



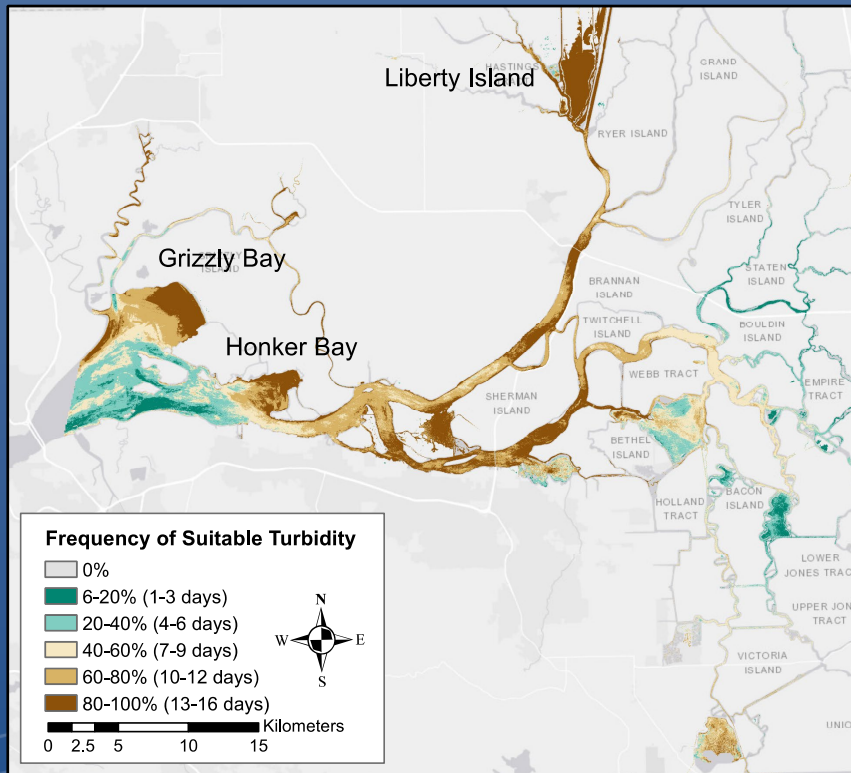
WHAT MATTERS?

