NOTICE OF MEETING

LAS VEGAS WASH COORDINATION COMMITTEE
Tuesday, October 22, 2024
8:30 a.m.

MEETING TO BE HELD VIRTUALLY VIA MICROSOFT TEAMS
Call-in Information: 1-702-602-7697 ID: 650 638 323#

The Las Vegas Wash Coordination Committee makes reasonable efforts to assist and accommodate persons with physical disabilities who desire to attend the meeting. For assistance, please contact the Agenda Coordinator at (702) 258-3185 or agendas@snwa.com at least 48 hours in advance of the meeting.

Visit our website at https://www.lvwash.org/about-the-wash/who-we-are/index.html for Las Vegas Wash Coordination Committee agenda postings, copies of supporting material and approved minutes. To receive meeting information, including supporting material, contact the Agenda Coordinator at (702) 258-3185 or agendas@snwa.com.

Any Committee member may combine two or more agenda items for consideration, consider an item out of order, remove an item from the agenda or delay discussions relating to an item on the agenda at any time.

COMMENTS BY THE GENERAL PUBLIC
No Action May Be Taken: This is a period devoted to comments by the general public pertaining to items on this agenda. If you wish to speak to the Committee about items within its jurisdiction, but not appearing on this agenda, you must wait until the "Comments by the General Public" period listed at the end of this agenda. Please limit your comments to three minutes or less. No action may be taken upon a matter not listed on the posted agenda.

ITEM NO.

I. *For Information Only:* Welcome/Call to Order

II. *For Possible Action:* Approve April 23, 2024 Meeting Summary

III. *For Information Only:* Receive Presentation on Phytoplankton Community Compositions in Lake Mead during Two Decades of Severe Drought

IV. *For Information Only:* Receive Update on Recent Activities
- a. Las Vegas Wash Project Coordination Team
- b. Clark County Wetlands Park
- c. Las Vegas Valley Watershed Advisory Committee
- d. Lake Mead Water Quality Forum
- e. Emerging Issues

V. *For Possible Action:* Set Next Meeting Date/Time and Propose Items for the Next Meeting's Agenda

COMMENTS BY THE GENERAL PUBLIC
No Action May Be Taken: At this time, the Committee will hear general comments from the public on matters under the jurisdiction of the Las Vegas Wash Coordination Committee. Please limit your comments to three minutes or less.

THIS MEETING HAS BEEN PROPERLY NOTICED AND POSTED IN THE FOLLOWING LOCATIONS:

City of Boulder City, City Hall
401 California Avenue
Boulder City, NV 89005

City of Henderson, City Hall
240 Water Street
Henderson, NV 89015

Las Vegas Valley Water District
1001 S. Valley View Boulevard
Las Vegas, NV 89153

Clark County Water Reclamation District
5857 E. Flamingo Road
Las Vegas, NV 89122

City of North Las Vegas, City Hall
2250 Las Vegas Boulevard North
North Las Vegas, NV 89030

Clark County Government Center
500 S. Grand Central Parkway
Las Vegas, NV 89106

Southern Nevada Water Authority
100 City Parkway, Ste. 700
Las Vegas, NV 89106

City of Las Vegas, City Hall
495 S. Main Street
Las Vegas, NV 89106

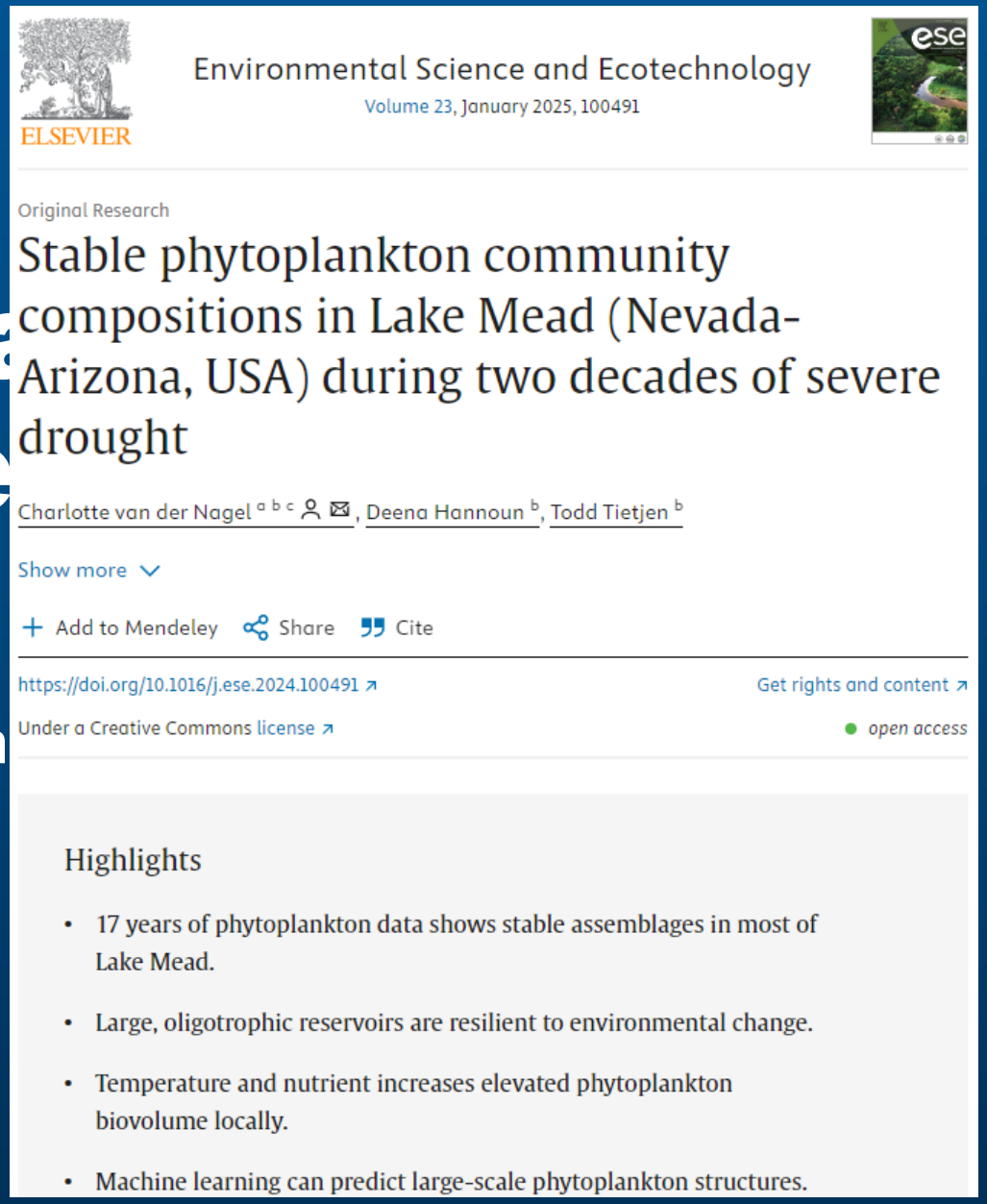
Phytoplankton and water quality Lake Mead

Charlotte van der Nagel, PhD, Deena Hannoun, PhD, Todd Tietjen, PhD

SOUTHERN NEVADA
WATER AUTHORITY®

Phytoplankton a
quality Lake

Charlotte van der Nagel, PhD, Deena Hann



ELSEVIER

Environmental Science and Ecotechnology

Volume 23, January 2025, 100491

Original Research

Stable phytoplankton community compositions in Lake Mead (Nevada-Arizona, USA) during two decades of severe drought

Charlotte van der Nagel [a b c], Deena Hannoun [b], Todd Tietjen [b]

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https://doi.org/10.1016/j.ese.2024.100491

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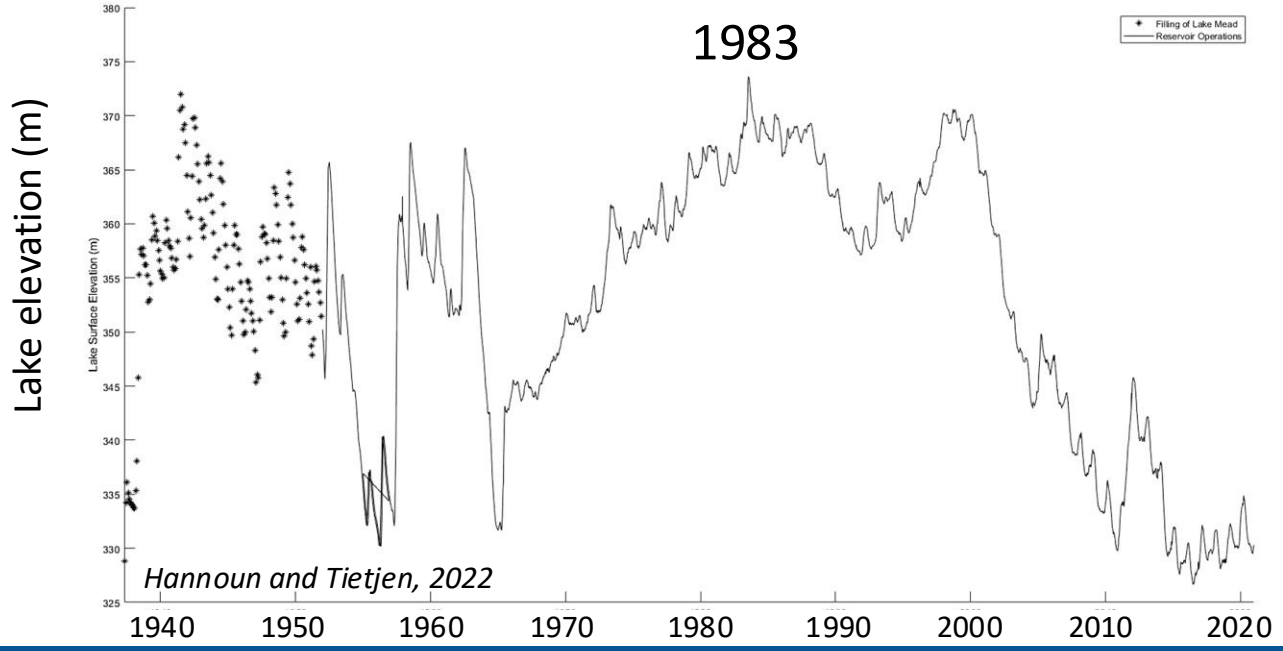
Highlights

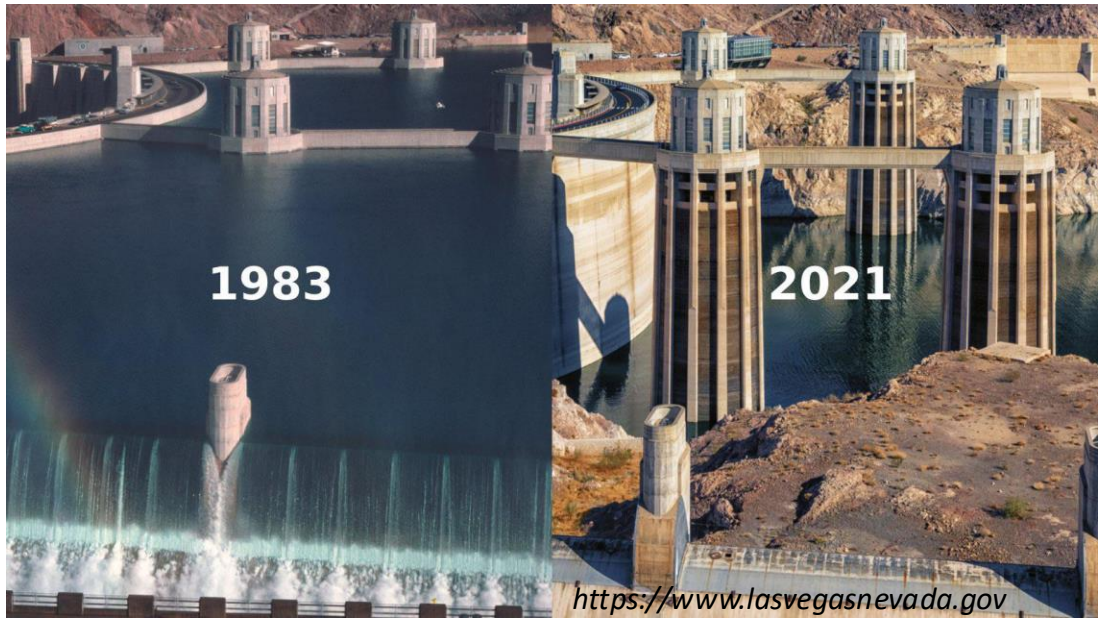
- 17 years of phytoplankton data shows stable assemblages in most of Lake Mead.
- Large, oligotrophic reservoirs are resilient to environmental change.
- Temperature and nutrient increases elevated phytoplankton biovolume locally.
- Machine learning can predict large-scale phytoplankton structures.

SOUTHERN NEVADA WATER AUTHORITY

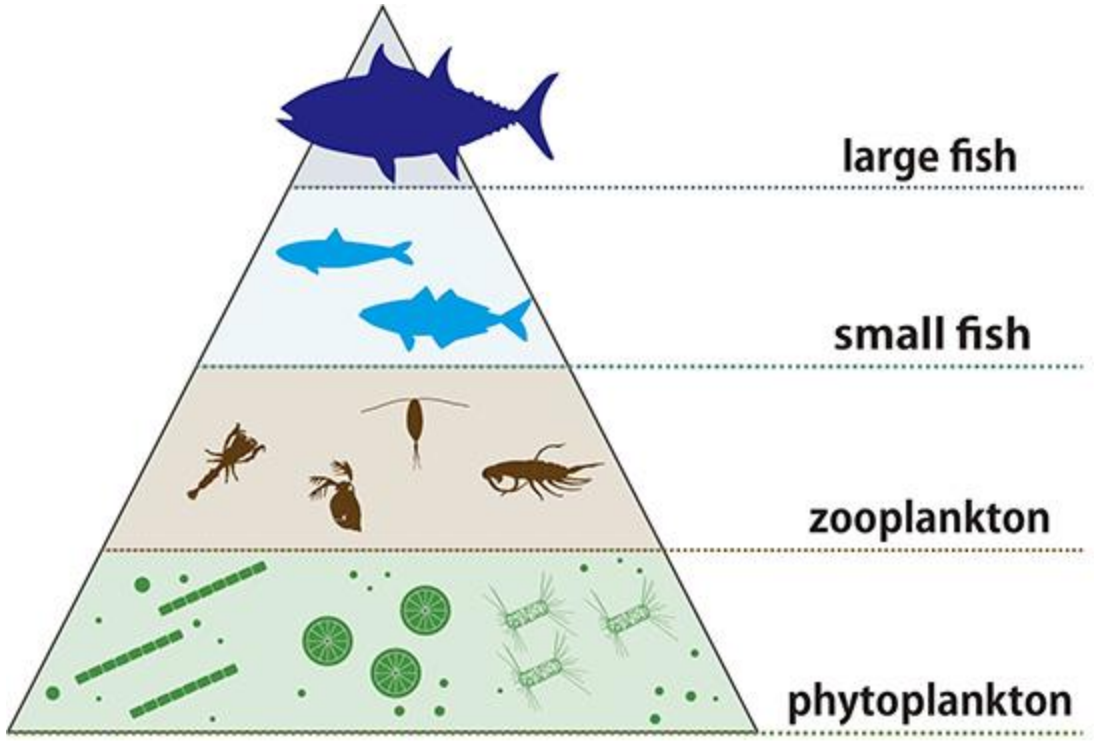
Drought has declined Lake Mead elevation rapidly since 2000

160ft / 50m elevation loss between 1983-2021





Drought can change phytoplankton community structures



Smith, 2016

https://www.riverkeeper.org/blogs/boat-blog/using-community-science-document-wallkill-rivers-harmful-algal-bloom/

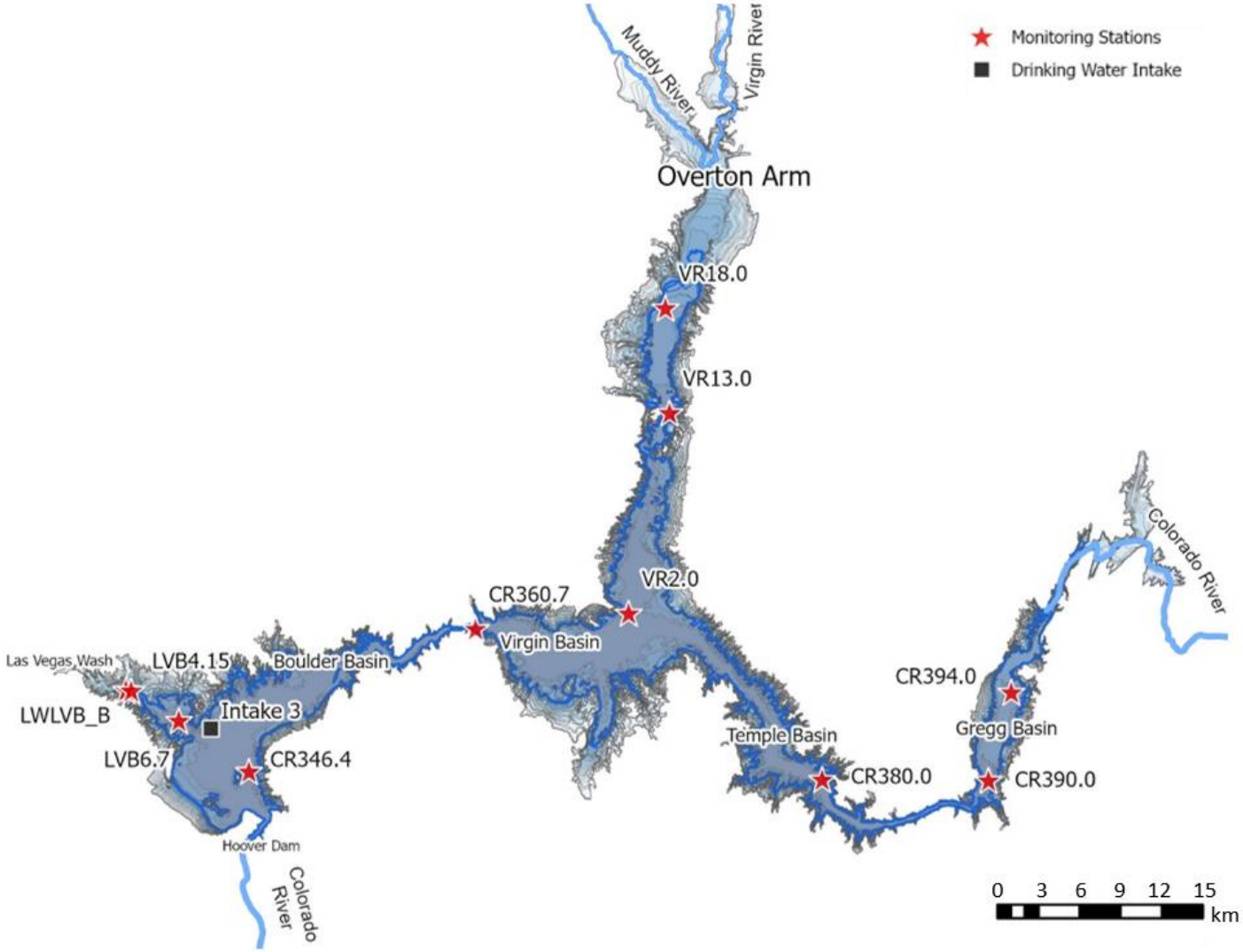
Research

- Spatial variability of phytoplankton in Lake Mead
- Water quality and phytoplankton trends
- Machine learning to predict phytoplankton

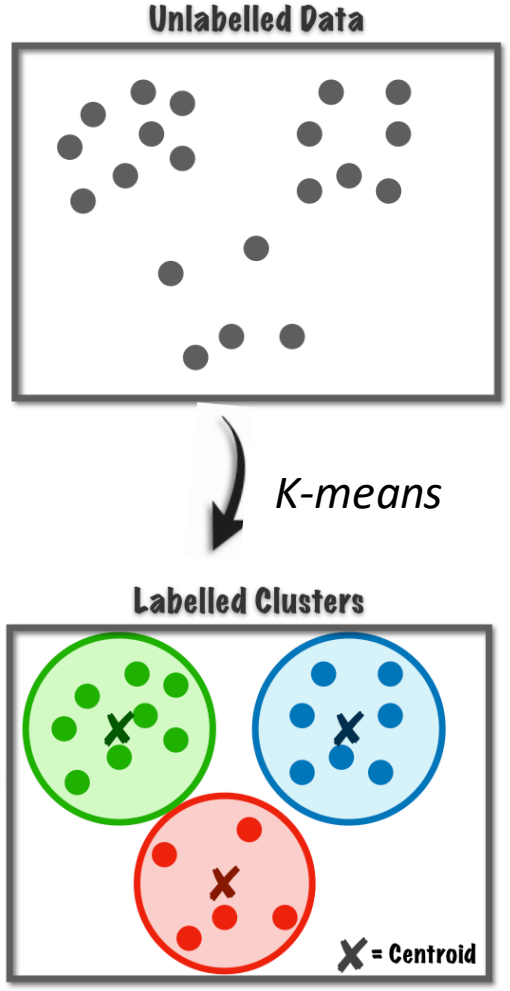
Methods

DATA

- 9 monitoring stations
  - 2002-2018
- Water quality data
  - Water temperature
  - Secchi depth
  - Nutrients
- Phytoplankton data
  - Chlorophyll-*a*
  - Total and group specific phytoplankton biovolume

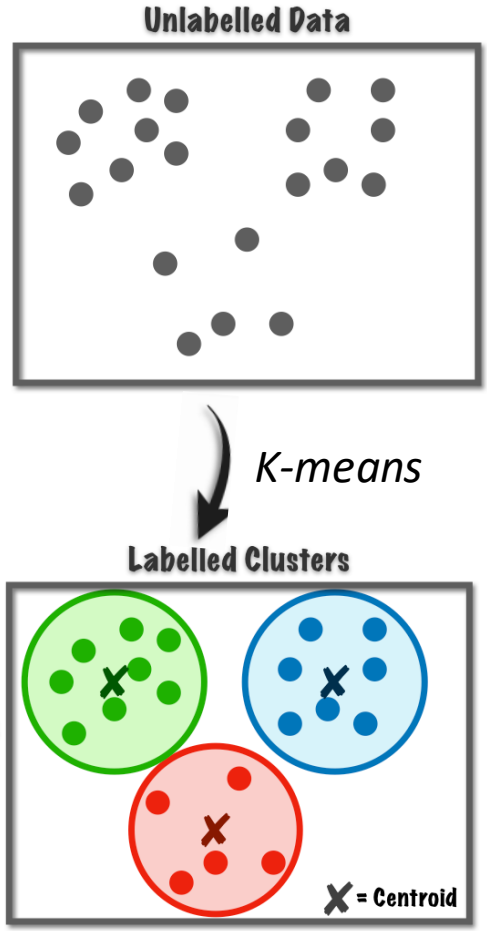


Spatial variability in phytoplankton

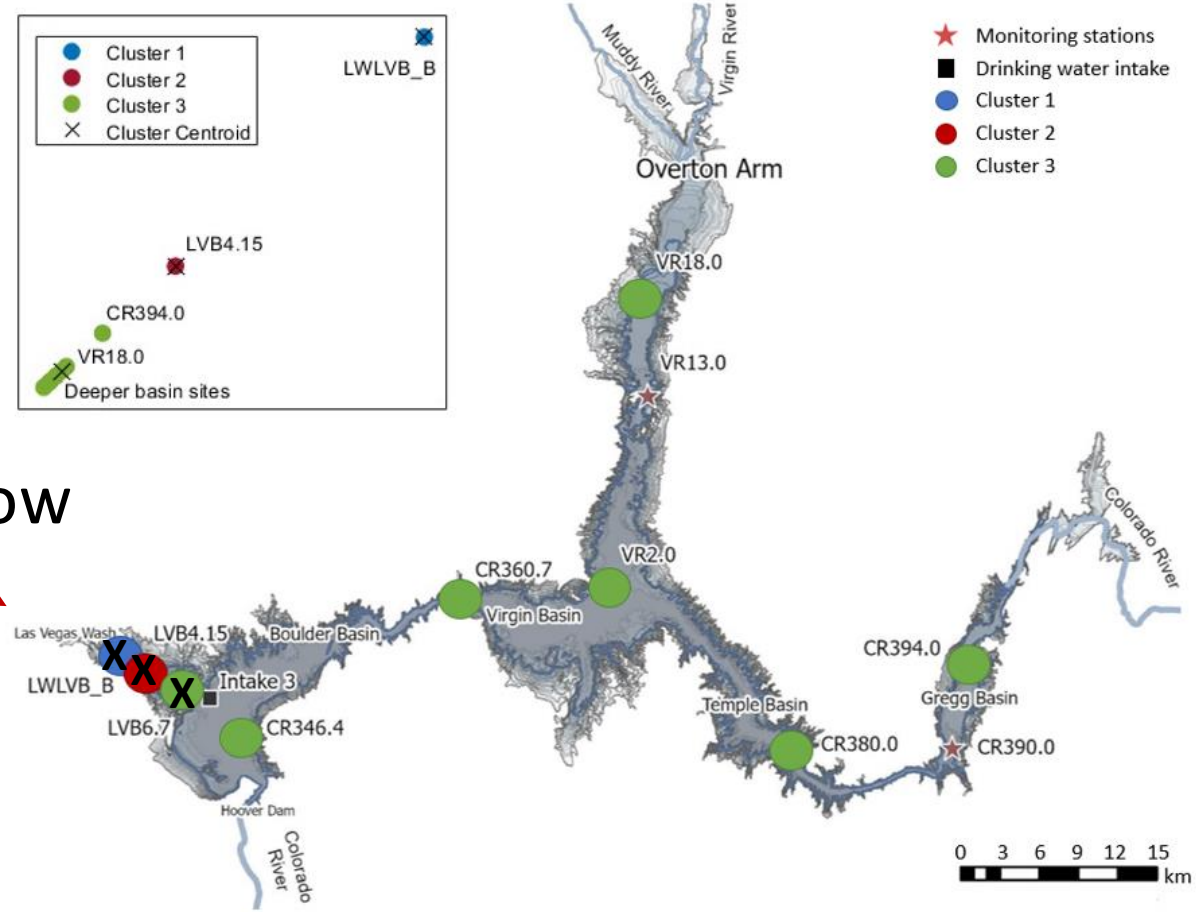


- K-means clustering
- Chlorophyll *a*
- 9 monitoring stations
- Optimal number of clusters based on AIC

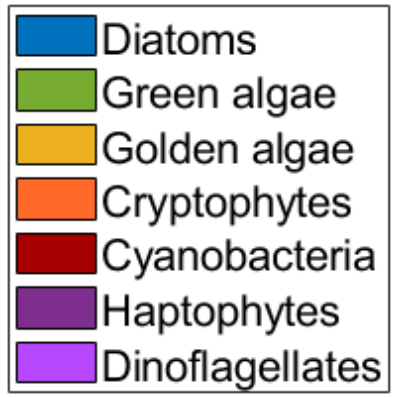
Spatial variability mainly affected by the Wash inflow



