2018 SFEI RMP Data Visualization Challenge
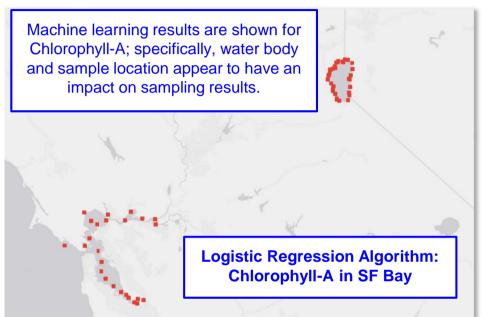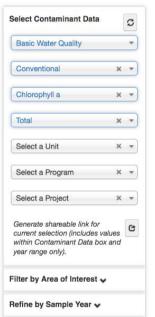## Machine Learning Analysis of Nutrients in the SF Bay
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Nutrients present in the SF Bay are linked to higher algae blooms and toxins which result in lower dissolved oxygen (DO), negative impacts to fish habitat and lower overall water quality; as a result, machine learning was used to identify other potential insights from nutrient monitoring data.

Machine learning results are shown for Chlorophyll-A; specifically, water body and sample location appear to have an impact on sampling results.

Logistic Regression Algorithm: Chlorophyll-A in SF Bay

Select Contaminant Data

Basic Water Quality
Conventional
Chlorophyll a
Total
Select a Unit
Select a Program
Select a Project

Generate shareable link for current selection (includes values within Contaminant Data box and year range only).

Filter by Area of Interest
Refine by Sample Year

Feature	Score
huc8_name	0.208333
stationname	0.041667
county_name	0.020833
result	0
huc10_name	-0.020833
huc12_name	-0.041667

Metrics

Overall accuracy	0.564885
Average accuracy	0.825954
Micro-averaged precision	0.564885
Macro-averaged precision	NaN
Micro-averaged recall	0.564885
Macro-averaged recall	0.262879

Metrics

Overall accuracy	0.782918
Average accuracy	0.891459
Micro-averaged precision	0.782918
Macro-averaged precision	NaN
Micro-averaged recall	0.782918
Macro-averaged recall	0.413686

Feature	Score
result	0.086022
huc8_name	0.026882
huc12_name	0.010753
huc10_name	0.005376
stationname	0
county_name	0

Machine learning results are shown for dissolved oxygen; specifically, water body and sample location appear to have an impact on sampling results.

Logistic Regression Algorithm: Dissolved Oxygen in SF Bay

Select Contaminant Data

Basic Water Quality
Conventional
Oxygen, Dissolved
Total
Select a Unit
Select a Program
Select a Project

Generate shareable link for current selection (includes values within Contaminant Data box and year range only).

Filter by Area of Interest
Refine by Sample Year
Download Mapped Data

Github Repository: https://github.com/walteryu/sfei-rmp
AML Chl-A Model: https://gallery.azure.ai/Experiment/SFEI-RMP-Classification-Evaluation-Chlorophyll-A
AML DO Model: https://gallery.azure.ai/Experiment/SFEI-RMP-Classification-Evaluation-Dissolved-Oxygen