TARGET UNCERTAINTY LEVELS FOR RESEARCH & SCIENCE NEEDS

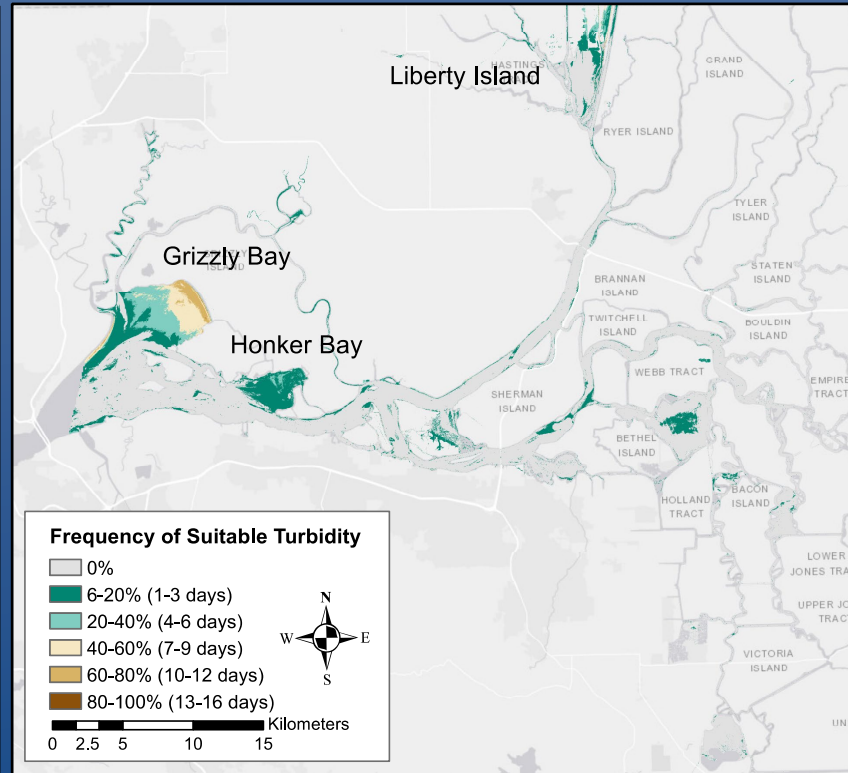
Dulci Avouris
Erin Hestir

INSTRUMENT RANGE & UNCERTAINTY LEVELS MATTER

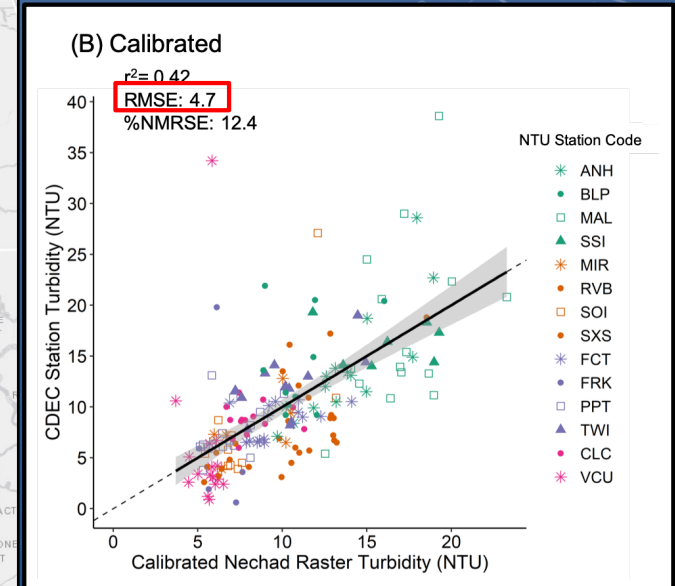
Retrieval uncertainty has consequences for amount of potential habitat for Delta Smelt



Upper bound Delta Smelt habitat potential (+RMSE)



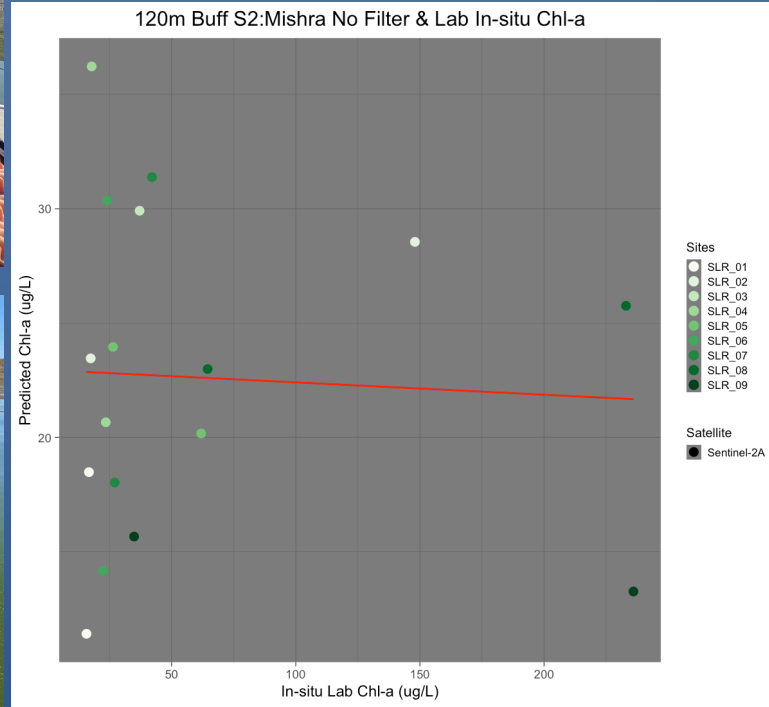
Lower bound Delta Smelt habitat potential (-RMSE)



Turbidity retrievals calibrated to the SFB Delta

HOW SAMPLING IS CONDUCTED MATTERS

San Luis Reservoir, California



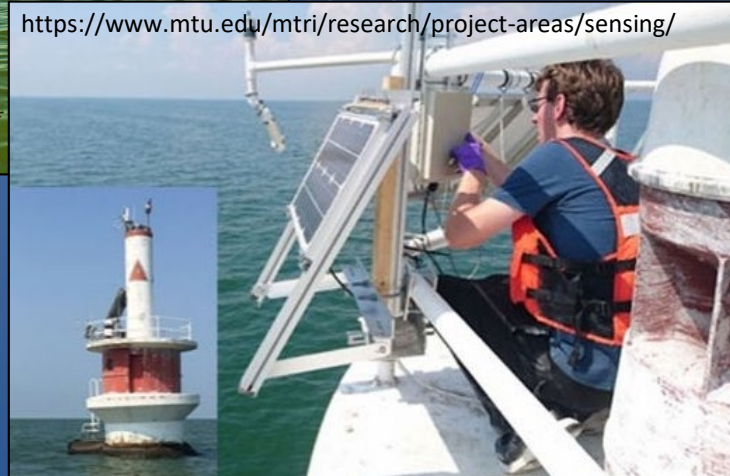
UCM EORS Lab sampling

- Visible bloom!
- Lab measurements of grab samples = high microcystis
- In situ fluorometers = low chl a, despite visible bloom