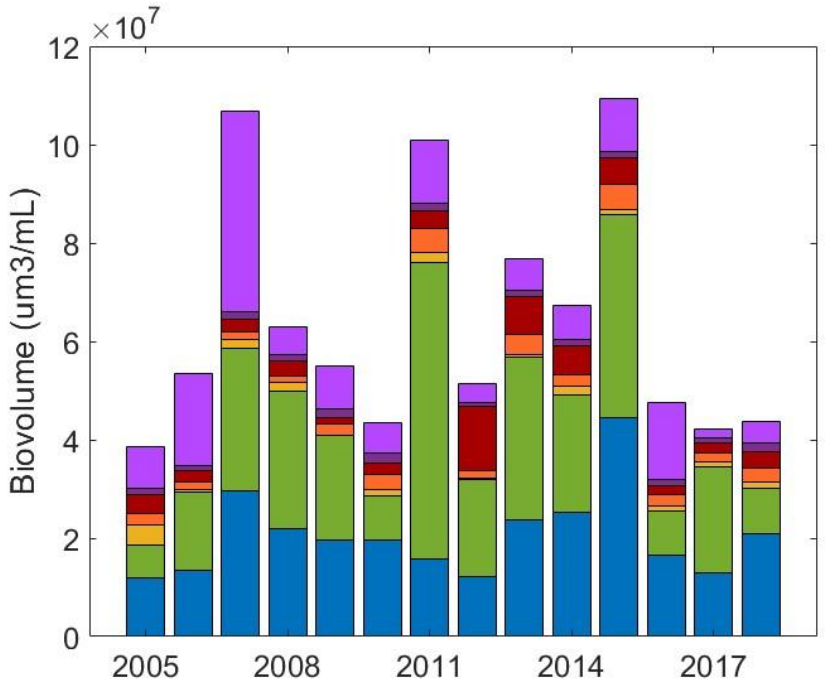
Wash inflow



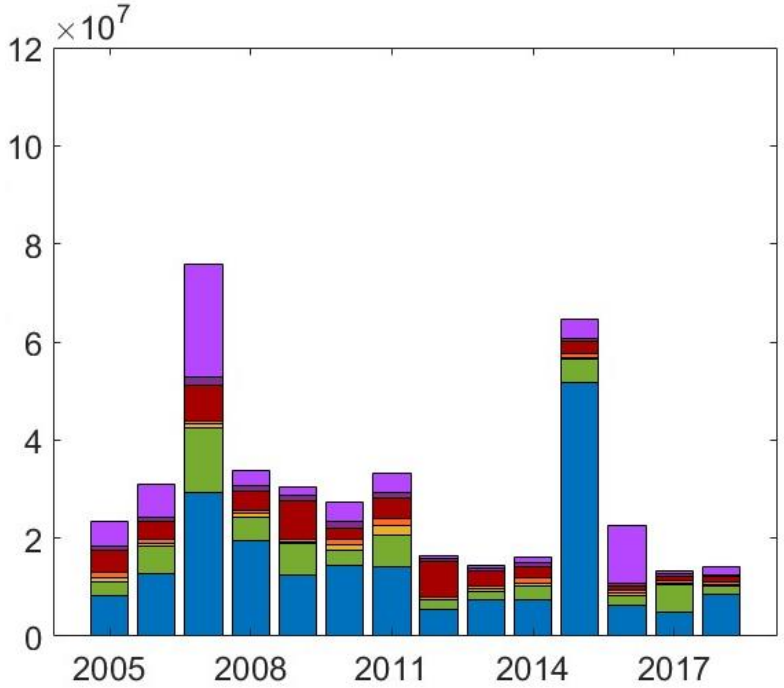
Total biovolume significantly decreases moving away from the Wash inflow



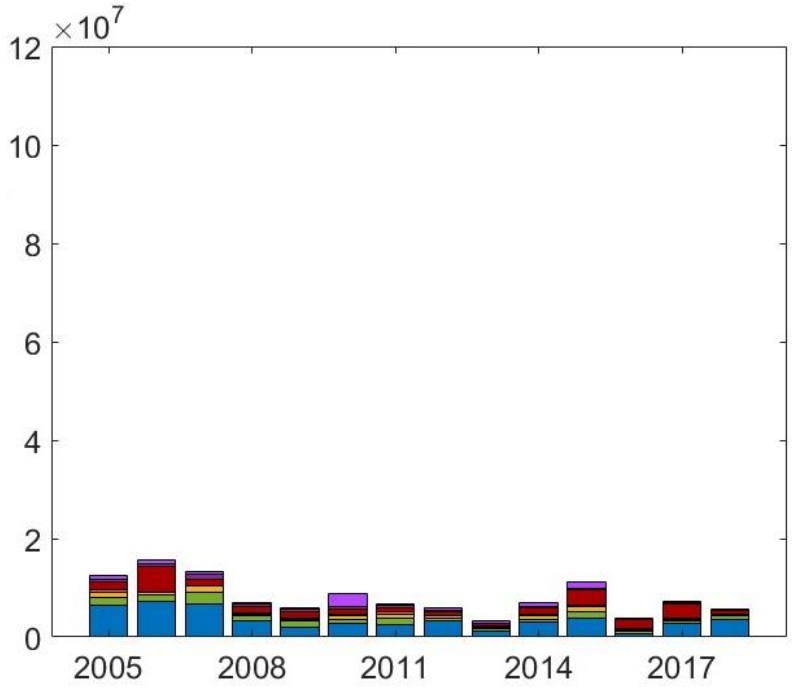
Cluster 1
Las Vegas Wash inflow



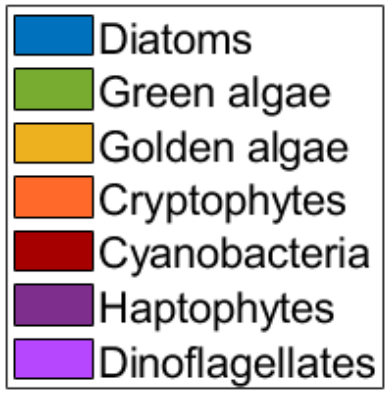
Cluster 2
4.15 miles from LVW



Cluster 3
6.7 miles from LVW



Phytoplankton structure differs throughout clusters



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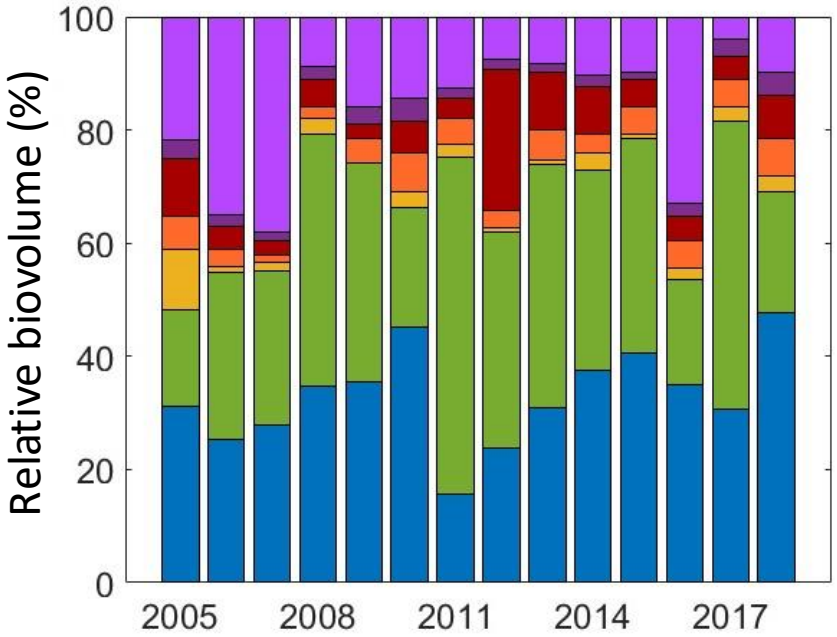

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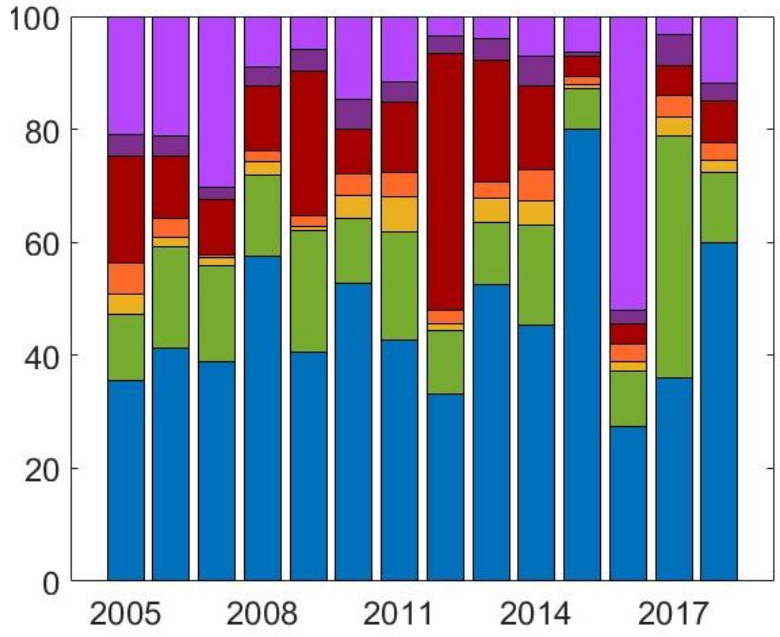

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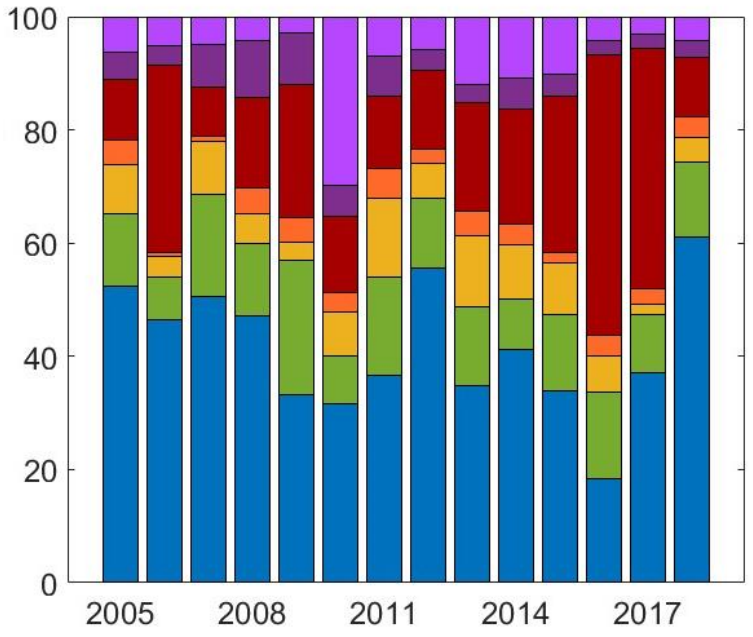

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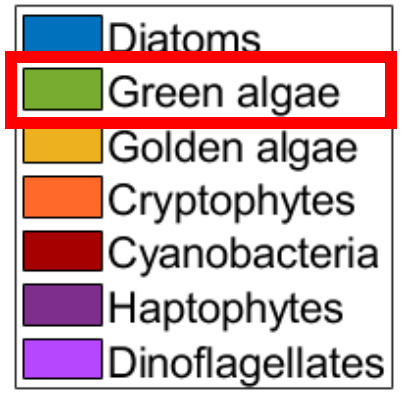

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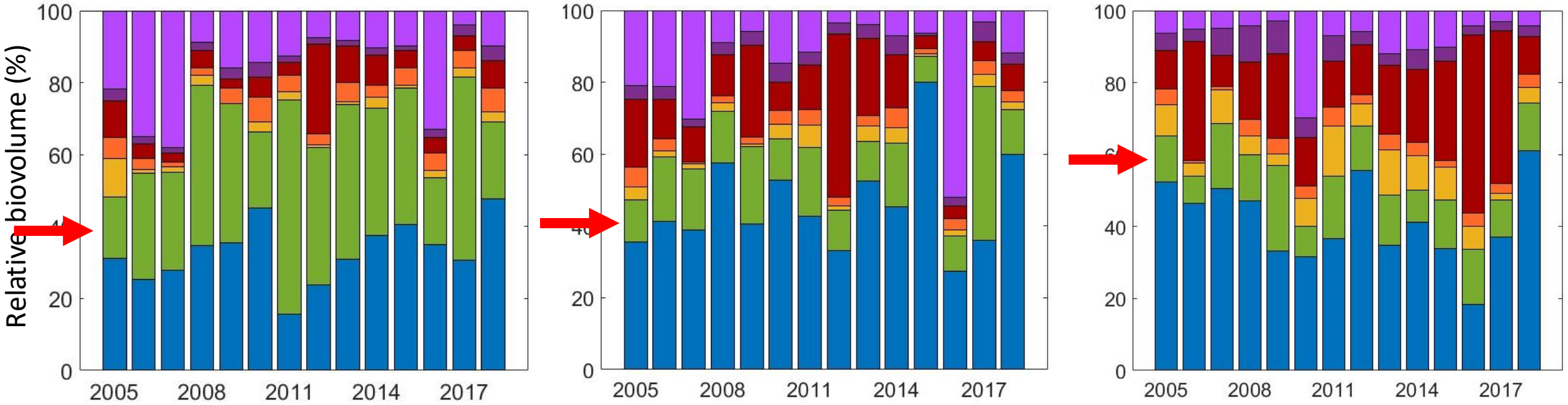
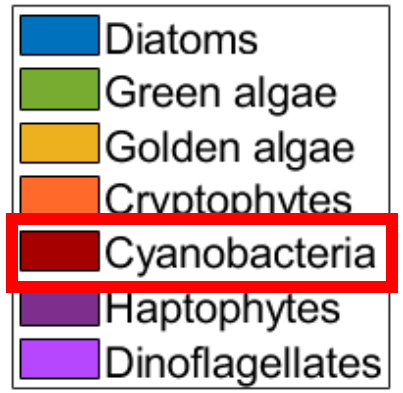


Phytoplankton structure differs throughout clusters



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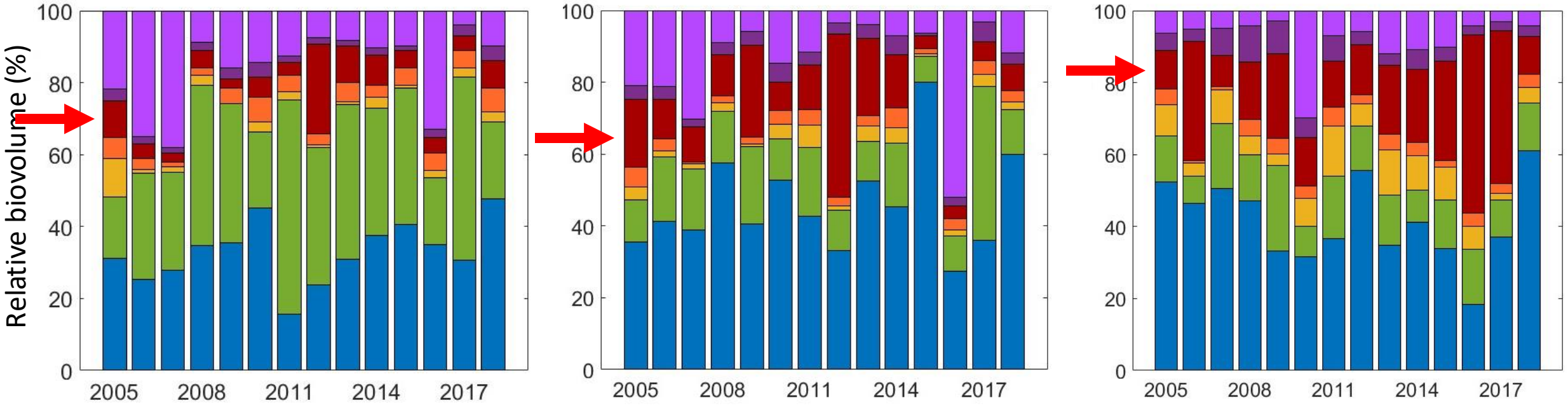
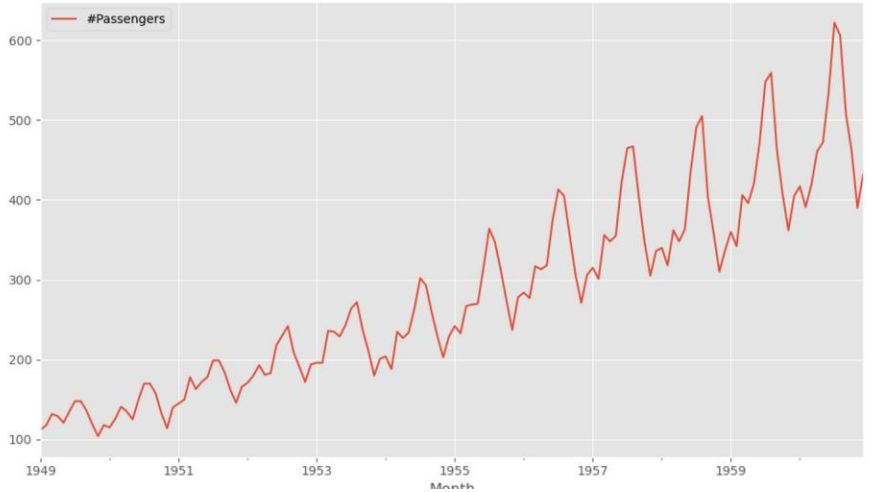


Stability in major phytoplankton groups in most of Lake Mead

Seasonal Mann-Kendall test for trend analysis

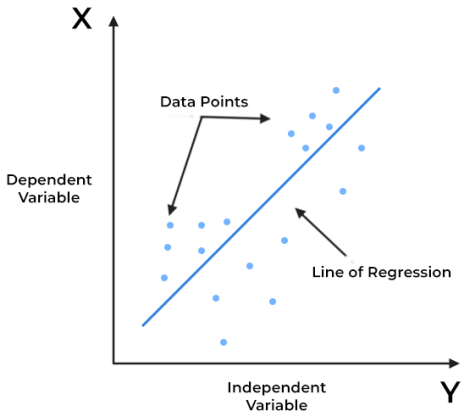


https://abhinaya-sridhar-rajaram.medium.com/mann-kendall-test-in-python-for-trend-detection-in-time-series-bfca5b55b

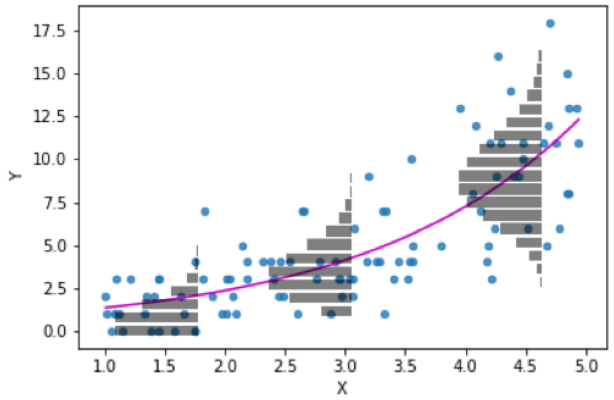
Cluster	Station	Diatoms	Green Algae	Cyanobacteria	Dinoflagellates
1	LWLVB_B	+	+	+	
2	LVB4.15	+			-
3	LVB6.7				

Machine learning can be used to predict phytoplankton communities

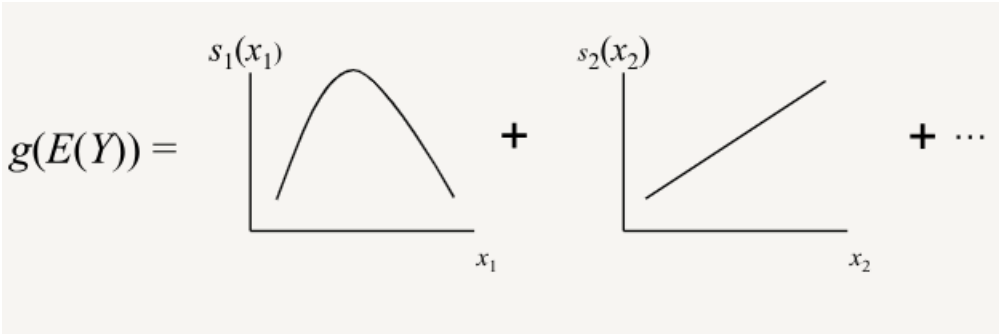
Linear regression



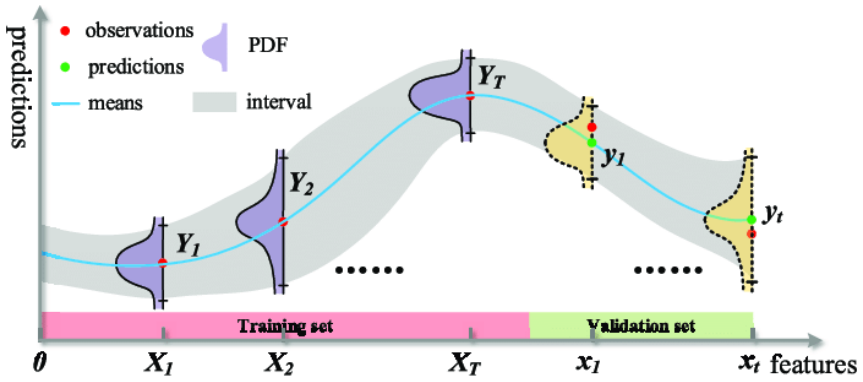
Generalized Linear regr.



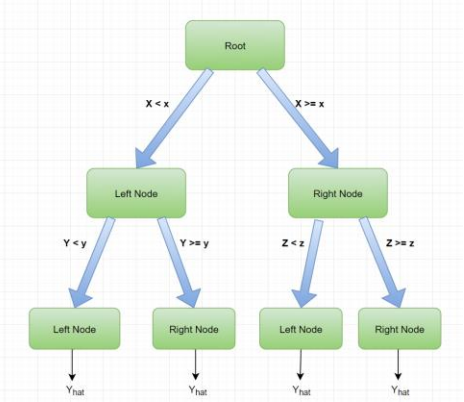
Generative Additive model



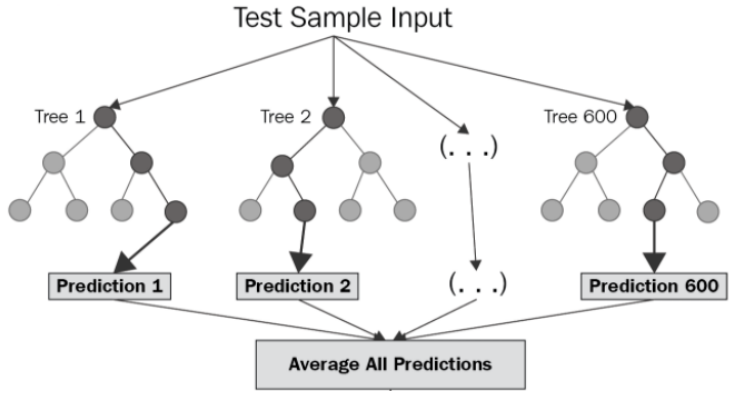
Gaussian Process Regression Model



Regression tree

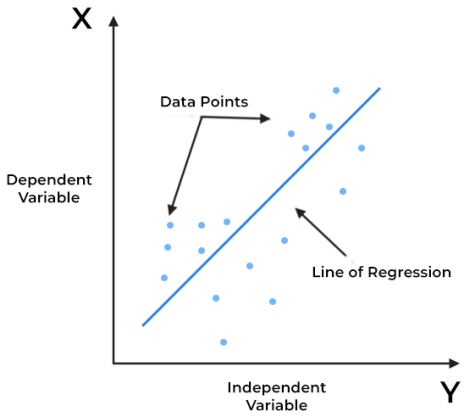


Regr. tree ensemble & random forest



Machine learning can be used to predict phytoplankton communities

Linear regression



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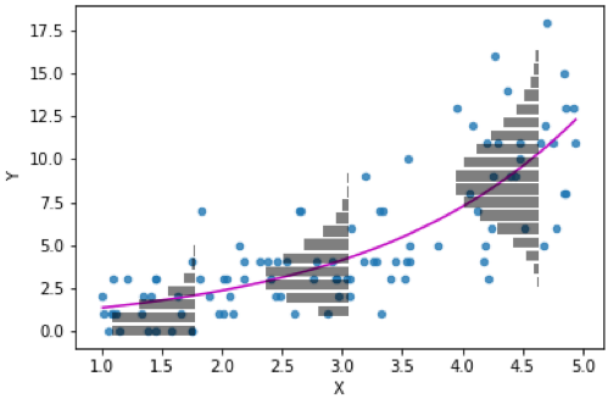

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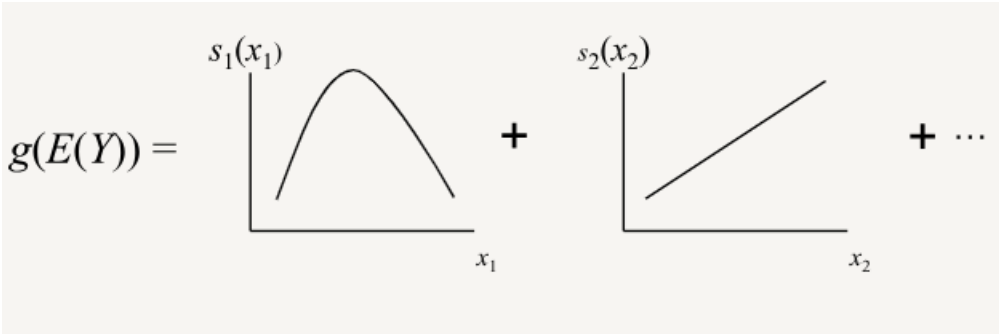

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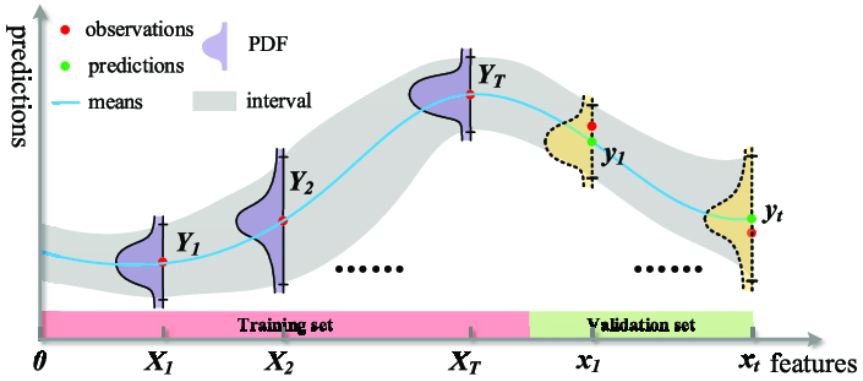
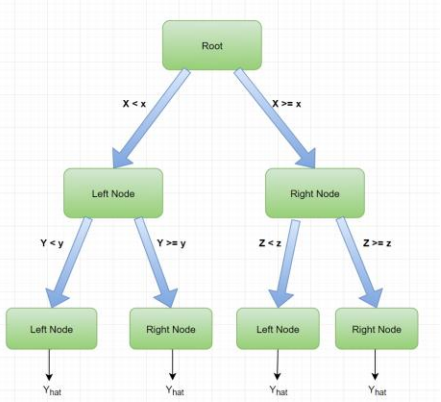
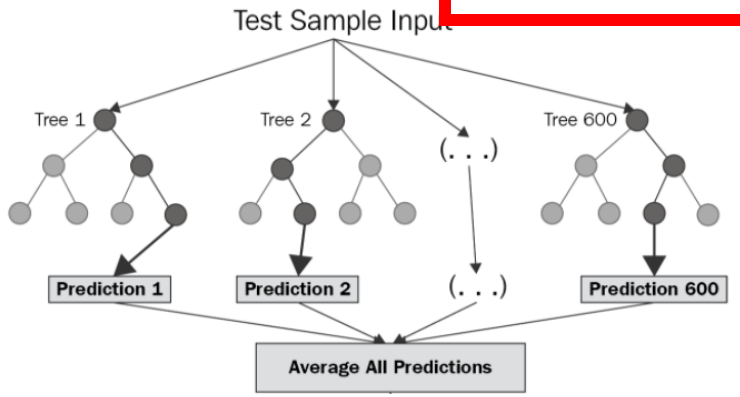


