BLUE WATER TASK FORCE

O‘AHU WATER QUALITY REPORT

2023

SURFRIDER FOUNDATION
O'AHU

BLUE WATER TASK FORCE

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INTRODUCTION

The Blue Water Task Force (BWTF) is the Surfrider Foundation's volunteer water quality monitoring program that provides critical information to protect public health at our beaches.

In 2023, the BWTF programs collected 869 water samples at 65 sites throughout the islands of Kaua'i (18), Maui (23), and O'ahu (24). Our BWTF Teams are composed of trained volunteers who sample biweekly on O'ahu and once a month on Kaua'i and Maui.

Water quality samples are tested for the presence of *enterococcus*, a fecal bacteria that indicates the presence of human or animal waste in the water. Elevated levels of *enterococcus* increase the likelihood that other pathogens that can make people sick may be present.

The goal of BWTF is to fill in monitoring gaps and quickly communicate with the public where it is safe to swim and where bacteria levels are elevated. Water quality results are compared to the standards used by the Hawai'i Department of Health. (HDOH) to make beach closure decisions. Known as the Beach Action Value (BAV), this threshold is set at 130 colony forming units of *Enterococcus* per 100mL sample (130 CFU/100mL).

The water quality information generated by the BWTF augments the data that the HDOH provides through its beach water quality monitoring program. HDOH services test only a specific number of beaches on each island, primarily those with lifeguards and in popular tourist areas, while the BWTF covers a variety of areas popular with local families and recreational users including surf spots and local swimming beaches.

Beachgoers should take precautions swimming, surfing, or recreating after heavy rain events for 24-48 hours. Do not enter brown water areas or where there is a warning sign for high bacteria levels.

Community members are encouraged to check water quality results posted online before they head to the beach at **bwtf.surfrider.org**. Current and historic data are available.

ACCESSING DATA

BWTF data is posted online 24-hours after it is collected (see websites below). If you have questions about a specific island's data, please reach out to the below coordinators. You can also direct questions to Lauren Blickley (LBlickley@surfrider.org), Surfrider Foundation's Hawai'i Regional Manager.

The BWTF would not be possible without the dedication of our many volunteers and program coordinators (who are also volunteers) on each island. We appreciate our volunteers tremendously.

KAUA'I

Program Coordinator:

- Rob Brower (rob@browerhomes.com)

View Data: https://bwtf.surfrider.org/explore/23

O'AHU

Program Co-Coordinators:

- Dr. Dan Amato (bwtf@oahu.surfrider.org)
- Arleen Velasco (bwtf2@oahu.surfrider.org)

View Data: https://bwtf.surfrider.org/explore/44

MAUI

Program Co-Coordinators:

