

Professor Paula Sanchez
Miami Dade College, Kendall Campus
World Languages / English for Academic Purposes

Biscayne Bay and the Tragedy of the Commons

EAP 1586 Reading and Speech Level 5 (Advanced)

Time: 2.5 hours

Goals:

Students will become aware of a local project -*The Deering Flow-way/Cutler Slough Rehydration Project* - and will be able to make connections between that project and the larger *CERP – Comprehensive Everglades Restoration Program*. Students will recognize the players involved in local environmental issues, and they will be able to list reasons that could prevent journalists from telling the complete story. They will read an example of one blogger's response to such an article and discuss the power of the Internet as related to free speech.



Instructional Objectives:

Students will practice their listening, reading, speaking, and critical thinking skills as they analyze a blogger's reaction to an article in the Miami Herald.

Miami Dade College Learning Outcomes:

- Outcome #1: Communicate effectively using listening, speaking, reading, and writing skills .
- Outcome #3: Solve problems using critical and creative thinking and scientific reasoning.
- Outcome #7: Demonstrate knowledge of ethical thinking and its application to issues in society.
- Outcome #10: Describe how natural systems function and recognize the impact of humans on the environment.

Materials:

Access to a computer, the Internet, and a projector

Handout: Biscayne Bay and the Tragedy of the Commons (See Below)

Activities:

Begin with the question, "Where does the rain go?" and write students' responses on the board.

Show a short YouTube Video: Deering Estate Flow Way Project

<https://www.youtube.com/watch?v=gOqoYoG5dDM>

Locate the Deering Estate on Google Maps - zoom out to show how close we are to the Everglades.

Give each student a copy of the 6 page handout, and go through it with them. Let them form groups to answer the discussion questions before they come together as a class for a group discussion.

Biscayne Bay and the Tragedy of the Commons

Background

If you've been living in South Florida for even a short amount of time, you know that this is a place where WATER is frequently in the news. We hear about beaches that practically disappear after hurricanes push ashore. We hear that during king tides, South Beach streets transform into canals. We know that salt water from the ocean is showing up in our aquifers and contaminating our drinking water, and we're beginning to realize that climate change could raise the level of the ocean to a point where we may not be able to continue living here – at least not in the way we're accustomed to.

Most of South Florida is a river. Environmentalist Marjorie Stoneman Douglas coined the phrase “River of Grass” to describe the magnificent ecosystem in our backyard – The Everglades. Fresh water flows south in this amazing peninsula we live upon. The river flows so slowly over so much land and at times is so shallow that we barely recognize it's a river at all. Still, if it weren't for this river of fresh water flowing over the peninsula, the ocean and the Gulf of Mexico would have swallowed us up long ago. The moving fresh water keeps the salt water away, and in order to preserve this delicate balance, we must keep the water moving at a nice, steady pace.

To build in Miami, civil engineers have created a massive series of canals that collect water and flush it into Biscayne Bay. When it rains, runoff from fields and highways drain into the canals and out to the bay. Sometimes in preparation for hurricane season, officials purposely open the canals so that huge amounts of water (along with fertilizer, pesticides and pollutants) drain directly into the bay. Such a move might protect Miami residents from flooding, but it wreaks havoc on the wildlife in coastal waters. Sea grass dies, as do countless creatures that use the sea grass as a nursery. This, in turn, has a devastating effect on larger species who then find nothing to eat.

Rather than flushing all of this contaminated water into the ocean, the South Florida Water Management District now pumps some of the water from canals over land so that it has time to be filtered through vegetation and naturally enter the bay. There are 30 acres of the Deering Estate just off of Old Cutler Road that is devoted to *The Deering Flow-way/Cutler Slough Rehydration Project*. The first stage of this project has been a complete success, but there seems to be a lot of bureaucracy standing in the way of the second part of this project, which is actually quite a small project in comparison with the much larger, but stalled *Comprehensive Everglades Restoration Plan*, also known as *CERP*. The Deering Estate project cost \$4.2 million dollars, but the price tag to do something similar across the entire Everglades amounts to close to \$10.5 billion dollars. Congress gave CERP its approval back in 2000, but little has been accomplished since then.

In April, 2014, Miami Herald journalist, Jenny Staletovich, wrote an article entitled *Urban wetland at Deering Estate offers glimpse at successful Everglades restoration*. A few days later, blogger, gimleteye from *Eye on Miami* wrote an interesting response to the article. Read the response below and use two different highlighters to highlight the left edge of what Ms. Staletovich wrote and what gimleteye wrote. Read the blog carefully, and then answer the questions that follow.