Regression tree



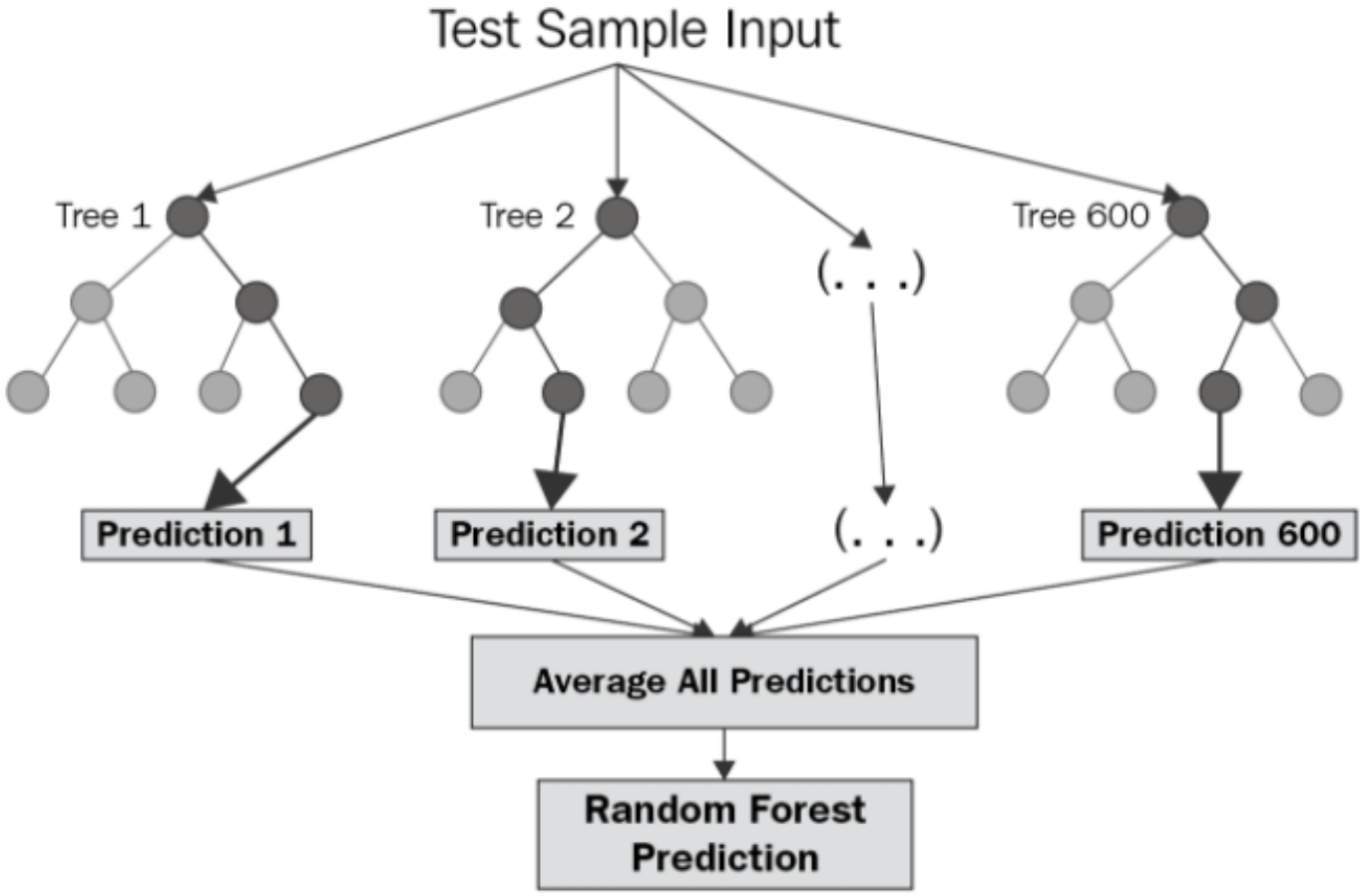
Regr. tree ensemble & random forest



Machine learning can aid in further understanding and predicting phytoplankton community dynamics

Input

- Water Temperature
- Water clarity
- Total Phosphorus
- Salinity
- Lake elevation



Machine learning models most reliable for predicting Chlorophyll-a values

MODELS CREATED FOR:

- Chlorophyll-*a*
- Total biovolume
- Diatoms
- Green Algae
- Cyanobacteria

Machine learning models most reliable for predicting Chlorophyll-a values

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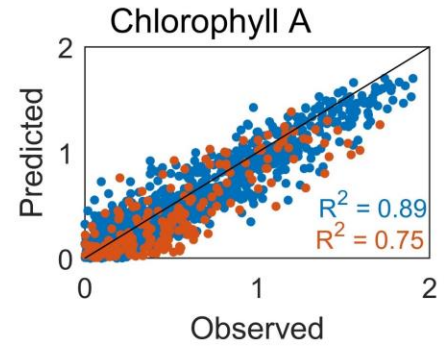
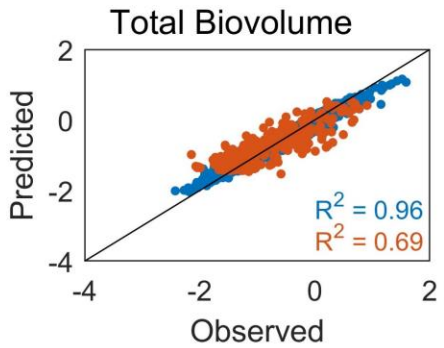
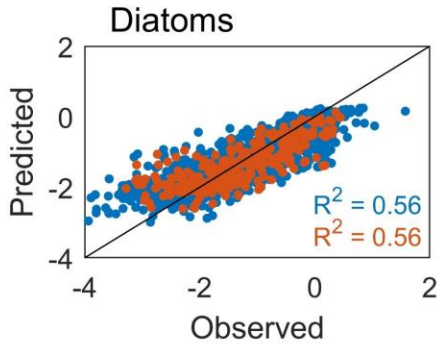


Testing R-Squared = 0.75

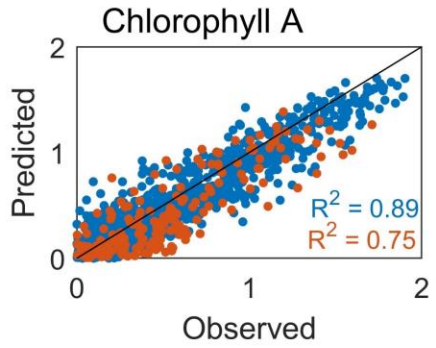


Testing R-Squared = 0.69

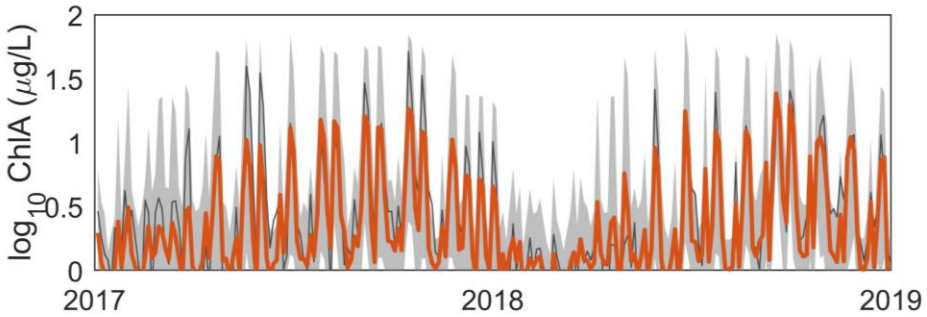


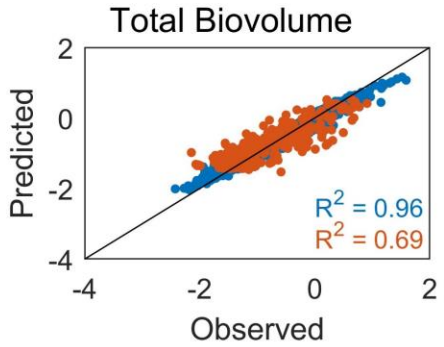
Testing R-Squared = 0.56

Machine learning models most reliable for predicting Chlorophyll-a values



Testing R-Squared = 0.75





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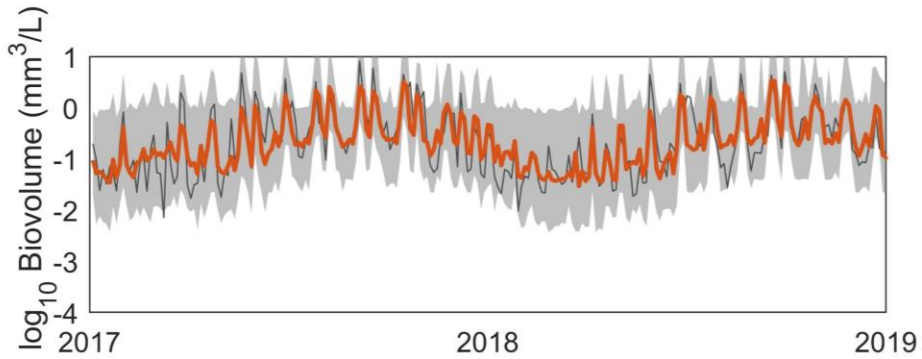

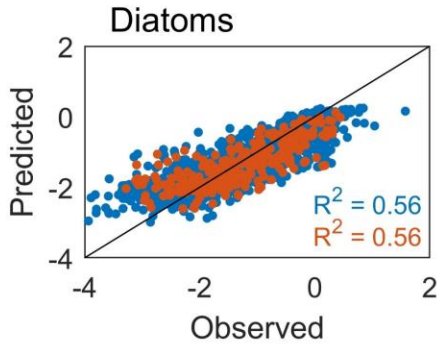

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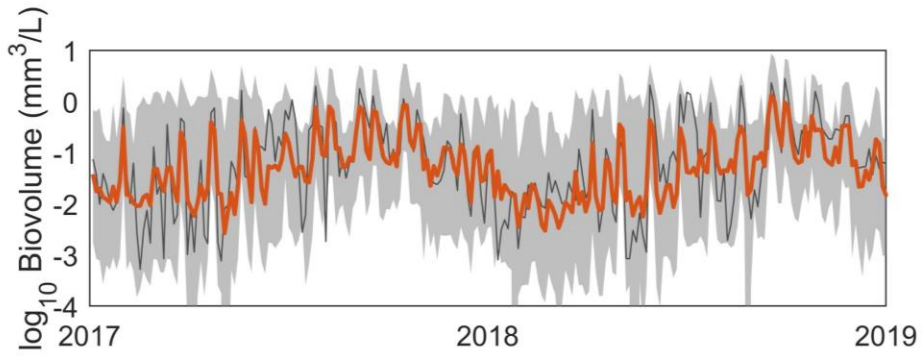
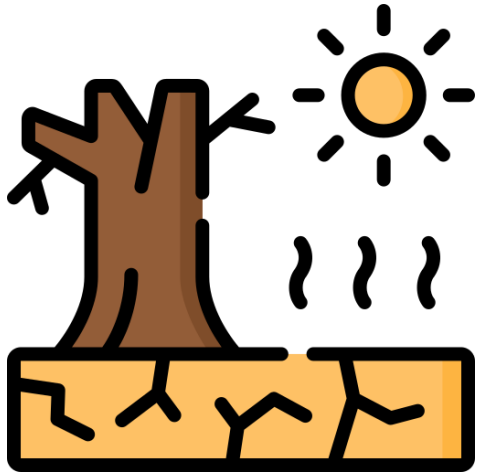


Conclusions



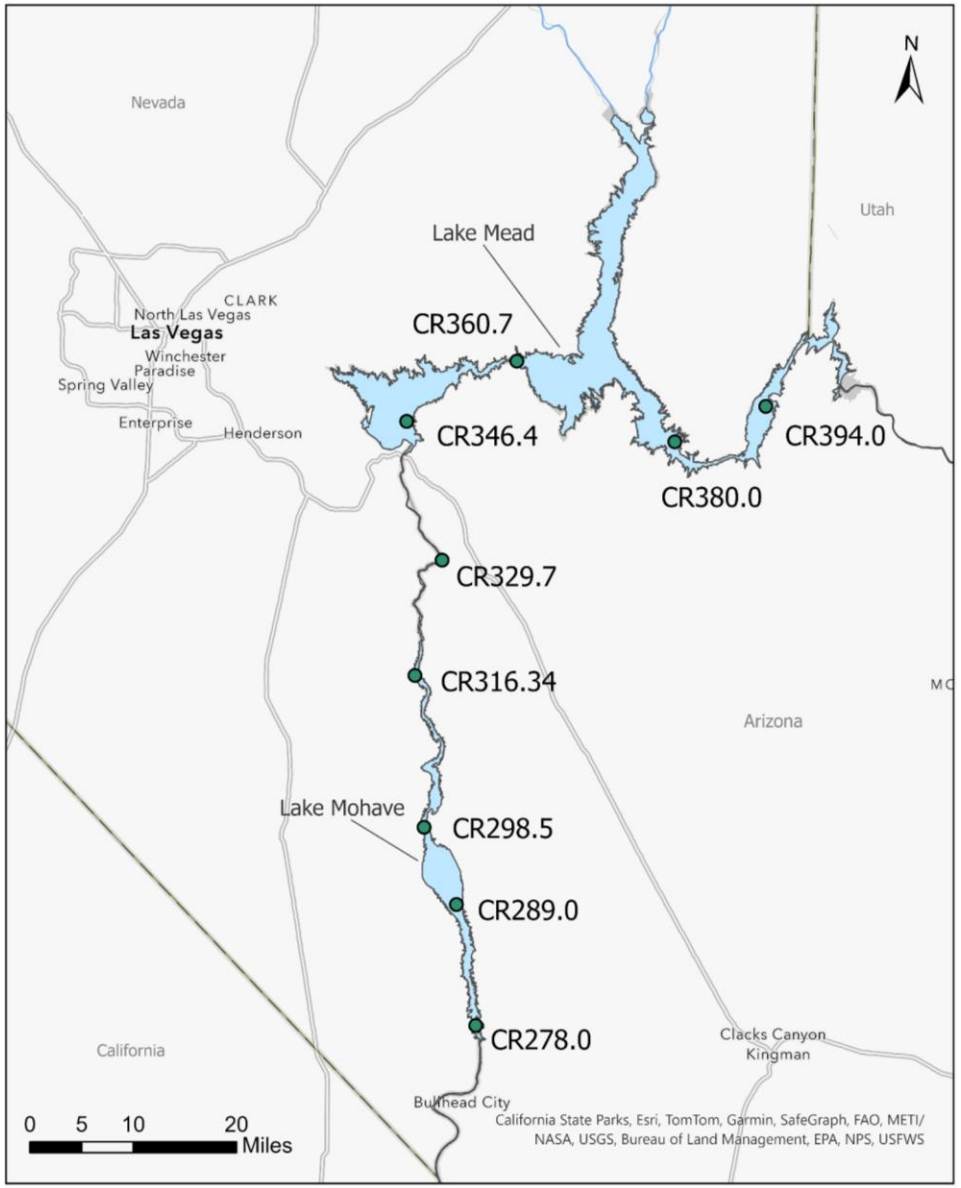
Stability besides prolonged drought

Significant changes in phytoplankton structure near the Wash inflow

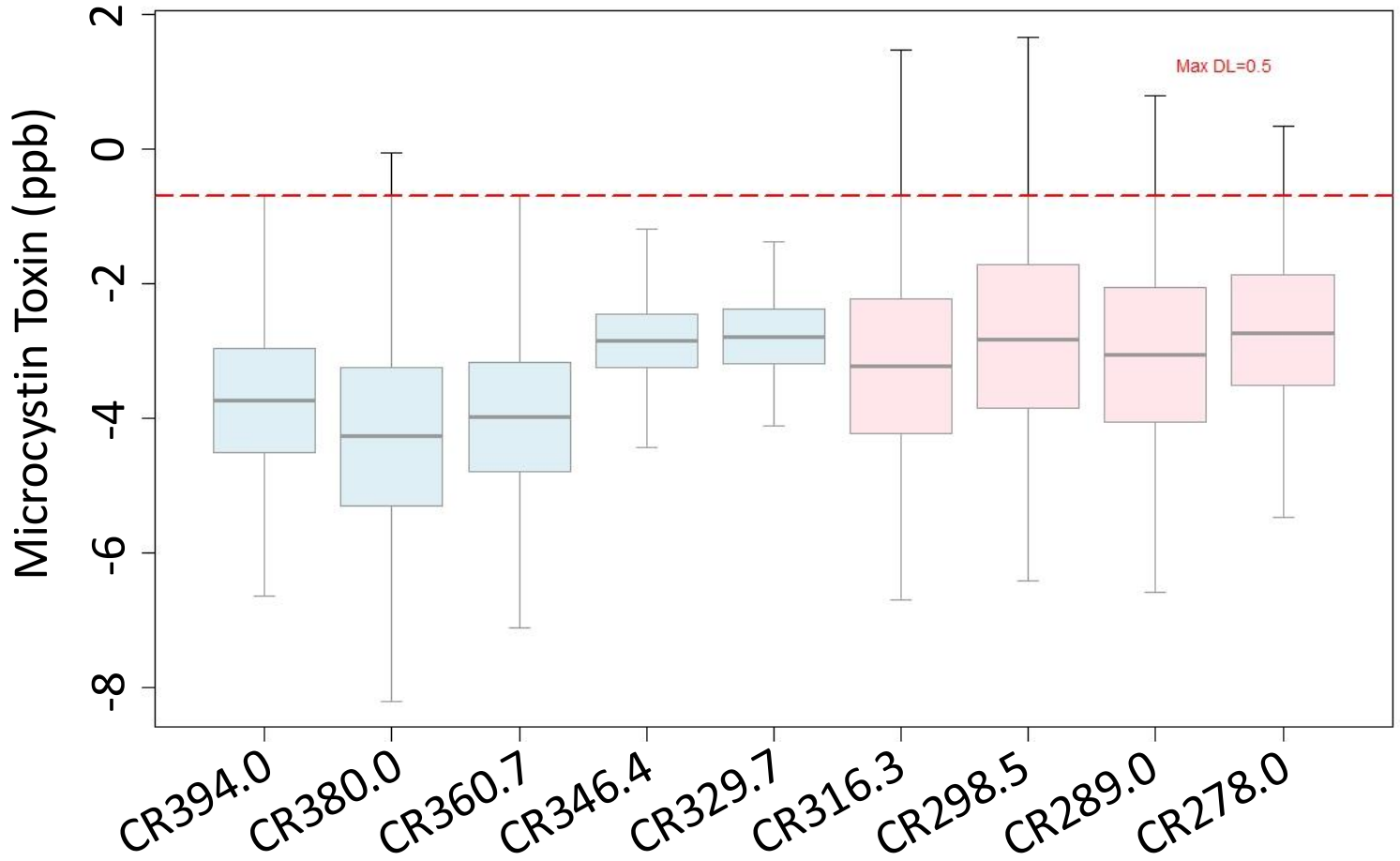
Machine learning is best for predicting peaks in Chlorophyll-*a*

Mead vs. Mohave

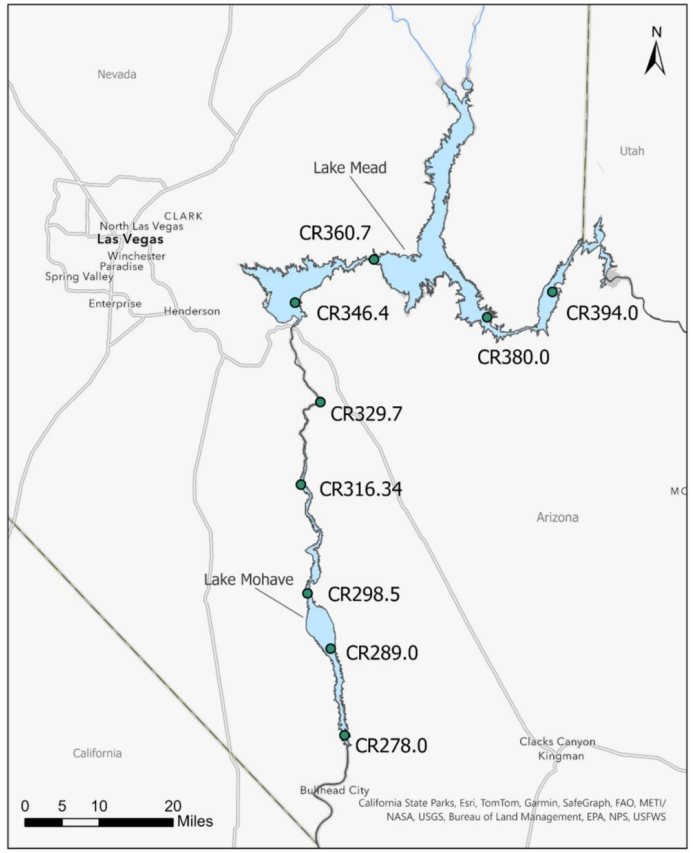
- 9 study locations
  - 4 Lake Mead
  - 5 Lake Mohave
- 2013 – 2018



Microcystin levels



Biovolume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Utah
Lake Mead
CLARK
North Las Vegas
Las Vegas
Winchester
Paradise
Spring Valley
Enterprise
Henderson
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CR346.4
CR394.0
CR380.0
CR329.7
CR316.34
Arizona
Lake Mohave
CR298.5
CR289.0
CR278.0
California
Clacks Canyon
Kingman
Bullhead City
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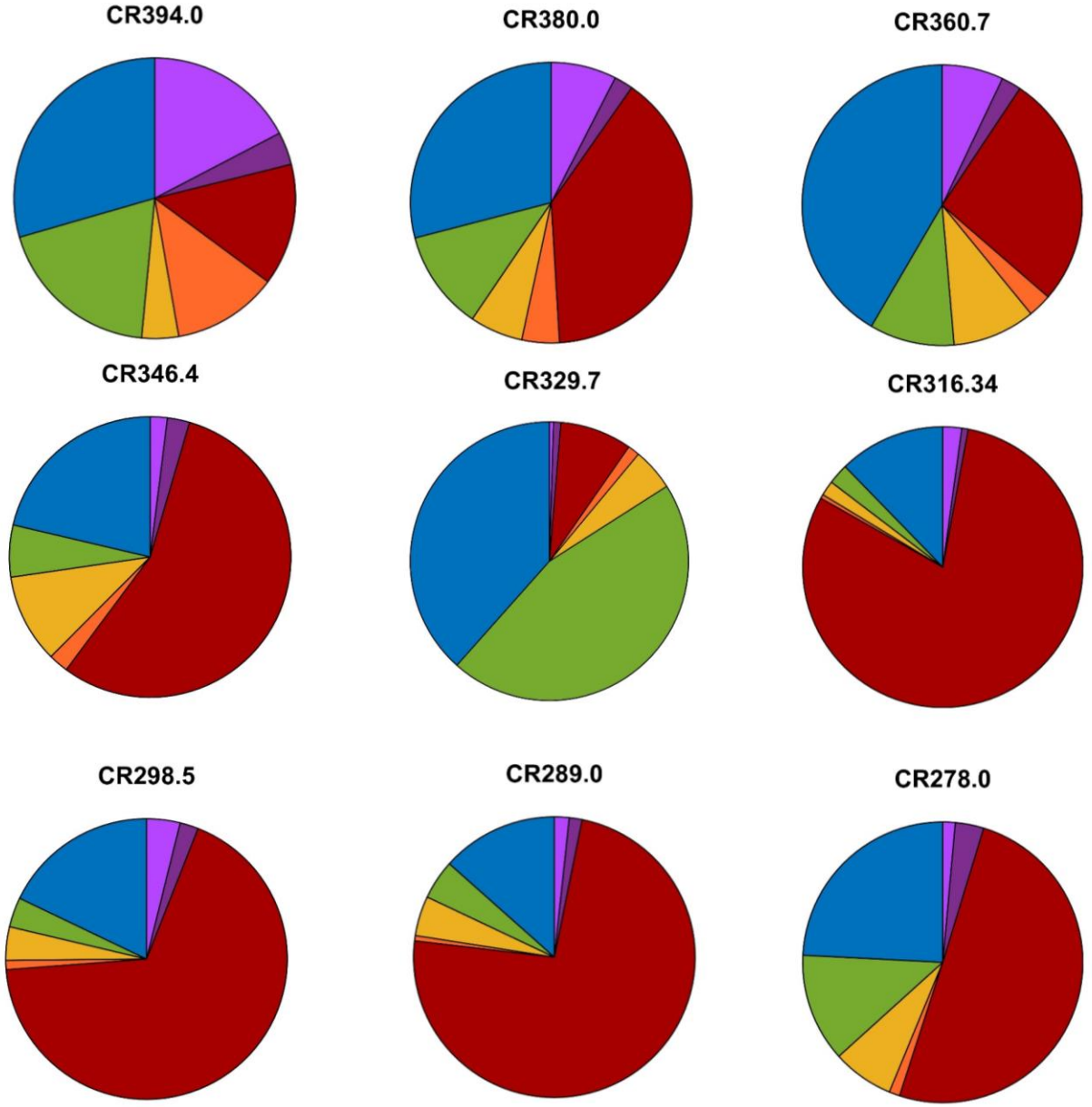
Miles
California State Parks, Esri, TomTom, Garmin, SafeGraph, FAO, METI/
NASA, USGS, Bureau of Land Management, EPA, NPS, USFWS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CR346.4
CR329.7
CR316.34
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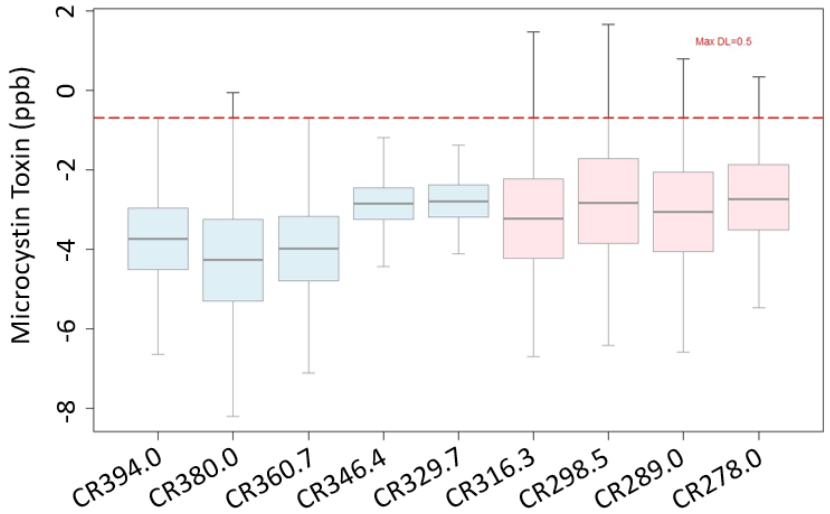
CR289.0
CR278.0

