



## BOARD OF DIRECTORS

Thursday, May 18, 2023

Ausable Bayfield Conservation Authority Administration Centre  
Morrison Dam Conservation Area

10:00 a.m.

### AGENDA

1. Chair's Welcome and Call to Order
2. Land Acknowledgement Statement
3. Adoption of Agenda
4. Disclosure of Pecuniary Interest
5. Disclosure of intention to record this meeting by video and/or audio device
6. Approval of Minutes from April 13, 2023
7. Business Out of the Minutes

### 8. Program Reports

Report 1: (a) Development Review (O Reg147/06) – Daniel King

(b) Violations/Appeals Update – Geoff Cade/Daniel King

Report 2: CA Act Update – Brian Horner/Kate Monk

Report 3: Vehicle Tender Results – Nathan Schoelier

Report 4: Arkona Car Show at Rock Glen Conservation Area – Nathan Schoelier

Report 5: Ausable Bayfield Conservation Foundation Overview – Abbie Gutteridge

Report 6: E.coli Beach Report – Mari Veliz/Cristen Watt

Report 7: Section 28, Conservation Authorities Act - Hearings – Geoff Cade

### 9. Committee Reports

- Arkona Lions Museum Committee – Dave Marsh

### 10. Correspondence

11. New Business

12. **Committee of the Whole** – *personnel matter*

13. Adjournment

#### Upcoming Meetings and Events

June 15, 2023

Board of Directors Meeting at 10:00 a.m.

July 20, 2023

Board of Directors Meeting at 10:00 a.m.

## BOARD OF DIRECTORS MEETING

Thursday, April 13, 2023

Ausable Bayfield Conservation Authority Boardroom  
Morrison Dam Conservation Area

### DIRECTORS PRESENT

Ray Chartrand, Adrian Cornelissen, Jim Ginn, Steve Herold, Jaden Hodgins, Greg Lamport, Dave Marsh, Wayne Shipley, Marissa Vaughan

### STAFF PRESENT

Geoff Cade, Abbie Gutteridge, Davin Heinbuck, Brian Horner, Daniel King, Mary Lynn MacDonald, Tracey McPherson, Nathan Schoelier, Meghan Tydd-Hrynyk, Angela Van Niekerk, Mari Veliz

### OTHERS PRESENT

Adam Skillen, *Skillen Investment Management*

### CALL TO ORDER

Chair Marissa Vaughan called the meeting to order at 10:01 a.m., welcomed everyone in attendance, and read the Land Acknowledgement Statement.

### ADOPTION OF AGENDA

#### **MOTION #BD 33/23**

**Moved Dave Marsh**

**Seconded by Ray Chartrand**

**“RESOLVED, THAT the agenda for the April 13, 2023 Board of Directors Meeting be approved,”**

**Carried.**

### DISCLOSURE OF PECUNIARY INTEREST

There were no disclosures of pecuniary interest at this meeting or from the previous meeting.

### DISCLOSURE OF INTENTION TO RECORD

None

ADOPTION OF MINUTES**MOTION #BD 34/23****Moved by Jaden Hodgins  
Seconded by Wayne Shipley**

**“RESOLVED, THAT the minutes of the Board of Directors meeting held on March 16, 2023 be adopted as circulated.”**

**Carried.**BUSINESS OUT OF THE MINUTES

None

PRESENTATION

Adam Skillen, Skillen Investment Management, presented an update on the investment portfolio, which, despite a downturn in the last year, has started to increase. It continues to perform well overall in comparison to global markets. Bonds continue to suffer, and they have slow been rotating towards more GICs for a better return. At present, our targets for 65% bonds and 35% equity have drifted to approximately 60% bonds, 38% equity and 2% cash and cash equivalents.

**MOTION #BD 35/23****Moved by Steve Herold  
Seconded by Jaden Hodgins**

**“RESOLVED, THAT the investments update from Skillen Investment Management be received as presented.”**

**Carried.**PROGRAM REPORTS1. (a) Development Review

Daniel King, Regulations Coordinator, presented the Development Review report pursuant to Ontario Regulation 147/06 *Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*. Through the application process, proposed developments within regulated areas are protected from flooding and erosion hazards. Staff granted permission for 7 *Applications for Permission* and 8 *Minor Works Applications*.

(b) Violations/Appeals Update

Geoff Cade, Water and Planning Manager, provided a brief update on an ongoing violation in Beach of Pines in Lambton Shores. It is going through the court process for restoration, which would involve removal of a portion of the shoreline protection wall.

**MOTION #BD 36/23****Moved by Adrian Cornelissen****Seconded by Greg Lamport**

**“RESOLVED, THAT the Board of Directors affirm the approval of applications as presented in Program Report # 1 – a) Development Review and receive the Violations and Appeals update as presented.”**

**Carried.**

**2. Resource-Based Watershed Management Strategy**

Kate Monk, Projects Coordinator, reported on the initial phase of the Resource-Based Watershed Strategy, which is a mandatory (Category 1) program in the Conservation Authorities Act (CA Act) and is included in the 2023 budget. This document will guide the management and operations of the Ausable Bayfield Conservation Authority (ABCA). The strategy will meet all of the required components set out by the CA Act, as well as meet the future needs of the ABCA. It will include a summary of existing technical studies, a review of mandatory programs and services, outline a process for review of the Strategy. From a staff perspective, the document will need to be in a usable format and be a resource available for municipalities and other agencies. Climate change will be a theme throughout the document.

Public consultation will be a vital part of the process and will mostly take place via the website and social media, and in person meetings with key stakeholders, such as the First Nations community. Staff anticipate that the document will be ready in November 2023.

**MOTION #BD 37/23****Moved by Wayne Shipley****Seconded by Greg Lamport**

**“RESOLVED, THAT the report on the Resource-Based Watershed Management Strategy be received as presented.”**

**Carried.**

**3. Supporting ABCA’s Conservation Areas**

Nathan Schoelier, Stewardship and Conservation Lands Manager, presented a report on an opportunity for the public to continue to support local conservation areas. These areas are important, not only to the environment, but to the community by providing green space for those who live in the watershed. They provide opportunities for various passive recreation, such as hiking, bicycling, birdwatching, fishing, canoeing and hunting where permitted. ABCA relies on the community to help support and maintain these areas and works with several community groups to help this effort. Expenses are also covered through cost-recovery efforts, such as timber harvest, gate fees at Rock Glen Conservation Area, the sale of hunting permits and rent through an agricultural lease. ABCA’s conservation areas provide an opportunity to facilitate donations from visitors and trail users by installing signage that directs them to the Ausable Bayfield Conservation Foundation’s donation page. The estimated costs per sign is \$40-50, which would be offset by donations. Staff recommend the installation of this signage.

**MOTION #BD 38/23**

**Moved by Jim Ginn  
Seconded by Dave Marsh**

**“RESOLVED, THAT the report on Supporting ABCA’s Conservation Areas by received as presented, and**

**“FURTHER, THAT the Ausable Bayfield Conservation Authority Board of Directors approve the installation of signage depicted in the report, at its conservation areas.”**

**Carried.**

**4. 1<sup>st</sup> Quarter Profit and Loss Statement**

Brian Horner, General Manager, presented the financial statement for January through March 2023 with comparables to the 2023 budget.

