AGUA HEDIONDA 2022 ANNUAL REPORT

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We would also like to acknowledge the time and effort of our field volunteers who make this all possible: Janell Cannon, Scott Engel, Jan Neff-Sinclair, Diane Campbell and Karen Merrill .

Background

In the spring of 2019 Preserve Calavera created the North San Diego County Watershed Monitoring Program (NSDCWMP) to carry on the decade-long work of San Diego Coastkeeper (SDCK) to assess the health of local surface waters. The three watersheds of Carlsbad's lagoons, all of which are part of the Carlsbad Hydrologic Unit, are evaluated for a variety of physical, chemical and biological parameters on a bimonthly basis.

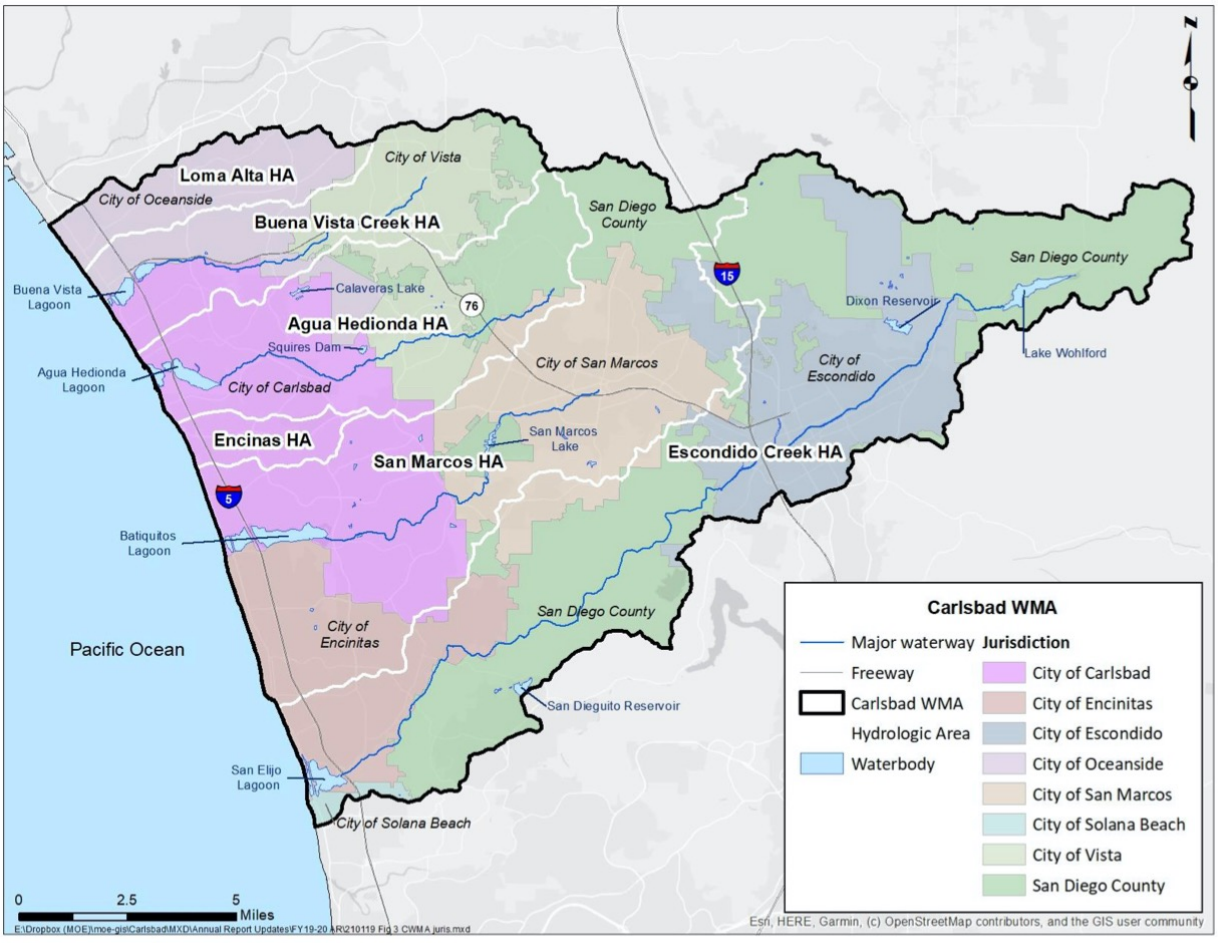


Figure ES-1: Carlsbad Watershed Management Area

***Figure 1**: The Carlsbad Watershed Management Area. Source: CWMA-Water Quality Improvement Plan page ES-2*

NSDCWMP is an all-volunteer citizen science effort with a leadership management team comprised of one Preserve Calavera board member (also leader of the Buena Vista Creek monitoring team) and one representative from and leader of the Batiquitos Lagoon team. Our technical advisors are from the CA Waterboard and the San Diego Regional Water Quality Control Board (SDRWCB). Data is posted at www.preservecalavera.org. Monitoring data for the Carlsbad Watershed can also be accessed through the California Environmental Data Exchange Network (CEDEN) www.ceden.org or the WQIP Annual Reports. The program began testing in July 2019.

The Agua Hedionda Watershed begins along the southwestern slopes of the San Marcos Mountains and flows over 10 miles until discharging into the Pacific Ocean at the Agua Hedionda Lagoon in Carlsbad and is about 18,800 acres in area. Most of the hydrologic area is in the City of Carlsbad (41%); the remainder is in Vista (24%) and San Diego County (24%) and there are also small portions in Oceanside and San Marcos. The Lagoon extends inland for about 1.7 miles and it is 0.5 miles wide at its widest point. As a result of Highway 101, Interstate 5 and Highway 101, the lagoon has been split into 3 waterway sections as you move inland from the coast: the outer, middle and inner lagoon.

The diverse habitats of this hydrological area range from coastal sage scrub to salt marsh and mudflats. There are over 650 acres of Ecological Reserve Land that supports numerous birds (including the coastal California gnatcatcher), mammals, amphibians, and reptiles.

