The truth about environmental flows

By David Sikes

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COASTAL BEND — The low level of Lake Corpus Christi has very little to do with releasing water to benefit shrimp.

Lake Corpus Christi is 17 feet low because of several factors, most of which have nothing to do with shrimp, salinity or misguided policies.

The most fundamental reason is the lack of rainfall.

The recent rain relief did little to raise reservoir levels. But combined with cooler temperatures the rain reduced demand for water in the region. Fewer folks were drinking water and watering their lawns. When I say folks, we're talking about a half-million residents of Mathis, Corpus Christi, Alice, Beeville, Kingsville, Robstown, Portland and Gregory. They all consume water from our reservoirs.

They either have a legal right to the water or they paid for it, along with industrial consumers and a few farmers that receive water from our combined reservoir system.

Often when you see water flowing from Wesley Seale Dam or over the saltwater dam at LaBonte Park, this water is not — I repeat, not — destined for Nueces Bay. Water from the reservoir used by Corpus Christi, Robstown, San Patricio Municipal Water District, Flint Hills and Celanese must travel down the Nueces River to the pump station that services those consumers.

When the river is your pipeline, some water may escape into the bay. But this is an unintended consequence. The unused portion of water in these transfers would count toward the environmental flow target for that month. Also, when rains falls anywhere along the 39 miles of river below Wesley Seale Dam you might see it flowing over the saltwater dam. This is not a release or a pass through, which are two different things. Water releases service water buyers. A pass-through is an beneficial flow through the marsh to the bay the way nature intended. This is not wasteful, but rather essential to the ecosystem.

Evaporation is another basic reason Lake Corpus Christi is so low. More than half the amount of water annually used by cities and industry evaporates from the surface of our reservoirs during a typical year.

The percentage of water that evaporates from a shallow body such as Lake Corpus Christi is much greater than that of a deeper body of water such as Choke Canyon, making Choke a more efficient storage facility.

Releasing stored water from Choke Canyon simply to raise the lake level at Mathis would be wasteful and irresponsible from a water management perspective.

The policy that forbids this is profoundly misunderstood. No doubt this practice also has resulted in hardship for folks in Mathis, especially those who live on the lake with false expectations of water beneath their piers. Nobody with authority promised anyone that Lake Corpus Christi would be maintained full or near capacity.

Raising the water level at Lake Corpus Christi by releasing water from Choke Canyon would squander hundreds of millions of gallons of stored water by evaporation. The combined reservoir level would be drawn down even faster than what we're seeing now.

During summer months, evaporation at the lakes is about twice as high as the demand for water from area consumers. At the same time, residential consumption increases. Lawn watering makes up about 40 percent of household usage in the summer. St. Augustine grass is about the most unsuitable and unnatural ground cover possible for the South Texas climate. I suggest we denounce such wasteful water uses rather than complain about feeding water to a natural bay.

It's important to note Lake Corpus Christi was created solely as a storage tank for Corpus Christi and other water users, despite what a few real estate agents might have said when selling waterfront property there. And because Lake Corpus Christi's watershed is much bigger than Choke's, it has a greater chance of filling because its able to capture water and funnel it into the reservoir more quickly. About a half-inch of widespread rain in the watershed would fill an empty Lake Corpus Christi if all the water drained into the lake.

Choke Canyon is a high capacity reservoir on the Frio, a shallow, low-flow river that drains a small watershed. Lake Corpus Christi is a low capacity reservoir on two higher-flow rivers that drain larger watersheds.

During drought, the city tries not to allow Lake Corpus Christi to fall below 77 feet above mean sea level to keep the pumps and pipes operating properly to supply Beeville and Alice. In fact just recently water was released from Choke to maintain this water delivery system.

If we get a really good rain soon within the Lake Corpus Christi watershed, the reservoir is prepared to capture it because of the capacity that is available now. Yes, they should have built Lake Corpus Christi deeper and/or wider. And maybe doing so now is a good idea.

Another good plan would be to scratch the current triggers for water restrictions. I suggest we enforce voluntary water restrictions when the combined reservoir level is 70 percent of capacity and

mandatory rationing at 50 percent capacity. Or maybe we should enforce a year round rule that restricts lawn watering during the heat of the day.

Maybe then our combined water level would not be near 42 percent, as it is this week.

The current trigger for mandatory rationing is 30 percent. This 30 percent trigger also applies to releases we owe to Nueces Bay and its estuary. Yes, I did indeed say we owe water to the estuary.

I know this is a sore subject for folks who don't believe rivers are the lifeblood of bays and estuaries. But when Corpus Christi built a second dam to create a second reservoir we agreed to allow some water to pass through the bay to balance the needs of man and nature.

The permit to create Choke Canyon would have been denied had we not agreed to this order. But the city renegotiated the order to substantially reduce environmental flow requirements during dry periods. Pass throughs were eliminated altogether when the combined reservoir level reaches 30 percent.

Water managers and biologists with authority over the Nueces River have compromised and tweaked this plan intended to loosely mimic nature. This is the basis of a good plan that protects adequate reserves while keeping the Corpus Christi Bay system alive and healthy.

It is unreasonable to believe this issue is about big city vs. small town; bass vs. shrimp; lake vs. bay; or good vs. evil. The more it rains, the more water is allowed to reach the bay, but only up to a point.

Each pass through target represents the maximum volume of water that must be released, if — and this is an important if — the reservoir system receives that much water that month. Often, these pass-though targets are not met because it did not rain. This point often is lost on people complaining about low lake levels.

And it's not just about maintaining a livable salinity level in Nueces Bay. River flow also supplies needed nutrients and sediments to a bay system, its protective marshes and everything that lives there, from microorganisms to fish. Think of an estuary as a single giant organism that requires both food and water. Estuaries with little freshwater inflow such as the Laguna Madre have evolved to receive their food from seagrasses. Nueces Bay, which has limited seagrasses, gets its food from the inflow of nutrients supplied by the Nueces River.

The aesthetics of an artificial lake, such as Lake Corpus Christi, along with the rise and fall of its recreational opportunities, should never influence sound water management policy or compromise the legally binding agreement to release some captured water in exchange for withholding so much river flow from Nueces Bay. The Corpus Christi City Council cannot alter the terms of this state-ordered covenant. The Texas Commission on Environmental Quality could and may change the rules sooner or later. I hope they don't.

Rivers are meant to flow into the sea. This is a defensible law of nature. If disobeyed there would be major negative consequences for our natural ecosystems and the coastal economies they support.

Unfortunately for the folks near Lake Corpus Christi, the artificial ecosystem created by the reservoir and the economies supported best by a full reservoir will always be a lesser consideration in this equation.

http://www.caller.com/news/2012/sep/19/the-truth-about-environmental-flows/