Cyano-bacteria



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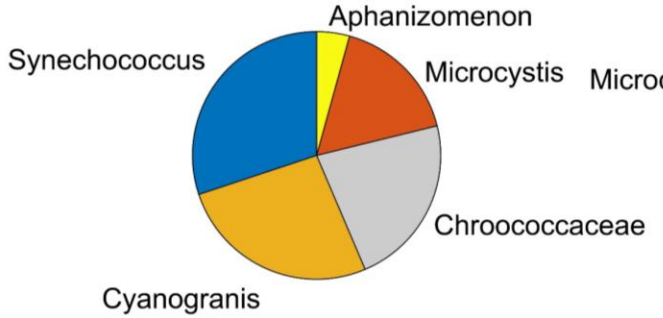

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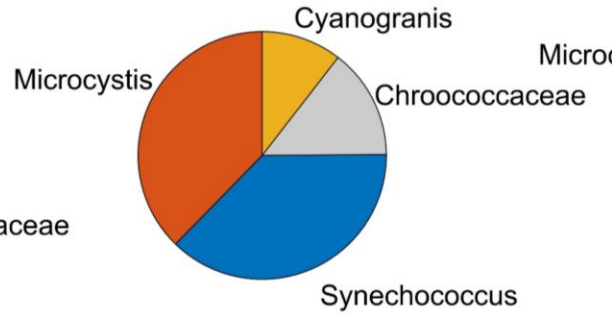

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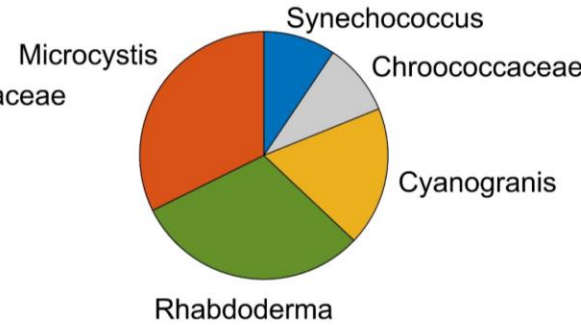

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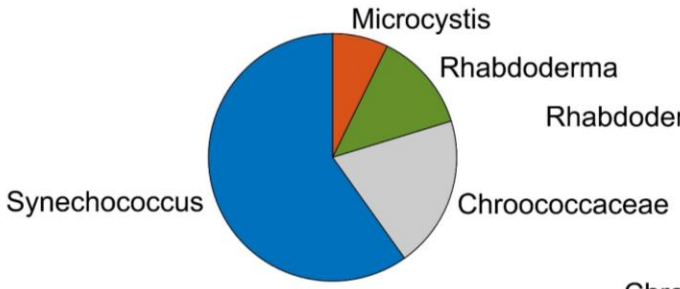

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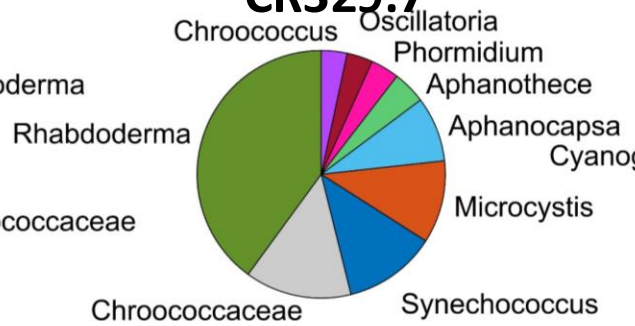

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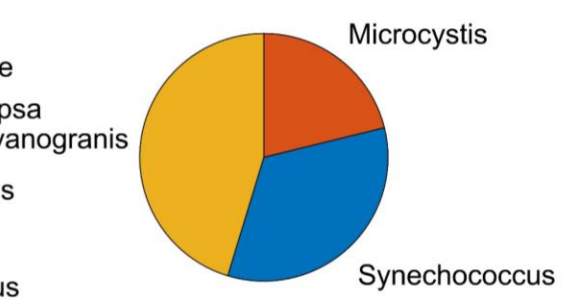

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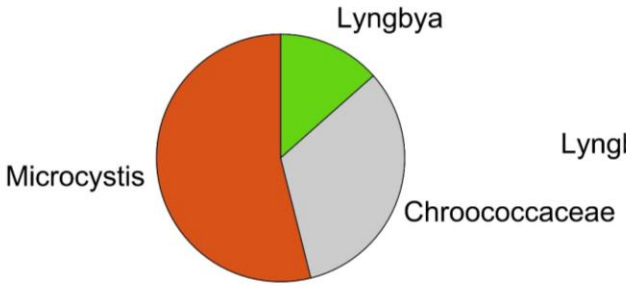

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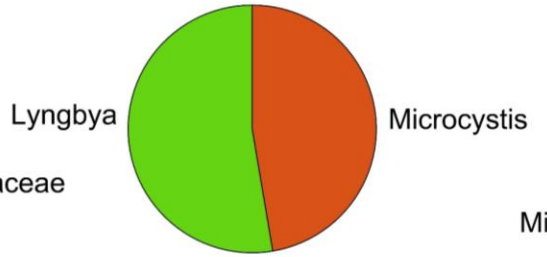

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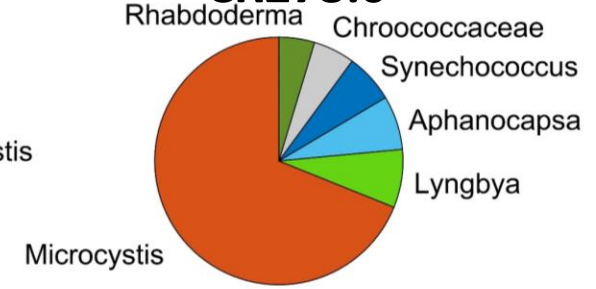


Las Vegas Wash Coordination Committee Environmental Resources, Funding and Outreach Update

OCTOBER 22, 2024

LVWCC

October 2024

www.lvwash.org

Wildlife Management Plan

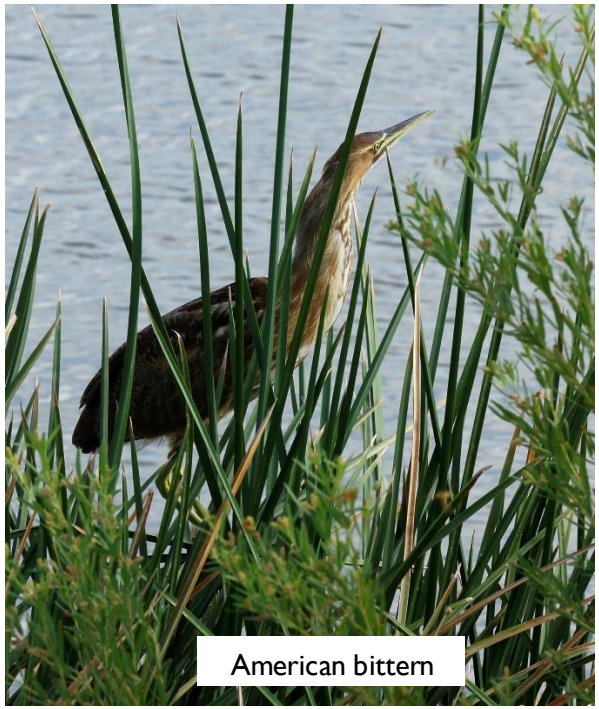
Bird Surveys

Annual T&E surveys

- Yuma Ridgway's rail (E) - Since 2000
- Southwestern willow flycatcher (E) - Since 1998
- Yellow-billed cuckoo (T) - 2002–2004; 2013–present

Biweekly point counts year-round at >30 points

- 2005–09 - SBCM
- 2009–11; 2014–present - GBBO



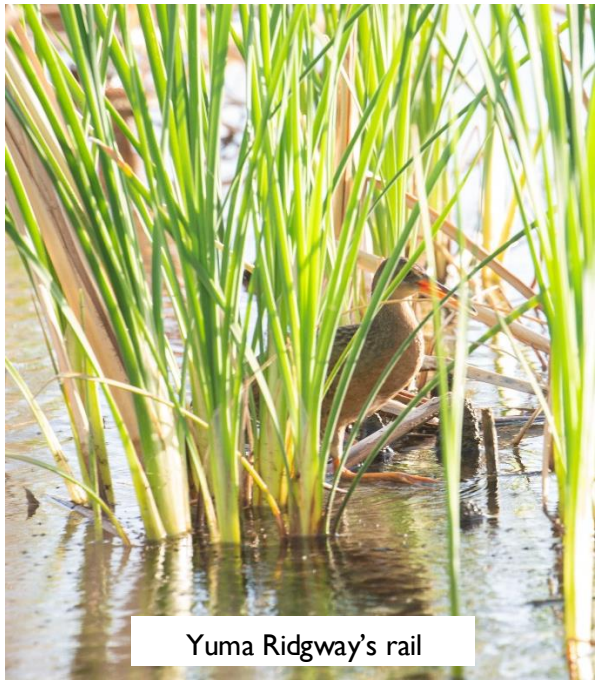
American bittern

Wildlife Management Plan

Threatened and Endangered Bird Surveys

Marsh birds/Yuma Ridgway's rail (YRRA)

- Surveys take place in April–May
- 5 individuals counted in 2024
  - 5–7 annually since 2021
  - All other years – 0 or 1



Yuma Ridgway's rail

Wildlife Management Plan

Threatened and Endangered Bird Surveys

Southwestern willow flycatcher (SWFL)

- Surveys conducted May–June, territory monitoring continued into August
- 2 territories in 2024, including 1 pair that fledged 1 young, 2nd ever!
  - 2023 was first year with a confirmed successful nest, also with 1 fledge

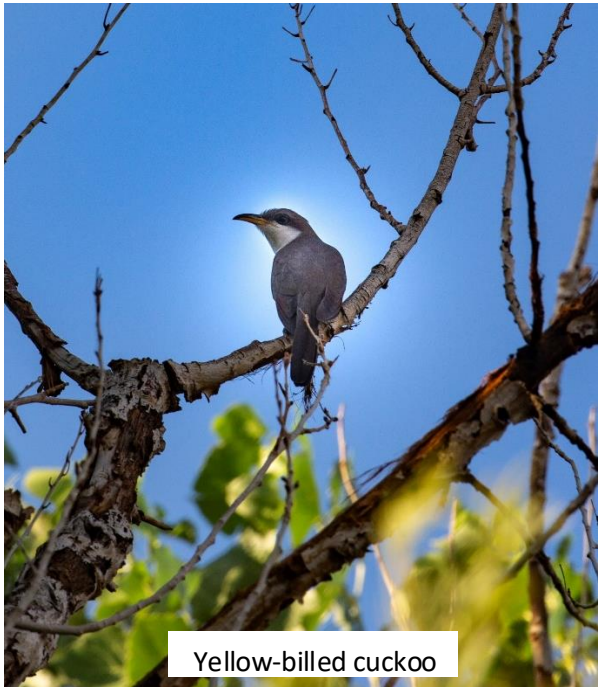
SWFL nestlings at the Wash

Wildlife Management Plan

Threatened and Endangered Bird Surveys

Yellow-billed cuckoo (YBCU)

- Surveys conducted June–August
- 1 detection, in August
  - Only 2 years without detections since annual surveys began in 2013

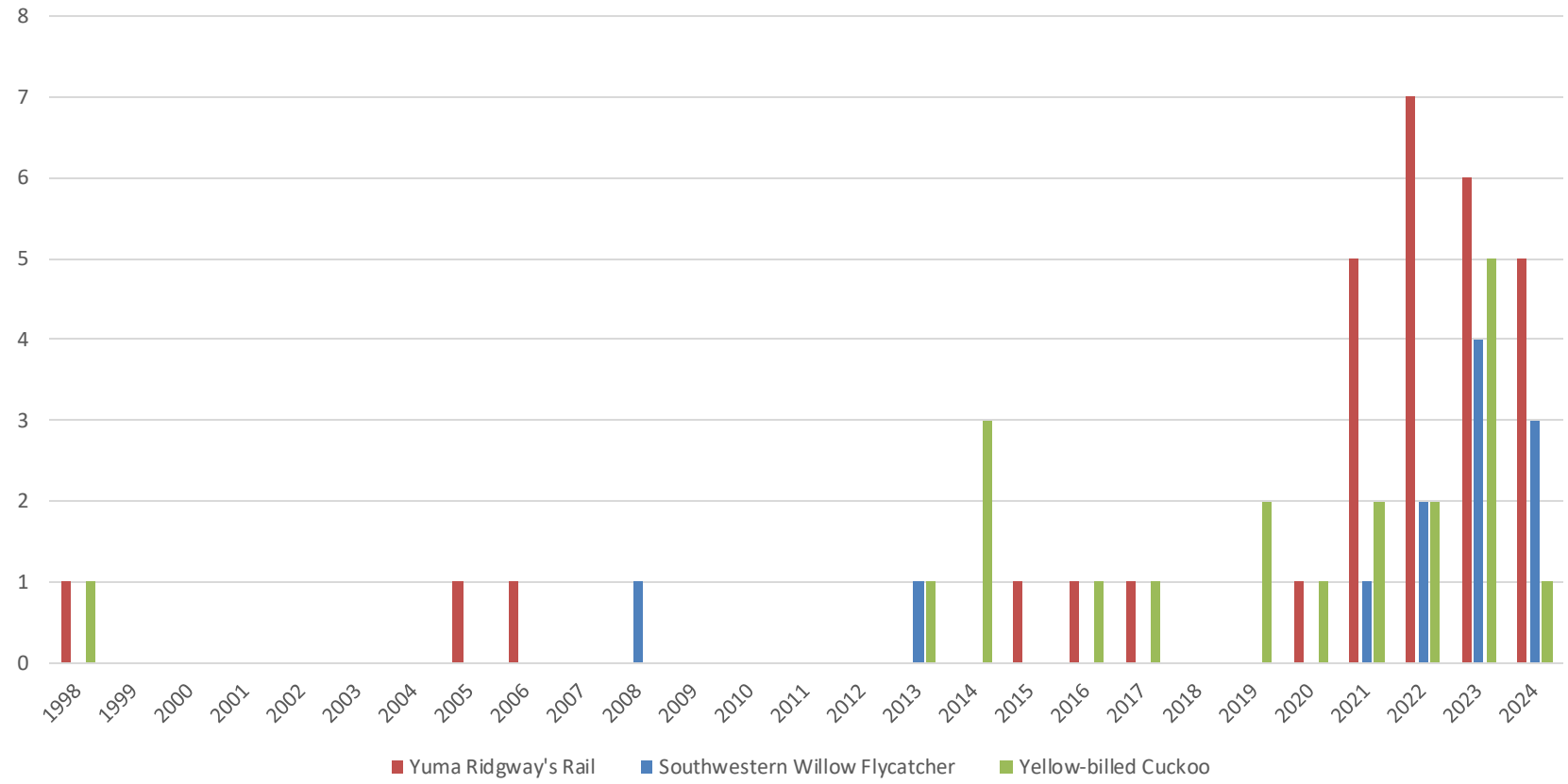


Yellow-billed cuckoo

Wildlife Management Plan

Threatened and Endangered Bird Surveys

27 years of surveys



Wildlife Management Plan

Threatened and Endangered Bird Surveys

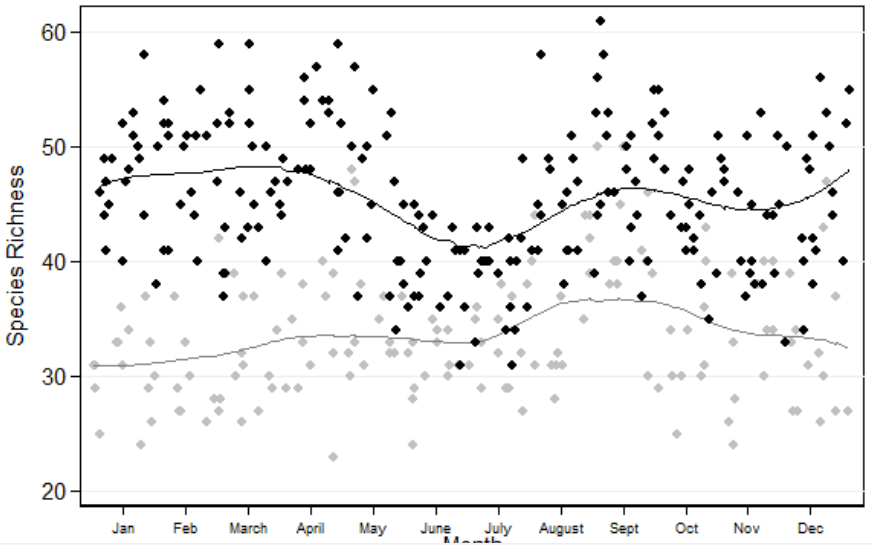
- The increase in detections/breeding records requires new ESA compliance coverage for LTOP activities
  - Section 7 consultation for Reclamation lands/funding for the three listed birds and monarch (candidate) - BO with incidental take statement received in January
  - SNWA is working with Clark County and partners on measures for YRRA, which is not covered by the MSHCP (SWFL & YBCU are). No incidental take is expected, so coverage is not needed.

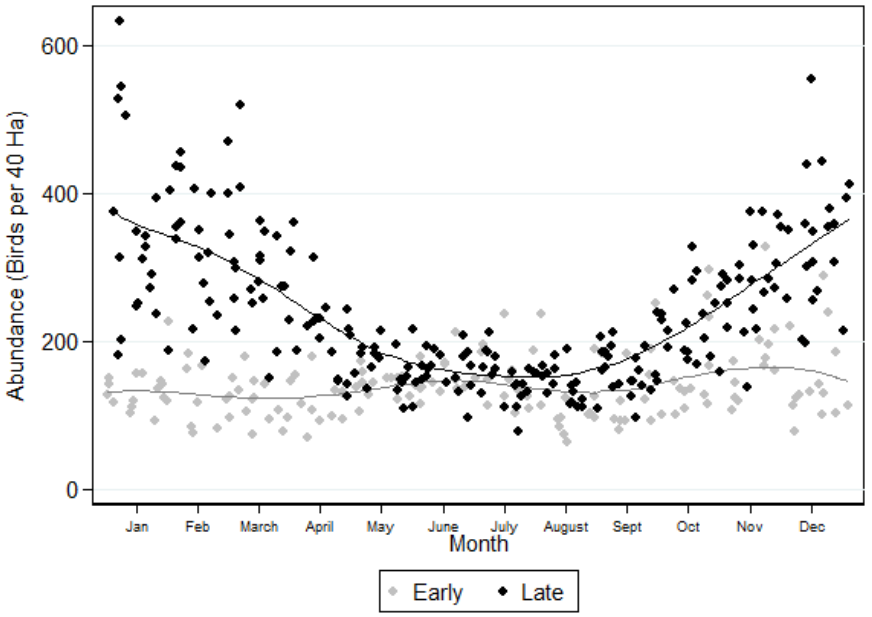
SWFL on nest

WMP
Avian Point Count Study

- Biweekly counts by GBBO, began alternating years 9/2023; off until spring 2025
  - Large dataset and less change with move to LTOP; no longer need to collect data annually
- 2005–2023
  - Report posted to lvwash.org
  - 252 species
  - Significant increases in richness and abundance (see figures)

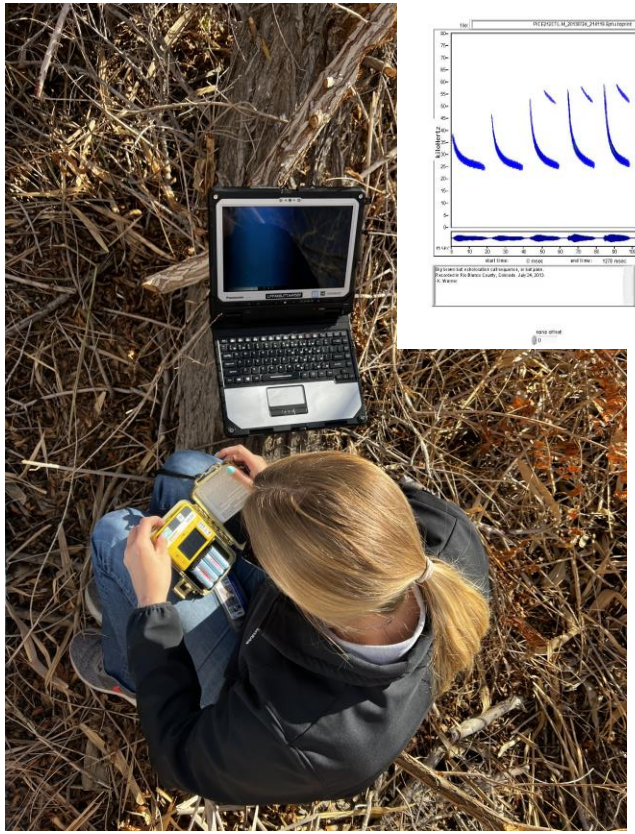
Figures show seasonal changes in number of species and individuals detected in the early (Years 1–6) versus late (Years 10–18) period





Wildlife Management Plan

Bat Surveys – Acoustic Monitoring



- Acoustic Monitoring
  - Three acoustic stations added in January 2023
    - Two stations for a period
  - Collect echolocation calls every night
  - Data downloaded monthly
  - Ongoing through December 2024
  - Finalized contract with Vesper Bat Detection Services to analyze acoustic data

Wildlife Management Plan

Bat Surveys – Mist Netting

Captured 171 individuals *(Preliminary results)*

2023 - 23 bats

April – June over 10 nights (paused)

- 9 Pallid bats
- 1 California myotis
- 1 Yuma myotis
- 9 Mexican free-tailed bats
- 3 Hoary bats

2024 - 148 captured

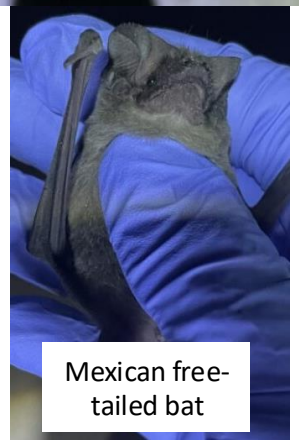
March – September over 26 nights

- 86 Pallid bats
- 1 California myotis
- 36 Yuma myotis
- 20 Mexican free-tailed bats
- 4 Hoary bats
- 1 Canyon bat

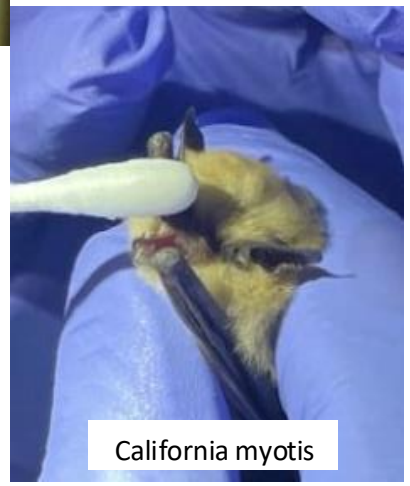
All swab samples collected during 2024 came back negative for the fungus that causes White-nose Syndrome.

Pallid bat

Hoary bat



Mexican free-tailed bat



California myotis

Wildlife Management Plan

2024 Surveys

Benthic Macroinvertebrates

- First samples collected in September
- Quarterly sampling
- 11 sampling sites

Revegetation

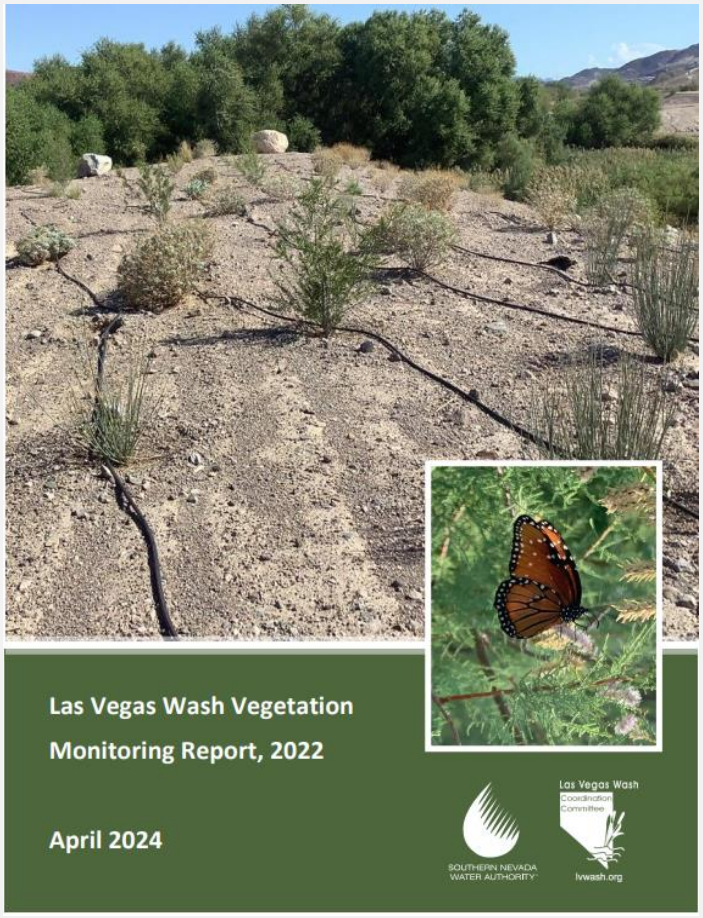
2022 vegetation monitoring report complete and available on lvwash.org

- Of 69 sites monitored in the field
  - 36 had cover that stayed the same
  - 23 increased in cover
  - 9 decreased in cover
  - 1 first year sampled

2023 report under internal review

- This report includes modifications to survey protocols
- Transitioning into long-term monitoring:
  - Combined sites of similar habitats to reduce total site numbers
  - Will conduct timed-meander surveys

- 2024 surveys started September 17th and completed October 1.