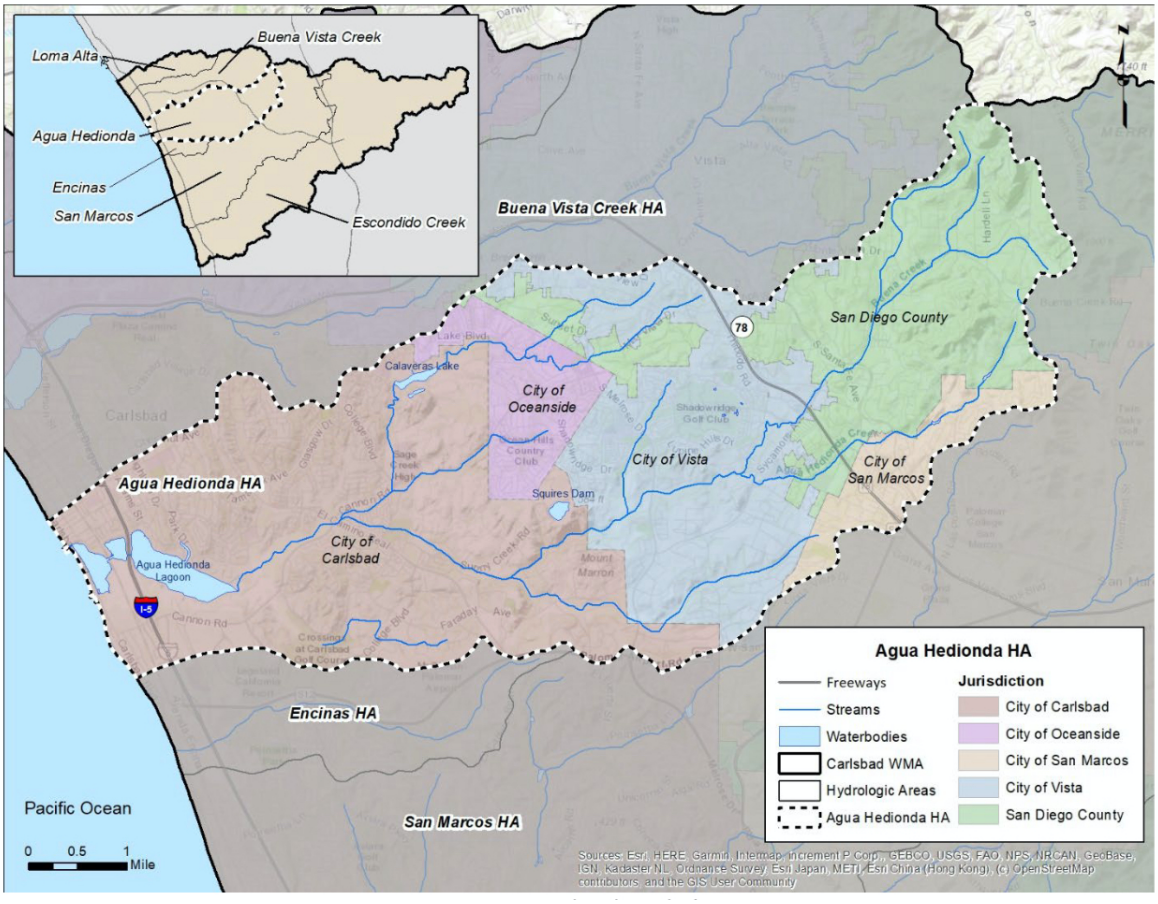


Figure 2: Agua Hedionda Hydrologic Unit (Source: Carlsbad Watershed Management Area-Annual Report p.AHAA 14)

***Figure 3**: Agua Hedionda Lagoon; It's three sections are visible (Source: Google Maps)*

Agua Hedionda is the only lagoon in San Diego County which supports commercial and recreational uses. Carlsbad Desalinization Plant, Hubbs Seaworld fish hatchery and Carlsbad Aquafarm are at the west end; Ecke Family YMCA Aquatic Park, California Watersports and boat ramps are in the center section and a state ecological reserve and nature center are at the east end. The inner lagoon is designated REC-1 beneficial use (water sports) and the outer lagoon SHELL-1 for the aquafarm.

In June of 2020, installation of new fish-friendly seawater intake pumps at the Carlsbad Desalination Plant was completed. The three intake pumps are part of a broader effort to ensure the long-term health of the marine environment near the Desalination Plant. And in September of 2020, AB-1949 Fisheries: California Ocean Resources Enhancement and Hatchery Program was passed. The Bill strengthens and expands the marine fish hatchery program at the lagoon's fish hatchery and aquafarm— allowing additional breeding of the native California species that have been depleted by commercial and recreational fishing.

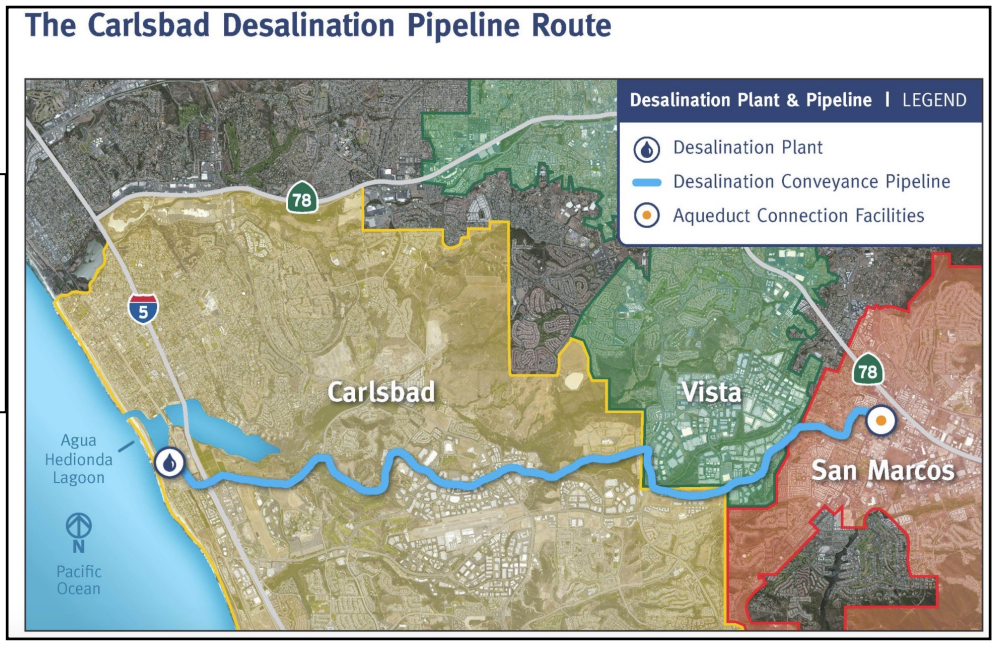


***Figure 4:** Poseidon Water assumed stewardship of the lagoon in 2019. (Source: [Carlsbad Desalination])*

Figure 5: Project Location Map for Dredging and Sand Replacement. Red outline indicates dredging area. (Source: Agua Hedionda Lagoon - Outer Basin 2020-21 Maintenance Dredge/ Beach Nourishment Cycle Sand Deposition Plan)

Lagoon Dredging:

As a result of accumulated sedimentation, and the absence of significant tidal flushing, the lagoon was becoming an increasingly restricted salt water marsh. The entire lagoon was dredged and permanently opened to the sea between 1952 to1954 to provide a tidal prism adequate enough to supply cooling water for the San Diego Gas and Electric Company's Encina Power Plant located on the south side of the outer lagoon. The resultant deepening and tidal flushing created a new deepwater bay environment.

The lagoon has been dredged every one to four years since 1954. This began as part of the Encina power plant operations. Now that the Encina plant has been retired, Poseidon Water has taken over the dredging, as part of an agreement when the seawater desalination plant was built and came online in 2015.[1] Regular dredging is needed to remove sand that slowly enters the lagoon and forms a large sand bar in the western-most part of the lagoon. Dredging was most recently conducted from February of 2021 through mid-April of 2021.

[1] https://www.carlsbadca.gov/news/displaynews.asp?NewsID=2277&TargetID=1

Agua Hedionda Creek Restoration Project:
The City of Carlsbad's Agua Hedionda's Creek Restoration Project continues to focus on restoring riparian habitat areas to improve flood control, reduce erosion, stabilize riverbanks, increase habitat connectivity and quality, and improve water quality. While progress has occurred, the city recognizes that achieving 2023 interim and 2028 final restoration goals are in jeopardy and the final construction timeline was unknown as of the Carlsbad WQIP 2021-2022 Annual Report.