Suite of sensor deployments AND weekly boat based sampling



<https://www.limno.com/buoys/>



<https://www.mtu.edu/mtri/research/project-areas/sensing/>

Lake Erie

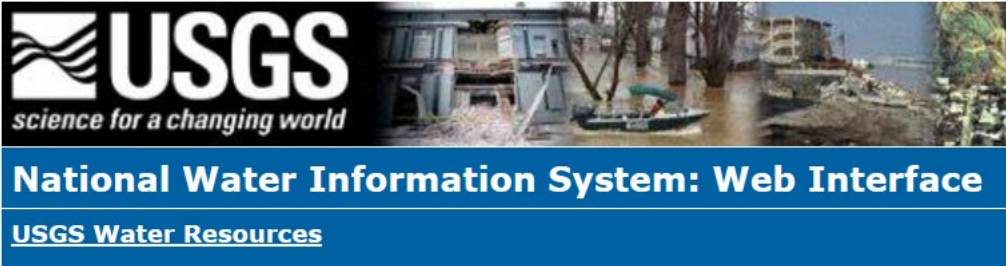


UNIFORM REPORTING & DATA ACCESS MATTERS

Welcome to the new Water Quality Portal

The Water Quality Portal (WQP) is the premiere source of discrete water-quality data in the United States and beyond. This cooperative service integrates publicly available water-quality data from the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and over 400 state, federal, tribal, and local agencies. [Learn More](#)

To download data complete the query below. Returning and experienced users may wish to use the [Advanced Download](#).



USGS
science for a changing world

National Water Information System: Web Interface

USGS Water Resources



Wisconsin Department of Natural Resources

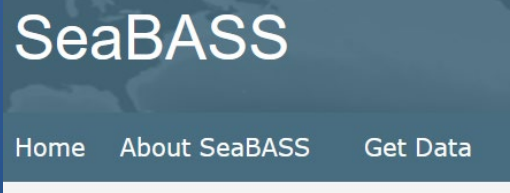
Water Quality

Graphs & Data

Adams County

Ashland County

Barron County



SeaBASS

Home About SeaBASS Get Data

WELCOME TO CALIFORNIA DATA EXCHANGE CENTER

The primary function of the California Data Exchange Center (CDEC) is to facilitate the collection, storage, and exchange of hydrologic and climate information to support real-time flood management and water supply needs in California.

