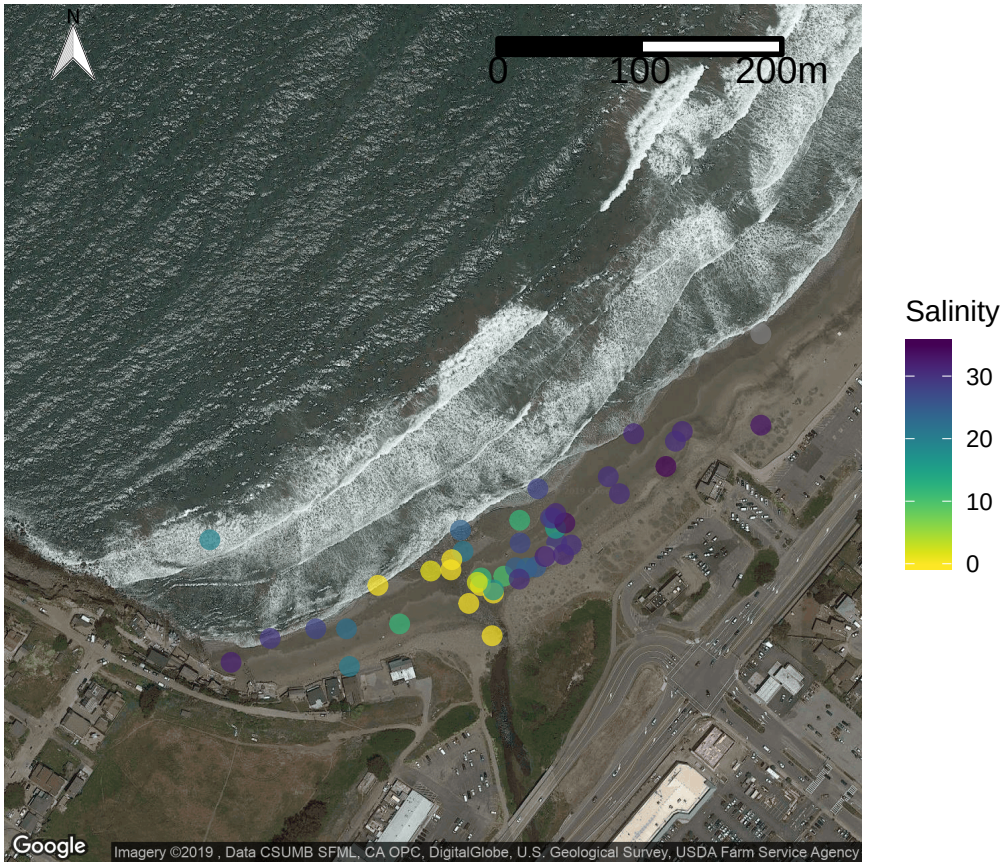
Data Report for Linda Mar Beach, Pacifica

