

Alaska Department of Environmental Conservation Waterbody Field Report Eagle River: Eagle River, Alaska



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DEC Water Quality staff, Mary Inovejas, collecting data at S.F. Eagle River sampling site. Photo by Jeff Fisher/DEC

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Abstract

The objective of this study was to assess pathogen concentrations in Eagle River and determine compliance with freshwater water quality criteria for Water Supply and Water Recreation uses. During the spring, summer, and fall of 2024², water samples were collected from four sites along the mainstem of Eagle River and South Fork Eagle River. In 2025, due to inaccessibility of the most downstream site (Eagle River at VFW Rd) resulting from construction activities, a sample location in Meadow Creek at the confluence with the mainstem Eagle River was sampled instead. No exceedances of applicable water quality criteria were observed for the Eagle River assessment units. However, during the 2025 sampling season (Year 1 of sampling at Meadow Creek), elevated pathogen concentrations of *E. coli* and fecal coliform were observed, with exceedances of water quality criteria. No human, dog, or bird associated genetic markers were detected. Additional bacteria sampling is planned for Meadow Creek in 2026.

Basic Waterbody Information

Table 1. Basic Waterbody Information.

Assessment Unit ID (AUID)	AK_R_2040103_003_004	AK_R_2040103_003_005	AK_R_2040103_003_007
Assessment Unit Name	Eagle River	Meadow Creek	South Fork Eagle River
Location description	Eagle River (Municipality of Anchorage), Alaska		
Hydrologic unit code	190204010306	190204010306	190204010305
Water Type	River		
Area sampled	Three sites: one on the North Fork and two between the South Fork confluence and the Glenn Highway Bridge	One site immediately upstream of confluence with Eagle River.	One site approximately one kilometer upstream of the confluence with the mainstem.
Time of year sampled	May 2 – September 29, 2024, May 22 – September 24, 2025		

Water Quality Evaluation

Background

The Eagle River watershed is located north and east of Anchorage and drains approximately 45 square miles before discharging into Knik Arm. The upper watershed is located within the

² 2024. ADEC. 2024 Eagle River Pathogens Field Report. Juneau, Alaska.

Chugach Mountains and Chugach State Park, consists of forested and wetland areas, and is largely undisturbed. Much of lower Eagle River is located within Joint Base Elmendorf-Richardson, limiting public access. Eagle River is not currently listed as impaired for fecal coliform. In 2020 and 2021, Eagle River was sampled for fecal coliform and *E. coli* as part of the Anchorage Creeks and Lakes Pathogen Survey.³ In both years, fecal coliform results exceeded water quality criteria, with preliminary analysis suggesting that stormwater runoff contributed to the elevated levels. Microbial Source Tracking (MST) analyses, as part of that study, detected no markers for human, bird, or dog sources of pathogens. The objective of the 2024-2025 study was to collect additional pathogen samples from multiple locations and seasons in the watershed to determine whether Eagle River is meeting water quality criteria for fecal coliform and *E. coli*. Water quality criteria for pathogens in freshwater are specified in Alaska's Water Quality Standards 18 AAC 70.020(2) as summarized in Table 2.

Table 2. Water quality criteria for freshwater supply and recreation designated uses 18 AAC 70.020(1)(2).

Designated Use	Freshwater Criteria
(A) Water Supply (i) drinking, culinary, and food processing ⁴	In a 30-day period, the geometric mean may not exceed 20 fecal coliform colony forming units (cfu)/100 ml, and not more than 10% of the samples may exceed 40 fecal coliform cfu/100 ml.
(B) Water Recreation (i) contact recreation	In a 30-day period, the geometric mean of samples may not exceed 126 <i>Escherichia coli</i> (<i>E. coli</i>) cfu/100 ml, and not more than 10% of the samples may exceed a statistical threshold value of 410 <i>E. coli</i> cfu/100 ml.

Objective

The objective of this study is to determine if Eagle River meets water quality criteria for pathogens by collecting assessment level data at multiple locations during open water months. This report presents analysis results from the 2025 sampling season and compares them to 2024 results. The analysis of 2024 and 2025 fulfills the two-year data collection requirement⁵

Quality Assurance Review

This project followed DEC's Water Quality Programmatic Quality Assurance Project Plan, the project sampling plan⁶, and standard operating procedures for pathogen sample collection and AquaTROLL operation. Field staff were trained in water sample collection methods. Some sample event dates were adjusted slightly from the original date specified in the sampling plan. Data collected equated to 100 % project completeness.

³ ADEC. 2022. Anchorage Creeks and Lakes Pathogen Survey 2020-2021 Final Report. Juneau, Alaska.

⁴ The applicable use for assessing freshwater is 18 AAC 70. Alaska Water Quality Standards, Amend as of August 9, 2025.

⁵ ADEC. 2019. Listing Methodology for Determining Water Quality Impairment from Pathogens. Juneau, Alaska.

⁶ QAPP and SAP available from DEC Water Quality Program

All samples were delivered to DEC's Environmental Health Laboratory well within the 6-hour time requirement, and cooler temperatures were 6 degrees Celsius (C) or cooler. All quality control field replicate sample pairs were within 60% relative percent difference (RPD) except for five sample pairs. Due to low bacteria counts and the nature of bacteria growth, DEC's Quality Assurance Officer determined that the exceedance of the 60% RPD did not mean the data were invalid; however, the samples were flagged as not meeting the programmatic quality objective RPD.

All AquaTROLL calibration and verification records were stored digitally as well as in a hard copy logbook kept in the instrument case.

Methods

In 2025, DEC staff collected water samples and took in situ measurements of Eagle River at three locations and one location of Meadow Creek (Figure 1 and Table 3). Six sample events were completed in spring 2025, six in early summer 2025, and six in late summer 2025 (Table 2). Each set of six sample events occurred within 30 days, as required by DEC's pathogen water quality criteria and listing methodology for pathogens⁷. Water samples were analyzed for fecal coliform bacteria and *E. coli* by the DEC Environmental Health Laboratory in Anchorage, AK. Duplicate samples were collected at one rotating location for each sampling event. At one event per season, water samples were collected, filtered, preserved, and shipped to LuminUltra for Microbial Source Tracking genetic analysis for human, bird, and dog *Bacteroides* DNA markers.

During each sample event, an In Situ AquaTROLL 500 was used at each site to record in situ measurements for pH, specific conductance, water temperature, dissolved oxygen, and turbidity (Table 11). Photos were taken at each site during each sampling event (Figures 2-6) and field observations of weather, wildlife, and activity were collected using Survey123 field data sheets.

⁷ ADEC. 2019. Listing Methodology for Determining Water Quality Impairment from Pathogens. Juneau, Alaska.