**MOTION #BD 39/23**

**Moved by Adrian Cornelissen  
Seconded by Jim Ginn**

**“RESOLVED, THAT the 1<sup>st</sup> Quarter Profit and Loss Statement by received as presented.”**

**Carried.**

**5. Flood Emergency Planning Meeting**

Davin Heinbuck, Water Resources Coordinator, provided a report on the Flood Emergency Planning meeting, which is held annually with staff from Member Municipalities and other flood responders. This year, 47 attendees represented 8 watershed municipalities, three counties, Emergency Management Ontario, Lambton OPP and three neighbouring conservation authorities. This meeting outlined the roles and responsibilities of those involved in flood response, provided background on the ABCA Flood Forecasting and Warning Network, and provided an update on current watershed conditions and the flood outlook. This year, the feature presentation, “Extreme Weather in the Great Lakes Region” was made by Mark Robinson of The Weather Network.

**MOTION #BD 40/23**

**Moved by Wayne Shipley  
Seconded by Jaden Hodgins**

**“RESOLVED, THAT the report on the Flood Emergency Planning Meeting be received as presented.”**

**Carried.**

**COMMITTEE REPORTS**

**MOTION #BD 41/23**

**Moved by Greg Lamport  
Seconded by Jaden Hodgins**

**“RESOLVED, THAT the minutes of the Source Protection Committee meetings held on March 1, 2023 and May 29, 2023 and the motions therein be approved as circulated, and**

**“FURTHER, THAT the minutes of the Friends of the South Huron Trail meeting held on March 27, 2022 and the motions therein be approved as circulated.”**

**Carried.**

**CORRESPONDANCE**

- a) Reference: Letter of Resignation  
File: P.1  
Brief: A letter of resignation from Conservation Educator, Denise Iszczuk, who notes that her last day will be April 22, 2023.

**NEW BUSINESS**

- 1. Brian Horner provided a brief update on staff meetings with Municipal Councils over the last months. To date, staff have met with Bluewater, Lucan Biddulph, and Middlesex Centre, and meetings have been set up with most other member municipalities.

**COMMITTEE OF THE WHOLE**

**MOTION #BD 42/23**

**Moved by Jim Ginn  
Seconded by Ray Chartrand**

**“RESOLVED, THAT the Board of Directors go into Committee of the Whole at 12:00 p.m. to discuss a property matter with Nathan Schoelier, Brian Horner and Abbie Gutteridge remaining in attendance.”**

**Carried.**

**MOTION #BD 43/23**

**Moved by Jaden Hodgins  
Seconded by Dave Marsh**

**“RESOLVED, THAT the Committee of the Whole rise and report at 12:03 p.m.”**

**Carried.**

**MOTION #BD 44/23**

**Moved by Ray Chartrand  
Seconded by Adrian Cornelissen**

**“RESOLVED, THAT the information on the property matter be received as presented.”**

**Carried.**

ADJOURNMENT

The meeting was adjourned at 12:04 p.m.

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Marissa Vaughan  
Chair

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Abigail Gutteridge  
Corporate Services Coordinator

*Copies of program reports are available upon request.  
Contact Abigail Gutteridge, Corporate Services Coordinator*

DRAFT

# ABCA Program Report

**To:** Board of Directors  
**Date:** May 18, 2023  
**From:** Daniel King, Regulations Coordinator  
**Subject:** Applications for Permission - Ontario Regulation 147/06 - *Development, Interference with Wetlands and Alteration to Shorelines and Watercourses*

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The following *Applications for Permission* have been issued by staff since the last Board of Directors Meeting.

\* A Coastal Assessment was required as part of the application

## **Major Permits**

- (1) PERMIT #: 2022-36A  
NAME: John Suljak  
MUNICIPALITY: Bluewater  
PERMISSION TO: reconstruct existing dwelling  
PERMISSION RENEWED BY STAFF DATE: April 7, 2023  
STAFF NAME: Meghan Tydd-Hrynyk
  
- (2) PERMIT #:2023-06A  
NAME: Municipality of North Middlesex  
MUNICIPALITY: North Middlesex  
PERMISSION TO: install a new culvert on a municipal drain ( Canada Co. Drain)  
COMPLETE APPLICATION RECEIVED ON DATE: March 14, 2023  
PERMISSION GRANTED BY STAFF DATE: April 6, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 17  
STAFF NAME: Andrew Bicknell
  
- (3) PERMIT #:2023-06B  
NAME: Municipality of North Middlesex  
MUNICIPALITY: North Middlesex  
PERMISSION TO: install a new culvert on a municipal drain (Eagleson Branch)  
COMPLETE APPLICATION RECEIVED ON DATE: March 14, 2023  
PERMISSION GRANTED BY STAFF DATE: April 6, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 17  
STAFF NAME: Andrew Bicknell
  
- (4) PERMIT #:2023-17  
NAME: Municipality of North Middlesex  
MUNICIPALITY: North Middlesex  
PERMISSION TO: allow a Section 78 (Drainage Act) drain improvement  
COMPLETED APPLICATION RECEIVED ON DATE: January 27, 2023  
PERMISSION GRANTED BY STAFF DATE: April 4, 2023



- |  |                                    |                 |
|--|------------------------------------|-----------------|
|  | NUMBER OF BUSINESS DAYS TO REVIEW: | 47              |
|  | STAFF NAME:                        | Andrew Bicknell |
- (5) PERMIT#: 2023-21  
NAME: Scott and Ashley Thompson  
MUNICIPALITY: Lucan – Biddulph  
PERMISSION TO: construct a building addition  
COMPLETED APPLICATION RECEIVED ON DATE: March 24, 2023  
PERMISSION GRANTED BY STAFF DATE: April 5, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 8  
STAFF NAME: Andrew Bicknell
- (6) PERMIT#: 2023-24  
NAME: County of Huron  
MUNICIPALITY: Central Huron  
PERMISSION TO: undertake maintenance on a bridge structure  
COMPLETED APPLICATION RECEIVED ON DATE: February 14, 2023  
PERMISSION GRANTED BY STAFF DATE: April 25, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 50  
STAFF NAME: Andrew Bicknell
- (7) PERMIT#: 2023-14  
NAME: Jeffrey and Susan Girling  
MUNICIPALITY: Lambton Shores  
PERMISSION TO: construct a residential addition  
COMPLETED APPLICATION RECEIVED ON DATE: March 7, 2023  
PERMISSION GRANTED BY STAFF DATE: April 13, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 27  
STAFF NAME: Andrew Bicknell
- (8) PERMIT#: 2023-26  
NAME: Ian Small  
MUNICIPALITY: Bluewater  
PERMISSION TO: construct a replacement residence  
COMPLETED APPLICATION RECEIVED ON DATE: April 20 2023  
PERMISSION GRANTED BY STAFF DATE: April 26, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 4  
STAFF NAME: Andrew Bicknell
- (9) PERMIT#: 2023-23  
NAME: Municipality of Lambton Shores  
MUNICIPALITY: Lambton Shores  
PERMISSION TO: replace a culvert crossing on a regulated watercourse  
COMPLETED APPLICATION RECEIVED ON DATE: March 2, 2023  
PERMISSION GRANTED BY STAFF DATE: April 25, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 38

STAFF NAME: Andrew Bicknell

(10) PERMIT#: 2023-22  
NAME: Juliet and Michael Promnitz  
MUNICIPALITY: Bluewater  
PERMISSION TO: construct a replacement residence  
COMPLETED APPLICATION RECEIVED ON DATE: March 20, 2023  
PERMISSION GRANTED BY STAFF DATE: April 5, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 12  
STAFF NAME: Andrew Bicknell

(11) PERMIT #: 2023-25  
NAME: Municipality of Bluewater  
MUNICIPALITY: Bluewater  
PERMISSION TO: Construct a sunroom and associated work  
COMPLETED APPLICATION RECEIVED ON DATE: April 14, 2023  
PERMISSION GRANTED BY STAFF DATE: April 21, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 6  
STAFF NAME: Meghan Tydd-Hrynyk