Grant Funding
Bureau of Reclamation


Downstream Pabco South

- $350,000 in funding added for FY24
  - Revegetation, water quality monitoring, wildlife management plan implementation and LVWCC program management
- $900,500 restoration grant
  - Downstream Pabco area
  - Staff is working with a design firm and engineering
  - Remove gravel sediment and restore riparian trees
  - Plan for construction to begin this winter

Grant Funding

Nevada Division of Environmental Protection

- $34,750 that covered FY2023/24 Mabel Hoggard and Wash Green-Up programs
- Awarded $28,000 for FY24/25 that will cover Wash Green-Up

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

Grant Funding
Potential

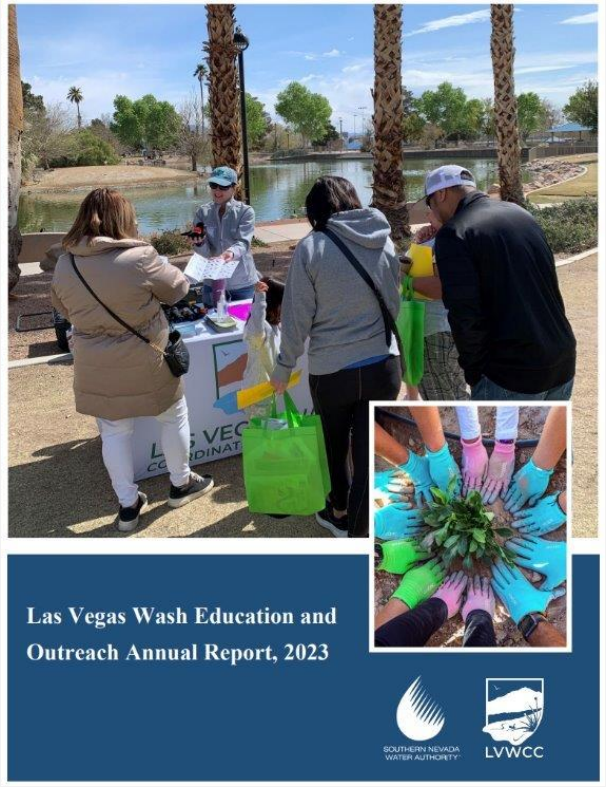
- SNPLMA RD 20 - $1,048,553 - recommended
  - Historic Lateral North area
  - Riparian and wetland restoration
- BOR EWRP FY 2024 - $663,875 - submitted
  - Pabco South, Three Kids North and Powerline on both sides
  - Riparian and wetland restoration
  - Invasive weed removal

Outreach

Green-Up

- Spring 2024 – 40th event
  - April 6, 2024
  - Lower Narrows/Homestead South
    - Previously revegetated in 2011
    - 4 acres
    - 3,500 plants
- Spring 2025 – 41st event
  - March 29, 2025
  - Lower Narrows/Homestead South
    - Beside 2024 GU site
    - ~5 acres
    - ~4,000 plants
    - Registration will open in January

Outreach
Events



- Annual reports began in 2023
- Summarizes all events and outreach conducted within the year
- Available on lvwash.org

- **Upcoming events:**
  - Mabel Hoggard Fieldtrips
    - March 2025
  - World Wetlands Day
    - February 2025

Fieldtrips, presentations and events will be added as requests are received

QUESTIONS?

LVWCC

October 2024

www.lvwash.org

Water Quality Monitoring Update

October 22, 2024

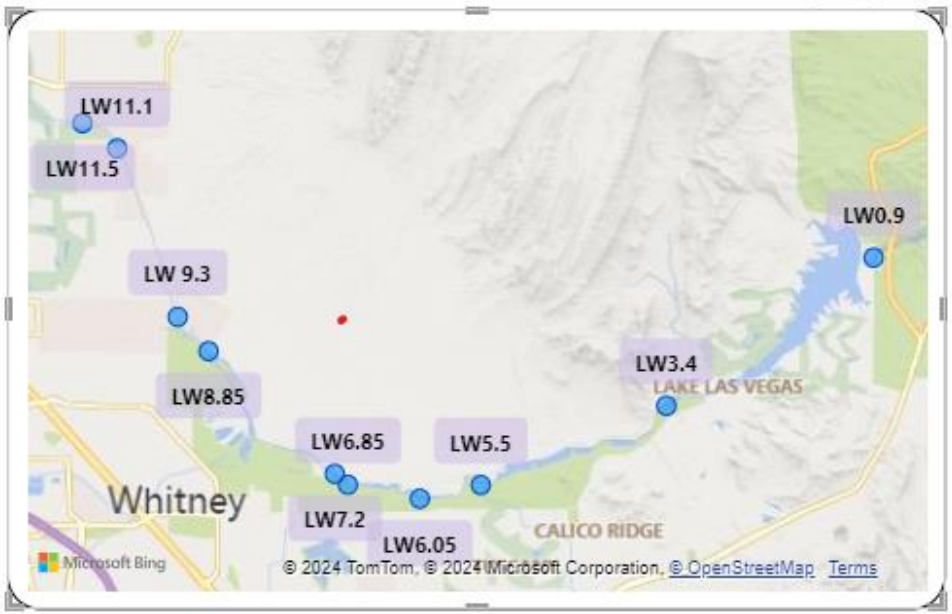
2024 Water Quality Sampling Schedule

Project	Frequency	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
Mainstream Wash Water Quality Sampling	quarterly		x			x			x			x	
Tributary Water Quality Sampling	quarterly	x			x			x			x		
Tributary Flow Measurements and Se sampling	monthly	x	x	x	x	x	x	x	x	x	x	x	x
Real Time Water Quality Monitoring (3 stations)	bi-weekly	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x
TSS and Perchlorate Study in the Wash	monthly	x		x	x		x	x		x	x		x
Shallow Groundwater Quality Sampling along the Wash	quarterly		x			x			x			x	
Water Quality Sampling at Nature Preserve	monthly	x	x	x	x	x	x	x	x	x	x	x	x

Water Quality Data from the Mainstream Las Vegas Wash

(2024 vs. previous years)

Water Quality in the Las Vegas Wash



Site Name

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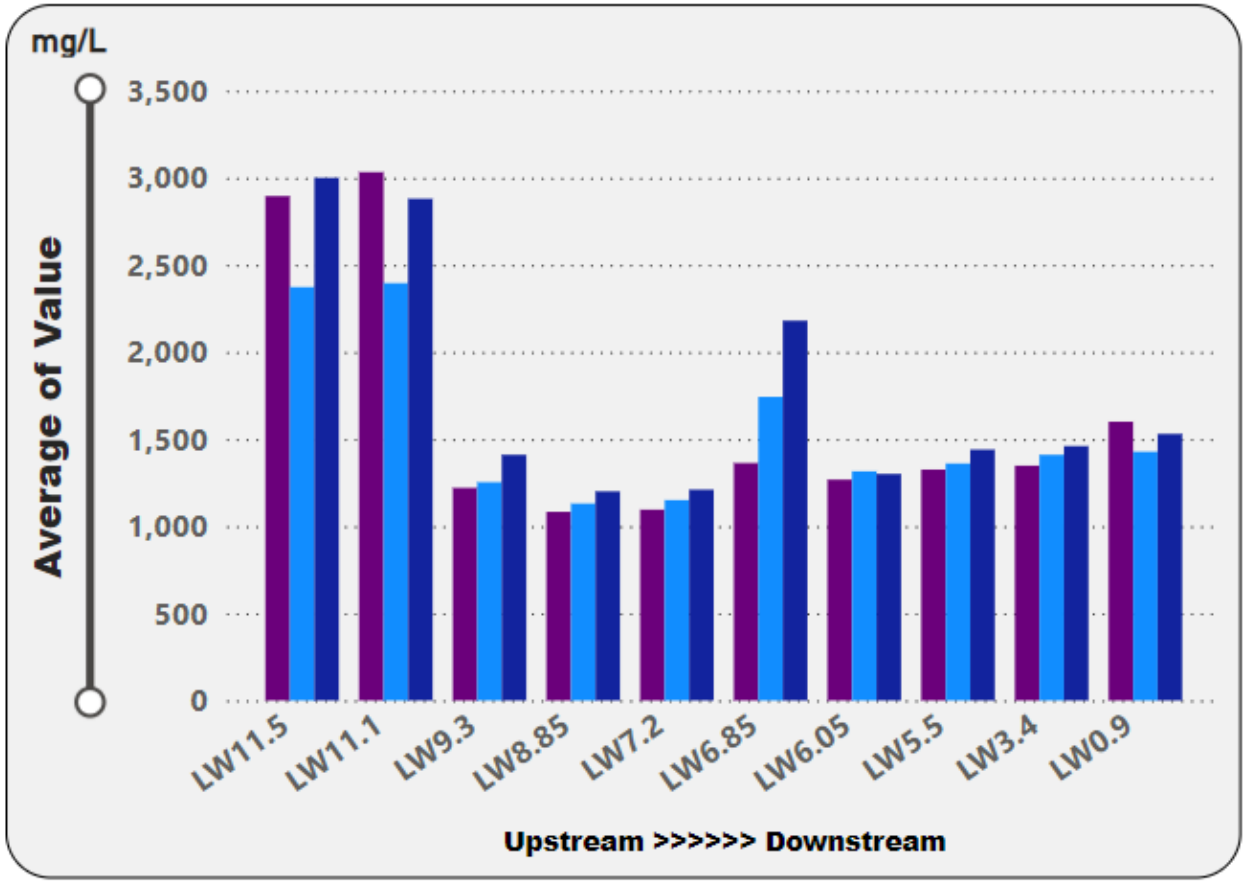
LW11.5	LW9.3	LW7.2	LW6.05	LW3.4	

Year



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- [x] 2023
- [x] 2024

General Chemistry

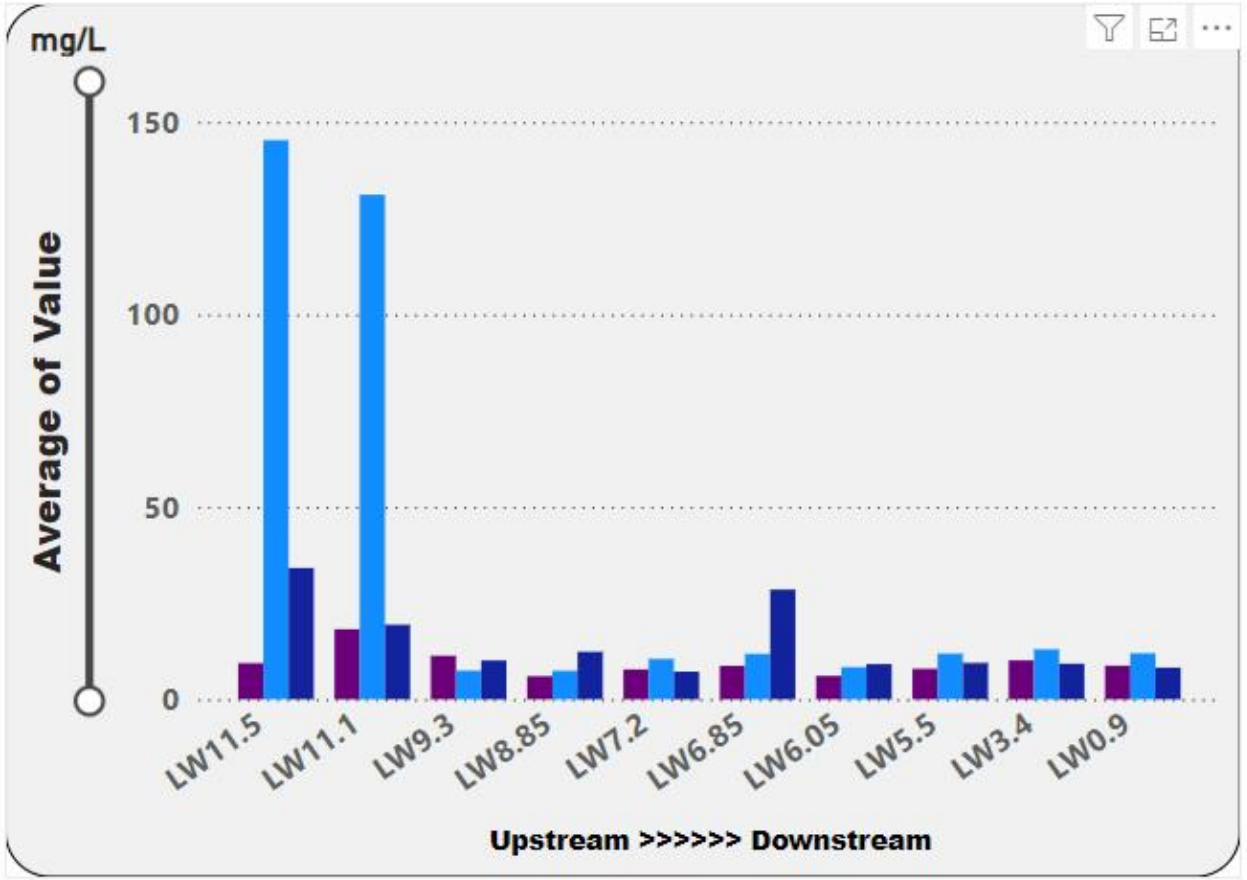
Alkalinity Total	Calcium Total	Conductivity LAB	Magnesium Total	Sodium Total	Total Dissolved Solids LAB
Bromide	Chloride	Fluoride	Potassium Total	Sulfate	Total Suspended Solids

Water Quality in the Las Vegas Wash

Site Name

Select all	LW11.1	LW8.85	LW6.85	LW5.5	LW0.9
LW11.5	LW9.3	LW7.2	LW6.05	LW3.4	

Year



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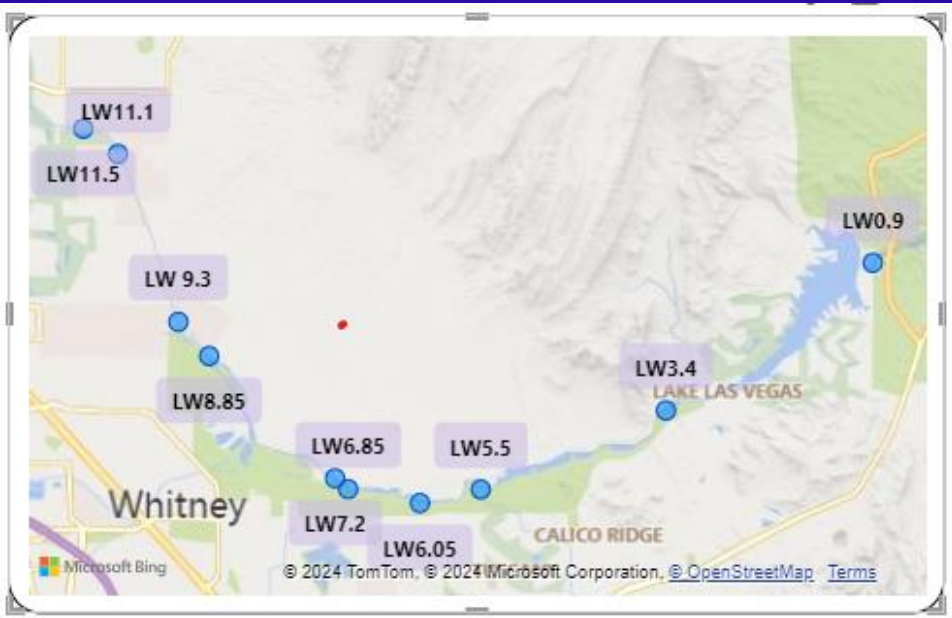
Water Quality in the Las Vegas Wash



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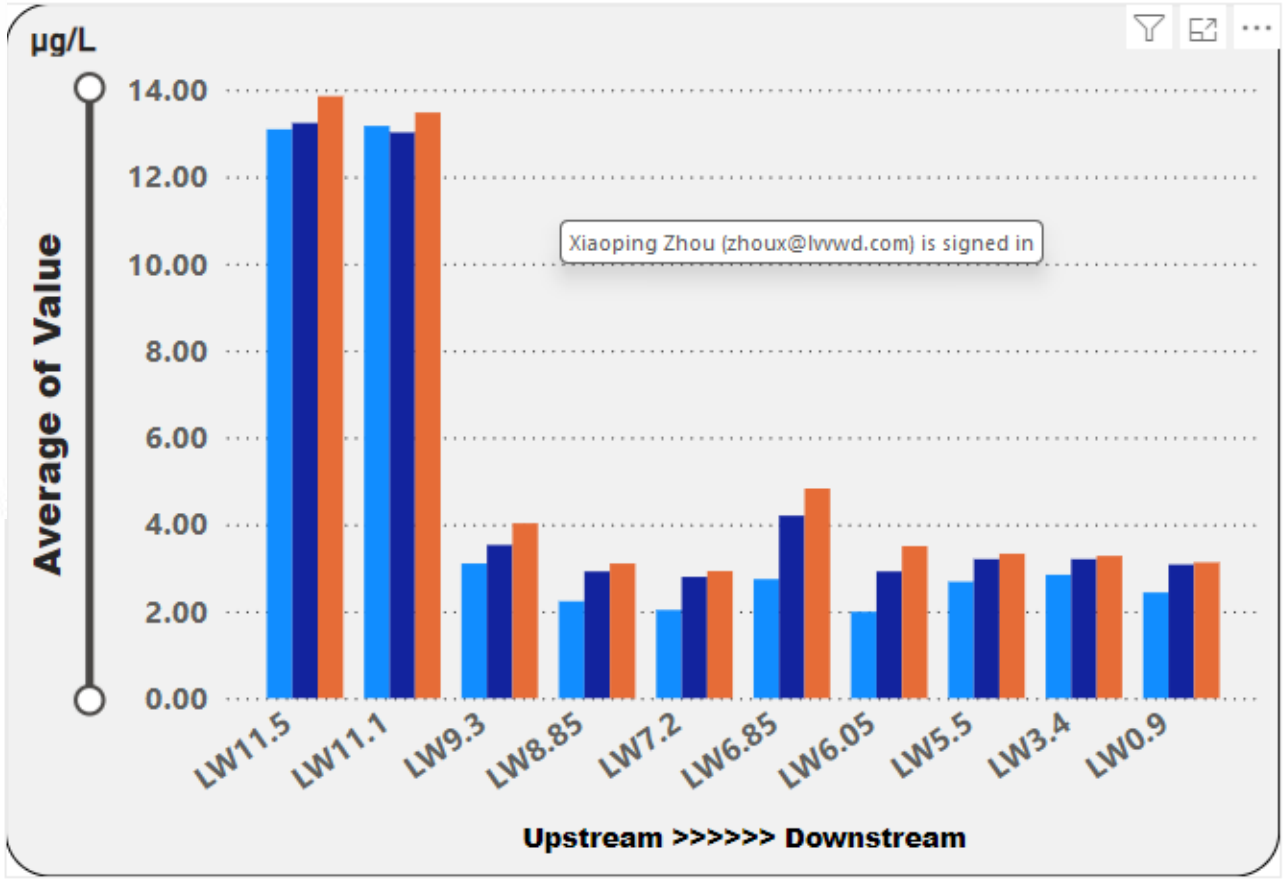
LW11.5	LW9.3	LW7.2	LW6.05	LW3.4	

Year



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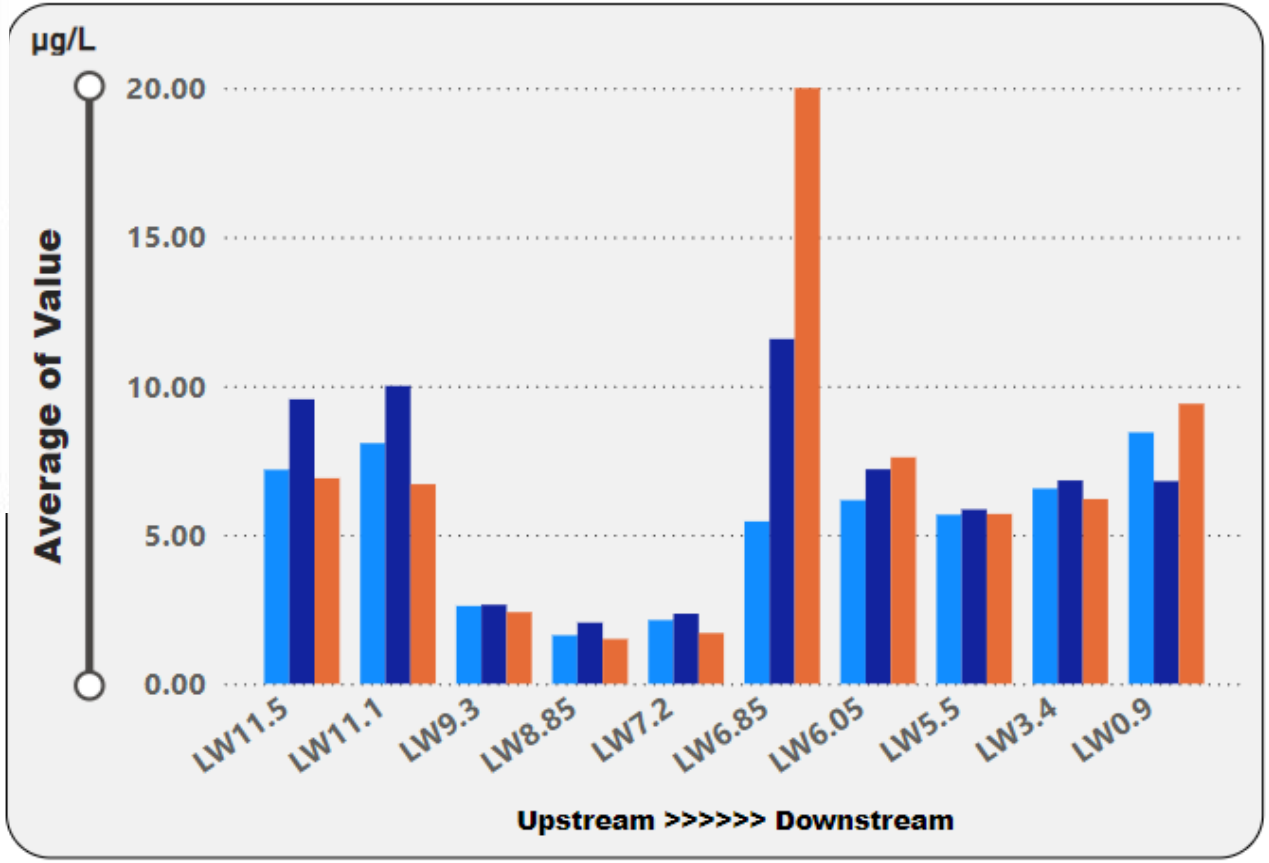
- [x] 2024

Metals

Beryllium Dissolved	Cadmium Dissolved	Chromium Dissolved	Chromium Total	Copper Total	Iron Total	Lead Total	Manganese Total	Mercury Total	Molybdenum Total	Nickel Total	Selenium Total
Beryllium Total	Cadmium Total	Chromium III Total	Copper Dissolved	Iron Dissolved	Lead Dissolved	Manganese Dissolved	Mercury Dissolved	Molybdenum Dissolved	Nickel Dissolved	**Selenium Dissolved**	Silver Dissolved

Water Quality in the Las Vegas Wash



Site Name

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LW11.5	LW9.3	LW7.2	LW6.05	LW3.4	

Year

Metals

Aluminum Dissolved	Antimony Dissolved	Arsenic Dissolved	Barium Dissolved	Beryllium Dissolved	Cadmium Dissolved	Chromium Dissolved	Chromium Total	Copper Total	Iron Total	Lead Total	Manganese Total
Aluminum Total	Antimony Total	Arsenic Total	Barium Total	Beryllium Total	Cadmium Total	Chromium III Total	Copper Dissolved	Iron Dissolved	Lead Dissolved	Manganese Dissolved	Mercury Dissolved

Year

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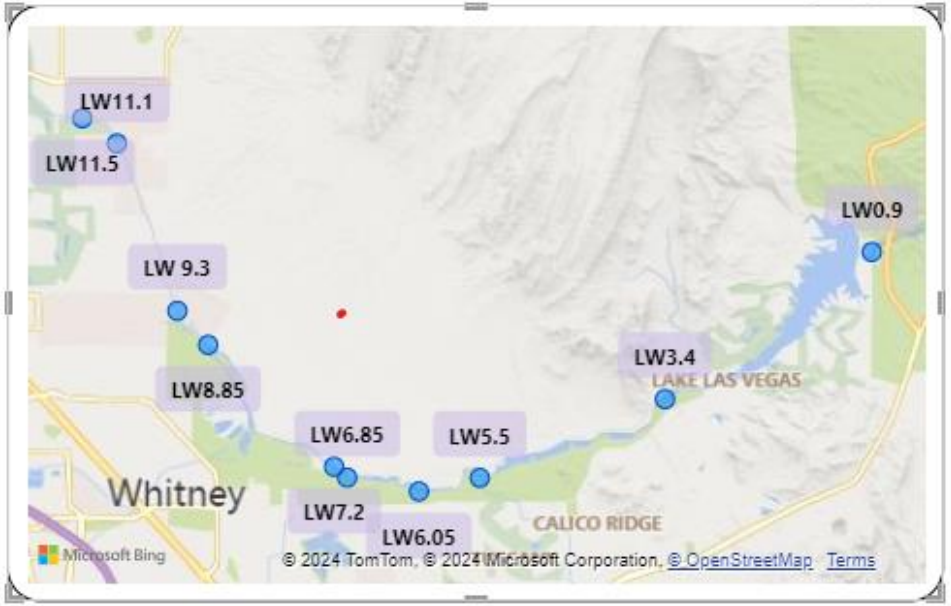
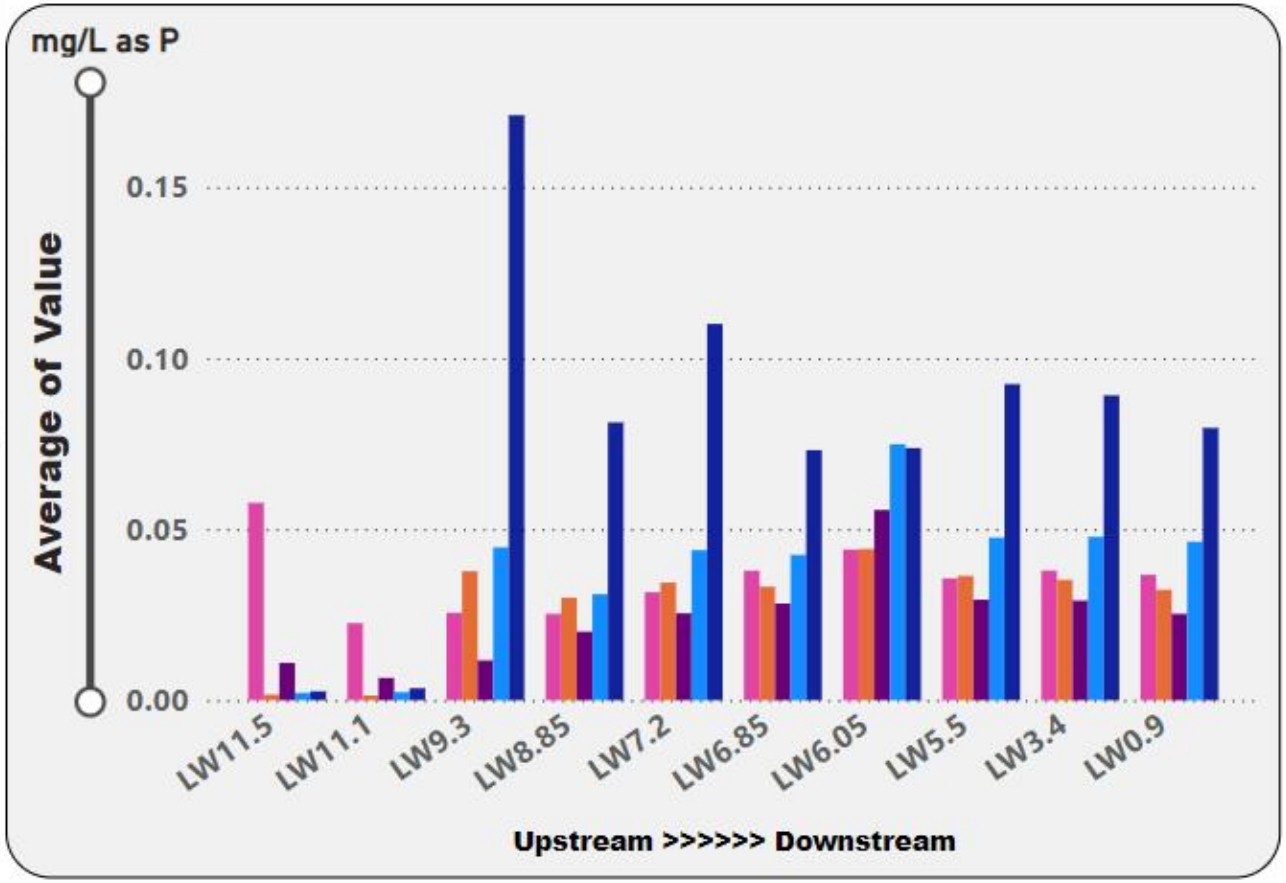
Water Quality in the Las Vegas Wash





