



Nature Does It Best

A Big Edwards Island project in Roberts Bay can actually do harm—by diverting efforts from the problems labeled “high priority” by state monitors.

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Nature Does It Best



Big Edwards Island: Shallows teem with tiny creatures that become breakfast for birds

BY KENNETH M. PIERCE

Where has all the seagrass gone?

It sure sounded like a good idea when the Army Corps of Engineers proposed in 2000 to “restore” a trio of bird rookery islands in Roberts Bay. Currents and wakes from the Intracoastal Waterway were eroding their steep sides. The idea: dump tons of boulders into an “L-shaped” breakwater to shield the islands. Eventually, Sarasota County and the Sarasota Bay Estuary Program backed the \$1.2 million, year-long construction project, completed in February, 2008.

That same month, helicopters flew over Roberts Bay to scan the bottom for sea-grass, part of a routine check-up. Because seagrass shelters many creatures, its growth tells much about the bay’s health. The grass can’t grow if tiny floating plants prevent sunlight from reaching the bottom, as happens sometimes when too much nitrogen (from fertilizer, say, or wastewater) washes into the bay.

Prior helicopter scans had found great news for Sarasota’s bays: seagrass was increasing, a sign the bays were clearing up. In Roberts Bay, by far the biggest crop of new

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seagrass between 2001 and 2006 appeared on maps as a growing green blob next to the Bird Colony Islands. It spread from the Intracoastal Waterway to the Bay's northeast corner.

Unfortunately, as it turned out, that's about where the construction crew began barging and dumping in 2007 for the Bird Colony Island restoration project. By 2008, scans showed that the big new blob of seagrass had vanished, though gains remained in other parts of Roberts Bay.

Too bad, of course. But wait, it gets worse.

Not long after viewing the 2008 scans, scientists suspected the rookery's breakwater had caused the blob to vanish. They decided to wait and see if new scans for 2010 show a seagrass comeback near the rookery.

But they didn't tell the Herald-Tribune, apparently. Several times since May, 2009, the paper has linked the seagrass decline to concern about pollution in Roberts Bay, termed a "troubled water body" by the paper earlier this year. Why hadn't anybody told the journalists, "It's the breakwater, stupid?" Finally, a brief article this February did report that Roberts Bay's seagrass levels were rising, but the paper has yet to report that it or anybody else did anything to mislead the public or harm the Bay.

There are some lessons here. First: well-intentioned projects that backers call "restoration" can turn out to cause destruction. A top-level panel on estuaries convened some years ago by the University of Florida's Sea Grant College Program found that dredging and other "unconsidered" changes in the current flows of bays "may be the most significant threat to the integrity and functionality of Florida's estuaries in the coming decades."

From the Bay's point of view, one might ask: Instead of one giant breakwater, would three little ones have been better? Would a breakwater of a different shape have been kinder to the seagrass? Could less massive methods have stabilized the rookery islands? Was the damage caused by dredging or the shift in currents? Were the currents studied by computer models beforehand, as recommended prior to any such project by that Sea Grant panel?

Answers to these questions were obviously flawed in this case, but I hope such questions were asked, because it's in the public's interest to do so. If anyone—even our local newspaper—assails people for questioning a project labeled "restoration," the best response is, shame on you. Good stewardship requires all of us to ask tough questions about any idea for reshaping (or "restoring") Sarasota's 3,000 year-old estuary.

Lesson two: Not all scientists study the same thing (Bird? Land? Water?) and not everything scientists say (or fail to say) is science. Of course science is important to public policy, but so is cost, and so are choices—birds or seagrass, for example, should it come down to that.

Lesson three: When it comes to Roberts Bay, the Herald-Tribune has missed the real story and printed a fictional, if alarming, one --and not just concerning seagrass. Other recent reporting on the Bay has added further fictions, left out events that seem to qualify as front page news, and ignored all the estuary questions — every single one -- that some Bay enthusiasts (including me) have voiced about another idea for "restoration," while assailing the motives of the questioners. So I'll now turn to that.

Kill the Trees

On the front page for Feb. 1, journalist Doug Sword wrote an article that read like an argument for cutting down Australian Pine trees on Big Edwards Island in Roberts Bay, with the headline “Save the views or restore the bays?” The headline and the long article echoed a view I’d heard from Doug when he first contacted me in mid-December, when I presumed he was starting his reporting. His conclusion then was the same as the eventual headline: some of the Bay’s waterfront homeowners (I’m one) put their property values, outside views and desires for privacy screening ahead of the public’s interest in cleaning up the waters and “restoring” Roberts Bay. And worse, County Commissioners had last year failed to resist those non-ecological homeowners when they put aside consideration of cutting down pine trees on Big Edwards Island.