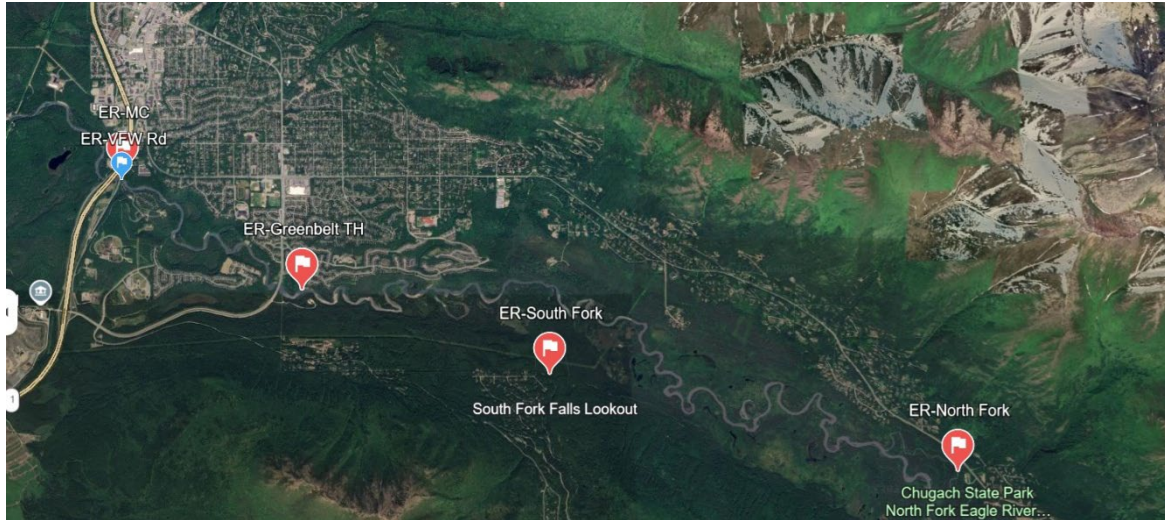


Figure 1. Eagle River pathogen sampling sites. The mainstem site farthest upstream is Eagle River at ER-North Fork) and the mainstem site farthest downstream is ER- VFW Rd (2024 sampling only), Eagle River-MC (2025 sampling only). ER- South Fork is a separate assessment unit and joins into the mainstem between the North Fork and Greenbelt sites.



Figure 2. Looking upstream at the North Fork sample site.



Figure 3. Looking upstream at the South Fork sample site.



Figure 4. Looking upstream at the Greenbelt sample site.



Figure 5. Looking upstream at the VFW Road sample site (2024 only).



Figure 6. Looking upstream at the mouth of Meadow Creek site (2025 only).

Table 3. Locations for water quality sampling and in situ monitoring along Eagle River.

Site ID	Description	Year(s) Sampled	Latitude	Longitude
ER-NF	Eagle River North Fork accessed from North Fork Trailhead	2024/2025	61.27735	-149.38103
ER-SF	Eagle River South Fork downstream of bridge by South Fork (Barbara) Falls Trailhead	2024/2025	61.288092	-149.476331
ER-GB	Eagle River by Eagle River Greenbelt Trailhead	2024/2025	61.297502	-149.535363
ER-VFW	Eagle River downstream VFW Road	2024	61.310309	-149.57826
ER-MC	Meadow Creek upstream of Eagle River Confluence	2025	61.310278	-149.57639

Table 4. Summary of sampling seasons for 2024.

Season	Sampling Date Range	Number of Sample Events
Spring 2024	5/2-5/29/2024	6
Early summer 2024	7/9-7/31/2024	6
Fall 2024	8/27-9/23/2024	6

Table 5. Summary of sampling seasons for 2025.

Season	Sampling Date Range	Number of Sample Events
Spring 2025	5/22-6/17/2025	6
Early summer 2025	7/16-8/7/2025	6
Fall 2025	8/19-9/29/2025	6

Results

Results were analyzed by assessment unit identifier (AUID)(Table 1). Three sites (ER-NF, ER-GB, and ER-VFW) were sampled on the mainstem of Eagle River (AUID AK_R_2040103_003_004). ER-NF and ER-GB were the two sites that were sampled in 2024 and 2025 where ER-VFW was only sampled in 2024 due to construction that was occurring at the site location in 2025. One site (ER-SF) was sampled on South Fork Eagle River (AUID AK_R_2040103_003_007) in 2024 and 2025. Meadow Creek (AK_R_2040103_005) was added to the sampling schedule in 2025 as a surrogate for VFW; however, ER-MC falls in a different assessment unit and cannot be used to analyze mainstem Eagle River conditions.

Water quality criteria for pathogens include both a geometric mean (geomean) criterion and a specific threshold criterion which not more than ten percent of samples may exceed. Thirty-day geomeans were calculated for periods in which at least five samples were collected, for a total of six geomeans for each assessment unit. For each non-detect result, a value of half the detection level was used in the geomean calculations. All pathogen results are listed in Appendix A and AUID geomeans are listed in Appendix B.

Mainstem Eagle River

Fecal coliform concentrations on the mainstem of Eagle River ranged from non-detect to 85 cfu/100 mL in 2024 and from non-detect to 54 cfu/100 mL in 2025 (Figures 8, 9, 10), while *E. coli* ranged from non-detect to 127.4 MPN/100 mL in 2024 and from non-detect to 104.6 MPN/100 mL in 2025 (Figures 8, 9, 10). None of the calculated 30-day geometric means for *E. coli* exceeded the 126 MPN/100 mL criterion in either year (Table 8), and no individual samples exceeded the 410 MPN/100 mL not-to-exceed threshold (Table 9). For fecal coliform, no geometric means exceeded the 20 cfu/100 mL criterion in 2024, while one exceedance occurred in 2025 (Table 6). A small number of individual fecal coliform samples exceeded 40 cfu/100 mL in both years (3.7% in 2024 and 2.8% in 2025), but these did not surpass the 10% exceedance threshold in either year (Table 7).

South Fork Eagle River

Fecal coliform concentrations on the South Fork Eagle River ranged from non-detect to 53 cfu/100 mL in 2024 (Appendix A) and from 1 to 100 cfu/100 mL in 2025 (Appendix A), while *E. coli* ranged from 0.5 to 85.5 MPN/100 mL in 2024 (Appendix A) and from 1 to 166.4 MPN/100 mL in 2025 (Appendix A). None of the calculated 30-day geometric means for *E. coli* exceeded the 126 MPN/100 mL criterion in either year (Figure 7 and Table 8), and no individual samples exceeded the 410 MPN/100 mL not-to-exceed threshold (Table 9). For fecal coliform, no geometric means exceeded the 20 cfu/100 mL criterion in 2024 or 2025 (Table 6). One fecal coliform sample exceeded 40 cfu/100 mL in 2024 (Table 7) and no individual samples exceeded 40 cfu/100 mL in 2025. The percent of samples that exceeded 40 cfu/100 mL in 2024 was 5.6% and did not surpass the 10% exceedance threshold (Table 7).