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LW11.5	LW9.3	LW7.2	LW6.05	LW3.4	

Year

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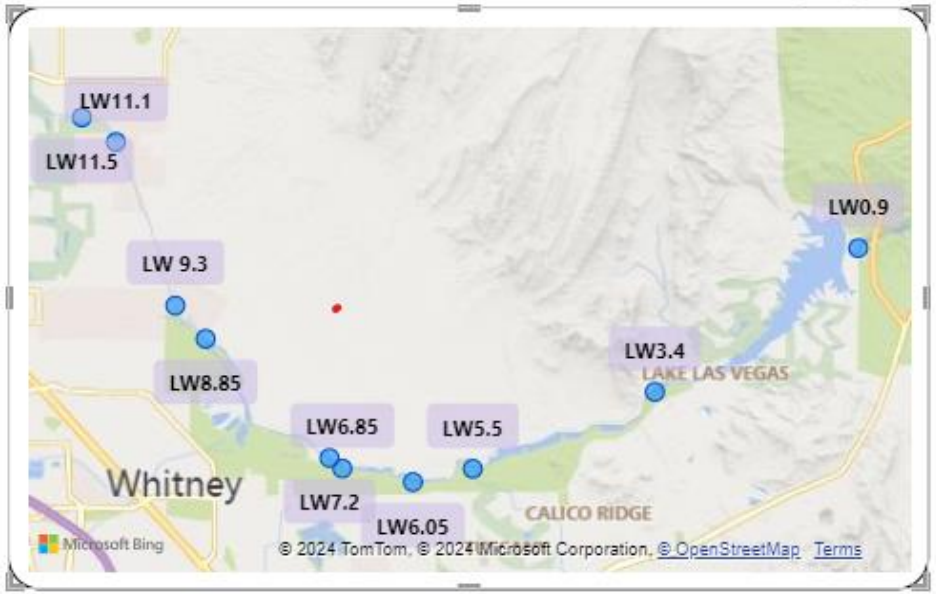
Nutrients

Nitrogen Ammonia Dissolved	Nitrogen Inorganic Total	Nitrogen Nitrate Dissolved	Nitrogen Nitrite Total	Nitrogen Total	Phosphorus Total
Nitrogen Ammonia Total	Nitrogen Kjeldahl Dissolved	Nitrogen Nitrite Plus Nitrate Total	Nitrogen Organic Total	Phosphorus Orthophosphate Total	

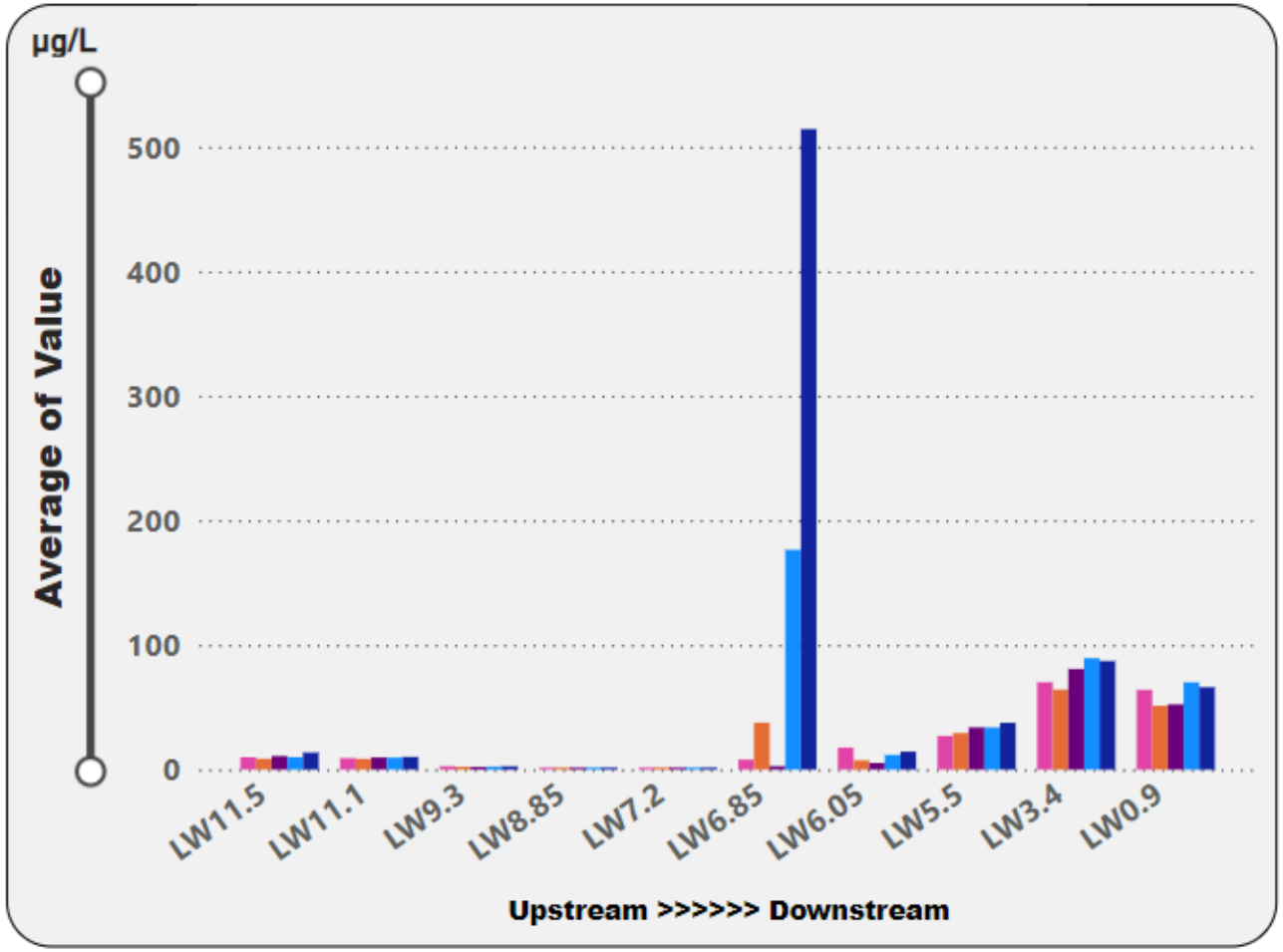
Water Quality in the Las Vegas Wash



Site Name

Select all	LW11.1	LW8.85	LW6.85	LW5.5	LW0.9
LW11.5	LW9.3	LW7.2	LW6.05	LW3.4	

Year



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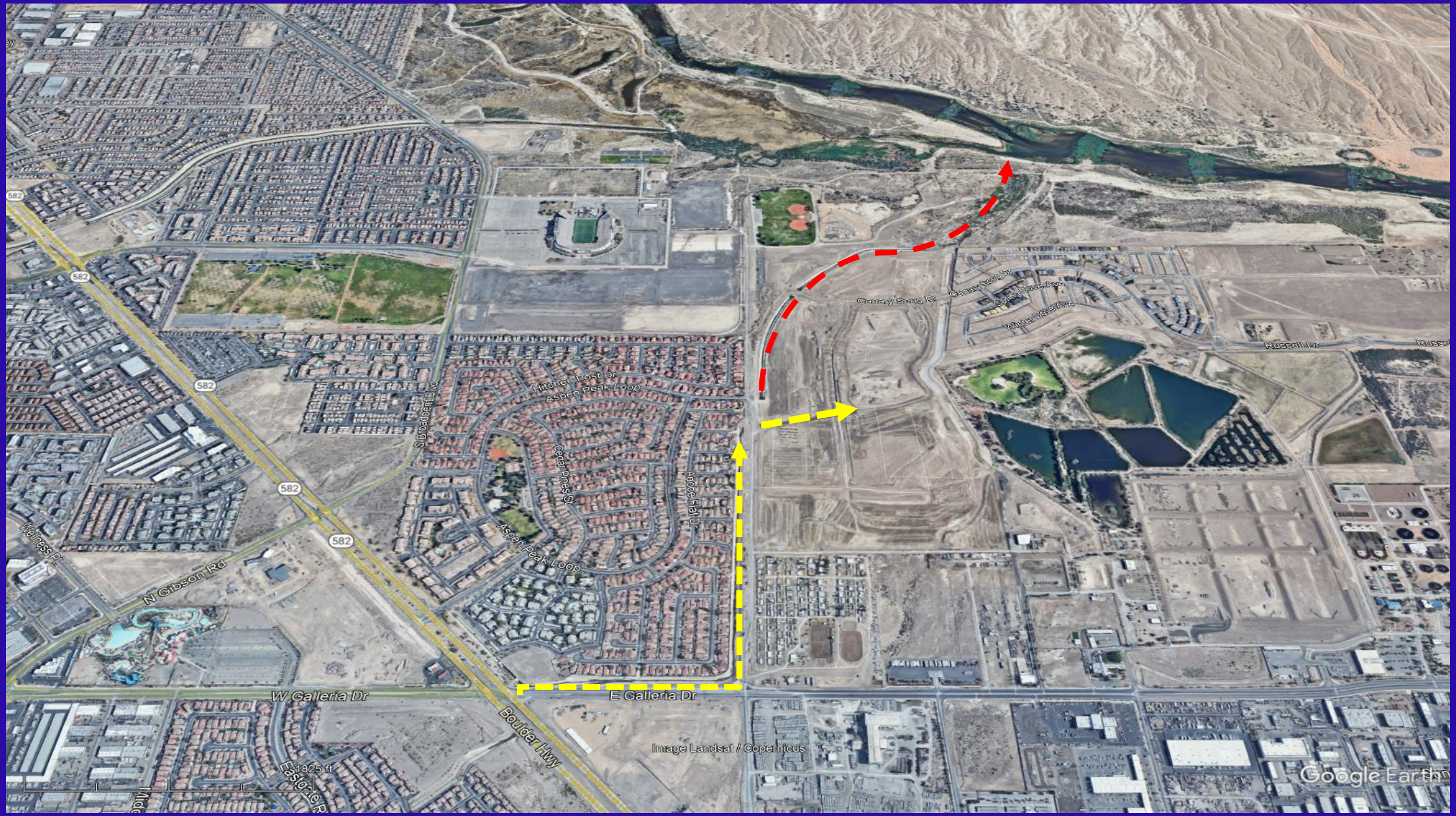
- [x] 2021
- [x] 2022
- [x] 2023
- [x] 2024

Boron, Perchlorate, and TOC

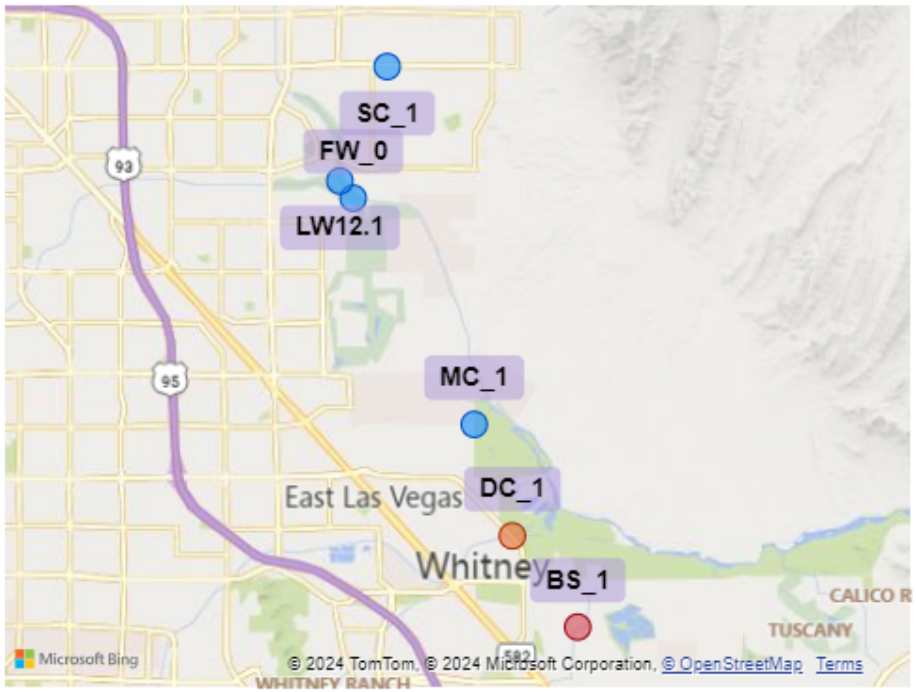
Boron Dissolved	Boron Total	Chlorate	Perchlorate

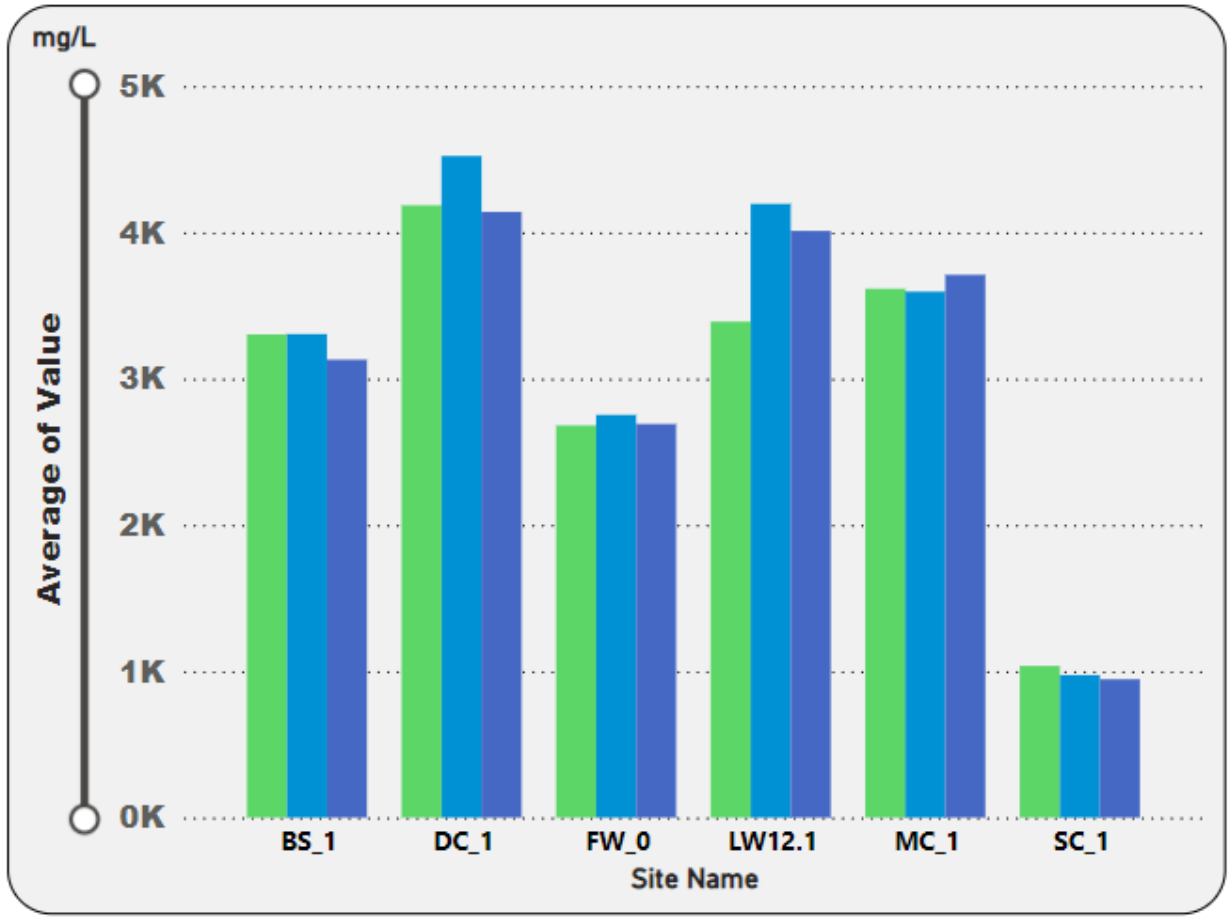

582
N Gibson Rd
Wellness Pl
W Galleria Dr
E Galleria Dr
Boulder Hwy
S Eagle Crest Rd
Aspen Peak Loop
Cedar Pines St
Adobe Flat Dr
Hitchen Post Dr
Russell Dr
Image Landsat / Copernicus
1825 ft
Google Earth

Water Quality Data from Urban Runoff Tributaries

(2024 vs previous years)

Water Quality of Urban Runoff Tributaries in the Las Vegas Valley





Select all | BS_1 | DC_1 | FW_0 | LW12.1 | MC_1 | SC_1

Year

General Chemistry

Alkalinity Total	Bromide	Chlorate	Chlorine, Free	Magnesium Total	Sodium Total	Total Dissolved Solids LAB	Turbidity (see remarks)
Boron Total	Calcium Total	Chloride	Fluoride	Potassium Total	Sulfate	Total Suspended Solids	

Year

- [ ] Select all
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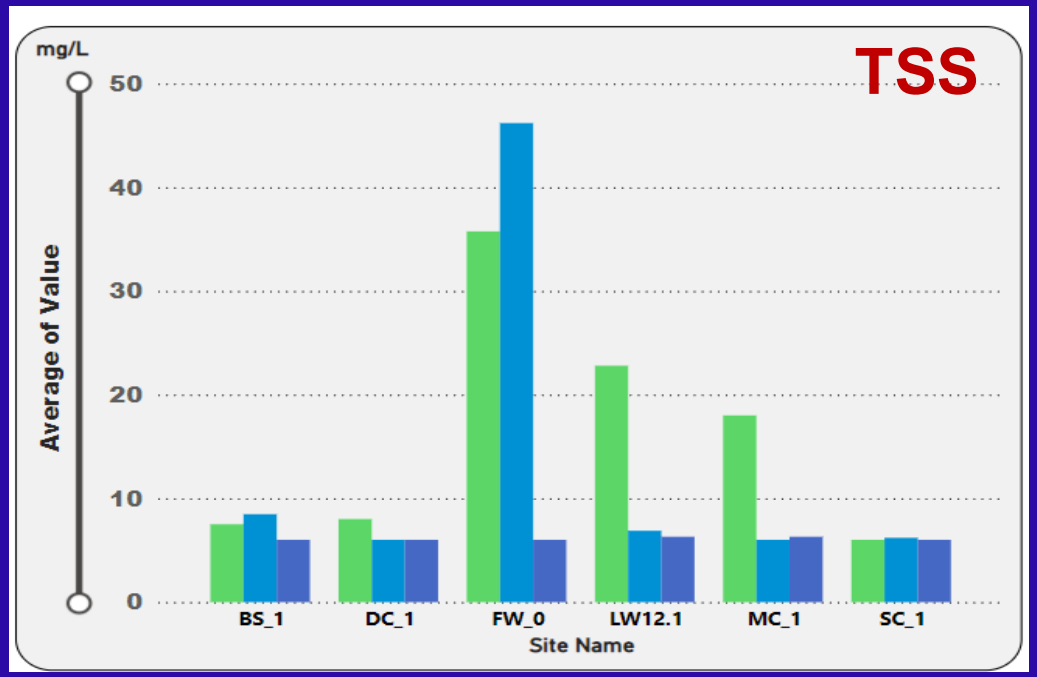
TSS
mg/L
Average of Value
50
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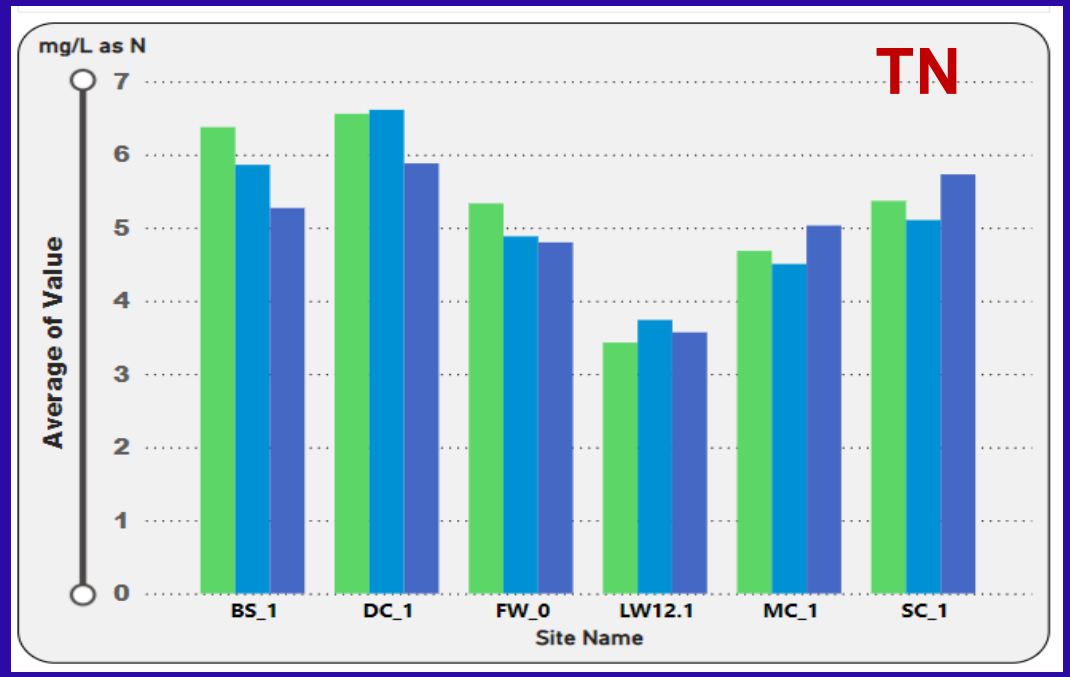
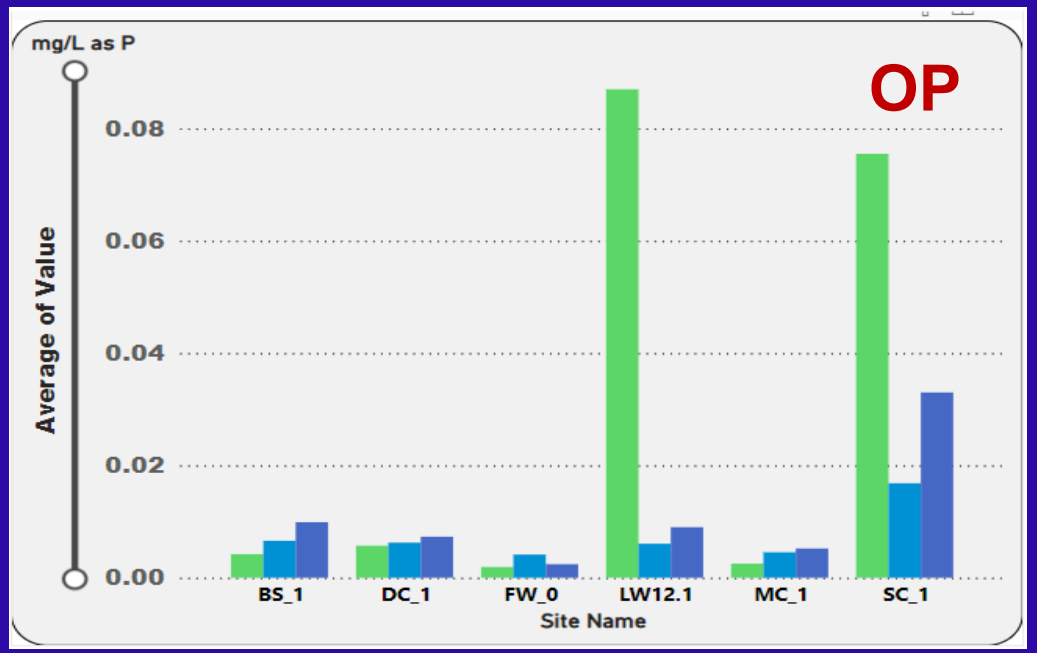
30
20
10
0
BS_1
DC_1
FW_0
LW12.1
MC_1
SC_1
Site Name


TN
mg/L as N
Average of Value
7
6
5
4
3
2
1
0
BS_1
DC_1
FW_0
LW12.1
MC_1
SC_1
Site Name


OP
mg/L as P
Average of Value
0.08
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0.04
0.02
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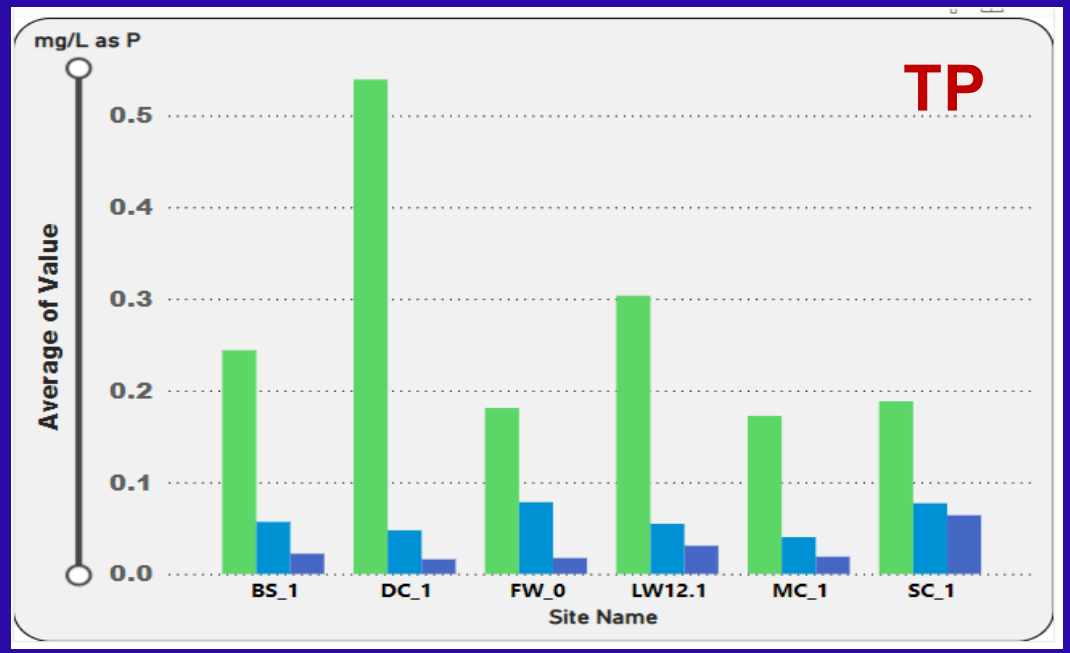
Site Name


TP
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Average of Value
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Site Name


