

2-6-2018

## Ecosystem Restoration After Hurricane Harvey

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### eCommons Citation

Montemurri, Celia and Richard, Sarah, "Ecosystem Restoration After Hurricane Harvey" (2018). *Rivers Institute Blog Archive*. 317.  
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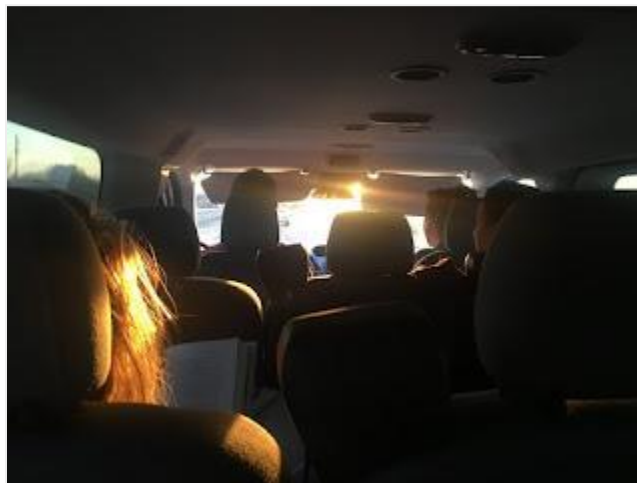
Tuesday, February 6, 2018

# Ecosystem Restoration After Hurricane Harvey

Celia Montemurri and Sarah Richard, 2019 Cohort

**Sarah:** It was about a month before the stress of finals, and anticipation of Christmas break was upon us. I was scrolling through my emails when I noticed an opportunity to attend an 8-day winter breakout in Houston, Texas. After the devastation that Hurricane Harvey brought the city of Houston, one could expect the need for house repairs and cleanups. Instead, this trip was seeking individuals willing to help with conservation and restoration efforts. My roommate, and fellow Stew, Celia, has taught me nearly everything I know about the importance and great need for ecosystem restoration. I quickly forwarded her the email stating quite bluntly, “DUDE. We have to do this.”

**Celia:** Sarah’s email about this breakout trip found me at the perfect time. My grandma lives just outside Houston, and her house was three feet deep in water after the hurricane. I felt very helpless being so far away during the devastation, and couldn’t stop thinking about all the other people displaced, as well as those who lost their lives. I wanted to do something. Participating in environmental service that helped people at the same time was an opportunity I couldn’t pass up. When the morning came to embark on our 17-hour voyage to Texas, I was stoked!



**Sarah:** Environmental service is something I feel is often under-appreciated. A frustrating facet for anyone in the field, the impact of direct services such as disaster relief often receives more praise and support than preventive services in conservation or regulation.

**Celia:** The journey to Texas was long, but the company was good. Sarah slept for 80% of the ride (Sarah: Hey, I was tired!), so I had the chance to get to know the six other members of our group. We comprised of two chemical engineering majors, two mechanical engineering majors, one sociology major, one biology major, one environmental biology major (that's me!), and our fearless leader Emily, a biology masters student in Dr. Chelse Prather's Lab. A modge-podge group, we were all excited for the opportunity to learn, reach out, and make a difference.

**Sarah:** We arrived in Galveston, where would spend our first night of camp. The fact that we were camping nearly the entire the trip, was something that initially attracted me to sign up. Truly immersing yourself in the natural environment you are working in provides an opportunity that the luxury of a warm shower and hotel heater could not. Sleeping, eating, and sharing fellowship under the stars with the water just yards away offered a unique spiritual experience to reflect on the work of each day.



**Celia:** While at camp we took advantage of our little free time to walk on the shore of the gulf. The sunny skies and cool breeze were a nice break from the below zero weather we had been experiencing in Dayton just days before. One thing we immediately took note of, however, was the sea foam. There was a lot of it on the sand, and when we bent to take a closer look, a strange, iridescent shine was immediately apparent. A little research soon told us why. Many of us remember the tragic Deepwater Horizon oil spill of 2010. As it turns out, oil spills on offshore rigs are not an uncommon occurrence, although they usually don't occur on that scale. According to the Houston Chronicle, "Galveston Bay has averaged 285 spills a year since 1998." In addition to the oil, agricultural nutrient runoff from the Mississippi River is contributing to an 8,776 square mile dead zone in the gulf. Consequently, the immense volume of decomposing algae contributes to the foam washing up on the shore. This was a sad sight for all of us, and strengthened our resound to do what good we could for the environment while we were there and after we left.