Meadow Creek

Fecal coliform concentrations in Meadow Creek ranged from 8 to 360 cfu/100 mL, while *E. coli* ranged from 39.5 to 1,046.2 MPN/100 mL (Appendix A). All calculated 30-day geometric means for fecal coliform exceeded the 20 cfu/100 mL criterion (Figure 8 and Table 6), and two calculated *E. coli* geometric means exceeded the 126 MPN/100 mL criterion (Table 8). Ten individual fecal coliform samples exceeded the 40 cfu/100 mL not-to-exceed threshold (Table 7), and two *E. coli* samples exceeded the 410 MPN/100 mL not-to-exceed threshold (Table 9).

No genetic markers were detected at any of the sample sites for any of the sample events in 2024 and 2025.

Table 6. Summary of geomean exceedances for fecal coliform freshwater supply (A)(i) criteria on both assessment units for Eagle River and Meadow Creek. Bold text indicates a result above allowed limits.

	Evaluated area	Number of calculated 30-day geometric means	Exceed 20 cfu/100 ml	
			Number	Percent
2024 Sampling	Eagle River - Mainstem	18	3	16.7%
	Eagle River - South Fork	6	0	0.0%
2025 Sampling	Eagle River - Mainstem	12	1	8.3%
	Eagle River - South Fork	6	0	0.0%
	Eagle River - Meadow Creek	6	6	100.0%

Table 7. Summary of not-to-exceed exceedances for fecal coliform freshwater Supply (A)(i) on both assessment units for Eagle River and Meadow Creek. Bold text indicates a result above allowed limits.

	Evaluated area	Number of observations	Exceed 40 cfu*/100 ml	
			Number	Percent
2024 Sampling	Eagle River - Mainstem	54	2	3.7%
	Eagle River - South Fork	18	1	5.6%
2025 Sampling	Eagle River - Mainstem	36	1	2.8%
	Eagle River - South Fork	18	0	0.0%
	Eagle River - Meadow Creek	18	10	55.6%

Table 8. Summary of geomean exceedances for E. coli Freshwater Recreation (B)(i) criteria for assessment units for Eagle River and Meadow Creek. For each non-detect result, a value of half the detection limit was used in the geomean calculation. Bold text indicates a result above allowed limits.

	Evaluated area	Number of calculated 30-day geometric means	Exceed 126 MPN*/100 ml	
			Number	Percent
2024 Sampling	Eagle River - Mainstem	18	0	0.0%
	Eagle River - South Fork	6	0	0.0%
2025 Sampling	Eagle River - Mainstem	12	0	0.0%
	Eagle River - South Fork	6	0	0.0%
	Eagle River - Meadow Creek	6	2	33.3%

*MPN= most probable number (equal to cfu but reported as MPN per lab method)

Table 9. Summary of not-to-exceed exceedances for E. coli Freshwater Recreation (B)(i) criteria for assessment units of Eagle River and Meadow Creek. Bold text indicates a result above allowed limits.

	Evaluated area	Number of observations	Exceed 410 MPN/100 ml	
			Number	Percent
2024 Sampling	Eagle River - Mainstem	54	0	0.0%
	Eagle River - South Fork	18	0	0.0%
2025 Sampling	Eagle River - Mainstem	36	0	0.0%
	Eagle River - South Fork	18	0	0.0%
	Eagle River - Meadow Creek	18	2	11.1%