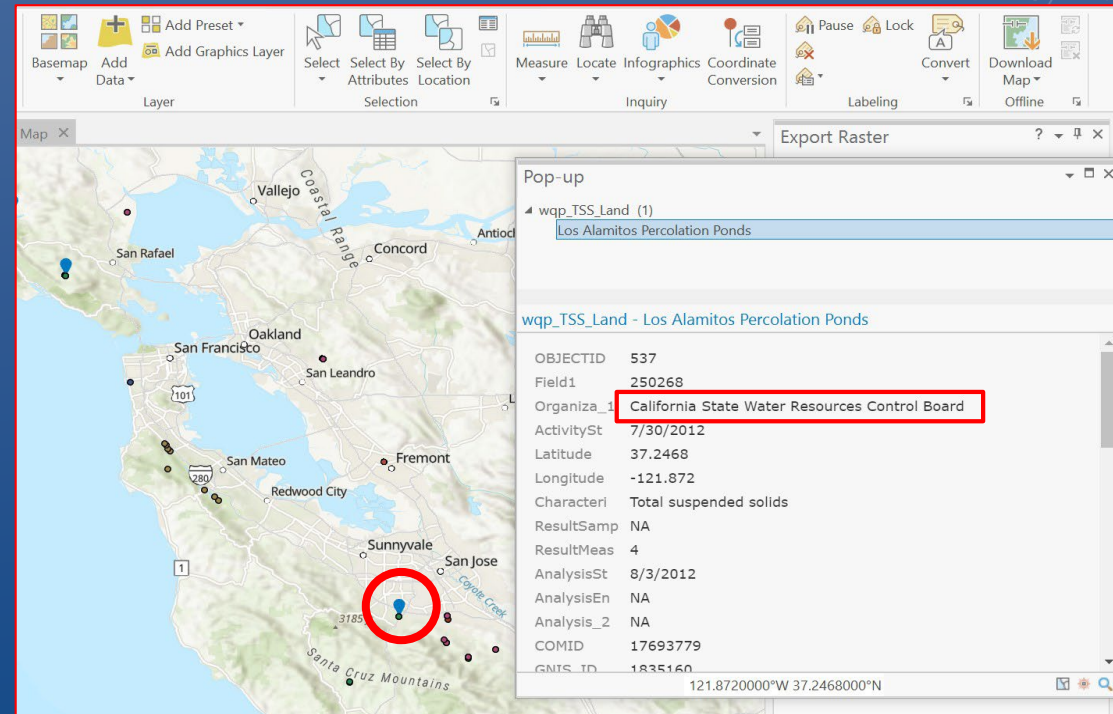
Water Resources Research

Technical Reports: Data | [Free Access](#)

AquaSat: A Data Set to Enable Remote Sensing of Water Quality for Inland Waters

Matthew R. V. Ross ✉, Simon N. Topp, Alison P. Appling, Xiao Yang, Catherine Kuhn, David Butman, Marc Simard, Tamlin M. Pavelsky

First published: 11 October 2019 | <https://doi.org/10.1029/2019WR024883> | Citations: 39



Map x

Layer

Basemap Add Data Add Graphics Layer

Select Select By Select By

Attributes Location

Measure Locate Infographics Coordinate Conversion

Inquiry

Pause Lock

Convert Download Map Offline

Export Raster

Pop-up

wqp_TSS_Land (1)

Los Alamitos Percolation Ponds

wqp_TSS_Land - Los Alamitos Percolation Ponds

OBJECTID	537
Field1	250268
Organiza_1	California State Water Resources Control Board
ActivitySt	7/30/2012
Latitude	37.2468
Longitude	-121.872
Character1	Total suspended solids
ResultSamp	NA
ResultMeas	4
AnalysisSt	8/3/2012
AnalysisEn	NA
Analysis_2	NA
COMID	17693779
GNIS_ID	1835160

121.8720000°W 37.2468000°N

GEOLOCATION MATTERS

USGS official
(NWIS)
locations of
in situ
monitoring
stations



Is this a significant figures issue with lat/long data?

UNITS & VOCABULARY MATTERS

Humification_Index___calculated_by_dividing_the_fluorescence_intensity_in_the_435_480_nm_region_by_the_total_intensities_in_the_300_345_and_435_480_nm_regions__unitless_None_32313

Fluorescence_Index___ratio_of_emission_intensities_which_characterizes_the_slope_of_the_emission_curve_at_an_excitation_of_370_nm__unitless_None_32312

- Absorption vs Absorbance
- apg, ag, ap, cpg, cg, cp – in situ absorption
- Ap, At, Aph – in lab absorption
- A280, A440 – in lab absorbance

