Jekyll and Cumberland Islands: Sea Kayak Surf Workshop With Geneva Kayak

By Mary Fairchild
Surfers on Amelia Island shared with me that there are consistent spots along the eastern seaboard that bring in solid waves for three out of the four seasons. Although I was hoping that Hurricane Sandy, which had already delivered swell from Florida to the Great Lakes (Sun Times story here), would keep things interesting, conditions were very flat at the start of our trip.

Our group met on Amelia Island and camped in Fort Clinch State Park for the first night. We had originally planned to paddle up to Stafford Beach on Cumberland Island, but due to the conditions we decided to drive north of Cumberland Island and set up camp on Jekyll Island for our second night instead.

Hiking through maritime forests on Cumberland Island: Mary Fairchild, Paul Redzimski, Ryan Rushton, and Dave Langowski.

I teamed up with three men for this surf workshop who had prepared me for my first kayak expedition in 2007. Ryan Rushton, owner of Geneva Kayak Center, Paul Redzimski, who
taught my my first L1-2 lesson, and David Langowski, who paddled with me on my first expedition and also taught my son and his friends their first kayak lessons. In 2011, Paul, Ryan, and I had some of the biggest surf and swell I've ever experienced off the coast of Maine (blog post here), but this week on Georgia's coast I looked forward to the warm, shallow, rolling surf to play in (Cumberland surf pictures from '11).

After setting up camp, we circumnavigated Jekyll Island and worked in the strong west wind which had steepened up a nice tide race for us as we made our way up Jekyll Sound. We experienced sustained wind for most of our circumnavigation with some gusts up to 25mph and we were all pretty salty afterwards. It was interesting to watch the clusters of salt crumble out of my hair when I touched it that evening.

We left our cars on Jekyll and ended up paddling Jekyll Sound three times and each time the conditions were very different. Short, continual, breaking waves battered up against our boats on our first trip. In the morning as we headed down to Cumberland Island the area was flooding and much of the shoreline was underwater creating very calm conditions like a big bathtub. Then, as we returned on Sunday, I was reminded of the island's important archaeological sites when I was able to see the walls of oyster shells lining the west side of Jekyll Island as more land was exposed.

Jekyll, like Georgia's other barrier islands, was a popular hunting ground for Indians on the coast. The construction of shell rings, or shell middens, is believed to symbolize the conversion of nomadic hunter-gatherers to coastal fisher folk and is considered a pivotal stage in the evolution of pre-European contact culture in the United States.

Georgia's largest golf resort is built on an ancient Indian mound on Jekyll. Jekyll Island is also where, in 1910, draft legislation was written in secret to create a central bank by some of the world's richest men—the U.S. Federal Reserve.
Forbes Magazine founder, Bertie Charles Forbes, wrote: “Picture a party of the nation’s greatest bankers stealing out of New York on a private railroad car under a cover of darkness, stealthily riding hundreds of miles South, embarking on a mysterious launch, sneaking onto an island deserted by all but a few servants, living there a full week under such rigid secrecy that the names of one of them was not once mentioned, lest the servants learn the identity and disclose to the world this strangest, most secret expedition in the history of America finance. I am not romancing; I am giving to the world, for the first time, the real story of how the famous Aldrich currency report, the foundation of our new currency system, was written... The utmost secrecy was enjoined upon all. The public must not glean a hint of what was to be done.” (7)

President Woodrow Wilson: “I am a most unhappy man. I have unwittingly ruined my country... We have come to be one of the worst ruled, one of the most completely controlled and dominated governments in the civilized world. No longer a government by free opinion, no longer a government by conviction and vote of the majority, but a government by the opinion and duress of a small group of dominant men.” (8)

The guys joked with me about the time, on my circumnavigation of Isle Royale in 2009, that I brazenly attempted some rock gardening that I was not supposed to. Fortunately, I gracefully paid attention to their instructions to “turn around” at the right time and I didn’t do anything “too stupid.”