Stanford Beach Project

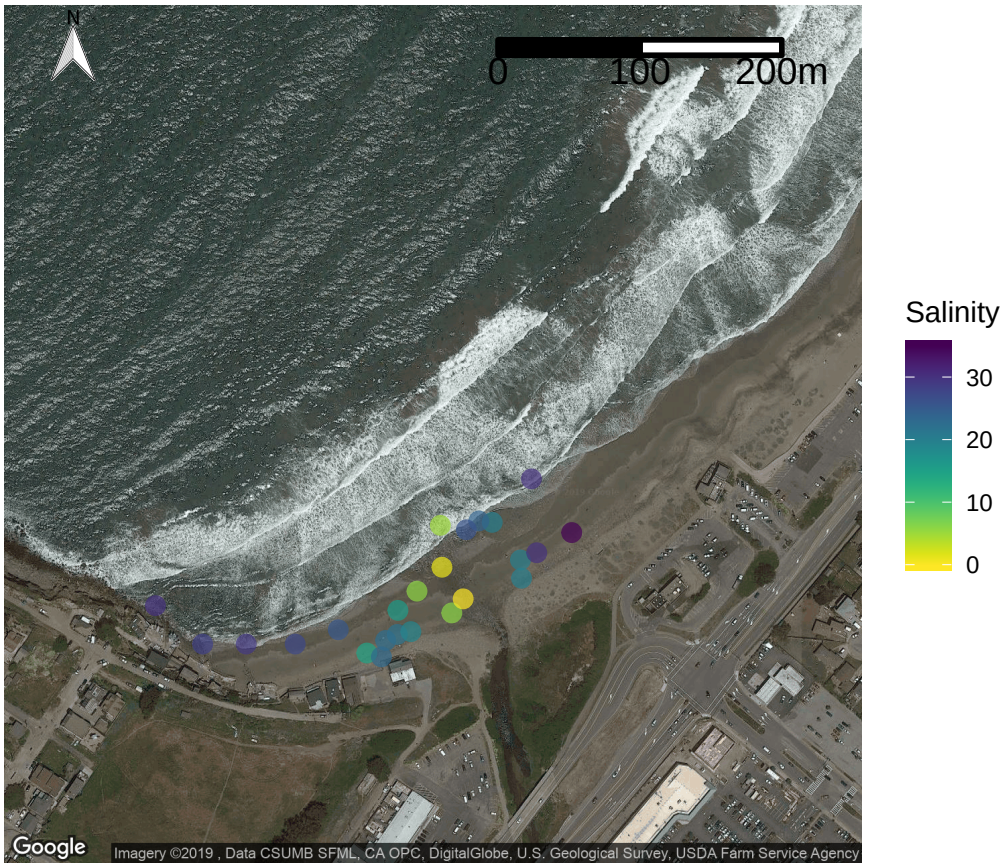
3/22/2019 - 4/7/2019

Salinity: Mar 22 - Mar 30, 2019: from high to low flow from Creek

This figure shows salinity measurements made between Mar 22 and Mar 30 by our awesome water quality monitors. Remember that completely freshwater has a salinity near 0 PSU (Practical Salinity Units), while local marine water has a salinity of about 34 PSU.



Salinity: Mar 31 - Apr 7, 2019: low flow from Creek



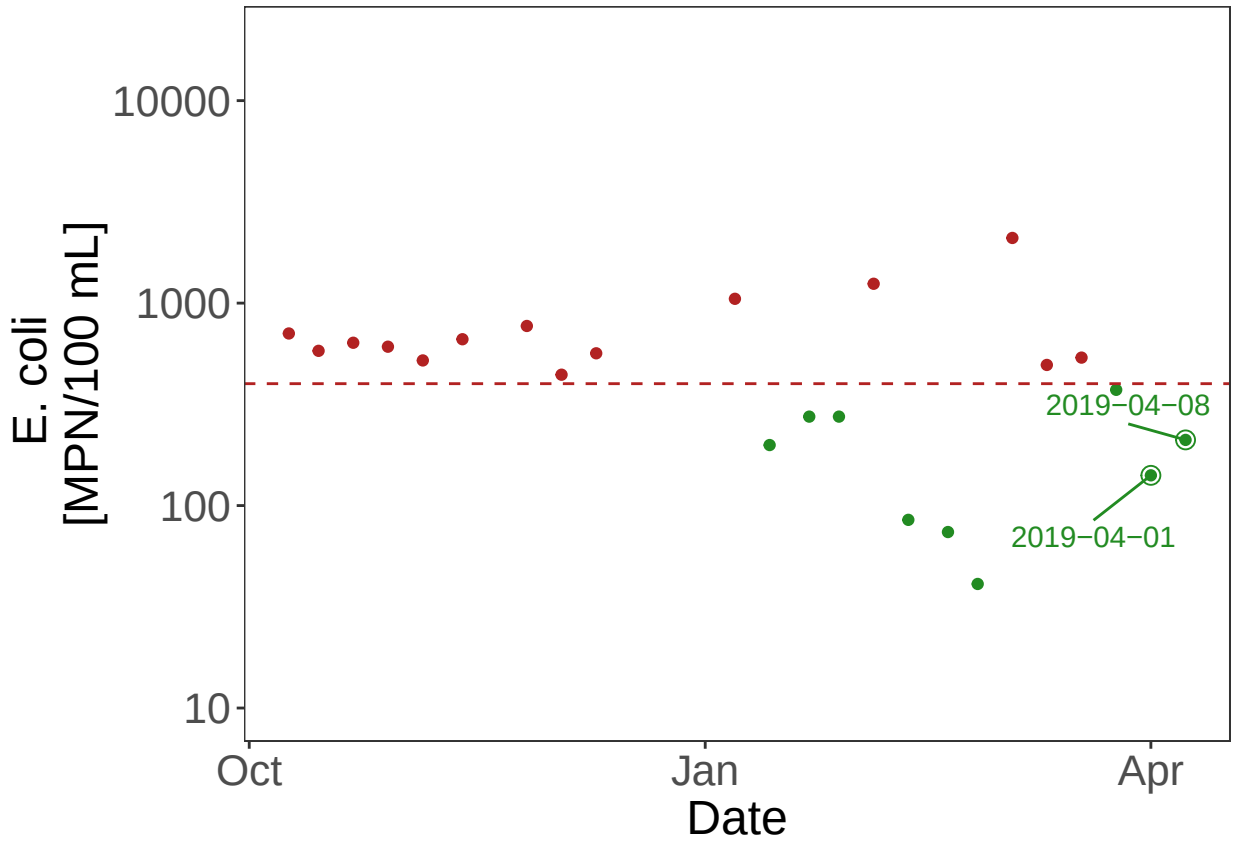
Stuff worth knowing:

- Great job on GPS locations!
- Clearly, the low Creek flow is not pushing fresh water very far along the beach.
- These measurements are calibrated, but they are still preliminary, so there may be a couple funny numbers from time to time.