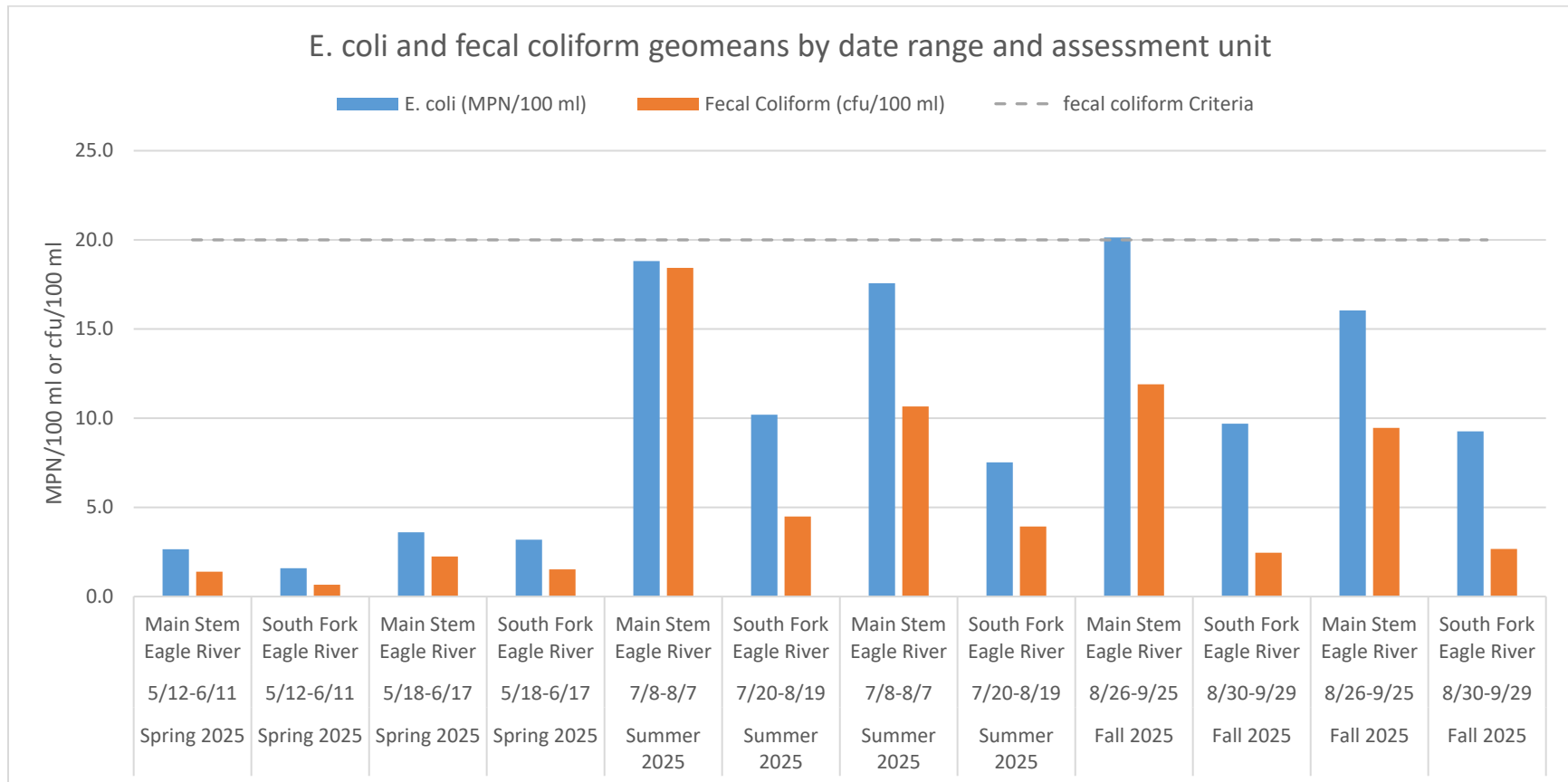


Figure 7. E. coli and fecal coliform 30-day geomeans by date range and assessment unit for 2025. Geomeans were calculated for 30-day periods in which there were at least five sampling events. Within each sampling season (spring, summer, and fall), there were two geomeans calculated, one of which were calculated using results from five sample events and one calculated using results from six sample events. Results from three sites (ER-NF, ER-GB) were used in calculating the geomeans for the mainstem; geomeans for South Fork Eagle River were calculated using results from ER-SF. The dashed line indicates the water quality geomean criterion for fecal coliform (20 cfu/ 100 ml). The geomean criterion for E. coli (126 MPN/100 ml) is not shown as all E. coli geomeans were well below this threshold.

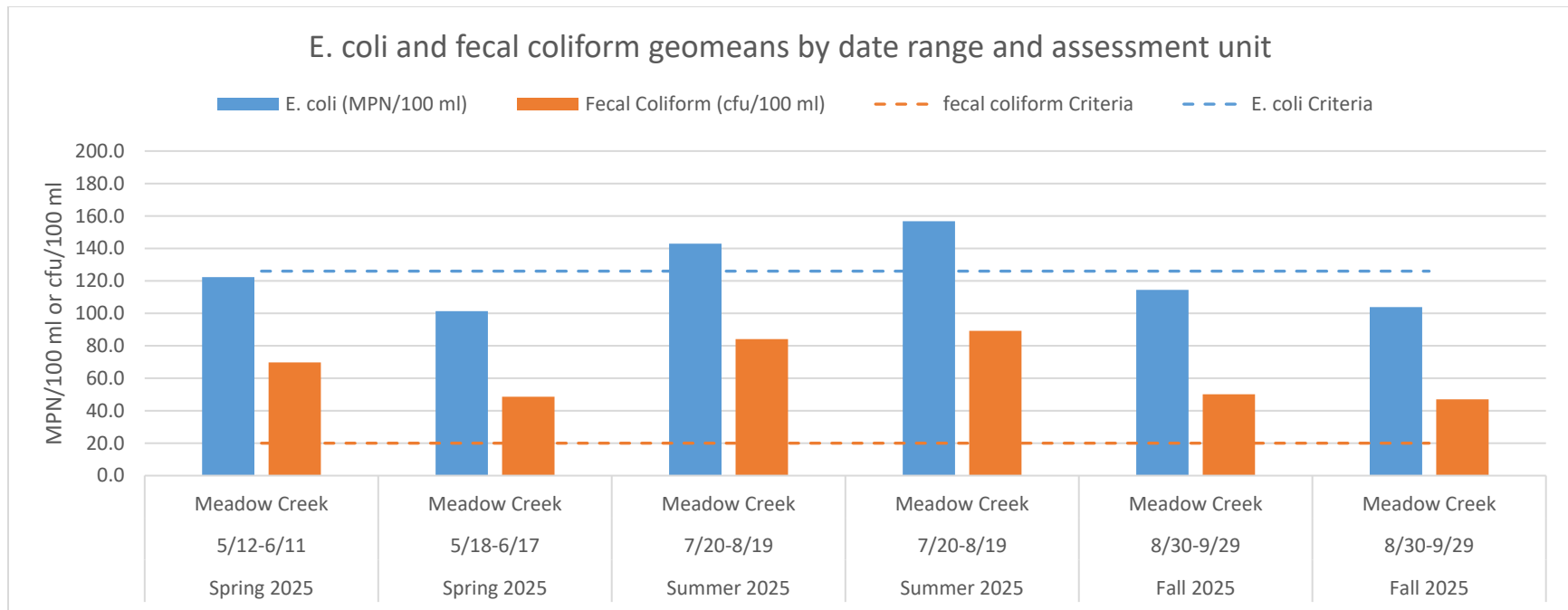


Figure 8. Meadow Creek *E. coli* and fecal coliform 30-day geomeans by date range for 2025. Geomeans were calculated for 30-day periods in which there were at least five sampling events. Within each sampling season (spring, summer, and fall), there were two geomeans calculated, one of which were calculated using results from five sample events and one calculated using results from six sample events. The orange dashed line indicates the water quality geomean criterion for fecal coliform (20 cfu/ 100 ml) and the blue dashed line indicates the water quality geomean for *E. coli* (126 MPN/100 ml).

