Kayaking With Altamaha Coastal Tours: Ancient Tidal Forests to Ocean Renewables

By Mary Fairchild
Buffalo Swamp Natural Area/Cathead Creek, a tributary of Georgia’s Altamaha River.

Just as Egypt used slave labor, the channel pictured above was dug out in the 1820s by slaves to shorten the water route to Darien: “Straight as a rifle shot through the cypress swamp and just as narrow.”

“Mary, can you smell that? ... it’s sweet and fresh,” Danny Grissette, owner of Altamaha Coastal Tours incited with a deep breath. “You’re right. It’s fresh and not what you’d expect in a swamp,” I added as we paddled deeper into the ancient tidal forest along the Altamaha River.

Paddling between ancient cypress trees in a globally rare tidal forest.

My first time paddling in Georgia was focused solely on ocean paddling. This year, I was re-visiting Cumberland Island before heading up to the Buffalo Swamp Natural Area with Altamaha Coastal Tours.

Whereas my kayaking had been all about technique and speed, now it was all about “an ecologically important place that you need a boat to see” and the pace was purposefully slow....
“Mary, this area was once a rice plantation...,” Danny began describing the plants and the history and I stopped him with, “I always pictured rice in other countries not here.”

The tidewater ecosystem was perfect for the production of rice. Tides flooded the fields twice a day and the fresh water from the river protected the crops from the saltwater. The abandoned irrigation canals of the old rice plantations provide miles of waterways to paddle. Danny was pointing out a peculiar grass next, “That’s bulrush... are you familiar with that?” “Oh, yeah... the story of Moses,” I replied as I began to look around for the alligators... thinking of the Nile now and it’s crocodiles.

Over 130 rare and endangered species of plants and animals, some found no where else, find refuge among the swamps which totally surround and insulate the Altamaha River. The Altamaha River has been compared to the Nile by its impressive volume which pumps 100,000 gallons of fresh water every second into the sea. Much depends on that amount of water that flows downstream... If there’s too much withdrawal, either due to large municipal wells, or even the cumulative combination of smaller withdrawals, there may be serious problems for the natural vegetation in the area.
The best advocate to Georgia’s environment is the stewardship of citizens who are suspicious of developers and commercialism. As more projects go to sea for renewable energy sources, questions of how wave and tidal power devices might affect marine life are being discussed along Georgia’s coast. Currently, Jekyll Island and Tybee Island are the two locations with the best potential for connecting power from an offshore wind farm to a transmission grid.

Aspen Skiing Company’s Auden Schendler, also a kayaker, reports that he has rethought his position on renewable-energy credits because he believes that RECs do little to encourage new clean-energy development. Most ski resorts make money on real estate today not on lift tickets. (7)

“We need to be careful not to just do things when they truly don’t do environmental good, just because we have that message out there... this lacks integrity. If you bring more people into these natural areas you’ll have more traffic. Do we really want urban sprawl in a rural pristine environment? Soon you will also have water quality issues and air-quality issues there...” Auden Schendler

Plans that truly respect the latest scientific research as well as firsthand experience of local residents should be reflected in support from the central government. It will be an interesting and often contentious challenge ahead as scientists, planners, policymakers, and everyday citizens create and enact plans that truly live up to their green claims. We need to allow more time for thorough review by the local communities and by relevant experts.
In Georgia, data collected by Skidaway Institute of Oceanography scientists indicates an average wind speed of about 16 mph offshore. That’s enough for the Georgia coast to score a respectable four on the seven-point scale used to rank wind. Modern wind turbines are larger than previous generations, some as tall as small skyscrapers. That height makes them an eyesore to some and consequently a sitting challenge. But Georgia’s gently sloping coast (the continental shelf stretches 80 miles off Georgia) offers an offshore solution. The waters 10-20 miles off the coast are still shallow enough to allow the building of turbines, but that distance would put a wind farm out of view from shore. The U.S. has no offshore wind farms yet. Large wind projects proposed near Cape Cod and Long Island are farther along than is Georgia Tech’s but have met with concerns about ruined views and injuries to birds. (1)

The “Environmentally Responsible Wind Power Act of 2005,” proposed to eliminate federal tax incentives for the development of wind power within 20 miles (which is the horizon of a national seashore, a national lakeshore or a national wildlife refuge) of a “highly scenic” area, including all offshore projects. The bill was set up to protect America’s most scenic treasures – national parks, world heritage sites, national lakeshore and seashore sites. The act does not stop construction of the wind power just the federal subsidy of it for giant wind turbines within 20 miles. This helps us to re-think what we are doing to some of our most pristine coastlines.

