Oregon Beach Monitoring Program
2021 Evaluation of Monitoring Sites

May 2021

Laboratory and Environmental Assessment
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Department of Environmental Quality

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Executive Summary

This report describes the process by which the Oregon Beach Monitoring Program (OBMP) compiles the list of Oregon beaches to be monitored for fecal bacteria. The National Beach Guidance (USEPA, 2014) recommends an adaptive sampling approach which allows monitoring programs to be flexible enough to accommodate demands for new information as the need arises. The Oregon Department of Environmental Quality (DEQ) has limited resources to support monitoring the entire Oregon coast. The OBMP reviews candidate beaches in odd numbered years and ranks them according to public health risk (OHA, 2010).

Candidate beaches for which the OBMP has data are evaluated according to the percent of fecal bacteria sample results that exceeded the beach action value limit (USEPA, 2014) used by the OBMP and the geometric mean of those results. The sample results summary is then weighted by the number of people using the beach at the time of sampling.

The result of this review is the list of candidate beaches that will be proposed for the 2021-2022 OBMP sampling schedule. The list will be submitted for public comment on the Oregon Health Authority (OHA) website during the spring of 2021 (OHA, 2014). OBMP staff also considers logistical and resource constraints. The OHA and DEQ reviews public comments and finalize the sampling schedule for the season in this report.

The review of the beach list for the sampling schedule is repeated biennially. Data collected during the subsequent sampling seasons will be included in the next evaluation.

Introduction

The OHA and DEQ are responsible for monitoring recreational water quality along coastal beaches in Oregon. The collaborative OBMP is a US Environmental Protection Agency (EPA) funded program. The OBMP tests marine waters at select Oregon beaches for the fecal indicator bacterium (FIB) Enterococcus. Enterococcus is an indicator organism that has been found to be a useful predictor of gastrointestinal illness resulting from contact with contaminated water (USEPA, 2013). The program provides public notification and issues water contact advisories when Enterococcus levels exceed Oregon's beach action value (BAV) of 130 colony forming units (cfu) per 100 mL (ODEQ, 2006). Because coast-wide routine monitoring of the 360 miles of shore line in Oregon is unfeasible, the OBMP monitors a subset of high priority beaches. A beach evaluation process is conducted every two years to rank and select monitoring locations according to public recreational usage and potential exposure risk. The OBMP will begin its twentieth sampling season in 2021 starting in mid-May untill after Labor Day in September.

In May through September 2020, the OBMP monitored 18 beaches at 70 sampling locations. The program collected 494 total samples including 81 field duplicates and 42 field blank quality control samples. The OMBP samples both marine water and freshwater sites with 351 of the site samples were in marine water and 143 in freshwater. Of the 494 site samples collected in 2020, 42 (8.5%) exceeded Oregon's BAV of 130 Enterococcus/100 mL. There were 8 (2.3%) exceeding results from marine samples and 36 (25.2%) high results from fresh water samples. In total, since 2002, the OBMP has collected more than 17,061 samples, of which 1,203 (7.1%) exceeded the 130 Enterococcus/100 mL BAV. Overall, 68% of beach samples and 21% of the freshwater samples had no detectable fecal bacteria during the past 19 years.

Two occurances in 2020 decreased the number of samples collected by the OMBP. Because of the COVID-19 pandemic, scheduled sampling was cancelled or reduced from May18 to June 19. This amounted to 164 samples not collected throughout the monitoring network. In addition, scheduled sampling at 58 north and mid coast sites was cancelled between September 7 and September 18 because of poor air quality from wildfire smoke. This amounted to a 24% reduction in sample collections.

Oregon has more than 360 miles of coastline and 89 candidate beaches, each with multiple potential sampling locations (Table 1). Available resources limit the number of beaches that the OBMP can routinely monitor over the summer season. To determine which beaches to monitor, the OBMP evaluates beach locations and ranks them according to risk to public health. The program periodically reviews the bacteria test results and beach use data for beaches where sampling has occurred in an attempt to ensure resources are being applied to best protect public health at those beaches. The OBMP reviews land use, public access, potential pollution sources, and other relevant information about beach locations where little or no bacteria sampling data is available in order to include new sampling locations for consideration for the routine monitoring schedule. Beaches are selected for routine monitoring based on a number of parameters, such as recreational use, potential sources of bacterial pollution, proximity to creeks, pipes, and outflows, the number of previous water contact advisories, and other factors such as public comments and requests.

This report discusses the process for evaluating and ranking Oregon beaches to prioritize the routine monitoring schedule for 2021 and 2022. The resulting list of 2021-2022 candidate beaches will be made available for public comment between April 14 and April 26, 2021, after which the sampling schedule will be finalized by OHA and ODEQ.

Table 1 Candidate Beach List

Beach Name	*Beach Name*
Agate Beach	*McVay Rock State Recreation Site*
Alsea River Bridge Beach	*Meyer's Beach*
Arizona Beach State Recreation Site	*Mill Beach*
Baker and Sutton Beaches	*Moolack Beach*

Beach Name	*Beach Name*
Bandon South Jetty County Park	*Ponsler Memorial State Scenic Viewpoint*
Bandon State Natural Area	*Nehalem Bay Beach*
Bandon Wayside Face Rock State Park	*Nelscott Beach*
Barview County Park Beach	*Neskowin Beach*
Bastendorff Beach	*Nye Beach*
Battle Rock State Wayside	*Oceanside Beach State Wayside*
Beachside State Park Beach	*Ona Beach*
Beverly Beach	*Ophir Beach*
Bob Straub State Park Beach	*Oregon Dunes Horsefall Beach*
Buena Vista Ocean State Wayside Beach	*Oregon Dunes Umpqua Dunes Beach*
Bullards Beach	*Oregon Dunes South Jetty Beach*
Cannon Beach	*Oswald West State Park Beach - Arch Cape*
Cape Arago State Park North Cove	*Otter Point State Recreation Site*
Cape Arago State Park South Cove	*Otter Rock Beach*
Cape Blanco State Park Sixes River Beach	*Paradise Point State Recreation Site*
Cape Kiwanda Beach State Park	*Pistol River State Scenic Viewpoint*
Cape Lookout State Park	*Roads End Beach*
Carl G. Washburn Memorial State Park	*Rock Creek Campground - Roosevelt Beach*
Crissey Field State Park Beach	*Rockaway Beach*
D River Beach State Park Beach	*State Scenic Corridor - China Beach*
Del Rey Beach State Recreation Site	*State Scenic Corridor - Lone Ranch Beach*
Devil's Elbow State Park	*State Scenic Corridor - Whaleshead Beach*
Devil's Punchbowl State Natural Area	*Seal Rock State Recreation Site*
Driftwood Beach State Recreation Site	*Seaside Beach*
Florence North Jetty Beach	*Seven Devil's State Recreation Site*
Fogarty State Beach	*Siletz Bay Beach*
Fort Stevens Beach	*Smelt Sands State Recreation Site*
Gleneden Beach	*South Beach*
Gold Beach	*Sporthaven Beach*
Governor Patterson State Park Beach	*Stonefield Beach State Recreation Site*
Harris Beach State Park Beach	*Sunset Bay State Park Beach*
Heceta Florence Beach	*Sunset Beach State Recreation Site*
Hubbard Creek Beach	*Tillicum Beach*
Hug Point Beach	*Tolovana State Park Beach*
Hunter Creek Beach	*Twin Rocks Beach*
Indian Cannon Beach	*Umpqua Beach*
Lost Creek State Recreation Site	*Whiskey Run Beach*
Manhattan State Park Beach	*Yachats Wayside Beach*
Manzanita Beach	*Yaquina Bay Beach*

Methods and Criteria

This report ranks candidate beaches for the 2021-2022 sampling seasons. The rankings are calculated based on the average bacteria sampling results, the percentage of beach sample results that exceeded the BAV, and beach use by people in the water during sampling. The OBMP has collected this information during previous monitoring seasons. The physical characteristics of beaches and the proximity of creeks, outfall pipes, and potential pollution sources observed while sampling or reported by public comment are considered to develop the beach sampling schedule.

Bacteria Sample Results Data

All available sample results collected by the OBMP from the 2002 - 2020 sampling seasons are considered in this evaluation. The total number of samples, the number of samples that exceeded Oregon's BAV, and the geometric mean of bacteria count results were determined for all beaches. The method reporting limit for Enterococcus is 10 Enterococcus/ 100 mls. Half the method detection limit or 5 Enertococcus/ 100 ml was used in geometric mean calculations for samples with no bacteria detected. Each beach was then ranked by the percentage of total samples that exceeded Oregon's BAV and by the geometric mean of bacteria sampling results. These ranks were assigned according to the percent of samples exceeding the BAV and geometric mean of the sample results (Table 2). Both ranking assignments were added together to produce the total bacteria rank which ranges from 0 (lowest) to 7 (highest). The influence of mean bacterial levels on the overall ranking score is purposely minimized. Most results (59.7%) are non-detects and are not normally distributed and heavily skewed toward lower values.

Table 2 Bacteria Ranking Criteria

Rank Value Assigned	Samples Exceeding BAV (%)	Mean Bacterial Count (cfu/100ml)
0	No data OR N<5	No data OR N<5
1	0%	<10
2	>0% and <5%	>=10
3	5 - <10%	
4	10 - <15%	
5	15% or more	
Note: No rank value was assigned if there were fewer than 5 samples per beach		

Beach Use Data

The OBMP records beach use during sampling. The requirements of the Beaches Environmental Assessment and Coastal Health Act (BEACH Act) that apply to states and tribes, define "coastal recreation waters" as marine coastal waters used for swimming, bathing, surfing, or similar water contact activities. The OBMP counts anyone wading, swimming, surfing, or in the ocean for any similar activity near the sample collection site to determine the number of people in the water per sample collection. All available beach use observations are considered in the beach evaluation. A total beach ranking that incorporates bacteria presence and beach use at each beach was determined by multiplying total bacteria rank by the beach use rank. The final ranking represents a bacteria rank weighted by beach use. Beaches with higher ranks tend to have higher bacteria levels, higher beach use levels, or both. On average, beaches with higher use will be ranked higher than those with lower use.