Bacterial pollution at San Pedro Creek Mouth

This figure shows the levels of *E. coli* measured at San Pedro Creek Mouth by San Mateo County. Weekly measurements made from Oct 2018 to Apr 8, 2019 are shown.

Each data point is one *E. coli* measurement, and the two most recent measurements are labeled. Red points indicate levels higher than the level considered safe for swimming, and green points represent levels considered safe for swimming.

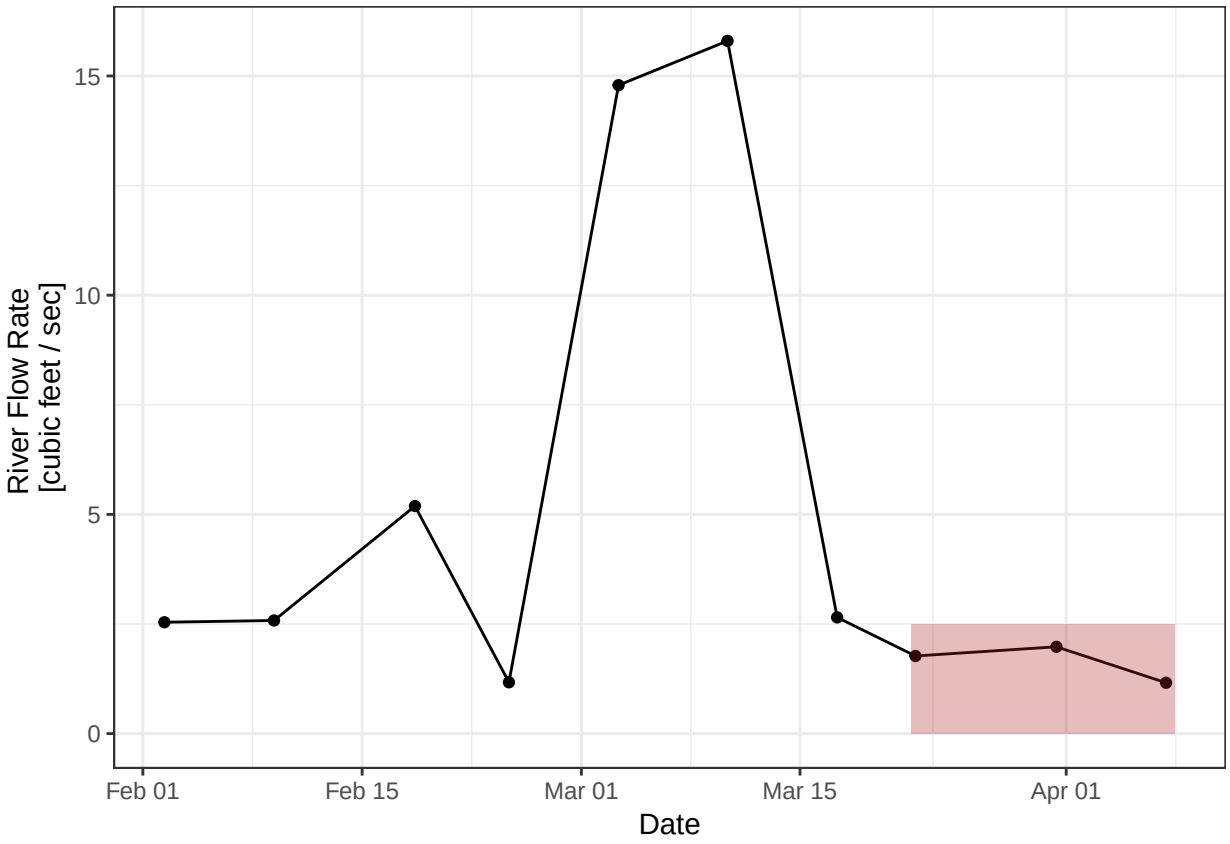


Stuff worth knowing:

- The dashed red line corresponds to 400 MPN/100 mL, which is the threshold used by California to determine the safety of swimming water.
- The *E. coli* measured are fecal indicator bacteria (FIB). FIB are used to indicate fecal contamination because feces can carry an array of pathogens that cause illness to humans. However, most *E. coli* themselves are not pathogens; they merely reside in the guts of healthy warm-blooded animals.
- MPN is a unit commonly used to measure the level of FIB. It stands for Most Probable Number. You can understand it as our best estimate of the number of bacteria in a water sample. MPN/100 mL is our estimate of the number of bacteria in a 100 milliliter water sample. 100 mL is the standard volume used in water quality testing.

Creek flow conditions

Between Mar 22 and Apr 7, we had little rainfall. This is reflected in the Creek flow measurements below, which are quite low.



Stuff worth knowing:

- There are no flow gages on San Pedro Creek. Therefore, we are measuring flow each week. However, flow in San Pedro Creek can change very rapidly following rain events, which we typically miss by making only weekly measurements. Later, we will get a more detailed set of flow estimates by using a hydrologic model of the entire watershed and rainfall data.