Freshwater tidal marshes are globally rare and occur along free-flowing coastal rivers and they are vital to sustaining all life on earth. The Altamaha River and its swamps play a vital role in supporting the rich estuary downstream.

Beneath the surface of the Atlantic Ocean exists a thriving ecosystem of fish, invertebrates, seal, and whales. The North Atlantic Ocean has one of the largest plankton blooms in the world every
spring. The change in color of water due to plankton bloom can be seen by NASA satelites. Plankton is one of the most important organisms in the ocean. Although usually quite small, anything that drifts in the ocean’s currents is technically considered planktonic. Jellyfish are considered plankton. If plankton where unable to grow for some reason all life in the ocean would suffer.

The bays, estuaries, and salt marsh along our coasts are considered nurseries for commercial fisheries. The larvae of fish, crustaceans and other marine animals, called meroplankton, if they survive, they will grow into nekton or free-swimming organisms.

“Anytime you alter something that’s so important as a habitat and as a source of nutrients for the other commercial fisheries you’re really playing with fire.” Roylan Hadworth Sealy, Sr. Research Assistant Shoals Marine Laboratory of Cornell University (8)

Freighter headed for Savannah off the northern tip of Tybee Island; a roosting area for shorebirds.

On the northern coast of Georgia, the Tybee Island National Wildlife Refuge is a 100-acre home to waterfowl, crustaceans and marine reptiles. The refuge is not open to the public, but many of the wildlife species from the island are seen near the tourist areas on the island.

Local Tybee Island resident watching the trapped cannonball jellyfish during low tide a few weeks ago.

“Jellyfish thrive in all of the world’s oceans, and there is mounting evidence that human activity in coastal zones, like overfishing, is creating conditions that could cause populations to skyrocket.” The Living Sea (6)
The city of Tybee Island said “yes” to wind energy this past February. A windmill farm with its flashing red lights will be seen from the beach at only 6.8 miles Southeast off Tybee Island. Local communities need some time to stop and think about the locations for clean energy. Usually wind turbines are located in wind farms containing 20 or more, but some can exceed 100. At night, the flashing red lights can be seen for 20 miles. Unfortunately, they work best along scenic coastlines and ridge tops… What do you think? Just 7 miles off the coast of Kent, England, is Thanet Wind Farm, the world’s second largest offshore wind farm since February 2012.

We don’t know whether the underwater acoustics of the turbines harm marine life or how fish and marine mammals might interact with the turbine’s rotors. Many marine species rely on the earth’s magnetic fields for migrating and searching for food and we don’t know yet if electromagnetic fields will repel or attract certain species. Wave, tidal, and hydrokinetic power devices, and the cables that bring electricity they generate to shore produce similar electromagnetic fields and there has not been a lot of research on whether or not marine life might be affected.

By 2020, the state of Maine hopes to produce thousands of megawatts of wind power from turbines on and off shore. The National Wildlife Refuge System hopes to monitor the flight and feeding habits of birds and bats to help with the placement of ocean energy projects.

“Seabird productivity periodically declines on some islands, because the herring disappear and chicks starve. We want to understand where birds are foraging, and what’s going on with fish in the Gulf of Maine.” Beth Goettel

This is a picture at low tide(picture above) in Cobscook Bay, Maine, when I was kayaking there last September. Nearby, Ocean Renewable tidal power was just getting settled in. They have described their tidal turbine as “a giant lawn mower.” Cobscook Bay is a semi-enclosed sea that extends almost 200 miles. The highly convoluted shorelines, intense tidal currents, and the cold waters
all contribute to the areas diverse marine inhabitants. Local fishermen wonder if the areas will be closed off to fishing around the turbines since no one has answered that yet. Another unanswered question is why wind turbines are placed only 10 miles offshore when the University of Maine experts suggested 20-50’ was less likely to interfere with coastal marine fisheries. (Fisherman’s Voice, 9/11; Vol. 16, No. 9) Noise Problems on Maine’s Fox Islands; YouTube: Offshore Windmills Could Harm Maine Lobster.

When the Maine coastal current meets low pressure zones created by the wind energy extraction around the turbines, seafloor water is pulled to the surface and is partly diverted around the upwelling of the cold water taking the lobster larvae with it.