Results

Bacteria Sample Results

The Appendix A is a summary of beach bacteria results and their rank. Approximately 7.1% of all samples from all seasons exceeded Oregon's BAV of 130 cfu/100 mL. Among the 57 beaches where OBMP has collected at least 5 samples, 13 had an exceeding percentage above the overall 7.1 % rate.

Risk

The bacteria sample results rankings were multiplied by the swimmers per sample to yield the total beach risk rank. The 57 evaluated beaches are listed by rank in Table 3. The beaches are listed in order of rish rank from highest to lowest. The Appendix B graphs summarize the bacteria results with beach use.

Public Comments

Oregon Beach Monitoring Program staff at OHA and DEQ will select beaches for the 2021-2022 summer sampling seasons from the candidate beaches listed in Table 1. That list of candidate beaches was submitted for public comment. The Oregon Health Authority received 25 rewsponses during the public comment period between April 14 and April 26, 2021. Most of the comments involved adding beaches to the monitoring program. Other concerns mentioned were trash and illegal dumping, upstream pesticide use, the corona virus, and fecal comtamination from unregulated camping. The public comments and OBMP responses are provided in Appendix D.

Adaptive Sampling Approach

The OBMP considers rotating beaches in to the sampling schedule that have not previously been sampled by the program or have not been monitored recently. Information such as potential pollution sources, access to public beaches, reported annual attendance, facility permits, and residential density is reviewed for beaches where the OBMP has not collected data. Public comments and agency concerns are also reviewed to consider new beaches for the sampling schedule**.** As funding or time allows, OBMP may add beaches of concern onto the routine sampling schedule.

Conclusion

The ranking method OBMP used to evaluate the beach list is based on the geometric means of the bacteria results, the percent of results exceeding the BAV, and beach use as recorded in the field. This method assigns relative bacteria results ranks to each beach and those ranks are weighted by beach use. The ranked beach list therefore includes those that have had relatively higher bacteria presence and higher beach use (Table 3). Appendix A presents the summary bacteria results with beach geometric mean and percent excedences. Figures 1 and 2 are risk plots of bacteria versus beach use. We also took into consideration comments we received during the public comment period. Appendix D contains the public comments and OBMP responses. The final ranking of beaches was evaluated to insure approximately equal representation of three coastal regions: north coast, mid coast, and south coast to compile the proposed monitoring site list.

The final sampling list was determined by the risk ranking described in this report, public comments, input from agency staff, as well as logistical and budgetary limits. The OBMP monitored 18 beaches with 70 sites during 2019-2020 and for several years prior. During 2021-2022, we plan to monitor 21 beaches with approximately 80 sites listed in Appendix C. This includes the 18 beaches monitored in 2019-2020 plus Manzanita Beach, Oceanside Beach and Kape Kiwanda. These three beaches are popular beaches that have not been monitored by the OBMP for several years, and were recommended to be monitored by public commenters. The 21 monitored beaches are highlighted in bold font in Table 3 and circled in blac in figures 1 and 2.

Table 3 Beaches Listed by Risk Rank. 2021-2022 Sites in Bold

Beach Name	County	2002-2020 sample size	Geomean rank	Percent Exceedance rank	Total Bacteria Rank	Swimmers per Sample	Risk Ranking Score
Cannon Beach	Clatsop	1508	2	3	5	7.36	36.80
Tolovana State Park Beach	Clatsop	449	2	3	5	6.35	31.75
Seaside Beach	Clatsop	1034	1	2	3	8.41	25.23
D River Beach	Lincoln	791	2	3	5	4.46	22.30
Indian Beach	Clatsop	210	1	2	3	6.24	18.72
Oswald West SP Beach	Tillamook	1349	1	2	3	4.53	13.59
Nye Beach	Lincoln	905	2	5	7	1.90	13.30
Cape Kiwanda State Park	Tillamook	474	1	2	3	4.39	13.17
Neskowin Beach	Lincoln	297	2	2	3	4.36	13.08
Fort Stevens State Park	Clatsop	19	1	1	2	6.24	12.48
Siletz Bay	Lincoln	200	1	2	3	3.62	10.86
Harris Beach State Park	Curry	767	2	4	6	1.70	10.20
Sunset Bay	Coos	1079	2	5	7	1.44	10.08
Rockaway Beach	Tillamook	618	2	4	6	1.66	9.96
Oceanside Beach State Park	Tillamook	243	1	2	3	3.24	9.72
Beachside Waldport	Lincoln	16	1	1	2	4.68	9.36
Whiskey Run Beach	Coos	12	1	3	5	1.87	9.35
Beverly Beach	Lincoln	365	2	3	5	1.86	9.30
Seal Rock Beach	Lincoln	368	2	4	6	1.51	9.06
Manzanita Beach	Tillamook	13	1	1	2	4.33	8.66
Agate Beach	Lincoln	662	2	3	5	1.59	7.95
Gov Patterson State Park	Lincolc	15	1	1	2	3.63	7.26
Heceta Beach Florence	Lane	271	2	2	3	2.41	7.23
Hug Point Beach	Clatsop	347	1	2	3	2.92	7.23
Cape Lookout State Park	Tillamook	17	1	1	2	3.58	7.16
Roads End Beach	Lincoln	79	1	2	3	2.34	7.02
Twin Rocks Beach	Tillamook	252	2	3	5	1.25	6.25
Otter Rock Beach	Lincoln	342	1	2	3	1.83	5.49
Yaquina Bay	Lincoln	58	1	2	3	1.80	5.40
Gleneden Beach	Lincoln	46	1	1	2	2.59	5.18
Robert Straub State Park	Tillamook	20	1	1	2	2.50	5.00
Bandon South Jetty	Coos	34	1	2	3	1.65	4.95
Bastendorff Beach	Coos	1084	2	3	5	0.92	4.60
Meyer's Beach	Curry	15	1	3	4	1.00	4.00
Sporthaven Beach	Curry	81	1	1	2	1.88	3.76

Beach Name	County	2002-2020 sample size	Geomean rank	Percent Exceedance rank	Total Bacteria Rank	Swimmers per Sample	Risk Ranking Score
Oregon Dunes South Jetty	Lane	21	1	1	2	1.75	3.50
Battle Rock Wayside	Coos	89	1	2	3	1.14	3.42
Nehalem Bay	Tillamook	15	1	1	2	1.60	3.20
Nelscott Beach	Lincoln	306	1	2	3	1.02	3.06
Umpqua Beach	Douglas	219	1	2	3	0.93	2.79
Ona Beach	Lincoln	99	2	3	4	0.67	2.68
Crissey State Park	Curry	51	1	2	3	0.88	2.64
South Beach	Lincoln	194	1	1	2	1.15	2.30
Fogarty Creek Beach	Lane	59	1	2	2	1.13	2.26
Moolack Beach	Lincoln	17	1	1	2	1.11	2.22
Manhattan Beach	Tillamook	30	1	2	3	0.71	2.13
Bullards Beach	Coos	15	1	1	2	0.86	1.72
Gold Beach	Curry	74	1	2	3	0.54	1.62
Hunter Cr Wayside	Curry	39	1	1	2	0.71	1.42
Alsea Bay	Lincoln	44	2	2	3	0.44	1.32
Barview County Park	Tillamook	153	1	2	3	0.41	1.23
Ophir Creek	Curry	12	1	1	2	0.57	1.14
Yachats Wayside Beach	Lincoln	45	1	1	2	0.50	1.00
Mill Beach	Curry	557	2	5	7	0.14	0.98
Hubbard Creek Beach	Curry	625	2	3	4	0.20	0.80
Florence North Jetty	Lane	270	1	2	3	0.26	0.78
Bandon Face Rock	Coos	50	1	2	3	0.00	0.00

Links

1. EPA Beach Advisory and Closing On-line Notification (BEACON) website
   http://watersgeo.epa.gov/beacon2/
2. Oregon Health Authority Beach Water Quality website
   https://www.oregon.gov/oha/ph/HealthyEnvironments/Recreation/BeachWaterQuality/pages/index.aspx
3. Oregon Department of Environmental Quality Beach Monitoring website
   https://www.oregon.gov/deq/wq/Pages/WQ-Monitoring-Beach.aspx
4. Oregon Coastal Atlas website
   https://www.coastalatlas.net/

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Appendix A: Site Prioritization