(12) PERMIT #: 2022-47A  
NAME: Karen von Hahn  
MUNICIPALITY: Central Huron  
PERMISSION TO: Construct a new dwelling, septic system and associated work  
PERMISSION RENEWED BY STAFF DATE: May 6, 2023  
STAFF NAME: Daniel King

## **Minor Permits**

- (1) PERMIT #: MW2022-118  
NAME: Don & Brenda Drybrough  
MUNICIPALITY: Central Huron  
PERMISSION TO: Construct a septic system  
COMPLETED APPLICATION RECEIVED ON DATE: March 2, 2023  
PERMISSION GRANTED BY STAFF DATE: April 14, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 28  
STAFF NAME: Daniel King
- (2) PERMIT #: MW2023-19  
NAME: Municipality of Bluewater  
MUNICIPALITY: Bluewater  
PERMISSION TO: Conduct annual dredging and maintenance in Bayfield Harbour  
COMPLETED APPLICATION RECEIVED ON DATE: April 18, 2023  
PERMISSION GRANTED BY STAFF DATE: April 21, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 4  
STAFF NAME: Meghan Tydd-Hrynyk
- (3) PERMIT #: MW2019-01D  
NAME: Dave Tilford  
MUNICIPALITY: South Huron  
PERMISSION TO: clear drain outlet  
PERMISSION RENEWED BY STAFF DATE: April 21, 2023  
STAFF NAME: Meghan Tydd-Hrynyk
- (4) PERMIT #: MW2022-117  
NAME: Seven Winds Marina Inc.  
MUNICIPALITY: Lambton Shores  
PERMISSION TO: repair an existing storage structure  
COMPLETE APPLICATION RECEIVED ON DATE: March 30, 2023  
PERMISSION GRANTED BY STAFF DATE: April 5, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 5  
STAFF NAME: Andrew Bicknell
- (5) PERMIT #: MW2023-18  
NAME: Alan Gillis  
MUNICIPALITY: Lambton Shores  
PERMISSION TO: Conduct maintenance dredging in a regulated area  
COMPLETED APPLICATION RECEIVED ON DATE: March 8, 2023  
PERMISSION GRANTED BY STAFF DATE: April 17, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 27  
STAFF NAME: Andrew Bicknell

(6) PERMIT #: MW2023-20  
NAME: Harbour Lights Marina  
MUNICIPALITY: Bluewater  
PERMISSION TO: Conduct annual dredging and maintenance in basin  
COMPLETED APPLICATION RECEIVED ON DATE: April 4, 2023  
PERMISSION GRANTED BY STAFF DATE: April 25, 2023  
NUMBER OF BUSINESS DAYS TO REVIEW: 15  
STAFF NAME: Meghan Tydd-Hrynyk

## *ABCA Program Report*

**To:** Board of Directors  
**Date:** May 18, 2023  
**From:** Brian Horner, General Manager/Secretary Treasurer  
Kate Monk, Projects Coordinator  
**Subject:** Conservation Authorities Act Update - Progress Report

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This is a progress report on the implementation of the Conservation Authorities Act and associated regulations, for information purposes. This report summarizes the work to date and future work.

### **Workplan Implementation**

Staff continue to implement Phase 2 of the Transition Plan which is for the period from February 2022 to December 2023. The Transition Plan prepares the ABCA and municipalities for changes that come into effect on January 1, 2024.

Other projects to fulfill the requirements of the Act need to be completed by December 31, 2024. The workplan to meet the requirements of the CA Act is being implemented in 2022-2024 to spread out costs and workload over three years and meet the staggered deadlines set by the province.

### **Municipal Agreements**

Senior staff met with municipal staff in 2022 to discuss the Inventory of Programs and Services, draft Cost Apportioning Agreements (CAA), and financial implications for beyond 2023.

The draft Cost Apportioning Agreement was presented to the ABCA board in late 2022 and has been distributed to all municipalities. Staff are presenting the agreements to councils and await resolutions. Staff will update the board on revisions to CAA and resolutions from councils.

Agreements with municipalities for Category 2 and Category 3 programs and services can be signed now and take effect on January 1, 2024. Municipalities and ABCA need to enter into Cost Apportioning Agreements for Category 3 programs and services (education, stewardship, local water quality monitoring, subwatershed strategies) for the municipalities to be invoiced for their portion of the costs beginning in 2024, and for the programs to be included in the Watershed Management Strategy.

The goal is to have the agreements signed this summer. The CAAs will be executed after the council resolutions are passed. Copies of the signed CAA need to be provided to the province and posted on the ABCA website. The Inventory of Programs and Services will be revised (if necessary) and provided to the province and the municipalities.

Municipalities and the ABCA need to sign Memorandum of Understanding (MOU) for Category 2 programs to continue the programs in 2024 and include the programs in the Strategy. Local

municipalities with municipal wells use CA staff as their risk management officials to meet the requirements of the Clean Water Act. Staff are discussing these renewals with municipalities.

### **Other Projects and Deliverables**

The five-year financial forecast for 2023-2027 was completed in 2022 and the 2024-2028 financial forecast will be completed by July. A financial scenario for the budget with costs apportioned to the three categories has been completed. The budget approval process remains largely the same except that notice must be given of when the board meets to discuss the draft budget. Staff will prepare the draft 2024 budget in September, and it will be presented to the board in October. Traditionally, the budget is approved in December.

The Inventory of Programs and Services was completed in 2021 and provided to municipalities and the province in early 2022. The fee policy was approved in 2022 and is on the website.

In 2022, the governance webpage was completed and is live on the ABCA website. It includes information on board meetings (minutes, agenda package, schedule), contact information for board members, financial information, municipal agreements, Conservation Authorities Act and Freedom of Information and Protection of Privacy.

The policies and strategic plans for the ABCA to acquire properties and dispose of properties were completed by staff and approved by the board of directors in 2022.

The Conservation Lands Strategy and Resource-Based Watershed Strategy are in progress, to be completed by year-end. Both documents update existing reports and incorporate new knowledge and requirements of the Conservation Authorities Act regulations.

In 2024, the remaining deliverables need to be completed: Asset Management Plan, Operational Plan and Conservation Lands Inventory. An Ice Management Plan will be completed if necessary.

### **Conservation Authorities Act** **Ausable Bayfield Conservation Authority** **Categories of Programs and Services**

*Category 1: Mandatory programs and services where municipal levy could be used without any agreement.*

- Corporate services
- Natural hazards and flooding
- Conservation Authority Lands

*Category 2: Non-mandatory programs and services at the request of a municipality with municipal funding through a memorandum of understanding or agreement.*

- DWSP Risk Management Officials

*Category 3: Non-mandatory programs and services a CA determines are advisable which may use municipal levy through an agreement.*

- Subwatershed strategies
- Monitoring
- Stewardship and forestry
- Education

## ABCA Program Report

**To:** Board of Directors  
**From:** Nathan Schoelier, Stewardship and Land Manager  
**Date:** May 18, 2023  
**Subject:** Vehicle Tender Results

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The 2022 ABCA budget included funding for the capital purchase of a four-wheel-drive pick-up truck for field staff to replace the 2010 Ford F-150 truck. This purchase is funded through the Motor Pool. The parameters for the vehicle were specific to the needs of the ABCA.

On February 1, staff sent requests for quotations to watershed vehicle dealers with a closing date of February 14. Brian Horner, Jeff VanNiekerk and Nathan Schoelier met on Monday, February 14, 2022 to open and review the tenders for the new 2022 pickup truck.