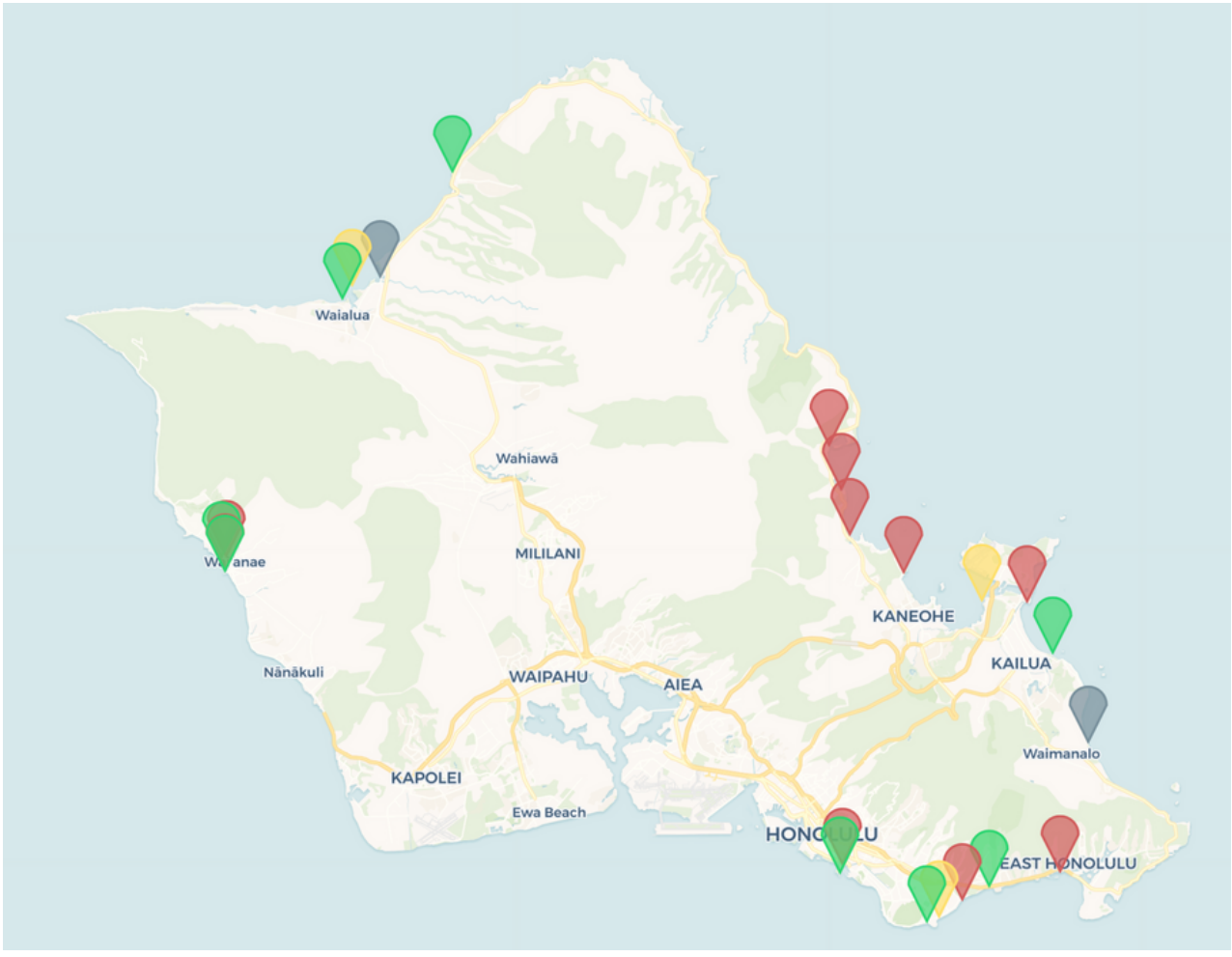
- Greg Masessa (bwtf@maui.surfrider.org)
- Kristina McHugh (bwtf2@maui.surfrider.org)

View Data: https://bwtf.surfrider.org/explore/51

O'AHU DATA SUMMARY

This report provides an analysis of water test results for 24 O'ahu sites (**Map 1**) that were monitored in 2023. Our water quality results indicate that certain sites frequently experience high bacteria levels that exceed state health standards (**Table 1**). Note BWTF results are recorded as Most Probable Number (MPN/100 mL), due to our testing methods.

High bacterial counts indicate the presence of human or animal waste in these waters, which may threaten public and ecosystem health. The data is also important in identifying chronically polluted sites that should continue to be prioritized for ongoing monitoring, as well as potential investigation into the sources of the pollution.



Map 1. Blue Water Task Force sites on O'ahu that are sampled once per month. This map was taken from the O'ahu BWTF December 2023 results. Red = sites with high bacteria (>130); Yellow = sites with medium bacteria (36-130); Green = sites with low bacteria (0-35).

O'AHU DATA SUMMARY

TABLE 1: PERCENT OF O'AHU SAMPLES EXCEEDING HEALTH STANDARDS (>130 MPN/100ML)

SITE NAME	TOTAL SAMPLES	% HIGH BACTERIA (>130 mpn/100mL)
Iroquois Point - Kapilina	5	0%
Pilila'au (Kaupuni Stream Mouth)	4	0%
Pūpūkea Tidepools	21	0%
Ka'alawai (Black Point/Cromwells)	23	4%
Kailua Beach Park	25	8%
Pōka'ī Bay (bay side)	24	8%
Pōka'ī Bay (ocean side)	24	8%
Kahaone Loop Pools	22	9%
Ka'alawai (Black Point/East)	22	9%
Wailupe Beach Park	25	12%
Magic Island - Bowls	24	17%
Magic Island - Canoe Launch	23	30%
Kaiaka Bay	22	32%
South Kāne'ohe Bay	25	32%
Wai'alae Beach Park	25	32%
Inoaole Stream	23	39%
Kaimalino	25	40%
Kaupuni Stream	24	58%
Waiāhole Beach Park	23	65%
Chocolates (Hale'iwa Beach Park)	21	67%
He'eia Stream	20	70%
Hakipu'u Boat Ramp	24	83%
Kauli'ou'ou Stream	25	84%
Kahalu'u	27	89%

Table 1. Indicates the percentage of total samples taken at respective sites that exceeded HDOH health standards for *Enterococcus* bacteria (>130 mpn/100mL). Note that the number of total samples is not consistent across sites.