**Sarah:** This being said, we did take the opportunity to take a swim in the gulf. I have certainly made better, or at least warmer decisions, but after a long day of work, it was worth it, if just for the giddy laughs.

**Celia:** The University of Houston Coastal Center was an amazing site to kick off our week! The entrance on the side of highway 2004 emphasized its majesty, as it greatly juxtaposed its industrial surrounding. The coastal center consists of over 300 acres of coastal tall grass prairie, just like the ones that would have covered much of the state of Texas before European settlement in the 19th century. Now, less than one percent of Texas's coastal prairies remain, due to Texas' agriculture industry and urban development.



Prairie interspersed with invasive Chinese tallow tree

Invasive woody species also pose a large threat to the native coastal prairie ecosystems. The prairie at the coastal center is being invaded by *Triadica sebifera*, or Chinese Tallow. Chinese Tallow is a beautiful tree with white bark and heart-shaped leaves. Native to Eastern Asia, it was brought to North America for its use in the soap making industry. Our two days at the coastal center revolved around stopping the advance of this tree into the prairie. Armed with loppers, handsaws, one large, somewhat scary ax-like tool, and a machete (Sarah's agent of choice), we began our crusade. The work was difficult and very tiring, but at the end of the day, taking a step back to observe the full scope of our destruction was rewarding. Plus, I worked muscles in my arms that I didn't even know I had.

**Sarah:** During the first two days at the Coastal Center, I was overwhelmed with the amount of information to take in. I admittedly never gave much thought to these grasses, but in reality, they are environmental warriors. With root systems reaching heights much greater than the average human, they are disputably the best natural defense against abrupt flood waters. Not to mention a host of many vital insects and animals. Having the chance to explore one of the largest preserved prairies in the area was a huge awakening for the importance of environmentally conscious zoning laws and regulatory policy.



Intact non-tallow invaded prairie at the University of Houston Coastal Center

**Celia:** Our third day in Houston, we arrived at Kolter Elementary School and were greeted by the smiling face of Ahlene Shong, the Kolter Pocket Prairie Guardian and a retired science teacher at Kolter. Ahlene's passion for the environment carried over to her teaching when she proposed putting a pocket prairie on the school's property to teach children about native Texas ecosystems. What a cool lady, right?



Jennie Katharine Kolter Elementary School was badly damaged by flooding during Harvey

Luckily, Ahlene connected with Jaime González, the Community Conservation Director at the Katy Prairie Conservancy, who helped her get support for her project. Jaime combines restoration efforts with education at over 25 pocket prairies through the Prairie Builders Schools & Parks program, so he and Ahlene made the perfect team.



Buffalo Bob watching over the Kolter Elementary Pocket Prairie

Jaime and Ahlene taught us how to give the prairie a “haircut,” cutting down the tall grasses to simulate grazing by bison, which would be a normal occurrence in this ecosystem (but unfortunately no longer exist in Houston).

**Sarah:** The second pocket Prairie we visited was on the grounds of the world-renowned MD Anderson Cancer Center. The perfect model of what a Pocket Prairie can offer a city or community, the prairie itself covers around 2 acres of land in the heart of Houston's medical hub. It offers patients and their families a space for natural healing and opportunity to briefly escape thoughts of their sickness. In addition, the prairie constitutes a living classroom to educate the public on the importance of natural drains in the hope to inspire future restoration in the concrete jungle of downtown Houston.