From the mid-19th century through the late 20th century, more than a third of the San Francisco Bay was filled and often built on. The state and federal governments have spent hundreds of millions of dollars since 1996 on projects to restore tidal wetlands and only 1% has been restored so far. It is difficult and expensive to reverse mistakes.

San Francisco Bay and the Sacramento-San Joaquin Delta remain perhaps California’s most important ecological habitats. California’s Dungeness crab, California halibut, and Pacific Salmon fisheries rely on the bay as a nursery. The few remaining salt marshes now represent most of California’s remaining salt marsh, supporting a number of endangered species and providing key ecosystem services such as filtering pollutants and sediments from the rivers.

Estimates of the value of tidal flats have been increasing as scientists understand more about the vital role that tidal flats play in sustaining urban areas as well as marine ecosystems. We have to be stewards of our own resource. We have to look after it and be interested in it. It all depends on how we view things....

I had started “forest gardening” years ago when I had some serious issues with the poison oak on our wooded lot. We don’t have grass to fertilize and cut anymore! I was so impressed with the natural vegetation and trees that, when we purchased our cabin in Wisconsin I dug up any existing grass and filled it in with native plants and trees as well.

Not only is forest gardening much less labor intensive, perennials reseed themselves and the soil enriches itself just like it does in the natural forests with fallen fruit, leaf litter, and other organic matter. I planted clumps of wildflowers in patches of sunlight and researched types of flowers native to my area and planted them. Woodland gardens require relatively low maintenance and falling leaves add to rather than detract from the appearance.

Ocean renewables, which may seem to be an ideal source of non-polluting energy, are appearing to be a much more complicated issue. The debate between ethics and economics, when human activity threatens the existence of species and their habitats, could go on and on.

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8. Rockweed Coalition, Roylan Hadworth Sealy, Sr. Research Assistant, Shoals Marine Laboratory of Cornell University.
9. Marine Ecosystem Dynamics Modeling: Altamaha River
Once a narrow, shallow tidal creek, Skidaway Narrows is now dredged and is part of the Atlantic Intracoastal Waterway which stretches from Virginia to Florida and on the Gulf side all the way around to Texas.

Over the years, Georgia's oyster fishery has greatly declined due to pollution and the introduction of minimum wage laws. In the early 1900s, Georgia produced more oysters commercially than any other state. Before the minimum wage laws went into effect, oyster pickers were paid by the number of oysters picked; with the new law, the incentive to harvest great numbers of oysters greatly decreased. Today it is rare to find Georgia oysters offered on the menu in coastal restaurants, and usually the oysters are brought in from Florida, Texas, or Louisiana.

Kayaking Coastal Georgia has opened my eyes to the fact that there is so much that we do not know about the delicate ecological balance that needs to be maintained and how intertwined we are with it. Georgia was among the first states in the nation to pass legislation protecting its tidal marshlands, which are the most extensive and productive of any on the East Coast—yet it still confronts many challenges.

Three ceremonial shell rings, dating back to 1750 B.C., have been found on Skidaway Island. There have been fewer than 20 of them discovered and all but one are in the southeastern United States, the other is in Ecuador. 56 ancient Timucua Indian sites have been found on the island. The Timucua were targets of mission activities by the Spanish in the 1630s, and
became extinct by the 1760s from European plagues and English-sponsored slaving. Also found on the island are fossil mastodons, mammoths, giant sloths, and native horses, which became extinct.

Shell midden (rings or heaps) are refuse piles consisting mostly of oyster shells which are found throughout the world on coastlines, major rivers, and tidewater flats indicating the favorite localities where Indians subsisted upon oysters, clams, conches, fishes, and animals and birds native to the region. Investigation of these sites is important for understanding how cultures change and for determining the future of such environments.

(Fort McAllister is south of Savannah on the Ogeechee River.)

One of the few untamed rivers in America, the Ogeechee River basin and its drainage to the coast plays a significant role in forming Wassaw, Ossabaw, St. Catherines, Blackbeard, and Sapelo Islands.

Available online, the Georgia Coast Saltwater Paddle Trial 2010 is designed to provide paddlers with a preliminary planning document for paddling trips on the Georgia Coast. The regional outfitters that provided valuable input for this guide include Up the Creek Expeditions, Southeast Adventure, Ocean Motion Surf Co., Altamaha Coastal Tours, Coffee Bluff Marina, Savannah Canoe and Kayak, and Sea Kayak Georgia.

