



Photo Credit: Stephanie Glenn

Two Double Bayou Stakeholders Honored with Awards



Mr. Clint Fancher

Photo credit: Becky Fancher



Mr. Leroy Ezer

Photo courtesy of Norma Ezer

Two of our stakeholders in Double Bayou, landowners and ranchers Clint Fancher and Leroy Ezer, have been presented with awards for their leadership roles in ranching and land stewardship in the region.

Mr. Fancher was named “Rancher of the Year 2015” by the local Trinity Bay Soil and Water Conservation District 434, and then “Conservation Rancher” for 2015 by Area 4 of the state’s soil and water conservation districts. Recognized were Mr. Fancher’s contributions of 40 years of conservation and stewardship as a rancher; his commitment to passing on knowledge of ranching and land

stewardship to the next generation; his use and implementation of a water quality management plan that has been in place for 17 years; and his management techniques for cattle breeding and raising.

Mr. Ezer received the Western Heritage Award at the TVE Cowboys and Crawfish event on March 14. The Western Heritage Award honors the preservation of western heritage, as well as recognizes community involvement and land stewardship. Mr. Ezer has served in leadership roles on the Cattleman’s Beef Board, as well as the Texas and Southwestern Cattle Raisers Association. The Ezers’ Canada Ranch was established in 1929 and has been managed by Mr. Ezer since 1958.

The Double Bayou Watershed Partnership is proud of these recognitions of our stakeholders, who have also made valued contributions to the watershed protection project. Their commitment to the land and the local community are admirable.

New Partner Supporting Double Bayou Watershed Partnership!



A PROGRAM OF THE TCEQ

has joined our other partners in supporting the Double Bayou WPP project. GBEP, administered by TCEQ, coordinates and facilitates partnerships to implement the Galveston Bay Plan, a conservation

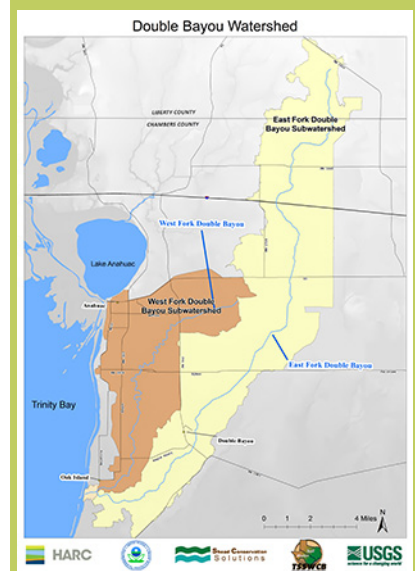
The Double Bayou Watershed Partnership is pleased to announce that the Galveston Bay Estuary Program (GBEP)

plan aimed at managing and protecting the resources of Galveston Bay.

Since 2005, GBEP has administered the “Back the Bay” project to engage citizens in actions that will improve and protect Galveston Bay resources. GBEP was also an original funding partner in exploring the possibilities for a WPP project for Double Bayou. Having this new funding support from GBEP will facilitate moving forward with our Watershed Protection Plan.

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Cease the Grease in the Double Bayou Watershed!



Chicken spiders? Grease monsters?

Has Double Bayou been invaded by greasy, oily creepy-crawlies? Not to worry - it's just the Galveston Bay Foundation's education and outreach campaign, "Cease the Grease," which will be now implemented in Double Bayou!

Although our Watershed Protection Plan is not yet complete, we are already thinking about the implementation of measures that will help improve and protect Double Bayou's stream water quality. Providing stakeholders with resources such as new workshops and outreach programs right away is a big part of our goals as the WPP moves toward completion.

The "Cease the Grease" campaign seeks to inform its audience about the dangers to the environment of improper disposal of fats, oil, and grease (FOG). It may seem easy and harmless to pour the grease from your cooking pots down the drain. However, when FOG enters the pipes, it can cause clogs in the sewer system, which leads to sanitary sewer overflows, which in turn release harmful bacteria into our waterways. It can also mean costly repairs for property owners.