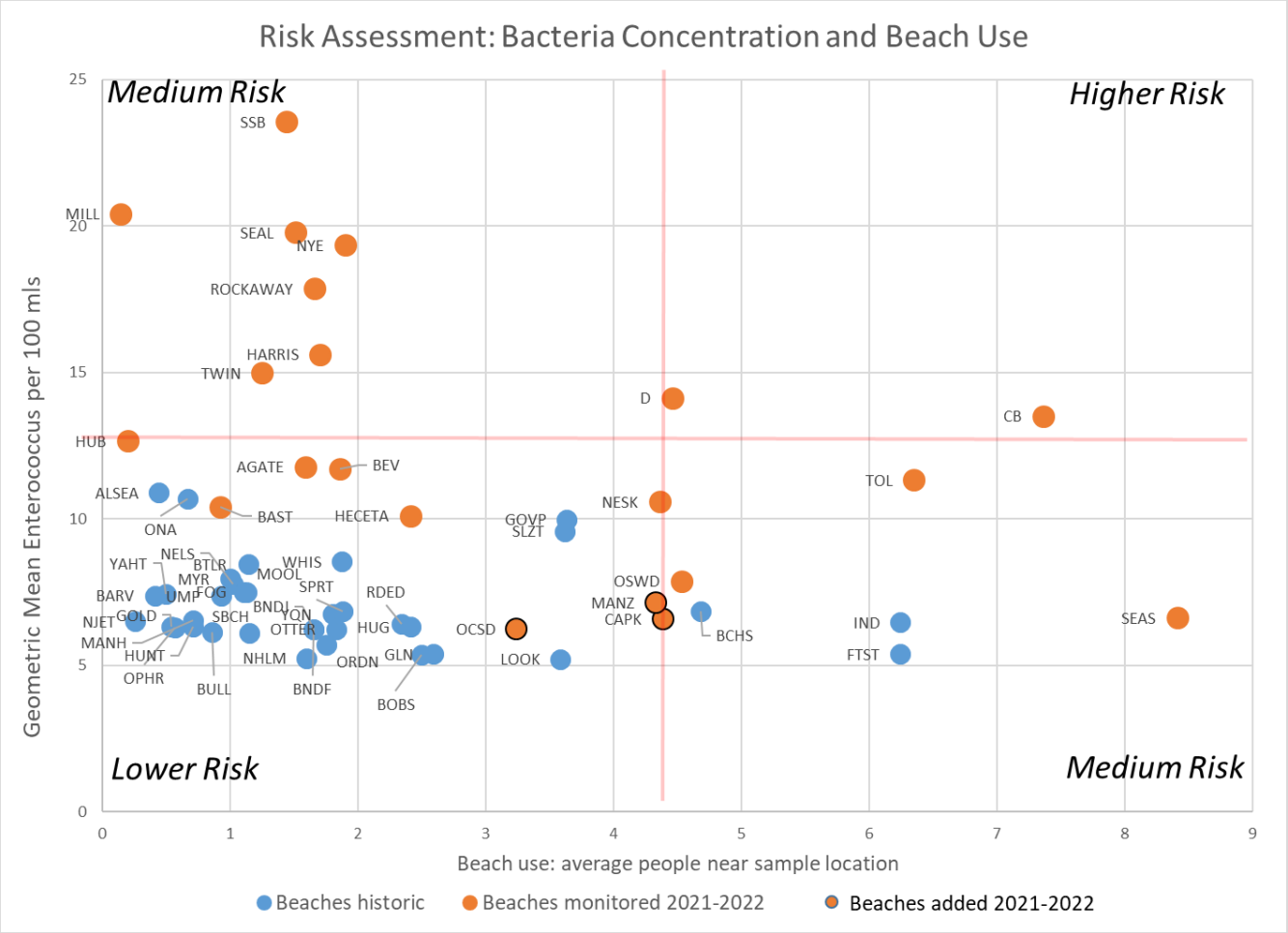
Detail of Bacteria Results by Geometric Mean

Beach Name	County	Short Beach Name	2002-2020 sample size	Geomean	Geomean rank	Number of Sites Exceeding	Percent Exceedance (%)	Percent Exceedance rank
Nye Beach	Lincoln	NYE	905	19.35	2	153	16.91	5
Sunset Bay	Coos	SSB	1079	25.15	2	181	16.77	5
Mill Beach	Curry	MILL	557	20.42	2	87	15.62	5
Rockaway Beach	Tillamook	ROCK	618	17.87	2	85	13.75	4
Seal Rock Beach	Lincoln	SEAL	368	19.78	2	45	12.23	4
Harris Beach State Park	Curry	HAR	767	15.62	2	87	11.34	4
Twin Rocks Beach	Tillamook	TWIN	252	14.99	2	21	8.33	3
Whiskey Run Beach	Coos	WHISK	12	8.54	1	1	8.33	3
Cannon Beach	Clatsop	CB	1508	13.67	2	124	8.22	3
D River Beach	Lincoln	D	791	14.13	2	65	8.22	3
Ona Beach	Lincoln	ONA	99	10.69	2	8	8.08	3
Bastendorff Beach	Coos	BAST	1084	10.42	2	85	7.84	3
Beverly Beach	Lincoln	BEV	365	11.71	2	27	7.4	3
Agate Beach	Lincoln	AGATE	662	11.78	2	45	6.8	3
Tolovana State Park Beach	Clatsop	TOL	449	11.32	2	30	6.68	3
Meyer's Beach	Curry	MEY	15	7.95	1	1	6.67	3
Hubbard Creek Beach	Curry	HUB	625	12.66	2	40	6.4	3
Heceta Beach Florence	Lane	HEC	271	10.11	2	13	4.8	2
Alsea Bay	Lincoln	ALSEA	44	10.9	2	2	4.55	2
Neskowin Beach	Lincoln	NESK	297	10.58	2	12	4.04	2
Crissey State Park	Curry	CRIS	51	9.72	1	2	3.92	2
Manhattan Beach	Tillamook	MANZ	30	6.55	1	1	3.33	2
Siletz Bay	Lincoln	SIL	200	9.58	1	6	3	2
Bandon South Jetty	Coos	BANDS	34	6.23	1	1	2.94	2
Oswald West SP Beach	Tillamook	SHRTS	1349	7.87	1	39	2.89	2
Roads End Beach	Lincoln	ROADS	79	7.37	1	2	2.53	2
Battle Rock Wayside	Coos	BATT	89	8.45	1	2	2.25	2
Bandon Face Rock	Coos	BANDF	50	6.21	1	1	2	2
Fogarty Creek Beach	Lane	FOG	59	7.51	1	1	1.69	2
Nelscott Beach	Lincoln	NELS	306	7.78	1	5	1.63	2
Yaquina Bay	Lincoln	YAQ	58	6.75	1	1	1.56	2
Gold Beach	Curry	GOLD	74	6.41	1	1	1.35	2
Cape Kiwanda SP Beach	Tillamook	CAPEK	474	6.64	1	5	1.05	2
Umpqua Beach	Douglas	UMP	219	6.22	1	4	0.91	2
Hug Point Beach	Clatsop	HUG	347	6.31	1	3	0.86	2

Beach Name	County	Short Beach Name	2002-2020 sample size	Geomean	Geomean rank	Number of Sites Exceeding	Percent Exceedance (%)	Percent Exceedance rank
Oceanside Beach	Tillamook	OCEAN	243	6.32	1	2	0.82	2
Seaside Beach	Clatsop	SEAS	1034	6.62	1	8	0.77	2
Florence North Jetty	Lane	FLON	270	6.6	1	2	0.74	2
Barview County Park	Tillamook	BARV	153	7.38	1	1	0.65	2
Otter Rock Beach	Lincoln	OTTR	342	6.24	1	2	0.58	2
Indian Beach	Clatsop	IND	210	6.47	1	1	0.48	2
Beachside Waldport	Lincoln	BEACH	16	6.85	1	0	0	1
Bullards Beach	Coos	BULL	15	6.12	1	0	0	1
Cape Lookout State Park	Tillamook	LOOK	17	5.21	1	0	0	1
Fort Stevens State Park	Clatsop	FSTV	19	5.38	1	0	0	1
Gleneden Beach	Lincoln	GLEN	46	5.39	1	0	0	1
Gov Patterson State Park	Lincolc	GOVP	15	9.98	1	0	0	1
Hunter Cr Wayside	Curry	HNTR	39	6.45	1	0	0	1
Manzanita	Tillamook	MANZ	13	7.13	1	0	0	1
Moolack Beach	Lincoln	MOO	17	7.49	1	0	0	1
Nehalem Bay	Tillamook	NHLM	15	5.24	1	0	0	1
Ophir Creek	Curry	OPH	12	6.3	1	0	0	1
Oregon Dunes South Jetty	Lane	FLOS	21	5.71	1	0	0	1
Robert Straub State Park	Tillamook	BOBS	20	5.36	1	0	0	1
South Beach	Lincoln	STHB	194	6.09	1	0	0	1
Sporthaven Beach	Curry	SPRT	81	6.85	1	0	0	1
Yachats Wayside Beach	Lincoln	YCHT	45	8.22	1	0	0	1