The following were the results:

Company	Vehicle	Price	Taxes and fees	Total	Net price plus non-refundable taxes
Exeter Toyota	2022 Tundra SR5	\$54 511.97	\$7086.56	\$61 598.53	\$55 471.38
Exeter Chrysler	2022 Ram 2500	\$57 610.00	\$7489.30	\$65 099.30	\$58 623.94
HMP	2022 Silverado 2500	\$49 649.01	\$6450.21	\$56 099.22	\$50 522.83

At the February 17, 2022, Board of Directors meeting, the purchase of a 2022 Chevrolet Silverado 2500 from Huron Motor Products, Exeter, was approved, in the amount of \$49 649.01 plus taxes. The estimated delivery time of that pickup truck was three to nine months. On July 19, 2022, Bill Vanderworp, New Vehicle Sales Manager at Huron Motor Products (HMP) notified ABCA that General Motors Canada (GMC) had ended the production of the 2022 Chevy Silverado 2500, prior to building the truck ordered by ABCA in February 2022.

On August 18, staff sent requests for quotations to watershed vehicle dealers with a closing date of September 6. Brian Horner and Nathan Schoelier met on Tuesday, September 6, 2022 to open and review the tender submissions.

The following were the results:

Company	Vehicle	Price	Taxes and fees	Total	Net price plus non-refundable taxes
Exeter Chrysler	2022 Ram 2500	\$57 870.00	\$7523.10	\$65 393.10	\$58 888.51
HMP	2023 Silverado 2500	\$55 135.00	\$7159.88	\$62 294.88	\$56 105.38

On January 13, 2023 staff were notified that GMC had ended the production of the 2023 Chevy Silverado 2500, prior to building the truck ordered by ABCA in September 2022. However, HMP informed staff that their dealership had allocation from GMC, for one truck that met the specifications, to be ordered in 2023. HMP informed staff that they were not able to provide a quote for the truck, but that there was no commitment from ABCA to purchase the vehicle. HMP proceeded with ordering a 2024-model truck that met the specifications that ABCA required.

Upon the truck being shipped to HMP, from GMC, the cost was provided to the dealer, and subsequently ABCA staff, it is as follows:

<b>Company</b>	<b>Vehicle</b>	<b>Price</b>	<b>Taxes and fees</b>	<b>Total</b>	<b>Net price plus non-refundable taxes</b>
HMP	2024 GMC Sierra 2500	\$61 535.00	\$8191.55	\$69 726.55	\$62 810.02

This price includes all licencing fees.

The 2023 motor pool budget included \$20,000 in funds for the capital purchase of a utility vehicle (UTV) to replace the 2011 John Deere Gator at Rock Glen Conservation Area. A report of the tender results was provided to the Board of Directors in March 2023. The following was the successful bid for the UTV tender:

<b>Company</b>	<b>Vehicle</b>	<b>Price</b>	<b>Taxes and fees</b>	<b>Total</b>	<b>Net price plus non-refundable taxes</b>
Hyde Brothers Farm Equipment Ltd.	Kubota RTV520	\$15 309.73	\$1990.27	\$17 300.00	\$15 579.18

The purchase of the 2024 GMC Sierra 2500, from HMP, was \$6704.64 more than the amount approved by the Board of Directors, on September 15, 2022. However, the motor pool budget realized a savings of \$4420.82, from the budgeted amount to the purchase price of the UTV in March 2023. The overall implication on the previously approved funding amounts is \$2283.82.

Due to the lack of availability of trucks that met the specifications; the need to replace the 2010 Ford F-150, prior to incurring added maintenance expenses; and the staff time required to undertake the tender process again, with limited submissions anticipated; staff proceeded with the purchase of the 2024 GMC Sierra 2500.

The 2022 motor pool budget included an anticipated \$3000 under 'Product Sales' which encompasses the sale of the 2010 Ford F-150, supporting the purchase of a 2022 truck for field services. The 2023 motor pool budget included an anticipated \$1000 under 'Product Sales' which encompasses the sale of the former UTV. However, given the current market, realizing a greater total return than \$4000 for the sale may be expected, reducing the budget implications on the Vehicle & Motor Pool reserves. The 2010 Ford F-150 would be sold upon the completion of the Spring 2023 tree planting season, the UTV will be sold upon the arrival of the Kubota RTV520, expected in June.



The five-year forecast for the vehicle and equipment replacement schedule outlines the purchase of field equipment in 2024, without a vehicle replacement forecasted until 2025. This will provide the opportunity to realize vehicle cost-recovery funds for the motor pool budget. The vehicle and equipment five-year forecast will undergo a review, later this year, which will better reflect the current market, allowing for more accurate budget figures.

## *ABCA Program Report*

**To:** Board of Directors  
**Date:** May 18, 2023  
**From:** Nathan Schoelier, Stewardship and Lands Manager  
**Subject:** Arkona Car Show at Rock Glen Conservation Area

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The Ausable Bayfield Conservation Authority and Arkona Lions Club (Lions) have a long-standing relationship at Rock Glen Conservation Area (RGCA). A formal agreement is in place for the Arkona Lions Museum and Information Centre at the conservation area.

The Lions are hosting the annual 'Bruce Redman Antique Car Show and Community Day' at RGCA, on September 16, 2023. It is a significant event at the conservation area, which will bring hundreds, if not more than one thousand people to the area. Car show entrants pay a \$10 fee per car, to the Lions. In 2018, the ABCA Board of Directors approved that the RGCA gate fee be waived to car show attendees, at the request of the Lions. This decision was made with the understanding that the Lions will provide a donation to the ABCA.

The Lions feel it is important to have the event available to the community, without it being cost-prohibitive to attendees. Therefore, the Lions are requesting that RGCA gate fee be waived to car show spectators, as well as car show entrants.

There will be a loss of revenue for RGCA, including the normal attendance levels, outside of an event. However, it is recognized that the contributions of the Lions, at the Arkona Lions Museum and Information Centre, attracts a significant number of paying attendees to the conservation area throughout the operating season.

### **Recommendation**

Recommended that, the Ausable Bayfield Conservation Authority Board of Directors waive the admission fee for Rock Glen Conservation Area, during the annual 'Bruce Redman Antique Car Show and Community Day' hosted by the Arkona Lions Club, with the understanding that the Arkona Lions Club will provide a donation to the Ausable Bayfield Conservation Authority.

# *ABCA Program Report*

**To:** Board of Directors  
**Date:** May 18, 2023  
**From:** Abbie Gutteridge, Corporate Services Coordinator  
**Subject:** Ausable Bayfield Conservation Foundation Overview

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The Ausable Bayfield Conservation Foundation (ABCF) was incorporated in 1974 as a registered, charitable, non-profit organization. Its aim is to promote conservation projects in the Ausable Bayfield Watershed. The ABCF is a self-governing body, and membership is comprised of community volunteers governed by nine Board members.

The Mandate of the Foundation has four pillars: Raising Funds, Fostering Partnerships, Providing Funds, and Acquiring Conservation Lands.

The Foundation raises funding in several ways:

1. Community members and visitors to the area make financial donations directly to the ABCF, and often intend them for specific purposes. For example, many donations are received each year for the South Huron Trail, which is used by many local community members, as well as visitors to the area. Donations are also received for conservation education, tree planting, and species-at-risk monitoring, supporting conservation areas, or for special projects such as the Jones Pedestrian Bridge.
2. Commemorative Woods Program – donations are received to plant or sponsor a tree in memory of a loved one, or to commemorate a special event. Depending on the donation, a plaque is placed on the signboard or staked directly at the tree. There are six commemorative woods throughout the watershed: Morrison Dam (Exeter), Rock Glen Conservation Area (Arkona), Parkhill Scenic Lookout, Clinton Conservation Area, Klondyke Sports Park (Grand Bend), and Klopp Tract (Zurich).
3. Conservation Dinner – a yearly dinner and auction that is held in partnership with the Exeter Lions Club. The funds raised are split between the two organizations to be used for their own conservation-related or community projects. This year was our first in-person dinner since 2019, and more than \$50,000 was raised through the event.

