The BFA October 2016 NEWSLETTER

Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

Our natural landscape can be very resilient. Hurricane Katrina revealed just how important emergent grasses were to low lying coastal areas when wind driven waves were slowed in areas where they remained. However, in areas where grasses were absent or thinned the waters took out everything (homes, trees, roads, etc.) in their path. Coastal engineers really took notice of this difference. Current research is focusing attention on the level of resiliency along natural

shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

While the science and its appreciation are still developing, many universities that have offered degrees in civil and structural engineering are now adapting environmental engineering curriculums to blend the structure of engineering with the hydrology and ecology of the specific geographic landscape. The old school method of armoring used along many of our creeks, rivers and bridge supports are unfortunately outdated and ill suited for our landscape. The Gulf Coastal Plain is made up of highly eroded sandy soils held together by a network of roots and plants (adapted to that environment) our region of the Gulf Coastal Plain does not contain rock. Yet most every coastal and creek restoration project uses thousands of tons of rock.Why rock? Basically it's cheap. Use of rock in our region - always causes problems downstream. It's like kicking the can down the road.

On Eglin Air Force Base, engineers are addressing erosion and gullies from the past; many old roads and a train trestle have created horrendous erosion problems where creeks and swamps were accidentally fragmented. On a recent visit with area biologists and engineers – we were encouraged to see engineered restoration conducted utilizing materials from the local landscape versus more hardening. Native species from the local region were introduced during dormant seasons and allowed to acclimate to conditions. This holistic approach towards restoration projects is less expensive, more attractive to important wildlife such as birds and insects, and is capable of self healing – thus making the area more resilient.

Natural berms and stream terraces, built up with roots from trees, trap enough material to allow dense vegetation to gain a foot hold. This in turn restores the natural hydrology of the system. The healthy natural hydrology, flow rate and volume, of the streams ultimately removed the finer sand grains to reveal the gravel which had been buried by sediment in many of creek beds. The true test came duringthe April 2014 floods. These natural systems came through that event with little harm; what's more, they were able to re-vegetate themselves with their own seed stock. Can you say resiliency?

What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

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National Seashore) or owned and managed by the largest landowner in Northwest, Florida, namely the US Military.

A recent analysis by the University of Florida on behalf of 1,000 Friends of Florida, found that over the next five decades the Sunshine State will grow all over the map, blanketing as much as one third of the state in development. Much of the growth will center on the Interstate 4 corridor in Central Florida, followed by urban centers in Northeast and South Florida. [http://1000friendsofflorida.org/florida2070/]

Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

Let's start with **Roads[1]**. The 16 October Pensacola News Journal points out that four of the 50 deadliest roads in the county pass through Escambia and Santa Rosa County. The article identifies I-10, US 90, US 98, and US 29 to be among the most dangerous roads in the country based on fatal accidents per 100 miles. Interstate-10 ranked No. 4 for three categories: deadliest road for 100 miles, darkest roads (natural areas mentioned earlier) and accidents involving a drunk drivers.

The Florida Department of Transportation (FDOT) is the state agency which oversees state roads and happens to be well funded, thanks in part to the gasoline tax which we all contribute to when we buy gas. When FDOTdesigns a new bridge (3 mile bridge), widens an existing road, or creates an entire new connecter road – their activities are strongly supported by elected officials, county commissioners, developers, admirers and advocates. This type of work creates many jobs so is generally a welcome site to communities where they are working as it brings in a workforce which helps drive the economy. If these improvements were designed and completed with an understanding of how the natural system functions, we could have economic growth and a healthy ecosystem to enjoy for generations.

Many of the deadliest roads in our area are currently under construction for road widening. Where are the extra lanes coming from? On I-10, the vegetated median swale is being dug up and filled in with mountains of rich red clay before being compacted and covered in asphalt. Those vegetated median swales serve an important environmental function by capturing the stormwater run-off from the road and holding it until it can percolate into the ground and not enter surface water still carrying sediments and run-off. The FDOT and their army of engineers are addressing this shortfall by building stormwater ponds along the stretch of the widened road. These highly engineered ponds are intended to function in a similar manner - that is holding water until it can percolate into the ground. And while these stormwater ponds are

designed to capture sand and clay, the system won't be able to trap and treat sediments, nutrients and stormwater in place (through phytoremediation – the ability of plants to take up contaminants) or support wildflowers for many pollinators as the living system does.

Living systems provide ecosystem services; for instance, trees drink groundwater, release moisture through transpiration which cools the air, they make their own food through sunlight and produce oxygen. A healthy mature tree or grove of native trees provide food for our bird friends that use our air space (much like the military) on their daily, seasonal and migratory routes.

The New 3 Mile Bridge preliminary phase I assessment is underway and let us hope that there are open lines of communication (two-way dialogue) between the FDOT engineers who are working on the bridge design, local biologists (Deadman's Island) and geologists who will factor in the important sediment transport system that feeds our beautiful coastline.

That two way conversation was not available to the Monterey Shores Community earlier this year when FDOT was working on I-10 between Escambia Bay and Avalon Blvd in Santa Rosa County. Our rainy spring and summer brought some heavy downpours (typical in our area which receives 65" of rain annually) which transported a lot of red clay into a tributary of Indian Bayou. Residents continue to be upset by this unnecessary impact to their bayou and its fragile ecosystem. The FDOT does not have a plan to protect Indian Bayou from this road expansion or the additional run off that will enter the bayou. Promises to mitigate elsewhere don't really interest the community, since they are living on a beautiful system which is in a relatively natural state and self healing. The clay that ran into the bayou and turned it red was a clear violation of the Clean Water Act; where's the enforcement?

Exactly which agency or entity is protecting our water quality and natural resources? Santa Rosa County currently does not have a commissioner in this district. The Water Management District issued the permit to FDOT. The FL Dept of Environmental Protection is a little short handed at the moment (the NW District currently does not have a senior biologist or chemist to oversee the 16 counties in the panhandle) and likely trusted their sister agency to protect the surface waters that these construction projects cross. But, like some sisters, these agencies don't communicate well. The US Environmental Protection Agency once had authority over the Clean Water Act but somehow believed FL when FL promised to self regulate. The problem with this delegation is that our state agencies were directed not to regulate (the state has encouraged permitting and development to jump start the economy) which is why we are having many of the water quality problems in Florida coastal waters (BFA July 2016 Newsletter).

All those wide and new roads will undoubtedly lead to all those **New Homes[2].** Many counties depend on property taxes for their bread and butter money (their daily budget), so it is to their benefit to allow - even encourage development (perhaps by offering tax incentives) in their jurisdictional areas to compete with neighboring counties or states – which secures growth of their county and more money in the coffers.

Hurricane Matthew zipped past the East Coast of Florida earlier this month, staying far enough offshore to soak us with rain and little else, but the states of Georgia, South and North Carolina felt the brunt of the system. Worse, many older communities which never experienced flooding before – were now being flooded. Why are these communities suddenly experiencing flooding? Increased development combined with hardening of the surface reduces the available areas for water to percolate into the ground. As a result surplus surface water runs off to the lowest point of the landscape, usually to a natural system like a creek, bayou, river or bay which creates the catastrophic flooding we observed.

During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

We didn't know then, what we know now – but why aren't we applying new and proven technology to the manner in which we develop our landscape? Ideally, we should focus our efforts on how we avoid (not re-engineer) low lying areas, leaving riparian zones in tact so they can function as designed in nature. Progressive approaches applied now can avoid watershed impairments in the future. Case in point, Escambia County has a long range plan to connect I-10 at Beulah to a new road, currently referred to as the Beltway that will eventually tie into Quintette Road on the east side of Hwy 29. (http://www.northescambia.com/2012/08/new-beltway-could-link-i-10-north-escambia-santa-rosa)

Pull out a map and take a close look at the area, and you'll notice a few things. Much of the landscape in this western portion of the county is low lying, prone to flooding and in a natural state. Subdivisions along Eleven Mile Creek which were built in the Riparian Zone (some before we knew better, some not) had 4-5' of water flowing through their homes during the 2014 flood. There are some noises to buy back the homes (taxpayer money), demolish them and try to reconnect the floodplain. That's a step in the right direction. A bigger jump would have been to curtail development in sensitive areas in the first place. And yet, this Beltway will encourage development in many of these rural low lying areas.

Escambia County is already kicking the can down the road for the next generation to pick up, or in this case clean up. Builders and their entourage are planning new communities that will take 1,200 acres out of a natural state and transform it into 14,000 cookie cutter homes. One acre of natural land doesn't generate much money for the county, but one acres with ten homes creates a nice little property tax base for the county. Perhaps some of this increased revenue could be invested upfront in the form of better planning to avoid the mistakes we continue to repeat.

The beltway will cross several creeks including Cowdevil Creek and Jack's Branch. Those waterways discharge into the Perdido River. The Perdido River is an Outstanding Florida Water, which by statute (if anyone would bother to enforce the law) should not have its water quality negatively impacted in **any** way. Much of the area as seen in aerial maps indicates a large riparian zone. So why do we need all the **new communities**[3], **new shopping centers**[4] and growth?? Because the Navy Federal Credit Union Expansion will create 10,000 jobs when completed and the new proposed Tech Park at Outlying Field 8 (OLF-8) are all providing **job growth and economic opportunities**[5]**.**

Ironically, the proposed Beltway, the Navy Federal Credit Union, OLF 8 and Bristol Park are all located in the Perdido Watershed, the latter three developments are located within the Eleven Mile Creek Watershed which used to have the nickname 'Stink Creek', before IP removed the paper mill effluent from direct discharge into Eleven Mile Creek to overland discharge onto manmade wetlands and into Tee and Wicker Lakes which enter Perdido Bay.

A well laid out plan with adequate buffers and roads complete with bridges that span the riparian zones may accommodate the proposed influx of people, roads, homes, fast food places, etc. to higher ground in a low lying part of county, but without a well thought out plan we will continue to cause ecological impacts to our area waters. The search for funding to correct past problems is always highly competitive, with the lowest bidder often winning the contract. These contractors often lack the skill set or knowledge to design and engineer a functioning ecosystem. These 'Random Acts of Restoration' are a nice thought, but rarely can they allow a living ecosystem to recover to a naturally functioning and healthy system.

The RESTORE Act has allotted future funding for projects in several NWFL counties that were impacted by the 2010 oil spill. A lengthy and committed process was convened with citizens appointed to a Board for several years to hear from our community and better understand the community's needs and desires. A proposal to restore the entire Carpenter Creek-Bayou Texar

Watershed has warranted a lot of attention. The proposal knits together many of the conservation goals visualized by groups such as Audubon, the Native Plant Society, the Bream Fishermen and the many locals who grew up remembering the bayou from their youth. The Concept Paper, on the BFA Website uses the many years worth of important water quality data collected by our organization to tell the story of changes over time and how that correlates to community growth and sprawl. This proposal sets the stage for students, citizens, organizations and communities alike to engage by learning and participating in understanding a land ethic for future generations.

> ***"Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest."***
>
> ***~ Aldo Leopold Conservation Economics (1934)***

This project has all the components to unite our community and this community has the talent, interest and knowledge to make this restoration a complete success. The Carpenter Creek Restoration Project will serve to showcase the community living in Escambia County and the City of Pensacola how reconnecting the community to the local waters can serve to enrich our lives, our economy, our watersheds and most importantly our natural resources.

Stuff you might like to know:

- City of Pensacola Councilwoman Myers will be hosting a town hall meeting focused on Carpenter Creek. The meeting will be held on Tues, 1 November at 6:30 PM at Cokesbury United Methodist Church (5925 North 9th Avenue)

- The Gulf Estuarine Research Society (GERS) will be hosting their fall 2016 meeting at the Pensacola Beach Hilton Garden Inn on 3-5 November 2016. The meeting theme is **Connections across the Gulf Coast: Wetlands to Watersheds and Waterways**. The meeting will highlight interconnections among wetlands, estuarine and coastal habitats by bringing together scientists, researchers and students from universities, agencies, research labs and other organizations across the Gulf coast and its watersheds. For more information, visit http://www.gers.us/2016-meeting.html

- Mike Lewis, researcher at USEPA recently published a report entitled: Environmental Quality of the Pensacola Bay System: Retrospective Review for Future Resource Management and Rehabilitation. The report can be found and downloaded from the BFA Website.

- A remarkable publication in Nature recently provided evidence that marine flowers, like those found in seagrass systems, may depend on small invertebrates like amphipods and other small crustaceans to pollinate these underwater flowers. Much like the role that many insects and small mammals accomplish to successfully pollinate terrestrial flowers, now new evidence points us to the importance of the small invertebrates that

evidently play a major role in pollinating underwater grasses. This remarkable finding is a testament to just how important all the components of a healthy ecosystem really are, and just how much more we have yet to learn. (*Note, many invertebrates are highly sensitive to impaired waters*) http://www.nature.com/articles/ncomms12980

- The FL Fish & Wildlife Conservation Commission secured a large Gulf Environmental Benefits Fund Grant to collect concurrent data among six large NW FL Bays in which researchers hope to answer why seagrasses are not returning to areas historically known to have grasses. Jane Caffrey from UWF, CEDB has overseen the research in the Escambia/Pensacola/East Bay & Santa Rosa Sound with an army of students. I have been fortunate to participate in this research and have had the opportunity to observe many wonderful things:
    - This week marked 26 days without rain and in Pensacola Bay near the Three Mile Bridge during very calm wind conditions we were able to see a Secchi Disk (an instrument to determine water clarity) for 5.5 Meters (which is roughly 18').
    - While many 'old timers' recall a time (1930's, 40's, and 50's) when the bay water was 'gin clear' and you could see seagrass meadows on a white sandy bottom like a mosaic across the bay – these days the deeper parts of our waterways are covered in a thick layer of fine mud.
    - Through the BFA WQ Sampling Program, we visit many creeks, rivers, and bayous that enter these bay systems. The 'old timers' recall when the creeks ran deep and cool, the banks were held in place by roots and the creek bottoms were dominated by gravel. Today the creeks are smothered by sand and the finer particulates have settled in the bayous and the bays.
    - In our scouting trips throughout the bays and sound we found hope in little pockets of seagrass trying to recover, we observed large schools of menhaden and mullet moving through the area, and we observed first hand just how resilient the ecosystem can be when allowed to recover.
    - There appeared to be a direct correlation between a natural shoreline and the observation of seagrass present. Areas with bulkheads and armoring were less apt to have grassbeds.
    - Stay tuned for a public meeting on the findings of this research in 2017.

- Lastly, in the July 2016 BFA Newsletter we reported a concern for moving the treated effluent from Hidden Creek in the Holley Navarre portion of South Santa Rosa County which discharges to East River Bayou in East Bay TO Williams Creek, which empties into Santa Rosa Sound. Earlier this month, 60,000 gallons of raw sewage spilled from a broken pipe into Williams Creek. Our seagrass beds and creeks systems will never recover to their full potential until we make certain that these accidents no longer occur. http://navarrepress.com/headlines/navarre-wastewater-leak/

We hope you can make the Fall Picnic, Saturday, 12 November 2016

BFA puts out a quarterly newsletter and hosts 4 general membership meetings a year.

The Bream Fishermen Association is a not-for-profit organization dedicated to the promotion of the conservation responsibilities as well as the recreational enjoyment of fishermen, hunters, campers and related outdoorsmen.

It is the objective of the BFA to support, develop, and implement programs that will:
1) Improve the quality of our environment;

2) Protect and maintain our present wilderness type lakes, rivers, swamps, marshes, bays, forests, and beaches in their natural undeveloped state; and

3) Advance the causes of plant, marine, and wildlife preservation.

Membership is open to all individuals who support these objectives. Please join the BFA by sending us your contact information (name, mailing address, phone, and email) be sure to notify us if you prefer to receive notices and announcements by mail or email, and $10 annual dues to our mailing address:

Bream Fishermen Association

1203 N. 16th Ave, Pensacola, FL 32503

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During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

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Watershed has warranted a lot of attention. The proposal knits together many of the conservation goals visualized by groups such as Audubon, the Native Plant Society, the Bream Fishermen and the many locals who grew up remembering the bayou from their youth. The Concept Paper, on the BFA Website uses the many years worth of important water quality data collected by our organization to tell the story of changes over time and how that correlates to community growth and sprawl. This proposal sets the stage for students, citizens, organizations and communities alike to engage by learning and participating in understanding a land ethic for future generations.

> ***"Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest."***
>
> ***~ Aldo Leopold Conservation Economics (1934)***

This project has all the components to unite our community and this community has the talent, interest and knowledge to make this restoration a complete success. The Carpenter Creek Restoration Project will serve to showcase the community living in Escambia County and the City of Pensacola how reconnecting the community to the local waters can serve to enrich our lives, our economy, our watersheds and most importantly our natural resources.

Stuff you might like to know:

- City of Pensacola Councilwoman Myers will be hosting a town hall meeting focused on Carpenter Creek. The meeting will be held on Tues, 1 November at 6:30 PM at Cokesbury United Methodist Church (5925 North 9th Avenue)

- The Gulf Estuarine Research Society (GERS) will be hosting their fall 2016 meeting at the Pensacola Beach Hilton Garden Inn on 3-5 November 2016. The meeting theme is **Connections across the Gulf Coast: Wetlands to Watersheds and Waterways**. The meeting will highlight interconnections among wetlands, estuarine and coastal habitats by bringing together scientists, researchers and students from universities, agencies, research labs and other organizations across the Gulf coast and its watersheds. For more information, visit http://www.gers.us/2016-meeting.html

- Mike Lewis, researcher at USEPA recently published a report entitled: Environmental Quality of the Pensacola Bay System: Retrospective Review for Future Resource Management and Rehabilitation. The report can be found and downloaded from the BFA Website.

- A remarkable publication in Nature recently provided evidence that marine flowers, like those found in seagrass systems, may depend on small invertebrates like amphipods and other small crustaceans to pollinate these underwater flowers. Much like the role that many insects and small mammals accomplish to successfully pollinate terrestrial flowers, now new evidence points us to the importance of the small invertebrates that

evidently play a major role in pollinating underwater grasses. This remarkable finding is a testament to just how important all the components of a healthy ecosystem really are, and just how much more we have yet to learn. (*Note, many invertebrates are highly sensitive to impaired waters*) http://www.nature.com/articles/ncomms12980

- The FL Fish & Wildlife Conservation Commission secured a large Gulf Environmental Benefits Fund Grant to collect concurrent data among six large NW FL Bays in which researchers hope to answer why seagrasses are not returning to areas historically known to have grasses. Jane Caffrey from UWF, CEDB has overseen the research in the Escambia/Pensacola/East Bay & Santa Rosa Sound with an army of students. I have been fortunate to participate in this research and have had the opportunity to observe many wonderful things:
    - This week marked 26 days without rain and in Pensacola Bay near the Three Mile Bridge during very calm wind conditions we were able to see a Secchi Disk (an instrument to determine water clarity) for 5.5 Meters (which is roughly 18').
    - While many 'old timers' recall a time (1930's, 40's, and 50's) when the bay water was 'gin clear' and you could see seagrass meadows on a white sandy bottom like a mosaic across the bay – these days the deeper parts of our waterways are covered in a thick layer of fine mud.
    - Through the BFA WQ Sampling Program, we visit many creeks, rivers, and bayous that enter these bay systems. The 'old timers' recall when the creeks ran deep and cool, the banks were held in place by roots and the creek bottoms were dominated by gravel. Today the creeks are smothered by sand and the finer particulates have settled in the bayous and the bays.
    - In our scouting trips throughout the bays and sound we found hope in little pockets of seagrass trying to recover, we observed large schools of menhaden and mullet moving through the area, and we observed first hand just how resilient the ecosystem can be when allowed to recover.
    - There appeared to be a direct correlation between a natural shoreline and the observation of seagrass present. Areas with bulkheads and armoring were less apt to have grassbeds.
    - Stay tuned for a public meeting on the findings of this research in 2017.

- Lastly, in the July 2016 BFA Newsletter we reported a concern for moving the treated effluent from Hidden Creek in the Holley Navarre portion of South Santa Rosa County which discharges to East River Bayou in East Bay TO Williams Creek, which empties into Santa Rosa Sound. Earlier this month, 60,000 gallons of raw sewage spilled from a broken pipe into Williams Creek. Our seagrass beds and creeks systems will never recover to their full potential until we make certain that these accidents no longer occur. http://navarrepress.com/headlines/navarre-wastewater-leak/

We hope you can make the Fall Picnic, Saturday, 12 November 2016

BFA puts out a quarterly newsletter and hosts 4 general membership meetings a year.

The Bream Fishermen Association is a not-for-profit organization dedicated to the promotion of the conservation responsibilities as well as the recreational enjoyment of fishermen, hunters, campers and related outdoorsmen.

It is the objective of the BFA to support, develop, and implement programs that will:
1) Improve the quality of our environment;

2) Protect and maintain our present wilderness type lakes, rivers, swamps, marshes, bays, forests, and beaches in their natural undeveloped state; and

3) Advance the causes of plant, marine, and wildlife preservation.