If you want to be good at something you not only have to practice, but sample the work of other people who have been doing it for a long time. It has been proven that most people are not very good at estimating their own competence and that the amateurs are much more likely to think they are the experts than the experts are. The more skilled you are, the more experience you have, the better you can compare yourself to others. (2)

As we paddled down to Stafford Beach on Cumberland Island, dolphins occasionally popped up along the way. We had to keep an eye on boat traffic in St. Andrews Sound where the shrimp boats, in particular seemed to change course and speed frequently. After we stopped for lunch we spotted a couple of horses that came down on the beach to nibble on seaweed as we continued to paddle south along Cumberland Island.

Where we once crossed with a smooth, slack tide on our way down, nice 3-4’ wave sets where rolling in continually across the shoals as we approached St. Andrews Sound on our way back up to Jekyll our last day. Travelling up to Jekyll proved to be a move “worth its
Navigating Bermuda and Cumberland Island: Intrigue, Flux, and Current
Baja Winter Kayak Expedition: Wind, Waves, and Lipstick (El Norte rescue)
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Kayaking Cobscook Bay and Coastal Maine with Geneva Kayak
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Kayaking Georgia's Coast: Tidal Flat Ecosystems, Ancient History, and Stewardship (Shell Middens)
Surfing My First Hole at Piers Gorge
Tybee Island Sea Kayak Surfing
Chicago Kayakers, Environmentalism, and Incentives: What's Good for the Goose Good for the Gander?
Cultural Ecology of the Atlantic Coast: Shell Middens and Ancient Tidal Forests

References

1. Paddle/Play
Cultural Ecology of the Atlantic Coast: Shell Middens and Ancient Tidal Forests

By Mary Fairchild
It was just a year ago that I had first stumbled across some ancient scattered shells by the Carnegie Ruins on Cumberland Island and couldn't stop thinking about them... Cultural ecology is a map of relationships between living things and their group dynamics over time.

The **Dungeness Historic District** on Cumberland Island (pictured) and the surrounding area were inhabited for thousands of years by indigenous peoples who preceded the Tacatacuru. The Tacatacuru occupied Cumberland Island and the adjacent coastal areas of mainland Georgia. Their main village was located towards the southern end of the island. Spanish records indicate there were at least seven other villages on the island and eleven more on the mainland.

*Long-term survival is not just a game played by animals against the environment but also one played against themselves* (14; Gamble 1994: 79).

Diagnostic pottery recovered from the midden deposits indicate prehistoric occupations beginning sometime during the Archaic period (22 00 b.c.) through the Mississippian period (1500 a.d.). (5) Shell rings have yielded worked artifacts of ceramics, organic remains, and rock. Lithics are least common and include objects such as flaked stone tools and hammerstones. The organic artifacts were manufactured from three types of raw materials: bone, deer antler, and shell. The ceramics are typically tempered with sand or fibers, and may be modeled, molded, or coiled. Finger pinching is the most common ceramic decoration. (11)
With the onset of a slow sea level rise some 6,000 years ago, coastal environments began to develop in parts of the southeastern United States, but the earliest records of their use have been lost due to the continuing rise of the sea. (9)

In June, 1970, an extensive shell midden area with Spanish and historic Indian ceramics was found. It seemed likely that this was the site of the Timucuan village of Tacatacuru. The center of the site is 3.6 miles from the NW tip of Amelia Island. The shell midden runs almost a mile along the island's edge with its south end on the Old Thomas Carnegie family estate of Dungeness. (4; Florida Historic Society)

Fossil shark teeth are found along the northern end of Amelia Island especially after the Intercoastal Waterway is dredged. Because shark skeletons are cartilage, all we find for fossils are the teeth. The rule of thumb is 10' of fish per inch of tooth, meaning Megalodons could have exceeded 70' in length. A modern day Great White shark rarely reaches a length greater than 22'.

