

FEATURED

It's still not too late to save wetlands, experts say

By KATHRYN EASTBURN The Daily News Mar 2, 2019



Anna Armitage, a wetlands researcher at Texas A&M University at Galveston, believes much endangered ecosystem.

STUART

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Driving south along Interstate 45 toward the Galveston causeway, flat lands give way to waving fields of marsh grasses harboring long-legged wading birds in full view. Beneath the surface, teeming fish nurseries abound.

Depending on the time of year and day, these grasses might glow green or golden or reddish. One patch of tall grass undulates next to another across a wide expanse of glittering, shallow water.

What's now called the John M. O'Quinn Scenic Estuarial Corridor, hundreds of acres of restored wetlands, looked dramatically different less than 30 years ago.

Approaching Galveston on I-45 in 1990, a motorist would have seen "tidal marsh in the last throes of environmental death — an estuary marred by landfills, borrow pits, levee walls, billboards and topless bars," according to the Scenic Galveston website.

In 1993, a hearty group of volunteers began reclaiming these gateway marshes.

Scenic Galveston Inc., under the leadership of founder Evangeline Whorton, purchased 900 acres of marshland along 5 miles of highway at a cost of nearly \$3 million. Most of the money came from private or state funding sources with one substantial grant from the North American Wetlands Conservation Act.

Partnering with more than 30 state and federal agencies, conservations groups, foundations, businesses and individuals, Scenic Galveston cleared debris, planted grasses and restored the marsh to a thriving winter habitat for birds, feeding grounds for abundant shore birds and an official designation on the Texas Parks and Wildlife's Great Coastal Birding Trail.

"We believe that our efforts — from fundraising to reclamation — can serve as a case-study demonstrating what can be done to restore habitat given a little vision and a lot of tenacity," the Scenic Galveston website reads.

Work continues along the corridor. In 2016, volunteers piled thousands of stones in the water 100 feet off of Virginia Point, creating a breakwater. This spring, volunteers will wade in the muck and plant plugs of marsh grasses in the gap, creating new marsh.

Indeed, plenty of wetland restoration and construction has succeeded all along Galveston Bay, up and down the county.

But the efforts of nonprofit groups such as Scenic Galveston, the Galveston Bay Foundation, Artist Boat, The Nature Conservancy and others who do this work in partnership with state and federal agencies is slow, painstaking and limited in scope by cost and labor.

Keeping up with the pace of real estate and industry development in the county is nearly impossible, given the financial incentives to keep building and the explosive population growth predicted for much of Galveston County over the next decade, requiring more roads, more jobs and more homes.

Juxtaposed against rising seas, imperiled shores and water quality endangered by shrinking wetlands, such growth must be planned strategically, by local governments and from conservation and development points of view.

Many experts who care deeply about the future of the upper Texas coast, are already working on it.

EDUCATION IS KEY

“We still have significant wetland resources but they’re going to get sucked up pretty quick with 4 million people coming to the Houston-Galveston area,” said John Jacob, a Texas A&M University professor and extension specialist with the Texas AgriLife Extension Service.

Jacob advocates for protection of freshwater wetlands embedded in coastal prairies throughout Galveston County and the Houston-Galveston region. These endangered wetlands, called prairie potholes, are depressions in the land where water gathers and is filtered, protecting water quality in neighboring bayous and bays. Vast prairies that covered coastal Texas 200 years ago have largely disappeared, but they are far from all gone, Jacob said.

“Some very large and significant patches remain, but the threat of losing these surviving areas to development is now very high,” Jacob said.

Anna Armitage of Texas A&M University at Galveston, studies the ecosystems of coastal marshes, like those along Galveston Bay and on the edges of Galveston Island.

For both Armitage and Jacob, education is key to protecting, restoring and building wetlands that will protect our coastal region into the future, they said.

Jacob helps train master naturalists to recognize plants and wildlife in wetland ecosystems. Those master naturalists, in turn, can train others to participate in the future of wetlands, spreading the word about the essential natural services they provide and helping to rebuild them.

Armitage and her students conduct research to study human effects on the coastal ecosystem, looking at habitat loss, nutrition pollution, climate change, distribution of plants and animals along the coast and the food web that supports life.