Membership is open to all individuals who support these objectives. Please join the BFA by sending us your contact information (name, mailing address, phone, and email) be sure to notify us if you prefer to receive notices and announcements by mail or email, and $10 annual dues to our mailing address:

Bream Fishermen Association

1203 N. 16th Ave, Pensacola, FL 32503

The BFA October 2016 NEWSLETTER

Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

Our natural landscape can be very resilient. Hurricane Katrina revealed just how important emergent grasses were to low lying coastal areas when wind driven waves were slowed in areas where they remained. However, in areas where grasses were absent or thinned the waters took out everything (homes, trees, roads, etc.) in their path. Coastal engineers really took notice of this difference. Current research is focusing attention on the level of resiliency along natural

shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

While the science and its appreciation are still developing, many universities that have offered degrees in civil and structural engineering are now adapting environmental engineering curriculums to blend the structure of engineering with the hydrology and ecology of the specific geographic landscape. The old school method of armoring used along many of our creeks, rivers and bridge supports are unfortunately outdated and ill suited for our landscape. The Gulf Coastal Plain is made up of highly eroded sandy soils held together by a network of roots and plants (adapted to that environment) our region of the Gulf Coastal Plain does not contain rock. Yet most every coastal and creek restoration project uses thousands of tons of rock.Why rock? Basically it's cheap. Use of rock in our region - always causes problems downstream. It's like kicking the can down the road.

On Eglin Air Force Base, engineers are addressing erosion and gullies from the past; many old roads and a train trestle have created horrendous erosion problems where creeks and swamps were accidentally fragmented. On a recent visit with area biologists and engineers – we were encouraged to see engineered restoration conducted utilizing materials from the local landscape versus more hardening. Native species from the local region were introduced during dormant seasons and allowed to acclimate to conditions. This holistic approach towards restoration projects is less expensive, more attractive to important wildlife such as birds and insects, and is capable of self healing – thus making the area more resilient.

Natural berms and stream terraces, built up with roots from trees, trap enough material to allow dense vegetation to gain a foot hold. This in turn restores the natural hydrology of the system. The healthy natural hydrology, flow rate and volume, of the streams ultimately removed the finer sand grains to reveal the gravel which had been buried by sediment in many of creek beds. The true test came duringthe April 2014 floods. These natural systems came through that event with little harm; what's more, they were able to re-vegetate themselves with their own seed stock. Can you say resiliency?

What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

Our community continues to grow; denser along the coast and sprawling into the suburbs and into the remaining natural areas. Our landscape is unique because so much of the natural lands are preserved in conservation lands (such as the Blackwater River State Forest and Gulf Islands

National Seashore) or owned and managed by the largest landowner in Northwest, Florida, namely the US Military.

A recent analysis by the University of Florida on behalf of 1,000 Friends of Florida, found that over the next five decades the Sunshine State will grow all over the map, blanketing as much as one third of the state in development. Much of the growth will center on the Interstate 4 corridor in Central Florida, followed by urban centers in Northeast and South Florida. [http://1000friendsofflorida.org/florida2070/]

Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

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The BFA October 2016 NEWSLETTER

Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

Our natural landscape can be very resilient. Hurricane Katrina revealed just how important emergent grasses were to low lying coastal areas when wind driven waves were slowed in areas where they remained. However, in areas where grasses were absent or thinned the waters took out everything (homes, trees, roads, etc.) in their path. Coastal engineers really took notice of this difference. Current research is focusing attention on the level of resiliency along natural

shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

While the science and its appreciation are still developing, many universities that have offered degrees in civil and structural engineering are now adapting environmental engineering curriculums to blend the structure of engineering with the hydrology and ecology of the specific geographic landscape. The old school method of armoring used along many of our creeks, rivers and bridge supports are unfortunately outdated and ill suited for our landscape. The Gulf Coastal Plain is made up of highly eroded sandy soils held together by a network of roots and plants (adapted to that environment) our region of the Gulf Coastal Plain does not contain rock. Yet most every coastal and creek restoration project uses thousands of tons of rock.Why rock? Basically it's cheap. Use of rock in our region - always causes problems downstream. It's like kicking the can down the road.

On Eglin Air Force Base, engineers are addressing erosion and gullies from the past; many old roads and a train trestle have created horrendous erosion problems where creeks and swamps were accidentally fragmented. On a recent visit with area biologists and engineers – we were encouraged to see engineered restoration conducted utilizing materials from the local landscape versus more hardening. Native species from the local region were introduced during dormant seasons and allowed to acclimate to conditions. This holistic approach towards restoration projects is less expensive, more attractive to important wildlife such as birds and insects, and is capable of self healing – thus making the area more resilient.

Natural berms and stream terraces, built up with roots from trees, trap enough material to allow dense vegetation to gain a foot hold. This in turn restores the natural hydrology of the system. The healthy natural hydrology, flow rate and volume, of the streams ultimately removed the finer sand grains to reveal the gravel which had been buried by sediment in many of creek beds. The true test came duringthe April 2014 floods. These natural systems came through that event with little harm; what's more, they were able to re-vegetate themselves with their own seed stock. Can you say resiliency?

What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

Our community continues to grow; denser along the coast and sprawling into the suburbs and into the remaining natural areas. Our landscape is unique because so much of the natural lands are preserved in conservation lands (such as the Blackwater River State Forest and Gulf Islands

National Seashore) or owned and managed by the largest landowner in Northwest, Florida, namely the US Military.

A recent analysis by the University of Florida on behalf of 1,000 Friends of Florida, found that over the next five decades the Sunshine State will grow all over the map, blanketing as much as one third of the state in development. Much of the growth will center on the Interstate 4 corridor in Central Florida, followed by urban centers in Northeast and South Florida. [http://1000friendsofflorida.org/florida2070/]

Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

Let's start with **Roads[1]**. The 16 October Pensacola News Journal points out that four of the 50 deadliest roads in the county pass through Escambia and Santa Rosa County. The article identifies I-10, US 90, US 98, and US 29 to be among the most dangerous roads in the country based on fatal accidents per 100 miles. Interstate-10 ranked No. 4 for three categories: deadliest road for 100 miles, darkest roads (natural areas mentioned earlier) and accidents involving a drunk drivers.

The Florida Department of Transportation (FDOT) is the state agency which oversees state roads and happens to be well funded, thanks in part to the gasoline tax which we all contribute to when we buy gas. When FDOTdesigns a new bridge (3 mile bridge), widens an existing road, or creates an entire new connecter road – their activities are strongly supported by elected officials, county commissioners, developers, admirers and advocates. This type of work creates many jobs so is generally a welcome site to communities where they are working as it brings in a workforce which helps drive the economy. If these improvements were designed and completed with an understanding of how the natural system functions, we could have economic growth and a healthy ecosystem to enjoy for generations.

Many of the deadliest roads in our area are currently under construction for road widening. Where are the extra lanes coming from? On I-10, the vegetated median swale is being dug up and filled in with mountains of rich red clay before being compacted and covered in asphalt. Those vegetated median swales serve an important environmental function by capturing the stormwater run-off from the road and holding it until it can percolate into the ground and not enter surface water still carrying sediments and run-off. The FDOT and their army of engineers are addressing this shortfall by building stormwater ponds along the stretch of the widened road. These highly engineered ponds are intended to function in a similar manner - that is holding water until it can percolate into the ground. And while these stormwater ponds are

designed to capture sand and clay, the system won't be able to trap and treat sediments, nutrients and stormwater in place (through phytoremediation – the ability of plants to take up contaminants) or support wildflowers for many pollinators as the living system does.

Living systems provide ecosystem services; for instance, trees drink groundwater, release moisture through transpiration which cools the air, they make their own food through sunlight and produce oxygen. A healthy mature tree or grove of native trees provide food for our bird friends that use our air space (much like the military) on their daily, seasonal and migratory routes.

The New 3 Mile Bridge preliminary phase I assessment is underway and let us hope that there are open lines of communication (two-way dialogue) between the FDOT engineers who are working on the bridge design, local biologists (Deadman's Island) and geologists who will factor in the important sediment transport system that feeds our beautiful coastline.

That two way conversation was not available to the Monterey Shores Community earlier this year when FDOT was working on I-10 between Escambia Bay and Avalon Blvd in Santa Rosa County. Our rainy spring and summer brought some heavy downpours (typical in our area which receives 65" of rain annually) which transported a lot of red clay into a tributary of Indian Bayou. Residents continue to be upset by this unnecessary impact to their bayou and its fragile ecosystem. The FDOT does not have a plan to protect Indian Bayou from this road expansion or the additional run off that will enter the bayou. Promises to mitigate elsewhere don't really interest the community, since they are living on a beautiful system which is in a relatively natural state and self healing. The clay that ran into the bayou and turned it red was a clear violation of the Clean Water Act; where's the enforcement?

Exactly which agency or entity is protecting our water quality and natural resources? Santa Rosa County currently does not have a commissioner in this district. The Water Management District issued the permit to FDOT. The FL Dept of Environmental Protection is a little short handed at the moment (the NW District currently does not have a senior biologist or chemist to oversee the 16 counties in the panhandle) and likely trusted their sister agency to protect the surface waters that these construction projects cross. But, like some sisters, these agencies don't communicate well. The US Environmental Protection Agency once had authority over the Clean Water Act but somehow believed FL when FL promised to self regulate. The problem with this delegation is that our state agencies were directed not to regulate (the state has encouraged permitting and development to jump start the economy) which is why we are having many of the water quality problems in Florida coastal waters (BFA July 2016 Newsletter).

All those wide and new roads will undoubtedly lead to all those **New Homes[2].** Many counties depend on property taxes for their bread and butter money (their daily budget), so it is to their benefit to allow - even encourage development (perhaps by offering tax incentives) in their jurisdictional areas to compete with neighboring counties or states – which secures growth of their county and more money in the coffers.

Hurricane Matthew zipped past the East Coast of Florida earlier this month, staying far enough offshore to soak us with rain and little else, but the states of Georgia, South and North Carolina felt the brunt of the system. Worse, many older communities which never experienced flooding before – were now being flooded. Why are these communities suddenly experiencing flooding? Increased development combined with hardening of the surface reduces the available areas for water to percolate into the ground. As a result surplus surface water runs off to the lowest point of the landscape, usually to a natural system like a creek, bayou, river or bay which creates the catastrophic flooding we observed.

During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

We didn't know then, what we know now – but why aren't we applying new and proven technology to the manner in which we develop our landscape? Ideally, we should focus our efforts on how we avoid (not re-engineer) low lying areas, leaving riparian zones in tact so they can function as designed in nature. Progressive approaches applied now can avoid watershed impairments in the future. Case in point, Escambia County has a long range plan to connect I-10 at Beulah to a new road, currently referred to as the Beltway that will eventually tie into Quintette Road on the east side of Hwy 29. (http://www.northescambia.com/2012/08/new-beltway-could-link-i-10-north-escambia-santa-rosa)

Pull out a map and take a close look at the area, and you'll notice a few things. Much of the landscape in this western portion of the county is low lying, prone to flooding and in a natural state. Subdivisions along Eleven Mile Creek which were built in the Riparian Zone (some before we knew better, some not) had 4-5' of water flowing through their homes during the 2014 flood. There are some noises to buy back the homes (taxpayer money), demolish them and try to reconnect the floodplain. That's a step in the right direction. A bigger jump would have been to curtail development in sensitive areas in the first place. And yet, this Beltway will encourage development in many of these rural low lying areas.

Escambia County is already kicking the can down the road for the next generation to pick up, or in this case clean up. Builders and their entourage are planning new communities that will take 1,200 acres out of a natural state and transform it into 14,000 cookie cutter homes. One acre of natural land doesn't generate much money for the county, but one acres with ten homes creates a nice little property tax base for the county. Perhaps some of this increased revenue could be invested upfront in the form of better planning to avoid the mistakes we continue to repeat.

The beltway will cross several creeks including Cowdevil Creek and Jack's Branch. Those waterways discharge into the Perdido River. The Perdido River is an Outstanding Florida Water, which by statute (if anyone would bother to enforce the law) should not have its water quality negatively impacted in **any** way. Much of the area as seen in aerial maps indicates a large riparian zone. So why do we need all the **new communities**[3], **new shopping centers**[4] and growth?? Because the Navy Federal Credit Union Expansion will create 10,000 jobs when completed and the new proposed Tech Park at Outlying Field 8 (OLF-8) are all providing **job growth and economic opportunities**[5]**.**

Ironically, the proposed Beltway, the Navy Federal Credit Union, OLF 8 and Bristol Park are all located in the Perdido Watershed, the latter three developments are located within the Eleven Mile Creek Watershed which used to have the nickname 'Stink Creek', before IP removed the paper mill effluent from direct discharge into Eleven Mile Creek to overland discharge onto manmade wetlands and into Tee and Wicker Lakes which enter Perdido Bay.

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Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

Our natural landscape can be very resilient. Hurricane Katrina revealed just how important emergent grasses were to low lying coastal areas when wind driven waves were slowed in areas where they remained. However, in areas where grasses were absent or thinned the waters took out everything (homes, trees, roads, etc.) in their path. Coastal engineers really took notice of this difference. Current research is focusing attention on the level of resiliency along natural

shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

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What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

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National Seashore) or owned and managed by the largest landowner in Northwest, Florida, namely the US Military.

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Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

Let's start with **Roads[1]**. The 16 October Pensacola News Journal points out that four of the 50 deadliest roads in the county pass through Escambia and Santa Rosa County. The article identifies I-10, US 90, US 98, and US 29 to be among the most dangerous roads in the country based on fatal accidents per 100 miles. Interstate-10 ranked No. 4 for three categories: deadliest road for 100 miles, darkest roads (natural areas mentioned earlier) and accidents involving a drunk drivers.

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designed to capture sand and clay, the system won't be able to trap and treat sediments, nutrients and stormwater in place (through phytoremediation – the ability of plants to take up contaminants) or support wildflowers for many pollinators as the living system does.

Living systems provide ecosystem services; for instance, trees drink groundwater, release moisture through transpiration which cools the air, they make their own food through sunlight and produce oxygen. A healthy mature tree or grove of native trees provide food for our bird friends that use our air space (much like the military) on their daily, seasonal and migratory routes.

The New 3 Mile Bridge preliminary phase I assessment is underway and let us hope that there are open lines of communication (two-way dialogue) between the FDOT engineers who are working on the bridge design, local biologists (Deadman's Island) and geologists who will factor in the important sediment transport system that feeds our beautiful coastline.

That two way conversation was not available to the Monterey Shores Community earlier this year when FDOT was working on I-10 between Escambia Bay and Avalon Blvd in Santa Rosa County. Our rainy spring and summer brought some heavy downpours (typical in our area which receives 65" of rain annually) which transported a lot of red clay into a tributary of Indian Bayou. Residents continue to be upset by this unnecessary impact to their bayou and its fragile ecosystem. The FDOT does not have a plan to protect Indian Bayou from this road expansion or the additional run off that will enter the bayou. Promises to mitigate elsewhere don't really interest the community, since they are living on a beautiful system which is in a relatively natural state and self healing. The clay that ran into the bayou and turned it red was a clear violation of the Clean Water Act; where's the enforcement?

Exactly which agency or entity is protecting our water quality and natural resources? Santa Rosa County currently does not have a commissioner in this district. The Water Management District issued the permit to FDOT. The FL Dept of Environmental Protection is a little short handed at the moment (the NW District currently does not have a senior biologist or chemist to oversee the 16 counties in the panhandle) and likely trusted their sister agency to protect the surface waters that these construction projects cross. But, like some sisters, these agencies don't communicate well. The US Environmental Protection Agency once had authority over the Clean Water Act but somehow believed FL when FL promised to self regulate. The problem with this delegation is that our state agencies were directed not to regulate (the state has encouraged permitting and development to jump start the economy) which is why we are having many of the water quality problems in Florida coastal waters (BFA July 2016 Newsletter).

All those wide and new roads will undoubtedly lead to all those **New Homes[2].** Many counties depend on property taxes for their bread and butter money (their daily budget), so it is to their benefit to allow - even encourage development (perhaps by offering tax incentives) in their jurisdictional areas to compete with neighboring counties or states – which secures growth of their county and more money in the coffers.

Hurricane Matthew zipped past the East Coast of Florida earlier this month, staying far enough offshore to soak us with rain and little else, but the states of Georgia, South and North Carolina felt the brunt of the system. Worse, many older communities which never experienced flooding before – were now being flooded. Why are these communities suddenly experiencing flooding? Increased development combined with hardening of the surface reduces the available areas for water to percolate into the ground. As a result surplus surface water runs off to the lowest point of the landscape, usually to a natural system like a creek, bayou, river or bay which creates the catastrophic flooding we observed.

During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

We didn't know then, what we know now – but why aren't we applying new and proven technology to the manner in which we develop our landscape? Ideally, we should focus our efforts on how we avoid (not re-engineer) low lying areas, leaving riparian zones in tact so they can function as designed in nature. Progressive approaches applied now can avoid watershed impairments in the future. Case in point, Escambia County has a long range plan to connect I-10 at Beulah to a new road, currently referred to as the Beltway that will eventually tie into Quintette Road on the east side of Hwy 29. (http://www.northescambia.com/2012/08/new-beltway-could-link-i-10-north-escambia-santa-rosa)

Pull out a map and take a close look at the area, and you'll notice a few things. Much of the landscape in this western portion of the county is low lying, prone to flooding and in a natural state. Subdivisions along Eleven Mile Creek which were built in the Riparian Zone (some before we knew better, some not) had 4-5' of water flowing through their homes during the 2014 flood. There are some noises to buy back the homes (taxpayer money), demolish them and try to reconnect the floodplain. That's a step in the right direction. A bigger jump would have been to curtail development in sensitive areas in the first place. And yet, this Beltway will encourage development in many of these rural low lying areas.

Escambia County is already kicking the can down the road for the next generation to pick up, or in this case clean up. Builders and their entourage are planning new communities that will take 1,200 acres out of a natural state and transform it into 14,000 cookie cutter homes. One acre of natural land doesn't generate much money for the county, but one acres with ten homes creates a nice little property tax base for the county. Perhaps some of this increased revenue could be invested upfront in the form of better planning to avoid the mistakes we continue to repeat.

The beltway will cross several creeks including Cowdevil Creek and Jack's Branch. Those waterways discharge into the Perdido River. The Perdido River is an Outstanding Florida Water, which by statute (if anyone would bother to enforce the law) should not have its water quality negatively impacted in **any** way. Much of the area as seen in aerial maps indicates a large riparian zone. So why do we need all the **new communities**[3], **new shopping centers**[4] and growth?? Because the Navy Federal Credit Union Expansion will create 10,000 jobs when completed and the new proposed Tech Park at Outlying Field 8 (OLF-8) are all providing **job growth and economic opportunities**[5]**.**

Ironically, the proposed Beltway, the Navy Federal Credit Union, OLF 8 and Bristol Park are all located in the Perdido Watershed, the latter three developments are located within the Eleven Mile Creek Watershed which used to have the nickname 'Stink Creek', before IP removed the paper mill effluent from direct discharge into Eleven Mile Creek to overland discharge onto manmade wetlands and into Tee and Wicker Lakes which enter Perdido Bay.

A well laid out plan with adequate buffers and roads complete with bridges that span the riparian zones may accommodate the proposed influx of people, roads, homes, fast food places, etc. to higher ground in a low lying part of county, but without a well thought out plan we will continue to cause ecological impacts to our area waters. The search for funding to correct past problems is always highly competitive, with the lowest bidder often winning the contract. These contractors often lack the skill set or knowledge to design and engineer a functioning ecosystem. These 'Random Acts of Restoration' are a nice thought, but rarely can they allow a living ecosystem to recover to a naturally functioning and healthy system.

The RESTORE Act has allotted future funding for projects in several NWFL counties that were impacted by the 2010 oil spill. A lengthy and committed process was convened with citizens appointed to a Board for several years to hear from our community and better understand the community's needs and desires. A proposal to restore the entire Carpenter Creek-Bayou Texar

Watershed has warranted a lot of attention. The proposal knits together many of the conservation goals visualized by groups such as Audubon, the Native Plant Society, the Bream Fishermen and the many locals who grew up remembering the bayou from their youth. The Concept Paper, on the BFA Website uses the many years worth of important water quality data collected by our organization to tell the story of changes over time and how that correlates to community growth and sprawl. This proposal sets the stage for students, citizens, organizations and communities alike to engage by learning and participating in understanding a land ethic for future generations.

> ***"Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest."***
>
> ***~ Aldo Leopold Conservation Economics (1934)***

This project has all the components to unite our community and this community has the talent, interest and knowledge to make this restoration a complete success. The Carpenter Creek Restoration Project will serve to showcase the community living in Escambia County and the City of Pensacola how reconnecting the community to the local waters can serve to enrich our lives, our economy, our watersheds and most importantly our natural resources.

Stuff you might like to know:

- City of Pensacola Councilwoman Myers will be hosting a town hall meeting focused on Carpenter Creek. The meeting will be held on Tues, 1 November at 6:30 PM at Cokesbury United Methodist Church (5925 North 9th Avenue)

- The Gulf Estuarine Research Society (GERS) will be hosting their fall 2016 meeting at the Pensacola Beach Hilton Garden Inn on 3-5 November 2016. The meeting theme is **Connections across the Gulf Coast: Wetlands to Watersheds and Waterways**. The meeting will highlight interconnections among wetlands, estuarine and coastal habitats by bringing together scientists, researchers and students from universities, agencies, research labs and other organizations across the Gulf coast and its watersheds. For more information, visit http://www.gers.us/2016-meeting.html

- Mike Lewis, researcher at USEPA recently published a report entitled: Environmental Quality of the Pensacola Bay System: Retrospective Review for Future Resource Management and Rehabilitation. The report can be found and downloaded from the BFA Website.