Three ceremonial shell rings, dating back 1750 B.C., have been found on Skidaway Island near Savannah, Georgia. They are protected in a gated community on a golf course. Along with fossil mastodons, mammoths, giant sloths, and native horses, which became extinct, there have been 56 ancient Timucua Indian sites found on the island as well. 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.
In April, Dan Grissette of Altamaha Coastal Tours led me through an ancient tidal forest on Cathead Creek which is the last tributary of the Altamaha River in Georgia. His love for the ancient trees only added to the intrigue of the area for me.

The largest collection of tree-ring dated bald cypress wood in the world is maintained at the University of Arkansas Tree-Ring Laboratory - this includes the exactly dated samples from the Beidler Forest Sanctuary, South Carolina, and Black River, North Carolina, the two sites with the oldest known living baldcypress trees. Annual growth rings present an excellent opportunity for the development of millennia-long tree-chronologies during the late Pleistocene.

All living creatures require matter and energy to build themselves and maintain themselves and then to reproduce themselves. Since plants live in some kind of environment - they are a reflection of (map of) the environment in which they evolved. (15; Gilsen)

Archives are being created from core samples which are extracted from living trees and cross-sections cut from dead logs that provide reconstruction of past climate and stream flow, the socioeconomic impacts of past climatic extremes, the dating of historic structures, and the identification and mapping of ancient forests.

Bald cypress tree-ring chronologies from southeastern Virginia indicate that Sir Walter Raleigh's Lost Colony of Roanoke Island, the first English settlement in the New World, disappeared during the most extreme drought in 800 years (1587-1589), and that the heavy mortality and near abandonment of Jamestown Colony, the first successful English settlement in America, occurred during the driest seven-year period in 770 years... (1)

While staying in Darien, Georgia, I was fortunate to stop in to find this Guale dugout canoe at the Altamaha River Trading Co. at Mudcat Charlie's. Dugouts are the oldest boats archaeologists have found, dating back about eight thousand years. Some dug-out canoes, like the ones found in Einbaum, Germany date back to the Stone Age. (3)
The Guale Indians had several settlements on nearby Sapelo Island. I took a ferry from Darien and rented a bike to tour the ruins, an ancient shell ring site in particular, located in the R.J. Reynolds Wildlife Refuge (pictured). Archaeologists have found pottery shards on the island that date back 4,500 years, making some of the oldest artifacts ever found in North America.

Shell middens, or rings, are not only found on the coast of Georgia, but South Carolina, and Florida as well. There have only been approximately 20 sites discovered and all but one are in the southeastern United States, the other is in Ecuador. They are circular and semicircular deposits of shell, bone, soil, and artifacts. The construction of shell rings, or midden, is believed to symbolize the conversion of nomadic hunter-gatherers to coastal fisher folk and is considered a pivotal stage in the evolution of pre-European contact culture in the United States. (7)

Whether the shell rings developed incidentally from shells discarded around circular villages, or were intentionally built is still unknown. Some shell rings on Sapelo Island had houses on the crest of the rings suggesting residential use verses ceremonial use. Although the circular shape may imply an egalitarian society, asymmetry in a ring may represent occupation by a non-egalitarian society as well. Open rings are often the highest and widest at the point opposite the opening. High status members of the community would have their houses on the highest point of the ring. When comparing different shapes and sized of the rings from South Carolina to Florida, Mike Russo, an archaeologist with the National Park Service, interprets the differences to having to accommodate larger and more complex (less egalitarian) communities. (13)

Recent investigations suggest that the shell ring sites were arced habitation sites with rings gradually developing from kitchen refuse. But there are still unanswered questions about the ring functions. Postholes are evidence of built structures and pits are common in the shell ring sites. Two different pits have been identified with one being used for roasting.
ashes) and one that most likely was used for steaming food (preserved charcoal). Other pits seemed to be used for underground storage. Some scattered human remains have been found at some South Carolina sites, but human burial pits have not been substantiated. (10)

It has been the geometry of the ancient shell rings that have attracted archaeologists. Some North American archaeologists doubt the true ringed nature of Ecuador location (10). Since the Columbian site dates from several hundred years before the North American occurrences (11), the time difference has been used to suggest the northward transfer of culture, through Caribbean and Atlantic waters, long before the time of Columbus (12). Even if the Columbian site is a true shell ring, the archaeologists still suggest that the rings in the two Americas represent convergence in behavior, among unrelated peoples, when faced with the needs of life in the coastal zone.