REC-1 Beneficial Use in Agua Hedionda Lagoon- Report December 2022:
A special Agua Hedionda Lagoon Bacterial Study[2] was done in order to address concerns expressed by San Diego Water Board. The responsible agencies re-evaluated the REC-1 beneficial use in the Lagoon in 2020, which resulted in the elevation of bacteria and the associated REC-1 beneficial use to a priority water condition. A monitoring and assessment component was put in place to determine whether subsequent action would be needed. Sampling was conducted on a weekly basis for one year from October 2021 to September 2022.

The final results of the study showed that bacteria levels (*Enterococcus)* in the lagoon are below state water quality objectives and that the water is safe for a variety of recreational uses. The figure below plots the monitoring results relative to the water quality objective for Enterococcus, which is based on the geometric mean over a 6-week period.

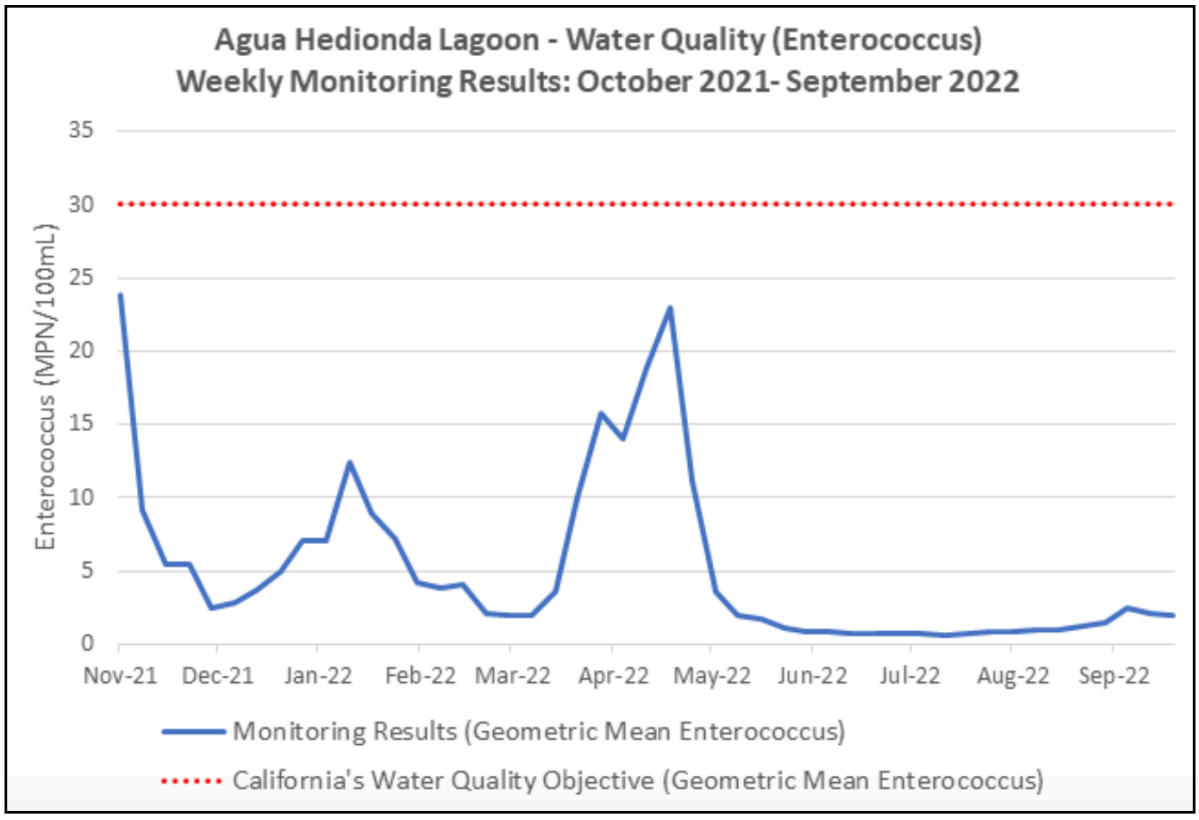


Figure 6: Final Study Results Agua Hedionda Lagoon (City of Carlsbad)

[2] *Agua Hedionda Lagoon REC-1 Report*

Purpose

The purpose of this annual report is to provide the water testing data for Agua Hedionda Creek Watershed that was collected during 2022 (Appendix). Each parameter will be evaluated for anomalies and the overall trends of the watershed will be summarized based upon this data. Monitoring was carried out in January, March, July, September and November of 2022. The data will also be compared with our previous years of data from 2021, 2020 and 2019, as well as 2018 and 2017 data that was collected by San Diego Coastkeeper. Environmental DNA (eDNA) was also collected at one testing site as part of a pilot program.

Sampling Sites

The Agua Hedionda Creek team sampled the sites AH010, AH020 and AH030 identified by the yellow pins in the map shown in Figure 7. A photograph of each site can be viewed in Appendix B:

- AHL010-Samples the convergence of Calavera Creek, Agua Hedionda Creek, and other tributaries. This site is located at the eastern end of lagoon before recreational areas; close to the intersection of Cannon Rd and El Camino Real. There is no public access in the sample area.
- AHL020-Samples Calavera Creek in the Lake Calavera Preserve in Carlsbad. This site is protected open space.
- AHL030-Samples Agua Hedionda Creek under south Melrose in Vista. This site is at the very eastern most edge of Buena Vista Park. There is residential development to the east and undeveloped lands to the west.