- A remarkable publication in Nature recently provided evidence that marine flowers, like those found in seagrass systems, may depend on small invertebrates like amphipods and other small crustaceans to pollinate these underwater flowers. Much like the role that many insects and small mammals accomplish to successfully pollinate terrestrial flowers, now new evidence points us to the importance of the small invertebrates that

evidently play a major role in pollinating underwater grasses. This remarkable finding is a testament to just how important all the components of a healthy ecosystem really are, and just how much more we have yet to learn. (*Note, many invertebrates are highly sensitive to impaired waters*) http://www.nature.com/articles/ncomms12980

- The FL Fish & Wildlife Conservation Commission secured a large Gulf Environmental Benefits Fund Grant to collect concurrent data among six large NW FL Bays in which researchers hope to answer why seagrasses are not returning to areas historically known to have grasses. Jane Caffrey from UWF, CEDB has overseen the research in the Escambia/Pensacola/East Bay & Santa Rosa Sound with an army of students. I have been fortunate to participate in this research and have had the opportunity to observe many wonderful things:
    - This week marked 26 days without rain and in Pensacola Bay near the Three Mile Bridge during very calm wind conditions we were able to see a Secchi Disk (an instrument to determine water clarity) for 5.5 Meters (which is roughly 18').
    - While many 'old timers' recall a time (1930's, 40's, and 50's) when the bay water was 'gin clear' and you could see seagrass meadows on a white sandy bottom like a mosaic across the bay – these days the deeper parts of our waterways are covered in a thick layer of fine mud.
    - Through the BFA WQ Sampling Program, we visit many creeks, rivers, and bayous that enter these bay systems. The 'old timers' recall when the creeks ran deep and cool, the banks were held in place by roots and the creek bottoms were dominated by gravel. Today the creeks are smothered by sand and the finer particulates have settled in the bayous and the bays.
    - In our scouting trips throughout the bays and sound we found hope in little pockets of seagrass trying to recover, we observed large schools of menhaden and mullet moving through the area, and we observed first hand just how resilient the ecosystem can be when allowed to recover.
    - There appeared to be a direct correlation between a natural shoreline and the observation of seagrass present. Areas with bulkheads and armoring were less apt to have grassbeds.
    - Stay tuned for a public meeting on the findings of this research in 2017.

- Lastly, in the July 2016 BFA Newsletter we reported a concern for moving the treated effluent from Hidden Creek in the Holley Navarre portion of South Santa Rosa County which discharges to East River Bayou in East Bay TO Williams Creek, which empties into Santa Rosa Sound. Earlier this month, 60,000 gallons of raw sewage spilled from a broken pipe into Williams Creek. Our seagrass beds and creeks systems will never recover to their full potential until we make certain that these accidents no longer occur. http://navarrepress.com/headlines/navarre-wastewater-leak/

We hope you can make the Fall Picnic, Saturday, 12 November 2016

BFA puts out a quarterly newsletter and hosts 4 general membership meetings a year.

The Bream Fishermen Association is a not-for-profit organization dedicated to the promotion of the conservation responsibilities as well as the recreational enjoyment of fishermen, hunters, campers and related outdoorsmen.

It is the objective of the BFA to support, develop, and implement programs that will:
1) Improve the quality of our environment;

2) Protect and maintain our present wilderness type lakes, rivers, swamps, marshes, bays, forests, and beaches in their natural undeveloped state; and

3) Advance the causes of plant, marine, and wildlife preservation.

Membership is open to all individuals who support these objectives. Please join the BFA by sending us your contact information (name, mailing address, phone, and email) be sure to notify us if you prefer to receive notices and announcements by mail or email, and $10 annual dues to our mailing address:

Bream Fishermen Association

1203 N. 16th Ave, Pensacola, FL 32503

The BFA October 2016 NEWSLETTER

Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

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During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

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This project has all the components to unite our community and this community has the talent, interest and knowledge to make this restoration a complete success. The Carpenter Creek Restoration Project will serve to showcase the community living in Escambia County and the City of Pensacola how reconnecting the community to the local waters can serve to enrich our lives, our economy, our watersheds and most importantly our natural resources.

Stuff you might like to know:

- City of Pensacola Councilwoman Myers will be hosting a town hall meeting focused on Carpenter Creek. The meeting will be held on Tues, 1 November at 6:30 PM at Cokesbury United Methodist Church (5925 North 9th Avenue)

- The Gulf Estuarine Research Society (GERS) will be hosting their fall 2016 meeting at the Pensacola Beach Hilton Garden Inn on 3-5 November 2016. The meeting theme is **Connections across the Gulf Coast: Wetlands to Watersheds and Waterways**. The meeting will highlight interconnections among wetlands, estuarine and coastal habitats by bringing together scientists, researchers and students from universities, agencies, research labs and other organizations across the Gulf coast and its watersheds. For more information, visit http://www.gers.us/2016-meeting.html

- Mike Lewis, researcher at USEPA recently published a report entitled: Environmental Quality of the Pensacola Bay System: Retrospective Review for Future Resource Management and Rehabilitation. The report can be found and downloaded from the BFA Website.

- A remarkable publication in Nature recently provided evidence that marine flowers, like those found in seagrass systems, may depend on small invertebrates like amphipods and other small crustaceans to pollinate these underwater flowers. Much like the role that many insects and small mammals accomplish to successfully pollinate terrestrial flowers, now new evidence points us to the importance of the small invertebrates that

evidently play a major role in pollinating underwater grasses. This remarkable finding is a testament to just how important all the components of a healthy ecosystem really are, and just how much more we have yet to learn. (*Note, many invertebrates are highly sensitive to impaired waters*) http://www.nature.com/articles/ncomms12980

- The FL Fish & Wildlife Conservation Commission secured a large Gulf Environmental Benefits Fund Grant to collect concurrent data among six large NW FL Bays in which researchers hope to answer why seagrasses are not returning to areas historically known to have grasses. Jane Caffrey from UWF, CEDB has overseen the research in the Escambia/Pensacola/East Bay & Santa Rosa Sound with an army of students. I have been fortunate to participate in this research and have had the opportunity to observe many wonderful things:
    - This week marked 26 days without rain and in Pensacola Bay near the Three Mile Bridge during very calm wind conditions we were able to see a Secchi Disk (an instrument to determine water clarity) for 5.5 Meters (which is roughly 18').
    - While many 'old timers' recall a time (1930's, 40's, and 50's) when the bay water was 'gin clear' and you could see seagrass meadows on a white sandy bottom like a mosaic across the bay – these days the deeper parts of our waterways are covered in a thick layer of fine mud.
    - Through the BFA WQ Sampling Program, we visit many creeks, rivers, and bayous that enter these bay systems. The 'old timers' recall when the creeks ran deep and cool, the banks were held in place by roots and the creek bottoms were dominated by gravel. Today the creeks are smothered by sand and the finer particulates have settled in the bayous and the bays.
    - In our scouting trips throughout the bays and sound we found hope in little pockets of seagrass trying to recover, we observed large schools of menhaden and mullet moving through the area, and we observed first hand just how resilient the ecosystem can be when allowed to recover.
    - There appeared to be a direct correlation between a natural shoreline and the observation of seagrass present. Areas with bulkheads and armoring were less apt to have grassbeds.
    - Stay tuned for a public meeting on the findings of this research in 2017.

- Lastly, in the July 2016 BFA Newsletter we reported a concern for moving the treated effluent from Hidden Creek in the Holley Navarre portion of South Santa Rosa County which discharges to East River Bayou in East Bay TO Williams Creek, which empties into Santa Rosa Sound. Earlier this month, 60,000 gallons of raw sewage spilled from a broken pipe into Williams Creek. Our seagrass beds and creeks systems will never recover to their full potential until we make certain that these accidents no longer occur. http://navarrepress.com/headlines/navarre-wastewater-leak/

We hope you can make the Fall Picnic, Saturday, 12 November 2016

BFA puts out a quarterly newsletter and hosts 4 general membership meetings a year.

The Bream Fishermen Association is a not-for-profit organization dedicated to the promotion of the conservation responsibilities as well as the recreational enjoyment of fishermen, hunters, campers and related outdoorsmen.

It is the objective of the BFA to support, develop, and implement programs that will:
1) Improve the quality of our environment;

2) Protect and maintain our present wilderness type lakes, rivers, swamps, marshes, bays, forests, and beaches in their natural undeveloped state; and

3) Advance the causes of plant, marine, and wildlife preservation.

Membership is open to all individuals who support these objectives. Please join the BFA by sending us your contact information (name, mailing address, phone, and email) be sure to notify us if you prefer to receive notices and announcements by mail or email, and $10 annual dues to our mailing address:

Bream Fishermen Association

1203 N. 16th Ave, Pensacola, FL 32503

The BFA October 2016 NEWSLETTER

Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

Our natural landscape can be very resilient. Hurricane Katrina revealed just how important emergent grasses were to low lying coastal areas when wind driven waves were slowed in areas where they remained. However, in areas where grasses were absent or thinned the waters took out everything (homes, trees, roads, etc.) in their path. Coastal engineers really took notice of this difference. Current research is focusing attention on the level of resiliency along natural

shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

While the science and its appreciation are still developing, many universities that have offered degrees in civil and structural engineering are now adapting environmental engineering curriculums to blend the structure of engineering with the hydrology and ecology of the specific geographic landscape. The old school method of armoring used along many of our creeks, rivers and bridge supports are unfortunately outdated and ill suited for our landscape. The Gulf Coastal Plain is made up of highly eroded sandy soils held together by a network of roots and plants (adapted to that environment) our region of the Gulf Coastal Plain does not contain rock. Yet most every coastal and creek restoration project uses thousands of tons of rock.Why rock? Basically it's cheap. Use of rock in our region - always causes problems downstream. It's like kicking the can down the road.

On Eglin Air Force Base, engineers are addressing erosion and gullies from the past; many old roads and a train trestle have created horrendous erosion problems where creeks and swamps were accidentally fragmented. On a recent visit with area biologists and engineers – we were encouraged to see engineered restoration conducted utilizing materials from the local landscape versus more hardening. Native species from the local region were introduced during dormant seasons and allowed to acclimate to conditions. This holistic approach towards restoration projects is less expensive, more attractive to important wildlife such as birds and insects, and is capable of self healing – thus making the area more resilient.

Natural berms and stream terraces, built up with roots from trees, trap enough material to allow dense vegetation to gain a foot hold. This in turn restores the natural hydrology of the system. The healthy natural hydrology, flow rate and volume, of the streams ultimately removed the finer sand grains to reveal the gravel which had been buried by sediment in many of creek beds. The true test came duringthe April 2014 floods. These natural systems came through that event with little harm; what's more, they were able to re-vegetate themselves with their own seed stock. Can you say resiliency?

What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

Our community continues to grow; denser along the coast and sprawling into the suburbs and into the remaining natural areas. Our landscape is unique because so much of the natural lands are preserved in conservation lands (such as the Blackwater River State Forest and Gulf Islands

National Seashore) or owned and managed by the largest landowner in Northwest, Florida, namely the US Military.

A recent analysis by the University of Florida on behalf of 1,000 Friends of Florida, found that over the next five decades the Sunshine State will grow all over the map, blanketing as much as one third of the state in development. Much of the growth will center on the Interstate 4 corridor in Central Florida, followed by urban centers in Northeast and South Florida. [http://1000friendsofflorida.org/florida2070/]

Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

Let's start with **Roads[1]**. The 16 October Pensacola News Journal points out that four of the 50 deadliest roads in the county pass through Escambia and Santa Rosa County. The article identifies I-10, US 90, US 98, and US 29 to be among the most dangerous roads in the country based on fatal accidents per 100 miles. Interstate-10 ranked No. 4 for three categories: deadliest road for 100 miles, darkest roads (natural areas mentioned earlier) and accidents involving a drunk drivers.

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Bream Fishermen Association

1203 N. 16th Ave, Pensacola, FL 32503

The BFA October 2016 NEWSLETTER

Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

Our natural landscape can be very resilient. Hurricane Katrina revealed just how important emergent grasses were to low lying coastal areas when wind driven waves were slowed in areas where they remained. However, in areas where grasses were absent or thinned the waters took out everything (homes, trees, roads, etc.) in their path. Coastal engineers really took notice of this difference. Current research is focusing attention on the level of resiliency along natural

shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

While the science and its appreciation are still developing, many universities that have offered degrees in civil and structural engineering are now adapting environmental engineering curriculums to blend the structure of engineering with the hydrology and ecology of the specific geographic landscape. The old school method of armoring used along many of our creeks, rivers and bridge supports are unfortunately outdated and ill suited for our landscape. The Gulf Coastal Plain is made up of highly eroded sandy soils held together by a network of roots and plants (adapted to that environment) our region of the Gulf Coastal Plain does not contain rock. Yet most every coastal and creek restoration project uses thousands of tons of rock.Why rock? Basically it's cheap. Use of rock in our region - always causes problems downstream. It's like kicking the can down the road.

On Eglin Air Force Base, engineers are addressing erosion and gullies from the past; many old roads and a train trestle have created horrendous erosion problems where creeks and swamps were accidentally fragmented. On a recent visit with area biologists and engineers – we were encouraged to see engineered restoration conducted utilizing materials from the local landscape versus more hardening. Native species from the local region were introduced during dormant seasons and allowed to acclimate to conditions. This holistic approach towards restoration projects is less expensive, more attractive to important wildlife such as birds and insects, and is capable of self healing – thus making the area more resilient.

Natural berms and stream terraces, built up with roots from trees, trap enough material to allow dense vegetation to gain a foot hold. This in turn restores the natural hydrology of the system. The healthy natural hydrology, flow rate and volume, of the streams ultimately removed the finer sand grains to reveal the gravel which had been buried by sediment in many of creek beds. The true test came duringthe April 2014 floods. These natural systems came through that event with little harm; what's more, they were able to re-vegetate themselves with their own seed stock. Can you say resiliency?

What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

Our community continues to grow; denser along the coast and sprawling into the suburbs and into the remaining natural areas. Our landscape is unique because so much of the natural lands are preserved in conservation lands (such as the Blackwater River State Forest and Gulf Islands

National Seashore) or owned and managed by the largest landowner in Northwest, Florida, namely the US Military.

A recent analysis by the University of Florida on behalf of 1,000 Friends of Florida, found that over the next five decades the Sunshine State will grow all over the map, blanketing as much as one third of the state in development. Much of the growth will center on the Interstate 4 corridor in Central Florida, followed by urban centers in Northeast and South Florida. [http://1000friendsofflorida.org/florida2070/]

Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

Let's start with **Roads[1]**. The 16 October Pensacola News Journal points out that four of the 50 deadliest roads in the county pass through Escambia and Santa Rosa County. The article identifies I-10, US 90, US 98, and US 29 to be among the most dangerous roads in the country based on fatal accidents per 100 miles. Interstate-10 ranked No. 4 for three categories: deadliest road for 100 miles, darkest roads (natural areas mentioned earlier) and accidents involving a drunk drivers.

The Florida Department of Transportation (FDOT) is the state agency which oversees state roads and happens to be well funded, thanks in part to the gasoline tax which we all contribute to when we buy gas. When FDOTdesigns a new bridge (3 mile bridge), widens an existing road, or creates an entire new connecter road – their activities are strongly supported by elected officials, county commissioners, developers, admirers and advocates. This type of work creates many jobs so is generally a welcome site to communities where they are working as it brings in a workforce which helps drive the economy. If these improvements were designed and completed with an understanding of how the natural system functions, we could have economic growth and a healthy ecosystem to enjoy for generations.

Many of the deadliest roads in our area are currently under construction for road widening. Where are the extra lanes coming from? On I-10, the vegetated median swale is being dug up and filled in with mountains of rich red clay before being compacted and covered in asphalt. Those vegetated median swales serve an important environmental function by capturing the stormwater run-off from the road and holding it until it can percolate into the ground and not enter surface water still carrying sediments and run-off. The FDOT and their army of engineers are addressing this shortfall by building stormwater ponds along the stretch of the widened road. These highly engineered ponds are intended to function in a similar manner - that is holding water until it can percolate into the ground. And while these stormwater ponds are

designed to capture sand and clay, the system won't be able to trap and treat sediments, nutrients and stormwater in place (through phytoremediation – the ability of plants to take up contaminants) or support wildflowers for many pollinators as the living system does.

Living systems provide ecosystem services; for instance, trees drink groundwater, release moisture through transpiration which cools the air, they make their own food through sunlight and produce oxygen. A healthy mature tree or grove of native trees provide food for our bird friends that use our air space (much like the military) on their daily, seasonal and migratory routes.

The New 3 Mile Bridge preliminary phase I assessment is underway and let us hope that there are open lines of communication (two-way dialogue) between the FDOT engineers who are working on the bridge design, local biologists (Deadman's Island) and geologists who will factor in the important sediment transport system that feeds our beautiful coastline.

That two way conversation was not available to the Monterey Shores Community earlier this year when FDOT was working on I-10 between Escambia Bay and Avalon Blvd in Santa Rosa County. Our rainy spring and summer brought some heavy downpours (typical in our area which receives 65" of rain annually) which transported a lot of red clay into a tributary of Indian Bayou. Residents continue to be upset by this unnecessary impact to their bayou and its fragile ecosystem. The FDOT does not have a plan to protect Indian Bayou from this road expansion or the additional run off that will enter the bayou. Promises to mitigate elsewhere don't really interest the community, since they are living on a beautiful system which is in a relatively natural state and self healing. The clay that ran into the bayou and turned it red was a clear violation of the Clean Water Act; where's the enforcement?

Exactly which agency or entity is protecting our water quality and natural resources? Santa Rosa County currently does not have a commissioner in this district. The Water Management District issued the permit to FDOT. The FL Dept of Environmental Protection is a little short handed at the moment (the NW District currently does not have a senior biologist or chemist to oversee the 16 counties in the panhandle) and likely trusted their sister agency to protect the surface waters that these construction projects cross. But, like some sisters, these agencies don't communicate well. The US Environmental Protection Agency once had authority over the Clean Water Act but somehow believed FL when FL promised to self regulate. The problem with this delegation is that our state agencies were directed not to regulate (the state has encouraged permitting and development to jump start the economy) which is why we are having many of the water quality problems in Florida coastal waters (BFA July 2016 Newsletter).

All those wide and new roads will undoubtedly lead to all those **New Homes[2].** Many counties depend on property taxes for their bread and butter money (their daily budget), so it is to their benefit to allow - even encourage development (perhaps by offering tax incentives) in their jurisdictional areas to compete with neighboring counties or states – which secures growth of their county and more money in the coffers.

Hurricane Matthew zipped past the East Coast of Florida earlier this month, staying far enough offshore to soak us with rain and little else, but the states of Georgia, South and North Carolina felt the brunt of the system. Worse, many older communities which never experienced flooding before – were now being flooded. Why are these communities suddenly experiencing flooding? Increased development combined with hardening of the surface reduces the available areas for water to percolate into the ground. As a result surplus surface water runs off to the lowest point of the landscape, usually to a natural system like a creek, bayou, river or bay which creates the catastrophic flooding we observed.

During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

We didn't know then, what we know now – but why aren't we applying new and proven technology to the manner in which we develop our landscape? Ideally, we should focus our efforts on how we avoid (not re-engineer) low lying areas, leaving riparian zones in tact so they can function as designed in nature. Progressive approaches applied now can avoid watershed impairments in the future. Case in point, Escambia County has a long range plan to connect I-10 at Beulah to a new road, currently referred to as the Beltway that will eventually tie into Quintette Road on the east side of Hwy 29. (http://www.northescambia.com/2012/08/new-beltway-could-link-i-10-north-escambia-santa-rosa)

Pull out a map and take a close look at the area, and you'll notice a few things. Much of the landscape in this western portion of the county is low lying, prone to flooding and in a natural state. Subdivisions along Eleven Mile Creek which were built in the Riparian Zone (some before we knew better, some not) had 4-5' of water flowing through their homes during the 2014 flood. There are some noises to buy back the homes (taxpayer money), demolish them and try to reconnect the floodplain. That's a step in the right direction. A bigger jump would have been to curtail development in sensitive areas in the first place. And yet, this Beltway will encourage development in many of these rural low lying areas.

Escambia County is already kicking the can down the road for the next generation to pick up, or in this case clean up. Builders and their entourage are planning new communities that will take 1,200 acres out of a natural state and transform it into 14,000 cookie cutter homes. One acre of natural land doesn't generate much money for the county, but one acres with ten homes creates a nice little property tax base for the county. Perhaps some of this increased revenue could be invested upfront in the form of better planning to avoid the mistakes we continue to repeat.

The beltway will cross several creeks including Cowdevil Creek and Jack's Branch. Those waterways discharge into the Perdido River. The Perdido River is an Outstanding Florida Water, which by statute (if anyone would bother to enforce the law) should not have its water quality negatively impacted in **any** way. Much of the area as seen in aerial maps indicates a large riparian zone. So why do we need all the **new communities**[3], **new shopping centers**[4] and growth?? Because the Navy Federal Credit Union Expansion will create 10,000 jobs when completed and the new proposed Tech Park at Outlying Field 8 (OLF-8) are all providing **job growth and economic opportunities**[5]**.**

Ironically, the proposed Beltway, the Navy Federal Credit Union, OLF 8 and Bristol Park are all located in the Perdido Watershed, the latter three developments are located within the Eleven Mile Creek Watershed which used to have the nickname 'Stink Creek', before IP removed the paper mill effluent from direct discharge into Eleven Mile Creek to overland discharge onto manmade wetlands and into Tee and Wicker Lakes which enter Perdido Bay.