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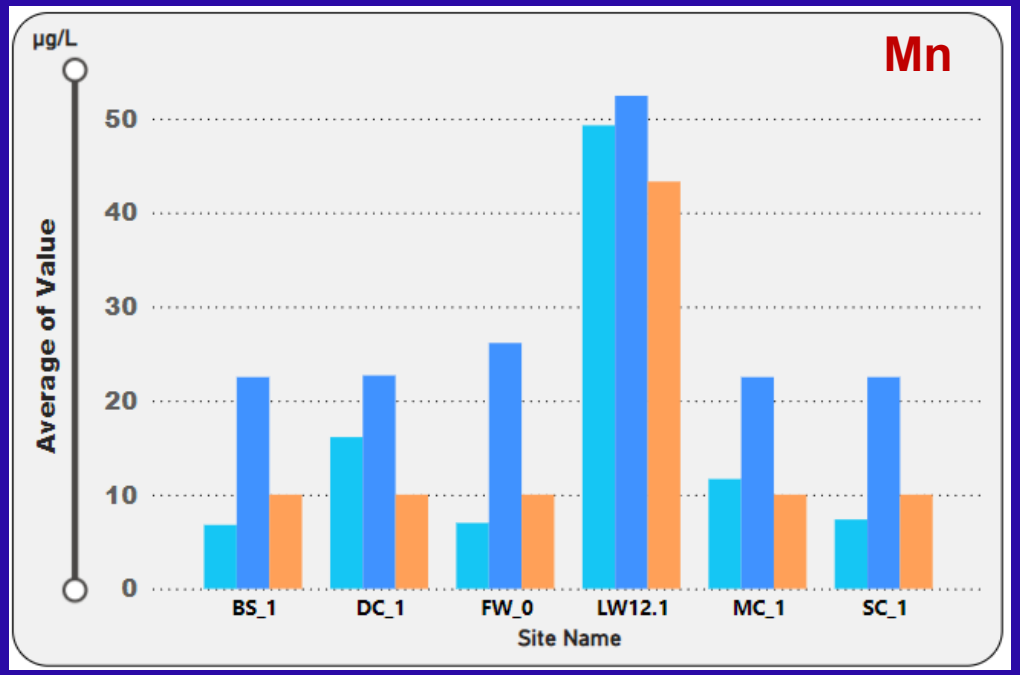
Mn
µg/L
Average of Value
0
10
20
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40
50
BS_1
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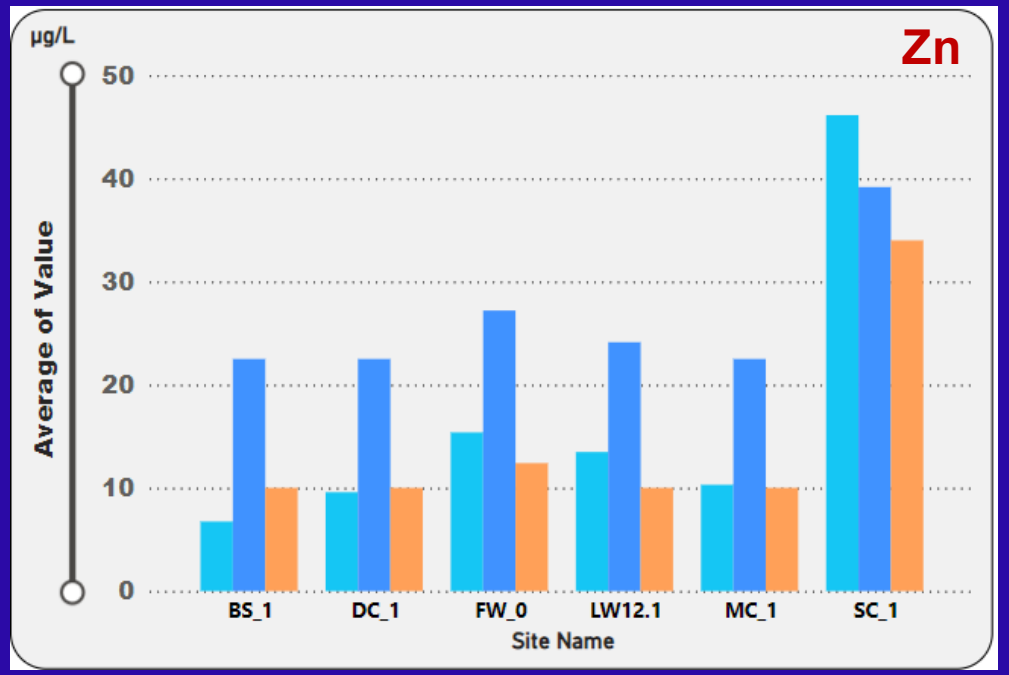
LW12.1
MC_1
SC_1
Site Name


Zn
µg/L
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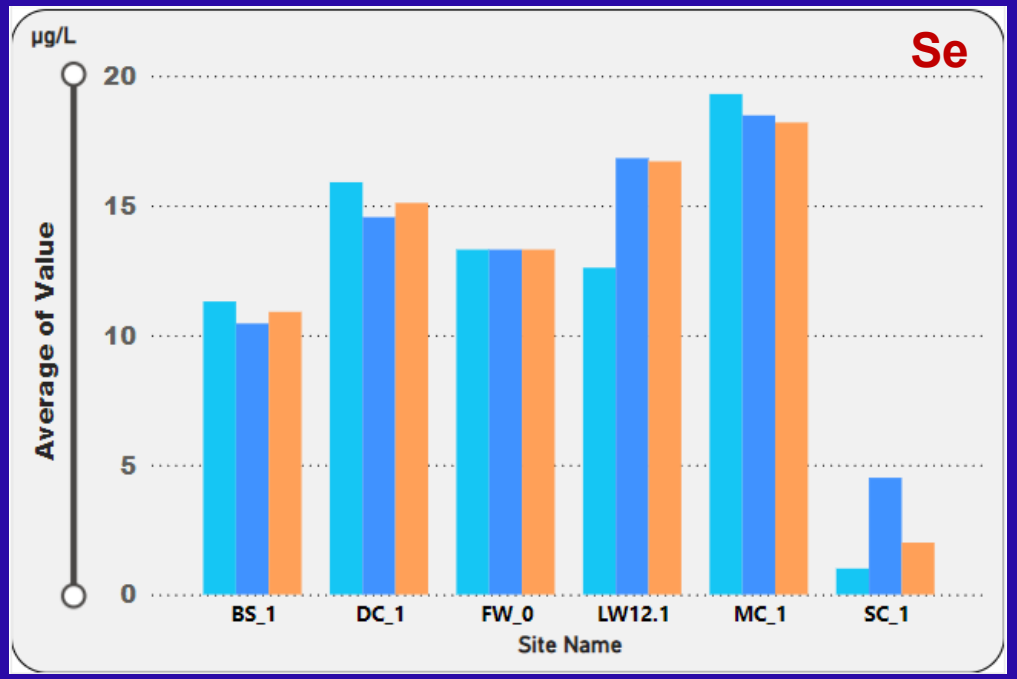
Site Name


Se
µg/L
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MC_1
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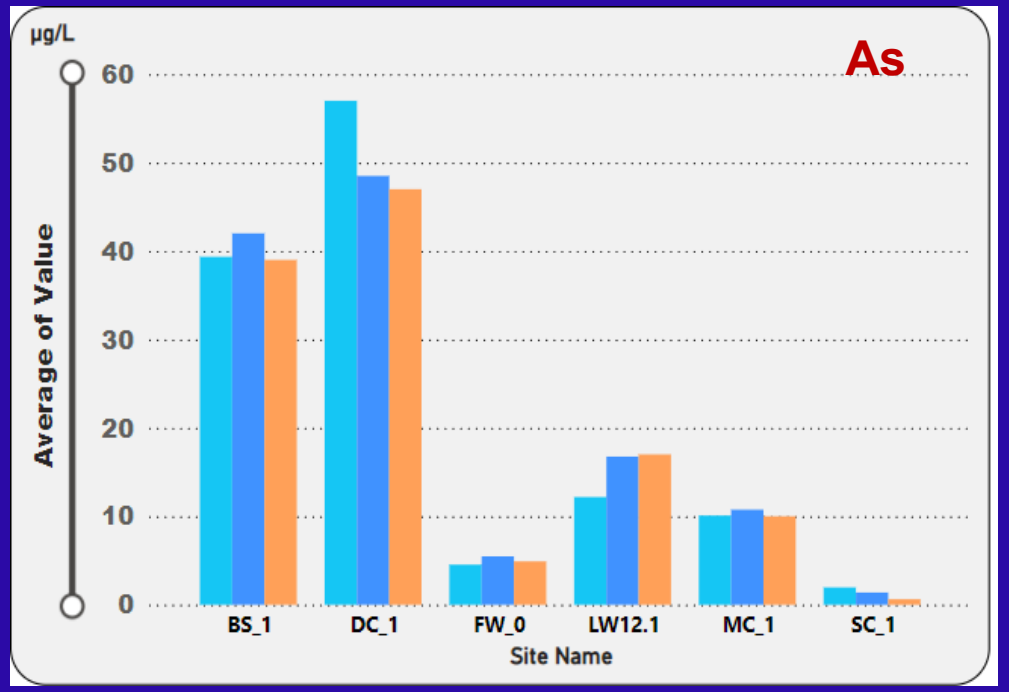
Site Name


As
µg/L
Average of Value
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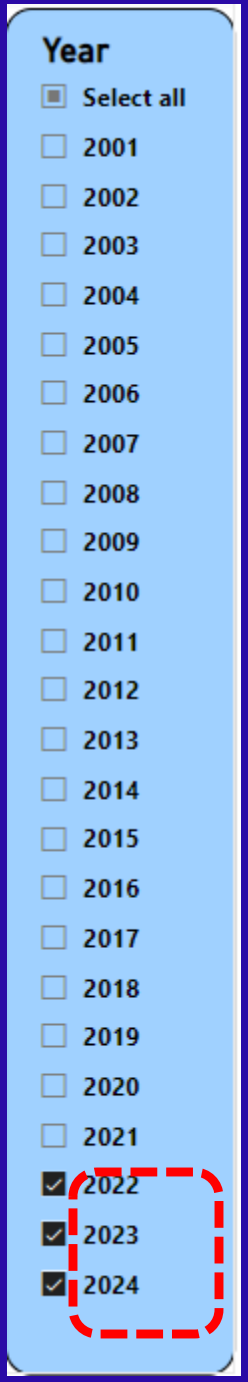
BS_1
DC_1
FW_0
LW12.1
MC_1
SC_1
Site Name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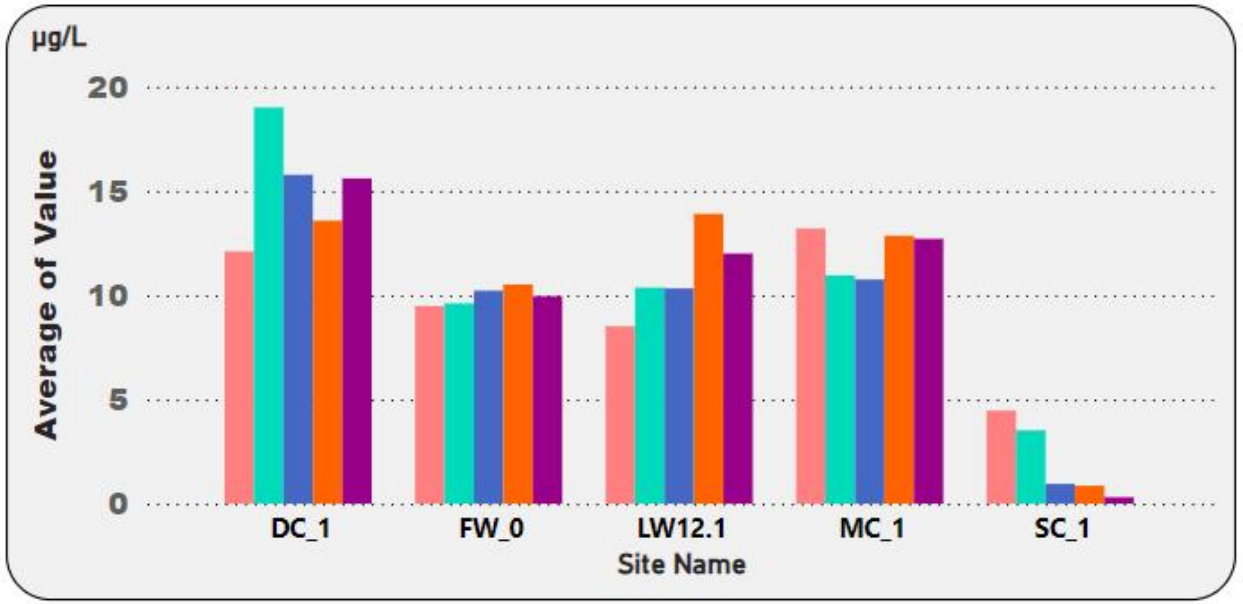
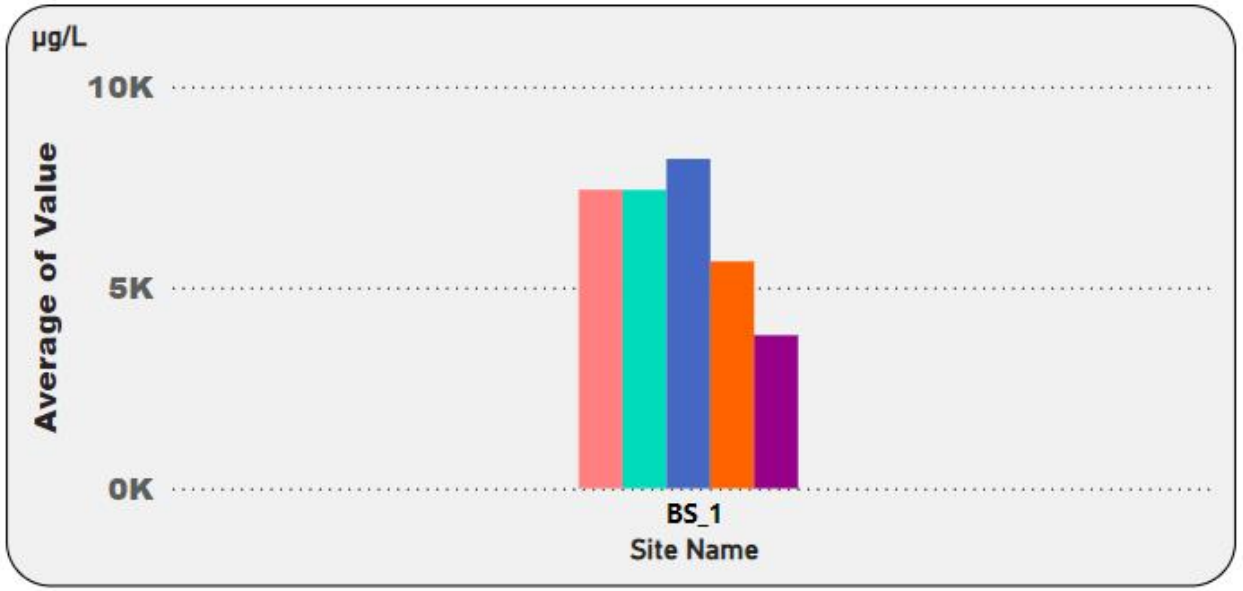
Water Quality of Urban Runoff Tributaries in the Las Vegas Valley





Site Name

Select... | BS_1 | DC_1 | FW_0 | LW12.1 | MC_1 | SC_1

Year

Perchlorate and Chlorate

- Chlorate
- Perchlorate

Year

- [ ] Select all
- [ ] 2000
- [ ] 2001
- [ ] 2002
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- [x] 2022
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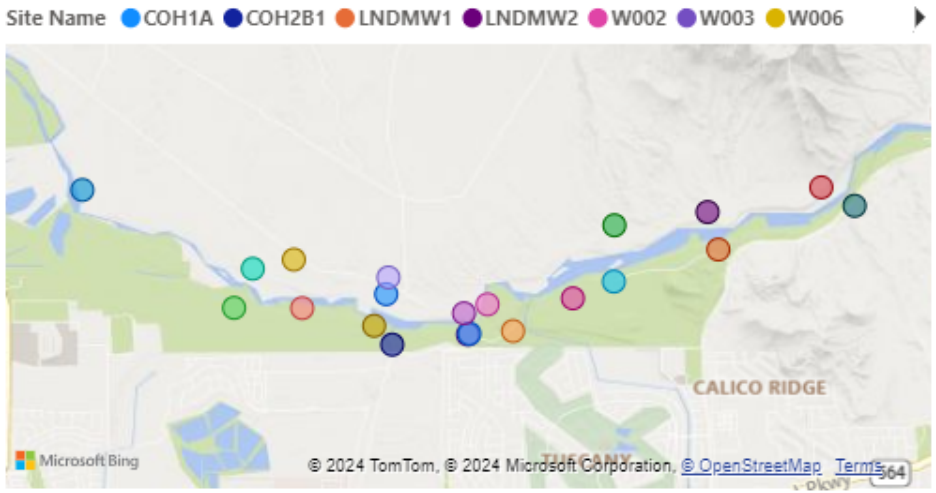
- [x] 2024

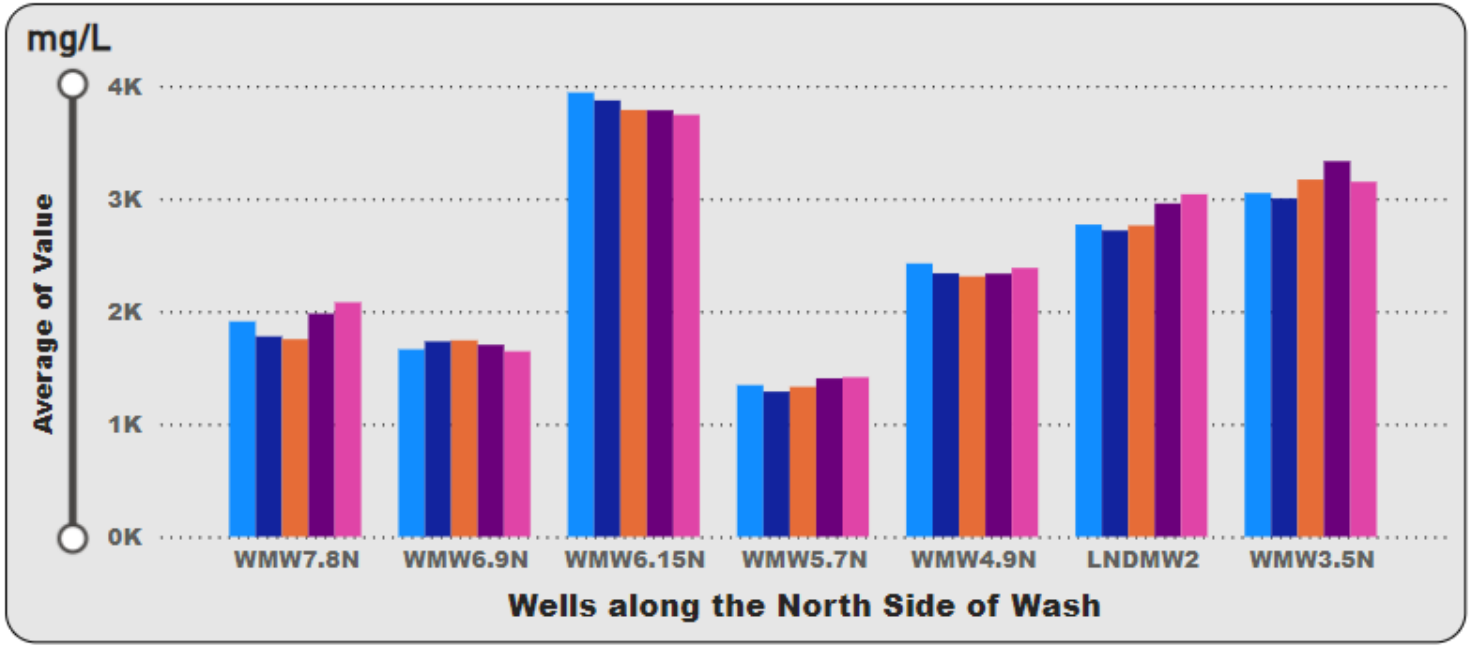
Water Quality Data from Shallow Groundwater Monitoring wells along the Wash

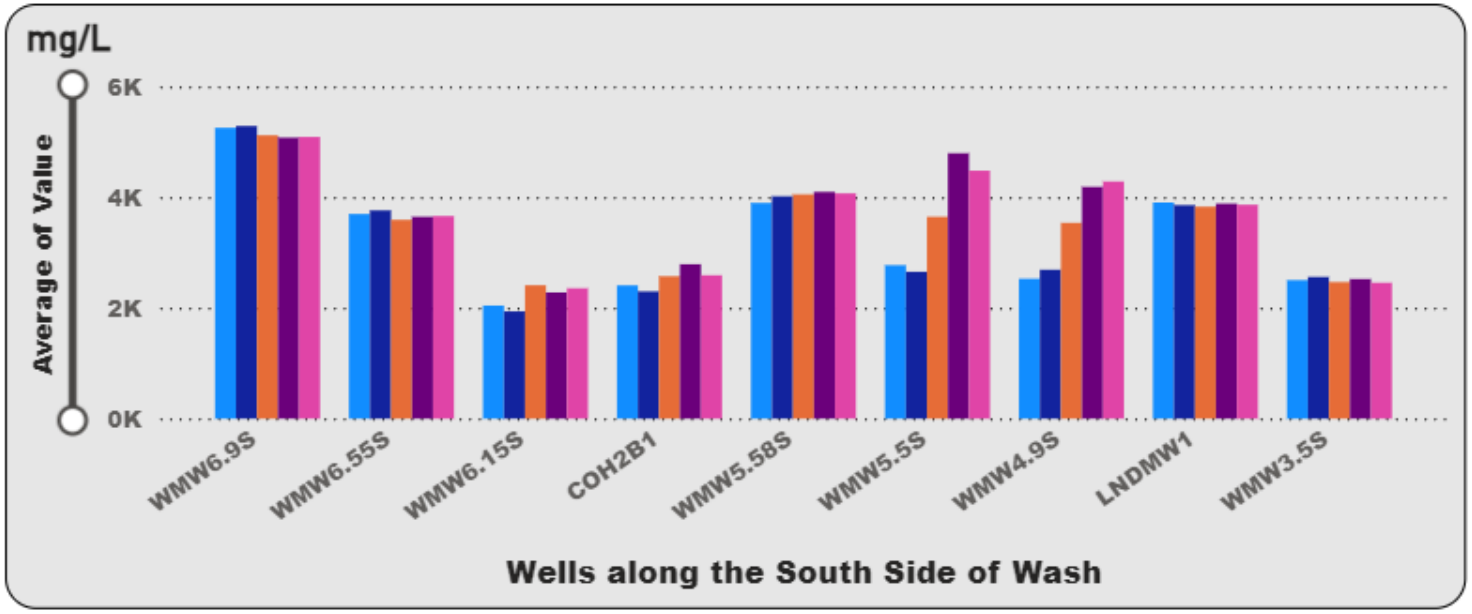
(2020 - 2024)

Map showing monitoring wells along the Wash



Groundwater Quality from the Monitoring Wells along the Las Vegas Wash





Parameter

- Alkalinity Bicarb...
- Alkalinity Total
- Bromide
- Calcium
- Chloride
- Fluoride
- Hardness, Total
- Magnesium
- Potassium
- Silica
- Sodium
- Sulfate
- Total Dissolved S...

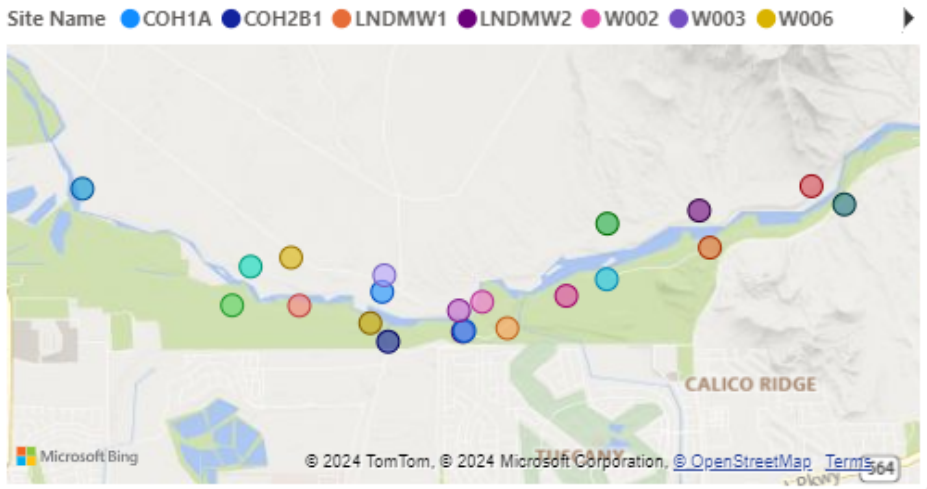
Year

Select all	2013	2018	2023
2009	2014	2019	2024
2010	2015	2020	
2011	2016	2021	
2012	2017	2022	

Year

Groundwater Quality from the Monitoring Wells along the Las Vegas Wash

Map showing monitoring wells along the Wash



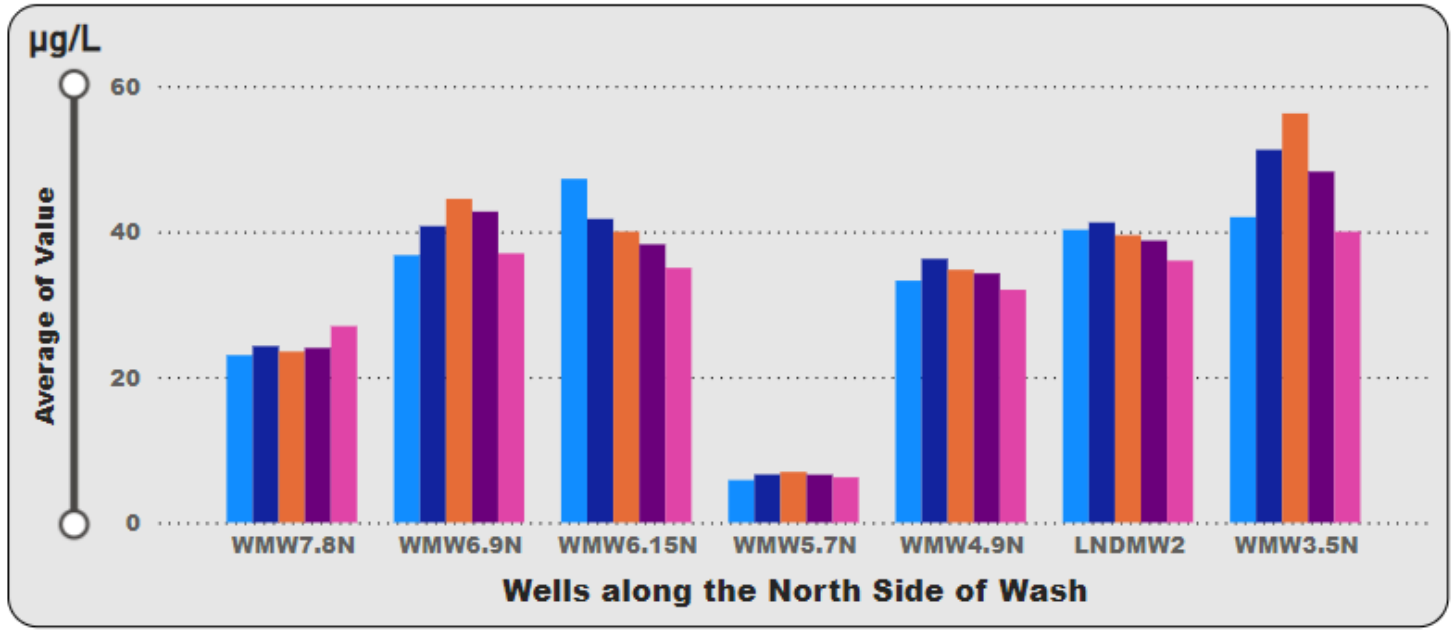
Parameter

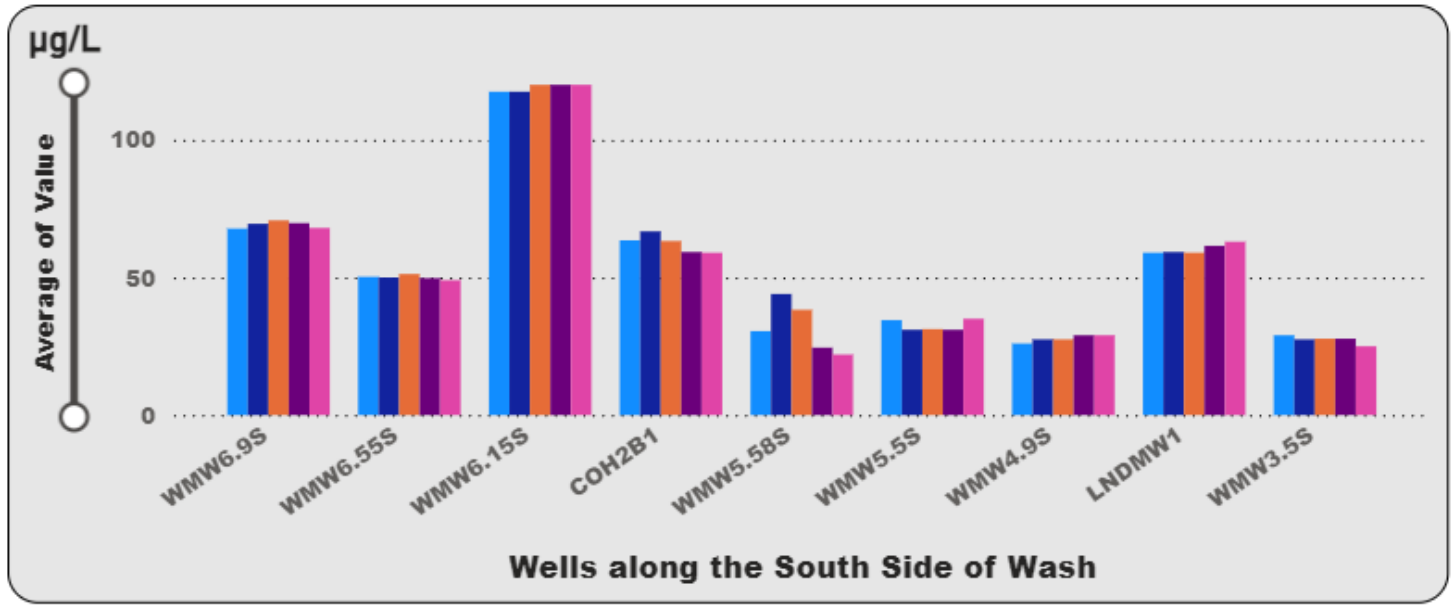
- Aluminum Total
- Antimony Total
- (●) Arsenic Total
- Barium Total
- Beryllium Total
- Cadmium Total
- Chromium Total
- Copper Total
- Iron Total
- Lead Total
- Manganese Total
- Mercury Total

