

Rain, Tide, and Field Observations

Precipitation Information

Below is a list of a few of the many sources for precipitation information. I will gravitate toward different sources depending on what location I need the info for. Each of these websites has strong and weak points that I will also attempt to identify:

- www.harriscountyfws.com
 - The Harris County Flood Warning System is for more than just Harris County locations, however there aren't many locations outside of Harris County.
 - To find precipitation information for your site:



- Under the 'Gage Selections' section on the left side of the screen, select the "All" button under 'Gages by Agency'
- Search on the map for your monitoring location
- If there is a station nearby your monitoring location then proceed. If not, this system may not work for your location.
- To view the amount of rainfall for a three day period, select the 'historical' tab under the 'Rainfall Data' section.
- Select to count back 3 days from the exact date and time that you monitored and press 'Show Historical'.
- To see when it last rained at your location, change the number of days to count back from your monitoring date until you see when the last significant rainfall actually occurred.

- www.wunderground.com
 - Weather Underground is most useful when your location is close to an airport, such as Scholes International (Galveston), Ellington Field, Houston Hobby, or Bush Intercontinental.
 - To find the precipitation information for your site:
 - Search for the nearest town in the search bar

- Scroll down to the section that says 'Almanac'. At the bottom of the 'History' section, click on 'Calendar View'

| 8 | 9 | 10 | 11 | 12 |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| Actual: | Actual: | Actual: | Actual: | Actual: |
| 76 67 0.00 | 77 68 T | 78 55 0.18 | 67 48 1.08 | 71 57 0.00 |
| Average: | Average: | Average: | Average: | Average: |
| 74 62 0.11 | 75 63 0.11 | 75 63 0.12 | 75 63 0.13 | 75 63 0.11 |

- From this calendar, you can see that for each day there is actual and average (goes back many years) information for low temp, high temp, and precipitation. When looking for the 'Inches of Rainfall Accumulation from the last 3 days' field from the datasheet, find the date you sampled and add the Actual (daily) precipitation for that and the previous two days (ex: sampled the 11th. Added up the 9th, 10th, and 11th actual precipitation values). For that example, the value you'd write in the datasheet would be 1.26 inches, because you had to add the two rain events on the 11th and the 10th. When a 'T' is present, like on the 9th, that means 'trace'; some rain was measured, but it was less than 0.01 inches. If this happens, you don't need to add anything to your total rainfall amount.

- www.weather.com

- I find Weather.com to be least accurate in its records of how much it actually has rained.
- To find precipitation information for your site:

- Search for a town near your location
- Click 'Yesterday' on the bar on the left
- To find further past data, click the next date. In the image below, it is a link near the bottom that says "← April 23"
- Keep clicking backward and recording the precipitation as you go

Other precipitation resources:

- <http://w1.weather.gov/data/obhistory/KGLS.html>

- <http://wx.apxsolutionsinc.com/wxwebcam.php>

- League City Weather, great if you sample in or near League City.

Tide Stage

[Tidesandcurrents.noaa.gov/map](http://tidesandcurrents.noaa.gov/map) is a good source for tide information. I suggest to play with the mapping tool a bit to get the hang of it, but it is a great resource. Notice that there are only a few stations that actually record and show the actual tide data – all of this is historical (so yesterday's information, but not tomorrows). Eagle Point, Rollover Pass, Galveston Bay Entrance North, Galveston Pier 21, Galveston Railroad Bridge, and San Luis Pass are the only 6 that record and store the actual tide data, not just the predicted tide. Just like with the precipitation information, you can go back in time and view the tide information through this website. Just select the location you want to view from the map, click 'Water Levels', and on the new webpage select the date you sampled on the bottom and find the time the sample was collected on the chart.

- Other tide stage resources:
 - <http://tides.mobilegeographics.com/>

Field Observations

Below are the 8 field observations that ask for a subjective answer as a number. Most are pretty intuitive, but there are a few tips/tricks to some of them.

Flow Severity

- If the water does not look like it is very low/dry or flooding, suggested number to use is either 1 (no flow, because the bay doesn't have a one directional flow) or 3 (normal).

Algae Cover

- This measurement includes anything that would be in the 'tide line' above and below the water. Any algae that you can see that is or could be at one point under water.

Water Color

- Water will be collected in the 2 gallon white buckets for the sample grab, so color is determined when looking inside of the white bucket. DO NOT determine the color of the water from looking at the bay or looking at water in a clear container.

Water Clarity

- When filling the turbidity tubes with sample water (using the clear, plastic beakers), take one of the beakerfulls and place it over some text (on the datasheet, perhaps). Look through the clear beaker full of water to a block of text. If it looks like you are trying to look through milk, the water is turbid; if writing is somewhat visible but not legible, the water is cloudy; if letters and words are legible, the water is clear.

Water Conditions

- Measure this AND ALL OTHER FIELD OBSERVATIONS from where your sample was collected, not 20, 50, or 100 feet out into the bay. If there are white caps out in the bay, write that in the comments section. Only if there are whitecaps where the sample was taken should that be recorded here.

Water Odor

- Measure this by smelling the water in the white sample bucket so that the person measuring this does not fall into the water.

Present Weather

- Clear means there are no clouds in the sky; cloudy means there is at least 1 cloud in the sky and at least a little bit of blue in the sky; overcast means that there is no blue to the sky, it is all cloud. Rain is an obvious one.