Most living humans who read such a story can have only one reaction: “The bay’s at stake. It must be protected. We need ACTION! Kill the trees! Ignore fat cat homeowners—the bay belongs to all of us!” (These jabs are close to many actual reader comments, and a guest editorial the paper ran two days later.)

We all remember Upton Sinclair, “Harvest of Shame” and Rachel Carson, and it’s clear that the reporter, and the Herald-Tribune, are entitled to promote any conclusions they want, before OR after they set out to “get the facts.”

What journalists are NOT entitled to do is to mislead their readers about the actions, statements and goals of people in their stories —especially when reporters have in their possession facts, statements, and documents that contradict the conclusion they want to present. But the Herald-Tribune did it anyway.

I used to work in journalism, and I never wrote about myself. Doing so in this article feels a little different, but I’m going to report a little on the paper’s interview with me because it sheds some light on how a pretty good local paper got it so messed up when reporting on Roberts Bay.

The position that I tried to convey to the Herald-Tribune’s reporter on the Big Edwards Island project, simply stated, is: 1) I love both the views and the bay; 2) I believe that an ambitious Island dredging project threatens the bay without much benefit, and would divert effort from important water quality improvements; and 3) I figure that an island project would cost much more than smaller scale steps to deal with the pines (details later on).

But on the central issue in the Herald-Tribune’s article, which claimed there was a conflict between “Saving the Views” and “Restoring the bays” I made it clear where I stood to Doug Sword when he interviewed me at my house, notebook in hand. I said something like: “If I believed that cutting down pines would make a real difference to the water quality of Roberts Bay, I’d support cutting them down. The Bay has got to be the first priority.”

He wrote it down. I saw him do so. But he didn’t put it into his story, which instead gave the opposite impression—proclaiming to the world that I and some neighbors were preventing clean-up of the Bay, and doing so to protect our private views. As I thought I made clear to the reporter, I’d take an axe to the pines myself if I believed it would help bay water quality. But there was no hint of that view in the 2800 word article. Misleading? Malicious? Let’s just call it, a “heck-of-a-job.”

The reporter did correctly understand that most homeowners care about their views. And yes, I think the tall pines on Big Edwards Island are beautiful. They appeal to a hefty slice of our community: boaters, picnickers, hundreds of daily tour boat passengers, thousands of car travelers, and an uncounted number who walk, bike, run, visit or live in the three neighborhoods near Big Edwards Island. The pines make Roberts Bay look different from any other place I know in Florida—not just to a few, but to everybody. Were this unique setting to be destroyed, then everyone would bear the burden—in the form of tax increases or service cuts due to dips in property values that are predictable if planners make Roberts Bay look like Punta Gorda.

But the paper didn't report that my interest in the Bay—and my love for the view seen by nearly everyone who visits Siesta Key and Roberts Bay—has led me to ask, what's the effect of the pines on water quality? And another question, which almost everybody believes should underlie all public policy regarding the environment: What is the best bang for the buck, the best expenditure to make to improve water quality in Roberts Bay?

This article will also take another look at these questions: Why seek to “restore” Big Edwards Island? What problems do the Island's pines pose? And what is the best response to them?

As for the water quality questions, there are scientific answers, and they are not controversial. First, the pines have no effect on water quality--zero, zip, zilch. The pines grow only on land (if on an island, they only grow “upland,” away from the water). Explains Tony Pernas, a strong critic of the pines as coordinator of the National Park Service's Exotic Plant management team for Florida and the Caribbean: “Australian Pines don't affect water quality.” In that respect, adds he, there's no difference between the pines and other common plants.

Then there's the priority question. What water clean-up projects does the bay need the most? According to Florida's Department of Environmental Protection, the surprising answer with regard to Roberts Bay is: they're not seeking any clean-up there. On January 15, the Department declared that water quality in Roberts Bay (and Blackburn Bay) had improved so much since 2005 that the state was removing those bays from its list of impaired water bodies. Based on area water samples taken over five years, the state found that Roberts Bay is now not a high, medium or even low priority for corrective action. It's not impaired.

To bay-watchers, that might seem to be big news, but the Herald-Tribune waited nearly four weeks before referring to it. Finally, nine days after telling readers that those who opposed an island makeover stood in the way of restoring the bays, the paper reported the state's assessment in a short note inside on page BN1. It didn't say how Roberts Bay had improved so much in just nine days (or, irony aside, how the previous article had misled the public about the Bay's condition and the location of the true priority needs for continued water quality improvement in Sarasota's bays).

One analyst who contributed to the state's review of Roberts and Blackburn Bays is marine biologist David Tomasko, who has tracked bay water quality over the years for both the Sarasota Bay Estuary Program and the Southwest Florida Water Management District. Says Tomasko: . “In Roberts Bay and Blackburn Bay there is about 50% more seagrass than in 1988 and 30% more than in 1950. My view is, this bay is cleaner than it was 20 years ago, and it may be cleaner than 60 years ago--and we know how it happened. This community spent 250 million dollars to fix storm water and wastewater treatment. The whole Sarasota Bay ought to be an example of how to recover a system.”