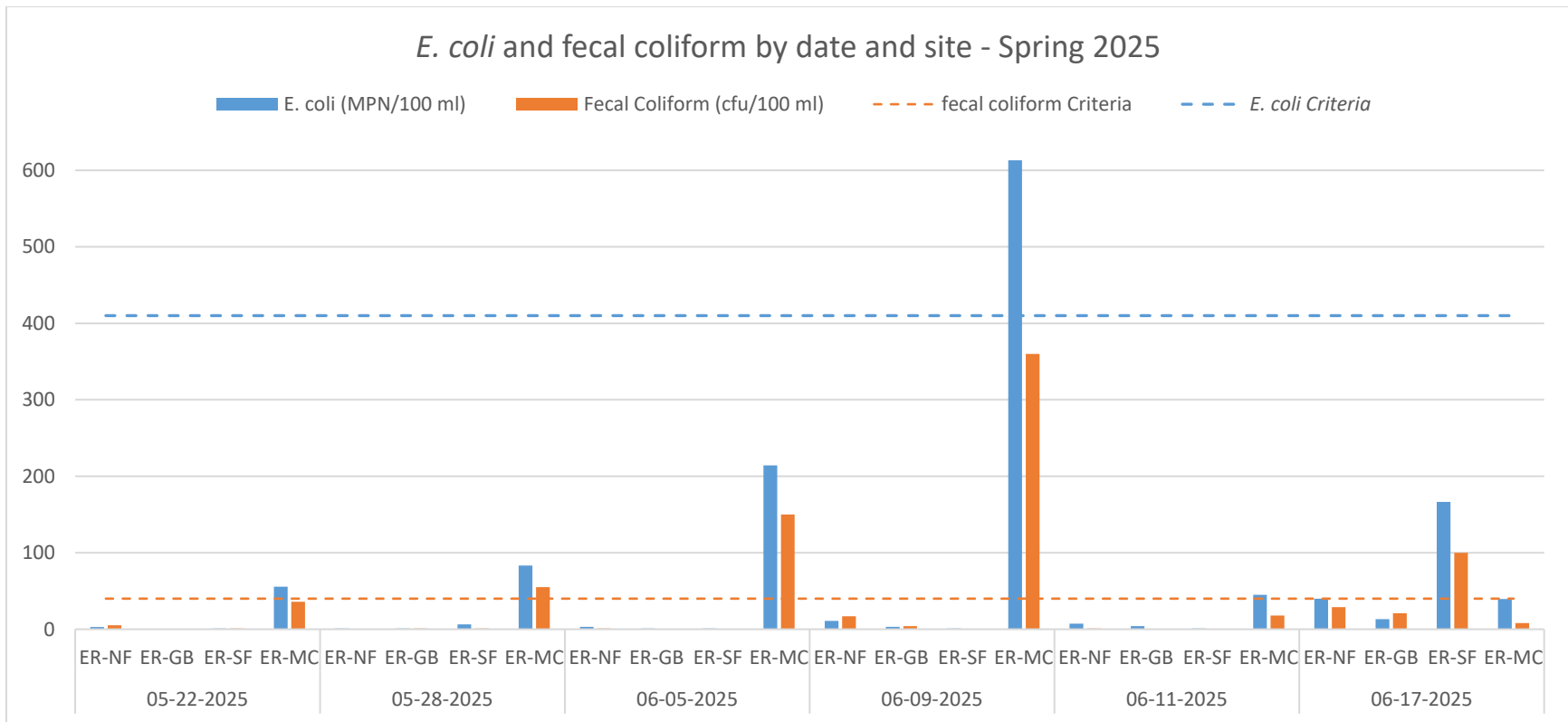


Figure 9. Spring 2025 *E. coli* and fecal coliform results by date and site. Dashed lines indicate water quality criteria for *E. coli* not-to-exceed (410 MPN/100 ml) and fecal coliform not-to-exceed (40 cfu/100 ml).

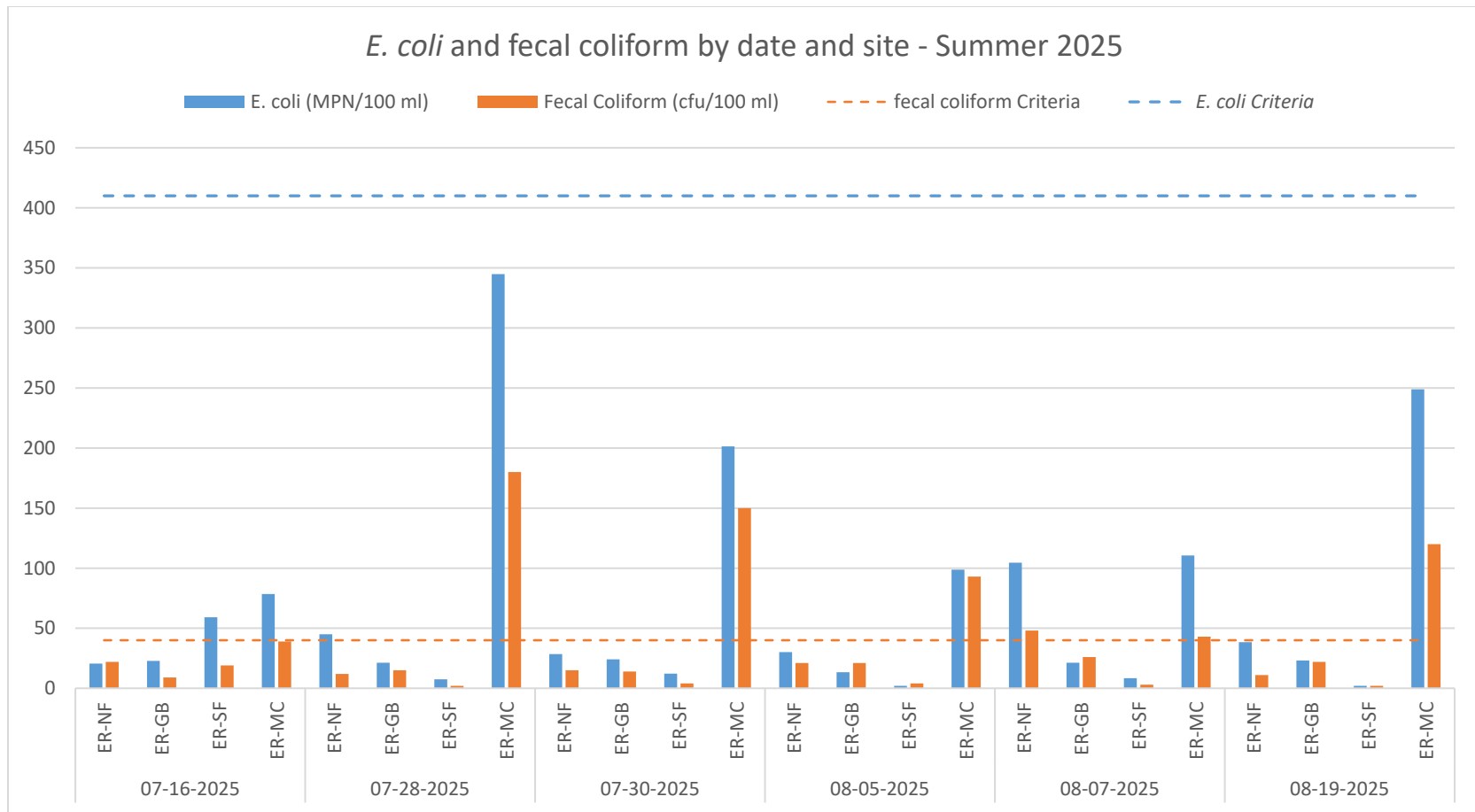


Figure 10. Summer 2025 E. coli and fecal coliform results by date and site. Dashed lines indicate water quality criteria for E. coli not-to-exceed (410 MPN/100 ml) and fecal coliform not-to-exceed (40 cfu/100 ml).