A well laid out plan with adequate buffers and roads complete with bridges that span the riparian zones may accommodate the proposed influx of people, roads, homes, fast food places, etc. to higher ground in a low lying part of county, but without a well thought out plan we will continue to cause ecological impacts to our area waters. The search for funding to correct past problems is always highly competitive, with the lowest bidder often winning the contract. These contractors often lack the skill set or knowledge to design and engineer a functioning ecosystem. These 'Random Acts of Restoration' are a nice thought, but rarely can they allow a living ecosystem to recover to a naturally functioning and healthy system.

The RESTORE Act has allotted future funding for projects in several NWFL counties that were impacted by the 2010 oil spill. A lengthy and committed process was convened with citizens appointed to a Board for several years to hear from our community and better understand the community's needs and desires. A proposal to restore the entire Carpenter Creek-Bayou Texar

Watershed has warranted a lot of attention. The proposal knits together many of the conservation goals visualized by groups such as Audubon, the Native Plant Society, the Bream Fishermen and the many locals who grew up remembering the bayou from their youth. The Concept Paper, on the BFA Website uses the many years worth of important water quality data collected by our organization to tell the story of changes over time and how that correlates to community growth and sprawl. This proposal sets the stage for students, citizens, organizations and communities alike to engage by learning and participating in understanding a land ethic for future generations.

> ***"Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest."***
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Let's start with **Roads[1]**. The 16 October Pensacola News Journal points out that four of the 50 deadliest roads in the county pass through Escambia and Santa Rosa County. The article identifies I-10, US 90, US 98, and US 29 to be among the most dangerous roads in the country based on fatal accidents per 100 miles. Interstate-10 ranked No. 4 for three categories: deadliest road for 100 miles, darkest roads (natural areas mentioned earlier) and accidents involving a drunk drivers.

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Living systems provide ecosystem services; for instance, trees drink groundwater, release moisture through transpiration which cools the air, they make their own food through sunlight and produce oxygen. A healthy mature tree or grove of native trees provide food for our bird friends that use our air space (much like the military) on their daily, seasonal and migratory routes.

The New 3 Mile Bridge preliminary phase I assessment is underway and let us hope that there are open lines of communication (two-way dialogue) between the FDOT engineers who are working on the bridge design, local biologists (Deadman's Island) and geologists who will factor in the important sediment transport system that feeds our beautiful coastline.

That two way conversation was not available to the Monterey Shores Community earlier this year when FDOT was working on I-10 between Escambia Bay and Avalon Blvd in Santa Rosa County. Our rainy spring and summer brought some heavy downpours (typical in our area which receives 65" of rain annually) which transported a lot of red clay into a tributary of Indian Bayou. Residents continue to be upset by this unnecessary impact to their bayou and its fragile ecosystem. The FDOT does not have a plan to protect Indian Bayou from this road expansion or the additional run off that will enter the bayou. Promises to mitigate elsewhere don't really interest the community, since they are living on a beautiful system which is in a relatively natural state and self healing. The clay that ran into the bayou and turned it red was a clear violation of the Clean Water Act; where's the enforcement?

Exactly which agency or entity is protecting our water quality and natural resources? Santa Rosa County currently does not have a commissioner in this district. The Water Management District issued the permit to FDOT. The FL Dept of Environmental Protection is a little short handed at the moment (the NW District currently does not have a senior biologist or chemist to oversee the 16 counties in the panhandle) and likely trusted their sister agency to protect the surface waters that these construction projects cross. But, like some sisters, these agencies don't communicate well. The US Environmental Protection Agency once had authority over the Clean Water Act but somehow believed FL when FL promised to self regulate. The problem with this delegation is that our state agencies were directed not to regulate (the state has encouraged permitting and development to jump start the economy) which is why we are having many of the water quality problems in Florida coastal waters (BFA July 2016 Newsletter).

All those wide and new roads will undoubtedly lead to all those **New Homes[2].** Many counties depend on property taxes for their bread and butter money (their daily budget), so it is to their benefit to allow - even encourage development (perhaps by offering tax incentives) in their jurisdictional areas to compete with neighboring counties or states – which secures growth of their county and more money in the coffers.

Hurricane Matthew zipped past the East Coast of Florida earlier this month, staying far enough offshore to soak us with rain and little else, but the states of Georgia, South and North Carolina felt the brunt of the system. Worse, many older communities which never experienced flooding before – were now being flooded. Why are these communities suddenly experiencing flooding? Increased development combined with hardening of the surface reduces the available areas for water to percolate into the ground. As a result surplus surface water runs off to the lowest point of the landscape, usually to a natural system like a creek, bayou, river or bay which creates the catastrophic flooding we observed.

During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

We didn't know then, what we know now – but why aren't we applying new and proven technology to the manner in which we develop our landscape? Ideally, we should focus our efforts on how we avoid (not re-engineer) low lying areas, leaving riparian zones in tact so they can function as designed in nature. Progressive approaches applied now can avoid watershed impairments in the future. Case in point, Escambia County has a long range plan to connect I-10 at Beulah to a new road, currently referred to as the Beltway that will eventually tie into Quintette Road on the east side of Hwy 29. (http://www.northescambia.com/2012/08/new-beltway-could-link-i-10-north-escambia-santa-rosa)

Pull out a map and take a close look at the area, and you'll notice a few things. Much of the landscape in this western portion of the county is low lying, prone to flooding and in a natural state. Subdivisions along Eleven Mile Creek which were built in the Riparian Zone (some before we knew better, some not) had 4-5' of water flowing through their homes during the 2014 flood. There are some noises to buy back the homes (taxpayer money), demolish them and try to reconnect the floodplain. That's a step in the right direction. A bigger jump would have been to curtail development in sensitive areas in the first place. And yet, this Beltway will encourage development in many of these rural low lying areas.

Escambia County is already kicking the can down the road for the next generation to pick up, or in this case clean up. Builders and their entourage are planning new communities that will take 1,200 acres out of a natural state and transform it into 14,000 cookie cutter homes. One acre of natural land doesn't generate much money for the county, but one acres with ten homes creates a nice little property tax base for the county. Perhaps some of this increased revenue could be invested upfront in the form of better planning to avoid the mistakes we continue to repeat.

The beltway will cross several creeks including Cowdevil Creek and Jack's Branch. Those waterways discharge into the Perdido River. The Perdido River is an Outstanding Florida Water, which by statute (if anyone would bother to enforce the law) should not have its water quality negatively impacted in **any** way. Much of the area as seen in aerial maps indicates a large riparian zone. So why do we need all the **new communities**[3], **new shopping centers**[4] and growth?? Because the Navy Federal Credit Union Expansion will create 10,000 jobs when completed and the new proposed Tech Park at Outlying Field 8 (OLF-8) are all providing **job growth and economic opportunities**[5]**.**

Ironically, the proposed Beltway, the Navy Federal Credit Union, OLF 8 and Bristol Park are all located in the Perdido Watershed, the latter three developments are located within the Eleven Mile Creek Watershed which used to have the nickname 'Stink Creek', before IP removed the paper mill effluent from direct discharge into Eleven Mile Creek to overland discharge onto manmade wetlands and into Tee and Wicker Lakes which enter Perdido Bay.

A well laid out plan with adequate buffers and roads complete with bridges that span the riparian zones may accommodate the proposed influx of people, roads, homes, fast food places, etc. to higher ground in a low lying part of county, but without a well thought out plan we will continue to cause ecological impacts to our area waters. The search for funding to correct past problems is always highly competitive, with the lowest bidder often winning the contract. These contractors often lack the skill set or knowledge to design and engineer a functioning ecosystem. These 'Random Acts of Restoration' are a nice thought, but rarely can they allow a living ecosystem to recover to a naturally functioning and healthy system.

The RESTORE Act has allotted future funding for projects in several NWFL counties that were impacted by the 2010 oil spill. A lengthy and committed process was convened with citizens appointed to a Board for several years to hear from our community and better understand the community's needs and desires. A proposal to restore the entire Carpenter Creek-Bayou Texar

Watershed has warranted a lot of attention. The proposal knits together many of the conservation goals visualized by groups such as Audubon, the Native Plant Society, the Bream Fishermen and the many locals who grew up remembering the bayou from their youth. The Concept Paper, on the BFA Website uses the many years worth of important water quality data collected by our organization to tell the story of changes over time and how that correlates to community growth and sprawl. This proposal sets the stage for students, citizens, organizations and communities alike to engage by learning and participating in understanding a land ethic for future generations.

> ***"Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest."***
>
> ***~ Aldo Leopold Conservation Economics (1934)***

This project has all the components to unite our community and this community has the talent, interest and knowledge to make this restoration a complete success. The Carpenter Creek Restoration Project will serve to showcase the community living in Escambia County and the City of Pensacola how reconnecting the community to the local waters can serve to enrich our lives, our economy, our watersheds and most importantly our natural resources.

Stuff you might like to know:

- City of Pensacola Councilwoman Myers will be hosting a town hall meeting focused on Carpenter Creek. The meeting will be held on Tues, 1 November at 6:30 PM at Cokesbury United Methodist Church (5925 North 9th Avenue)

- The Gulf Estuarine Research Society (GERS) will be hosting their fall 2016 meeting at the Pensacola Beach Hilton Garden Inn on 3-5 November 2016. The meeting theme is **Connections across the Gulf Coast: Wetlands to Watersheds and Waterways**. The meeting will highlight interconnections among wetlands, estuarine and coastal habitats by bringing together scientists, researchers and students from universities, agencies, research labs and other organizations across the Gulf coast and its watersheds. For more information, visit http://www.gers.us/2016-meeting.html

- Mike Lewis, researcher at USEPA recently published a report entitled: Environmental Quality of the Pensacola Bay System: Retrospective Review for Future Resource Management and Rehabilitation. The report can be found and downloaded from the BFA Website.

- A remarkable publication in Nature recently provided evidence that marine flowers, like those found in seagrass systems, may depend on small invertebrates like amphipods and other small crustaceans to pollinate these underwater flowers. Much like the role that many insects and small mammals accomplish to successfully pollinate terrestrial flowers, now new evidence points us to the importance of the small invertebrates that

evidently play a major role in pollinating underwater grasses. This remarkable finding is a testament to just how important all the components of a healthy ecosystem really are, and just how much more we have yet to learn. (*Note, many invertebrates are highly sensitive to impaired waters*) http://www.nature.com/articles/ncomms12980

- The FL Fish & Wildlife Conservation Commission secured a large Gulf Environmental Benefits Fund Grant to collect concurrent data among six large NW FL Bays in which researchers hope to answer why seagrasses are not returning to areas historically known to have grasses. Jane Caffrey from UWF, CEDB has overseen the research in the Escambia/Pensacola/East Bay & Santa Rosa Sound with an army of students. I have been fortunate to participate in this research and have had the opportunity to observe many wonderful things:
    - This week marked 26 days without rain and in Pensacola Bay near the Three Mile Bridge during very calm wind conditions we were able to see a Secchi Disk (an instrument to determine water clarity) for 5.5 Meters (which is roughly 18').
    - While many 'old timers' recall a time (1930's, 40's, and 50's) when the bay water was 'gin clear' and you could see seagrass meadows on a white sandy bottom like a mosaic across the bay – these days the deeper parts of our waterways are covered in a thick layer of fine mud.
    - Through the BFA WQ Sampling Program, we visit many creeks, rivers, and bayous that enter these bay systems. The 'old timers' recall when the creeks ran deep and cool, the banks were held in place by roots and the creek bottoms were dominated by gravel. Today the creeks are smothered by sand and the finer particulates have settled in the bayous and the bays.
    - In our scouting trips throughout the bays and sound we found hope in little pockets of seagrass trying to recover, we observed large schools of menhaden and mullet moving through the area, and we observed first hand just how resilient the ecosystem can be when allowed to recover.
    - There appeared to be a direct correlation between a natural shoreline and the observation of seagrass present. Areas with bulkheads and armoring were less apt to have grassbeds.
    - Stay tuned for a public meeting on the findings of this research in 2017.

- Lastly, in the July 2016 BFA Newsletter we reported a concern for moving the treated effluent from Hidden Creek in the Holley Navarre portion of South Santa Rosa County which discharges to East River Bayou in East Bay TO Williams Creek, which empties into Santa Rosa Sound. Earlier this month, 60,000 gallons of raw sewage spilled from a broken pipe into Williams Creek. Our seagrass beds and creeks systems will never recover to their full potential until we make certain that these accidents no longer occur. http://navarrepress.com/headlines/navarre-wastewater-leak/

We hope you can make the Fall Picnic, Saturday, 12 November 2016

BFA puts out a quarterly newsletter and hosts 4 general membership meetings a year.

The Bream Fishermen Association is a not-for-profit organization dedicated to the promotion of the conservation responsibilities as well as the recreational enjoyment of fishermen, hunters, campers and related outdoorsmen.

It is the objective of the BFA to support, develop, and implement programs that will:
1) Improve the quality of our environment;

2) Protect and maintain our present wilderness type lakes, rivers, swamps, marshes, bays, forests, and beaches in their natural undeveloped state; and

3) Advance the causes of plant, marine, and wildlife preservation.

Membership is open to all individuals who support these objectives. Please join the BFA by sending us your contact information (name, mailing address, phone, and email) be sure to notify us if you prefer to receive notices and announcements by mail or email, and $10 annual dues to our mailing address:

Bream Fishermen Association

1203 N. 16th Ave, Pensacola, FL 32503

The BFA October 2016 NEWSLETTER

Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

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During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

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evidently play a major role in pollinating underwater grasses. This remarkable finding is a testament to just how important all the components of a healthy ecosystem really are, and just how much more we have yet to learn. (*Note, many invertebrates are highly sensitive to impaired waters*) http://www.nature.com/articles/ncomms12980

- The FL Fish & Wildlife Conservation Commission secured a large Gulf Environmental Benefits Fund Grant to collect concurrent data among six large NW FL Bays in which researchers hope to answer why seagrasses are not returning to areas historically known to have grasses. Jane Caffrey from UWF, CEDB has overseen the research in the Escambia/Pensacola/East Bay & Santa Rosa Sound with an army of students. I have been fortunate to participate in this research and have had the opportunity to observe many wonderful things:
    - This week marked 26 days without rain and in Pensacola Bay near the Three Mile Bridge during very calm wind conditions we were able to see a Secchi Disk (an instrument to determine water clarity) for 5.5 Meters (which is roughly 18').
    - While many 'old timers' recall a time (1930's, 40's, and 50's) when the bay water was 'gin clear' and you could see seagrass meadows on a white sandy bottom like a mosaic across the bay – these days the deeper parts of our waterways are covered in a thick layer of fine mud.
    - Through the BFA WQ Sampling Program, we visit many creeks, rivers, and bayous that enter these bay systems. The 'old timers' recall when the creeks ran deep and cool, the banks were held in place by roots and the creek bottoms were dominated by gravel. Today the creeks are smothered by sand and the finer particulates have settled in the bayous and the bays.
    - In our scouting trips throughout the bays and sound we found hope in little pockets of seagrass trying to recover, we observed large schools of menhaden and mullet moving through the area, and we observed first hand just how resilient the ecosystem can be when allowed to recover.
    - There appeared to be a direct correlation between a natural shoreline and the observation of seagrass present. Areas with bulkheads and armoring were less apt to have grassbeds.
    - Stay tuned for a public meeting on the findings of this research in 2017.

- Lastly, in the July 2016 BFA Newsletter we reported a concern for moving the treated effluent from Hidden Creek in the Holley Navarre portion of South Santa Rosa County which discharges to East River Bayou in East Bay TO Williams Creek, which empties into Santa Rosa Sound. Earlier this month, 60,000 gallons of raw sewage spilled from a broken pipe into Williams Creek. Our seagrass beds and creeks systems will never recover to their full potential until we make certain that these accidents no longer occur. http://navarrepress.com/headlines/navarre-wastewater-leak/

We hope you can make the Fall Picnic, Saturday, 12 November 2016

BFA puts out a quarterly newsletter and hosts 4 general membership meetings a year.

The Bream Fishermen Association is a not-for-profit organization dedicated to the promotion of the conservation responsibilities as well as the recreational enjoyment of fishermen, hunters, campers and related outdoorsmen.

It is the objective of the BFA to support, develop, and implement programs that will:
1) Improve the quality of our environment;

2) Protect and maintain our present wilderness type lakes, rivers, swamps, marshes, bays, forests, and beaches in their natural undeveloped state; and

3) Advance the causes of plant, marine, and wildlife preservation.

Membership is open to all individuals who support these objectives. Please join the BFA by sending us your contact information (name, mailing address, phone, and email) be sure to notify us if you prefer to receive notices and announcements by mail or email, and $10 annual dues to our mailing address:

Bream Fishermen Association

1203 N. 16th Ave, Pensacola, FL 32503

The BFA October 2016 NEWSLETTER

Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

Our natural landscape can be very resilient. Hurricane Katrina revealed just how important emergent grasses were to low lying coastal areas when wind driven waves were slowed in areas where they remained. However, in areas where grasses were absent or thinned the waters took out everything (homes, trees, roads, etc.) in their path. Coastal engineers really took notice of this difference. Current research is focusing attention on the level of resiliency along natural

shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

While the science and its appreciation are still developing, many universities that have offered degrees in civil and structural engineering are now adapting environmental engineering curriculums to blend the structure of engineering with the hydrology and ecology of the specific geographic landscape. The old school method of armoring used along many of our creeks, rivers and bridge supports are unfortunately outdated and ill suited for our landscape. The Gulf Coastal Plain is made up of highly eroded sandy soils held together by a network of roots and plants (adapted to that environment) our region of the Gulf Coastal Plain does not contain rock. Yet most every coastal and creek restoration project uses thousands of tons of rock.Why rock? Basically it's cheap. Use of rock in our region - always causes problems downstream. It's like kicking the can down the road.

On Eglin Air Force Base, engineers are addressing erosion and gullies from the past; many old roads and a train trestle have created horrendous erosion problems where creeks and swamps were accidentally fragmented. On a recent visit with area biologists and engineers – we were encouraged to see engineered restoration conducted utilizing materials from the local landscape versus more hardening. Native species from the local region were introduced during dormant seasons and allowed to acclimate to conditions. This holistic approach towards restoration projects is less expensive, more attractive to important wildlife such as birds and insects, and is capable of self healing – thus making the area more resilient.

Natural berms and stream terraces, built up with roots from trees, trap enough material to allow dense vegetation to gain a foot hold. This in turn restores the natural hydrology of the system. The healthy natural hydrology, flow rate and volume, of the streams ultimately removed the finer sand grains to reveal the gravel which had been buried by sediment in many of creek beds. The true test came duringthe April 2014 floods. These natural systems came through that event with little harm; what's more, they were able to re-vegetate themselves with their own seed stock. Can you say resiliency?

What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

Our community continues to grow; denser along the coast and sprawling into the suburbs and into the remaining natural areas. Our landscape is unique because so much of the natural lands are preserved in conservation lands (such as the Blackwater River State Forest and Gulf Islands

National Seashore) or owned and managed by the largest landowner in Northwest, Florida, namely the US Military.

A recent analysis by the University of Florida on behalf of 1,000 Friends of Florida, found that over the next five decades the Sunshine State will grow all over the map, blanketing as much as one third of the state in development. Much of the growth will center on the Interstate 4 corridor in Central Florida, followed by urban centers in Northeast and South Florida. [http://1000friendsofflorida.org/florida2070/]

Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

Let's start with **Roads[1]**. The 16 October Pensacola News Journal points out that four of the 50 deadliest roads in the county pass through Escambia and Santa Rosa County. The article identifies I-10, US 90, US 98, and US 29 to be among the most dangerous roads in the country based on fatal accidents per 100 miles. Interstate-10 ranked No. 4 for three categories: deadliest road for 100 miles, darkest roads (natural areas mentioned earlier) and accidents involving a drunk drivers.

The Florida Department of Transportation (FDOT) is the state agency which oversees state roads and happens to be well funded, thanks in part to the gasoline tax which we all contribute to when we buy gas. When FDOTdesigns a new bridge (3 mile bridge), widens an existing road, or creates an entire new connecter road – their activities are strongly supported by elected officials, county commissioners, developers, admirers and advocates. This type of work creates many jobs so is generally a welcome site to communities where they are working as it brings in a workforce which helps drive the economy. If these improvements were designed and completed with an understanding of how the natural system functions, we could have economic growth and a healthy ecosystem to enjoy for generations.

Many of the deadliest roads in our area are currently under construction for road widening. Where are the extra lanes coming from? On I-10, the vegetated median swale is being dug up and filled in with mountains of rich red clay before being compacted and covered in asphalt. Those vegetated median swales serve an important environmental function by capturing the stormwater run-off from the road and holding it until it can percolate into the ground and not enter surface water still carrying sediments and run-off. The FDOT and their army of engineers are addressing this shortfall by building stormwater ponds along the stretch of the widened road. These highly engineered ponds are intended to function in a similar manner - that is holding water until it can percolate into the ground. And while these stormwater ponds are

designed to capture sand and clay, the system won't be able to trap and treat sediments, nutrients and stormwater in place (through phytoremediation – the ability of plants to take up contaminants) or support wildflowers for many pollinators as the living system does.

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evidently play a major role in pollinating underwater grasses. This remarkable finding is a testament to just how important all the components of a healthy ecosystem really are, and just how much more we have yet to learn. (*Note, many invertebrates are highly sensitive to impaired waters*) http://www.nature.com/articles/ncomms12980

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Hope Everyone has been enjoying the cooler temperatures of fall!