The state's environmental review made another very important point. Although Roberts Bay and Big Edwards Island are not even "low" priorities, there are other places in the county that are a high priority for restoring Sarasota's Bays, say the regulators. If that's true, then the paper's crusade for a Big Edwards Island project in Roberts Bay can actually do harm, because if anybody were to act on it, they would be diverting efforts from the problems labeled "high priority" by state monitors.

The "high priority" problems for Sarasota County's bays, according to the state, are six rivers that flow into various county bays. All are miles away from Big Edwards Island, with the closest being the upstream part of Phillippi Creek, which flows into Roberts Bay two miles south of Big Edwards Island. The other high priority waters in the county that affect Sarasota's bays: Whitaker Bayou (north of downtown Sarasota), Elligraw Bayou, Clowers Creek and North Creek (Little Sarasota Bay), and Catfish Creek (Blackburn Bay)—plus the Venice fishing pier. In addition, as elsewhere in Florida, the state considers high levels of mercury in fish tissue a high priority in almost all bay waters. Longboat's estuary is impaired but the state calls it only a "medium" priority; as "low priority," the state notes that shellfish harvesting in the central Bay near downtown continues to be banned.

Even in Sarasota, Rivers Flow Down to the Sea

While omitting the major news about water quality in Roberts Bay, the crusading Feb. 1 article garbled the tale about recent EPA pressure, making it seem to be about Roberts Bay, when the real target was elsewhere. Said the paper: "This summer the EPA told the county that it needed to cut the amount of nitrogen coming out of Phillippi by another 70 percent to get Roberts Bay off the 'impaired' water body list," attributing this (without quotation marks) to Teresa Connor, the county's director of environmental services.

This puzzled me, since I had heard of no new focus on Roberts Bay, which was already OFF the state's 'impaired' list. When I called Connor's office to ask about the reference, I was directed to the county's manager of water resources, Jack Merriam, who cleared up the confusion: The reductions being sought don't target the Bay but an area far upstream in the fresh water portion of Phillippi Creek, one of those high priority areas, where nitrogen and bacteria levels appear high. As everybody knows, rivers flow down from the mainland to the sea, not the other way around. So nothing done on Big Edwards Island—with pines, mangroves or the Miss America Contest—will have any effect on pollution in upstream Phillippi. It's fanciful to suggest otherwise, which the paper did. As the County's Merriam puts it: "What happens in the North portion of Roberts Bay and Big Edwards Island won't affect the upper, fresh-water portion of Phillippi."

Water does flow downhill—so Phillippi's pollution can affect Roberts Bay. Septic tanks along Phillippi have long been a priority problem, for example. The Creek has seen progress too since 1990, so the experts are currently debating the proper grading standards for that Creek.

Tomasko and others who know the bays argue that the widespread seagrass recovery is a better sign of water quality than some tests for nitrogen and other nutrients that regulators do. He may be right. Still, the state's priority list is based on evidence and ranks all area water bodies by a single benchmark. Bay advocates should demand a focus on priority projects, judged to be such by region-wide evidence—especially in tight times. If a better list is made, let's by all means consider it. Meanwhile, for those who take an interest in restoring the bay, it seems obvious that available funds should be used for the

“high priority” cleanups until their priority drops, at the very least. Except for mercury, where new preventive steps may need devising, there are proven solutions to the problems listed as high priority by the state: focus on the tributaries, waste treatment and storm runoff from sewers, roads and lawns.

In the pines, the pines, where the sun never shines...

What the paper did correctly report is that Australian Pines are an invasive species. Legally, this means that most Floridians can't plant new ones, but existing trees are a matter for case by case decision—cut them, thin them, or let them be, it's the owner's choice. On Sanibel Island, for example, concerned citizens and realtors feared that city officials might seek to eradicate their pines, so they sought a special law blocking such efforts, unless a tree grows too close to “public infrastructure” such as streetlights and can't be fixed by trimming. The City Council passed it unanimously. State officials have made other similar “hands-off” agreements—protecting the pines, for example, in Key West's Fort Zachary Taylor Historic State Park, and even permitting new ones to be planted (by act of the legislature) along Ocean Drive in Palm Beach County's Gulf Stream.

The trees tolerate salt spray, one reason they were deliberately imported to Florida more than a century ago to fight erosion and provide shade. Also known as casuarinas, they are not true pines, but deciduous trees that shed their needles. They absorb carbon dioxide, the greenhouse gas that causes global warming. Because they are large and grow fairly rapidly, some speculate that Australian Pines may absorb more CO₂ than other common Florida trees, but no data exists about this. Ecologists can get emotional about their disdain for them, because their thick green canopy and carpet of needle-like leaves tend to block the growth of other plants.