Appendix B. Risk: Bacteria and Beach Use Graphs

Figure 1. Enterococcus geometric mean and beach use

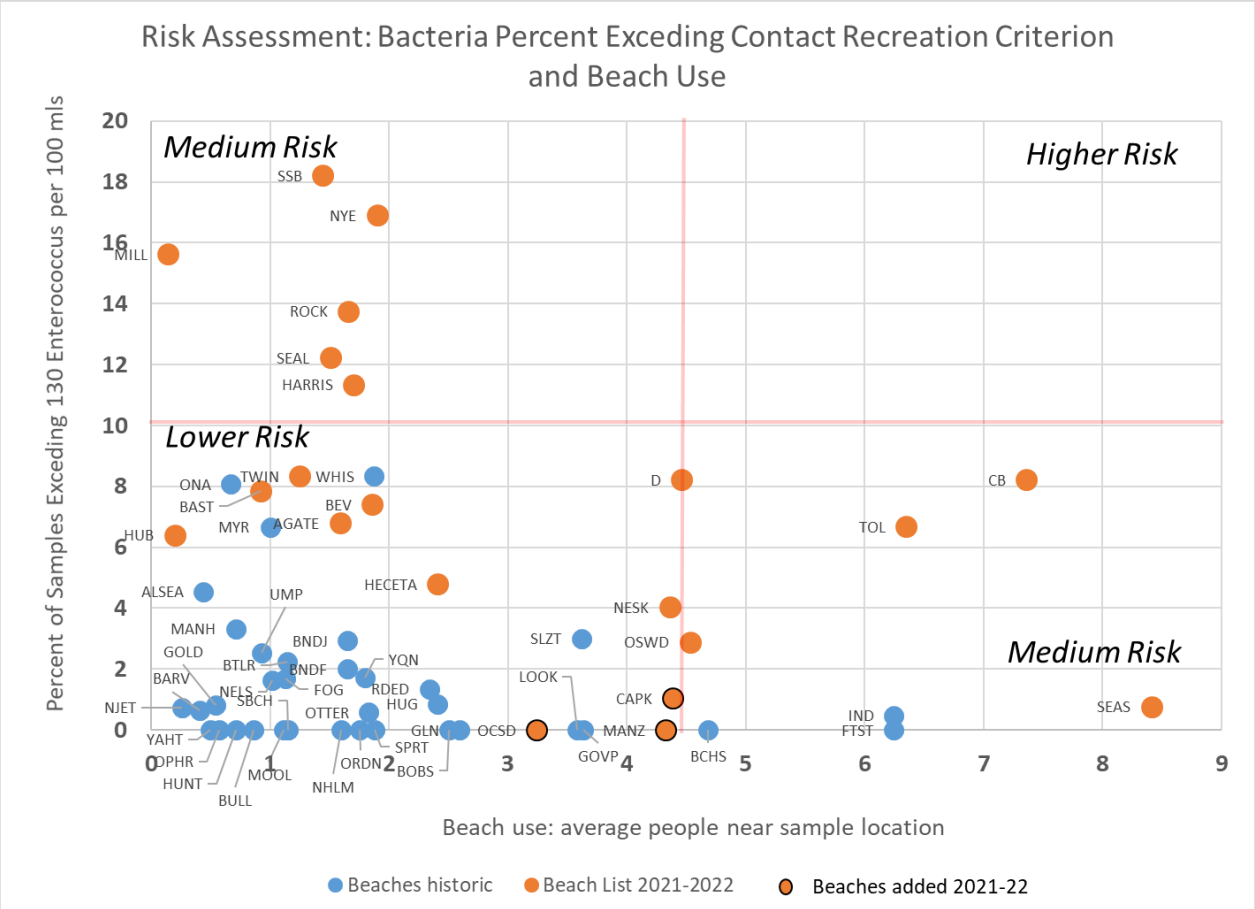


Abrv	Beach Name
AGATE	Agate Beach - Lincoln County
ALSEA	Alsea Bay-Lincoln county
BARV	Barview County Park - Tillamook County
BAST	Bastendorff Beach - Coos County
BCHS	Beachside SP Beach - Lincoln County
BEV	Beverly Beach - Lincoln County
BNDF	Bandon State Wayside Beach-Coos County
BNDJ	Bandon S. Jetty-Coos County
BOBS	Bob Straub SP Beach -Tillamook County
BTLR	Battle Rock Beach - Curry County
BULL	Bullards Beach - Coos County
CAPK	Cape Kiwanda SP Beach - Tillamook County
CB	Cannon Beach - Clatsop County
CRFD	Crissey Field SP Beach - Curry County
D	D River SP Beach - Lincoln County
FOG	Fogarty Creek Beach - Lincoln County
FTST	Fort Stevens - Clatsop County
GLN	Gleneden Beach - Lincoln County
GOLD	Gold Beach - Curry County

Abrv	Beach Name
GOVP	Governor Patterson SP Beach - Lincoln County
HARRIS	Harris Beach SP - Curry County
HECETA	Heceta Beach - Lane County
HUB	Hubbard Creek Beach - Curry County
HUG	Hug Point Beach - Clatsop County
HUNT	Hunter Creek Beach - Curry County
IND	Indian Beach - Clatsop County
LOOK	Cape Lookout SP Beach - Tillamook County
MANH	Manhattan SP Beach - Tillamook
MANZ	Manzanita Beach - Tillamook County
MILL	Mill Beach - Curry County
MOOL	Moolack Beach - Lincoln County
MYR	Meyer's Beach - Curry County
NELS	Nelscott Beach - Lincoln County
NESK	Neskowin Beach - Tillamook County
NHLM	Nehalem Bay SP Beach - Tillamook County
NJET	Florence North Jetty Beach - Lane County
NYE	Nye Beach - Lincoln County
OCSD	Oceanside Beach State Wayside - Tillamook County

Abrv	Beach Name
ONA	Ona Beach - Lincoln County
OPHR	Ophir Beach - Curry County
ORDN	Oregon Dunes South Jetty - Lane County
OSWD	Oswald West SP Beach - Tillamook County
OTTER	Otter Rock Beach - Lincoln County
PIST	Pistol River Beach - Curry County
RDED	Roads End Beach - Lincoln County
ROCK	Rockaway Beach - Tillamook County
SBCH	South Beach Newport - Lincoln County
SEAL	Seal Rock Beach-Lincoln County
SEAS	Seaside Beach - Clatsop County
SLZT	Siletz Bay - Lincoln County
SPRT	Sporthaven Beach - Curry County
SSB	Sunset Bay SP Beach - Coos County
TOL	Tolovana SP Beach - Clatsop County
TWIN	Twin Rocks Beach - Tillamook County
UMP	Umpqua Beach - Douglas County
WHIS	Whiskey Run Beach - Coos County
YAHT	Yachats Wayside Beach - Lincoln County
YQN	Yaquina Bay - Lincoln County

Figure 2. Percent of samples exceeding 130 Enterococcus per 100 mls and beach use



Abrv	Beach Name
AGATE	Agate Beach - Lincoln County
ALSEA	Alsea Bay-Lincoln county
BARV	Barview County Park - Tillamook County
BAST	Bastendorff Beach - Coos County
BCHS	Beachside SP Beach - Lincoln County
BEV	Beverly Beach - Lincoln County
BNDF	Bandon State Wayside Beach-Coos County
BNDJ	Bandon S. Jetty-Coos County
BOBS	Bob Straub SP Beach -Tillamook County
BTLR	Battle Rock Beach - Curry County
BULL	Bullards Beach - Coos County
CAPK	Cape Kiwanda SP Beach - Tillamook County
CB	Cannon Beach - Clatsop County
CRFD	Crissey Field SP Beach - Curry County
D	D River SP Beach - Lincoln County
FOG	Fogarty Creek Beach - Lincoln County
FTST	Fort Stevens - Clatsop County
GLN	Gleneden Beach - Lincoln County
GOLD	Gold Beach - Curry County

Abrv	Beach Name
GOVP	Governor Patterson SP Beach - Lincoln County
HARRIS	Harris Beach SP - Curry County
HECETA	Heceta Beach - Lane County
HUB	Hubbard Creek Beach - Curry County
HUG	Hug Point Beach - Clatsop County
HUNT	Hunter Creek Beach - Curry County
IND	Indian Beach - Clatsop County
LOOK	Cape Lookout SP Beach - Tillamook County
MANH	Manhattan SP Beach - Tillamook
MANZ	Manzanita Beach - Tillamook County
MILL	Mill Beach - Curry County
MOOL	Moolack Beach - Lincoln County
MYR	Meyer's Beach - Curry County
NELS	Nelscott Beach - Lincoln County
NESK	Neskowin Beach - Tillamook County
NHLM	Nehalem Bay SP Beach - Tillamook County
NJET	Florence North Jetty Beach - Lane County
NYE	Nye Beach - Lincoln County
OCSD	Oceanside Beach State Wayside - Tillamook County

Abrv	Beach Name
ONA	Ona Beach - Lincoln County
OPHR	Ophir Beach - Curry County
ORDN	Oregon Dunes South Jetty - Lane County
OSWD	Oswald West SP Beach - Tillamook County
OTTER	Otter Rock Beach - Lincoln County
PIST	Pistol River Beach - Curry County
RDED	Roads End Beach - Lincoln County
ROCK	Rockaway Beach - Tillamook County
SBCH	South Beach Newport - Lincoln County
SEAL	Seal Rock Beach-Lincoln County
SEAS	Seaside Beach - Clatsop County
SLZT	Siletz Bay - Lincoln County
SPRT	Sporthaven Beach - Curry County
SSB	Sunset Bay SP Beach - Coos County
TOL	Tolovana SP Beach - Clatsop County
TWIN	Twin Rocks Beach - Tillamook County
UMP	Umpqua Beach - Douglas County
WHIS	Whiskey Run Beach - Coos County
YAHT	Yachats Wayside Beach - Lincoln County
YQN	Yaquina Bay - Lincoln County