While shell rings contain some of the earliest pottery found in North America, the earlier rings were actually built hundreds of years before pottery was adopted in the region (16). The nature of the rings suggests that inhabitants successfully harvested natural resources which allowed nomadic bands to eventually settle at permanent locations. Differences in social organization may be responsible for the difference in approaches to ring building. Social identity, population size, and exploitable resource area likely impacted distribution, density, and layout of ring sites.

Archaeological sites are only the fragmented remains of human activities that reflect an overall adaptive strategy of resource exploitation and control. Data gets destroyed in time by human actions and the archaeological records are imperfect and the measures are imprecise. Stone tools are often the only material remains found when dealing with extinct societies that left no written records.

Related Posts

1. Kayaking With Altamaha Coastal Tours: Ancient Tidal Forest to Ocean Renewables
2. Kayaking Georgia’s Coast: Tidal Flat Ecosystems, Ancient History, and Stewardship

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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.
Picture was taken 20 yrs. ago—“Amazing to be on this river and having it to yourself. It’s still the same today! Some things don’t change.”  

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 satellites. 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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(Razor sharp clusters of oysters exposed during low tide at Skidaway Narrows across from Skidaway Island State Park.)

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 midden is scattered along the trail behind the earthworks (pictured). When I inquired about shell midden, 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.

(Following feral hog hoof prints through R.J. Reynolds Wildlife Refuge.)

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.

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. (17)

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.”

Collision Risk Assessment
Eagle Accidents at Altamont Pass
Tidal Turbines
Noise Problems on Maine's Fox Islands

In spite of the projected benefits, various environmental nongovernmental organizations (NGOs)—local, national, and international—and local fishermen's groups strongly oppose the tidal power plants at this time. Those groups anticipated deep and lasting harm to the tidal flat ecosystem, fisheries, and landscape. Whether the underwater acoustics of the turbines harm marine life and 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.

Paddle/HikePlay
Science/Green
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Tybee Island Sea Kayak Surfing

By Mary Fairchild
Tybee Island is located about 15 miles east of Savannah, Georgia; at the end of an eight-mile peninsula and US Highway 80. Fourteen barrier islands make up Georgia’s coastline and Tybee is the northeastern-most of these islands. Like all the barrier islands of the area, Tybee has a sandy beach on its eastern shore and a tidal salt marsh on its western shore.

Every 24 hours, the Atlantic coast has two high tides and two low tides. Georgia's high tidal variance is preceded only by Northern Maine. The world's biggest tides are in the Bay of Fundy which rises 45 feet. (2)
hour before the tide was to be going out. If we took too long we could have gotten stuck in the mud.

The size of the sandy beach at the southern tip of Tybee Island varies considerably in response to tidal changes. Located between Tybee and Little Tybee Island, is the local ebb tidal delta. High tide is more favorable for surfing. Low tide can yield flat conditions, whereas high tide can produce shoulder-high or better surf on the same day. **The optimum time to catch surf is 2 hours before high tide and about 1 hour after.**

October 27th through the 31st of 2010 was the 9th annual symposium for **Sea Kayak Georgia**. SKG is owned and operated by Marsha Henson and Ronnie Kemp. The cost for the symposium week included five days of training and participants could choose whether to complete the whole week or attend a la carte each day. They also could decide whether or not to work on skills training courses or **BCU** courses or a little of both.
I camped out under the stars comfortably with my fly off for the whole weekend. The following week I did wear my drysuit on a couple of mornings, however, as the temperatures dipped down in the 40s for a few nights. One thing for sure, the water was always nice and warm. Although I did spend one day on the beach in my swimsuit, for kayaking, I was wearing neoprene and layers. Even on some of the warmer days the wind swirling around can be chilling especially if you are wet and you don't have some kind of dry top.