Naturalists like Sanibel's Holly Downing say the trees have shallow roots, which allow hurricanes to blow them over more easily. “That's a myth,” counters arborist C. Way Hoyt, who tends approximately 400 of them beside the ocean in Gulf Stream. “Their roots grow just about like other trees,” adds he. Hoyt reports that the past decade's hurricanes blew over more so-called “native” trees (live oak and olive, for example) than Australian Pines (only 3 of his 400 succumbed to wind). In Sanibel, Downing says the pines along Periwinkle Way and elsewhere were more likely to blow down than other trees during 2004's Hurricane Charley.

Like coconut palms and other tall trees, pines that grow too close to a Gulf or ocean shore can shade small plants that help to build sand dunes. Trees that get too close on such beaches can also block the path back to the sea for hatchlings (of turtles, say, or, in the Everglades, American crocodiles).

But that is not the case on Big Edwards Island, located in a sheltered Bay, not the Gulf or an Ocean shore. Nor is there a Periwinkle Way—or any road at all—on Big Edwards, which is uninhabited (by people, anyway).

Then there are our feathered friends. While the pines seem to attract ospreys, anhingas, warblers, woodpeckers, hawks and the occasional eagle, among others, it's common to hear that a mixture of other trees attracts more bird species.

For such reasons, efforts to remove Australian Pines in Florida are supported by, among others, a much beloved authority on invasive plants, Professor Kenneth Langeland of the University of Florida, a former vice-Chairman of the Florida Exotic Pest Plant Council (FLEPPC) who was quoted in the Herald's article.

But if you are talking water quality , inter-tidal habitat, estuary pollution, or Roberts Bay, the way the Herald-Tribune was, and the way I have been for a year--you might want to ask Professor Langeland and the other experts at the FLEPPC if it makes any sense to believe the pines on Big Edwards—or their removal—affect water quality for good or ill. The scientific and expert answer is no, they don't. In that respect, they're just like other common plants.

Mangroves, mangroves everywhere

Some have argued that the reason to cut down the pines is to plant mangroves—because mangroves do support water quality and sea creatures. The article repeats this view. The important thing to notice when people make this argument is that it doesn't fit the “ground truth” on Big Edwards Island, which is already the second-largest mangrove island in Roberts Bay. A thicket of mangroves between 12 and 16 feet tall borders the island for a length of more than 3,000 feet. “Go look for yourself,” I urged Doug Sword. I decided to call Professor Langeland last spring after I saw 10-year-old diagrams and 6-year-old pictures that showed that Big Edwards island was long ago—as it is today -- chock full of flourishing mangroves, fat and tall. They've persisted for decades, ALONG WITH the flourishing pines.

(When I asked a county consultant at a 2009 presentation why a “restoration” project would target a mangrove island, he responded by asking me: “Are you sure they're mangroves there?” This answer flabbergasted me—because to me it meant, here's a professional seeking support for a new artificial approach to an island that has sat in the Bay for more than 50 years, and he hadn't looked closely at it.)

In fact, the mangroves on Big Edwards are greener and taller than those growing a few feet away on an oyster “spit” that has NO PINES AT ALL. Permit me to say that again (I said it about four times to Doug Sword, but it was Not Mentioned In His Article – “NMIHA,” let's call it, to save repetition below). On Big Edwards, the mangroves are taller than the island nearby where there are NO pines or other trees of any kind.

With oysters and a swarm of other creatures nestled in their roots, the mangroves are helping to build and protect a tidal shallows that slopes gradually away from most of Big Edwards' shoreline. It's called “inter-tidal habitat,” and it's the nursery and supermarket for a vast bounty of marine life. In only a few spots do easily-trimmed tree branches come anywhere near Big Edwards' mangroves. Pines can't be bad for mangroves, I thought a year ago, as I looked at both growing on the island. Mangroves and pines co-exist there, and they have flourished together for decades.

Why do both species get along? The pines grow “upland,” on higher ground, not in the water. Mangroves grow with their roots in the water, some distance away from the pine canopy. It's because mangrove roots are in the water that the plants can stabilize shorelines, shelter creatures and remove some excess nutrients (nitrogen) from the water.

I double-checked with Professor Langeland and other FLEPPC biologists recently (the leading critics of the pines). There's no doubt about it: according to the experts, what one sees on Big Edwards is not a fluke or a mirage: the mangroves grow with their roots in the water. The pines grow “upland,” away from the water, and generally, as on Big Edwards Island, well away from the mangroves.

That a former Vice-chairman of the Pest Plant Council advocates removal of invasive

plants, the Herald-Tribune found the space to report. But that the state's top critics of Australian Pines say that the critique of the pines is not about water quality, and that mangroves commonly can (as on Big Edwards Island) co-exist with Australian Pines—this, the Herald-Tribune did not report.