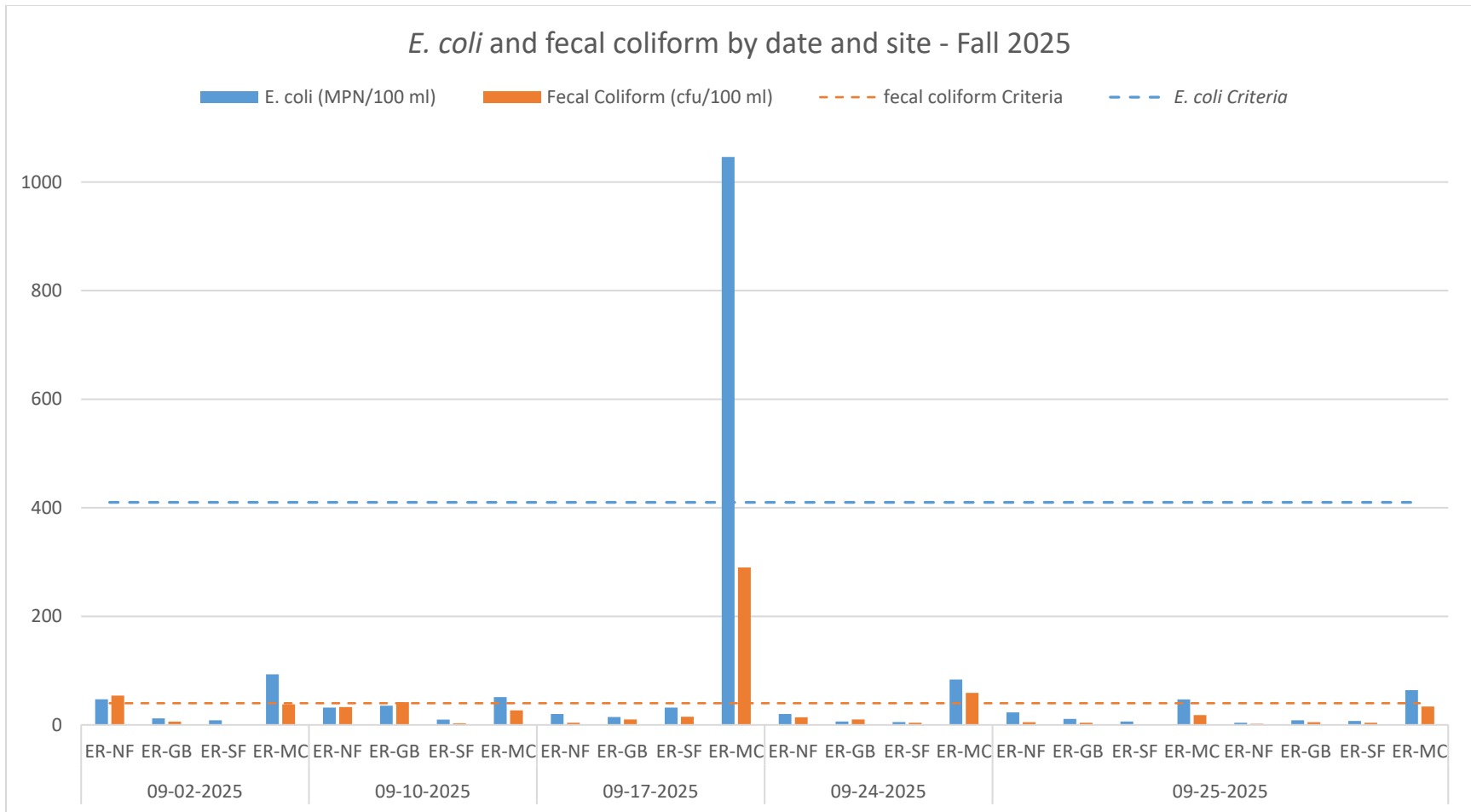


Figure 11. Fall 2025 E. coli and fecal coliform results by date and site. Dashed lines indicate water quality criteria for E. coli not-to-exceed (410 MPN/100 ml) and fecal coliform not-to-exceed (40 cfu/100 ml).

Table 10. Summary of 2025 MST results. ND stands for “Not Detected”, and DNQ stands for “Detected, Not Quantifiable”.

Date	Marker	Site			
		ER-NF	ER-GB	ER-MC	ER-SF
6/11/2025	Canine_Bac_Can	ND	ND	ND	ND
	Human_HF183	ND	ND	ND	ND
	Avian_GFD	ND	ND	ND	ND
8/19/2025	Canine_Bac_Can	ND	ND	ND	ND
	Human_HF183	ND	ND	ND	ND
	Avian_GFD	ND	ND	ND	ND
9/25/2025	Canine_Bac_Can	ND	ND	ND	ND
	Human_HF183	ND	DNQ	ND	ND
	Avian_GFD	ND	ND	ND	ND

Table 11. Summary of 2025 in situ field measurements for each site. There were 18 monitoring events for which in situ data were collected at all sites.

	Site	Parameter	Mean	Median	Range
Eagle River Mainstem	ER-NF	Water Temperature (°C)	7.7	7.4	3.9-11.9
		Dissolved oxygen (mg/ L)	10.3	10.9	8.8-12.0
		pH	7.3	7.6	7.3-7.8
		Turbidity (NTU)*	4.8	0.7	0.0-68.5
		Specific conductance (µg/L)	329.3	334.2	253.3-381.6
		Total dissolved solids (ppt)	0.2	0.2	0.2-0.3
	ER-GB	Water Temperature (°C)	6.5	6.7	4.3-8.9
		Dissolved oxygen (mg/ L)	11.3	11.4	9.1-12.1
		pH	7.6	7.7	7.0-8.1
		Turbidity (NTU)*	73.8	67.7	3.3-240.5
		Specific conductance (µg/L)	170.1	172.6	103.2-249.9
South Fork Eagle River	ER-SF	Total dissolved solids (ppt)	0.1	0.1	0.1-0.2
		Water Temperature (°C)	8.0	7.9	5.0-11.5
		Dissolved oxygen (mg/ L)	11.1	11.0	10.2-12.0
		pH	7.8	7.9	7.5-8.0
		Turbidity (NTU)*	17.9	5.0	0.0-223.3
		Specific conductance (µg/L)	217.5	213.0	182.8-252.8
Meadow Creek	ER-MC	Total dissolved solids (ppt)	0.1	0.1	0.1-0.2
		Water Temperature (°C)	6.2	5.2	4.1-9.5
		Dissolved oxygen (mg/ L)	11.3	11.4	9.1-12.4
		pH	7.7	7.7	7.3-8.1
		Turbidity (NTU)*	1.9	0.9	0.5-13.2
		Specific conductance (µg/L)	293.7	294.4	242.1-332.7
		Total dissolved solids (ppt)	0.2	0.2	0.2-0.2

Conclusion

DEC successfully implemented two years of freshwater pathogen monitoring at two Eagle River mainstem sample locations (ER-GB and ER-NF) as well as one South Fork Eagle River site (ER-SF). Eagle River at VFW Road site (ER-VFW) was moved to Meadow Creek site (ER-MC) in 2025. Results indicate that water quality criteria are being met for the Eagle River mainstem; however, results for Meadow Creek show several bacteria water quality criteria excursions throughout all sampled seasons in 2025. Eagle River is a popular area for recreation and habitat for Alaskan wildlife. No genetic markers for bird, canine, or human were quantified at any of the sampling sites.