Year

Year

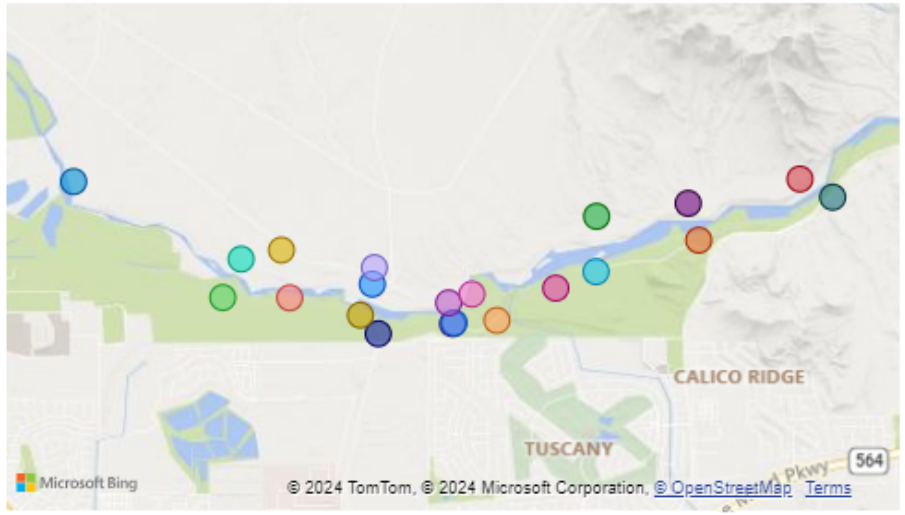
Select all	2015	2022
2009	2016	2023
2010	2017	2024
2011	2018	
2012	2019	
2013	2020	
2014	2021	



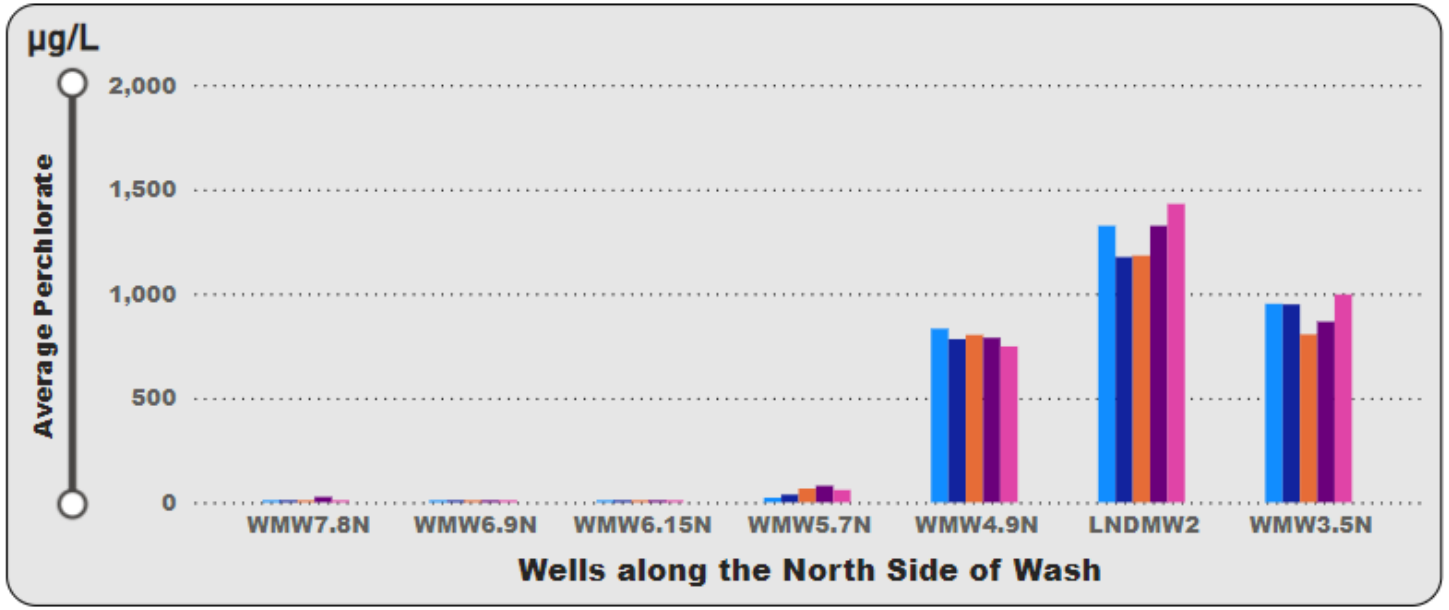


Map showing monitoring wells along the Wash

Site Name COH1A COH2B1 LNDMW1 LNDMW2 W002 W003 W006



Groundwater Quality from the Monitoring Wells along the Las Vegas Wash



Perchlorate

Year

Select all	2011	2014	2017	2020	2023
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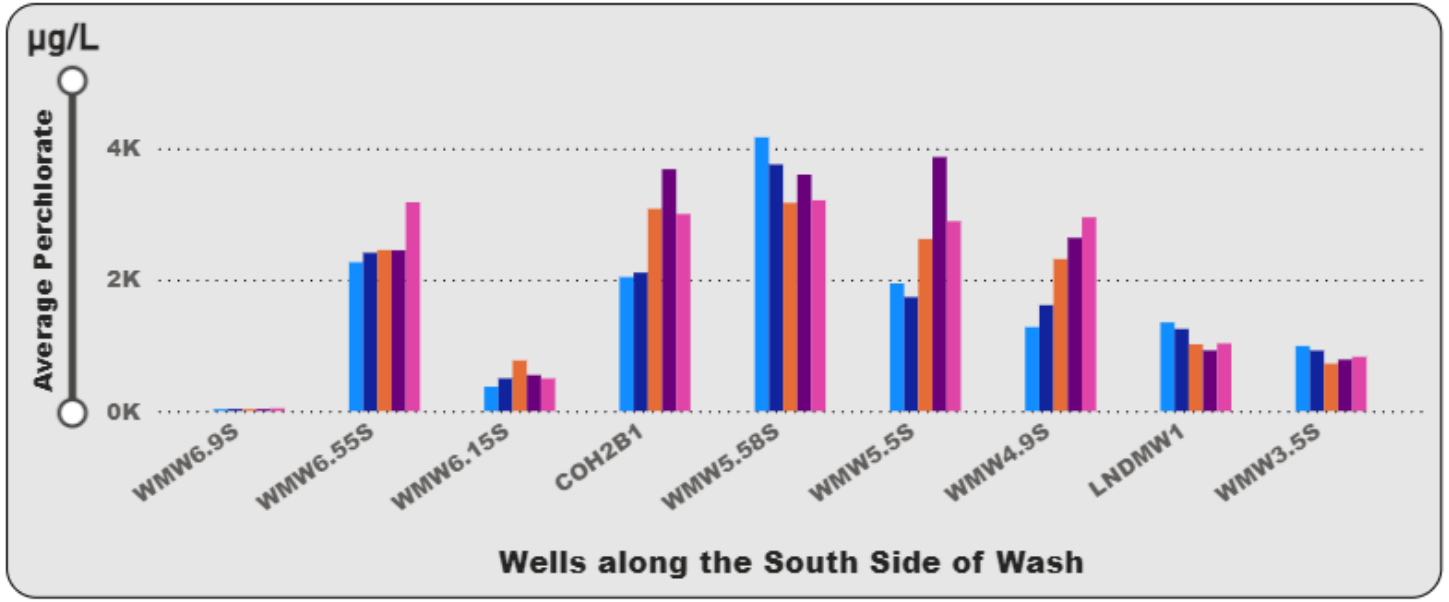
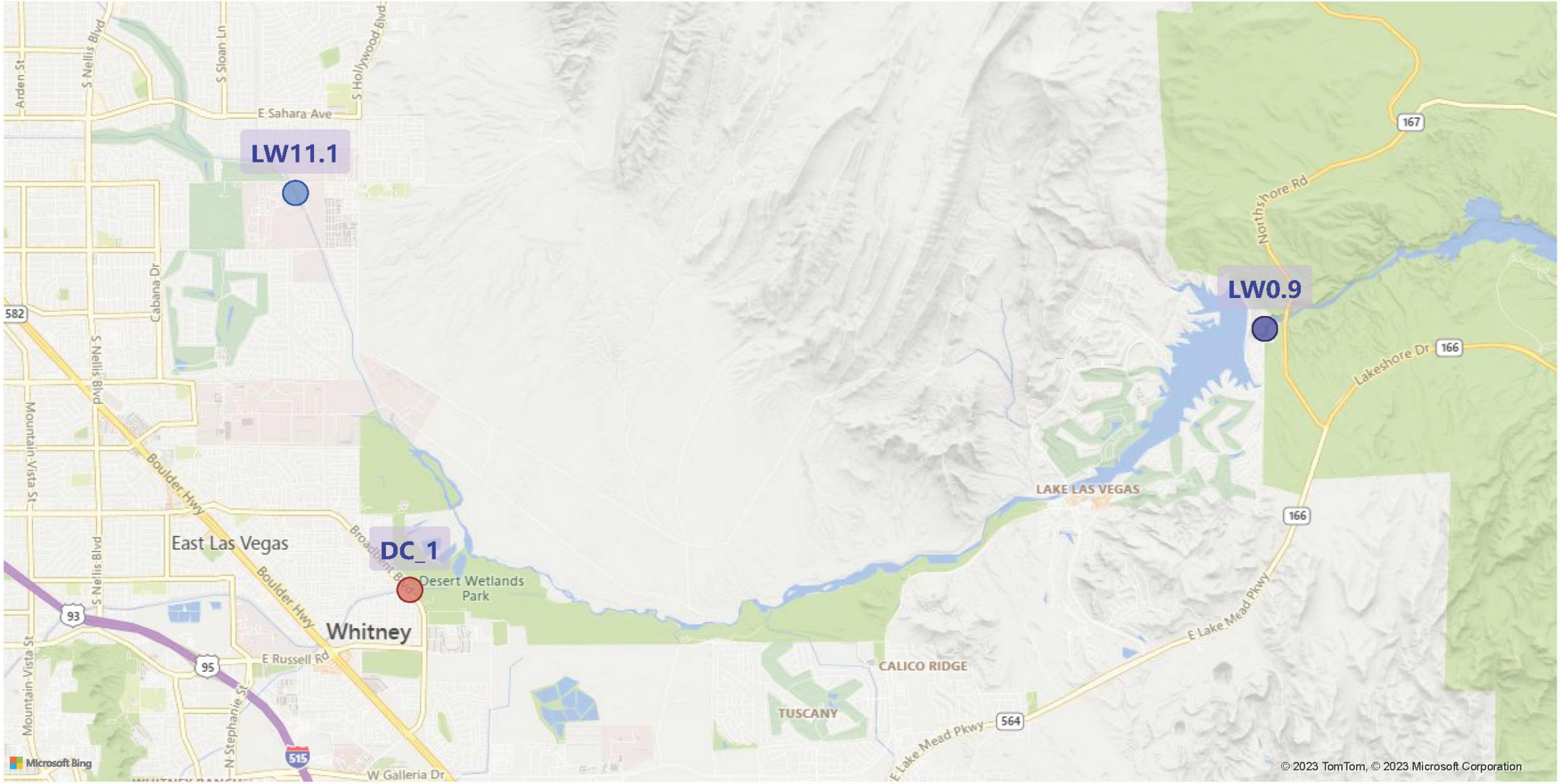
2010	2013	2016	2019	2022	



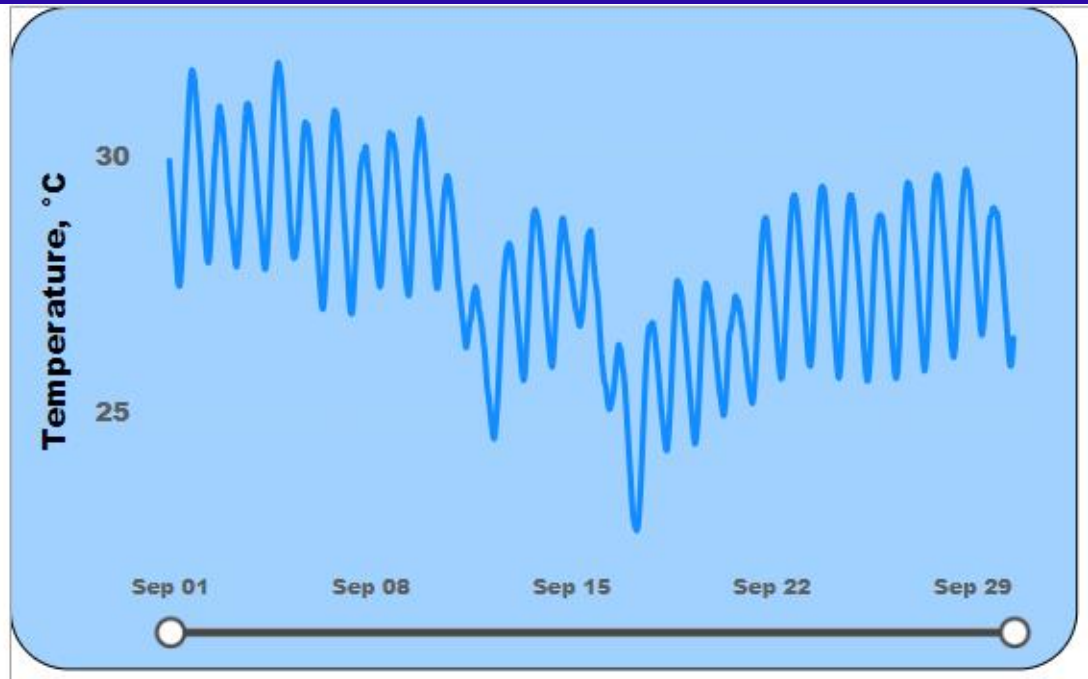
Year

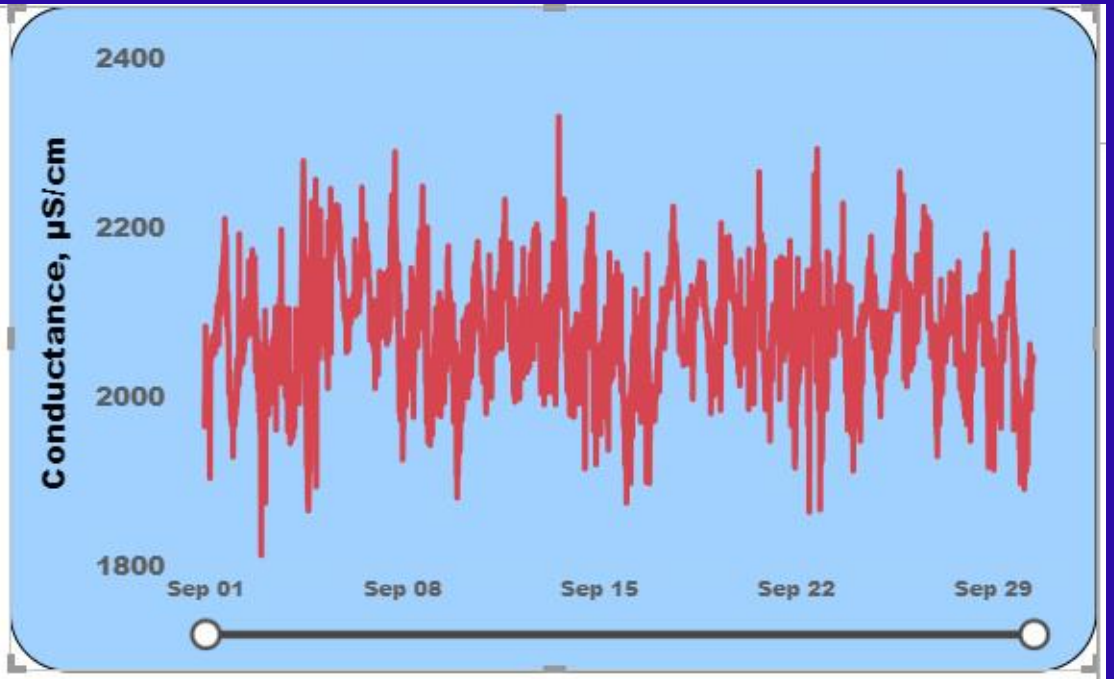
Real-time Water Quality Monitoring from 3 Stations in the Las Vegas Valley

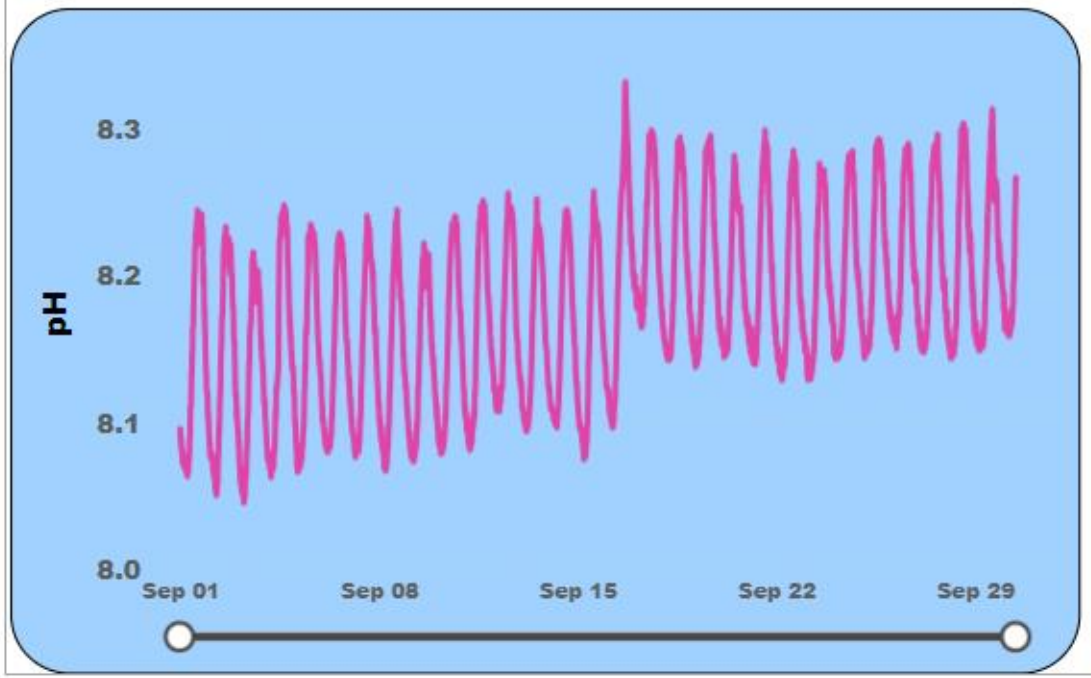
Real-time Water Quality Monitoring Stations in the Las Vegas Valley

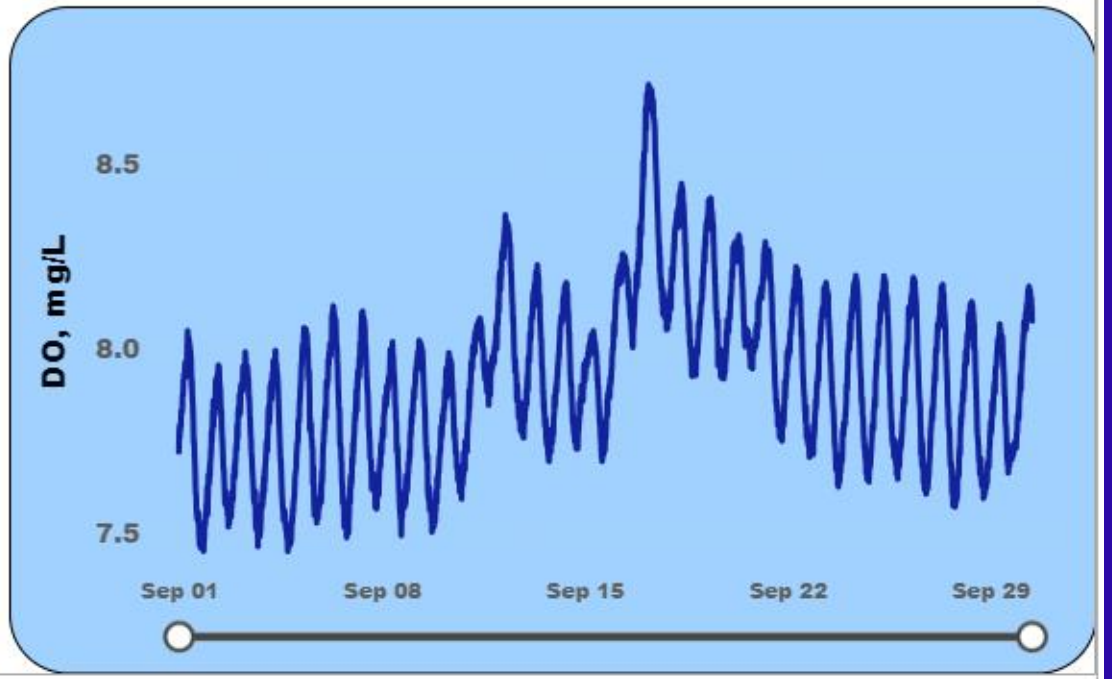


Real-time Water Quality Data from the Lower Wash (LW0.9)









Real-time Water Quality Data at LW0.9


Thank you


Question?

Las Vegas Valley Watershed Advisory Committee (LVVWAC) Update

October 22, 2024

LVVWAC Update:
April 9, 2024 Meeting

Charles Trushel (CLV) and Joemel Llamado (CNLV) were selected as Chair and Vice Chair, respectively

Approved 2022–2023 Accomplishments Document; some highlights include:

- Expanded the capabilities of the Lake Mead Model to forecast potential water quality conditions under future water surface elevation scenarios
- Continued year-round phosphorus removal at wastewater treatment facilities to meet the 334 pounds-per-day waste load allocation for total phosphorus, surpassing permit requirements
- Spent $23 million on the maintenance work program to ensure efficient operation of the flood control network

LVVWAC Update:
April 9, 2024 Meeting

Received update from wastewater dischargers:

- CCWRD, CLV, CNLV, COH

Received update from CCRFCD on Stormwater Quality Management Committee

- Discussed updates on the Construction General Permit and the Municipal Separate Storm Sewer System (MS4) Permit
- Received update on the new MS4 Permit
- Received update on a revised SWMP for review/approval by the NDEP

LVVWAC Update:
May 14, 2024 Meeting

Approved a five-year Interlocal Agreement to establish funding allocations and the budget for Las Vegas Wash Long-Term Operating Plan (LTOP) actions

LVVWAC Update:
October 8, 2024 Meeting

Approved the FY 2025/2026 LTOP budget

- Total operating budget: $2,774,205
  - Estimated Bureau of Reclamation and Nevada Division of Environmental Protection contributions: $333,000
  - Local contribution: $2,441,205
- Budget reflects an annual increase of 2.5 percent
- Budget received unanimous approval

Received update on accomplishments of the LVWCC

LVVWAC Update:
October 8, 2024 Meeting

Received update on the Clark County Wetlands Park

- Continued coordination with CCWRD and CCPW on several projects
- Submitted proposal for SNPLMA funding for a new interpretation and event area
- Wetlands Loop Trail completion project under way
- Programs, field trips and events are ongoing, and notable awards were received

LVVWAC Update:
October 8, 2024 Meeting

Received update on regional water quality

- Lake Mead surface elevation looks stable for the coming year; elevation predictions for 2025 are between 1,050 and 1,065 ft
- Discussed temperature profiles, dissolved oxygen levels, salinity specific conductance, algae biomass concentrations, and quagga mussels
  - Algal toxins showed occasional detections this summer in Lake Mead, and more frequently, Lake Mohave
- Upcoming efforts to utilize the Lake Mead Model for water quality concerns, specifically looking at nitrite-nitrate concentrations

LVVWAC Update:
October 8, 2024 Meeting

Received update on Lower Las Vegas Wash

- Since 2019, SNWA's focus has been on Weirs 5–9, particularly Weir 5, and work began on environmental compliance for that project
- Erosion continues and Weir 3 failed in 2023
- Due to changes in NPS leadership and staff; challenges regarding environmental compliance, funding and authorizations; and significant cost inflation, staff researched stabilization alternatives to Weirs 5–9
  - Two major questions for alternatives: 1) how much will they cost, and 2) how long will they protect upstream infrastructure?
  - Proposed project: Weir 3.5, a sheet-pile control structure, to protect upstream infrastructure for 30+ years; total cost estimated at $52.5 million; construction to start summer of 2028 and take 30 months

Next Meeting

April 8, 2025

2 p.m.