Some say they favor scooping out land from portions of Big Edwards Island to create “inside” shoreline and watery pools where additional mangroves could grow. There's no actual plan, and the article didn't describe one, but using old diagrams, my measurements, discussed with Doug Sword (but NMIHA--not mentioned in his article), suggest that after cutting new channels through the mangrove shallows for water to flow into the new holes, there wouldn't be enough room remaining to add back enough mangroves to make a meaningful difference to water quality in Roberts Bay. At 1,700 acres, it's not a tiny waterbody.

If the plan were to add two big holes in the interior of the small island, the costs are expected to include sacrificing a popular beach, and scraping and barging enough sand and dirt to fill at least four football fields three feet high—while trampling all over the second largest mangrove island in the Bay. It's an even bigger project if such “island-top-destruction” is attempted over the entire island. So much earth-moving appears quite extravagant when measured against the present need and promised benefits (just about none, to water quality, we'll get to “habitat” shortly). All that barging, trampling, channeling and diverting of the current poses a risk to the existing mangroves on Big Edwards, to the inter-tidal habitat that nature has been building there for more than 50 years, and to the remaining seagrass in the north end of Roberts Bay (the Bird Rookery islands are close by). [NMIHA]

(Curiously, in 2800 words promoting “restoration” and completely ignoring any suggestion that the Bay is better served by safer, proven efforts addressed to more pressing needs, the paper did not tell readers, including many who have played, hiked or rested there, that removing some—or all—of the island above the waterline was among the restorations that officials had pondered).

Various hole-punching plans were proposed by the Army Corps of Engineers 10 years ago, but resoundingly rejected then because they destroyed the beach and boater recreation, in addition to killing the unusual and spectacular look and feel of Roberts Bay. The key point to remember: such a “restoration” will chop up Big Edwards Island, and cut channels through mangroves and inter-tidal habitat that nature has been building there. By ripping away some of nature's habitat on the outside of the oval-shaped island, one could put some additional human-planted mangroves into newly designed holes inside, but even that won't matter to water quality in the Bay--or its main fresh-water tributary, Phillippi Creek, which flows into Roberts Bay two miles south of the island.

Take the extreme case: barge away the ENTIRE island and replace the entire six acres with new mangroves. By how much could that reduce the level of nitrogen in the Bay's waters? By virtually nothing. Those added mangroves would occupy a volume of water amounting to less than two-one-hundredths of one percent of the water in the Bay—and none of that water goes upstream to the fresh-water portions of Phillippi Creek, the area of water quality concern.

This may sound technical, but the point is clear: To claim water quality as the goal of cutting down the pines or “restoring” the mangrove island is to mislead the public, shift attention (and resources) away from more urgent measures that DO make a difference to water quality, and make a false claim about the results to be obtained by using public funds--a deplorable tactic made worse when you consider that “restoration” experts be-

lieve the results are better when nature does the mangrove planting, not restorers.

Trout, Oysters, Crabs, Mullet, Snook...

Spurred on by the tangle of mangrove roots washed over by the tides, the fertile shallows building out from Big Edwards Island show that Sarasota's ancient estuary is doing its job. With oysters, sea trout, crabs, mullet, snook and an amazing array of other marine creatures finding their way to the Island's coves and meanders, Mother Nature's super-market is open for business. (Local fishermen get excited when they recall the action this year around Big Edwards Island before the cold spell hit. As one supplier to Walt's fish market puts it: "The Bay was on fire!") A swarm of nine-armed starfish (numbering about 80) burrowed in the sand last spring, near one of the sandy beaches. Three kinds of seagrass hold fast to the bottom in various spots around the Island, while dolphins splash past the tiny spiral shells of snails. The intertidal zone abuilding around Big Edwards fascinates, because it is the living Bay at work doing its own restoration. It shows that the Bay can respond naturally even to the assault of careless dredging and dumping that created the island in the 1950's, given half a chance and 50 years of time.

What then, of other reasons sometimes offered for cutting down the pines? For example, the birds. I love to see them on Big Edwards Island—in the pines and wading in the shallows, and I could list many. But why bother—it's beside the point. It would be like talking up the junior college football team when the Super Bowl is right next door. About a block southeast of Big Edwards as the osprey flies are those bird rookery islands, termed "the most important bird sanctuary in Sarasota Bay" by Audubon of Florida's Ann Hodgson.

Like the VIP floor at nature's own Ritz-Carlton, the bird rookery islands serve their guests by teaming up with Big Edwards. The steep-sided bird islands offer protected suites to the avian guests. The gently sloping shores of Big Edwards are a dining room, offering marine meals to wading birds at low tide. (For birds like ospreys who don't wade to breakfast, meals are on offer all day long in Roberts Bay). Those with other life-style preferences have a broad choice of accommodations and menus nearby on the mainland and Siesta Key. No doubt it's possible for designers to imagine changes they might wish for, but it's hard to actually look at Roberts Bay's super bowl and dining service for birds and see a priority need—or any significant need—for another artificial intervention.