"Cease the Grease" will also provide information to the community on how to properly dispose of FOG: Put it in a container and throw it away, or take used cooking oil to a designated recycling station.

Once active, ceasethegrease.net will become a core part of the outreach program, providing information and resources to the community, such as a cooking oil recycling map. "Cease the Grease" was developed and implemented by the Dallas Water Utilities and has successfully reduced the monthly occurrence of sanitary sewer overflows there.

How can you get involved in "Cease the Grease?"

The local Galveston Bay community has been instrumental in directing the course of the "Cease the Grease" program here, by participating in workgroups, sharing and promoting new ideas for outreach and education, and passing the message on to friends, co-workers, and neighbors. To become a partner in the "Cease the Grease" program, or to find out about workgroups and other activities in the area, contact Neally Rhea (nrhea@galvbay.org) or Charlene Bohanon (cbohanon@galvbay.org).

You'll be hearing more from us about "Cease the Grease" as implementation continues. In the meantime, remember: Cease the Grease in the Double Bayou watershed!



"Chicken Spider" courtesy of GBF's Cease the Grease

What is the Double Bayou WPP project?

The Double Bayou Watershed Protection Plan project is one of several projects designed to voluntarily address stream water quality in a tributary of Galveston Bay. Like most of these tributaries, Double Bayou is listed on the State Impaired Waters List (the "303(d) List") for having bacteria levels that are unsafe for human contact in some recreational uses. Many also have too little oxygen to support healthy aquatic life.

Impairments in Double Bayou are not as severe as for most other Galveston Bay tributaries. With voluntary stakeholder involvement it may be possible to improve the stream water quality enough to have it removed from the State Impaired Waters List without drastic measures.

The Double Bayou WPP project will result in a stakeholder-driven, written plan to achieve stream water quality standards through voluntary actions: the Double Bayou Watershed Protection Plan.



Project Acronyms

DBWP = Double Bayou Watershed Partnership

DO = Dissolved Oxygen

GBEP - Galveston Bay Estuary Program

HARC = Houston Advanced Research Center

TCEQ = Texas Commission on Environmental Quality

TMDL = Total Maximum Daily Load

TSSWCB = Texas State Soil and Water Conservation Board

USEPA = United States Environmental Protection Agency

USGS = United States Geological Survey

WPP = Watershed Protection Plan

WWTP - Wastewater Treatment Plant

A Local Perspective: Q&A with Rex Tunze

Periodically, the Double Bayou WPP project team will ask local participants to share their thoughts about the project and its activities. This edition features Rex Tunze's responses.



What watershed interest do you represent?

As a landowner, resident, recreationist, and a member of local government, I have an interest in the Double Bayou Watershed Project.

Why have you chosen to participate in the Double Bayou WPP project?

Due to my varied interests in this project, I feel compelled to participate in the Double Bayou WPP. As a member of this community, I want to be part of the group that makes decisions for the protection and restoration of our water quality. I understand and appreciate the varied perspectives from our community stakeholders.

How do you think this project will help the county?

This project is instrumental in raising

awareness of the quality of the water. By monitoring and analyzing the water, stakeholders can play a role in protecting and restoring this natural resource that is home to an abundant wildlife population. Finding solutions that are good for improving the quality of the water is necessary, but not at the expense of the livelihood of community members.

What would you most like to see come out of this project?

I would like to see this project monitor, analyze, and provide solutions that are feasible and do not adversely affect the stakeholders' livelihoods. I would like to see strong partnerships between the stakeholders that will allow them to work effectively to identify solutions. Additionally, I would like to see more resources that will provide funding, such as grants.

Please share with us something you have learned through your participation in this project about the Double Bayou Watershed and water quality.

I have learned that the community members share a concern and are willing to work together to find solutions that are fair to all involved.