The Foundation seeks to work in partnership with various community groups. A long-standing partnership with the Exeter Lions Club has resulted in more than \$1.3 million raised for community projects. In addition, the Foundation has partnered with other groups, such as Blue

Bayfield, the Exeter and District Heritage Foundation, and the Rotary Club of Grand Bend.

Funds raised through the ABCF are used for a various projects throughout the watershed. Donations made to specific projects are directed to those projects (*i.e.* the Commemorative Woods, tree planting, etc.) In addition, each year staff are encouraged to make applications to the ABCF for funding to help specific upcoming projects. These may include education programs, species or habitat monitoring projects, tree planting projects or wetlands.

Funds raised also support youth opportunities in the watershed. Each year, the ABCF provides funding to hire a Junior Conservationist, which is a position for a senior high school student or first year university student who is interested in pursuing a career in the environmental field. This 8-week job allows a young person to experience the various aspects of working in Conservation. In addition, a \$1000 grant is available to a watershed student each year to support their education in the environmental field. Funds are also used to support other community initiatives, such as the Lion's Club Trout Fishing Derby and the Trail Mobile, which allows people with accessibility challenges to enjoy time on the South Huron Trail.

# *ABCA Program Report*

**To:** Board of Directors  
**Date:** May 10, 2023  
**From:** Mari Veliz and Cristen Watt  
**Subject:** Beach *E. coli* report

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Healthy Watersheds staff have been monitoring *E. coli* in Lake Huron in partnership with the Bluewater Shoreline Residents' Association (BSRA) since 2006. Currently, five beaches and adjacent ravines are monitored through this partnership. Two additional beaches that were previously tested by ABCA are now monitored by Huron Perth Public Health.

The attached report describes water quality trends at seven beaches and ravine watercourses in the ABCA area for up to sixteen years of *E. coli* testing. This work shows that *E. coli* has remained steady at both beach and ravine sites (i.e., no clear increase or decrease *E. coli* counts) over this monitoring period.

Although there are not clear trends at each beach, there were differences noted in water quality between beaches. Most beaches met the Canadian Recreational Guideline most of the time, however some sites had consistently better water quality than others. In general, sites with low *E. coli* in the ravine tended to also have low *E. coli* in Lake Huron. While it is encouraging that *E. coli* has not increased over time, there continues to be a need for monitoring and water quality improvement.

Water Quality Monitoring at  
Lake Huron beaches in the Ausable Bayfield area (2006 - 2022)



Ausable Bayfield Conservation Authority

Prepared by: Cristen Watt and Mari Veliz

May 2023



**Table of Contents**

1. Introduction ..... 2

    1.1 Lake Huron’s beaches ..... 2

    1.2 *Escherichia coli* as an indicator of water quality ..... 3

    1.3 Water quality monitoring and watershed improvement through the CURB program ..... 2

    1.4 Water quality monitoring with the Bluewater Shoreline Residents’ Association ..... 3

    1.5 Water sampling by public health agencies ..... 3

    1.6 Objectives..... 3

2. Methods ..... 4

    2.1. Water sampling by the ABCA & BSRA ..... 4

    2.2. Water sampling by public health agencies ..... 5

    2.3. Data Analysis ..... 6

    2.4. Comparisons with recreational guidelines..... 7

3. Results ..... 8

    3.1.1 Water quality at Gully Creek Beach & Ravine ..... 8

    3.1.2 Water quality at Wildwood Beach & Ravine..... 9

    3.1.3 Water quality at Houston Heights Beach & Ravine ..... 10

    3.1.4 Water quality at St. Joseph Beach & Ravine ..... 11

    3.1.4 Water quality at Ridgeway Beach & Ravine..... 12

    3.1.6 Water quality at Turnbull’s Grove Beach & Ravine ..... 13

    3.1.3 Water quality at Port Franks Beach & Ravine..... 14

    3.1.4 Water quality comparisons ..... 15

    3.2 Annual Geometric Mean Concentration of *E. coli* at all seven beaches and ravines ..... 18

    3.3 Recreational water quality guideline exceedances at all seven beaches and ravines..... 19

    3.4 Maximum *E. coli* concentrations..... 20

    3.5 Daily water quality at beaches and ravines ..... 21

4. Discussion and Conclusions ..... 35

    Overall Trends ..... 35

    Comparisons with CURB ..... 35

    Next Steps ..... 36

Acknowledgements..... 37

References ..... 37

Appendices..... 39

## **1. Introduction**

### **1.1 Lake Huron's beaches**

Lake Huron is a vital part of everyday life for the many full-time and seasonal residents of the southeast shore of Lake Huron. Ecologically rare sand beaches and dunes found along Lake Huron's eastern shore are a popular destination in the summer months, with thousands of visitors per day flocking to the most popular beaches (lakehuron.ca). Beach tourism and summer recreation have a considerable impact on local communities. Some beach towns welcome tens of thousands of visitors per day in the summer months, so even a single day when a beach is closed can have an impact on annual revenue for local businesses (Hocking and Dean, 1989). Prolonged closures can have even greater economic impacts on tourist-dependent towns. A (2016) poll by the Great Lakes Water Quality Board showed that 86 per cent of people in the Great Lakes basin feel that recreational use is a highly important reason to protect the Great Lakes. It has been suggested that the most pressing issue currently in lake tourism is water quality and that environmental considerations are an important factor in satisfaction of beach visitors in Southwestern Ontario (Dodds, 2010).

The Ausable Bayfield Conservation Authority (ABCA) jurisdiction (hereafter referred to as Ausable Bayfield area) stretches along sixty kilometres of shoreline with beautiful beaches from just south of Port Franks in Lambton County to north of Bayfield in Huron County. Pinery Provincial Park, Port Blake Conservation Area, and the villages of Port Franks, Grand Bend, and Bayfield include over ten kilometers of public beaches (Hocking and Dean, 1989). Much of the remaining fifty kilometers of shoreline has beaches with private access.

### **1.3 Water quality monitoring and watershed improvement through the CURB program**

Concerns about water quality at local beaches are a paramount concern for residents and communities along the south-east shore of Lake Huron over many years (Appendix 5). Forty years ago, the Grand Bend beach on Lake Huron was posted for the first time as being unsafe for swimming. By the 1980's, the government of Ontario expressed concern about the increase in the number of beach closures from elevated bacteria levels. The provincial government set out to determine the sources of pollution, particularly in areas where urban sources were not the cause (Ministry of Environment and Energy, 1996). Thus, the Cleaning Up Rural Beaches (CURB) grant assistance program began with the goal of improving rural beaches across Ontario (Ministry of Environment and Energy, 1996).

Starting in 1991, ABCA staff began connecting watershed residents with CURB funding to help eliminate contamination of surface drains and watercourses discharging to Lake Huron (Hocking 1996). Local studies helped identify the relative impact of pollution sources, their pathways to beaches, and to develop a plan specific to watersheds upstream of rural beaches (Hocking and Dean, 1989). It was estimated that there were more CURB projects per km<sup>2</sup> in the ABCA area than in any of the other 30 CURB program areas across Southern Ontario (Hocking, 1996).