Then there's the example of Palm Beach County, mentioned by the Herald-Tribune, which has dredged its way through a passel of island restoration projects in the 20-mile long Lake Worth Lagoon. (Note its name: it's a "lagoon." Unlike Sarasota's natural bay, where salt and fresh water have mixed for thousands of years, the Lagoon at Palm Beach is an artificial bay, still in the teething stage since its creation a mere 150 years ago, when cuts were made to permit entry of ships into what had been a fresh water lake near the ocean. When it rains, fresh water floods the Lagoon from canals that were dug to drain the land. Those flows cause the Lagoon's salinity to swing erratically—a danger to young sea creatures, in contrast to the more tender care generally provided by Sarasota's bays.)

One of Palm Beach County's naturalists was quoted by the Herald-Tribune as, in effect, taking Sarasota to task for being too timid and slow to get with the island restoration dredging program, which he said was "settled science." But neither he nor the article mentioned two important points: 1) Roberts Bay doesn't suffer from the major ills targeted by the Palm Beach projects, and 2) Palm Beach County's signature project, the 79-

acre Peanut Island restoration, didn't at all diminish the beach, boating or recreational use of a popular island destination. Rather, much of the \$13 million spent on Peanut Island was used to expand use of the island's popular county park by building hundreds of feet of boating docks, a snorkeling pool, 1.25 miles of paved brick walkways—plus a 23-acre storage area used for dredging material. All wonderful, no doubt, but not what's needed in Roberts Bay and not what's usually meant by “science.”

Helpfully, Palm Beach County describes the purposes of its projects (not the drawbacks, but at least the goals are published). So let's take a look at the description by that County's Department of Environmental Resource Management of the project that most nearly resembles (in size and layout) what some have imagined for Big Edwards, namely, John's Island.

The Dead Zone: Plain Out of Muck

- There's a “dead zone” on the bottom of the Lake Worth Lagoon, devoid of seagrass but covered with organic “muck.” When it rains, those inland canals act like giant pea-shooters, pushing muck into the narrow Lagoon that's lined with buildings on both sides (there are nearly four times more people in Palm Beach County than in Sarasota County). Solution: cover up the Lagoon's mucky bottom near John's Island with thousands of tons of limestone rock dumped into shallow water. Over time, oysters should build a reef on those rocks. Cost: about \$730,000 for the 5-acre first phase, or \$146,000 per acre. For John's Island, this may be perfect, but in Sarasota, Big Edwards Island already has 1) A natural oyster reef on its west side, anchored by nature-planted mangroves, not imported rocks; 2) A natural oyster shallows that fans out from the mangroves on the island's northwest side; and 3) Adjacent oyster flats in the Bay to the southwest. And NO muck. Sarasota's cost per acre for the oyster habitat surrounding Big Edwards Island: \$0.

- Another announced benefit of the John's Island project is donation of sand, an amount equal to about 1½ football fields piled five feet high, to help reshape 100 acres of the Lagoon's bottom about a mile to the south, next to the city golf course. There, seagrass and mangroves didn't like the deep, scarred bottoms. So a massive construction project called the “Snook Islands Natural Area” was conceived to raise up the bottom there by adding sand. In all, more than 100 football fields of sand piled 5 feet high were barged to the Snook area as a base for seagrass over more than 40 acres. The imported sand was also used to combat shore erosion, create four speck-sized islands, and build slopes for hand-planted mangroves against the golf course's pilings. (To shelter the new mangroves and their sandy bed from waves and currents 28,000 tons of limestone boulders were also spread around)

Where did they get the sand they needed to cover all those acres? It was sliced off the tops of older spoil islands, including the sprawling Peanut Island, and the smaller John's Island and others. When they sliced, they also removed “exotic vegetation” from the amputated islands. Costs of the Snook Area project: about \$18 million, or roughly \$180,000 per acre. Afterwards, says Palm Beach County, seagrass did begin to settle in, and fishermen caught more snook. These Palm Beach projects are popular ones, and perhaps they are exactly what's required to grow seagrass, mangroves and snook habitat in that area's artificial bay.

But Sarasota is much luckier. Roberts Bay is already a paradise for snook —no need to first build a “Snook Islands Natural Area.” Seagrass plants itself naturally on the bottoms of Sarasota's natural bays (if currents aren't diverted by “restoration” projects and

if the water's not clouded)—no need to strip sand from islands to manufacture “natural” bay bottoms. Muck and “dead zones” are not issues in Roberts Bay. In the narrow Lake Worth Lagoon, they dump boulders to protect new mangroves (as at the Snook Area and John's Island). But in the sheltered tidal coves and channels on Big Edwards Island, nature's mangroves are already flourishing--no hand-planting and no boulder breakwaters required.