fCHLA (?g/L) (WS) HR

Yellow substances (?g/L) (FP) HR

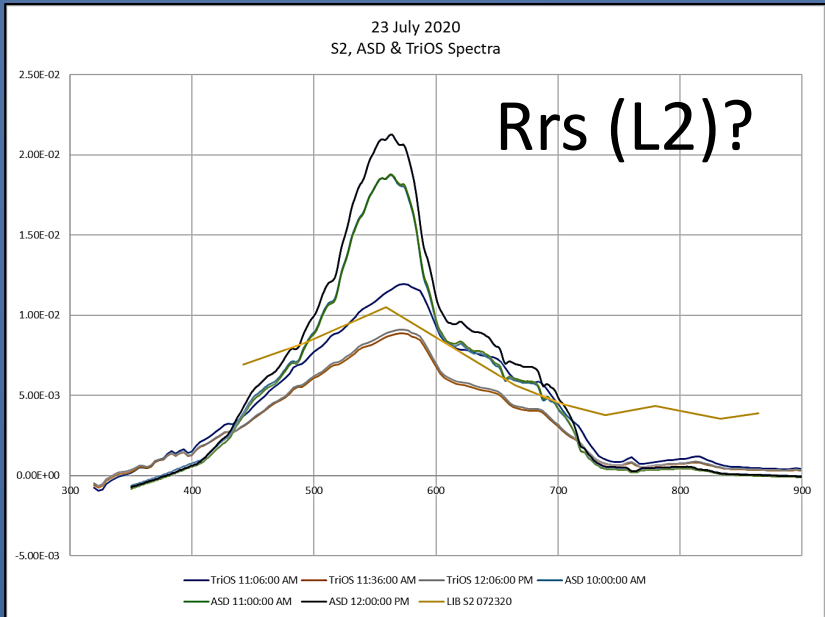
fDOM (RFU) (WS) HR



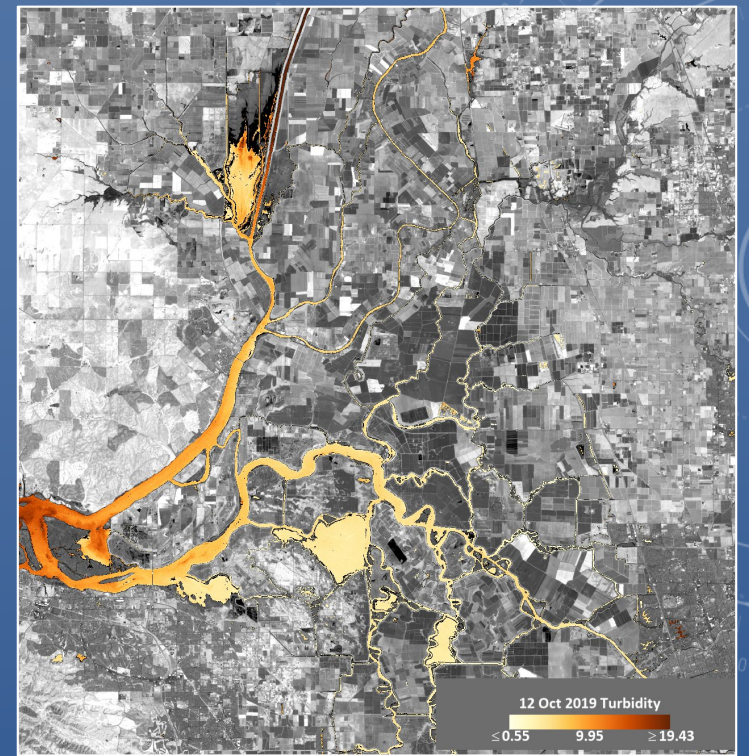
DATA DICTIONARY

FDOM_32295_WLM	fDOM (RFU) (WS) HR
fCHL_32316_WLM	fCHLA (?g/L) (WS) HR
NO3_uM_SUN	NO3 (?M) (SUNA) HR
NO3_uM_SUN_cal	NO3 (?M) (SUNA) HR Lab Calibrated
NO3_SUN_cal	NO3 mg/L SUNA MAP
Tr_WLM	Tr (%) (CStar) HR
Cpg650_WLM	C (1/m) (CStar) HR
WTemp_00010_TSG	Temp (?C) (TSG) HR
SC_00095_TSG	Cond (?S/cm) (TSG) HR
Salinity_00480_TSG	Salinity (PSU) (TSG) HR
WTemp_00010_XOM	Temp (?C) (EXO) HR
SC_00095_XOM	Sp Cond (?S/cm) (EXO) HR
Salinity_XOM	Salinity (PSU) (EXO) HR
pH_00400_XOM	pH (EXO) HR
DO_00300_XOM	DO (mg/L) (EXO) HR
DOsat_00301_XOM	DO (%sat) (EXO) HR
Turb_63680_XOM	Turb (FNU) (EXO) HR
FDOM_32295_XOM	fDOM (QSU) (EXO) HR
fCHL_32316_XOM	fCHLA (?g/L) (EXO) HR
fBGA_XOM	fBGA (ug/L) (EXO) HR
GAlgae_FPM	Green Algae (?g/L) (FP) HR
BGA_FPM	Bluegreen Algae (?g/L) (FP) HR
Diatoms_FPM	Diatoms (?g/L) (FP) HR
Crypto_FPM	Cryptophyta (?g/L) (FP) HR