Recommended Next Steps

With two years of monitoring completed for the mainstem and South Fork Eagle River assessment units, DEC will assess data collected as part of an upcoming Integrated Report cycle.

Due to the Meadow Creek exceedances, beginning in spring 2026, DEC will begin a 2-year Meadow Creek pathogen sampling study to determine the spatial and temporal extent of bacteria exceedances. Additional MST sampling will be conducted to understand potential host species and to help inform best management practice recommendations.

Appendix A. Fecal coliform and *E. coli* data for Eagle River

Table A.1. Sample results for fecal coliform and *E. coli* for Eagle River sites. Field replicates are indicated in parentheses and were used only for quality control. Results in bold exceed the threshold criterion of 40 cfu/100 ml for fecal coliform. No results exceeded the threshold criterion of 410 MPN/100ml for *E. coli*.

Sampling Site	Date	Fecal coliform (cfu/100 ml)	<i>E. coli</i> (MPN/100 ml)
ER-NF	05-22-2025	3	5.2
ER-SF	05-22-2025	1	1
ER-GB	05-22-2025	.5	.5
ER-MC	05-22-2025	31	55.6
<i>ER-MC (replicate)</i>	05-22-2025	36	81.3
ER-NF	05-28-2025	.5	1
ER-SF	05-28-2025	1	6.3
ER-GB	05-28-2025	1	1
<i>ER-GB (replicate)</i>	05-28-2025	1	.5
ER-MC	05-28-2025	55	83.3
ER-NF	06-05-2025	1	3.1
ER-SF	06-05-2025	.5	1
<i>ER-SF(replicate)</i>	06-05-2025	3	7.4
ER-GB	06-05-2025	.5	1
ER-MC	06-05-2025	150	214.3
ER-NF	06-09-2025	17	10.9
<i>ER-NF (replicate)</i>	06-09-2025	24	13.4
ER-SF	06-09-2025	.5	1
ER-GB	06-09-2025	4	3.1
ER-MC	06-09-2025	360	613.1
ER-NF	06-11-2025	1	7.3
ER-SF	06-11-2025	.5	1
ER-GB	06-11-2025	.5	4.1
ER-MC	06-11-2025	18	45
<i>ER-MC (replicate)</i>	06-11-2025	30	77.1
ER-NF	06-17-2025	29	39.5
ER-SF	06-17-2025	100	166.4
ER-GB	06-17-2025	21	13.2
<i>ER-GB (replicate)</i>	06-17-2025	20	16.9
ER-MC	06-17-2025	8	39.5
ER-NF	07-16-2025	22	20.6
ER-SF	07-16-2025	19	59.10
<i>ER-SF (replicate)</i>	07-16-2025	25	51.2
ER-GB	07-16-2025	9	22.8
ER-MC	07-16-2025	39	78.5
ER-NF	07-28-2025	12	45

Sampling Site	Date	Fecal coliform (cfu/100 ml)	<i>E. coli</i> (MPN/100 ml)
<i>ER-NF (replicate)</i>	07-28-2025	9	43.5
ER-SF	07-28-2025	2	7.5
ER-GB	07-28-2025	15	21.3
ER-MC	07-28-2025	180	344.8
ER-NF	07-30-2025	15	28.5
ER-SF	07-30-2025	4	12.2
ER-GB	07-30-2025	14	24.1
ER-MC	07-30-2025	150	201.4
<i>ER-MC (replicate)</i>	07-30-2025	150	224.7
ER-NF	08-05-2025	21	30.1
ER-SF	08-05-2025	4	2
ER-GB	08-05-2025	21	13.4
<i>ER-GB (replicate)</i>	08-05-2025	24	13.4
ER-MC	08-05-2025	93	98.8
ER-NF	08-07-2025	48	104.6
ER-SF	08-07-2025	3	8.4
<i>ER-SF (replicate)</i>	08-07-2025	7	18.7
ER-GB	08-07-2025	26	21.3
ER-MC	08-07-2025	43	110.6
ER-NF	08-19-2025	11	38.4
<i>ER-NF (replicate)</i>	08-19-2025	11	24.1
ER-SF	08-19-2025	2	2
ER-GB	08-19-2025	22	23.1
ER-MC	08-19-2025	120	248.9
ER-NF	09-02-2025	54	47.3
ER-SF	09-02-2025	1	8.5
ER-GB	09-02-2025	6	12.1
ER-MC	09-02-2025	38	93.3
<i>ER-MC (replicate)</i>	09-02-2025	40	114.5
ER-NF	09-10-2025	33	31.8
ER-SF	09-10-2025	3	9.8
ER-GB	09-10-2025	42	35.5
<i>ER-GB (replicate)</i>	09-10-2025	41	38.4
ER-MC	09-10-2025	27	51.2
ER-NF	09-17-2025	4	20.1
ER-SF	09-17-2025	15	31.8
<i>ER-SF (replicate)</i>	09-17-2025	7	24.6
ER-GB	09-17-2025	10	14.6
ER-MC	09-17-2025	290	1046.2
ER-NF	09-24-2025	14	20.1
<i>ER-NF (replicate)</i>	09-24-2025	5	31.3

Sampling Site	Date	Fecal coliform (cfu/100 ml)	<i>E. coli</i> (MPN/100 ml)
ER-SF	09-24-2025	4	5.2
ER-GB	09-24-2025	10	6.3
ER-MC	09-24-2025	59	83.6
ER-NF	09-25-2025	5	23
ER-SF	09-25-2025	.5	6.2
ER-GB	09-25-2025	4	.5
ER-MC	09-25-2025	18	47
<i>ER-MC (replicate)</i>	09-25-2025	24	71
ER-NF	09-23-2024	2	4.1
ER-SF	09-23-2024	4	7.4
ER-GB	09-23-2024	5	8.6
<i>ER-GB (replicate)</i>	09-23-2024	1	3.1
ER-MC	09-23-2024	34	64

Table A.2. 2024 sample results for fecal coliform and *E. coli* for Eagle River sites. Field replicates are indicated in parentheses and were used only for quality control. Blank cells indicate non-detect results. Results in bold exceed the threshold criterion of 40 cfu/100 ml for fecal coliform. No results exceeded the threshold criterion of 410 MPN/100ml for *E. coli*.