Water quality information collected during the CURB program provides a point of comparison with current conditions. There is a time lag before the cumulative effects of improvements are measurable. Many rural sources of pollution are non-point sources that may impact a length of stream over a long distance. Water quality improvements related to non-point sources are difficult to detect, in part due to



a time lag that may last several years (Meals et al., 2010). Comparisons of current water quality conditions with CURB data from thirty years ago aims to account for this lag.

### **1.2 *Escherichia coli* as an indicator of water quality**

Water quality monitoring at local beaches is focused on bacterial *Escherichia coli* (*E. coli*) concentrations in water used for recreational activities such as swimming. *Escherichia coli* are fecal coliform bacteria that normally live in the intestines of healthy people and animals. Most strains of *E. coli* do not cause disease, but there are many potential disease-causing organisms (i.e., pathogens) associated with fecal contamination (lakehuron.ca). It would be nearly impossible to test for every possible pathogen in a water sample, so the presence of *E. coli*, especially at elevated levels, is used as an indicator that disease-causing bacteria may be present (lakehuron.ca). In rural areas, *E. coli* sources include agriculture (Graves et al., 2007; Kon et al., 2009), faulty septic systems (lakehuron.ca), stormwater runoff from urban or agricultural areas, wild or domestic animals, or discharged sewage (Health Canada).

### **1.4 Water quality monitoring with the Bluewater Shoreline Residents' Association**

The Bluewater Shoreline Residents' Association (BSRA) is an umbrella organization for several lakeshore associations in the Municipality of Bluewater. The BSRA and its member associations have been working on solutions to water quality issues in the Municipality of Bluewater and Huron County since 1996. In 2006, the BSRA formed a partnership with the Ausable Bayfield Conservation Authority (ABCA) to undertake water quality monitoring in four ravines that enter Lake Huron from the Municipality of Bluewater (Veliz and Brock 2006). Prior to 2006, the BSRA had conducted water quality testing in some of the ravines along the lakeshore. In 2007, the BSRA requested that the ABCA also monitor water quality in the lake near the outlets of the four ravines. Since 2014, the ABCA has monitored water quality in four ravines and adjacent lake locations. Weekly data collected through this partnership are available on the BSRA website, with useful information for residents about water quality.

### **1.5 Water sampling by public health agencies**

Several public beaches in the Ausable Bayfield area are currently monitored by Lambton Public Health (Lambton County) and Huron Perth Public Health (HPPH) (Huron County). Water quality data from beaches monitored by HPPH are posted to the Huron Perth Public Health website (hpph.ca). Lambton County beaches in the Ausable Bayfield area include Pinery Provincial Park, Grand Bend North Beach, and Grand Bend South Beach. Beaches in Grand Bend are monitored daily from Monday to Friday with predictive models, while the Pinery Provincial Park is monitored weekly with laboratory analysis (Lambton Public Health, 2022).

### **1.6 Objectives**

This report outlines water quality results following up to sixteen years of regular monitoring. When possible, comparisons are made with water quality information from approximately thirty years ago. A main objective was to evaluate current water quality conditions at seven beaches in the Ausable Bayfield area in reference to recreational water quality guidelines. A second objective was to determine how water quality at these beaches has changed over time, and if *E. coli* is increasing or decreasing at seven Lake Huron beaches and associated ravine watercourses. This report also describes work that has been done in the past to improve water quality, as well as current efforts and next steps to improve water quality.

## 2. Methods

The agency responsible for sampling for *E. coli* has varied by location and year of sampling. Huron Perth Public Health currently samples two public beaches that were previously also sampled by ABCA staff through the BSRA partnership. Samples included in this report were collected from 2006–2022 (Table 1).

### 2.1. Water sampling by the ABCA & BSRA

*Escherichia coli* sampling by ABCA staff currently takes place one day per week from late June to late August. This sampling takes place near four Ontario lakeshore communities: Port Franks (Mud Creek), Ridgeway, Wildwood, and Bayfield (Gully Creek) (Figure 3). One water sample is collected from the centre of each ravine where the treeline and the beach meet. Five water samples are also collected from Lake Huron at each of the lakeshore communities (Figure 1). These five samples include one at the mouth of the ravine, two south of the ravine, and two north of the ravine (site names are included in Appendix 1). Water samples are collected with a sampling bottle on a grab pole, one foot below the surface at a lake depth of three feet (i.e., approximately waist-height). Depending on weather, water levels, and wave height, some sites were sampled fewer times than scheduled. Water and air temperatures at each beach were also recorded at the time of sampling (Figure 2). Laboratory analyses of *E. coli* concentrations were conducted by ALS Laboratories.

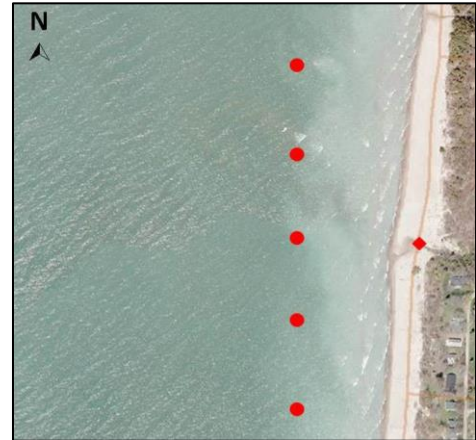


Figure 1. Beach (red circles) and ravine (red diamonds) sampling locations for *E. coli* testing. Sample locations are 50 paces apart in waist-deep water.



Figure 2. Measuring water temperature in Lake Huron with a handheld thermometer.

## 2.2. Water sampling by public health agencies

Huron Perth Public Health (HPPH) Unit data were included in this report for beaches at St. Joseph and Houston Heights for 2016 – present. The HPPH samples water twice a week from early June until Labour Day as five sampling points for each beach, spaced 15 to 30 m apart. Sampling methods were taken at the sampler’s waist depth (approximately 1 m) with a bottle on a reaching pole. Full sampling methods are outlined in the *Operational Approaches for Recreational Water Quality Guideline, 2018* (MOHLTC, 2018). Beaches were typically sampled twice per week on Monday and Wednesday. Prior to 2016, ABCA staff conducted water quality monitoring at Houston Heights and St. Joseph once per week. Sampling locations by ABCA and the Health Unit at these beaches were close to one another, but not identical. Data from samples collected by HPPH staff since 2016 were combined in one dataset with data from samples collected by ABCA at these sites prior to 2016.

Data from Lambton Public Health were not included in this report but are available online ([lambtonshores.ca](http://lambtonshores.ca)). Additional information about local beach water quality can be found in an online 2011–2023 ‘Swim Guide’ produced by Swim Drink Fish ([swimguide.org](http://swimguide.org)).

Table 1. Beaches with water sampled for *E. coli*, agency responsible for sampling, sampling years, and number of samples.

Site Name	Sampling Location	Sampling agency	Sampling years	Number of samples
Gully	Lake Huron	Ausable Bayfield C.A.	2011	14
			2017–22	314
	Ravine	Ausable Bayfield C.A.	2017–22	63
Wildwood	Lake Huron	Ausable Bayfield C.A.	2007–22	905
	Ravine	Ausable Bayfield C.A.	2006–22	834
Houston Heights	Lake Huron	Ausable Bayfield C.A.	2006–15	600
		Huron Perth Health	2016–19, 2021	520
	Ravine	Ausable Bayfield C.A.	2006–15	121
St. Joseph	Lake Huron	Ausable Bayfield C.A.	2006–15	602
		Huron Perth Health	2016–21	665
	Ravine	Ausable Bayfield C.A.	2006–15	121
Ridgeway	Lake Huron	Ausable Bayfield C.A.	2007–21	930
	Ravine	Ausable Bayfield C.A.	2006–22	199
Turnbull	Lake Huron	Ausable Bayfield C.A.	2016–22	201
	Ravine	Ausable Bayfield C.A.	2014–22	86
Mud Creek	Lake Huron	Ausable Bayfield C.A.	2017–22	265
	Ravine	Ausable Bayfield C.A.	2017–22	53



Figure 3. Sampling sites for *E. coli* testing in Lake Huron and ravines. These sites are a partnership between the Ausable Bayfield Conservation Authority and Bluewater Shoreline Residents' Association. Additional sites at St. Joseph and Houston Heights are monitored by Public Health agencies.