Appendix C: 2021-2022 Site List

STATION ID	STATION NAME	LATITUDE	LONGITUDE
SEASIDE BEACH - SEASIDE, OREGON - CLATSOP COUNTY			
29393	Seaside Beach at 12th Avenue	46.0019	-123.9319
29392	Seaside Beach at Broadway turn around	45.9937	-123.9327
29394	Seaside Beach at U Avenue	45.9814	-123.9365
CANNON BEACH - CANNON BEACH, OREGON - CLATSOP COUNTY			
31536	Ecola Creek at Logan Creek	45.9024	-123.9609
29395	Cannon Beach at Ecola Creek mouth (2nd Avenue)	45.8974	-123.9655
29396	Cannon Beach near Ecola Court storm outfall	45.8898	-123.9653
34608	Ecola Court outfall pipe to Cannon Beach	45.8893	-123.9638
TOLOVANA BEACH SP - CANNON BEACH, OREGON - CLATSOP COUNTY			
36219	Tolovana Beach SP 50m north of Chisana Creek	45.8722	-123.9632
30503	Tolovana Beach SP at the mouth of Chisana Creek	45.8727	-123.963
36221	Tolovana Beach SP in Chisana Creek at the outflow	45.8726	-123.963
36220	Tolovana Beach SP 50m South of Chisana Creek	45.8722	-123.9619
SHORT SAND SP - ARCH CAPE, OREGON - TILLAMOOK COUNTY			
29390	Short Sand Beach north end (Oswald State Park)	45.7635	-123.97
29389	Short Sand Beach middle (Oswald State Park)	45.7614	-123.9671
31525	Short Sand Creek at footbridge	45.7601	-123.9628
MANZANITA BEACH - MANZANITA, OREGON - TILLAMOOK COUNTY			
41114	Manzanita Beach at Neahkahnie-Manzanita State Recreation Site	45.7268	-123.9442
41115	Stormwater Runoff at Neahkahnie-Manzanita State Recreation Site	45.7268	-123.9427
41112	Manzanita Beach west of Treasure Cove Lane	45.7162	-123.9421
41113	Stormwater Runoff at Treasure Cove Lane at Manzanita	45.7162	-123.9405
ROCKAWAY BEACH - ROCKAWAY, OREGON - TILLAMOOK COUNTY			
29386	Rockaway Beach at Rock Creek	45.6135	-123.9465
29385	Rockaway Beach at Saltair Creek	45.6057	-123.9474
34724	Rock Creek at south 1st Avenue	45.6139	-123.9445
34725	Saltair Creek at south 6th Avenue	45.6052	-123.9462
TWIN ROCKS BEACH - TWIN ROCKS, OREGON - TILLAMOOK COUNTY			
30510	Twin Rocks Beach at Watseco Creek	45.5933	-123.9504
30890	Watseco Creek	45.5927	-123.9456
OCEANSIDE BEACH - OCEANSIDE, OREGON - TILLAMOOK COUNTY			
29383	Oceanside Beach State Wayside at headland	45.4620	-123.9724
29382	Oceanside Beach State Wayside at parking access	45.4602	-123.9707
29384	Oceanside Beach State Wayside at seep (250 meters south)	45.4586	-123.9695
CAPE KIWANDA - PACIFIC CITY, OREGON - TILLAMOOK COUNTY			
29381	Kiwanda Beach at Dory Launch	45.2158	-123.9724
31821	Kiwanda Beach at mid mound	45.2132	-123.9711
31822	Kiwanda Beach at south site	45.2081	-123.9699

STATION ID	STATION NAME	LATITUDE	LONGITUDE
NESKOWIN BEACH - NESKOWIN, OREGON - TILLAMOOK COUNTY			
38607	Hawk Creek at the Salem Avenue bridge	45.1029	-123.9826
38608	Neskowin Creek 50 m upstream of the confluence with Hawk Creek	45.1008	-123.9828
30513	Neskowin Creek north side of Proposal Rock	45.1016	-123.9873
32133	Neskowin Beach south side of Proposal Rock	45.0993	-123.9879
D RIVER BEACH - LINCOLN CITY, OREGON - LINCOLN COUNTY			
10526	D River at the bridge	44.9678	-124.0151
29346	D River Beach at north corner of parking lot	44.9685	-124.0184
29345	D River Beach at restroom	44.9672	-124.0199
29344	D River Beach 200 M south of restroom	44.9647	-124.0199
AGATE BEACH - NEWPORT, OREGON - LINCOLN COUNTY			
34727	Agate Beach at mouth of Big Creek	44.6588	-124.0581
34726	Big Creek at Agate Beach Wayside	44.6587	-124.0567
BEVERLY BEACH - NEWPORT, OREGON - LINCOLN COUNTY			
11253	Spencer Creek at Beverly Beach campground footbridge	44.7292	-124.0568
29248	Beverly Beach 100 m north of the mouth of Spencer Creek	44.7304	-124.0602
29247	Beverly Beach at mouth of Spencer Creek	44.7291	-124.0603
29246	Beverly Beach 100 m south of the mouth of Spencer Creek	44.7282	-124.0602
NYE BEACH - NEWPORT, OREGON - LINCOLN COUNTY			
34728	Nye Beach at rocky outcrop qest of Olive Street	44.6365	-124.0646
33170	Nye Beach turnaround at discharge pipe	44.6392	-124.0626
33171	Nye Beach turnaround at outflow from discharge pipe	44.6392	-124.0627
34745	Nye Beach 100m north of Nye Creek (west 6th St)	44.6403	-124.0632
SEAL ROCK BEACH - SEAL ROCK, OREGON - LINCOLN COUNTY			
37690	Seal Rock SP Beach at north access State Wayside Trail	44.4955	-124.0847
37691	Seal Rock SP Beach at mouth of Hill Creek	44.4943	-124.0845
37692	Seal Rock SP Beach at mouth of Little Creek	44.4916	-124.0847
37709	Hill Creek at Seal Rock SP Beach at outflow W of HWY 101	44.4943	-124.0835
37710	Little Creek at Seal Rock SP Beach at ourflow W of HWY 101	44.4919	-124.0834
HECETA BEACH - FLORENCE, OREGON - LANE COUNTY			
36225	Heceta Beach at north runoff	44.0368	-124.1344
30480	Heceta Beach middle site	44.0376	-124.1351
36226	Heceta Beach at south runoff	44.035	-124.1347
36227	Heceta Beach in the south runoff	44.0349	-124.1329
BASTENDORFF BEACH - COOS BAY, OREGON - COOS COUNTY			
29320	Bastendorff Beach at the jetty	43.3519	-124.3454
29319	Bastendorff Beach 400m south of the jetty	43.3477	-124.3471
29318	Bastendorff Beach at Minor Creek	43.3457	-124.3492
31562	Bastendorff Beach 250m south of Minor Creek	43.3434	-124.3533
31561	Minor Creek 200m upstream	43.3431	-124.3498
SUNSET BAY SP BEACH - COOS BAY, OREGON - COOS COUNTY			
29317	Sunset Bay SP Beach at North Beach Access	43.3354	-124.3729

STATION ID	STATION NAME	LATITUDE	LONGITUDE
29316	Sunset Bay SP Beach at Restroom	43.3336	-124.3726
29315	Sunset Bay SP Beach at mouth of Big Creek	43.3324	-124.3748
31450	Big Creek at Sunset Bay footbridge	43.3308	-124.3732
HUBBARD CREEK BEACH - PORT ORFORD, OREGON - CURRY COUNTY			
30749	Hubbard Creek Beach 50m north of Hubbard Creek	42.7355	-124.4784
30750	Hubbard Creek between Hwy 101 and beach	42.7352	-124.4784
30471	Hubbard Creek Beach at Hubbard Creek	42.7349	-124.4771
30751	Hubbard Creek Beach south of Hubbard Creek	42.7349	-124.4771
HARRIS BEACH STATE PARK - BROOKINGS, OREGON - CURRY COUNTY			
29312	Harris Beach SP at Harris Creek	42.0692	-124.317
31559	Harris Creek upstream	42.0689	-124.3155
31555	Harris Beach SP east of Goat Island	42.067	-124.3146
29313	Harris Beach SP west of parking lot	42.0676	-124.3149
31549	Harris Beach SP at Eiler Creek	42.063	-124.3048
MILL BEACH - BROOKINGS, OREGON - CURRY COUNTY			
30935	Mill Beach at Macklyn Creek upstream	42.0492	-124.2922
31687	Mill Beach at Macklyn Creek	42.0493	-124.2926
29310	Mill Beach at south side of Seastack	42.0486	-124.2912
29311	Mill Beach at access point	42.0488	-124.2925

Appendix D: Public comments and OBMP Responses

1. Please add **Manzanita beach**. Should meet your criteria. Thank you.

Response #1: Thanks for your interest in the Oregon Beach Monitoring Program. The beach program plans to add Manzanita to the 2021 sampling schedule. The program monitors bacteria pollution at popular beaches on the Oregon coast. The beaches we monitor are selected based on the risk to swimmers and waders and people enjoying a variety of water sports along the coast. There are enough people on the beaches and in the water that suggests Manzanita is eligible for investigation. For more information on Oregon Beach Monitoring Program sampling locations and advisories please visit Oregon Health Authority at: *https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/BEACHWATERQUALITY/Pages/beaches.aspx*

2. Please keep **Rockaway** and **Twin Rocks** on your water surveillance program. With the clear cut above the town and the inadequacy of the current rules the timber industry is putting water supplies at risk, and my understanding is that the city municipality does not have the resources to take remedial action. We have pregnant women and young children visiting regularly and the chemicals found in the water supply are potential carcinogenic substances from forest cutting practices getting into streams that become city water.

Response #2: Thank you for your comments regarding drinking water quality and forestry practices. Your concerns are outside the scope of the Oregon Beach Monitoring Program, which deals with water contact recreation safety and fecal contamination. We encourage the Rockaway community to provide this input to the Oregon Department of Forestry, which is the agency that oversees timber management on private lands. ODF implements the Forest Practices rules that make sure that the pollutants from forest operations do not impair the Clean Water Act water quality standards. The Oregon Health Authority oversees drinking water safety and they would be another place to voice your concerns. DEQ's water quality program administers the Clean Water Act in Oregon, which includes setting WQ standards to protect beneficial uses of waters. There is more information on DEQ's Assessment and Monitoring programs on our WQ Website: https://www.oregon.gov/deq/wq/Pages/default.aspx.