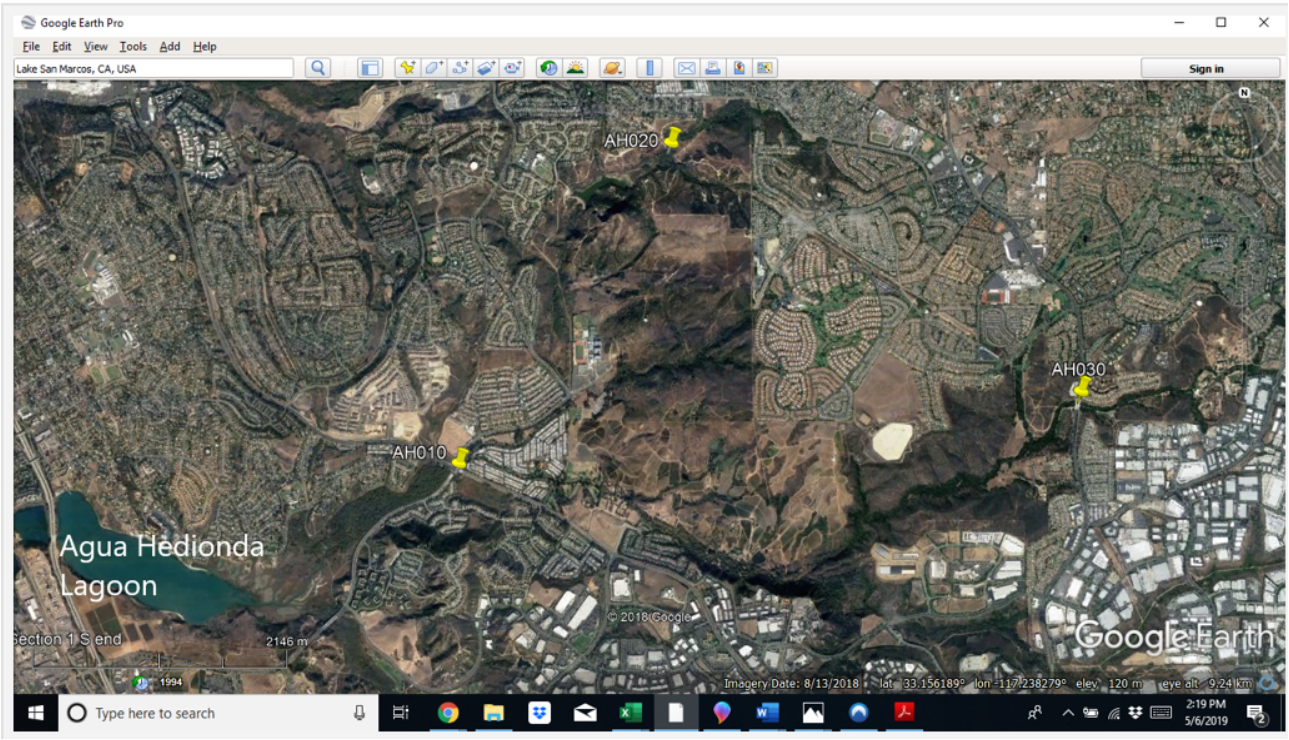


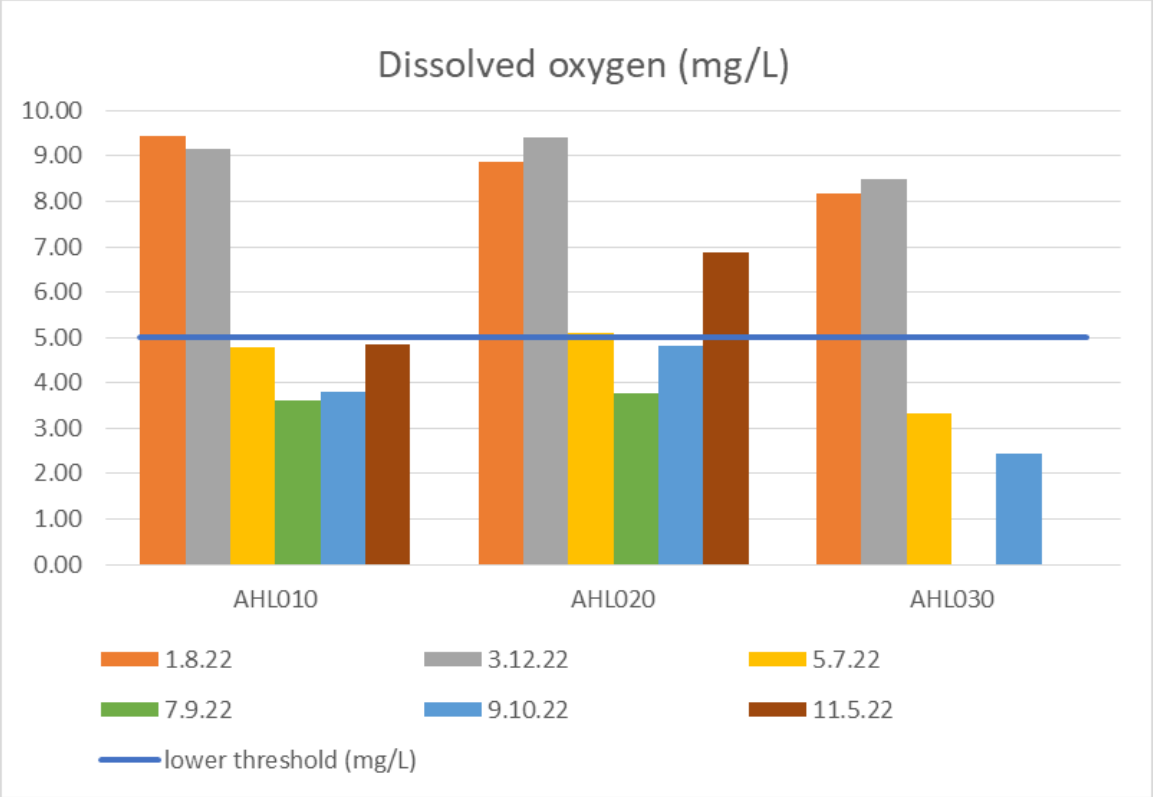
***Figure 7**- Agua Hedionda Creek sampling sites (Source: Google maps)*

Test Data and Results: Testing was conducted bimonthly during 2022 beginning in January on the following dates: January 8, March 12, May 7, July 9, September 10 and November 5.
The following should also be noted:

- There was heavy rain event on September 9 which was just prior to testing on September 10. Prior to that event there had been a prolonged dry period.
- Site AHL030 was dry during July and November testing dates.

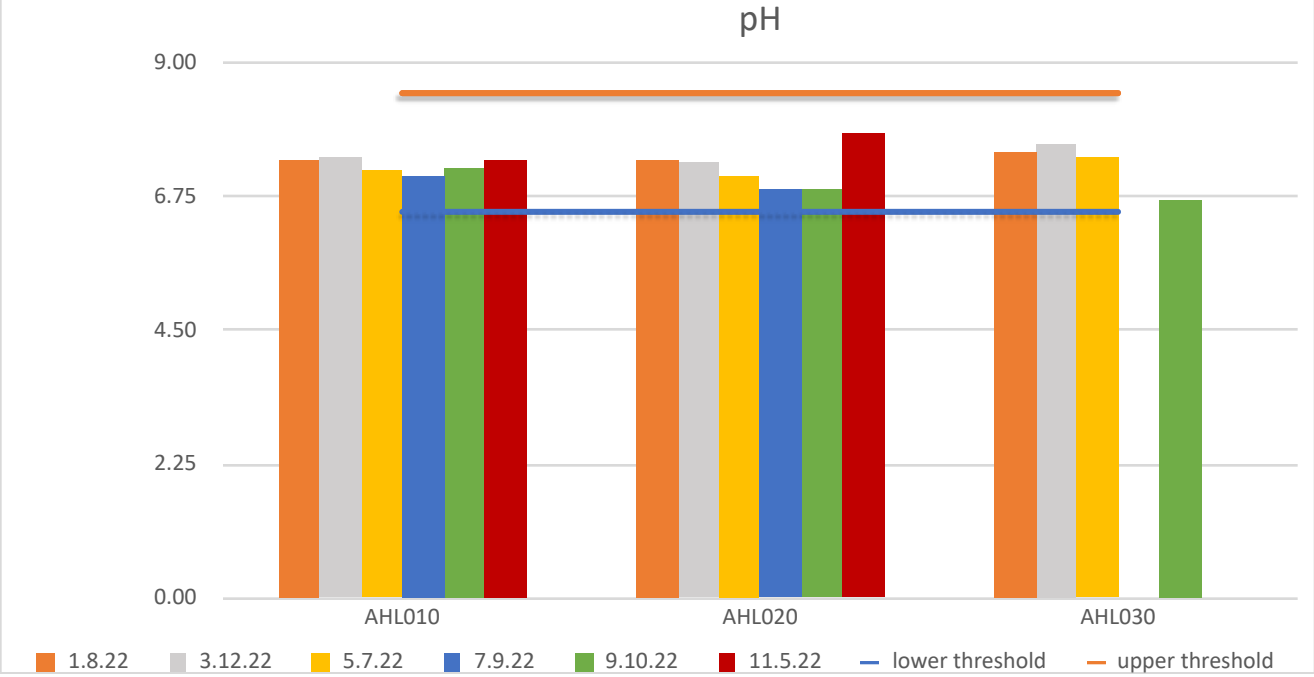
Field Parameters

Dissolved Oxygen (DO): San Diego Basin Plan[3] threshold level for dissolved oxygen is 5.0 mg/L or above. Dissolved oxygen was well above the threshold level at the three test sites during January and March. As the year progressed and temperatures began rising, DO levels declined below threshold level. DO levels began rising at the end of the year at sites AHL010 and AHL020 (data missing for 030).