### 2.3. Data Analysis

*Escherichia coli* data were summarized as a *daily* geometric mean of the five samples taken each sampling day (or three at Turnbull's Grove), or as an *annual* geometric mean. Annual geometric means were calculated for lake samples and ravine samples. A geometric mean is a type of mean or average whereby the effect of uncommonly high or low concentrations on a mean is reduced. Seasonal geometric means are used to track trends in *E. coli* concentrations from year to year.

Geometric mean was calculated with the psych package (Revelle, 2022) in R version 4.2.2 (R Core Team, 2022). Plots of geometric mean were made with the ggplot2 package in R (Wickham, 2016). Geometric mean concentrations were compared with the Recreational Water Quality guideline. The percentage of samples within a year that exceeded the former and current recreational guidelines (100 CFU/100 mL and 200 CFU/ 100 mL, respectively) were also calculated. Annual geometric means for samples collected by the Huron Perth Public Health were compared with geomeans calculated by ABCA staff (for 2017–2015 sampling years) with a two-sample t-test in R.

The laboratory detection limit for *E. coli* has been inconsistent across all years. To allow for better comparisons between years and with HPPH data, values less than or equal to 8 CFU/100 mL were considered to be 8 CFU/100 mL for lake samples included in this report. It is also important to note that Public Health Ontario (PHO) does not count above 1000 cfu/100 mL, so beaches sampled by HPPH have a maximum of 1000 cfu/100 mL.

#### 2.4. Comparisons with recreational guidelines

Water sampling results from local beaches and ravines were compared with the guidelines related to *E. coli* levels in water used for recreational activities (e.g., swimming).

The current *E. coli* guideline values for primary contact activities in fresh water according to Health Canada (2012) and the Ontario Ministry of Health and Long-Term Care (MOHLTC) (2018) are:

- 1) a geometric mean concentration of less than or equal to 200 CFU (colony forming units [CFU]) per 100 millilitres of water, based on a minimum of five samples, and
- 2) single-sample maximum concentrations of less than or equal to 400 CFU / 100 mL.



*Figure 4. Ravine watercourse entering Lake Huron through a beach. Water in ravines is often high in *E. coli* and swimming should be avoided, but these areas sometimes appeal to for swimming and wading, especially to people with young children, due to warmer water temperatures and low waves compared to the lake.*

Prior to 2018, Ontario followed a stricter guideline of a geometric mean concentration of 100 CFU/100 mL. As of 2018, Ontario beaches have followed the *Operational Approaches for Recreational Water Quality* guideline (MOHLTC, 2018) and the *Recreational Water Quality Protocol (2012)* for geometric mean and single-sample maximum parameters. These parameters now match Health Canada’s guidelines (2012) and makes Ontario consistent with other provinces including Saskatchewan (Saskatchewan Environment, 2015), and British Columbia (BC Ministry of Environment and Climate Change Strategy, 2019).

The Bluewater Shoreline Residents’ Association has a long-term goal of meeting the pre-2018 provincial water quality standard of less than 100 CFU / 100 mL all the time. The BRSA’s shorter term goal is to see a reduction in the percentage of time that ravine and lake water exceed the provincial standard ([www.bsra.ca](http://www.bsra.ca)). These results are published online on a weekly basis during the summer.

### 3. Results

#### H.4.4 Water quality at Gully Creek Beach & Ravine

Annual *E. coli* concentrations at the Gully Creek beach near Bayfield were well within the current Canadian Recreational Water Quality Guideline and consistently also met the pre-2018 guideline of 100 CFU/100 mL (Figure 5, left; Table 2). These concentrations have not changed significantly over the six-year period. Samples were also collected at this site in April, July, and October of 2012, but are not presented here as sampling months were inconsistent with other sampling in this report.

The current recreational guideline was not met on six occasions (2017–2022); five times based on a geometric mean exceeding 200 CFU/100 mL and once based on a single sample maximum exceeding 400 CFU/100 mL (Figure 14). The percentage of samples exceeding the guideline has remained stable (Table 5). Two recent records were above 1000 CFU/100 mL (1260 CFU/100mL in 2020 and 1100 CFU/100 mL in 2021) (Table 6); both high values were recorded north of the ravine.

Concentrations of *E. coli* in the ravine at Gully Creek ravine were consistently above the concentrations measured in Lake Huron (Figure 5, right; Table 3; Figure 21). There was not a significant trend over the six-year period, but *E. coli* was high in 2020 from a single measurement of 11,800 CFU/100 mL (Table 7).