I have looked into environmental water quality data for area of your concerns. Between 2013 and 2015, DEQ and the Tillamook Estuaries Partnership sampled surface drinking water source in the North Coast, including Jetty Creek. Through these efforts, DEQ tested for over 200 chemicals and detected 47 chemicals. Results indicate extremely low levels of current use pesticides were present in some streams, but these were not at levels that posed risks to human health. The chemicals detected included legacy pesticide breakdown products (DDE and DDD) and priority metals (copper, iron, and inorganic arsenic). These detections were in stream water, not finished drinking water. More information on this monitoring is available in the

TEP's 2015 Health of the Bay Report (https://www.tbnep.org). DEQ and the Tillamook Estuaries Partnership will continue monitoring toxics when appropriate, working with local partners, and reducing pollutants through DEQ programs in the North Coast Basin over the next several years.
The Rockaway Beach Water District regularly tests the drinking water for a wide range of substances and reports the results on the Oregon Health Authority web page. https://yourwater.oregon.gov/inventory.php?pwsno=00708. All pesticide results in finished drinking water have been below detection. The distribution system experienced a period where there were elevated levels of disinfection byproducts like triholmethanes in its processed water from 2011 to approximately 2013. Drinking water samples since 2013 have been low for disinfection byproducts. It is not known, but possible, that increased logging activity upstream of source water contributed to this increase. However, the drinking water facility managers installed new filtering and treatment systems to address the issues.

The good news is that recent monitoring data from Rockaway Beach Water District shows that all monitored chemicals are within limits for safe drinking water.

3. I believe the water off beach at the end of **NW 68th Street in Newport** should be monitored (in addition to the water of the creek running into the ocean at that location). Reasons: (1) an increasing number of people use that beach due partly to the more then doubling of the number of residential structures on **NW 68th street** in the past 15 years and the use of at least some of them as Vacation Rental Dwellings/Short Term Rentals. It is also now standard for visitors to a moderate sized condos/time share just south of NW 68th Street to walk down slope from that facility, plus there is a path from the Pacific Shores RV resort (which probably has 75-100 spaces), and residents of the neighborhood of NW 54th to NW 60th street also use that beach (the neighborhood has at least 7 or 8 VRDs/STRs at this time). A number of these people have dogs (i.e., dog feces left on the beach). As a long-term resident of the area, my observation is that the beach from the north side of Yaquina Head to about NW 70-71st street has become much more heavily used in the past 10 years. (2) the city of Newport replaced the pumping station & created a new & larger asphalt parking lot, thus making it even more likely that more people will visit that beach/use that beach access. (3) Despite the new pumping station installed in 2019, there was a sewer line break on NW 68th street after the new pumping station was open. It's an old system struggling with increased demand due to the above-mentioned construction of residential structures. (4) The beach is part of a different circulatory/transport system then Agate Beach wayside. The Yaquina Head headland creates a boundary between two circulatory/transfer systems, thus testing at Agate Beach wayside won't pick up on high e.coli levels at the NW 68th street access beach, if the pumping station is overwhelmed (as still seems to happen at Agate Beach wayside, despite the replacement & enlargement of the pumping station just on the other side of Oceanview St from the beach at Agate Beach wayside) for any reason or there's another break in a sewer line.

Response #3: Thank you for your comment. We currently monitor Agate Beach at two locations, and four locations associated with Beverly Beach to the North. For

more specific information on those locations please visit Oregon Health Authority at: https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/BEACHWATERQUALITY/Pages/beaches.aspx. Based on our risk assessment and previous data, these locations are important for continued routine monitoring and bracket the NW 68th Street in Newport. The Oregon Beach Monitoring Program (OBMP) will conduct a few investigational sampling events in 2021 or 2022 at NW 68th Street location in Newport to check fecal bacteria concentration in ocean water. We appreciate your interest in the Oregon Beach Monitoring Program (OBMP). We hope you continue to remain engaged with issues affecting Oregon's beaches and follow the results of fecal bacteria monitoring data and advisories provided by the OBMP.

4. I would propose that the section of beach between **Delray Beach and Sunset Beach** just south of Camp Rilea, in Warrenton be a location to monitor as to its designation as a highway. It is frequently misused in a number of ways by vehicles. This includes improper dumping of rubbish, illegal camping, animal carcasses, & mostly distracted and reckless driving. Additionally, there has been increasing occurrences of people driving up into the grass dunes damaging the grasses, angle of repose and wildlife habitat as well. Many of these have been documented and information readily available on the local site of volunteers who tow people out.

Response #4: Thank you for your comments regarding the OBMP. Your observations, while troubling, are outside the scope of the OBMP. Our program deals with fecal contamination of beach water and the safety of people recreating at the beach. We encourage you to voice your concerns to Oregon State Parks through their web page https://stateparks.oregon.gov/index.cfm?do=v.page&id=86. Perhaps if they hear concerns about these beaches from you and others they will be able to devote more resources to clean up and rules enforcement.

5. Response #4:Hi there, I recently became part of a Facebook group on agate hunting and the beaches they recommend to each other were significantly more busy than others not on their list. The group is called Oregon Beach Gravel Bed Reports or Oregon Beach Gravelhounds. In addition to a few already in your list (Beverly, Short Sand, D River) they steer people toward: **Oceanside, OR** - the parking here is usually always full, **Moolack Beach, Gleneden Beach, Road's End, Nelscott**

Response #5: Thanks for your interest in the Oregon Beach Monitoring Program. The beach program has monitored several of the beaches you listed during the last couple of decades. The program monitored Oceanside beaches for nearly a decade but focused on other beaches more recently because there were only a couple of high results from samples collected at Oceanside back in 2007. The Program plans to add Oceanside back to the 2021 sampling schedule for further investigation and to update our data. Moolack and Gleneden beaches were checked during the early years of the program and we did not get any high results. Nelscott beaches were also monitored during the first six years of the program and there were a few high results but most of the results were below the detection limit of the test. Road's End Beach sample

results were also below advisory criteria. There was a spill at Road's End in June 2019 and the beach program collected samples which showed high results and an advisory was issued while the spill was cleaned up. As we add Oceanside to the 2021 monitoring schedule Moolack, Gleneden, Road's End and Nelscott Beaches remain candidates for further monitoring. For more information on Oregon Beach Monitoring Program sampling locations and advisories please visit Oregon Health Authority at: *https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/BEACHWATERQUALITY/Pages/beaches.aspx*

6. The beach testing should include **Cape Kiwanda**. All the development there is worrisome.

Response #6: Thanks for your interest in the Oregon Beach Monitoring Program. The beach program monitored the beach at Cape Kiwanda for the first decade of the program. There has been noticeable development at Cape Kiwanda and Pacific City over the years. The program tests for fecal indicator bacteria and works with the Oregon Health Authority to issue advisories when indicator bacteria counts exceed the recreational ocean water criteria. Sample results from Cape Kiwanda only exceeded that criteria a few times during a decade of testing. One reason might be that there is no significant creek or pipe runoff on to the beach. There is a pipe that drains the parking area during heavy rains. Cape Kiwanda and Pacific City are popular with surfers and people enjoying a variety of water sports as well as people walking along the beach and hiking the trails. The beach program plans to resume monitoring Cape Kiwanda for the 2021 summer season in order to update data that we can provide to the public. For more information on Oregon Beach Monitoring Program sampling locations and advisories please visit Oregon Health Authority at: *https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/BEACHWATERQUALITY/Pages/beaches.aspx*

7. Thank you, the list showed most of the **Lincoln County beaches** I frequent and care about most. Appreciate having a voice in the process.

Response #7: Thank you for your comment. We appreciate your interest in the Oregon Beach Monitoring Program (OBMP). We hope you continue to remain engaged with issues affecting Lincoln Counties beaches and follow the results of fecal bacteria monitoring data and advisories provided by the OBMP.

8. If I would choose which Beaches, I first would,go with the beaches that has had the highest Covid levels at the beach or in that specific county. To get those beaches safe.

9. I would choose the beaches that have the best revenue for the city/county and has low Covid stats. I would choose the beaches who have the most visitors who practice safe protocols for public safety. Reward those who practice safety with wisdom. Thank you for asking. I appreciate all what OHA has done to keep the citizens safe in Oregon. I do not endorse the complainers or those who recommend resignations from your agency or the state. Please continue making us Oregonians safe.

Response #8 and #9: Thank you for your comments on the OBMP. OMBP deals with swimmer safety and fecal bacteria contamination at beaches. We do not test for the COVID virus and considerations related to the COVID pandemic are outside the scope of this program. With increased vaccinations, we hope that the pandemic may be behind us soon.

10. Thank you for sharing this list. I approve of your selections.

Response #10: Thank you for your comment. We appreciate your interest in the Oregon Beach Monitoring Program (OBMP). We hope you continue to remain engaged with issues affecting Oregon's beaches and follow the results of fecal bacteria monitoring data and advisories provided by the OBMP.

11. Unless there is some really specific reason not to, why wouldn't we monitor all of the beaches as Covid cases are not at marginal level yet and variants are spreading.

Response #11: Thank you for your comments on the OBMP. The specific reason we do not monitor all the beaches all the time is money. The only support for this program are grants from EPA. Oregon has 360 miles of Pacific Ocean coastline and 89 beaches. We cannot afford to monitor all the beaches all the time. Every two years we prioritize which beaches to monitor based on swimmer risk and public comments like yours. In recent years, we have monitored 70 sites at 18 beaches. With careful scheduling, we plan add three beaches to increase this about 21 beaches in 2021-2022. We will select the added beaches based on public comments, logistical and budget limits, swimmer risk and the need for bacteria data.