[3] https://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/docs/R9_Basin_Plan.pdf ; Appendix C

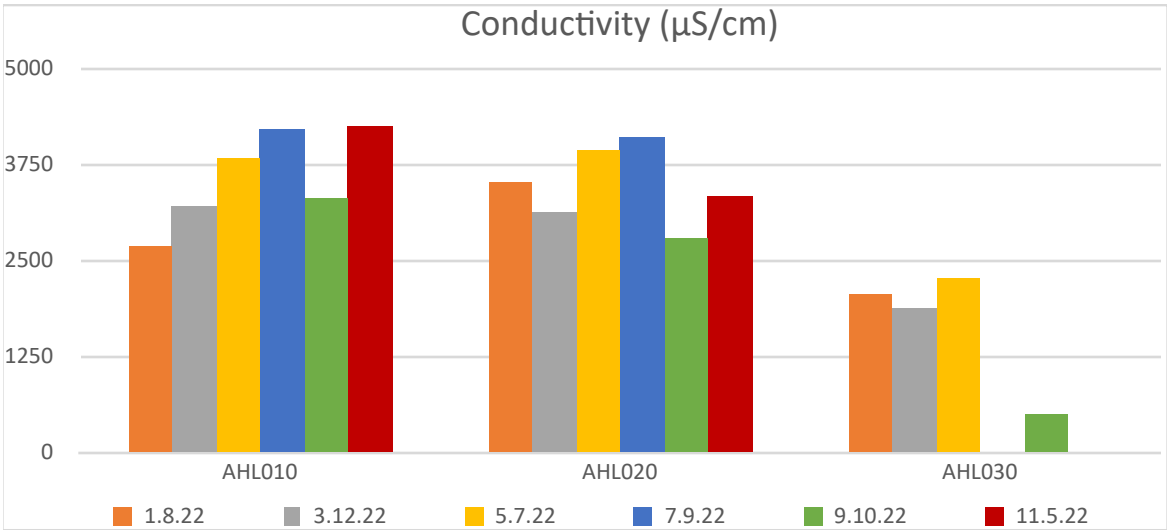
pH: The pH ranged from 7.01 to 8.5 for all sites. All values fall within the acceptable range for the San Diego Basin Plan of 6.5-8.5.



Conductivity: Conductivity fluctuated between 514 - 4257 **µ**S/cm. There is no threshold for conductivity, it merely reflects the amount of dissolved minerals in the water, however, the California Waterboard typically sees levels between 100-2000 µS/cm in freshwater streams (*Electrical Conductivity/Salinity Fact Sheet*).

Sites AHL010 and 020 showed higher values than those typically seen in other freshwater streams in California.

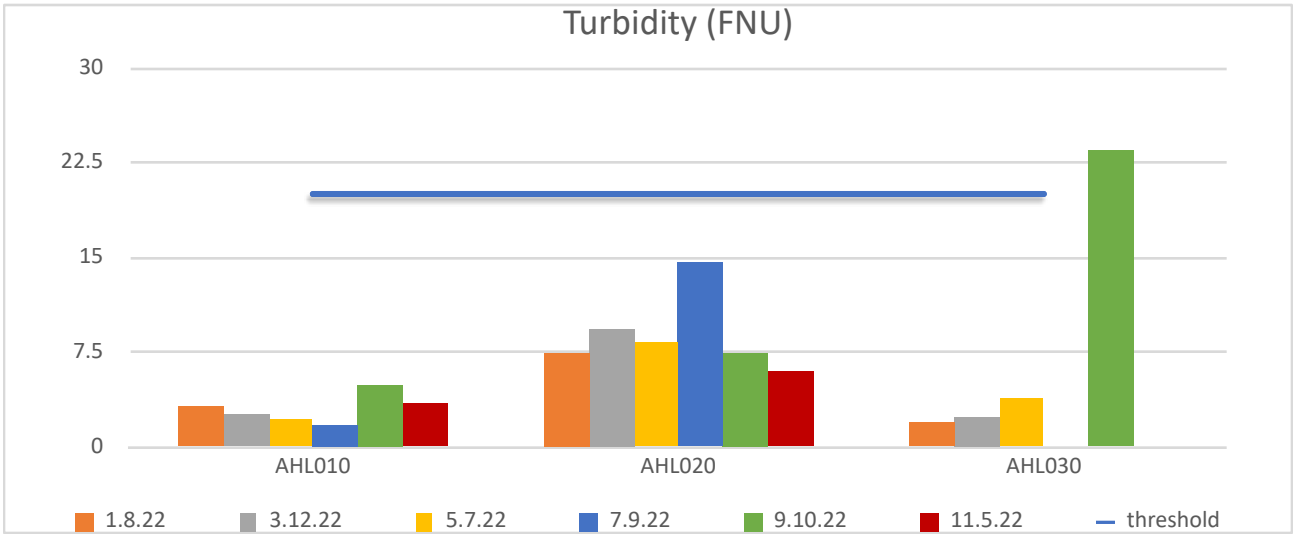
Site AHL030 had considerably lower conductivity than the other two sites. There were 2 readings below 2000 µS/cm; March-1890 µS/cm and September -514 µS/cm. The other two values for this site were close to 2000 µS/cm.



Laboratory Tests-Turbidity (cloudiness), total coliform, *Escherichia coli (E. coli)*, nitrates, total phosphorus, reactive phosphorus and ammonia are measured in the lab using 'grabbed' samples transported from the field.

Turbidity: High turbidity can hinder the quantity light penetrating water which may affect photosynthesis. The threshold is 20 FNU.

With just one exception, all turbidity readings were well below threshold. AHL030 reading in September was 23.4 FNU. Since site AHL030 was dry during July and November testing dates, no trend can be established.



E. coli: Coliforms are a group of bacteria found in the digestive tracts of animals, including humans and their waste products. They are also found in plant and soil material. They may or may not indicate pathogenic bacteria. There is no threshold for these bacteria due to the wide types of sources. *E. coli*, however, is much more indicative of potential concern as many strains are pathogenic. The test we run, using IDEXX Quanti-tray/ Colilert, measures all *E. coli*, pathogenic or not. The threshold for this bacteria is 320 MPN/100 mL[3].

We chose to omit a graph of *E. coli* and just present the results in table format; deciding that this would be the best representation of the data for this year. The unusual results for September 10 likely resulted because of the heavy rain event on September 9. Prior to that event there had been a prolonged dry period.