Sampling Site	Date	Fecal coliform (cfu/100 ml)	<i>E. coli</i> (MPN/100 ml)
ER-NF	05-02-2024		
ER-SF	05-02-2024		2
ER-GB	05-02-2024	6.7	5.2
ER-VFW	05-02-2024		10.9
<i>ER-VFW (replicate)</i>	05-02-2024		9.7
ER-NF	05-09-2024		
ER-SF	05-09-2024		1
ER-GB	05-09-2024		6.3
<i>ER-GB (replicate)</i>	05-09-2024		4.1
ER-VFW	05-09-2024	4	12.1
ER-NF	05-15-2024	1	
ER-SF	05-15-2024	1	
<i>ER-SF(replicate)</i>	05-15-2024	2	2
ER-GB	05-15-2024	5	3.1
ER-VFW	05-15-2024		2
ER-NF	05-16-2024		
<i>ER-NF (replicate)</i>	05-16-2024		
ER-SF	05-16-2024	1	1
ER-GB	05-16-2024	5	17.5

Sampling Site	Date	Fecal coliform (cfu/100 ml)	<i>E. coli</i> (MPN/100 ml)
ER-VFW	05-16-2024	1	1
ER-NF	05-20-2024	2	2
ER-SF	05-20-2024		
ER-GB	05-20-2024	5	6.3
ER-VFW	05-20-2024	1	1
<i>ER-VFW (replicate)</i>	<i>05-20-2024</i>		2
ER-NF	05-29-2024	40	127.4
ER-SF	05-29-2024		4.1
ER-GB	05-29-2024	40	36.4
<i>ER-GB (replicate)</i>	<i>05-29-2024</i>	23	47.1
ER-VFW	05-29-2024	31	45.7
ER-NF	07-09-2024	68	35.5
ER-SF	07-09-2024	1	1
<i>ER-SF (replicate)</i>	<i>07-09-2024</i>	3	1
ER-GB	07-09-2024	9	10.9
ER-VFW	07-09-2024	14	6.3
ER-NF	07-10-2024	39	32.3
<i>ER-NF (replicate)</i>	<i>07-10-2024</i>	44	32.3
ER-SF	07-10-2024		
ER-GB	07-10-2024	17	14.6
ER-VFW	07-10-2024	18	21.1
ER-NF	07-15-2024	35	21.6
ER-SF	07-15-2024		5.2
ER-GB	07-15-2024	22	8.6
ER-VFW	07-15-2024	20	23.8
<i>ER-VFW (replicate)</i>	<i>07-15-2024</i>	14	11.8
ER-NF	07-17-2024	25	17.5
ER-SF	07-17-2024	1	2
ER-GB	07-17-2024	10	9.8
<i>ER-GB (replicate)</i>	<i>07-17-2024</i>	15	17.3
ER-VFW	07-17-2024	3	6.3
ER-NF	07-29-2024	85	32.3
ER-SF	07-29-2024	32	43.2
<i>ER-SF (replicate)</i>	<i>07-29-2024</i>	27	35
ER-GB	07-29-2024	14	8.6
ER-VFW	07-29-2024	17	18.7
ER-NF	07-31-2024	33	14.5
<i>ER-NF (replicate)</i>	<i>07-31-2024</i>	25	15.8
ER-SF	07-31-2024	1	2
ER-GB	07-31-2024	16	14.5
ER-VFW	07-31-2024	11	10.8

Sampling Site	Date	Fecal coliform (cfu/100 ml)	<i>E. coli</i> (MPN/100 ml)
ER-NF	08-27-2024	15	41.7
ER-SF	08-27-2024		6.3
ER-GB	08-27-2024	17	13.5
ER-VFW	08-27-2024	27	17.3
<i>ER-VFW (replicate)</i>	08-27-2024	16	18.7
ER-NF	08-29-2024	37	21.6
ER-SF	08-29-2024		7.4
ER-GB	08-29-2024	8	7.4
<i>ER-GB (replicate)</i>	08-29-2024	4	10.8
ER-VFW	08-29-2024	5	4.1
ER-NF	09-04-2024	26	17.3
ER-SF	09-04-2024	3	8.6
<i>ER-SF (replicate)</i>	09-04-2024	3	5.2
ER-GB	09-04-2024	8	9.7
ER-VFW	09-04-2024	12	11
ER-NF	09-11-2024	38	37.9
<i>ER-NF (replicate)</i>	09-11-2024	32	38.4
ER-SF	09-11-2024	3	4.1
ER-GB	09-11-2024	17	14.5
ER-VFW	09-11-2024	23	25.3
ER-NF	09-17-2024	6	8.5
ER-SF	09-17-2024	53	85.5
ER-GB	09-17-2024	27	16.1
ER-VFW	09-17-2024	19	22.8
<i>ER-VFW (replicate)</i>	09-17-2024	21	19.5
ER-NF	09-23-2024	1	8.5
ER-SF	09-23-2024	7	8.2
ER-GB	09-23-2024	4	12
<i>ER-GB (replicate)</i>	09-23-2024	6	8.5
ER-VFW	09-23-2024	7	14.8

Appendix B. Geometric Means by Sample Site

Table B.1. Rolling geometric means calculated from 2025 fecal coliform results from sample sites. Geomeans were not calculated for ranges fewer than 5 sample events. For each non-detect result, a value of half the detection limit was used in the geomean calculation.

Season	Dates	# Range	Number of Samples	Fecal coliform geomean (cfu/100 ml)			
				ER-NF	ER-SF	ER-GB	ER-MC
Spring 2025	6/11/2025 - 5-12-2025	5	5	1.9	0.7	0.9	69.8
	6/17/2025 - 5/18/2025	6	6	3.0	1.5	1.5	48.6
Summer 2025	8/7/2025 - 7/8/2025	5	5	20.9	4.5	15.9	84.1
	8/19/2025 - 7/20/2025	6	6	18.8	3.9	16.8	89.2
Fall 2025	9/25/2025 - 8/26/2025	5	5	13.8	2.5	10.0	50.1
	9/29/2025 - 8/30/2025	6	6	10.0	2.7	8.9	47.0

Table B.2. Rolling geometric means calculated from 2025 E. coli results from sample sites. Geomeans were not calculated for ranges fewer than 5 sample events. For each non-detect result, a value of half the detection limit was used in the geomean calculation.

Season	Dates	# Range	Number of Samples	E. coli geomean (cfu/100 ml)			
				ER-NF	ER-SF	ER-GB	ER-MC
Spring 2025	6/11/2025 - 5-12-2025	5	5	4.2	1.6	1.1	122.3
	6/17/2025 - 5/18/2025	6	6	6.1	3.2	2.1	101.3
Summer 2025	8/7/2025 - 7/8/2025	5	5	38.4	10.2	19.9	142.9
	8/19/2025 - 7/20/2025	6	6	38.4	7.5	20.6	156.7
Fall 2025	9/25/2025 - 8/26/2025	5	5	26.9	9.7	13.4	114.4
	9/29/2025 - 8/30/2025	6	6	19.6	9.3	12.5	103.9