The bottom line (we're talking bay bottoms, partly, but no pun intended): Palm Beach's projects seek to manufacture conditions that are already present at Big Edwards Island and Roberts Bay, courtesy of Mother Nature. (Except for the paved visitor's playground at Peanut Island, where visitors can even tour a bunker built to accommodate a visiting JFK. It's a much larger and more developed facility than what most expect in the quiet and majestic Roberts Bay). Since nature's bounty is present, and expanding out from the shallows of Big Edwards Island, a restoration there *a la* Palm Beach would have little to gain and much to harm. Yes, Palm Beach's projects frequently remove Australian pines and other “non-native” vegetation. Yes, too, a few miles south, in Gulf Stream, they preserve their pines with care. Neither one, it seems, bears much on conditions in Roberts Bay—except to underscore how special, and how lucky, is Sarasota to have a natural bay that's been able to survive the assaults of dredgers, engineers and developers (at least so far)—without being forced to cope with anything as radical as the gender-changing operation that made a salt water bay out of the Lake Worth Lagoon.

Anywhere I Hang My Hat is Home

Nor is there much that matters to Sarasota in the radical agenda of some ecologists who propose erasing all but “native” species in every place—a questionable goal especially in Florida, where 65% of the current human population was born elsewhere, and which is a hub for inter-continental travel. Of course, it might serve the state's ecology for all Chicagoans to be shipped back to Illinois (just joking). But to say that the future of the state or its bays depends on nativist cleansing, geographic or ethnic, is to deny the past (Jacaranda trees were once newcomers to Florida, for example, and even the legendary apple tree was brought to America by 17th-century colonists) and to turn one's back on the future (about one out of seven of the new species—plant or animal--introduced to the U.S. is “invasive” in some respect, estimates ecologist Daniel Simberloff).

With the prospect of ever more travel (for flora, fauna, *and* people), surely the wise response to new species is to concentrate control efforts on the places and “aliens” where the dangers are most significant and responses most likely to make a difference. Such as, for example, the aquatic weed hydrilla, an import from the Indian Ocean that can choke fresh-water lakes with dense weedy mats, clogging motorboat propellers and blocking sunlight from plants that nurture fish.

For the pines on Big Edwards Island, we've not found dangers clear or present, even when looking across the state at Palm Beach County. Yet that county's projects are an example--of the industrial approach to estuaries, using mechanical equipment and relying on a team of designers and engineers to rebuild what fails to function as an estuary should. It's ambitious, expensive and energy-intensive. When necessary, it's the speediest, most direct, can-do and gung-ho way to get the job done. Like building an expressway, say. Or a dam.

Fortunately, at least in lucky Sarasota, there's another way, more natural, less expensive, and less intrusive. Just as, years ago, there were less threatening alternatives when the Army Corps of Engineers built hydropower dams bank-to-bank across the state of

Washington's Snake River. Innocently intended as a source of clean electricity, those dams have so decimated the Pacific salmon hatchery that scientists in several Western states now urge their removal or reconstruction.

The better way for Sarasota came into focus as I looked into the last remaining item on my list of pine criticisms: the impact of their seeds. So let's take a look at what this issue has to say about the pines, and also about us—about how we respond to the Bay, about the budgets we favor in today's economic climate, and about the technologies we prefer to rely on in the age of global warming.

By themselves, out in the bay on one isolated island, it should be clear by now that the pines are a very minor problem, if indeed a problem at all. One woman's "mono-culture"—the crowding out of other upland plants—is another's cool and shady forest. No one has argued (yet, at any rate) that it's more important for this small island to become a repository of increased species diversity than it is for any of the zillion other of the county's local environments. (Just a few blocks away from Big Edwards Island, in fact, the neighborhood I live in has a little pocket park that could happily support additional diverse plants; there are hundreds, if not thousands, of similar spaces throughout the county.)

But, as University of Florida professor Kenneth Langeland pointed out in the Herald-Tribune's article, Big Edwards' pines (technically known as *casuarina equisetifolia*) are not all that isolated, because their seeds can spread elsewhere in the wind, as is true also of such pines elsewhere in the county. Throughout the eight miles of nearby Siesta Key, on the inland (or "upland") parts of the barrier island, for example, there are a couple dozen scattered pine clusters that are even more likely to spread their seeds about, since many face stronger winds than blow in the more sheltered Roberts Bay.