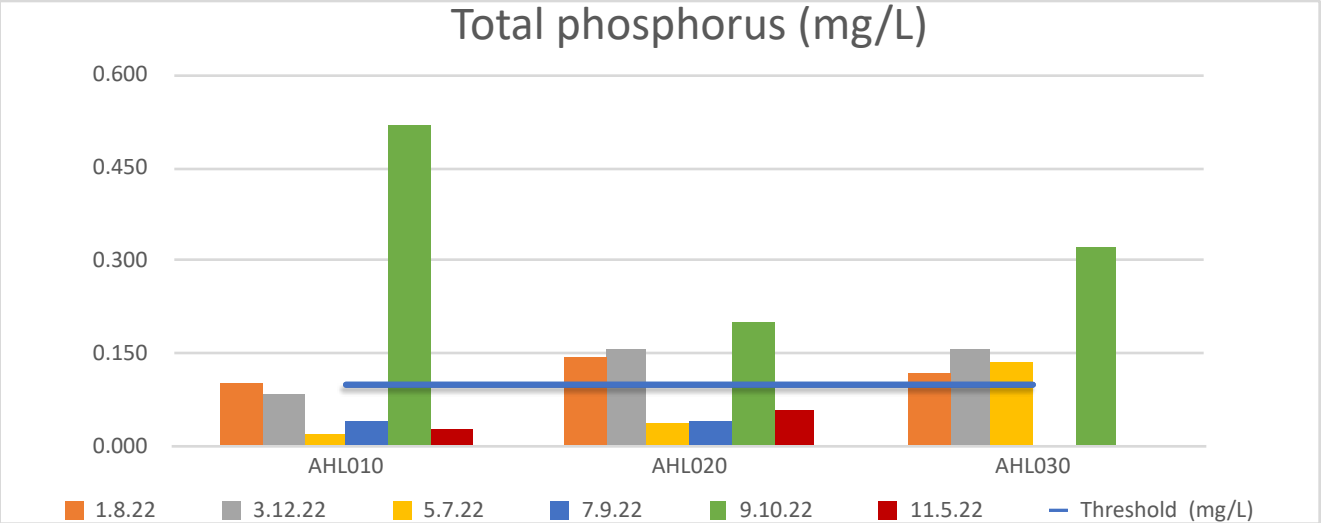
The values in red below were above the scale limit and the value for AHL010 was within scale limit but still well above the threshold value of 320 MPN/100 mL. There was also no data available at site AHL030 for the months before and after these off-scale test. There is also an unusually high value of 7701 MPN/100 mL at the AHL020 test site in March. It was noted that a person was present around the test area just prior to sampling. There may have been some localized contamination that was picked up during sampling.It can be noted that readings in January and November were all well below threshold limit.

E. Coli

Site	threshold (MPN/100 mL)	1.8.22	3.12.22	5.7.22	7.9.22	9.10.22	11.5.22
AHL010	320	62	228.0	439.0	594	11588.0	233.0
AHL020	320	10	7701.0	31.0	10	48392	146.0
AHL030	320	10	374.0	148.0	dry	48392	dry

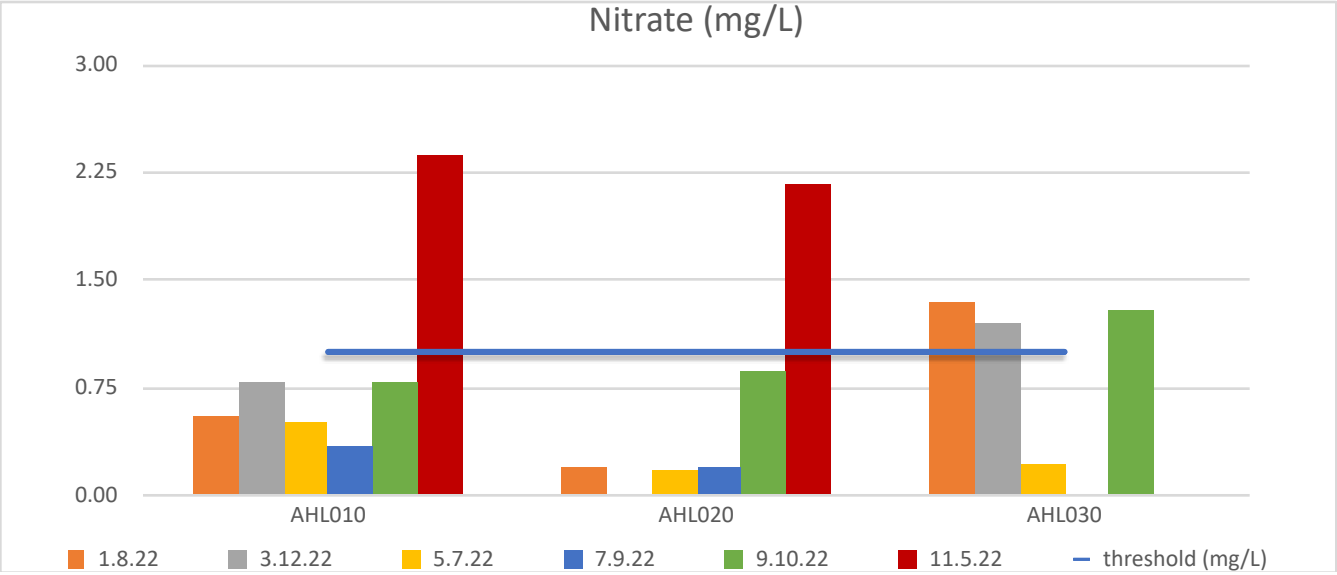
Total Phosphorus: Elevated phosphorus is often the result of fertilizer runoff and can lead to algal blooms. The threshold for San Diego watersheds is 0.1 mg/L[3].

September testing had well above threshold values across all 3 sites. Runoff from a rain event prior to testing may have contributed to the high values. Site AHL010 had foam in pools at testing time. AHL010 was at or below threshold for the other test dates. AHL020 and AHL030 had several additional test dates above threshold which is a concern.



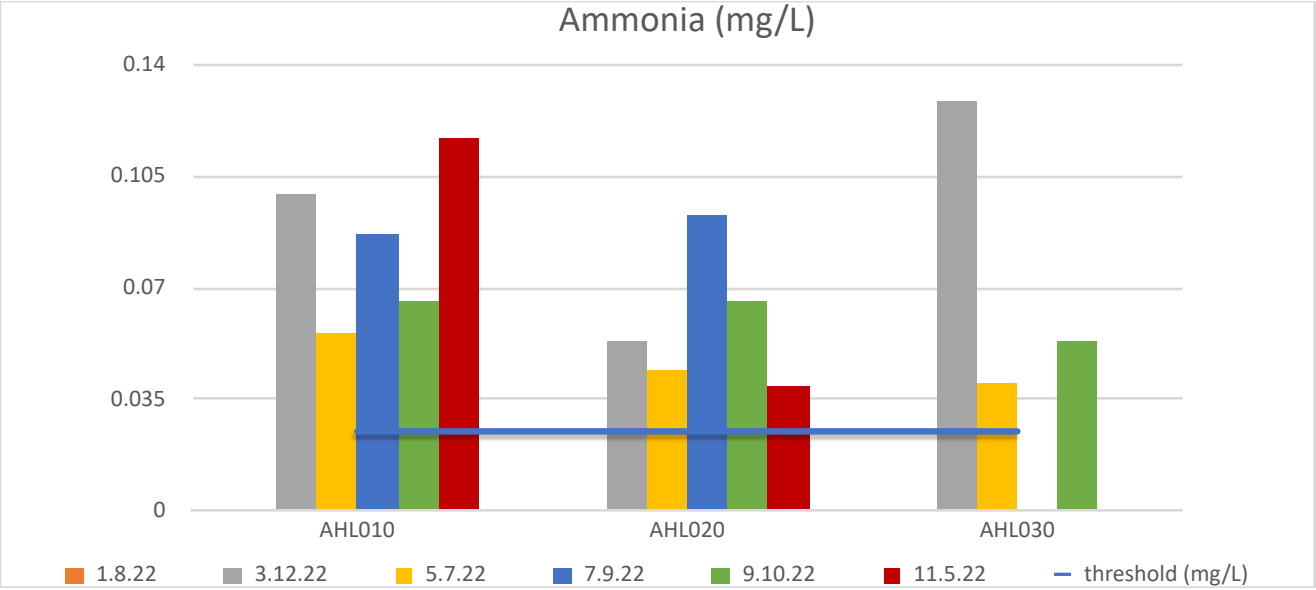
Nitrates: Nitrates generally enter waterways from fertilizer runoff. Threshold level for nitrates is 1.0 mg/L. Values for nitrates fluctuated among the three test sites.