KEY OUTCOMES

2023 BWTF results are consistent with water quality trends from previous years. Across O‘ahu, sites located at stream mouths, beaches with freshwater outlets, or in bays without much circulation are typically characterized by higher bacteria levels than at ocean sites with better circulation and more mixing. Streams located at many of the most contaminated sites could also carry runoff from cesspools and other pollution sources in the watershed such as animal waste from pets, agriculture, and wildlife.

In particular, seven sites (He‘eia Stream, Kaupuni Stream, Hakipu‘u Boat Ramp, Chocolates, Waiāhole Beach Park, Kuli‘ou‘ou Stream, Kahalu‘u) had 50% of their samples exceed state health standards. These same seven sites showed similarly high bacteria levels in 2022.

These seven sites are located at mouth of streams or rivers. Chronic pollution at these sites may therefore also be attributed to land-based runoff from upland areas that is carried by freshwater streams and released into the ocean. In addition, Kahalu‘u is located in a Priority 2 Cesspool area, meaning that there is known wastewater contamination. The chronic pollution documented at these sites by the BWTF indicates the potential impact of sewage pollution in these areas.

BWTF data from sampling sites in Hawai‘i also indicate that locations have elevated levels of fecal indicator bacteria after rain events and during brown water events. Beginning in November, the rainy season is characterized by large storm events with heavy rainfall. Particularly in the early part of the season, these storms serve to "flush" the island and can result in large amounts of water, sediments, wastewater, and pollutants flowing downhill into the ocean.

Families, ocean users, and the public should be aware of the poor water quality conditions in these freshwater flows and avoid any contact with these freshwater flows. The public should be particularly cautious after heavy rain events that lead to increased runoff and can prompt Brown Water Advisories. Even if you do not see a public notice posted, avoid brown water until conditions clear.

More exposed beaches and those that do not have direct freshwater inputs from streams or rivers generally test clean. These sites seldom show high bacteria levels because of the high volumes of water exchange and mixing that occurs at these sites. Bacteria at these sites, however, can be elevated after rainfall or other heavy storm events.

Note that not all high bacteria spikes were detected during brown water (for example, spikes on O‘ahu and Kaua‘i in the summer). This demonstrates the importance of regular water quality monitoring programs.

Before going to the beach, check current water quality conditions at bwtf.surfrider.org or the state Water Quality Advisories.

KEY OUTCOMES

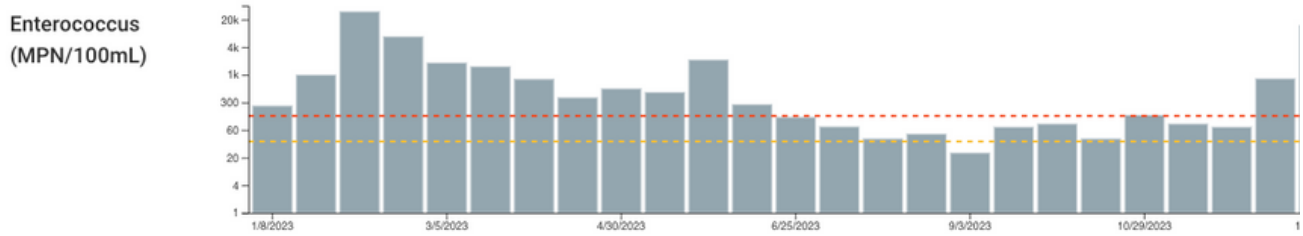
PRIORITY SAMPLE SITES: PŌKAʻĪ BAY & KAUPUNI STREAM

In the summer of 2022, longterm water quality concerns prompted the West Side community at Pōkaʻī Bay to engage in water quality sampling. Specifically, the community wanted to understand if the water quality inside the breakwall is worse than outside, due to a lack of circulation. Since summer 2022, community members have been sampling four sites at Pōkaʻī Bay. While nearly all the samples collected in Pōkaʻī Bay in 2023 met state health standards, 58% of the samples from Kaupuni Stream exceeded bacteria standards. This indicates the potential for human or animal waste in these waters, which may threaten public health and coral reefs.