Armitage is involved in research on mangroves, a type of wetland vegetation that thrives in salt water but is intolerant to cold temperatures. With climate change, it’s likely that mangroves will eventually replace marsh plants along much of the Texas coast, she said.

“We have to ask what that means for fish and shrimp that use saltwater flats for nurseries,” Armitage said.

“Will they eat mangrove leaves the way they eat marsh plant leaves? We’re looking at the food chain. We’ve discovered, for example, that fiddler crabs do better on marsh leaves than mangrove leaves.”

These studies can be used to protect fish nursery habitat, to make adjustments where possible and to plan for the future of both wildlife and humans. Adapting to change is the name of the game in coastal sciences, given the near certainty of continual sea level rise and a gradually warming climate.

“It can be overwhelming,” Armitage said about the immensity of the problem.

“It can feel hopeless.”

But she tells her students, and she walks the talk, that choosing to be active participants in conservation and environmental protection truly makes a difference.

“I like to think we all have a sphere of influence; everybody does,” she said, drawing a circle around herself, her arms outstretched.

“And if we pull together all of those spheres of influence, it’s like putting together the pieces of a puzzle into a larger thing.”

Scientists don’t know everything, including exactly how climate change is going to happen, but we can’t just wait for it to happen, Armitage said.

Educating and being involved is key, she said.

Armitage pointed out successful wetlands construction projects that bode well for a future with rising seas, including one along Bob Smith Drive at the western edge of Jamaica Beach on Galveston Island.

Looking at an aerial image of the wetlands on her smartphone, she pointed out subtle elevation points along these manmade marshes.

“See, they’re building mound structures, making some higher spots for birds to roost and a refuge for plants as sea level goes up,” she said. “Variety in structure and elevation. It’s insurance against change.”

ADVERSE EFFECTS

Understanding the nature of wetlands without examining the nature of development is futile, experts said.

In this area, development on top of wetlands has to be permitted by the U.S. Army Corps of Engineers, and those permits are often granted even against the advice of the agency itself.

Take, for example, canal subdivisions like those that line Galveston Bay. In its own publication, the U.S. Army Corps of Engineers Guidelines on Housing Developments, this type of waterfront development is discouraged.

“Housing developments sited along the waterfront have a great potential for adverse impacts to the aquatic environment and to human health if appropriate measures are not taken,” the guidelines warn.

“Construction of canal subdivisions is discouraged. Such developments commonly result in the degradation of water quality and are often detrimental to fish and wildlife.”

“Housing development should be restricted to upland areas. Fill should not be placed in wetlands or other special aquatic sites. Houses on pilings should not be constructed over wetlands or submerged lands.”

Paying attention to which development projects get a green light from the corps is one area of public involvement that might benefit the future of wetlands, experts said.

Advocating for smarter, better planned development is another.

Numerous guides already exist to assist local governments and planning entities in encouraging smarter growth and development that meshes with the needs of the natural environment.

The West Galveston Island Greenprint for Growth, published in 2007, includes suggestions for providing incentives for builders, developers and landowners to surpass minimum requirements in preservation and restoration of green space, natural areas and conserved land, including wetlands.

The greenprint recommends the city investigate and consider tax breaks for developers that practice conservation, restoration and preservation of natural areas.

It recommends trade-offs for developers who invest in trail development around the island. It suggests that among city services, providing information about how building affects natural resources to qualifying developers might be a good place to start.

These and ideas such as incentivizing property owners to engage in environmentally sound landscaping practices, are not pie-in-the-sky schemes, experts assert. They are practical and doable, if public interest demands them.

WEIRD WEATHER, WETLANDS AND GROWTH

Post-Hurricane Harvey, the flood mitigation capabilities of wetlands were overwhelmed by record rainfall of 50 inches in many parts of the Houston-Galveston area.

While both coastal marshes and prairie wetlands can do a lot to protect areas downstream during moderate rains like those we see most every week in our region, in an event like Harvey, the difference upland wetlands made in flooding down below was negligible.