“We use our paddling adventures as a tool to educate and inform others on our dynamic marine environment. No trip to Savannah is complete until you've experienced the unique culture and natural beauty of the Georgia Coast!” Kristin and Nigel Law of Savannah Canoe & Kayak
(Sea Kayak Georgia nature kayak tour on Little Tybee Island with my daughter.)

“Our seasoned guides and naturalists love to interpret the beautiful Georgia coast.”

*Marsha Henson and Ronnie Kemp of Sea Kayak Georgia*

In July of 1968, *Kerr-McGee Corporation* submitted a bid to lease 25,000 acres of Georgia’s offshore land for phosphate mining. They also planned to use dredge from the mining operation to fill and develop 20 square miles of “high grounds” on Little Tybee and Cabbage Islands. At that time, filling was driven by the dominant cultural worldview which had its roots in the industrial era. Today, our ecological worldview has reclaimed our respect for tidal wetlands as a life supporting resource.

*Fort Morris* is surrounded by marsh. There is an approximate 2 mile hike to the campground from the boat dock on the Medway River. Salt marsh is actually considered to be the most valuable land in the world. It provides food for infant shrimp, oysters, clams and many baby fish. Not only is an estimated 20% of the oxygen in the air produced by this zine, but the marsh also helps to purify the waste waters from the cities.
Earth works at Fort Morris where built to defend the site during the Revolutionary War. Shell middens are scattered along the trail behind the earthworks (pictured). When I inquired about shell middens, the park host told me that it is not labeled because it has not been studied yet.

At the University of Alabama, T. Fred T. Andrus, Dept. of Geological Sciences, has had long standing collaborative projects in the Georgia Bight investigating Midden Geoarchaeology. His goal is to assess past human subsistence strategies, season of occupation and resource use, site formation processes, and other questions relating to archaeology. The shell rings of Georgia are the best indicator that complex hunter-gatherers were present on the coast during the Late Archaic.

I rented a bike to ride out to see the ancient shell rings on Sapelo island. Archeologists have found pottery shards on the island that date back 4,500 years, making them some of the oldest artifacts ever found in North America. In 1969, the widow of tobacco millionaire R.J. Reynolds sold 8,240 acres of the island to the state, which became the R.J. Reynolds (Sapelo Island) Wildlife Refuge.

“"The truth is, nearly every island on the Georgia coast, ... having been considerably altered by humans over the past 4,500 years, whether these were Native Americans, Europeans, or Americans..... denoted by the loss of original habitats and native species or the addition of non-native species.....Perhaps the most charismatic yet problematic of non-native animals on any of the Georgia barrier islands are the wild horses of Cumberland Island. These horses are the source of much controversy, which becomes even more apparent whenever anyone tries to apply some actual science to them...”" T. Martin
The town of Darien lies just north of the Altamaha River's mouth. Several miles to the south lies the larger city of Brunswick. St. Simons Island lies on the south side of the Altamaha estuary.

The estuary of the Altamaha River, where fresh and salt water mix, is about 26 square miles in size, one of the largest intact, relatively non-degraded estuary on the Atlantic coast and most of it is easily visited by canoe or kayak year round. Altamaha River Bioreserve is the Nature Conservancy’s protection of the rich biodiversity of the largest undammed river on the Southeast Coast. Included in the BioReserve is the River, tidal freshwater, brackish and saltwater eco-systems.

June 16-22 is the date for 8th annual Paddle Georgia 2012 which is a fundraiser for Georgia River Network and Altamaha Riverkeeper. You can join 350 paddle enthusiasts paddle 108 miles, averaging 15 miles a day, for seven days on the Ohooppe and Altamaha Rivers from
Reidsville to Darien. There will be food, camping, tours of historic sites, entertainment and educational programs.

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Just in the last few years wind and tidal turbines have been introduced to the beautiful Atlantic Coast. In Maine...not everyone believes this is a sound idea.

Harbor seal mating occurs here in the water during the summer months. The pups are born almost a year later in late spring. When the cow is done nursing, she leaves her pup, and goes off to mate again. A little under 3 feet long, the pup has to fend for itself. In about 4 to 6 years, when it is fully grown, it will be about 5 feet long and about 250 lbs. By 1972 seals were almost gone from most of New England. This was the year that the U.S. marine mammal protection act was passed.

This is a picture at low tide in Cobscook Bay, Maine, when I was kayaking there last September. Nearby, Ocean Renewable tidal power was just getting settled in. They have described their tidal turbine as “a giant lawnmower.”

