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More freshwater should be top priority in Everglades restoration

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There is a growing consensus that much of the Everglades is suffering irreversible damage from a lack of freshwater. While Everglades advocates seek approval of a new $1.7-billion restoration project, which will take decades to implement, the reality is that we could substantially increase freshwater flows now with existing facilities.

What it would require is for people to rethink outdated restoration choices made 20 years ago.

A healthy Everglades needs more freshwater, and needs that water to be cleaned of excessive phosphorus. Without enough freshwater, the upstream Everglades loses the characteristics of a river, and the downstream Everglades turns into mangrove forests. With too much phosphorus in the water, marsh areas exposed to the phosphorus can turn into a forest of cattails. Ideally, restoring the Everglades requires both more water and cleaner water.

It is hard to both increase freshwater deliveries and reduce phosphorus levels at the same time. To meet strict phosphorus standards, water managers divert water that otherwise could flow to the Everglades. This means that water managers have to choose which is more important: reducing phosphorus levels to the absolute minimum or increasing freshwater deliveries.

For decades, government policy has been to reduce phosphorus levels first, at the expense of delivering enough freshwater to the Everglades. That made sense 20 years ago, when average phosphorus levels entering the central Everglades were in the range of

180-205 parts per billion (ppb), far above the 13 ppb level for inflows that most scientists believe is fully protective of the Everglades aquatic ecosystem.

Moreover, most scientists agreed that phosphorus damage was essentially irreversible in the areas of the Everglades that received the high phosphorus water, but that the damage caused by low water levels could be quickly reversed once new water (with low phosphorus levels) is delivered.

Restoration officials need to rethink that choice today. Since the early 1990s, substantial progress has been made toward reducing phosphorus: Today, average phosphorus levels in water entering the central Everglades are 18 ppb, which means that water managers have achieved more than 90 percent of the cleanup target.

While phosphorus levels over the 13-ppb target can cause adverse effects, the harm is minor compared to when phosphorus levels were 10 times higher in the 1990s. Waiting for the final few percentage points of cleanup — which is projected to take another 15 years, at a cost of $900 million — is causing its own environmental harm.

In 2012, the National Academy of Sciences concluded that the Everglades faces irreversible damage if additional water is not sent soon. In October 2013, a study by the University of Miami showed that the reduction in freshwater flows, combined with sea level rise, is causing Everglades marshes to turn into mangrove forests at the southern end of the system. And this past year, billions of gallons of excess water from Lake Okeechobee were dumped into the Caloosahatchee and St. Lucie rivers, causing severe harm there.

All of this harm is happening, at least in part, because water managers cannot send additional freshwater to the Everglades. And the insistence on perfection with phosphorus levels stands in the way of implementation of important restoration projects, including the project to modify water deliveries to Everglades National Park.

No government agency has taken a clear-eyed look at this tradeoff in 20 years. When phosphorus levels were averaging 180-205 ppb, there was a broad scientific consensus that phosphorus reductions were the first priority. But since that time, government agencies have been locked into that choice, and have not re-examined the tradeoff, even as phosphorus levels have been dramatically reduced and scientific evidence mounts that the Everglades is dying of thirst.

It is time for a frank debate about whether it is more important to keep the last few ppb of phosphorus out of the Everglades, or whether to deliver more freshwater. The reality is that we cannot have it all when it comes to restoration, at least for the foreseeable future.

The good news is that we can actually increase freshwater deliveries with the water management system we already have, and building on the phosphorus cleanup that already has taken place. But restoration officials need to rethink their old assumptions.

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