12. Good afternoon, I would like to suggest **Cape Kiwanda Beach** located in Pacific City, Oregon as a beach to monitor. Over the last five years this beach has seen an increase in visitors.

Response #12: Thanks for your interest in the Oregon Beach Monitoring Program. The beach program monitored the beach at Cape Kiwanda for the first decade of the program. There has been noticeable development at Cape Kiwanda and Pacific City over the years. The program tests for fecal indicator bacteria and works with the Oregon Health Authority to issue advisories when indicator bacteria counts exceed the recreational ocean water criteria of 130 cfu's / 100 mL's. Sample results from Cape Kiwanda only exceeded that criteria a few times during a decade of testing. One reason might be that there is no significant creek or pipe runoff on to the beach. There is a pipe that drains the parking area during heavy rains. Cape Kiwanda and Pacific City are popular with surfers and people enjoying a variety of water sports as well as people walking along the beach and hiking the trails. The beach program plans to resume monitoring Cape Kiwanda for the 2021 summer season in order to update

data that we can provide to the public that enjoy the beaches there. For more information on Oregon Beach Monitoring Program, sampling locations and advisories please visit Oregon Health Authority at: *https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/BEACHWATERQUALITY/Pages/beaches.aspx*

13. Not on your list, but please consider adding **Horsfall Beach** where the ATV crowd regularly ignore laws. Also **Sunset Beach** is easily monitored with a drive by as is Bastendorf.

Response #13: Thank you for your comments on the OBMP. We have monitored Sunset Bay State Park and Bastendorf Beach the past and we will continue to monitor them in 2021 and 2022. However, we are not able to monitor Horsefall Beach since it is part of the Oregon Dunes National Recreation Area. The law that created this program forbids us to use federal grant money to monitor beaches at federal facilities.

14. I 100% support the proposed monitoring of the **Nye Beach** area in Lincoln County (@ Nye Beach turn around, Newport, OR). This area has numerous problems and is highly used by tourists. The area has a lot of domestic animal use (dogs), sewer line leaks into storm water system and street run off from local areas. Thanks You, Gary, Newport, Oregon

Response #14: Thank you for your comment. We will continue to monitoring Nye Beach as part of the Oregon Beach Monitoring Program (OBMP). We appreciate your interest the OBMP and hope you continue to remain engaged with issues affecting Oregon's beaches and follow the results of fecal bacteria monitoring data and advisories provided by the OBMP.

15. With over 90 beaches to monitor, and one technician. . . quite a challenge. Would it be possible to enlist "citizen scientists?" I'm sure there are a number of volunteers who would like to help out. This may not be feasible, but it's a thought. Good luck!

Response #15: Thank you for your comment. Citizen scientists play an important role in environmental data collection. DEQ works with the Oregon Watershed Enhancement Board (OWEB) to provide instruments and technical assistance to volunteer monitoring groups funded through OWEB's competitive grant process. If you are interested, you can find more information on that here: https://www.oregon.gov/oweb/grants/Pages/monitoring.aspx

The Oregon Beach Monitoring Program (OBMP) is fund by the Environmental Protection Agency (EPA). Over the years, the funding for this program has always been limited and has remained essentially flat. The OBMP has some very specific objectives that we have to meet:

- We need to evaluate and prioritize monitoring locations covering the whole Oregon coast every two years.

- We need to insure that the OBMP monitoring data is with strict quality control measure to produce data of known quality.
- We need to make sure the data is collected, analyzed and reported on predictable schedule.
- We need to make sure that advisories are issued and lifted in a timely manner.
- And we need to make sure all the environmental data and advisory data are reported and uploaded to EPA by January 1 each year.

With the limited resources at our disposal, the best way for us to achieve these objectives is using DEQ and OHA staff. Unfortunately, there are not sufficient resources to provide the necessary equipment, supplies, technical support, training, and data management requirements for our citizens scientists along the 360 miles of Oregon's coast. With that said, local information is valuable for helping us make decision on beaches we should consider when we revise our monitoring list. Citizen science can and does play an important in that process on certain parts of our coast.

We appreciate your interest in the Oregon Beach Monitoring Program (OBMP). We hope you continue to remain engaged with issues affecting Oregon's beaches and follow the results of fecal bacteria monitoring data and advisories provided by the OBMP.

16. We have been and go to **Seaside** and other Oregon beaches very often throughout the year and by far seaside is one that we usually wont even go to anymore due to the garbage and litter on the beaches and in the sand.

Reaponse #16: Thank you for your comments on the Oregon Beach Monitoring Program. Your concerns are outside the scope of the OMBP, but we share your frustration. Most Oregon beaches are free of trash most of the time because the vast majority of us are conscientious people who love the beach. Seaside is one of the most popular beaches in Oregon and it only takes a few inconsiderate people to ruin it. We encourage you to voice your concerns to the City of Seaside Parks Department. The ocean beach is important to the prosperity of the Seaside area. Perhaps if they hear concerns about trash on the beach from you and others they will devote more resources to cleaning the beaches and in enforcing anti-littering rules. https://www.cityofseaside.us/public-works/webforms/report-public-works-hazard-or-service-request.

17. Please monitor Rockaway Beach as part of your sampling plan.

Response #17: Thank you for your comment. We will continue to monitoring Rockaway Beach as part of the Oregon Beach Monitoring Program (OBMP). For information on the specific locations on Rockaway Beach, please visit the Oregon Health Authority OBMP website at: https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/BEACHWATERQUALITY/Pages/beaches.aspx

We appreciate your interest in the Oregon Beach Monitoring Program (OBMP). We hope you continue to remain engaged with issues affecting Oregon's beaches and follow the results of fecal bacteria monitoring data and advisories provided by the OBMP.

18. **Neskowin** has over 300,000 visitors annually (OPRD) and requests to be a part of Water Sampling for public safety.

Response #18: Thanks for your interest in the Oregon Beach Monitoring Program. The beach program monitored Neskowin Beach during the first decade of the program. The beach program reviews the beaches on the sampling schedule every two years and focused resources to other beaches from 2012 to 2016. The beach program went back to Neskowin in 2017 and it remains on the sampling schedule for 2021. There has been a volunteer watershed group monitoring water quality in Hawk Creek and Neskowin Creek at Neskowin Beach and their concerns resulted in adding Neskowin Beach back to the sampling schedule. Over the years the beach program has collected almost 300 samples from Neskowin Beach and the creeks flowing out to the beach. A little less than five percent of those sample results exceeded the criteria for bacteria pollution at ocean beaches. For more information on Oregon Beach Monitoring Program sampling locations and advisories please visit Oregon Health Authority at: *https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/BEACHWATERQUALITY/Pages/beaches.aspx*

19. First, I thank you for the opportunity to express my opinion. With that said, the beaches in **Coos Bay** are severely contaminated. The homeless people are coming to our area in full force. They live in the hills and brush all along the bay from Charleston to the North Bend Bridge. They use creeks and brush as their toilets and wash area. The tide takes all of that nastiness back out with it. Not too mention their old food and garbage. So I ask that you please monitor those beaches, as well as all of the others and the bay area that I mentioned. The homeless are all over town and up the river . The river area is just as bad if not worse. Also carrying more waste and bacteria to the ocean. I just remembered, there are some homeless camps under the North Bend Bridge.

Response #19: Thank you for your comment. Unfortunately, with the resources we have available to us for the Oregon Beach Monitoring Program (OBMP) we can't monitor all beaches along the Oregon coast. We do a risk assessment every two

years combining beach use, potential bacteria sources, equitable coastwide coverage and public comments determining our final list. Uisng those criteria will continue monitoring Sunset Bay and Bastendorff in Coos County and Heceta Beach in Florence as part of the OBMP program. If you have environmental pollution concerns, you can file an environmental complaint at https://www.oregon.gov/DEQ/Pages/index.aspx. The "File a Pollution Complaint" is at the bottom under "Quick links.

We appreciate your interest in the Oregon Beach Monitoring Program (OBMP). We hope you continue to remain engaged with issues affecting Oregon's beaches and follow the results of fecal bacteria monitoring data and advisories provided by the OBMP.

20. I think that the beach informally known as "**Short Beach**," between **Oceanside and Cape Meares lighthouse**, needs monitoring. There are NO bathroom or garbage facilities, and it is receiving increasingly heavy use. Last summer cars lined the road in both directions. It is accessed via a staircase.

Response #20: Thank you for your comments on the Oregon Beach Monitoring Program. We will investigate the Short Beach area you described but we may not be able to add it to our monitoring program. This area is probably part of the Cape Meares National Wildlife Refuge. We cannot use EPA grant money to monitor beaches under federal jurisdiction.

We plan to add the beach at Oceanside. The beach program monitored Oceanside beaches for nearly a decade but focused on other beaches more recently because there were only a couple of high results from samples collected at Oceanside back in 2007. We collected and analyzed 246 samples between 2002 and 2011. Our results showed that this popular beach had low bacteria levels. Less than 1% of the samples exceeded the level safe for contact recreation.

For more information on Oregon Beach Monitoring Program sampling locations and advisories please visit Oregon Health Authority at: https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/BEACHWATERQUALITY/Pages/beaches.aspx.