Photo by Min Lee

Other Watershed Projects: Galveston Bay Oyster Waters

Oyster harvesting is an especially important economic activity in Galveston Bay. However, high bacteria concentrations in coastal waters can cause bacteria to accumulate in shellfish, making them unsafe to eat.

The impairment of water quality in our upper Gulf coast bays can thus result in restrictions on where people can harvest shellfish, such as oysters. According to TCEQ, about 50% of Galveston Bay has been classified as a restricted harvesting zone, where oysters may be harvested, but not for direct marketing.

Facilitated by the Galveston Bay Foundation, stakeholders around Galveston Bay formed into workgroups to draft an Implementation Plan, or I-Plan, to improve water quality along the upper Gulf coast so that the shellfish harvested in these waters are safe to consume.

Stakeholders identified several potential sources contributing to high bacteria concentrations within the oyster waters – including many that have also been identified for Double Bayou – and recommended management measures to address those potential sources of bacteria.

The project is now taking public comments on the Galveston Bay Bacteria Reduction Plan. More information about the project, as well as the text of the plan, can be found at <http://www.tceq.state.tx.us/waterquality/tmdl/74-uppercoastoyster.html>.

TSSWCB Celebrating 75 Years!



Established in 1939, the Texas State Soil and Water Conservation Board is celebrating its 75th anniversary. The TSSWCB works

with local soil and water conservation districts to encourage best practices with regards to Texas natural resources. It helps Texans to develop and implement voluntary programs at

the local level to conserve and protect the natural resources of their respective communities.

Since 2011, the TSSWCB has supported the Double Bayou Watershed Partnership in developing its watershed protection plan for Double Bayou. Congratulations to TSSWCB on 75 years of successfully implementing measures that protect our state's resources. Best wishes for many more!

Project Begins Final Phase: Develop the Double Bayou Watershed Protection Plan Document



The project to develop a Double Bayou WPP is embarking on the final phase of the process – writing down the results of:

- (a) stakeholder identification of potential pollution sources and their recommendations for how to improve the stream water quality of Double Bayou, and
- (b) the watershed analysis done for the project.

The Double Bayou WPP will include information to help ensure successful implementation of the Plan.

Drafts of the first two chapters of the Double Bayou WPP document have been presented to stakeholders for review and comment. These are available to all on the project website: <http://www.doublebayou.org/wpp-document/>.

Over the course of the next six months – until the middle of October – the project team will be delivering, in phases, a total of eleven chapters, for stakeholder input and approval. (See box for topics.) Once stakeholders approve a final version of the Double Bayou WPP (planned for late 2015), it will be submitted to the USEPA for their review.

USEPA's review looks for nine key elements the agency has identified as priorities for a WPP. The Double Bayou watershed will become eligible for other federal funding to help with WPP implementation, if the WPP is found consistent with those nine elements. Preparation of an

application for the next round of implementation funding is currently being considered.

Producing a stakeholder-approved Double Bayou WPP document will represent the culmination of this watershed planning project, with meetings of stakeholders being the core of the process. Stakeholders have provided valuable input and review for the Double Bayou project team's roles in research, evaluation, and information-sharing (see sidebar). Without that local input, the project would lack meaning or effective direction for improvements in the watershed and stream water quality.

Some aspects of the Double Bayou WPP project have been described in previous issues of this newsletter (<http://www.doublebayou.org/newsletters/>). On page 5 in this issue is a description of the first set of bacteria results from the project's program of water quality monitoring.

It's not too late to get involved:

*Attend a meeting!
Review documents on the website!
Be a part of the solution!*

Double Bayou WPP Chapter Topics

- Introduction to Watersheds
- State of the Double Bayou Watershed
- Public Participation
- Watershed Analysis
- Causes and Sources of Pollution
- Estimates of How Much Bacteria Could be Reduced
- Management Measures
- Technical and Financial Assistance Needs
- Outreach and Education
- Project Schedule, Milestones, and Progress Indicators
- Monitoring Plan

Roles of the DB Project Team:

The Double Bayou project team works to bring the best possible data and information to the stakeholders for their consideration.

