in Elephant Butte."

I'll never forget a meeting we had in January 1985 at Gary Rowe's house (because he was recovering from his back injury) where we argued about whether or not we should allow Elephant Butte to exceed 1.6 million acre-feet, because we would lose the capability of using the low flow channel. I was worried about the increased evaporation of storage in Caballo over Elephant Butte. Then two months later we were filling Caballo to the top of the conservation pool and the low flow channel hasn't been used since.

Another priority we have, especially this year, is limiting excess releases to minimize flood damage downstream. We have had difficulties with determining which is better -- a higher release for a shorter time period, or a lower release for a longer time.

We have been releasing 2,500 cfs from Caballo Dam since October 8, 1986, with no demand for water. We expect to dump about 120,000 acre-feet in October alone. This amount

is about as much water as the city of El Paso uses in an entire year.

One of the gray areas we encountered this year was encroachment into the flood space in Caballo Reservoir. For example, last summer when we were trying to keep a steady flow at Fort Quitman, it rained, and the districts' orders dropped off. Elephant Butte was within less than 50,000 acre-feet from being full, so what do we do? Do we encroach into the flood space at Caballo or do we keep releases the same and suffer flood damage downstream? What we did was made use of the flood space in Caballo, called the corps and asked for a cut in releases from Cochiti, cut the release from Caballo and Elephant Butte, and waited for the demand to pick up again. The IBWC was tolerant of this operation, and I thank them for that.

Another gray area is the amount of flood space needed in Elephant Butte Reservoir. In 1985 we operated with 100,000 acre-feet of flood space. In 1986 we had a goal of maintaining 50,000 acre-feet of flood space. In reality, we operated in the 30,000 acre-feet range. The flood space got as low as 17,000 acre-feet at one point in May.

A third gray area we encountered was whether to use the coordinated forecast to operate our reservoirs or not. There was one point in 1985 when we had more water in hand in the reservoirs than what the runoff forecast indicated.

We handled this by preparing several operating plans, one with the published forecast and another with a higher runoff to reflect a reasonable range.

A fourth gray area surfaced at the last Rio Grande Compact meeting in March 1986. There was not a clear definition of what constituted a spill at Elephant Butte. There were also accusations that we in the Rio Grande Project were manipulating releases to try to prevent a spill in 1986. I believe there are some people who are still suspicious of us this year too. As a result of these concerns, we intend to fill Elephant Butte to the top on the first of January and have a physical spill before we start evacuating for the 1987 runoff.

During these past years we have set some records:

1. Record for power generation in one month--July 1986;
2. Record for annual net power generation in 1985;
3. Highest release from Caballo since 1942 (7/17/86 3,640 cfs);
4. Highest storage in Caballo since 1947 (3/29/86 4,177.13 feet, 277,900 acre-feet);
5. Highest storage in Elephant Butte since 1942 (5/5/86 4,406.53 feet 2,093,000 acre-feet);
6. Most release from Elephant Butte for a year since 1942 (1,232,000 acre-feet in 1986), third highest on record (1,830,000 in 1942 and 1,270,000 in 1917), (1,232,000 acre-feet in 1986);

7. Flow at Ft. Quitman in 1986 will be over 600,000 acre-feet, 1912 was 1,070,400 acre-feet, 1942 was 1,270,400 acre feet; and
8. Expect 410,000 acre-feet excess release in 1986. Expect 360,000 acre-feet spillway flows in 1986. A total of 880,000 acre-feet was released for flood control in 1942.

It appears that some of my predecessors did not expect the reservoirs to get this high again. The Caballo boat launching and parking area was built below the high water mark; the pipeline for the sewage treatment facilities at the damsite marina is under water and filling with water; and many cabin lease lots at Elephant Butte are at the water's edge, some relocated. Even our office at Elephant Butte was built directly across from the spillway and had to be protected last year.

One of the priorities for 1987 will be to try to move water out through the lower end of the Rio Grande below El Paso. After 40 years of no flow, we seem to be a bit constipated.

Looking back, I think we did an excellent job of managing the river. A potentially dangerous operation is the carryover of all this water to next year to ensure a spill for Rio Grande Compact purposes. A more prudent operation might be to continue to evacuate excess water

during the winter to provide more flood protection.

Regarding the flexibility of operating rules to accommodate the desires of additional water users, I would say that we have tried to accommodate all the water users. We have achieved water conservation flood protection for T or C and Hudspeth. Recreation has been great this year, and fish spawning at Caballo was greatly enhanced.

In summary we need to work together, make our concerns known, and look at the problems from others' perspective, and try to work out the best solution.