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Saturday, 12 November 2016
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This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

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Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

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shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

While the science and its appreciation are still developing, many universities that have offered degrees in civil and structural engineering are now adapting environmental engineering curriculums to blend the structure of engineering with the hydrology and ecology of the specific geographic landscape. The old school method of armoring used along many of our creeks, rivers and bridge supports are unfortunately outdated and ill suited for our landscape. The Gulf Coastal Plain is made up of highly eroded sandy soils held together by a network of roots and plants (adapted to that environment) our region of the Gulf Coastal Plain does not contain rock. Yet most every coastal and creek restoration project uses thousands of tons of rock.Why rock? Basically it's cheap. Use of rock in our region - always causes problems downstream. It's like kicking the can down the road.

On Eglin Air Force Base, engineers are addressing erosion and gullies from the past; many old roads and a train trestle have created horrendous erosion problems where creeks and swamps were accidentally fragmented. On a recent visit with area biologists and engineers – we were encouraged to see engineered restoration conducted utilizing materials from the local landscape versus more hardening. Native species from the local region were introduced during dormant seasons and allowed to acclimate to conditions. This holistic approach towards restoration projects is less expensive, more attractive to important wildlife such as birds and insects, and is capable of self healing – thus making the area more resilient.

Natural berms and stream terraces, built up with roots from trees, trap enough material to allow dense vegetation to gain a foot hold. This in turn restores the natural hydrology of the system. The healthy natural hydrology, flow rate and volume, of the streams ultimately removed the finer sand grains to reveal the gravel which had been buried by sediment in many of creek beds. The true test came duringthe April 2014 floods. These natural systems came through that event with little harm; what's more, they were able to re-vegetate themselves with their own seed stock. Can you say resiliency?

What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

Our community continues to grow; denser along the coast and sprawling into the suburbs and into the remaining natural areas. Our landscape is unique because so much of the natural lands are preserved in conservation lands (such as the Blackwater River State Forest and Gulf Islands

National Seashore) or owned and managed by the largest landowner in Northwest, Florida, namely the US Military.

A recent analysis by the University of Florida on behalf of 1,000 Friends of Florida, found that over the next five decades the Sunshine State will grow all over the map, blanketing as much as one third of the state in development. Much of the growth will center on the Interstate 4 corridor in Central Florida, followed by urban centers in Northeast and South Florida. [http://1000friendsofflorida.org/florida2070/]

Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

Let's start with **Roads[1]**. The 16 October Pensacola News Journal points out that four of the 50 deadliest roads in the county pass through Escambia and Santa Rosa County. The article identifies I-10, US 90, US 98, and US 29 to be among the most dangerous roads in the country based on fatal accidents per 100 miles. Interstate-10 ranked No. 4 for three categories: deadliest road for 100 miles, darkest roads (natural areas mentioned earlier) and accidents involving a drunk drivers.

The Florida Department of Transportation (FDOT) is the state agency which oversees state roads and happens to be well funded, thanks in part to the gasoline tax which we all contribute to when we buy gas. When FDOTdesigns a new bridge (3 mile bridge), widens an existing road, or creates an entire new connecter road – their activities are strongly supported by elected officials, county commissioners, developers, admirers and advocates. This type of work creates many jobs so is generally a welcome site to communities where they are working as it brings in a workforce which helps drive the economy. If these improvements were designed and completed with an understanding of how the natural system functions, we could have economic growth and a healthy ecosystem to enjoy for generations.

Many of the deadliest roads in our area are currently under construction for road widening. Where are the extra lanes coming from? On I-10, the vegetated median swale is being dug up and filled in with mountains of rich red clay before being compacted and covered in asphalt. Those vegetated median swales serve an important environmental function by capturing the stormwater run-off from the road and holding it until it can percolate into the ground and not enter surface water still carrying sediments and run-off. The FDOT and their army of engineers are addressing this shortfall by building stormwater ponds along the stretch of the widened road. These highly engineered ponds are intended to function in a similar manner - that is holding water until it can percolate into the ground. And while these stormwater ponds are

designed to capture sand and clay, the system won't be able to trap and treat sediments, nutrients and stormwater in place (through phytoremediation – the ability of plants to take up contaminants) or support wildflowers for many pollinators as the living system does.

Living systems provide ecosystem services; for instance, trees drink groundwater, release moisture through transpiration which cools the air, they make their own food through sunlight and produce oxygen. A healthy mature tree or grove of native trees provide food for our bird friends that use our air space (much like the military) on their daily, seasonal and migratory routes.

The New 3 Mile Bridge preliminary phase I assessment is underway and let us hope that there are open lines of communication (two-way dialogue) between the FDOT engineers who are working on the bridge design, local biologists (Deadman's Island) and geologists who will factor in the important sediment transport system that feeds our beautiful coastline.

That two way conversation was not available to the Monterey Shores Community earlier this year when FDOT was working on I-10 between Escambia Bay and Avalon Blvd in Santa Rosa County. Our rainy spring and summer brought some heavy downpours (typical in our area which receives 65" of rain annually) which transported a lot of red clay into a tributary of Indian Bayou. Residents continue to be upset by this unnecessary impact to their bayou and its fragile ecosystem. The FDOT does not have a plan to protect Indian Bayou from this road expansion or the additional run off that will enter the bayou. Promises to mitigate elsewhere don't really interest the community, since they are living on a beautiful system which is in a relatively natural state and self healing. The clay that ran into the bayou and turned it red was a clear violation of the Clean Water Act; where's the enforcement?

Exactly which agency or entity is protecting our water quality and natural resources? Santa Rosa County currently does not have a commissioner in this district. The Water Management District issued the permit to FDOT. The FL Dept of Environmental Protection is a little short handed at the moment (the NW District currently does not have a senior biologist or chemist to oversee the 16 counties in the panhandle) and likely trusted their sister agency to protect the surface waters that these construction projects cross. But, like some sisters, these agencies don't communicate well. The US Environmental Protection Agency once had authority over the Clean Water Act but somehow believed FL when FL promised to self regulate. The problem with this delegation is that our state agencies were directed not to regulate (the state has encouraged permitting and development to jump start the economy) which is why we are having many of the water quality problems in Florida coastal waters (BFA July 2016 Newsletter).

All those wide and new roads will undoubtedly lead to all those **New Homes[2].** Many counties depend on property taxes for their bread and butter money (their daily budget), so it is to their benefit to allow - even encourage development (perhaps by offering tax incentives) in their jurisdictional areas to compete with neighboring counties or states – which secures growth of their county and more money in the coffers.

Hurricane Matthew zipped past the East Coast of Florida earlier this month, staying far enough offshore to soak us with rain and little else, but the states of Georgia, South and North Carolina felt the brunt of the system. Worse, many older communities which never experienced flooding before – were now being flooded. Why are these communities suddenly experiencing flooding? Increased development combined with hardening of the surface reduces the available areas for water to percolate into the ground. As a result surplus surface water runs off to the lowest point of the landscape, usually to a natural system like a creek, bayou, river or bay which creates the catastrophic flooding we observed.

During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

We didn't know then, what we know now – but why aren't we applying new and proven technology to the manner in which we develop our landscape? Ideally, we should focus our efforts on how we avoid (not re-engineer) low lying areas, leaving riparian zones in tact so they can function as designed in nature. Progressive approaches applied now can avoid watershed impairments in the future. Case in point, Escambia County has a long range plan to connect I-10 at Beulah to a new road, currently referred to as the Beltway that will eventually tie into Quintette Road on the east side of Hwy 29. (http://www.northescambia.com/2012/08/new-beltway-could-link-i-10-north-escambia-santa-rosa)

Pull out a map and take a close look at the area, and you'll notice a few things. Much of the landscape in this western portion of the county is low lying, prone to flooding and in a natural state. Subdivisions along Eleven Mile Creek which were built in the Riparian Zone (some before we knew better, some not) had 4-5' of water flowing through their homes during the 2014 flood. There are some noises to buy back the homes (taxpayer money), demolish them and try to reconnect the floodplain. That's a step in the right direction. A bigger jump would have been to curtail development in sensitive areas in the first place. And yet, this Beltway will encourage development in many of these rural low lying areas.

Escambia County is already kicking the can down the road for the next generation to pick up, or in this case clean up. Builders and their entourage are planning new communities that will take 1,200 acres out of a natural state and transform it into 14,000 cookie cutter homes. One acre of natural land doesn't generate much money for the county, but one acres with ten homes creates a nice little property tax base for the county. Perhaps some of this increased revenue could be invested upfront in the form of better planning to avoid the mistakes we continue to repeat.

The beltway will cross several creeks including Cowdevil Creek and Jack's Branch. Those waterways discharge into the Perdido River. The Perdido River is an Outstanding Florida Water, which by statute (if anyone would bother to enforce the law) should not have its water quality negatively impacted in **any** way. Much of the area as seen in aerial maps indicates a large riparian zone. So why do we need all the **new communities**[3], **new shopping centers**[4] and growth?? Because the Navy Federal Credit Union Expansion will create 10,000 jobs when completed and the new proposed Tech Park at Outlying Field 8 (OLF-8) are all providing **job growth and economic opportunities**[5]**.**

Ironically, the proposed Beltway, the Navy Federal Credit Union, OLF 8 and Bristol Park are all located in the Perdido Watershed, the latter three developments are located within the Eleven Mile Creek Watershed which used to have the nickname 'Stink Creek', before IP removed the paper mill effluent from direct discharge into Eleven Mile Creek to overland discharge onto manmade wetlands and into Tee and Wicker Lakes which enter Perdido Bay.

A well laid out plan with adequate buffers and roads complete with bridges that span the riparian zones may accommodate the proposed influx of people, roads, homes, fast food places, etc. to higher ground in a low lying part of county, but without a well thought out plan we will continue to cause ecological impacts to our area waters. The search for funding to correct past problems is always highly competitive, with the lowest bidder often winning the contract. These contractors often lack the skill set or knowledge to design and engineer a functioning ecosystem. These 'Random Acts of Restoration' are a nice thought, but rarely can they allow a living ecosystem to recover to a naturally functioning and healthy system.

The RESTORE Act has allotted future funding for projects in several NWFL counties that were impacted by the 2010 oil spill. A lengthy and committed process was convened with citizens appointed to a Board for several years to hear from our community and better understand the community's needs and desires. A proposal to restore the entire Carpenter Creek-Bayou Texar

Watershed has warranted a lot of attention. The proposal knits together many of the conservation goals visualized by groups such as Audubon, the Native Plant Society, the Bream Fishermen and the many locals who grew up remembering the bayou from their youth. The Concept Paper, on the BFA Website uses the many years worth of important water quality data collected by our organization to tell the story of changes over time and how that correlates to community growth and sprawl. This proposal sets the stage for students, citizens, organizations and communities alike to engage by learning and participating in understanding a land ethic for future generations.

> ***"Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest."***
>
> ***~ Aldo Leopold Conservation Economics (1934)***

This project has all the components to unite our community and this community has the talent, interest and knowledge to make this restoration a complete success. The Carpenter Creek Restoration Project will serve to showcase the community living in Escambia County and the City of Pensacola how reconnecting the community to the local waters can serve to enrich our lives, our economy, our watersheds and most importantly our natural resources.

Stuff you might like to know:

- City of Pensacola Councilwoman Myers will be hosting a town hall meeting focused on Carpenter Creek. The meeting will be held on Tues, 1 November at 6:30 PM at Cokesbury United Methodist Church (5925 North 9th Avenue)

- The Gulf Estuarine Research Society (GERS) will be hosting their fall 2016 meeting at the Pensacola Beach Hilton Garden Inn on 3-5 November 2016. The meeting theme is **Connections across the Gulf Coast: Wetlands to Watersheds and Waterways**. The meeting will highlight interconnections among wetlands, estuarine and coastal habitats by bringing together scientists, researchers and students from universities, agencies, research labs and other organizations across the Gulf coast and its watersheds. For more information, visit http://www.gers.us/2016-meeting.html

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What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

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All those wide and new roads will undoubtedly lead to all those **New Homes[2].** Many counties depend on property taxes for their bread and butter money (their daily budget), so it is to their benefit to allow - even encourage development (perhaps by offering tax incentives) in their jurisdictional areas to compete with neighboring counties or states – which secures growth of their county and more money in the coffers.

Hurricane Matthew zipped past the East Coast of Florida earlier this month, staying far enough offshore to soak us with rain and little else, but the states of Georgia, South and North Carolina felt the brunt of the system. Worse, many older communities which never experienced flooding before – were now being flooded. Why are these communities suddenly experiencing flooding? Increased development combined with hardening of the surface reduces the available areas for water to percolate into the ground. As a result surplus surface water runs off to the lowest point of the landscape, usually to a natural system like a creek, bayou, river or bay which creates the catastrophic flooding we observed.

During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

We didn't know then, what we know now – but why aren't we applying new and proven technology to the manner in which we develop our landscape? Ideally, we should focus our efforts on how we avoid (not re-engineer) low lying areas, leaving riparian zones in tact so they can function as designed in nature. Progressive approaches applied now can avoid watershed impairments in the future. Case in point, Escambia County has a long range plan to connect I-10 at Beulah to a new road, currently referred to as the Beltway that will eventually tie into Quintette Road on the east side of Hwy 29. (http://www.northescambia.com/2012/08/new-beltway-could-link-i-10-north-escambia-santa-rosa)

Pull out a map and take a close look at the area, and you'll notice a few things. Much of the landscape in this western portion of the county is low lying, prone to flooding and in a natural state. Subdivisions along Eleven Mile Creek which were built in the Riparian Zone (some before we knew better, some not) had 4-5' of water flowing through their homes during the 2014 flood. There are some noises to buy back the homes (taxpayer money), demolish them and try to reconnect the floodplain. That's a step in the right direction. A bigger jump would have been to curtail development in sensitive areas in the first place. And yet, this Beltway will encourage development in many of these rural low lying areas.

Escambia County is already kicking the can down the road for the next generation to pick up, or in this case clean up. Builders and their entourage are planning new communities that will take 1,200 acres out of a natural state and transform it into 14,000 cookie cutter homes. One acre of natural land doesn't generate much money for the county, but one acres with ten homes creates a nice little property tax base for the county. Perhaps some of this increased revenue could be invested upfront in the form of better planning to avoid the mistakes we continue to repeat.

The beltway will cross several creeks including Cowdevil Creek and Jack's Branch. Those waterways discharge into the Perdido River. The Perdido River is an Outstanding Florida Water, which by statute (if anyone would bother to enforce the law) should not have its water quality negatively impacted in **any** way. Much of the area as seen in aerial maps indicates a large riparian zone. So why do we need all the **new communities**[3], **new shopping centers**[4] and growth?? Because the Navy Federal Credit Union Expansion will create 10,000 jobs when completed and the new proposed Tech Park at Outlying Field 8 (OLF-8) are all providing **job growth and economic opportunities**[5]**.**

Ironically, the proposed Beltway, the Navy Federal Credit Union, OLF 8 and Bristol Park are all located in the Perdido Watershed, the latter three developments are located within the Eleven Mile Creek Watershed which used to have the nickname 'Stink Creek', before IP removed the paper mill effluent from direct discharge into Eleven Mile Creek to overland discharge onto manmade wetlands and into Tee and Wicker Lakes which enter Perdido Bay.

A well laid out plan with adequate buffers and roads complete with bridges that span the riparian zones may accommodate the proposed influx of people, roads, homes, fast food places, etc. to higher ground in a low lying part of county, but without a well thought out plan we will continue to cause ecological impacts to our area waters. The search for funding to correct past problems is always highly competitive, with the lowest bidder often winning the contract. These contractors often lack the skill set or knowledge to design and engineer a functioning ecosystem. These 'Random Acts of Restoration' are a nice thought, but rarely can they allow a living ecosystem to recover to a naturally functioning and healthy system.

The RESTORE Act has allotted future funding for projects in several NWFL counties that were impacted by the 2010 oil spill. A lengthy and committed process was convened with citizens appointed to a Board for several years to hear from our community and better understand the community's needs and desires. A proposal to restore the entire Carpenter Creek-Bayou Texar

Watershed has warranted a lot of attention. The proposal knits together many of the conservation goals visualized by groups such as Audubon, the Native Plant Society, the Bream Fishermen and the many locals who grew up remembering the bayou from their youth. The Concept Paper, on the BFA Website uses the many years worth of important water quality data collected by our organization to tell the story of changes over time and how that correlates to community growth and sprawl. This proposal sets the stage for students, citizens, organizations and communities alike to engage by learning and participating in understanding a land ethic for future generations.

> ***"Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest."***
>
> ***~ Aldo Leopold Conservation Economics (1934)***

This project has all the components to unite our community and this community has the talent, interest and knowledge to make this restoration a complete success. The Carpenter Creek Restoration Project will serve to showcase the community living in Escambia County and the City of Pensacola how reconnecting the community to the local waters can serve to enrich our lives, our economy, our watersheds and most importantly our natural resources.

Stuff you might like to know:

- City of Pensacola Councilwoman Myers will be hosting a town hall meeting focused on Carpenter Creek. The meeting will be held on Tues, 1 November at 6:30 PM at Cokesbury United Methodist Church (5925 North 9th Avenue)

- The Gulf Estuarine Research Society (GERS) will be hosting their fall 2016 meeting at the Pensacola Beach Hilton Garden Inn on 3-5 November 2016. The meeting theme is **Connections across the Gulf Coast: Wetlands to Watersheds and Waterways**. The meeting will highlight interconnections among wetlands, estuarine and coastal habitats by bringing together scientists, researchers and students from universities, agencies, research labs and other organizations across the Gulf coast and its watersheds. For more information, visit http://www.gers.us/2016-meeting.html

- Mike Lewis, researcher at USEPA recently published a report entitled: Environmental Quality of the Pensacola Bay System: Retrospective Review for Future Resource Management and Rehabilitation. The report can be found and downloaded from the BFA Website.

- A remarkable publication in Nature recently provided evidence that marine flowers, like those found in seagrass systems, may depend on small invertebrates like amphipods and other small crustaceans to pollinate these underwater flowers. Much like the role that many insects and small mammals accomplish to successfully pollinate terrestrial flowers, now new evidence points us to the importance of the small invertebrates that

evidently play a major role in pollinating underwater grasses. This remarkable finding is a testament to just how important all the components of a healthy ecosystem really are, and just how much more we have yet to learn. (*Note, many invertebrates are highly sensitive to impaired waters*) http://www.nature.com/articles/ncomms12980

- The FL Fish & Wildlife Conservation Commission secured a large Gulf Environmental Benefits Fund Grant to collect concurrent data among six large NW FL Bays in which researchers hope to answer why seagrasses are not returning to areas historically known to have grasses. Jane Caffrey from UWF, CEDB has overseen the research in the Escambia/Pensacola/East Bay & Santa Rosa Sound with an army of students. I have been fortunate to participate in this research and have had the opportunity to observe many wonderful things:
    - This week marked 26 days without rain and in Pensacola Bay near the Three Mile Bridge during very calm wind conditions we were able to see a Secchi Disk (an instrument to determine water clarity) for 5.5 Meters (which is roughly 18').
    - While many 'old timers' recall a time (1930's, 40's, and 50's) when the bay water was 'gin clear' and you could see seagrass meadows on a white sandy bottom like a mosaic across the bay – these days the deeper parts of our waterways are covered in a thick layer of fine mud.
    - Through the BFA WQ Sampling Program, we visit many creeks, rivers, and bayous that enter these bay systems. The 'old timers' recall when the creeks ran deep and cool, the banks were held in place by roots and the creek bottoms were dominated by gravel. Today the creeks are smothered by sand and the finer particulates have settled in the bayous and the bays.
    - In our scouting trips throughout the bays and sound we found hope in little pockets of seagrass trying to recover, we observed large schools of menhaden and mullet moving through the area, and we observed first hand just how resilient the ecosystem can be when allowed to recover.
    - There appeared to be a direct correlation between a natural shoreline and the observation of seagrass present. Areas with bulkheads and armoring were less apt to have grassbeds.
    - Stay tuned for a public meeting on the findings of this research in 2017.

- Lastly, in the July 2016 BFA Newsletter we reported a concern for moving the treated effluent from Hidden Creek in the Holley Navarre portion of South Santa Rosa County which discharges to East River Bayou in East Bay TO Williams Creek, which empties into Santa Rosa Sound. Earlier this month, 60,000 gallons of raw sewage spilled from a broken pipe into Williams Creek. Our seagrass beds and creeks systems will never recover to their full potential until we make certain that these accidents no longer occur. http://navarrepress.com/headlines/navarre-wastewater-leak/

We hope you can make the Fall Picnic, Saturday, 12 November 2016

BFA puts out a quarterly newsletter and hosts 4 general membership meetings a year.

The Bream Fishermen Association is a not-for-profit organization dedicated to the promotion of the conservation responsibilities as well as the recreational enjoyment of fishermen, hunters, campers and related outdoorsmen.

It is the objective of the BFA to support, develop, and implement programs that will:
1) Improve the quality of our environment;

2) Protect and maintain our present wilderness type lakes, rivers, swamps, marshes, bays, forests, and beaches in their natural undeveloped state; and

3) Advance the causes of plant, marine, and wildlife preservation.