HARC is the overall project manager for the Double Bayou project. HARC analyzes and reports to stakeholders the results of water quality monitoring. It has also conducted research about what has been known about the watershed, and has conducted modeling to identify which sources have the most potential to contribute bacteria in the streams. HARC has primary responsibility for writing the WPP document for stakeholder review.

For this project, USGS has been regularly monitoring water quality at two stations each on the West Fork and the East Fork of Double Bayou, plus one station at the outfall of the Anahuac wastewater treatment facility, for a total of 29 sampling events since October 2013. USGS has also monitored water quality during 7 rain events at those locations over that time period. The sampling process will continue through the Fall of 2015.

Shed Conservation Solutions facilitates information-sharing – though stakeholder meetings and meeting documents, through the website and newsletters, and through fact sheets, news releases, stakeholder interviews, presentations, and other communications.

The project team also includes a representative from TSSWCB and GBEP. (See articles on those project partners on pp. 1 and 3).



Is the stream water quality of Double Bayou safe for people contact?

Bacteria Sampling for Double Bayou

The initial Double Bayou water quality monitoring results are for water samples taken from October 22, 2013 through August 12, 2014. These samples were regularly taken by USGS at two locations on the East Fork, two on the West Fork, and one in the Anahuac Ditch, just downstream of the outfall of the Anahuac wastewater treatment facility (see map in sidebar).

For this initial sampling report, a total of 17 routine samples (i.e., scheduled, without consideration of weather) and 4 targeted samples (during rain events) were taken and analyzed for each station.

Bacteria Analysis

HARC has analyzed the initial bacteria sampling results to look for patterns in the bacteria levels. Some patterns might help identify where management measures might be needed most – or be most effective – at reducing bacteria levels in the bayou.

What has been learned so far about bacteria levels in the waters of Double Bayou?

Routine Results. For routine sampling (scheduled, not dependent on weather), the initial sampling results show that all three of the tidal bayou stations had bacteria geomeans (a type of average) that were above the State criterion. That is, they would exceed the levels determined to be safe for contact recreation (see sidebar).

The bacteria geomean for the one non-tidal station (at FM 1663) was just below the State criterion. The bacteria geomean for the station at the Anahuac wastewater treatment facility (WWTF) was well below the State criterion.

Rain Event Results. While there are not State criteria for unscheduled, targeted sampling during rain events, checking bacteria levels at those times can help to identify other sources of

bacteria not seen during a typical dry weather period. For rain event sampling, the bacteria levels for all the stations were well above benchmarks for safe levels, especially for the WWTF station.

Other Conditions. In addition to these results, HARC considered how the indicator bacteria levels varied with season and with the amount of time since the last major rain event. They found a possible pattern of more exceedances of the bacteria benchmark in routine fall samples. They also found that the bacteria levels tend to be higher for a given rain event if it has been longer since the previous major rain event.

Bacteria Indicators

To protect human health, criteria for maximum bacteria levels in surface waters have been established by the State of Texas, based on the potential risk of getting sick from ingesting water through recreational contact, such as swimming, boating, and wading.

These criteria are established using indicator bacteria – those that indicate the possible presence of disease-causing pathogens in the water. Two kinds of bacteria have been selected as indicators: *Escherichia coli* (*E. coli*) and Enterococcus.

Both of these bacteria are normally found in the digestive tracts of warm-blooded animals. They are used as indicators of the possible presence of disease-causing pathogens because they are found in human waste, and because they are easier and much less expensive to test than all of the possible diseases that could be passed along in waste in the water.

E. coli has been found to be a better indicator of human waste in freshwater samples, and Enterococcus as a better indicator of human waste in tidal water samples. The USGS team has been sampling for both kinds of bacteria.