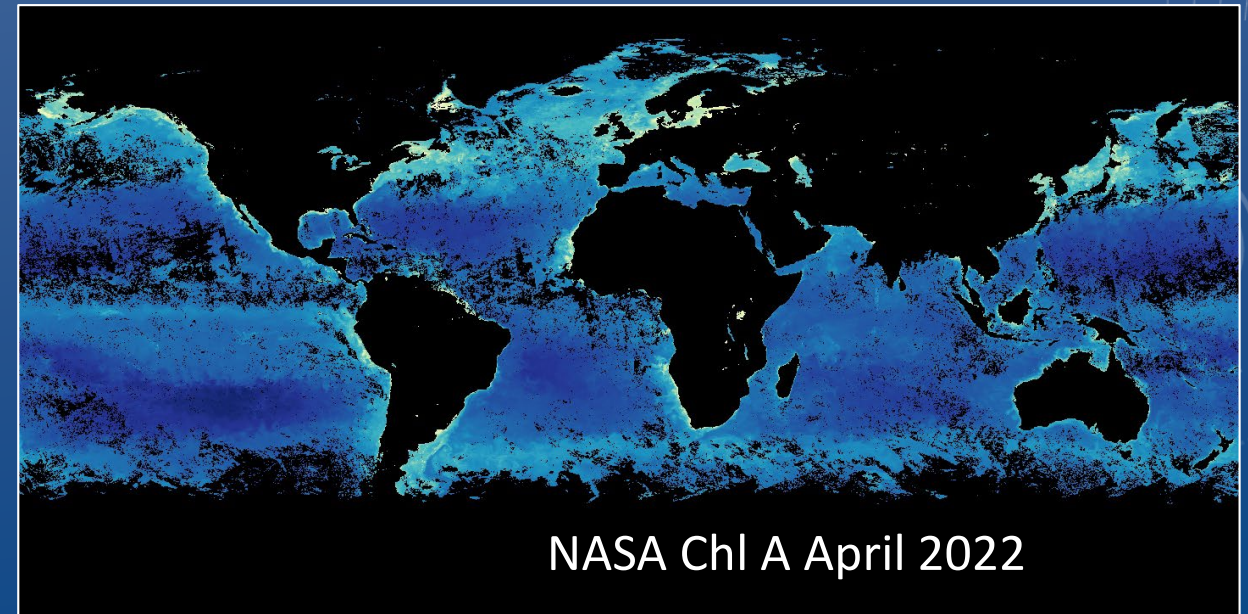
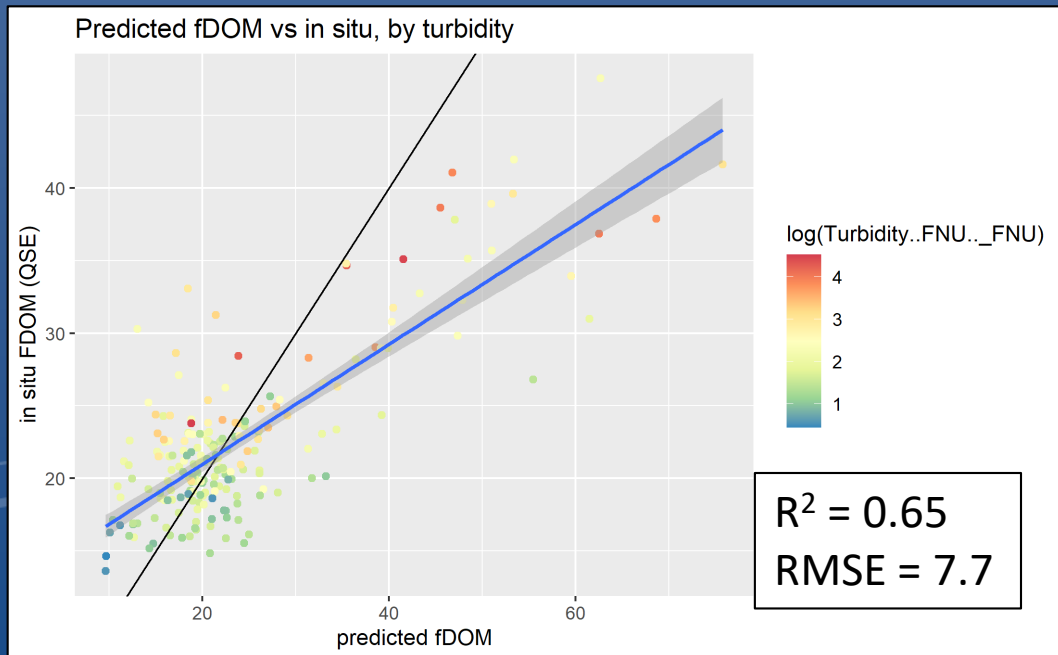
VALIDATION CONTEXT MATTERS



Products (L3)?
Regional vs Global



SFB Delta Nechad turbidity



SENSOR AVAILABILITY MATTERS