Membership is open to all individuals who support these objectives. Please join the BFA by sending us your contact information (name, mailing address, phone, and email) be sure to notify us if you prefer to receive notices and announcements by mail or email, and $10 annual dues to our mailing address:

Bream Fishermen Association

1203 N. 16th Ave, Pensacola, FL 32503

The BFA October 2016 NEWSLETTER

Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

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We didn't know then, what we know now – but why aren't we applying new and proven technology to the manner in which we develop our landscape? Ideally, we should focus our efforts on how we avoid (not re-engineer) low lying areas, leaving riparian zones in tact so they can function as designed in nature. Progressive approaches applied now can avoid watershed impairments in the future. Case in point, Escambia County has a long range plan to connect I-10 at Beulah to a new road, currently referred to as the Beltway that will eventually tie into Quintette Road on the east side of Hwy 29. (http://www.northescambia.com/2012/08/new-beltway-could-link-i-10-north-escambia-santa-rosa)

Pull out a map and take a close look at the area, and you'll notice a few things. Much of the landscape in this western portion of the county is low lying, prone to flooding and in a natural state. Subdivisions along Eleven Mile Creek which were built in the Riparian Zone (some before we knew better, some not) had 4-5' of water flowing through their homes during the 2014 flood. There are some noises to buy back the homes (taxpayer money), demolish them and try to reconnect the floodplain. That's a step in the right direction. A bigger jump would have been to curtail development in sensitive areas in the first place. And yet, this Beltway will encourage development in many of these rural low lying areas.

Escambia County is already kicking the can down the road for the next generation to pick up, or in this case clean up. Builders and their entourage are planning new communities that will take 1,200 acres out of a natural state and transform it into 14,000 cookie cutter homes. One acre of natural land doesn't generate much money for the county, but one acres with ten homes creates a nice little property tax base for the county. Perhaps some of this increased revenue could be invested upfront in the form of better planning to avoid the mistakes we continue to repeat.

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    - This week marked 26 days without rain and in Pensacola Bay near the Three Mile Bridge during very calm wind conditions we were able to see a Secchi Disk (an instrument to determine water clarity) for 5.5 Meters (which is roughly 18').
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    - There appeared to be a direct correlation between a natural shoreline and the observation of seagrass present. Areas with bulkheads and armoring were less apt to have grassbeds.
    - Stay tuned for a public meeting on the findings of this research in 2017.

- Lastly, in the July 2016 BFA Newsletter we reported a concern for moving the treated effluent from Hidden Creek in the Holley Navarre portion of South Santa Rosa County which discharges to East River Bayou in East Bay TO Williams Creek, which empties into Santa Rosa Sound. Earlier this month, 60,000 gallons of raw sewage spilled from a broken pipe into Williams Creek. Our seagrass beds and creeks systems will never recover to their full potential until we make certain that these accidents no longer occur. http://navarrepress.com/headlines/navarre-wastewater-leak/

We hope you can make the Fall Picnic, Saturday, 12 November 2016

BFA puts out a quarterly newsletter and hosts 4 general membership meetings a year.

The Bream Fishermen Association is a not-for-profit organization dedicated to the promotion of the conservation responsibilities as well as the recreational enjoyment of fishermen, hunters, campers and related outdoorsmen.

It is the objective of the BFA to support, develop, and implement programs that will:
1) Improve the quality of our environment;

2) Protect and maintain our present wilderness type lakes, rivers, swamps, marshes, bays, forests, and beaches in their natural undeveloped state; and

3) Advance the causes of plant, marine, and wildlife preservation.

Membership is open to all individuals who support these objectives. Please join the BFA by sending us your contact information (name, mailing address, phone, and email) be sure to notify us if you prefer to receive notices and announcements by mail or email, and $10 annual dues to our mailing address:

Bream Fishermen Association

1203 N. 16th Ave, Pensacola, FL 32503

The BFA October 2016 NEWSLETTER

Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

Our natural landscape can be very resilient. Hurricane Katrina revealed just how important emergent grasses were to low lying coastal areas when wind driven waves were slowed in areas where they remained. However, in areas where grasses were absent or thinned the waters took out everything (homes, trees, roads, etc.) in their path. Coastal engineers really took notice of this difference. Current research is focusing attention on the level of resiliency along natural

shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

While the science and its appreciation are still developing, many universities that have offered degrees in civil and structural engineering are now adapting environmental engineering curriculums to blend the structure of engineering with the hydrology and ecology of the specific geographic landscape. The old school method of armoring used along many of our creeks, rivers and bridge supports are unfortunately outdated and ill suited for our landscape. The Gulf Coastal Plain is made up of highly eroded sandy soils held together by a network of roots and plants (adapted to that environment) our region of the Gulf Coastal Plain does not contain rock. Yet most every coastal and creek restoration project uses thousands of tons of rock.Why rock? Basically it's cheap. Use of rock in our region - always causes problems downstream. It's like kicking the can down the road.

On Eglin Air Force Base, engineers are addressing erosion and gullies from the past; many old roads and a train trestle have created horrendous erosion problems where creeks and swamps were accidentally fragmented. On a recent visit with area biologists and engineers – we were encouraged to see engineered restoration conducted utilizing materials from the local landscape versus more hardening. Native species from the local region were introduced during dormant seasons and allowed to acclimate to conditions. This holistic approach towards restoration projects is less expensive, more attractive to important wildlife such as birds and insects, and is capable of self healing – thus making the area more resilient.

Natural berms and stream terraces, built up with roots from trees, trap enough material to allow dense vegetation to gain a foot hold. This in turn restores the natural hydrology of the system. The healthy natural hydrology, flow rate and volume, of the streams ultimately removed the finer sand grains to reveal the gravel which had been buried by sediment in many of creek beds. The true test came duringthe April 2014 floods. These natural systems came through that event with little harm; what's more, they were able to re-vegetate themselves with their own seed stock. Can you say resiliency?

What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

Our community continues to grow; denser along the coast and sprawling into the suburbs and into the remaining natural areas. Our landscape is unique because so much of the natural lands are preserved in conservation lands (such as the Blackwater River State Forest and Gulf Islands

National Seashore) or owned and managed by the largest landowner in Northwest, Florida, namely the US Military.

A recent analysis by the University of Florida on behalf of 1,000 Friends of Florida, found that over the next five decades the Sunshine State will grow all over the map, blanketing as much as one third of the state in development. Much of the growth will center on the Interstate 4 corridor in Central Florida, followed by urban centers in Northeast and South Florida. [http://1000friendsofflorida.org/florida2070/]

Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

Let's start with **Roads[1]**. The 16 October Pensacola News Journal points out that four of the 50 deadliest roads in the county pass through Escambia and Santa Rosa County. The article identifies I-10, US 90, US 98, and US 29 to be among the most dangerous roads in the country based on fatal accidents per 100 miles. Interstate-10 ranked No. 4 for three categories: deadliest road for 100 miles, darkest roads (natural areas mentioned earlier) and accidents involving a drunk drivers.

The Florida Department of Transportation (FDOT) is the state agency which oversees state roads and happens to be well funded, thanks in part to the gasoline tax which we all contribute to when we buy gas. When FDOTdesigns a new bridge (3 mile bridge), widens an existing road, or creates an entire new connecter road – their activities are strongly supported by elected officials, county commissioners, developers, admirers and advocates. This type of work creates many jobs so is generally a welcome site to communities where they are working as it brings in a workforce which helps drive the economy. If these improvements were designed and completed with an understanding of how the natural system functions, we could have economic growth and a healthy ecosystem to enjoy for generations.

Many of the deadliest roads in our area are currently under construction for road widening. Where are the extra lanes coming from? On I-10, the vegetated median swale is being dug up and filled in with mountains of rich red clay before being compacted and covered in asphalt. Those vegetated median swales serve an important environmental function by capturing the stormwater run-off from the road and holding it until it can percolate into the ground and not enter surface water still carrying sediments and run-off. The FDOT and their army of engineers are addressing this shortfall by building stormwater ponds along the stretch of the widened road. These highly engineered ponds are intended to function in a similar manner - that is holding water until it can percolate into the ground. And while these stormwater ponds are

designed to capture sand and clay, the system won't be able to trap and treat sediments, nutrients and stormwater in place (through phytoremediation – the ability of plants to take up contaminants) or support wildflowers for many pollinators as the living system does.

Living systems provide ecosystem services; for instance, trees drink groundwater, release moisture through transpiration which cools the air, they make their own food through sunlight and produce oxygen. A healthy mature tree or grove of native trees provide food for our bird friends that use our air space (much like the military) on their daily, seasonal and migratory routes.

The New 3 Mile Bridge preliminary phase I assessment is underway and let us hope that there are open lines of communication (two-way dialogue) between the FDOT engineers who are working on the bridge design, local biologists (Deadman's Island) and geologists who will factor in the important sediment transport system that feeds our beautiful coastline.

That two way conversation was not available to the Monterey Shores Community earlier this year when FDOT was working on I-10 between Escambia Bay and Avalon Blvd in Santa Rosa County. Our rainy spring and summer brought some heavy downpours (typical in our area which receives 65" of rain annually) which transported a lot of red clay into a tributary of Indian Bayou. Residents continue to be upset by this unnecessary impact to their bayou and its fragile ecosystem. The FDOT does not have a plan to protect Indian Bayou from this road expansion or the additional run off that will enter the bayou. Promises to mitigate elsewhere don't really interest the community, since they are living on a beautiful system which is in a relatively natural state and self healing. The clay that ran into the bayou and turned it red was a clear violation of the Clean Water Act; where's the enforcement?

Exactly which agency or entity is protecting our water quality and natural resources? Santa Rosa County currently does not have a commissioner in this district. The Water Management District issued the permit to FDOT. The FL Dept of Environmental Protection is a little short handed at the moment (the NW District currently does not have a senior biologist or chemist to oversee the 16 counties in the panhandle) and likely trusted their sister agency to protect the surface waters that these construction projects cross. But, like some sisters, these agencies don't communicate well. The US Environmental Protection Agency once had authority over the Clean Water Act but somehow believed FL when FL promised to self regulate. The problem with this delegation is that our state agencies were directed not to regulate (the state has encouraged permitting and development to jump start the economy) which is why we are having many of the water quality problems in Florida coastal waters (BFA July 2016 Newsletter).

All those wide and new roads will undoubtedly lead to all those **New Homes[2].** Many counties depend on property taxes for their bread and butter money (their daily budget), so it is to their benefit to allow - even encourage development (perhaps by offering tax incentives) in their jurisdictional areas to compete with neighboring counties or states – which secures growth of their county and more money in the coffers.

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1203 N. 16th Ave, Pensacola, FL 32503

The BFA October 2016 NEWSLETTER

Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

Our natural landscape can be very resilient. Hurricane Katrina revealed just how important emergent grasses were to low lying coastal areas when wind driven waves were slowed in areas where they remained. However, in areas where grasses were absent or thinned the waters took out everything (homes, trees, roads, etc.) in their path. Coastal engineers really took notice of this difference. Current research is focusing attention on the level of resiliency along natural

shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

While the science and its appreciation are still developing, many universities that have offered degrees in civil and structural engineering are now adapting environmental engineering curriculums to blend the structure of engineering with the hydrology and ecology of the specific geographic landscape. The old school method of armoring used along many of our creeks, rivers and bridge supports are unfortunately outdated and ill suited for our landscape. The Gulf Coastal Plain is made up of highly eroded sandy soils held together by a network of roots and plants (adapted to that environment) our region of the Gulf Coastal Plain does not contain rock. Yet most every coastal and creek restoration project uses thousands of tons of rock.Why rock? Basically it's cheap. Use of rock in our region - always causes problems downstream. It's like kicking the can down the road.

On Eglin Air Force Base, engineers are addressing erosion and gullies from the past; many old roads and a train trestle have created horrendous erosion problems where creeks and swamps were accidentally fragmented. On a recent visit with area biologists and engineers – we were encouraged to see engineered restoration conducted utilizing materials from the local landscape versus more hardening. Native species from the local region were introduced during dormant seasons and allowed to acclimate to conditions. This holistic approach towards restoration projects is less expensive, more attractive to important wildlife such as birds and insects, and is capable of self healing – thus making the area more resilient.

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What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

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National Seashore) or owned and managed by the largest landowner in Northwest, Florida, namely the US Military.

A recent analysis by the University of Florida on behalf of 1,000 Friends of Florida, found that over the next five decades the Sunshine State will grow all over the map, blanketing as much as one third of the state in development. Much of the growth will center on the Interstate 4 corridor in Central Florida, followed by urban centers in Northeast and South Florida. [http://1000friendsofflorida.org/florida2070/]

Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

Let's start with **Roads[1]**. The 16 October Pensacola News Journal points out that four of the 50 deadliest roads in the county pass through Escambia and Santa Rosa County. The article identifies I-10, US 90, US 98, and US 29 to be among the most dangerous roads in the country based on fatal accidents per 100 miles. Interstate-10 ranked No. 4 for three categories: deadliest road for 100 miles, darkest roads (natural areas mentioned earlier) and accidents involving a drunk drivers.

The Florida Department of Transportation (FDOT) is the state agency which oversees state roads and happens to be well funded, thanks in part to the gasoline tax which we all contribute to when we buy gas. When FDOTdesigns a new bridge (3 mile bridge), widens an existing road, or creates an entire new connecter road – their activities are strongly supported by elected officials, county commissioners, developers, admirers and advocates. This type of work creates many jobs so is generally a welcome site to communities where they are working as it brings in a workforce which helps drive the economy. If these improvements were designed and completed with an understanding of how the natural system functions, we could have economic growth and a healthy ecosystem to enjoy for generations.

Many of the deadliest roads in our area are currently under construction for road widening. Where are the extra lanes coming from? On I-10, the vegetated median swale is being dug up and filled in with mountains of rich red clay before being compacted and covered in asphalt. Those vegetated median swales serve an important environmental function by capturing the stormwater run-off from the road and holding it until it can percolate into the ground and not enter surface water still carrying sediments and run-off. The FDOT and their army of engineers are addressing this shortfall by building stormwater ponds along the stretch of the widened road. These highly engineered ponds are intended to function in a similar manner - that is holding water until it can percolate into the ground. And while these stormwater ponds are

designed to capture sand and clay, the system won't be able to trap and treat sediments, nutrients and stormwater in place (through phytoremediation – the ability of plants to take up contaminants) or support wildflowers for many pollinators as the living system does.

Living systems provide ecosystem services; for instance, trees drink groundwater, release moisture through transpiration which cools the air, they make their own food through sunlight and produce oxygen. A healthy mature tree or grove of native trees provide food for our bird friends that use our air space (much like the military) on their daily, seasonal and migratory routes.

The New 3 Mile Bridge preliminary phase I assessment is underway and let us hope that there are open lines of communication (two-way dialogue) between the FDOT engineers who are working on the bridge design, local biologists (Deadman's Island) and geologists who will factor in the important sediment transport system that feeds our beautiful coastline.

That two way conversation was not available to the Monterey Shores Community earlier this year when FDOT was working on I-10 between Escambia Bay and Avalon Blvd in Santa Rosa County. Our rainy spring and summer brought some heavy downpours (typical in our area which receives 65" of rain annually) which transported a lot of red clay into a tributary of Indian Bayou. Residents continue to be upset by this unnecessary impact to their bayou and its fragile ecosystem. The FDOT does not have a plan to protect Indian Bayou from this road expansion or the additional run off that will enter the bayou. Promises to mitigate elsewhere don't really interest the community, since they are living on a beautiful system which is in a relatively natural state and self healing. The clay that ran into the bayou and turned it red was a clear violation of the Clean Water Act; where's the enforcement?

Exactly which agency or entity is protecting our water quality and natural resources? Santa Rosa County currently does not have a commissioner in this district. The Water Management District issued the permit to FDOT. The FL Dept of Environmental Protection is a little short handed at the moment (the NW District currently does not have a senior biologist or chemist to oversee the 16 counties in the panhandle) and likely trusted their sister agency to protect the surface waters that these construction projects cross. But, like some sisters, these agencies don't communicate well. The US Environmental Protection Agency once had authority over the Clean Water Act but somehow believed FL when FL promised to self regulate. The problem with this delegation is that our state agencies were directed not to regulate (the state has encouraged permitting and development to jump start the economy) which is why we are having many of the water quality problems in Florida coastal waters (BFA July 2016 Newsletter).

All those wide and new roads will undoubtedly lead to all those **New Homes[2].** Many counties depend on property taxes for their bread and butter money (their daily budget), so it is to their benefit to allow - even encourage development (perhaps by offering tax incentives) in their jurisdictional areas to compete with neighboring counties or states – which secures growth of their county and more money in the coffers.

Hurricane Matthew zipped past the East Coast of Florida earlier this month, staying far enough offshore to soak us with rain and little else, but the states of Georgia, South and North Carolina felt the brunt of the system. Worse, many older communities which never experienced flooding before – were now being flooded. Why are these communities suddenly experiencing flooding? Increased development combined with hardening of the surface reduces the available areas for water to percolate into the ground. As a result surplus surface water runs off to the lowest point of the landscape, usually to a natural system like a creek, bayou, river or bay which creates the catastrophic flooding we observed.

During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

We didn't know then, what we know now – but why aren't we applying new and proven technology to the manner in which we develop our landscape? Ideally, we should focus our efforts on how we avoid (not re-engineer) low lying areas, leaving riparian zones in tact so they can function as designed in nature. Progressive approaches applied now can avoid watershed impairments in the future. Case in point, Escambia County has a long range plan to connect I-10 at Beulah to a new road, currently referred to as the Beltway that will eventually tie into Quintette Road on the east side of Hwy 29. (http://www.northescambia.com/2012/08/new-beltway-could-link-i-10-north-escambia-santa-rosa)

Pull out a map and take a close look at the area, and you'll notice a few things. Much of the landscape in this western portion of the county is low lying, prone to flooding and in a natural state. Subdivisions along Eleven Mile Creek which were built in the Riparian Zone (some before we knew better, some not) had 4-5' of water flowing through their homes during the 2014 flood. There are some noises to buy back the homes (taxpayer money), demolish them and try to reconnect the floodplain. That's a step in the right direction. A bigger jump would have been to curtail development in sensitive areas in the first place. And yet, this Beltway will encourage development in many of these rural low lying areas.

Escambia County is already kicking the can down the road for the next generation to pick up, or in this case clean up. Builders and their entourage are planning new communities that will take 1,200 acres out of a natural state and transform it into 14,000 cookie cutter homes. One acre of natural land doesn't generate much money for the county, but one acres with ten homes creates a nice little property tax base for the county. Perhaps some of this increased revenue could be invested upfront in the form of better planning to avoid the mistakes we continue to repeat.

The beltway will cross several creeks including Cowdevil Creek and Jack's Branch. Those waterways discharge into the Perdido River. The Perdido River is an Outstanding Florida Water, which by statute (if anyone would bother to enforce the law) should not have its water quality negatively impacted in **any** way. Much of the area as seen in aerial maps indicates a large riparian zone. So why do we need all the **new communities**[3], **new shopping centers**[4] and growth?? Because the Navy Federal Credit Union Expansion will create 10,000 jobs when completed and the new proposed Tech Park at Outlying Field 8 (OLF-8) are all providing **job growth and economic opportunities**[5]**.**

Ironically, the proposed Beltway, the Navy Federal Credit Union, OLF 8 and Bristol Park are all located in the Perdido Watershed, the latter three developments are located within the Eleven Mile Creek Watershed which used to have the nickname 'Stink Creek', before IP removed the paper mill effluent from direct discharge into Eleven Mile Creek to overland discharge onto manmade wetlands and into Tee and Wicker Lakes which enter Perdido Bay.

A well laid out plan with adequate buffers and roads complete with bridges that span the riparian zones may accommodate the proposed influx of people, roads, homes, fast food places, etc. to higher ground in a low lying part of county, but without a well thought out plan we will continue to cause ecological impacts to our area waters. The search for funding to correct past problems is always highly competitive, with the lowest bidder often winning the contract. These contractors often lack the skill set or knowledge to design and engineer a functioning ecosystem. These 'Random Acts of Restoration' are a nice thought, but rarely can they allow a living ecosystem to recover to a naturally functioning and healthy system.

The RESTORE Act has allotted future funding for projects in several NWFL counties that were impacted by the 2010 oil spill. A lengthy and committed process was convened with citizens appointed to a Board for several years to hear from our community and better understand the community's needs and desires. A proposal to restore the entire Carpenter Creek-Bayou Texar

Watershed has warranted a lot of attention. The proposal knits together many of the conservation goals visualized by groups such as Audubon, the Native Plant Society, the Bream Fishermen and the many locals who grew up remembering the bayou from their youth. The Concept Paper, on the BFA Website uses the many years worth of important water quality data collected by our organization to tell the story of changes over time and how that correlates to community growth and sprawl. This proposal sets the stage for students, citizens, organizations and communities alike to engage by learning and participating in understanding a land ethic for future generations.

> ***"Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest."***
>
> ***~ Aldo Leopold Conservation Economics (1934)***

This project has all the components to unite our community and this community has the talent, interest and knowledge to make this restoration a complete success. The Carpenter Creek Restoration Project will serve to showcase the community living in Escambia County and the City of Pensacola how reconnecting the community to the local waters can serve to enrich our lives, our economy, our watersheds and most importantly our natural resources.

Stuff you might like to know:

- City of Pensacola Councilwoman Myers will be hosting a town hall meeting focused on Carpenter Creek. The meeting will be held on Tues, 1 November at 6:30 PM at Cokesbury United Methodist Church (5925 North 9th Avenue)

- The Gulf Estuarine Research Society (GERS) will be hosting their fall 2016 meeting at the Pensacola Beach Hilton Garden Inn on 3-5 November 2016. The meeting theme is **Connections across the Gulf Coast: Wetlands to Watersheds and Waterways**. The meeting will highlight interconnections among wetlands, estuarine and coastal habitats by bringing together scientists, researchers and students from universities, agencies, research labs and other organizations across the Gulf coast and its watersheds. For more information, visit http://www.gers.us/2016-meeting.html

- Mike Lewis, researcher at USEPA recently published a report entitled: Environmental Quality of the Pensacola Bay System: Retrospective Review for Future Resource Management and Rehabilitation. The report can be found and downloaded from the BFA Website.