Seeding and transplanting at MD Anderson Cancer Center Pocket Prairie

We were met by Jaime again, who led us in the pursuit to prepare for the spring growing season- by seeding and transplanting native wildflowers and grasses. An hour before our work day was to be over, it began to downpour. After running to the van to avoid being the perfect target of a lightning bolt, I took this opportunity to reflect on the strength of nature. Prairies are resilient- essentially unaffected by the devastation that left many in despair just months prior to our visit. Last semester we closed our River Steward seminar with a lecture, or rather dialogue, with Professor Bien from the philosophy department. We discussed the physical properties of water and its fluidity contrasted with its incomprehensible strength. Water can be quite ruthless in its destruction, leaving humans entirely defenseless. I strongly believe, however, that like many other aspects of our natural surroundings, water is not meant to be controlled, especially in the capacity it is today. This can be seen in the destruction and disturbance of habitat due to rerouting and damming rivers. How do we replicate water in our own daily lives? How can we challenge ourselves to put better trust in the natural form of our water systems?

**Celia:** This is something that I struggle with in our world today. There seems to be such a focus on *controlling* nature, and our society's viewpoint of nature has changed from a nurturing, providing mother, to a wild, uncontrollable force. Our patriarchal systems push us to micromanage, restrict, and dominate our surroundings, and all the while we do this, we create infrastructure which may bring immediate economic benefits, but which ultimately leads to the destruction of not only human life and dignity, but the lives of all other species.

**Sarah:** Our final day of service was spent at the Buffalo Bayou Park, a beautiful 16-acre park stretching along the banks of Buffalo Bayou. The park took a pretty hard hit during Harvey. Sediment from upstream was dropped off on the banks of the Bayou (just a Texan word for river) reaching heights as tall as me! The last few months have been spent removing this debris and restoring the park. We were tasked with removing dead trees with the help of an eager group of high school students from the area.



The mission of this park to connect to Downtown Houston around the river inspired me to imagine the possibilities for the Dayton Riverfront Master Plan. As former Mayor Parker stated, "Houston owes its very existence to Buffalo Bayou. Today, Buffalo Bayou Partnership is taking a neglected waterway and transforming it into an attractive and inviting gateway into downtown and beyond." How relevant to the work of the Rivers institute and stewards program!

Last semester I took a class entitled Cities and Suburbs with Dr. Felix Fernando. In this course, we looked at cities as an environmental function. One of my favorite sections within this unit was the exploration of Urban ecosystem services. These services include: provisional, regulatory, cultural, and supportive. Something I found Buffalo Bayou Park to model very well. It is moments like this, where I see classroom knowledge come to life, that make me adrenalized to be in this field. Cities have the possibility to be radically sustainable places to live, work, and play. What an exciting position for Dayton to be in as we consider the future of growth of our beloved city (the inclusive, non-destructive, uplifting, kind of growth).



Buffalo Bayou Park

**Celia:** Our trip to Houston was an experience I will never forget. I gained a tremendous insight about ecology, conservation, and community in a way that can only be understood through experience. In addition, I gained a new sort of hope- hope that there are people out there who are doing their best to save the environment, and hope that there is a job out there for me where I can truly make a difference doing something I am interested in and passionate about. In the future, I am excited to take the new knowledge I have to guide my life vocation.

**Sarah:** I packed up my great list of new perspectives, connections, and experiences and we began our 1,000-mile journey back home. As a mechanical engineering student, I strive to have a better understanding of the decision-making process. Opening my mind to the importance of ecosystem restoration and conservation has allowed me to consider the responsibility that industry and city governments have in designing and supporting communities with natural

systems at the center of conversation. I challenge our readers to consider just slowing down and taking the time to listen. Listen to one another. Listen to the concerned. Listen to nature.



Monumental Moments” a series by Anthony Thompson Schumate, 2015



Learn More:

<http://buffalobayou.org/>

<http://www.houstonchronicle.com/news/science-environment/article/Oil-spills-in-Galveston-Bay-a-routine-occurrence-5381283.php>

<http://nsmn1.uh.edu/eih/old-site/>

<http://www.noaa.gov/media-release/gulf-of-mexico-dead-zone-is-largest-ever-measured>

<https://oceanservice.noaa.gov/facts/seafoam.html>

<https://plants.ifas.ufl.edu/plant-directory/triadica-sebifera/>

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