58%

OF KAUPUNI STREAM SAMPLES IN 2023 EXCEEDED HEALTH STANDARDS FOR BACTERIAL COUNTS

Kaupuni Stream Results



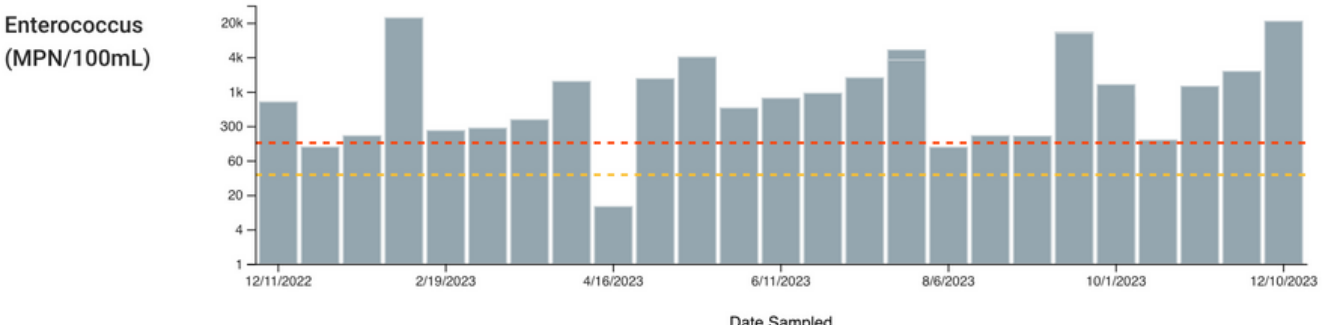
PRIORITY SAMPLE SITES: KAHALUʻU (OʻAHU)

Since 2018, Oʻahu BWTF monitoring has indicated chronically high bacteria levels at Kahaluʻu. In 2023, 89% of the samples collected at Kahaluʻu exceeded health standards. High bacteria readings are likely related to the high density of coastal cesspools in this area, as well as the fact that Kahaluʻu is located at the mouth of a river and receives high amounts of land-based runoff. The chronically high bacteria readings at Kahaluʻu and previous studies by the University of Hawaiʻi indicate the impact of wastewater contamination from cesspools.

89%

OF KAHALUʻU SAMPLES IN 2023 EXCEEDED HEALTH STANDARDS FOR BACTERIAL COUNTS

Kahaluʻu Results 2023



COMMUNITY SCIENCE DRIVES POLLUTION SOLUTIONS

PŌKAʻĪ BAY

In the summer of 2022, Carmen Guzman-Simplicano was pushing her elected officials to undertake water quality studies in Pōkaʻī Bay on West Oʻahu. Carmen, a community member, advocate, and mother of four, was concerned about her children and fellow community members getting rashes and sick after swimming in Pōkaʻī Bay. For the last year and a half, Carmen and other West Oʻahu residents have been sampling four Blue Water Task Force sites in Pōkaʻī Bay and Kaupuni Stream. In 2023, 58% of the samples collected from Kaupuni stream exceeded state health standards.

The importance of both ongoing and expanded sampling along West Oʻahu was highlighted in Surfrider Foundationʻs national "Treat It Better" video campaign.

The Blue Water Task Force is more than just collecting data - it is a program that empowers communities to investigate and understand what is happening in their local waterways. Armed with this data, activists like Carmen Guzman-Simpliciano and her hui of community members on Oʻahu advocate for solutions at the local and state level. For her tireless efforts to improve water quality along the West Oʻahu coastline, Carmen Guzman-Simplicano has been nominated as part of Surfrider Foundationʻs annual Wavemakers Awards.

FUNDING TO EXPAND WAIʻANAE TESTING

In the fall of 2023, Surfrider Foundation Oʻahu Chapter and Waiʻanae High School were awarded a grant by the Hawaiʻi Community Foundation to establish a new Blue Water Task Force lab at Waiʻanae High School. Having a lab at Waiʻanae High School will cut down on driving time for volunteers and also allow the community to expand its testing to additional sites along the West Oʻahu coastline, increase community awareness about water quality issues, and integrate high school students into water quality monitoring efforts. The lab is expected to begin analyzing samples in early 2024. Special thanks to Katie Kealoha who leads the Marine Science Learning Center at Waiʻanae High School and Carmen Guzman-Simplicano who continues to orgaize community members in collecting water quality samples.

GRANT FUNDED RESEARCH

The Oʻahu Chapter is excited about a new federal grant received in partnership with SeaGrant, the University of Hawaii and PacIOOS (Pacific Islands Ocean Observing System). The funding supports cutting edge research on Oʻahu to advance rapid testing methods and develop predictive models to forecast pollution events in coastal waters. Surfrider Oʻahuʻs own Daniel Amato will coordinate the study and train community-based 'extreme teams' to conduct testing during and after extreme rain and tide events. This data will provide us with a better understanding of the impacts that large rain and tide events have on water quality and public safety.

LEGISLATIVE ACTION

In addition to filling in the state level water quality gaps and informing beach goers about the safety of coastal waters, the Hawai'i Blue Water Task Force programs and their data also help drive important policy changes.