Wednesday, April 09, 2014

Biscayne Bay and the Tragedy of the Commons: Miami Dade's neglected jewel ... by gimleteye

On the weekend, The Miami Herald reported, "Urban Wetland at Deering Estate Offers Glimpse Of Everglades Restoration". It is a story meant to wrap the reader's attention around the positive potential and the complexities of Everglades restoration by focusing on a component that is visible -- unlike the Everglades -- to every resident of Miami-Dade County: our neglected jewel, Biscayne Bay.

The story is well-written, but the focal point -- the postage stamp sized effort to really fix a small piece of Biscayne Bay wetlands -- simply glides past so much real hard, grinding work by environmentalists and agency staff destroyed by Florida politics favoring growth-at-any-cost land use policies.

"Much of the massive plan to restore the Everglades exists in theory, a vast and complicated circuit of interconnected canals, culverts, gates and reservoirs, mostly located far inland and far from people. Few sections have been built. Far more exist only in computer models" is how the story begins. Let's pause for a moment and talk about those computer models; something the report could have done, too.

For decades it has been clear that the following corrective features are necessary to restore Biscayne Bay wetlands: stop the destruction of the mangrove shoreline at the coast and return clean, fresh water through remaining wetlands in order to hydrate Biscayne Bay.

The report continues, "But in the last two years, engineers have been fine-tuning a small but uniquely accessible project: an urban wetland sandwiched between tennis courts and walled McMansions near Palmetto Bay. Located on the Deering Estate and an adjacent old mango farm, and part of the much bigger Biscayne Bay wetland restoration, the mini project represents the science behind the grand but stalled Comprehensive Everglades Restoration Plan. Known as CERP, the far-reaching plan is intended to cure the ailing ecosystem by restoring the flow and breadth of the River of Grass. By comparison, this project by the South Florida Water Management District is tiny — just over 30 acres with a pump house sheathed in coral rock to mimic the nearby estate — and relatively inexpensive, at \$4.2 million. The price tag for CERP, passed by Congress in 2000, is \$10.5 billion."

There is nothing wrong in pointing out, that the Deering wetland project is a "drop in the bucket", as the Herald does.

But WHY is it a drop in the bucket? The Herald doesn't say at first. Instead the article skips to another point about positive confirmation that the environment can be restored.

"So far, it's confirming scientists' belief that they can restore, or at least partly repair, decades of damage caused by development and drying out. With water now freely flowing, upland trees that grew unnaturally around the Cutler Slough have started to die and lowland sedges and sawgrass have sprouted. Springs that for decades ran dry bubble with water. Salty water is fresher. And for the first time in years, the Chinese Bridge that Charles Deering built in 1916 across Cutler Creek spans an actual creek.

"It's impressive to see changes so fast," said Bahram Charkhian, the district's lead environmentalist, whose job it is to determine whether the project works.

But environmentalists also say the mini wetlands project represents something less positive: the fragmented and sluggish attempts to repair the Everglades."

What readers ought to know -- and what the Herald could have added -- is why and how restoration of Biscayne Bay wetlands has been the trashed Holy Grail of environmentalists for decades. In the early 1990's, it was even the Holy Grail for the state of Florida that spent millions of dollars in planning, through its Surface Water Improvement and Management programming (SWIM).

So what happened to SWIM, which was an important component of the planning for the initial Comprehensive Everglades Restoration Plan authorized by Congress in 2000 and signed into law by President Bill Clinton, with then Governor Jeb Bush in the Rose Garden audience on the same day the US Supreme Court decided the presidential election in favor of George W. Bush?

It was whittled down under the constant, unrelenting behind-the-scenes pressure of the Miami-Dade homebuilders and large farmers in west Dade; the same 8.5 Square Mile antagonists who have obstructed the reformation of water management practices at the federal level. The home builders, like Shoma Homes and Lennar, wanted -- and got -- permitting for production homes on property adjacent to lands that had been purchased or should have been, for re-watering to the bay. The big farmers wanted to continue their control of water, as they had in the past, to serve their own interests first. They opposed during the intervening decades and even to this day all plans to rehydrate Biscayne Bay coastal wetlands.

Instead of the Big Picture which is, fundamentally, a political one -- including how Gov. Jeb Bush lead the way in eroding political support for a strong role for growth management -- the Herald goes narrow.