21. I live adjacent to **Nedonna Beach** and I would like you to consider monitoring it. That's the beach that is between Rockaway Beach and the South Nehalem Jetty. For jurisdictional purposes, approximately 2/3 of the houses in the Nedonna Beach neighborhood are solely within Tillamook County; whereas, the other 1/3 are within the city limits of Rockaway Beach. The houses that are solely in the county section lie between the beach and David Street to the east. The houses that are within the city limits of Rockaway Beach are on the city sewer system, but the ones that are solely in the county have individual septic tanks. Some of these septic tanks were installed almost fifty years ago and many of them are deteriorating. There are no required regular inspections

of them, consequently, only if a house is sold to someone who will be carrying a mortgage is the septic system inspected. Houses sold for cash are not required to have the septic system inspected. Also, many of these houses are now being used as short-term vacation rentals which can drastically increase toilet usage. When there are particularly hard rains that leave large amounts of standing water, one can smell the sewage from flooded septic tanks. It seems possible that this is contaminating the groundwater and, thereby, causing pollution of the adjacent Nehalem River, ocean, and Nedonna Beach. In addition, the primary source of drinking water for the City of Rockaway Beach is Jetty Creek, but their backup wells are below the Nedonna Beach neighborhood. The aquifer that these backup wells tap is only about fifty feet below the neighborhood and, obviously, close to both the Nehalem River and the ocean beach. In the summer, Jetty Creek often does not provide sufficient water for the City of Rockaway Beach; therefore, much water is drawn from these backup wells. Besides concerns about possible fecal contamination is the fact that the Jetty Creek watershed is owned by two timber companies who over the last seventeen years have intermittently sprayed their land with pesticides. It seems likely that this use of pesticides also may be contaminating the drinking water, the river, the ocean, and, ultimately, aquatic life.

Response #21: Thank you for your comment. Tillamook administers the onsite program with authority delegated by DEQ. If an onsite system is failing, Tillamook county would oversee the repair permitting. If there are specific sites of concern, a complaint can be sent to Tillamook County for follow up. Here is the contact for Tillamook County for members of the public concerned about septic systems: Tillamook County, Department of Community Development, 1510 B Third Street, Tillamook, OR 97141 Phone: 503-842-3408 or 503-842-1819.

The Oregon Beach Monitoring Program will collect a few investigational samples in 2021 or 2022 along Nedonna Beach to check fecal bacteria concentration in ocean water. We appreciate your interest in the Oregon Beach Monitoring Program (OBMP). We hope you continue to remain engaged with issues affecting Oregon's beaches and follow the results of fecal bacteria monitoring data and advisories provided by the OBMP.

22. I would love to see **Bastendorff** and **Sunset beaches** in Coos Bay monitored. We have had so many issues over the years with Sunset.

Response #22: The OBMP has monitored the beaches at Bastendorff and Sunset Bay State Park since 2002 and we will continue to monitor them in 2021 and 2022. Thank you for your comments regarding the OBMP.

23. I respectfully request an additional beach which receives a great number of visitors on foot and also by vehicle. That beach is **Gearhart beach**. The access to the beach by vehicle is 10th Street, adjacent to the Gearhart By The Sea condos. When the weather is inviting, clams are being harvested, and holiday fun-seekers visit Gearhart, that beach area which allows vehicles is jammed. I believe that too many vehicles have an adverse affect on the animal life, especially the clams. Your observations and independent research by monitoring this beach would be welcome.

Response #23: Thank you for your comment. The Oregon Beach Monitoring Program (OBMP) specifically monitors fecal bacteria concentrations to advise recreational ocean uses on the safety of contacting the water. For more information on the program objectives, please visit https://www.oregon.gov/oha/PH/HealthyEnvironments/Recreation/BeachWaterQuality/Pages/index.aspx. If you have other environmental pollution concerns, you can place an environmental complaint at https://www.oregon.gov/DEQ/Pages/index.aspx. The "File a Pollution Complaint" is at the bottom under "Quick links.

The Oregon Beach Monitoring Program will collect a few investigational samples along Gearhart beach 2021 or 2022 to check fecal bacteria concentration in ocean water. We appreciate your interest in the Oregon Beach Monitoring Program (OBMP). We hope you continue to remain engaged with issues affecting Oregon's beaches and follow the results of fecal bacteria monitoring data and advisories provided by the OBMP.

24. I am very concerned about the clear cutting going on above **Rockaway/Twin Rocks** and the general coastline. The timber industry needs to monitor and FIX their processes so our water and any pollution they create, is not impacted by their lack of concern, their greediness for wealth, and general disregard for those communities they are impacting. It's deplorable what they are doing. Where are our natural resources headed if the companies who are greedy do not follow/or bend the rules or even think proactively how they are impacting the environment. Soon because of their lack of concern, the citizens of the towns that are impacted will be facing even more problems (human, animal, and terrible health concerns). They will move on and the citizens and towns will suffer substantially without a way to heal. The timber industry will bankrupt these towns they have impacted. They don't care, they will move on after the destruction they have created, leaving the towns to clean up but with very limited resources and money. Have the TIMBER INDUSTRY take the responsibility for WHAT THEY ARE DOING!!! Hold them accountable and change these laws. I would strongly ask that you monitor Rockaway/Twin Rocks this summer. Please let me know if there is anything more I can do or get more involved.

Response #24: Thank you for your comments regarding drinking water quality and forestry practices. Your concerns are outside the scope of the Oregon Beach Monitoring Program, which deals with water contact recreation safety and fecal contamination. We encourage the Rockaway community to provide this input to the Oregon Department of Forestry, which is the agency that oversees timber management on private lands. ODF implements the Forest Practices rules that make sure that the pollutants from forest operations do not impair the Clean Water Act water quality standards. The Oregon Health Authority oversees drinking water safety and they would be another place to voice your concerns. DEQ's water quality program administers the Clean Water Act in Oregon, which includes setting WQ standards to protect beneficial uses of waters. There is more information on DEQ's

Assessment and Monitoring programs on our WQ Website: https://www.oregon.gov/deq/wq/Pages/default.aspx.

I have looked into environmental water quality data for area of your concerns. Between 2013 and 2015, DEQ and the Tillamook Estuaries Partnership sampled surface drinking water source in the North Coast, including Jetty Creek. Through these efforts, DEQ tested for over 200 chemicals and detected 47 chemicals. Results indicate extremely low levels of current use pesticides were present in some streams, but these were not at levels that posed risks to human health. The chemicals detected included legacy pesticide breakdown products (DDE and DDD) and priority metals (copper, iron, and inorganic arsenic). These detections were in stream water, not finished drinking water. More information on this monitoring is available in the TEP's 2015 Health of the Bay Report (https://www.tbnep.org). DEQ and the Tillamook Estuaries Partnership will continue monitoring toxics when appropriate, working with local partners, and reducing pollutants through DEQ programs in the North Coast Basin over the next several years.

The Rockaway Beach Water District regularly tests the drinking water for a wide range of substances and reports the results on the Oregon Health Authority web page. https://yourwater.oregon.gov/inventory.php?pwsno=00708. All pesticide results in finished drinking water have been below detection. The distribution system experienced a period where there were elevated levels of disinfection byproducts like triholmethanes in its processed water from 2011 to approximately 2013. Drinking water samples since 2013 have been low for disinfection byproducts. It is not known, but possible, that increased logging activity upstream of source water contributed to this increase. However, the drinking water facility managers installed new filtering and treatment systems to address the issues.

The good news is that recent monitoring data from Rockaway Beach Water District shows that all monitored chemicals are within limits for safe drinking water.

25. This letter is submitted by the **Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians (the "Tribe" or "CTCLUSI")** in response to the Oregon Health Authority's news release on April 14,202 1 seeking comments on proposed Oregon Beaches to monitor in 2021. The Tribe appreciates the opportunity to offer input on proposed Oregon beaches to monitor in 2021. We want to applaud the good efforts made by Oregon Department of Environmental equality (DEQ) and Oregon Health Authority's to monitor recreational water quality at Oregon Coast beaches with the intent of protecting public health. The Tribe recommends continued monitoring of the **Sunset Bay** and **Bastendorff** in Coos County and **Heceta Beach** in Florence. Often times, the Sunset Bay has been closed due to high bacteria levels that has rendered it unsafe for contact recreation. The bacteria come from Big creek inputs- It is a popular beach for swimming, kayaks and tide pooling. The Bastendorff Beach is a popular surfer site and also has a creek that runs though cow fields before outputting to the ocean at the beach. Potential high bacteria inputs during rain events is imminent. I am glad to report that the Tribe periodically monitors Bastendorff for phytoplankton for ODF as part of a coastwide

monitoring program for harmful algal blooms. The Tribe would be interested to receive a copy of the final report following the monitoring event.

Response #25: Thank you for your support and your comment. We will continue monitoring Sunset Bay and Bastendorff in Coos County and Heceta Beach in Florence as part of the program. Monitoring data for the Oregon Beach Monitoring Program (OBMP) can be accessed a few different ways. When the monitoring is reviewed and finalized at the end of each season, it is all available in DEQ's Ambient Water Quality Monitoring System (AWQS). You can find the data here https://www.oregon.gov/deq/wq/Pages/WQdata.aspx. It is also available in through the EPA supported Water Quality Portal which can be accessed here https://www.waterqualitydata.us/wqp_description/. Finally, if you've never visited the EPA's Beach Advisory and Closing On-line Notification system (BEACON) s https://watersgeo.epa.gov/beacon2/ I encourage you to take a look. It has an excellent geographically based interface to view advisory and monitoring data for the country.

We appreciate your interest in the Oregon Beach Monitoring Program (OBMP). We hope you continue to remain engaged with issues affecting Oregon's beaches and follow the results of fecal bacteria monitoring data and advisories provided by the OBMP. Please let us know if you have any questions.