- A remarkable publication in Nature recently provided evidence that marine flowers, like those found in seagrass systems, may depend on small invertebrates like amphipods and other small crustaceans to pollinate these underwater flowers. Much like the role that many insects and small mammals accomplish to successfully pollinate terrestrial flowers, now new evidence points us to the importance of the small invertebrates that

evidently play a major role in pollinating underwater grasses. This remarkable finding is a testament to just how important all the components of a healthy ecosystem really are, and just how much more we have yet to learn. (*Note, many invertebrates are highly sensitive to impaired waters*) http://www.nature.com/articles/ncomms12980

- The FL Fish & Wildlife Conservation Commission secured a large Gulf Environmental Benefits Fund Grant to collect concurrent data among six large NW FL Bays in which researchers hope to answer why seagrasses are not returning to areas historically known to have grasses. Jane Caffrey from UWF, CEDB has overseen the research in the Escambia/Pensacola/East Bay & Santa Rosa Sound with an army of students. I have been fortunate to participate in this research and have had the opportunity to observe many wonderful things:
    - This week marked 26 days without rain and in Pensacola Bay near the Three Mile Bridge during very calm wind conditions we were able to see a Secchi Disk (an instrument to determine water clarity) for 5.5 Meters (which is roughly 18').
    - While many 'old timers' recall a time (1930's, 40's, and 50's) when the bay water was 'gin clear' and you could see seagrass meadows on a white sandy bottom like a mosaic across the bay – these days the deeper parts of our waterways are covered in a thick layer of fine mud.
    - Through the BFA WQ Sampling Program, we visit many creeks, rivers, and bayous that enter these bay systems. The 'old timers' recall when the creeks ran deep and cool, the banks were held in place by roots and the creek bottoms were dominated by gravel. Today the creeks are smothered by sand and the finer particulates have settled in the bayous and the bays.
    - In our scouting trips throughout the bays and sound we found hope in little pockets of seagrass trying to recover, we observed large schools of menhaden and mullet moving through the area, and we observed first hand just how resilient the ecosystem can be when allowed to recover.
    - There appeared to be a direct correlation between a natural shoreline and the observation of seagrass present. Areas with bulkheads and armoring were less apt to have grassbeds.
    - Stay tuned for a public meeting on the findings of this research in 2017.

- Lastly, in the July 2016 BFA Newsletter we reported a concern for moving the treated effluent from Hidden Creek in the Holley Navarre portion of South Santa Rosa County which discharges to East River Bayou in East Bay TO Williams Creek, which empties into Santa Rosa Sound. Earlier this month, 60,000 gallons of raw sewage spilled from a broken pipe into Williams Creek. Our seagrass beds and creeks systems will never recover to their full potential until we make certain that these accidents no longer occur. http://navarrepress.com/headlines/navarre-wastewater-leak/

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A recent analysis by the University of Florida on behalf of 1,000 Friends of Florida, found that over the next five decades the Sunshine State will grow all over the map, blanketing as much as one third of the state in development. Much of the growth will center on the Interstate 4 corridor in Central Florida, followed by urban centers in Northeast and South Florida. [http://1000friendsofflorida.org/florida2070/]

Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

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During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

We didn't know then, what we know now – but why aren't we applying new and proven technology to the manner in which we develop our landscape? Ideally, we should focus our efforts on how we avoid (not re-engineer) low lying areas, leaving riparian zones in tact so they can function as designed in nature. Progressive approaches applied now can avoid watershed impairments in the future. Case in point, Escambia County has a long range plan to connect I-10 at Beulah to a new road, currently referred to as the Beltway that will eventually tie into Quintette Road on the east side of Hwy 29. (http://www.northescambia.com/2012/08/new-beltway-could-link-i-10-north-escambia-santa-rosa)

Pull out a map and take a close look at the area, and you'll notice a few things. Much of the landscape in this western portion of the county is low lying, prone to flooding and in a natural state. Subdivisions along Eleven Mile Creek which were built in the Riparian Zone (some before we knew better, some not) had 4-5' of water flowing through their homes during the 2014 flood. There are some noises to buy back the homes (taxpayer money), demolish them and try to reconnect the floodplain. That's a step in the right direction. A bigger jump would have been to curtail development in sensitive areas in the first place. And yet, this Beltway will encourage development in many of these rural low lying areas.

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Ironically, the proposed Beltway, the Navy Federal Credit Union, OLF 8 and Bristol Park are all located in the Perdido Watershed, the latter three developments are located within the Eleven Mile Creek Watershed which used to have the nickname 'Stink Creek', before IP removed the paper mill effluent from direct discharge into Eleven Mile Creek to overland discharge onto manmade wetlands and into Tee and Wicker Lakes which enter Perdido Bay.

A well laid out plan with adequate buffers and roads complete with bridges that span the riparian zones may accommodate the proposed influx of people, roads, homes, fast food places, etc. to higher ground in a low lying part of county, but without a well thought out plan we will continue to cause ecological impacts to our area waters. The search for funding to correct past problems is always highly competitive, with the lowest bidder often winning the contract. These contractors often lack the skill set or knowledge to design and engineer a functioning ecosystem. These 'Random Acts of Restoration' are a nice thought, but rarely can they allow a living ecosystem to recover to a naturally functioning and healthy system.

The RESTORE Act has allotted future funding for projects in several NWFL counties that were impacted by the 2010 oil spill. A lengthy and committed process was convened with citizens appointed to a Board for several years to hear from our community and better understand the community's needs and desires. A proposal to restore the entire Carpenter Creek-Bayou Texar

Watershed has warranted a lot of attention. The proposal knits together many of the conservation goals visualized by groups such as Audubon, the Native Plant Society, the Bream Fishermen and the many locals who grew up remembering the bayou from their youth. The Concept Paper, on the BFA Website uses the many years worth of important water quality data collected by our organization to tell the story of changes over time and how that correlates to community growth and sprawl. This proposal sets the stage for students, citizens, organizations and communities alike to engage by learning and participating in understanding a land ethic for future generations.

> ***"Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest."***
>
> ***~ Aldo Leopold Conservation Economics (1934)***

This project has all the components to unite our community and this community has the talent, interest and knowledge to make this restoration a complete success. The Carpenter Creek Restoration Project will serve to showcase the community living in Escambia County and the City of Pensacola how reconnecting the community to the local waters can serve to enrich our lives, our economy, our watersheds and most importantly our natural resources.

Stuff you might like to know:

- City of Pensacola Councilwoman Myers will be hosting a town hall meeting focused on Carpenter Creek. The meeting will be held on Tues, 1 November at 6:30 PM at Cokesbury United Methodist Church (5925 North 9th Avenue)

- The Gulf Estuarine Research Society (GERS) will be hosting their fall 2016 meeting at the Pensacola Beach Hilton Garden Inn on 3-5 November 2016. The meeting theme is **Connections across the Gulf Coast: Wetlands to Watersheds and Waterways**. The meeting will highlight interconnections among wetlands, estuarine and coastal habitats by bringing together scientists, researchers and students from universities, agencies, research labs and other organizations across the Gulf coast and its watersheds. For more information, visit http://www.gers.us/2016-meeting.html

- Mike Lewis, researcher at USEPA recently published a report entitled: Environmental Quality of the Pensacola Bay System: Retrospective Review for Future Resource Management and Rehabilitation. The report can be found and downloaded from the BFA Website.

- A remarkable publication in Nature recently provided evidence that marine flowers, like those found in seagrass systems, may depend on small invertebrates like amphipods and other small crustaceans to pollinate these underwater flowers. Much like the role that many insects and small mammals accomplish to successfully pollinate terrestrial flowers, now new evidence points us to the importance of the small invertebrates that

evidently play a major role in pollinating underwater grasses. This remarkable finding is a testament to just how important all the components of a healthy ecosystem really are, and just how much more we have yet to learn. (*Note, many invertebrates are highly sensitive to impaired waters*) http://www.nature.com/articles/ncomms12980

- The FL Fish & Wildlife Conservation Commission secured a large Gulf Environmental Benefits Fund Grant to collect concurrent data among six large NW FL Bays in which researchers hope to answer why seagrasses are not returning to areas historically known to have grasses. Jane Caffrey from UWF, CEDB has overseen the research in the Escambia/Pensacola/East Bay & Santa Rosa Sound with an army of students. I have been fortunate to participate in this research and have had the opportunity to observe many wonderful things:
    - This week marked 26 days without rain and in Pensacola Bay near the Three Mile Bridge during very calm wind conditions we were able to see a Secchi Disk (an instrument to determine water clarity) for 5.5 Meters (which is roughly 18').
    - While many 'old timers' recall a time (1930's, 40's, and 50's) when the bay water was 'gin clear' and you could see seagrass meadows on a white sandy bottom like a mosaic across the bay – these days the deeper parts of our waterways are covered in a thick layer of fine mud.
    - Through the BFA WQ Sampling Program, we visit many creeks, rivers, and bayous that enter these bay systems. The 'old timers' recall when the creeks ran deep and cool, the banks were held in place by roots and the creek bottoms were dominated by gravel. Today the creeks are smothered by sand and the finer particulates have settled in the bayous and the bays.
    - In our scouting trips throughout the bays and sound we found hope in little pockets of seagrass trying to recover, we observed large schools of menhaden and mullet moving through the area, and we observed first hand just how resilient the ecosystem can be when allowed to recover.
    - There appeared to be a direct correlation between a natural shoreline and the observation of seagrass present. Areas with bulkheads and armoring were less apt to have grassbeds.
    - Stay tuned for a public meeting on the findings of this research in 2017.

- Lastly, in the July 2016 BFA Newsletter we reported a concern for moving the treated effluent from Hidden Creek in the Holley Navarre portion of South Santa Rosa County which discharges to East River Bayou in East Bay TO Williams Creek, which empties into Santa Rosa Sound. Earlier this month, 60,000 gallons of raw sewage spilled from a broken pipe into Williams Creek. Our seagrass beds and creeks systems will never recover to their full potential until we make certain that these accidents no longer occur. http://navarrepress.com/headlines/navarre-wastewater-leak/

We hope you can make the Fall Picnic, Saturday, 12 November 2016

BFA puts out a quarterly newsletter and hosts 4 general membership meetings a year.

The Bream Fishermen Association is a not-for-profit organization dedicated to the promotion of the conservation responsibilities as well as the recreational enjoyment of fishermen, hunters, campers and related outdoorsmen.

It is the objective of the BFA to support, develop, and implement programs that will:
1) Improve the quality of our environment;

2) Protect and maintain our present wilderness type lakes, rivers, swamps, marshes, bays, forests, and beaches in their natural undeveloped state; and

3) Advance the causes of plant, marine, and wildlife preservation.

Membership is open to all individuals who support these objectives. Please join the BFA by sending us your contact information (name, mailing address, phone, and email) be sure to notify us if you prefer to receive notices and announcements by mail or email, and $10 annual dues to our mailing address:

Bream Fishermen Association

1203 N. 16th Ave, Pensacola, FL 32503

The BFA October 2016 NEWSLETTER

Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

Our natural landscape can be very resilient. Hurricane Katrina revealed just how important emergent grasses were to low lying coastal areas when wind driven waves were slowed in areas where they remained. However, in areas where grasses were absent or thinned the waters took out everything (homes, trees, roads, etc.) in their path. Coastal engineers really took notice of this difference. Current research is focusing attention on the level of resiliency along natural

shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

While the science and its appreciation are still developing, many universities that have offered degrees in civil and structural engineering are now adapting environmental engineering curriculums to blend the structure of engineering with the hydrology and ecology of the specific geographic landscape. The old school method of armoring used along many of our creeks, rivers and bridge supports are unfortunately outdated and ill suited for our landscape. The Gulf Coastal Plain is made up of highly eroded sandy soils held together by a network of roots and plants (adapted to that environment) our region of the Gulf Coastal Plain does not contain rock. Yet most every coastal and creek restoration project uses thousands of tons of rock.Why rock? Basically it's cheap. Use of rock in our region - always causes problems downstream. It's like kicking the can down the road.

On Eglin Air Force Base, engineers are addressing erosion and gullies from the past; many old roads and a train trestle have created horrendous erosion problems where creeks and swamps were accidentally fragmented. On a recent visit with area biologists and engineers – we were encouraged to see engineered restoration conducted utilizing materials from the local landscape versus more hardening. Native species from the local region were introduced during dormant seasons and allowed to acclimate to conditions. This holistic approach towards restoration projects is less expensive, more attractive to important wildlife such as birds and insects, and is capable of self healing – thus making the area more resilient.

Natural berms and stream terraces, built up with roots from trees, trap enough material to allow dense vegetation to gain a foot hold. This in turn restores the natural hydrology of the system. The healthy natural hydrology, flow rate and volume, of the streams ultimately removed the finer sand grains to reveal the gravel which had been buried by sediment in many of creek beds. The true test came duringthe April 2014 floods. These natural systems came through that event with little harm; what's more, they were able to re-vegetate themselves with their own seed stock. Can you say resiliency?

What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

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Hope Everyone has been enjoying the cooler temperatures of fall!

Speaking of fall in the air, it's time for our Annual Fish Fry & Picnic
Saturday, 12 November 2016
11:00 - 2:30 PM

This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

Our natural landscape can be very resilient. Hurricane Katrina revealed just how important emergent grasses were to low lying coastal areas when wind driven waves were slowed in areas where they remained. However, in areas where grasses were absent or thinned the waters took out everything (homes, trees, roads, etc.) in their path. Coastal engineers really took notice of this difference. Current research is focusing attention on the level of resiliency along natural

shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

While the science and its appreciation are still developing, many universities that have offered degrees in civil and structural engineering are now adapting environmental engineering curriculums to blend the structure of engineering with the hydrology and ecology of the specific geographic landscape. The old school method of armoring used along many of our creeks, rivers and bridge supports are unfortunately outdated and ill suited for our landscape. The Gulf Coastal Plain is made up of highly eroded sandy soils held together by a network of roots and plants (adapted to that environment) our region of the Gulf Coastal Plain does not contain rock. Yet most every coastal and creek restoration project uses thousands of tons of rock.Why rock? Basically it's cheap. Use of rock in our region - always causes problems downstream. It's like kicking the can down the road.

On Eglin Air Force Base, engineers are addressing erosion and gullies from the past; many old roads and a train trestle have created horrendous erosion problems where creeks and swamps were accidentally fragmented. On a recent visit with area biologists and engineers – we were encouraged to see engineered restoration conducted utilizing materials from the local landscape versus more hardening. Native species from the local region were introduced during dormant seasons and allowed to acclimate to conditions. This holistic approach towards restoration projects is less expensive, more attractive to important wildlife such as birds and insects, and is capable of self healing – thus making the area more resilient.

Natural berms and stream terraces, built up with roots from trees, trap enough material to allow dense vegetation to gain a foot hold. This in turn restores the natural hydrology of the system. The healthy natural hydrology, flow rate and volume, of the streams ultimately removed the finer sand grains to reveal the gravel which had been buried by sediment in many of creek beds. The true test came duringthe April 2014 floods. These natural systems came through that event with little harm; what's more, they were able to re-vegetate themselves with their own seed stock. Can you say resiliency?

What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

Our community continues to grow; denser along the coast and sprawling into the suburbs and into the remaining natural areas. Our landscape is unique because so much of the natural lands are preserved in conservation lands (such as the Blackwater River State Forest and Gulf Islands

National Seashore) or owned and managed by the largest landowner in Northwest, Florida, namely the US Military.

A recent analysis by the University of Florida on behalf of 1,000 Friends of Florida, found that over the next five decades the Sunshine State will grow all over the map, blanketing as much as one third of the state in development. Much of the growth will center on the Interstate 4 corridor in Central Florida, followed by urban centers in Northeast and South Florida. [http://1000friendsofflorida.org/florida2070/]

Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

Let's start with **Roads[1]**. The 16 October Pensacola News Journal points out that four of the 50 deadliest roads in the county pass through Escambia and Santa Rosa County. The article identifies I-10, US 90, US 98, and US 29 to be among the most dangerous roads in the country based on fatal accidents per 100 miles. Interstate-10 ranked No. 4 for three categories: deadliest road for 100 miles, darkest roads (natural areas mentioned earlier) and accidents involving a drunk drivers.

The Florida Department of Transportation (FDOT) is the state agency which oversees state roads and happens to be well funded, thanks in part to the gasoline tax which we all contribute to when we buy gas. When FDOTdesigns a new bridge (3 mile bridge), widens an existing road, or creates an entire new connecter road – their activities are strongly supported by elected officials, county commissioners, developers, admirers and advocates. This type of work creates many jobs so is generally a welcome site to communities where they are working as it brings in a workforce which helps drive the economy. If these improvements were designed and completed with an understanding of how the natural system functions, we could have economic growth and a healthy ecosystem to enjoy for generations.

Many of the deadliest roads in our area are currently under construction for road widening. Where are the extra lanes coming from? On I-10, the vegetated median swale is being dug up and filled in with mountains of rich red clay before being compacted and covered in asphalt. Those vegetated median swales serve an important environmental function by capturing the stormwater run-off from the road and holding it until it can percolate into the ground and not enter surface water still carrying sediments and run-off. The FDOT and their army of engineers are addressing this shortfall by building stormwater ponds along the stretch of the widened road. These highly engineered ponds are intended to function in a similar manner - that is holding water until it can percolate into the ground. And while these stormwater ponds are

designed to capture sand and clay, the system won't be able to trap and treat sediments, nutrients and stormwater in place (through phytoremediation – the ability of plants to take up contaminants) or support wildflowers for many pollinators as the living system does.

Living systems provide ecosystem services; for instance, trees drink groundwater, release moisture through transpiration which cools the air, they make their own food through sunlight and produce oxygen. A healthy mature tree or grove of native trees provide food for our bird friends that use our air space (much like the military) on their daily, seasonal and migratory routes.

The New 3 Mile Bridge preliminary phase I assessment is underway and let us hope that there are open lines of communication (two-way dialogue) between the FDOT engineers who are working on the bridge design, local biologists (Deadman's Island) and geologists who will factor in the important sediment transport system that feeds our beautiful coastline.

That two way conversation was not available to the Monterey Shores Community earlier this year when FDOT was working on I-10 between Escambia Bay and Avalon Blvd in Santa Rosa County. Our rainy spring and summer brought some heavy downpours (typical in our area which receives 65" of rain annually) which transported a lot of red clay into a tributary of Indian Bayou. Residents continue to be upset by this unnecessary impact to their bayou and its fragile ecosystem. The FDOT does not have a plan to protect Indian Bayou from this road expansion or the additional run off that will enter the bayou. Promises to mitigate elsewhere don't really interest the community, since they are living on a beautiful system which is in a relatively natural state and self healing. The clay that ran into the bayou and turned it red was a clear violation of the Clean Water Act; where's the enforcement?

Exactly which agency or entity is protecting our water quality and natural resources? Santa Rosa County currently does not have a commissioner in this district. The Water Management District issued the permit to FDOT. The FL Dept of Environmental Protection is a little short handed at the moment (the NW District currently does not have a senior biologist or chemist to oversee the 16 counties in the panhandle) and likely trusted their sister agency to protect the surface waters that these construction projects cross. But, like some sisters, these agencies don't communicate well. The US Environmental Protection Agency once had authority over the Clean Water Act but somehow believed FL when FL promised to self regulate. The problem with this delegation is that our state agencies were directed not to regulate (the state has encouraged permitting and development to jump start the economy) which is why we are having many of the water quality problems in Florida coastal waters (BFA July 2016 Newsletter).

All those wide and new roads will undoubtedly lead to all those **New Homes[2].** Many counties depend on property taxes for their bread and butter money (their daily budget), so it is to their benefit to allow - even encourage development (perhaps by offering tax incentives) in their jurisdictional areas to compete with neighboring counties or states – which secures growth of their county and more money in the coffers.

Hurricane Matthew zipped past the East Coast of Florida earlier this month, staying far enough offshore to soak us with rain and little else, but the states of Georgia, South and North Carolina felt the brunt of the system. Worse, many older communities which never experienced flooding before – were now being flooded. Why are these communities suddenly experiencing flooding? Increased development combined with hardening of the surface reduces the available areas for water to percolate into the ground. As a result surplus surface water runs off to the lowest point of the landscape, usually to a natural system like a creek, bayou, river or bay which creates the catastrophic flooding we observed.

During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

We didn't know then, what we know now – but why aren't we applying new and proven technology to the manner in which we develop our landscape? Ideally, we should focus our efforts on how we avoid (not re-engineer) low lying areas, leaving riparian zones in tact so they can function as designed in nature. Progressive approaches applied now can avoid watershed impairments in the future. Case in point, Escambia County has a long range plan to connect I-10 at Beulah to a new road, currently referred to as the Beltway that will eventually tie into Quintette Road on the east side of Hwy 29. (http://www.northescambia.com/2012/08/new-beltway-could-link-i-10-north-escambia-santa-rosa)

Pull out a map and take a close look at the area, and you'll notice a few things. Much of the landscape in this western portion of the county is low lying, prone to flooding and in a natural state. Subdivisions along Eleven Mile Creek which were built in the Riparian Zone (some before we knew better, some not) had 4-5' of water flowing through their homes during the 2014 flood. There are some noises to buy back the homes (taxpayer money), demolish them and try to reconnect the floodplain. That's a step in the right direction. A bigger jump would have been to curtail development in sensitive areas in the first place. And yet, this Beltway will encourage development in many of these rural low lying areas.