Here is the Herald: "According to the U.S. Army Corps of Engineers, the project — if fully completed — will ultimately divert 59 percent of the water now flowing into canals to 283 acres of wetlands, which will help replenish coastal nurseries where bait fish scavenge for shrimp and other shellfish. It may also help bring back oysters and the marine life that thrives on an oyster reef.

But one piece of that, a move that could deliver even more water and potentially replenish a far bigger swath of coastal wetlands, remains shelved, with no money for its estimated \$18 million price tag. District engineers scraped up \$180,000 to install a few culverts in the southernmost stretch, but land for that section still needs to be purchased.

And that, say those who've watched restoration plans languish for more than a decade, is why CERP and its 68 projects spread over 38 years won't get done."

"The Biscayne Bay coastal wetlands project is a prime example. Phase one was congressionally authorized and phase two isn't yet," said Dawn Sherriff, a senior policy advisor for the nonprofit Everglades Foundation."

Ms. Sherriff understates the case. SWIM eventually morphed into the Biscayne Bay Coastal Wetlands project in the 2000's. The plan -- at significant cost -- was to hydrate wetlands from the Deering Estate south to Card Sound Road. Putting the property parcels together had been on the drawing boards, stretching back to the time of the late James Webb of the Wilderness Society, in the late 1980's.

Understand: whatever "progress" that has been achieved in this postage-stamp restoration has come at the expense of a beleaguered, stifled environmental movement that tries to re-invent itself constantly but is constantly eroded by the power of money; money from rock miners, from Big Sugar, and from production home builders. The Great Destroyers.

Let me talk about Big Sugar's role in Biscayne Bay for a brief moment. The Herald consistently refuses to go there.

Water managers say that the problem with rehydrating Biscayne Bay is that there is not enough water to

do the job adequately. It is an excuse that masks severe upstream water management and pollution issues that are driving the residents of Palm Beach and Martin County crazy.

There is plenty of water, but it is way too polluted to bring down to Miami-Dade County wetlands. Instead, it is being shunted into the St. Lucie River and destroying estuaries and wetlands serving a large, angry coastal constituency. If the waters were cleaned up by the polluters -- as the Florida Constitution requires --, upstream where the water is polluted, we could bring more fresh water to rehydrate Biscayne Bay wetlands. The Herald glides past that point, which is a very important one, perhaps because it takes the story in a different direction: the ugly politics of division through the ascendant Florida extreme right.

Much of the extreme right that runs the state of Florida locates right here, in Miami-Dade County. It is an ugly fact the Herald won't touch.

Here is the Herald: "Instead, advocates say, restoration needs to focus on a fast-tracking system that bundles projects and completes them over shorter periods. On Thursday, the South Florida Water Management District's governing board will vote on whether to pay its half of a \$2.1 billion plan of coordinated projects that target the central Everglades; it endorsed the plan a year ago. Both the U.S. House of Representatives and Senate approved separate bills covering the federal government's half last year, but they have yet to reconcile them. The U.S. Army Corps of Engineers, which will manage and build the projects, is expected to issue a report on a recommended plan for the central Everglades on April 22, Sherriff said.

"You'll turn on the switch to the central Everglades and you will immediately have benefits because everything will work together," she explained. Bundling projects "also helps because we get authorizations from Congress all in one sweep."

Restoring coastal wetlands by spreading water is not new science. What is different, and why this project is working, scientists say, is how the water is managed."

On the one hand, I can't argue with the Herald choosing to focus on a small success to help readers feel optimistic and positive about the massive investments for Everglades restoration. On the other hand, I have never accepted the terror that environmental organizations feel about bad news -- like Florida politics dominated by the far right, for example -- will eventually sour taxpayers on investing in Florida, period end of story.

We need newspapers like the Herald to 1) keep the Big Picture in mind when it comes to Biscayne Bay and 2) to help explain for readers, as we do here at EOM, how our politics have driven us to a point in time when environmentalists are scrambling over scraps and remnants. This is important not just for "restoration" of the Everglades, but for the restoration of meaning to public discourse under conditions of rapid climate change.

MANAGING WATER

The Miami Rock Ridge, a coral rock spine about 25 feet above sea level and six miles wide along the state's east coast from North Miami Beach to the Upper Keys, contained the fresh water in the eastern Everglades that once spilled out of Lake Okeechobee and flowed south. But in places, water eroded the sandy rock and broke free, creating valleys. As South Florida grew, many valleys were turned into canals to help drain more land for development. The canals dumped fresh water into the bay at single points, leaving the rest of the bay increasingly salty and choking the lush coastal estuaries.