State Criteria for Bacteria

The State criteria established for the indicator bacteria are based on the geomean (a kind of average) for routine (scheduled) sampling, and those limits are:

Enterococcus 35 MPN/100 mL
E. coli (non-tidal) 126 MPN/100 mL

(MPN = Most Probable Number, of bacteria, a statistical method of determining how many bacteria are there, based on their presence in small amounts of the sample, grown in special liquid (media).
mL = milliliter, a unit of volume;
100 mL = a bit less than ½ cup.)



Some useful links from our website:

WPP Document:
<http://www.doublebayou.org/wpp-document/>

Meeting Archives:
<http://www.doublebayou.org/double-bayou-meetings/>

Tools and Resources:
<http://www.doublebayou.org/toolsresources/>

Please visit www.doublebayou.org to access these and other resources, and if you have any questions or suggestions about the website, please send an email to: brandie.minchew@gmail.com.

Resources from the Feral Hog Management Workshop

The Feral Hog Management Workshop at White's Park on June 27, 2014 consisted of 7 presentation topics, plus an outside trip to see how to build and use feral hog traps. To help you find out more about feral hogs and what to do about them, the table below provides the workshop topics covered and the contact info for the speakers:

Topic	Speaker and Contact Information:
<ul style="list-style-type: none"> Basic Biology of Feral Swine and Feral Hog Implications to the Watershed Agriculture Regulations Regarding Feral Hogs Feral Hog Population Dynamics and Research Update 	Mark A. Tyson Extension Associate Texas A&M AgriLife Extension Wildlife & Fisheries Mark.Tyson@ag.tamu.edu 979-845-4698
<ul style="list-style-type: none"> Water Quality in Southeast Texas 	Brian Koch Texas State Soil & Water Conservation Board 979-532-9496 bkoch@tsswcb.texas.gov http://www.tsswcb.texas.gov/ http://www.tsswcb.texas.gov/cwp
<ul style="list-style-type: none"> Feral Hog Control 	Linda Tschirhart Wildlife Biologist Wildlife Services, USDA 979-845-5201/979-845-6201
<ul style="list-style-type: none"> Laws and Regulations for Hunting Feral Hogs 	Daniel Pope Game Warden, Chambers County Texas Parks & Wildlife Department 281-842-8100
<ul style="list-style-type: none"> Regulations for Transporting and Moving Feral Hogs & Disease Concerns 	Dwayne Easley Animal Health Supervising Inspector Texas Animal Health Commission 979-921-9481

And even more information can be found through the following AgriLife online resources:

Feral Hog Resources: <http://feralhogs.tamu.edu/>
 Feral Hog Community of Practice: http://www.extension.org/feral_hogs
 Feral Hog Reporting: <http://feralhogreports.tamu.edu/>
 Feral Hog Online Newspaper: <http://www.scoop.it/t/wild-pigs-feral-hogs>
 Feral Hog Webinar: <https://www.youtube.com/watch?v=1tSVPFmHVTk>



Photo courtesy of the U.S. Fish and Wildlife Service

Upcoming Events

10th General Meeting
Tuesday, June 16, 2015

Workgroups Meeting
Tuesday, July 14, 2015

11th General Meeting
Tuesday, Aug. 18, 2015

12th General Meeting
Tuesday, Sept. 15, 2015

13th General Meeting
Tuesday, Oct. 13, 2015



Our thanks to the following for providing recent support to the Double Bayou Watershed Partnership, since the previous newsletter:

For meeting space, equipment, and set-up –

- Chambers County
- Chambers Recovery Team

For refreshments –

- Jeri's Seafood
- Samson Energy

Please add your thanks to ours, when next you see these folks!



Our Project Partners



Houston Advanced Research Center
4800 Research Forest Drive
The Woodlands, TX 77381

<http://www.doublebayou.org>