In recent years, advocacy has focused on improving the state's water quality monitoring program and increasing signage at beach parks. These efforts are to protect public health and the community's right to know if coastal waters are clean and safe.

FEDERAL LEVEL ADVOCACY

In March, nine Surfrider Hawai'i volunteers traveled to Washington, D.C. to discuss, among other topics, coastal water quality with federal representat fed. Each chapter shared its annual water quality report, highlighting chronic pollution areas along their respective coastlines. These reports became important when discussing Surfrider's requests to increase federal appropriations for the BEACH Act that provides funding for state coastal water quality monitoring. We also shared the immediate need for cesspool upgrades to meet wastewater infrastructure challenges.

IMPROVING STATE WATER QUALITY MONITORING PROGRAM

For the last four years, Surfrider Foundation has advocated for legislation that would require the HDOH to continue their regular scheduled testing during Brown Water Advisories (BWAs) and rain events. For over a decade, the HDOH has refused to sample beaches when the water is brown or during an active BWA. This practice not only skews the state's data to dry conditions, but can also suspend testing for weeks at a time while BWA's are active. The overall result is that there is very little information available that describes water quality conditions at Hawai'i beaches during wet weather. Wet weather is also when *enterococcus* levels are most likely to be elevated.

POSTING 'BROWN WATER ADVISORY' SIGNAGE

The HDOH issues preemptive BWA warnings to the public to avoid coastal waters that are brown or have runoff due to potential health risks. BWAs, however, are only posted online and via local news outlets. The lack of signs posted at beaches leaves many beachgoers unaware of the potential threat of pollution, especially visitors. In 2024, the Maui Chapter is piloting a program to provide BWA signs to lifeguarded beaches across the island.

POSTING SIGNS AT CHRONICALLY POLLUTED BEACHES

There is also a lack of public notification and awareness of health risks at chronically polluted beaches - particularly on Kaua'i. Despite years of data confirming ongoing pollution at sites like Nāwiliwili stream mouth, the state and County of Kaua'i refuse to place permanent signage warning the public about health risks. The Kaua'i Chapter continues to push for signage at this and other key beaches to inform safe beach going.

CLEAN WATER SOLUTIONS

In 2021, Surfrider Foundation launched its STOP Sewage Pollution program to raise awareness about the impact of sewage spills and failing wastewater infrastructure on coastal water quality.

Sewage can contain bacteria, viruses & parasites that make people sick with gastro-intestinal symptoms, rashes, flu-like symptoms, skin and eye infections and worse! Sewage discharges also pollute waterways with excess nutrients that wreak havoc on coastal ecosystems by fueling harmful algal blooms that put human health at risk, cause fish kills and smother coral reefs.

CESSPOOLS IN HAWAI'I

Cesspools are essentially pits or holes in the ground that receive wastewater, including untreated human waste, from homes or businesses. Cesspools do not provide any wastewater treatment but instead, temporarily hold onto household effluent and let it seep into the surrounding ground water.

With an estimated 88,000 cesspools, Hawai'i has one of the highest cesspools per capita the United States. O'ahu has 11,300 cesspools that discharge 7.5 million gallons of untreated sewage each day. This untreated sewage contributes to high nitrogen levels in ground and surface waters, and can contain pathogens that can make people sick.

Local flooding conditions caused by rising sea levels and extreme weather events makes this situation even worse. Connections to sewers and other advanced wastewater treatment systems are needed in order to stop the flow of pathogens and nutrient pollution into local waterways and to reverse the human health and ecosystem damage caused by these systems in many communities.

CONVERT YOUR CESSPOOL

If you're a homeowner with a cesspool, the most important way you can help STOP Sewage Pollution is by converting your cesspool. Visit the Potty Portal (developed by partner organization WAI) for numerous cesspool conversion resources. New and cheaper technologies for toilets and human waste management are also quickly improving. Take WAI's Cesspool Homeowner's Quiz to see which option maybe best for you.

HOW YOU CAN HELP

1. Convert your cesspool
2. Share your knowledge about the impacts of cesspools on water quality
3. Inspect and pump your septic tanks and cesspools regularly.
4. Don't use septic additives.
5. Only flush the three P's (pee, poop and toilet paper)
6. Don't pour cooking grease or oils down the drain.
7. Conserve water inside your home.
8. Soak up the rain and reduce runoff by directing roof downspouts into a rain barrel or vegetated area.

BLUE WATER TASK FORCE

This report is brought to you by the
Surfrider Foundation Hawai'i Region.

hawaii.surfrider.org

Photo by Monica Andrea Photography