For decades, in fact, it's clear that the Australian pine seeds have been flying around in the wind—around Siesta Key and Roberts Bay. And the results—on display for all to see—are not what pine critics fear or imagine. While there are Australian pine clusters sprinkled inland on Siesta Key and elsewhere in the county, there aren't all that many, and there are even fewer places where one see adolescent pines or young adults. On private lands, it's easy for gardeners who don't desire a new "volunteer" to pull up the baby shoots—as all gardeners do whenever paid a visit by any of the hundreds of possible plant species that waft about in the air. It may not be the most enjoyable part of gardening, but there's nothing special about the pines in this regard, and pulling up young shoots is quite effective. No doubt it's nature and nurture both that explain why one sees few Australian pines on private lands in Sarasota, and fewer still that are adolescent or young adults.

The same holds true on public lands. For example, along almost all of the dunes that run for miles to the rear of Siesta's sandy Gulf beaches (one place where tall trees can cause problems, as described earlier), the plants that dominate—by an overwhelming margin—are typical low-lying sand dune vegetation. There are a few, but only a few, tall trees of any kind.

So the decades-long experiment has been run—with due time to examine the results produced throughout Sarasota by the windborne seeds. And the results are in: on neither private nor public lands is there an upwelling of new pines. On Siesta Key, which faces Big Edwards Island, there has instead been a decrease in the Pines over recent decades (a severe freeze during the mid 1980's damaged many of Siesta's pines).

Does this mean there's no need for routine efforts at control? No. County crews and vol-

unteers recruited by the county have long monitored beaches, parks and other public lands, pulling out by hand the seedlings of a long list of species, including Brazilian Pepper, Air Potato, Australian Pines, and many others. The rationale for such efforts undoubtedly will continue—in effect, forever. As George Tatge, manager for beaches, parks and trails in the county’s Parks and Recreation Department, explains, new baby shoots continue to sprout even in places where dense clumps of plants such as Brazilian Pepper or the pines have been cut down and cleared away, so the need for repeat control visits is ongoing. Such efforts can also be strengthened, if desired, by adding one or two full-time Park department staff landscaping positions (at about \$37,000 per year per person, including overhead, insurance and benefits).

Just give me the simple life

So the choice is simple. On the one hand, a response to the only criticism that might actually apply to the Big Edwards pines—their seed dispersal—is already in place in Sarasota. There is no new march of Pines that confronts Sarasota, thanks both to nature and the time-honored and simple practice known to every gardener as pulling up the “volunteers.” Simple too is an available upgrade in control efforts, should the county wish to do so: one or two guys with a cloth bag or a tarp, focused solely on baby shoots of all exotic plants, visiting all Gulf beaches and other public lands several times in the course of a year. (And that would cover maintenance visits expected to continue virtually forever to pull up shoots of a dozen other plant species in addition to Australian Pines).

The other solution is an industrial style dredging project that will replace a natural process of restoration in the Bay with a Disney-style exhibit that offers little benefit to the Bay and a substantial risk of harm to important natural assets. Using the \$180,000 per acre figure from Palm Beach’s Snook Natural Area, one could guess the cost to be \$1,080,000 for an industrial-type dredging project on the six-acre Big Edwards Island—and that would not eliminate the need for ongoing maintenance visits there and elsewhere (either by existing crews and volunteers, or added spending for one or two positions at roughly \$37,000 apiece).

One method does *not* rely on dredging, guarantees the safety of Roberts Bay’s existing mangroves, oysters, fishing, crabbing and seagrass, makes no permanent changes to flows of Bay currents, permits nature to continue its 50-year-old program of creating inter-tidal habitat on the Bay’s second-largest mangrove island, saves perhaps \$1 million (and may cost as little as \$0 in total if there’s no need to upgrade present volunteer activities), saves Big Edwards’ beach and shady picnic area, and responds to what actually exists on this particular island in Roberts Bay, rather than to general descriptions drawn up elsewhere or to a bureaucratic grand design. The more humble approach does not pretend to out- create nature, to make irreplaceable changes to Sarasota’s living bay, to require heavy industry or to use a lot of fossil fuels. And it also supports the property values and property taxes that benefit the entire community, as well as the special look and feel of Roberts Bay.

A preference for the small-scale is a little like acknowledging that there’s no command central, situation room or top-down headquarters for a diffuse natural system such as Sarasota’s living bay, which operates by timeless, natural laws in a growing urban area that has often been an arrogant and inconsiderate neighbor.

In the 21st century, it’s a sign of progress for Sarasota to choose the more humble, low key and non-industrial, way. As we cheer Roberts Bay’s recovery, it’s important to remember that Mother Nature knows more than even our best engineers about island res-

toration in Sarasota's bays, because she's been doing it continuously for more than 3,000 years (that's roughly 1,000 years before the Roman Empire). And when Mother Nature does it, it doesn't cost taxpayers a penny.

It seems to me that Disney wants our money. What the bay wants from us is to stop putting junk into it—and then to get out of its way.

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