AHL010 and AHL020 had well above threshold values for November (AHL030 was dry). AHL030 had values above threshold at 3 of the 4 dates tested. It does not appear that the rain event had a significant effect on the September data as we see for phosphorus; although values were somewhat higher than the previous month. We don't have an explanation for the cause of high values for nitrates in November at sites AHL010 and AHL020 (there is no data for AHL030 because site was dry).



Ammonia- Ammonia is another form of nitrogen. It can cause direct toxic effects on aquatic life. Ammonia can enter waterways through direct means such as municipal effluent discharges and the excretion of nitrogenous wastes from animals, and indirect means such as and runoff from agricultural lands. Ammonia's threshold is 0.025 mg/L. New ammonia protocols were implemented in 2021. [4]

Ammonia was above threshold at all sites except in January at sites AHL020 and AHL030. Above threshold levels of ammonia continue to be a concern for the effect on aquatic life.



Environmental DNA (eDNA) - Our water quality testing expanded in 2022 to include a pilot program collecting eDNA eDNA from our 3 watersheds. Our samples were tested for fish and phytoplankton. The fish species were ranked from most abundant to least. All of the fish species found are non-native. Phytoplankton are not listed in the data table below. It will take additional time to classify and quantify them due to their abundance.

Date	Site	Fish species
5/7/2022	AHL010	Green sunfish>largemouth bass
	AHL010 Duplicate	Green sunfish>largemouth bass>bluegill>western mosquito fish

[4] New ammonia protocol: filter in field and pour ~50 mL into a bottle with 0.1 mL 10N HCl (to lower pH to <2). pH adjust back to neutral just before assay in lab.

Data Comparison With Previous Years

San Diego Coastkeeper's testing procedures and protocols continued to be followed after the testing was taken over by NSDCWMP.

Testing has become more consistent over the past 3 years which is important for data comparison with a few exceptions in 2020 and 2021 due to COVID restrictions at the time. Testing had been irregular from 2017 through 2019.

Dissolved Oxygen

DO has less past data available than the other parameters. Although the data is limited from past years, 2022 does fit into the trends. During the colder months at the start of the year, January and March, more dissolved oxygen is in the water and the readings are above threshold level. Moving into May, July and September, warmer temperatures drop the DO below threshold levels. DO levels rise above threshold levels in November as temperatures cool.

pH

pH continued to fall within the acceptable range for all of 2022; which is consistent with all of the previous testing years. (There was one exception in 2020 as site AHL 010 had one measurement slightly below the acceptable range in September.)

Turbidity

Turbidity measurements for 2022 are similar to past years. It is difficult to spot any trends as looking at present and past years, most values are below threshold with one or two reading above threshold at sites AHL020 or AHL030. Site AHL010 has always been below threshold at all sampling data.

Volunteers added data on the collection site depth of the water samples. At this point, there is no consistent data showing that collection site depth affects turbidity. In September 2022 at site AHL030 there was an over threshold reading of 23.4 FNU and collection depth was 14 inches. The well under threshold reading at site AHL020 was 7.47 FNU and the collection depth was 6 inches. Additional study needs to be done to understand the significance, if any, of this data.

E. coli

In last year's report we had hoped for greater consistency in the coming year. Unfortunately 2022 had inconsistencies as well. We will look forward to next year.

It can be noted that as in prior years, as expected, E. coli was lowest in January likely due to cooler temperatures.

Total Phosphorus

Total phosphorus continues to be difficult to compare time of year and over years. The measurements do not appear to follow consistent trends although AHL010 does generally have lower phosphate and fewer values over threshold.

The values gathered during September testing are likely affected by the rain event so it is difficult to make comparisons with prior years.

Nitrates

As in past years, there are concerns regarding continuing data that shows over threshold measurements. Each site showed at least one over-threshold result for nitrates. As we are able to make consistent bimonthly water samples over the coming years, we may be able to establish some clear trends.

Ammonia

Above threshold values for ammonia continue to be a problem at all three test sites in 2022 as it has been in years past. This will continue to be a concern.

Final Thoughts:

- We hope to continue sampling 6 times throughout the years to make long term comparisons more meaningful.
- We hope to continue eDNA testing annually.
- We plan to expand testing to include microfibers. Samples were obtained and results are pending.

APPENDIX A: 2022 NSDCWMP DATA COLLECTION SPREADSHEET

It should `noted that **Dissolved Oxygen** is the only variable that is highlighted for a l**ower than threshold value**. All other variables are highlighted for concern when the value is higher than the threshold value.

January Data

Date	Site	Collection time	Avg DO (mg/L)	Avg Conductivity (uS/cm)	Avg pH	Avg Water temp (°C)	Avg air temp (°C)	turbidity (FNU)	Total phosphorus (mg/L)	Reactive phosphorus (mg/L)
1.8.22	AHL010	11:14 AM	9.44	2683	7.37	13.4	17	3.12	0.101	0.083
1.8.22	AHL020	10:22 AM	8.88	3513	7.39	10.9	18	7.34	0.146	0.041
1.8.22	AHL030	9:05 AM	8.16	2074	7.53	11.2	14.5	1.92	0.120	0.112
	threshold		**< 5.00**		6.5-8.5			>20.00	> 0.100	
	over threshold									

Date	Site	Collection time	Nitrate (mg/L)	Ammonia (mg/L)	Total coliform (MPN/100 mL) 1:10	*E. coli* (MPN/100 mL) 1:10	Total coliform (MPN/100 mL)	*E. coli* (MPN/100 mL)	Collection site depth (")	Flow (N,B,M,R,F)	Ppt within 72 hr?
1.8.22	AHL010	11:14 AM	0.543	NA	1203.3	6.2	12033	62	22	3	no
1.8.22	AHL020	10:22 AM	0.197	0.012	82.0	1.0	820	10	9	1	no
1.8.22	AHL030	9:05 AM	1.350	0.021	145.5	1.0	1455	10	18	3	no
	threshold		> 1.000	>0.025				>320			
	over threshold										

APPENDIX A (continued) : 2022 NSDCWMP DATA COLLECTION SPREADSHEET

March Data

Date	Site	Collection time	Avg DO (mg/L)	Avg Conductivity (uS/cm)	Avg pH	Avg Water temp (°C)	Avg air temp (°C)	turbidity (FNU)	Total phosphorus (mg/L)	Reactive phosphorus (mg/L)
3.12.22	AHL010	11:02 AM	9.14	3193	7.41	14.1	19.3	2.57	0.085	0.044
3.12.22	AHL020	10:03 AM	9.39	3143	7.34	10.9	23.0	9.41	0.157	0.048
3.12.22	AHL030	9:20 AM	8.48	1890	7.63	10.8	17.3	2.24	0.159	0.105
	threshold		< 5.00		6.5-8.5			>20.00	>0.100	
	over threshold									