“Harvey changed everything,” Jacob wrote in a recent blog post advocating for more accurate floodplain mapping.

“It modified my views on upstream wetlands and flood control. Harvey totally overwhelmed every single prairie-pothole wetland on the Katy Prairie, and on every other prairie in our area, for that matter.”

But Jacob still stands for wetlands, especially for the water quality protection they provide, and for their flood mitigation capabilities under normal circumstances.

“Every wetland we fill or destroy puts another nail into the coffin for Galveston Bay,” Jacob said. “It is just that kind of connection.”

“We are to the point now where each individual wetland lost makes a difference.”

Jim Blackburn, environmental law professor at Rice University, said the notion that strategies to preserve native prairies and wetlands are anti-growth or anti-development are nonsense.

“It’s exactly the opposite,” Blackburn said.

“Growth will cease if we continue to deny the problems we have. These are essential survival tactics.”

The message the region must impart to the rest of the world is that we’re getting our act together here, Blackburn said.

“We’re adapting,” Blackburn said. “And that includes factoring in wetlands protection for smart growth, as a protection against sea level rise and as a natural system that enhances quality of life.

“What I’m working on is trying to get a market established to put a dollar value on wetlands so homeowners can be rewarded for protecting them. What I’ve found is if I can talk about money and ecology together, every door in Houston is open to me.”

Developing a common area of agreement, after all, shouldn’t be that tough, he said.

“We’re talking about the fabulous natural system we share and how we can agree to protect it in a way that benefits everyone,” he said.

A SENSE OF PLACE

The task of protecting remaining wetlands in coastal Texas is multi-faceted.

Scientists say we must look to a future of rising seas and change waterfront development practices to give coastal marshes space to retreat, migrate and regenerate.

Some experts argue we need collaborative regional planning entities that can see the bigger picture beyond independent municipal utility districts and implement regional protection of natural resources as well as meeting the needs of development.

Some say we should look to innovations in the past, like the way Galveston pulled itself together after the Great Storm of 1900, to face an uncertain future.

Some say we should pressure our state legislators to take up the cause of protecting wetlands the Army Corps of Engineers doesn’t protect, to make Texas more like Louisiana and Florida, shoring up the authority of the state to enforce protection of our natural resources.

It’s likely these and more strategies will be required to get the job done, experts said.

But before we can commit to protecting wetlands, we must first see them. Rather than seeing grids of concrete and asphalt, we must train our eyes to see the flat lands that surround us and the waters that surround them, experts said.

“When you’re out on the big old prairie, this is your Garden of the Gods,” Jacob said.

“Once you get the nuances of this flat land, it’s like being out on the ocean. One can come to a sense of place.”

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Low Lands, High Stakes

A six-part series — Low Lands, High Stakes — explores challenges and opportunities facing the wetland environment in Galveston County in context of historic flooding, sea rise associated with climate change, a booming population and threatened withdrawal of wetlands protections by the federal government.

Jan. 27: Part 1, The Burden of Flat Land, examines the historic loss of wetlands in this area and why now is the time to look closely at the purpose wetlands serve in Galveston County.

Feb. 3: Part 2, The Ebb and Flow Government Oversight, examines provisions of the federal Clean Water Act designed to protect wetlands; mitigation banking as a wetlands protection strategy; and perspectives from area scientists and government workers on the shortcomings and advantages of the system in place.

Feb.10: Part 3, A Legal Swamp, looks at legal efforts surrounding wetlands protection including U.S. Supreme Court decisions, Texas cases over the past decade and cases being filed by area activists in the face of the Trump administration's proposed changes to wetland protection.

Feb. 17: Part 4, A Wealth of Wetland Riches, explores wetland restoration and preservation efforts in Galveston County, what they have accomplished and the future of wetland protection.

Feb. 24: Part 5, Local Governments in the Gap, examines the role of state and Galveston County municipalities in protecting wetlands while supporting development; what local governments can do to assist private efforts to protect wetlands; and why they should be involved.

TODAY: Part 6, The Future is With Us Now, will explore creative strategies, including public policy, business and citizens' efforts aimed at a future that equally values economic development and protecting wetlands.

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