In the early 1990s, Michael Ross, an environmental scientist with Florida International University, designed a project for the Water Management District intended to revive those estuaries at the south end of the bay, between Homestead's Bayfront Park and east of Southwest 97th Avenue.

The project, with two sections across 100 acres, lasted until 2001 — nearly 10 years. At the end, he said, his results were negligible. But the problem, he determined, wasn't the science. It was the water.

"We only had a little bit of water," he said. "But the concept was good."

So when Jaramillo, the engineer, designed his project, he made sure to include massive submerged electrical pumps that, if needed, could move up to 64 million gallons a day. And to keep his new neighbors happy, the pump house was adorned with copper flashing and green roof tiles to match the Deering Estate. Metal window hoods were covered with Bahama shutters. And a 2 1/2-acre freshwater wetland for environmental students was dredged where mango trees once grew.

In December 2012, he and Charkhian, the environmental engineer, turned on the pumps. But after the first year passed with few results, they realized they needed more water. In 2013, water managers at the district's West Palm Beach headquarters gave them permission to raise the volume. In January and February last year, a crew armed with GPS devices mapped the wetland and found that the water inundating the wetland nearly perfectly matched the historic slough.

They quickly began to see changes. Soaking the wetland appears to be recharging groundwater. Salinity in one monitoring well downstream dropped dramatically, from as high as 20 percent to between 2 and 3 percent. Charkhian said he has spotted a gar downstream in water that had previously been too salty to suit the freshwater fish.

HARSH REALITY

That's all positive news — but there's a harsh reality, too. In a regular status report published this week, the Army Corps noted that while the project was improving hydrology, the bay itself was far from healthy. Severe cold weather in January 2010 weakened its shoal grass and reduced the number of plants and mangrove fish.

"Once an ecosystem changes, you can't really restore it 100 percent back to what it was," said Stephen Baisden, the Corps' project manager.

There is also a competition for water, Ross pointed out.

"Rainfall hasn't changed much. There's just more competitors for that water. It's a zero sum game, and you have to pick. And one reason Biscayne Bay doesn't get much attention from the Everglades scientists is because at the same time, sea level is coming up," he said, referring to rising seas caused by climate change. "So even if you put the same amount of water there, you wouldn't have the same Biscayne Bay because sea level is a foot higher" and coastal estuaries would be saltier than they once were.

Still, Jane Graham, Audubon Florida's policy manager of Everglades conservation, applauds the district for completing the wetlands, even if it's just a small section.

"A lot of times, Everglades restoration is highly inaccessible. The average person can't hop in an airboat and see an alligator or venture into the Everglades to see tree islands," she said. "No one said this was going to be easy or fast. We just have to keep our wits about us and keep adjusting and, hopefully, we'll have restored the largest ecosystem in the world."

Biscayne Bay and the Tragedy of the Commons - Questions for Discussion:

1. Why does gimleteye feel he needs to respond to Jenny Staletovich's article?
2. What does gimleteye feel has been the policy of Florida politics recently?
3. In paragraph 3, gimleteye writes, "... something the report could have done, too." From this phrase, what does he suggest regarding the Miami Herald's reporting?
4. What does gimleteye say are the steps to restore the Biscayne Bay wetlands?
 - 1.
 - 2.
 - 3.
5. In paragraph 8, the Miami Herald states that "Upland trees that grew unnaturally around the Cutler Slough have started to die, and lowland sedges and sawgrass have sprouted." Is this a good thing or a bad thing? Explain.
6. Gimleteye talks about something that the Miami Herald never mentions – SWIM. What does that acronym stand for?
7. Gimleteye says that SWIM was "whittled down" by two groups.
 - a. What does "whittled down" mean?
 - b. What are the two groups, and why do they pressure the government?
 - 1.
 - 2.
 - c. Later gimleteye mentions a third group that is adding to the problem. Which group is that?
 - 3.
8. The title of this piece is "Biscayne Bay and the Tragedy of the Commons". What does "Tragedy of the Commons" mean, and why is it appropriate here?
9. You've already used two colors to highlight the edges of the paragraphs of Jenny Staletovich and gimleteye. Now use a third color to highlight some of gimleteye's language showing his frustration with the reporting.
10. How does blogging contribute to our freedom of speech?