My schedule allowed for me to try two a la carte surf courses at the symposium. I really appreciated the energy and enthusiasm of my first coach, Eila(pronounced Ila) Wilkinson. I wish I had come sooner so I could have heard her talk earlier in the week.
Many of the students in my class had whitewater backgrounds and were unfamiliar with the surf. That's Brad in the white—he was Eila's assistant. Not only does he live in the area, but he also works for Sea Kayak Georgia. Eila Wilkensen and Sonja Ewen, along with Nigel Dennis of Sea Kayaking UK are working with the Outdoor Partnership to bring Kayaking into primary schools on the Isle of Anglesey. Eila did a presentation Wednesday night on her circumnavigation of Ireland.

That's my blue helmet top left. As we paddled parallel to the waves we edged into each wave as it came—the larger the wave the more we edged into it. A kayak is more stable if you are actively paddling it—you have the support of the paddle in the water. We circled and took
turns bracing and leaning into the oncoming waves. In the low brace position as you put some weight on your paddle you will get some support as it drags on the back of the wave. In still water you cannot lean this way, but because the wave is pushing you sideways, the paddle acts like a water-ski and you can put a lot of weight on it.

As the wave passes under your boat, ease off the brace, straighten up the boat and resume paddling. The waves want to push you to the beach, but instead of paddling forward with the wave, stop yourself on the wave with backwards strokes and the wave will slip out from underneath you.

1. If you back-paddle as waves lift the back of your boat, they slip right under you.
2. Sitting up straight when you back paddle slows the boat so the waves slip by you faster.
3. If you paddle forward as the waves come, you can ride them.
4. Leaning forward when you're on the wave speeds the boat for a better ride.
5. Use a stern-rudder for directional control and support.

On Sunday, I had Intermediate Surf with Tom Bergh and Dale Williams. Tom Bergh founded Maine Island Kayak Company in 1986. He is a Master Maine Sea Kayak Guide, Member of Professional Maine Guides Assn, MASKGI, BCU Coach 4, A4, ACA Open Water. Dale Williams is an ACA Advanced Open Water Coastal Kayak ITE and former BCU Coach Five Aspirant Sea. He is also the current owner of The Outdoor Inn on Tybee Island and founder of Sea Kayak Georgia which is now run by Marsha Henson and Ronnie Kemp.

Surfing: facing the shore, position your kayak 90 degrees to the direction of the waves. Then, to catch one...

1. Paddle strongly as it lifts the back of the boat.
2. Leaning forward helps the boat accelerate to stay on the wave.
3. Use a stern rudder for some directional control and support.

This should schuss you nicely forward. If you end up broaching, the wave will slue you sideways. When you're on a wave, the water under the back of your boat is moving faster than the water under the bow of your boat. Unless the push from behind is dead straight, the boat will slue to one side or the other.

If you imagine a clock face, with your bow as “12”—as long as your bow is between 11 o’clock and 1 o’clock you'll stay on the wave. But the moment that your bow veers past 11 or 1, your stern rudder won't keep you straight on the wave. You have only a few seconds to do the following:

1. Get off your stern rudder.
2. Let the boat turn side-to the wave.
3. Edge into the wave and go into a low brace.

This is the exact move you used when waves were shoving you sideways. As the wave passes, straighten up and use sweep strokes to turn back on course.

Prior to this fall, I had only encountered occasional surf on the Great Lakes on my yearly expeditions. Prior to this trip, I did not have a kayak to surf in. We'll see what evolves in the months to come—I have to admit, I've always liked the rough water and Tybee has been a great introduction for me.
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