Date	Site	Collection time	Nitrate (mg/L)	Ammonia (mg/L)	Total coliform (MPN/100 mL) 1:10	*E. coli* (MPN/100 mL) 1:10	Total coliform (MPN/100 mL)	*E. coli* (MPN/100 mL)	Collection site depth (")	Flow (N,B,M,R,F)	Ppt within 72 hr?
3.12.22	AHL010	11:02 AM	0.786	0.099	344.8	22.8	3448.0	228.0	20	3	no
3.12.22	AHL020	10:03 AM	0.019	0.053	1413.6	770.1	14136.0	7701.0	8	2	no
3.12.22	AHL030	9:20 AM	1.200	0.129	198.9	37.4	1989.0	374.0	9	3	no
	threshold		>1.000	>0.025				>320			
	over threshold										

APPENDIX A (continued) : 2022 NSDCWMP DATA COLLECTION SPREADSHEET

May Data:

Date	Site	Collection time	Avg DO (mg/L)	Avg Conductivity (uS/cm)	Avg pH	Avg Water temp (°C)	Avg air temp (°C)	turbidity (FNU)	Total phosphorus (mg/L)	Reactive phosphorus (mg/L)
5/7/22	AHL010	11:28AM	4.77	3840	7.17	19.7	20.1	2.23	0.021	0.021
5/7/22	AHL020	9:34AM	5.09	3937	7.11	16.0	19.9	8.28	0.035	0.071
5/7/22	AHL030	8:52AM	3.33	2263	7.40	17.0	19.4	3.72	0.134	0.111
threshold			> 5.00		6.5-8.5			< 20.00	< 0.100	
over threshold										

Date	Site	Collection time	Nitrate (mg/L)	Ammonia (mg/L)	Total coliform (MPN/100 mL) 1:10	*E. coli* (MPN/100 mL) 1:10	Total coliform (MPN/100 mL)	*E. coli* (MPN/100 mL)	Collection site depth (")	Flow (N,B,M,R,F)	Ppt within 72 hr?
5/7/22	AHL010	11:28AM	0.509	0.056	>2419.6	43.9	>24196	439.0	28	3	no
5/7/22	AHL020	9:34AM	0.185	0.044	547.5	3.1	5475.0	31.0	8	1	no
5/7/22	AHL030	8:52AM	0.207	0.040	387.3	14.8	3873.0	148.0	14	2	no
threshold			<1.000	<0.025				<320			
over threshold											

APPENDIX A(continued): 2022 NSDCWMP DATA COLLECTION SPREADSHEET

July Data

Date	Site	Collection time	Avg DO (mg/L)	Avg Conductivity (uS/cm)	Avg pH	Avg Water temp (°C)	Avg air temp (°C)	turbidity (FNU)	Total phosphorus (mg/L)	Reactive phosphorus (mg/L)
7/9/22	AHL010	10:35A	3.60	4210	7.11	22.5	23.0	1.61	0.043	0.038
7/9/22	AHL020	9:40A	3.78	4103	6.89	19.5	25.1	14.60	0.043	0.094
7/9/22	AHL030	**DRY**								
threshold			<5.00		6.5 - 8.5			>20.00	>0.100	
over threshold										

Date	Site	Collection time	Nitrate (mg/L)	Ammonia (mg/L)	Total coliform (MPN/100 mL) 1:10	*E. coli* (MPN/100 mL) 1:10	Total coliform (MPN/100 mL)	*E. coli* (MPN/100 mL)	Collection site depth (")	Flow (N,B,M,R,F)	Ppt within 72 hr?
7/9/22	AHL010	10:35A	0.336	0.087	2419.6	59.4	24196.0	594	16	3	no
7/9/22	AHL020	9:40A	0.203	0.093	686.7	1	6867.0	10	6	2	no
7/9/22	AHL030	**DRY**									
threshold			>1.000	>0.025				>320			
over threshold											

APPENDIX A(continued): 2022 NSDCWMP DATA COLLECTION SPREADSHEET

September Data

Date	Site	Collection time	Avg DO (mg/L)	Avg Conductivity (uS/cm)	Avg pH	Avg Water temp (°C)	Avg air temp (°C)	turbidity (FNU)	Total phosphorus (mg/L)	Reactive phosphorus (mg/L)
9/10/22	AHL010	11:09A	3.79	3300	7.22	23.3	25.6	4.93	0.518	0.082
9/10/22	AHL020	10:03A	4.83	2797	6.87	22.8	24.9	7.47	0.199	0.297
9/10/22	AHL030	9:00A	2.45	514	6.69	22.9	23.5	23.40	0.321	0.163
threshold			<5.00		6.5-8.5			>20.00	>0.100	
over threshold										
anomaly										

Date	Site	Collection time	Nitrate (mg/L)	Ammonia (mg/L)	Total coliform (MPN/100 mL)	*E. coli* (MPN/100 mL)	Collection site depth (")	Flow (N,B,M,R,F)	Ppt within 72 hr?	notes
9/10/22	AHL010	11:09 A	0.786	0.066	48392.0	11588.0	21	3	y	Foam in pools, insects, crayfish
9/10/22	AHL020	10:03 A	0.866	0.066	48392.0	48392.0	6	3	y	insects, birds
9/10/22	AHL030	9:00A	1.300	0.053	48392.0	48392.0	14	3	y	higher than normal flow
threshold			>1.000	>0.025		>320				
over threshold										
above scale										

APPENDIX A(continued): 2022 NSDCWMP DATA COLLECTION SPREADSHEET

November Data

Date	Site	Collection time	Avg DO (mg/L)	Avg Conductivity (uS/cm)	Avg pH	Avg Water temp (°C)	Avg air temp (°C)	turbidity (FNU)	Total phosphorus (mg/L)	Reactive phosphorus (mg/L)
11/02/22	AHL010	9:43 AM	4.86	4257	7.36	14.1	16.5	3.50	0.030	0.033
11/02/22	AHL020	10:39 AM	6.87	3363	7.80	11.5	16.4	6.02	0.058	0.037
11/02/22	AHL030	**DRY**								
threshold			<5.00		6.5-8.5			>20.00	>0.100	

Date	Site	Collection time	Nitrate (mg/L)	Ammonia (mg/L)	Total coliform (MPN/100 mL) 1:10	*E. coli* (MPN/100 mL) 1:10	Total coliform (MPN/100 mL)	*E. coli* (MPN/100 mL)	Collection site depth (")	Flow (N,B,M,R,F)	Ppt within 72 hr?	notes
11/02/22	AHL010	9:43 AM	2.370	0.117	2419.6	23.3	24196.0	233.0	18	3	y	reeds cut down, channel dug near collection site
11/02/22	AHL020	10:39 AM	2.160	0.039	108.6	14.6	1086.0	146.0	4	1	y	
11/02/22	AHL030	**DRY**										DRY
threshold			>1.000	>0.025		>320						
over threshold												

Appendix B: Site Photos taken December 27, 2022 by Karen Merrill and Ellen Bartlett

Site AHL010

Appendix B: Continued

Site AHL 020

Appendix B: Continued

Site AHL 030