

Know before you go



Metis Engineering Project Summer 2022

Easy access conditions info

Data:


- [NOAA Tides & Currents](#)
- [Open Weather Map Air Pollution](#)
- [Weatherbit](#)



- Sailing & Boating
 - Paddleboarding
 - Kayaking
 - Windsurfing
 - Kit Boarding
 - Open Water Swimming
-

Scrape location data

Use Requests,
Selenium,
BeautifulSoup, and
MongoDB to get and
store location info for
tides stations in
California, Oregon,
and Washington



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NOAA Tide Predictions

About NOAA Tide Predictions

Choose a station using our Tides and Currents Map, click on a state below, or search by station name, ID, or latitude/longitude.

 Or search: [search help](#)

California

Name	Id	Lat	Lon	Predictions
Baja California				
San Carlos	TWC0399	+24.7833	-112.1167	Subordinate
Isla Guadalupe	TWC0401	+28.8833	-116.3000	Subordinate
Ensenada, Todos Santos Bay	TWC0403	+31.8500	-116.6333	Subordinate
Southern California				
Imperial Beach	9410120	+32.5783	-117.1350	Subordinate
Point Loma	TWC0405	+32.6667	-117.2333	Subordinate
San Diego, Quarantine Station	9410166	+32.7033	-117.2350	Subordinate
SAN DIEGO (Broadway)	9410170	+32.7142	-117.1736	Harmonic
National City, San Diego Bay	9410152	+32.6650	-117.1180	Subordinate
South San Diego Bay	9410135	+32.6291	-117.1078	Harmonic
Quivira Basin, Mission Bay	TWC0413	+32.7667	-117.2333	Subordinate
Mission Bay, Campland	9410196	+32.7937	-117.2238	Harmonic

Get tide, weather, and air quality info for each location

Use Requests to retrieve info in JSON format and store it using Pymongo and MongoDB

```
{'_id': ObjectId('62f0397dc868aa58a7094f79'),  
'station_name': 'Cape Disappointment',  
'station_id': '9440581',  
'lat': '46.2810',  
'long': '-124.0463',  
'response': [{ 'wind_cdir': 'N',  
  'rh': 60,  
  'pod': 'd',  
  'timestamp_utc': '2022-08-07T23:00:00',  
  'pres': 1012.5,  
  'solar_rad': 682.645,  
  'ozone': 308.3,  
  'weather': { 'icon': 'c01d', 'code': 800, 'description': 'Clear Sky'},  
  'wind_gust_spd': 8.59,  
  'timestamp_local': '2022-08-07T16:00:00',  
  'snow_depth': 0,  
  'clouds': 0,  
  'ts': 1659913200,  
  'wind_spd': 5.81,  
  'pop': 0,  
  'wind_cdir_full': 'north',  
  'slp': 1014.5,  
  'dni': 853.55,  
  'dewpt': 15.5,  
  'snow': 0,  
  'uv': 5.4,  
  'wind_dir': 2,  
  'clouds_hi': 0,  
  'precip': 0,  
  'vis': 31.296,  
  'dhi': 108.54,  
  'app_temp': 23.8,  
  'datetime': '2022-08-07:23',
```



Select Location

Columbia River entrance (N. Jetty) ▾

Select Date of Interest

2022-08-08

2022-08-07

2022-08-10

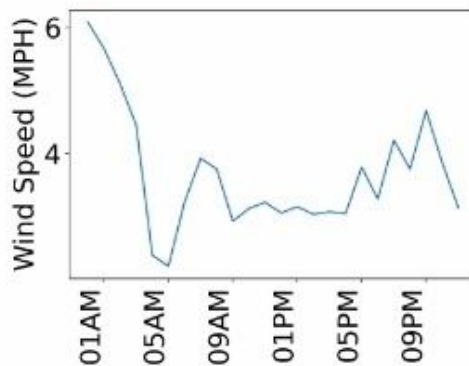
Conditions on the Water



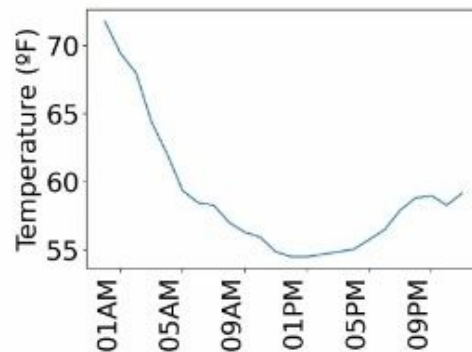
Air Quality Index (AQI) on 2022-08-08 at Columbia River entrance (N. Jetty) is **FAIR**

View tidal predictions for this location [here](#)

Wind

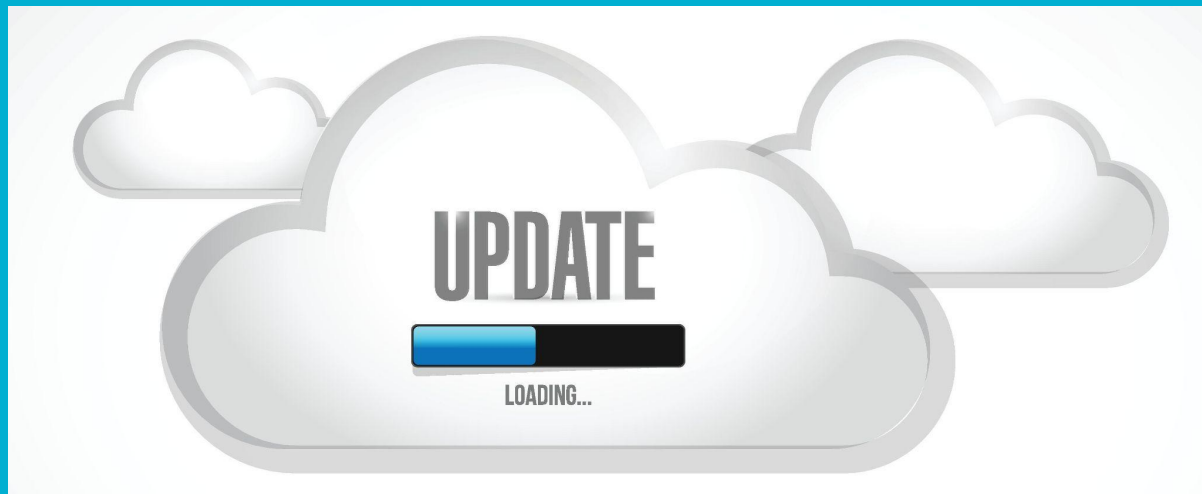


Temperature



Update the Data Daily

Use Cron to schedule daily execution of a Python script to refresh data for the Streamlit app to use



Next Steps

- Improve tides data display in the app
- Deploy to the web
- Select location by clicking on the map
- Simple model to build recommend locations within a given search area