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SEPTEMBER 21, 2011

Kayaking Cobscook Bay and Coastal Maine

By Mary Fairchild
As every mariner knows, to truly discover the character of Maine and her people one must approach them from the water. Christopher Little

At one time, according to maritime superstition, it was believed that having a woman on board your boat angered the seas and that she was an omen of bad luck for everyone. This past week we had a 50-50 ratio of men to women and our group actually was “in search of angry seas”–namely tide races, surf, and swell.

Checking out our route. In our first few days we focused on surfing and rock gardening along the coastal islands off Jonesport, Maine.
Level 4 sea kayak training in Coastal Maine (above).

Throughout our week we worked on surfing, boat handling, play boating, navigation, seamanship, and rescues. Waves picked up to 12' before everyone stopped surfing for the day.
Jonesport is a 12-mile peninsula that is drained by the Indian River. Tides here average 18'. I enjoyed watching the birds that morning sampling all of the newly exposed delicacies. Jonesport’s many uninhabited islands are nesting areas for eider, cormorants, seagulls, razorbills, guillemots, loons, black scoters, grebes and eagles.

Where are we? If you do not use your knowledge of navigation regularly you cannot rely on it. Good piloting and dead reckoning means being constantly aware of your approximate position and then finding ways to check and clarify that position.
Maine mariners are known the world over for their navigation skills. With the added moisture from the Atlantic Ocean, the weather is known to change quickly. There are an average of 59 foggy days every year at Quoddy Head Light near Lubec.

We did not encounter fog during our week but we planned for it. “Pea soup” is said to make for a good test of dead reckoning skills. Although we checked the buoys for tide direction, in a fog navigating is done from buoy to buoy and close attention to your compass course and distance made good. You can listen to the toll of the buoys, the irregular dissonance of the 4 noted bong buoys, and the whistle buoys. One of these sounds would lead you to your next point.

The coastline of Maine contains some 1,700 islands. Geologists call this area a “drowned coast.” The original coastline being only 250 miles is now irregular and indented and over 2,500 miles.

Christopher Little explains, in his book The Rockbound Coast, as he describes the voluptuous grassy bluffs of Maine: “Most of the green clad islands you can see from here are remnants of the resistant granite roots of long gone mountains.”
The effects of the ocean can significantly moderate the weather on the islands and for a few miles inland, depending on the direction of the wind. The water on the coast is part of an upwelling of the Labrador Current that has its origin under the polar ice cap. The air or wind passing over the coastal waters is cooled and humidified before it arrives ashore.

Erin setting up to peel out at the Reversing Falls of Cobscook Bay.
When water pours through a narrow channel, round a headland or over a shallow ledge of rock, it may create a tide race.

According to the Hydrographic Dictionary and Bowditch, a tide race is a strong tidal current or a channel in which such a current flows.
Cobscook Bay is a semi-enclosed sea that extends almost 200 miles. It’s highly convoluted shorelines, intense tidal currents, and cold waters all contribute to the area’s diverse marine habitats. It is part of the Bay of Fundy and is located between Falls Island and Mahar Point in Pembroke, Maine.

(Picture: Cobscook Bay Resource Center.) Falls Island sets up like a cork in a bottle—an obstacle to the tidal flow into the great bays west of Cobscook.

Ben Ellison described his adventure on Cobscook Bay in Maine: Boats, Homes & Harbors, “Well, it turns out that high water and even ‘slack’ low are both fairly hellacious in the narrows around and aptly named Falls Island, and all time periods between look fit only for whitewater kayakers. While the depths are reasonable and the charts amazingly accurate, the upwellings, whirlpools, and whatnot, to say the least, are challenging.... We exited a more sinuous and raucous northern route...That was when an entire family leapt instantly from “basking-on-smooth-warm-ledge’ mode to ‘look-at-the-crazies-shoot-the-rapids’ full attention as we passed by.”
Anne Margaret ferrying across Reversing Falls. Our group used the on-lookers on the boulders and cliffs for a point of reference as we ferried across this incredible area.

Ron glides across. At times we couldn't help but be occasionally distracted by a bald eagle soaring overhead or a group of seals peaking up at us.

As the tide reversed and began to ebb, we began to spot starfish in the seaweed and sand dollars on the sea floor.

Slack tide. While loading our boats at the end of the day, one car stopped by and rolled down their window to sincerely thank us. They really enjoyed watching us play in the rapids.
Wine, women, and song?
Hardly.
Angry seas?
We certainly hope so!

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