Escambia County is already kicking the can down the road for the next generation to pick up, or in this case clean up. Builders and their entourage are planning new communities that will take 1,200 acres out of a natural state and transform it into 14,000 cookie cutter homes. One acre of natural land doesn't generate much money for the county, but one acres with ten homes creates a nice little property tax base for the county. Perhaps some of this increased revenue could be invested upfront in the form of better planning to avoid the mistakes we continue to repeat.

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This year our picnic will be one week later! We hope to have some live music And the opportunity for you to record some local stories about your favorite local waters. Many of our members recall a time when our waters were different than they are today. We hope you will join us for this annual tradition. Weather permitting, we'll set up outside and ask folks to bring friends, chairs, blankets, a desert to share…and feel free to bring your pup if they are well behaved.

2016 has been a very tumultuous year. There is much to share – Brevity is not part of my skill set - so prepare yourself for a lengthy newsletter! Climate wise, we began the year with a mild winter, followed by a wet spring and summer. Economists seem pleased that tourism rates were high along the northern Gulf. Both Santa Rosa County and Pensacola Beaches received costly beach renourishment; which is when offshore sand is pumped on the beach to widen the beachfront. The cost of this engineered beach is astronomical and its life span is short; Escambia and Santa Rosa County will have spent upwards of $35 M to renourish the beach, this time. A cycle of beach renourishment lasts only five to six years depending on storm activity because longshore erosionand subsequent deposition is an ongoing geologic process that is unaffected by the nourishment efforts. But the physical movement of millions of tons of renourishment sand from the Gulf onto the shore disrupts the offshore benthic community (clams, shrimp, snails, worms, crabs, etc.) for many years. This ultimately depresses the offshore fishery*.

Beach renourishment should not be mistaken as ecological restoration. Beach renourishment is solely implemented to enhance tourism business. The majority of tourists do not appreciate the renourishment efforts because they are not here long enough to observe the minor changes. Beach renourishment is also not sustainable. Hurricane Matthew just scoured the Southeast Coast beachfront with its offshore travels and left a path of erosion both inland via flooding and eroded beaches along the coast.

Speaking of fisheries, we want more fish, more seafood, more shrimp and crabs; oysters both for eating and for filtering the water. That's part of why the FL State Trustees selected the City of Pensacola to receive a fish hatchery. Historically, our bays and bayous were very productive, but now not so much. The City provided property on the waterfront at the site of Historic Bruce's Beach to build the new state run hatchery. Although the species to be cultured have not been selected as of yet, the short list seems to have identified speckled trout, red fish, and maybe flounder or pompano. Only fish (vertebrates) are being considered for culture as this $18.7 M facility - as was part of the negotiation process between the Trustee's and the BP Oil lawyers for the penalty and impact felt by our community from the 2010 oil spill.

The hatchery project can be likened to 'putting the cart before the horse'. Until we address the water quality entering our bays and bayous from their upland sources, we will continue to experience nutrient loading, stormwater runoff, elevated bacteria levels and other harmful constituents entering our beautiful waters. This impaired water quality will never support the seagrasses (nursery grounds) and the important benthic community (the invertebrates) that rely on this specific and sensitive habitat to support a healthy natural fishery. Fish released from the proposed fishery may not flourish because their supporting food chain is absent or severely lacking.

For the past two years, the UF and their Sea Grant Program have hosted scallop surveys in Santa Rosa Sound and Grande Lagoon. Scallops used to be prolific in our seagrass beds, but were wiped out in the 1990's when the Pensacola Pass was dredged to deepen it for the USS Forrestal. The USS Forrestal (CV-59), formerly AVT-59 and CVA-59, was a super-carrier named after the first Secretary of Defense James Forrestal. Bringing the USS Forrestal to Pensacola never panned out, and 'back then we didn't know what we know now', so no one bothered to deploy turbidity curtains. Fine sediments from these types of invasive activities smothered the seagrasses, which are designed by nature to trap sediments, but the volumes of sediment were too great and the scallops were buried and were not able to survive. Today, scallops are rare in our inland waters, but walk the newly renourished beach and comb for shells and you are surely able to find many scallop shells among them.

Our natural landscape can be very resilient. Hurricane Katrina revealed just how important emergent grasses were to low lying coastal areas when wind driven waves were slowed in areas where they remained. However, in areas where grasses were absent or thinned the waters took out everything (homes, trees, roads, etc.) in their path. Coastal engineers really took notice of this difference. Current research is focusing attention on the level of resiliency along natural

shorelines, many with the ability to self heal by reseeding or growing back over time. Insurance companies are also quite aware ofthe resiliency of communities living along 'healthy shorelines' and the difference this makes to their potential liability from unprotected areas.

While the science and its appreciation are still developing, many universities that have offered degrees in civil and structural engineering are now adapting environmental engineering curriculums to blend the structure of engineering with the hydrology and ecology of the specific geographic landscape. The old school method of armoring used along many of our creeks, rivers and bridge supports are unfortunately outdated and ill suited for our landscape. The Gulf Coastal Plain is made up of highly eroded sandy soils held together by a network of roots and plants (adapted to that environment) our region of the Gulf Coastal Plain does not contain rock. Yet most every coastal and creek restoration project uses thousands of tons of rock.Why rock? Basically it's cheap. Use of rock in our region - always causes problems downstream. It's like kicking the can down the road.

On Eglin Air Force Base, engineers are addressing erosion and gullies from the past; many old roads and a train trestle have created horrendous erosion problems where creeks and swamps were accidentally fragmented. On a recent visit with area biologists and engineers – we were encouraged to see engineered restoration conducted utilizing materials from the local landscape versus more hardening. Native species from the local region were introduced during dormant seasons and allowed to acclimate to conditions. This holistic approach towards restoration projects is less expensive, more attractive to important wildlife such as birds and insects, and is capable of self healing – thus making the area more resilient.

Natural berms and stream terraces, built up with roots from trees, trap enough material to allow dense vegetation to gain a foot hold. This in turn restores the natural hydrology of the system. The healthy natural hydrology, flow rate and volume, of the streams ultimately removed the finer sand grains to reveal the gravel which had been buried by sediment in many of creek beds. The true test came duringthe April 2014 floods. These natural systems came through that event with little harm; what's more, they were able to re-vegetate themselves with their own seed stock. Can you say resiliency?

What's more, this approach follows the model used by the Civilian Conservation Corps (CCC) in the 1930s to address erosion after our forests were clear cut for the lumber industry. Much of the CCC's handiwork can still be seen in the area, including many of the Alabama Parks where many highways, bridges and roads, cabins, benches and the reforestation of large areas now known as the Conecuh National Forest and the Blackwater River State Forest took place. Our very own Bream Fishermen Building in Miraflores Park was built by the CCC in 1934 as the Administration Office for the Boy Scouts of America.

Our community continues to grow; denser along the coast and sprawling into the suburbs and into the remaining natural areas. Our landscape is unique because so much of the natural lands are preserved in conservation lands (such as the Blackwater River State Forest and Gulf Islands

National Seashore) or owned and managed by the largest landowner in Northwest, Florida, namely the US Military.

A recent analysis by the University of Florida on behalf of 1,000 Friends of Florida, found that over the next five decades the Sunshine State will grow all over the map, blanketing as much as one third of the state in development. Much of the growth will center on the Interstate 4 corridor in Central Florida, followed by urban centers in Northeast and South Florida. [http://1000friendsofflorida.org/florida2070/]

Many see this level of growth as a positive for economic development. New roads[1], new homes[2], new communities[3], new shopping centers[4] are all signs of jobs growth and economic opportunities[5] – but have any agencies given real thought to planning based on the watersheds and the landscape terrain? I'm not seeing it, and that's why we continue to see the same issues and consequences happening to our waters today as we experienced in the 1970s, 80's and 90's. Holistic watershed planning will be the key to not destroying the natural beauty of Florida.

Let's start with **Roads[1]**. The 16 October Pensacola News Journal points out that four of the 50 deadliest roads in the county pass through Escambia and Santa Rosa County. The article identifies I-10, US 90, US 98, and US 29 to be among the most dangerous roads in the country based on fatal accidents per 100 miles. Interstate-10 ranked No. 4 for three categories: deadliest road for 100 miles, darkest roads (natural areas mentioned earlier) and accidents involving a drunk drivers.

The Florida Department of Transportation (FDOT) is the state agency which oversees state roads and happens to be well funded, thanks in part to the gasoline tax which we all contribute to when we buy gas. When FDOTdesigns a new bridge (3 mile bridge), widens an existing road, or creates an entire new connecter road – their activities are strongly supported by elected officials, county commissioners, developers, admirers and advocates. This type of work creates many jobs so is generally a welcome site to communities where they are working as it brings in a workforce which helps drive the economy. If these improvements were designed and completed with an understanding of how the natural system functions, we could have economic growth and a healthy ecosystem to enjoy for generations.

Many of the deadliest roads in our area are currently under construction for road widening. Where are the extra lanes coming from? On I-10, the vegetated median swale is being dug up and filled in with mountains of rich red clay before being compacted and covered in asphalt. Those vegetated median swales serve an important environmental function by capturing the stormwater run-off from the road and holding it until it can percolate into the ground and not enter surface water still carrying sediments and run-off. The FDOT and their army of engineers are addressing this shortfall by building stormwater ponds along the stretch of the widened road. These highly engineered ponds are intended to function in a similar manner - that is holding water until it can percolate into the ground. And while these stormwater ponds are

designed to capture sand and clay, the system won't be able to trap and treat sediments, nutrients and stormwater in place (through phytoremediation – the ability of plants to take up contaminants) or support wildflowers for many pollinators as the living system does.

Living systems provide ecosystem services; for instance, trees drink groundwater, release moisture through transpiration which cools the air, they make their own food through sunlight and produce oxygen. A healthy mature tree or grove of native trees provide food for our bird friends that use our air space (much like the military) on their daily, seasonal and migratory routes.

The New 3 Mile Bridge preliminary phase I assessment is underway and let us hope that there are open lines of communication (two-way dialogue) between the FDOT engineers who are working on the bridge design, local biologists (Deadman's Island) and geologists who will factor in the important sediment transport system that feeds our beautiful coastline.

That two way conversation was not available to the Monterey Shores Community earlier this year when FDOT was working on I-10 between Escambia Bay and Avalon Blvd in Santa Rosa County. Our rainy spring and summer brought some heavy downpours (typical in our area which receives 65" of rain annually) which transported a lot of red clay into a tributary of Indian Bayou. Residents continue to be upset by this unnecessary impact to their bayou and its fragile ecosystem. The FDOT does not have a plan to protect Indian Bayou from this road expansion or the additional run off that will enter the bayou. Promises to mitigate elsewhere don't really interest the community, since they are living on a beautiful system which is in a relatively natural state and self healing. The clay that ran into the bayou and turned it red was a clear violation of the Clean Water Act; where's the enforcement?

Exactly which agency or entity is protecting our water quality and natural resources? Santa Rosa County currently does not have a commissioner in this district. The Water Management District issued the permit to FDOT. The FL Dept of Environmental Protection is a little short handed at the moment (the NW District currently does not have a senior biologist or chemist to oversee the 16 counties in the panhandle) and likely trusted their sister agency to protect the surface waters that these construction projects cross. But, like some sisters, these agencies don't communicate well. The US Environmental Protection Agency once had authority over the Clean Water Act but somehow believed FL when FL promised to self regulate. The problem with this delegation is that our state agencies were directed not to regulate (the state has encouraged permitting and development to jump start the economy) which is why we are having many of the water quality problems in Florida coastal waters (BFA July 2016 Newsletter).

All those wide and new roads will undoubtedly lead to all those **New Homes[2].** Many counties depend on property taxes for their bread and butter money (their daily budget), so it is to their benefit to allow - even encourage development (perhaps by offering tax incentives) in their jurisdictional areas to compete with neighboring counties or states – which secures growth of their county and more money in the coffers.

Hurricane Matthew zipped past the East Coast of Florida earlier this month, staying far enough offshore to soak us with rain and little else, but the states of Georgia, South and North Carolina felt the brunt of the system. Worse, many older communities which never experienced flooding before – were now being flooded. Why are these communities suddenly experiencing flooding? Increased development combined with hardening of the surface reduces the available areas for water to percolate into the ground. As a result surplus surface water runs off to the lowest point of the landscape, usually to a natural system like a creek, bayou, river or bay which creates the catastrophic flooding we observed.

During the 2014 flood, several low income housing areas were flooded – for the 3rd time since 2009. FEMA agreed to rebuild in the same footprint of these housing areas in 2009 and 2012; in 2014 someone at FEMA pulled out the topographic maps and finally realized that construction occurred in low lying areas. This time, FEMA will not rebuild with taxpayer money. And what happens to the folks who lost everything? Flooding usually devastates them, physically, emotionally and financially.

We didn't know then, what we know now – but why aren't we applying new and proven technology to the manner in which we develop our landscape? Ideally, we should focus our efforts on how we avoid (not re-engineer) low lying areas, leaving riparian zones in tact so they can function as designed in nature. Progressive approaches applied now can avoid watershed impairments in the future. Case in point, Escambia County has a long range plan to connect I-10 at Beulah to a new road, currently referred to as the Beltway that will eventually tie into Quintette Road on the east side of Hwy 29. (http://www.northescambia.com/2012/08/new-beltway-could-link-i-10-north-escambia-santa-rosa)

Pull out a map and take a close look at the area, and you'll notice a few things. Much of the landscape in this western portion of the county is low lying, prone to flooding and in a natural state. Subdivisions along Eleven Mile Creek which were built in the Riparian Zone (some before we knew better, some not) had 4-5' of water flowing through their homes during the 2014 flood. There are some noises to buy back the homes (taxpayer money), demolish them and try to reconnect the floodplain. That's a step in the right direction. A bigger jump would have been to curtail development in sensitive areas in the first place. And yet, this Beltway will encourage development in many of these rural low lying areas.

Escambia County is already kicking the can down the road for the next generation to pick up, or in this case clean up. Builders and their entourage are planning new communities that will take 1,200 acres out of a natural state and transform it into 14,000 cookie cutter homes. One acre of natural land doesn't generate much money for the county, but one acres with ten homes creates a nice little property tax base for the county. Perhaps some of this increased revenue could be invested upfront in the form of better planning to avoid the mistakes we continue to repeat.

The beltway will cross several creeks including Cowdevil Creek and Jack's Branch. Those waterways discharge into the Perdido River. The Perdido River is an Outstanding Florida Water, which by statute (if anyone would bother to enforce the law) should not have its water quality negatively impacted in **any** way. Much of the area as seen in aerial maps indicates a large riparian zone. So why do we need all the **new communities**[3], **new shopping centers**[4] and growth?? Because the Navy Federal Credit Union Expansion will create 10,000 jobs when completed and the new proposed Tech Park at Outlying Field 8 (OLF-8) are all providing **job growth and economic opportunities**[5]**.**

Ironically, the proposed Beltway, the Navy Federal Credit Union, OLF 8 and Bristol Park are all located in the Perdido Watershed, the latter three developments are located within the Eleven Mile Creek Watershed which used to have the nickname 'Stink Creek', before IP removed the paper mill effluent from direct discharge into Eleven Mile Creek to overland discharge onto manmade wetlands and into Tee and Wicker Lakes which enter Perdido Bay.

A well laid out plan with adequate buffers and roads complete with bridges that span the riparian zones may accommodate the proposed influx of people, roads, homes, fast food places, etc. to higher ground in a low lying part of county, but without a well thought out plan we will continue to cause ecological impacts to our area waters. The search for funding to correct past problems is always highly competitive, with the lowest bidder often winning the contract. These contractors often lack the skill set or knowledge to design and engineer a functioning ecosystem. These 'Random Acts of Restoration' are a nice thought, but rarely can they allow a living ecosystem to recover to a naturally functioning and healthy system.

The RESTORE Act has allotted future funding for projects in several NWFL counties that were impacted by the 2010 oil spill. A lengthy and committed process was convened with citizens appointed to a Board for several years to hear from our community and better understand the community's needs and desires. A proposal to restore the entire Carpenter Creek-Bayou Texar

Watershed has warranted a lot of attention. The proposal knits together many of the conservation goals visualized by groups such as Audubon, the Native Plant Society, the Bream Fishermen and the many locals who grew up remembering the bayou from their youth. The Concept Paper, on the BFA Website uses the many years worth of important water quality data collected by our organization to tell the story of changes over time and how that correlates to community growth and sprawl. This proposal sets the stage for students, citizens, organizations and communities alike to engage by learning and participating in understanding a land ethic for future generations.

> ***"Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest."***
>
> ***~ Aldo Leopold Conservation Economics (1934)***

This project has all the components to unite our community and this community has the talent, interest and knowledge to make this restoration a complete success. The Carpenter Creek Restoration Project will serve to showcase the community living in Escambia County and the City of Pensacola how reconnecting the community to the local waters can serve to enrich our lives, our economy, our watersheds and most importantly our natural resources.

Stuff you might like to know:

- City of Pensacola Councilwoman Myers will be hosting a town hall meeting focused on Carpenter Creek. The meeting will be held on Tues, 1 November at 6:30 PM at Cokesbury United Methodist Church (5925 North 9th Avenue)

- The Gulf Estuarine Research Society (GERS) will be hosting their fall 2016 meeting at the Pensacola Beach Hilton Garden Inn on 3-5 November 2016. The meeting theme is **Connections across the Gulf Coast: Wetlands to Watersheds and Waterways**. The meeting will highlight interconnections among wetlands, estuarine and coastal habitats by bringing together scientists, researchers and students from universities, agencies, research labs and other organizations across the Gulf coast and its watersheds. For more information, visit http://www.gers.us/2016-meeting.html

- Mike Lewis, researcher at USEPA recently published a report entitled: Environmental Quality of the Pensacola Bay System: Retrospective Review for Future Resource Management and Rehabilitation. The report can be found and downloaded from the BFA Website.

- A remarkable publication in Nature recently provided evidence that marine flowers, like those found in seagrass systems, may depend on small invertebrates like amphipods and other small crustaceans to pollinate these underwater flowers. Much like the role that many insects and small mammals accomplish to successfully pollinate terrestrial flowers, now new evidence points us to the importance of the small invertebrates that

evidently play a major role in pollinating underwater grasses. This remarkable finding is a testament to just how important all the components of a healthy ecosystem really are, and just how much more we have yet to learn. (*Note, many invertebrates are highly sensitive to impaired waters*) http://www.nature.com/articles/ncomms12980

- The FL Fish & Wildlife Conservation Commission secured a large Gulf Environmental Benefits Fund Grant to collect concurrent data among six large NW FL Bays in which researchers hope to answer why seagrasses are not returning to areas historically known to have grasses. Jane Caffrey from UWF, CEDB has overseen the research in the Escambia/Pensacola/East Bay & Santa Rosa Sound with an army of students. I have been fortunate to participate in this research and have had the opportunity to observe many wonderful things:
    - This week marked 26 days without rain and in Pensacola Bay near the Three Mile Bridge during very calm wind conditions we were able to see a Secchi Disk (an instrument to determine water clarity) for 5.5 Meters (which is roughly 18').
    - While many 'old timers' recall a time (1930's, 40's, and 50's) when the bay water was 'gin clear' and you could see seagrass meadows on a white sandy bottom like a mosaic across the bay – these days the deeper parts of our waterways are covered in a thick layer of fine mud.
    - Through the BFA WQ Sampling Program, we visit many creeks, rivers, and bayous that enter these bay systems. The 'old timers' recall when the creeks ran deep and cool, the banks were held in place by roots and the creek bottoms were dominated by gravel. Today the creeks are smothered by sand and the finer particulates have settled in the bayous and the bays.
    - In our scouting trips throughout the bays and sound we found hope in little pockets of seagrass trying to recover, we observed large schools of menhaden and mullet moving through the area, and we observed first hand just how resilient the ecosystem can be when allowed to recover.
    - There appeared to be a direct correlation between a natural shoreline and the observation of seagrass present. Areas with bulkheads and armoring were less apt to have grassbeds.
    - Stay tuned for a public meeting on the findings of this research in 2017.

- Lastly, in the July 2016 BFA Newsletter we reported a concern for moving the treated effluent from Hidden Creek in the Holley Navarre portion of South Santa Rosa County which discharges to East River Bayou in East Bay TO Williams Creek, which empties into Santa Rosa Sound. Earlier this month, 60,000 gallons of raw sewage spilled from a broken pipe into Williams Creek. Our seagrass beds and creeks systems will never recover to their full potential until we make certain that these accidents no longer occur. http://navarrepress.com/headlines/navarre-wastewater-leak/

We hope you can make the Fall Picnic, Saturday, 12 November 2016

BFA puts out a quarterly newsletter and hosts 4 general membership meetings a year.

The Bream Fishermen Association is a not-for-profit organization dedicated to the promotion of the conservation responsibilities as well as the recreational enjoyment of fishermen, hunters, campers and related outdoorsmen.

It is the objective of the BFA to support, develop, and implement programs that will:
1) Improve the quality of our environment;

2) Protect and maintain our present wilderness type lakes, rivers, swamps, marshes, bays, forests, and beaches in their natural undeveloped state; and

3) Advance the causes of plant, marine, and wildlife preservation.

Membership is open to all individuals who support these objectives. Please join the BFA by sending us your contact information (name, mailing address, phone, and email) be sure to notify us if you prefer to receive notices and announcements by mail or email, and $10 annual dues to our mailing address:

Bream Fishermen Association

1203 N. 16th Ave, Pensacola, FL 32503