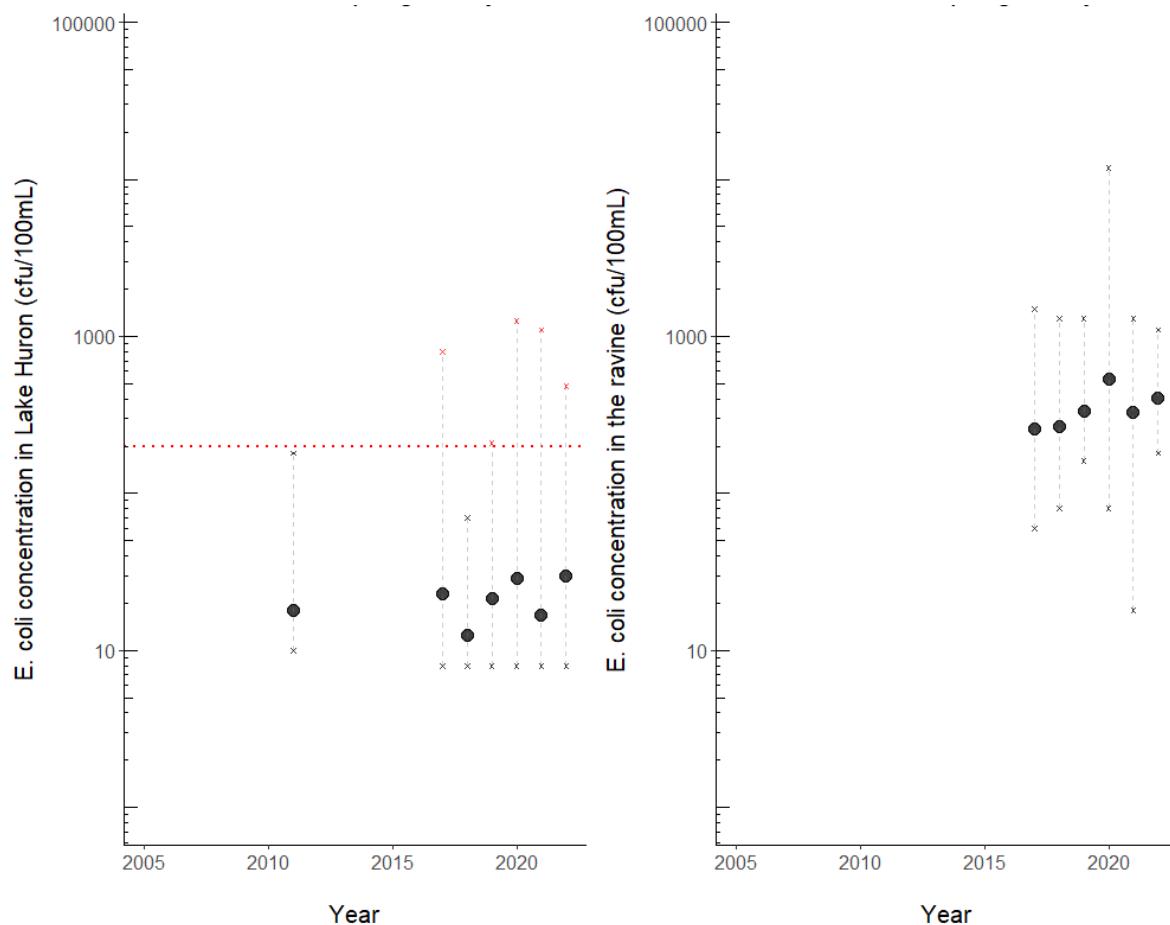


Figure 5. Seasonal geometric mean *E. coli* concentration at Gully Creek sampled at left) five sites in Lake Huron, and right) one site in a ravine just upstream of Lake Huron. A dotted red line indicates the Recreational Water guideline of 200 colony forming units per 100 millilitres of water. Vertical lines indicate the maximum and minimum concentration within each year. A red cross indicates a maximum concentration  $\geq 400$  cfu/100 mL at the beach sampling location.

### 3.1.2 Water quality at Wildwood Beach & Ravine

Seasonally, *E. coli* concentrations at the Wildwood beach are within the current Canadian Recreational Water Quality Guideline (Figure 6, left; Table 2), with higher than usual geometric mean concentrations in 2012 and 2022. These concentrations have not changed significantly over the fifteen-year period.

The current recreational guideline was not met on thirteen occasions; 12 times based on a geometric mean concentration exceeding 200 CFU/100 mL and once based on a single sample maximum exceeding 400 CFU/100 mL (Figure 15). The number of days per above the guidelines have remained stable with no exceedances from 2015–2021 (Figure 6). Maximum *E. coli* concentration was over 1000 CFU/100 mL in 2018, 2012, 2014, and 2022 (Table 6).

Yearly concentrations of *E. coli* in the ravine at Wildwood were consistently above the concentrations measured in Lake Huron (Figure 6, right; Table 3; Figure 22). These concentrations have not changed significantly over the 17-year period, but one sample in 2007 had very high *E. coli* (65,000 CFU/100 mL) (Table 7).

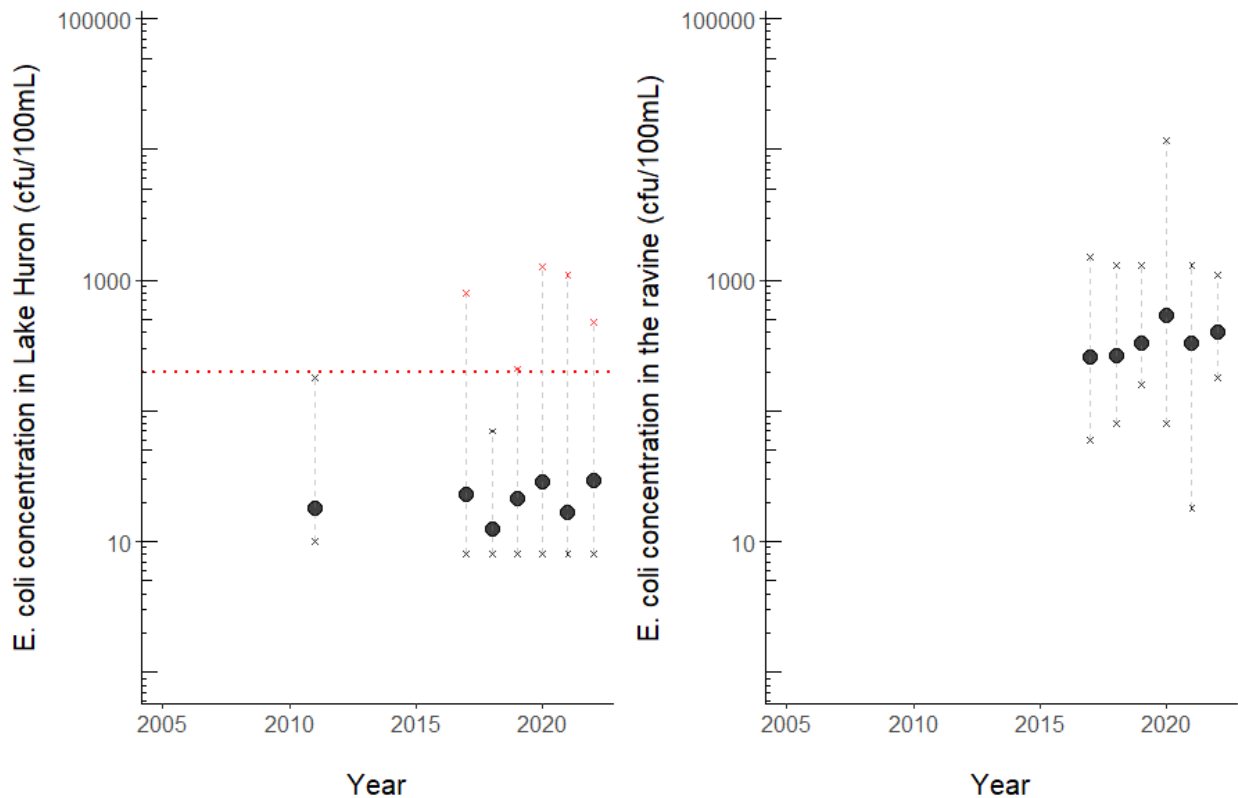


Figure 6. Seasonal geometric mean *E. coli* concentration at Wildwood sampled at left) five sites in Lake Huron, and right) one site in a ravine just upstream of Lake Huron. A dotted red line indicates the Recreational Water guideline of 200 colony forming units per 100 millilitres of water. Vertical lines indicate the maximum and minimum concentration within each year. A red cross indicates a maximum concentration  $\geq 400$  cfu/100 mL at the beach sampling location.

### 3.1.3 Water quality at Houston Heights Beach & Ravine

Annual *E. coli* concentrations at the Houston Heights beach are well within the current Canadian Recreational Water Quality Guideline (Figure 7, left; Table 2). These concentrations have not changed significantly over the fifteen-year period.

The current recreational guideline was not met on eighteen occasions; seventeen times based on a geometric mean concentration exceeding 200 CFU/100 mL and once based on a single sample maximum exceeding 400 CFU/100 mL (Figure 16). The percentage of samples exceeding the guideline has remained stable (Table 5) but were greater than usual in 2012. Records were above 1000 CFU/100 mL in 2012 and 2018 (

Table 6 6). Huron Perth Public Health records values above 1000 CFU/100 mL as 1000 CFU/100 mL, so it is likely that the maximum concentration in 2018 was higher than the recorded value. Geomeans calculated by the Huron Perth Public Health in their *Beach Water Monitoring Report (2018)* were not significantly different from those calculated by ABCA staff for the same years (2006–2015) ( $t = 1.02$ ,  $df = 14.69$ ,  $p = 0.3262$ ).

Concentrations of *E. coli* in the ravine at Houston Heights beach were consistently above the concentrations measured in Lake Huron (Figure 7, right; Table 3; Figure 23). There was not a significant trend in ravine *E. coli* concentrations over the ten-year period (Table 7).

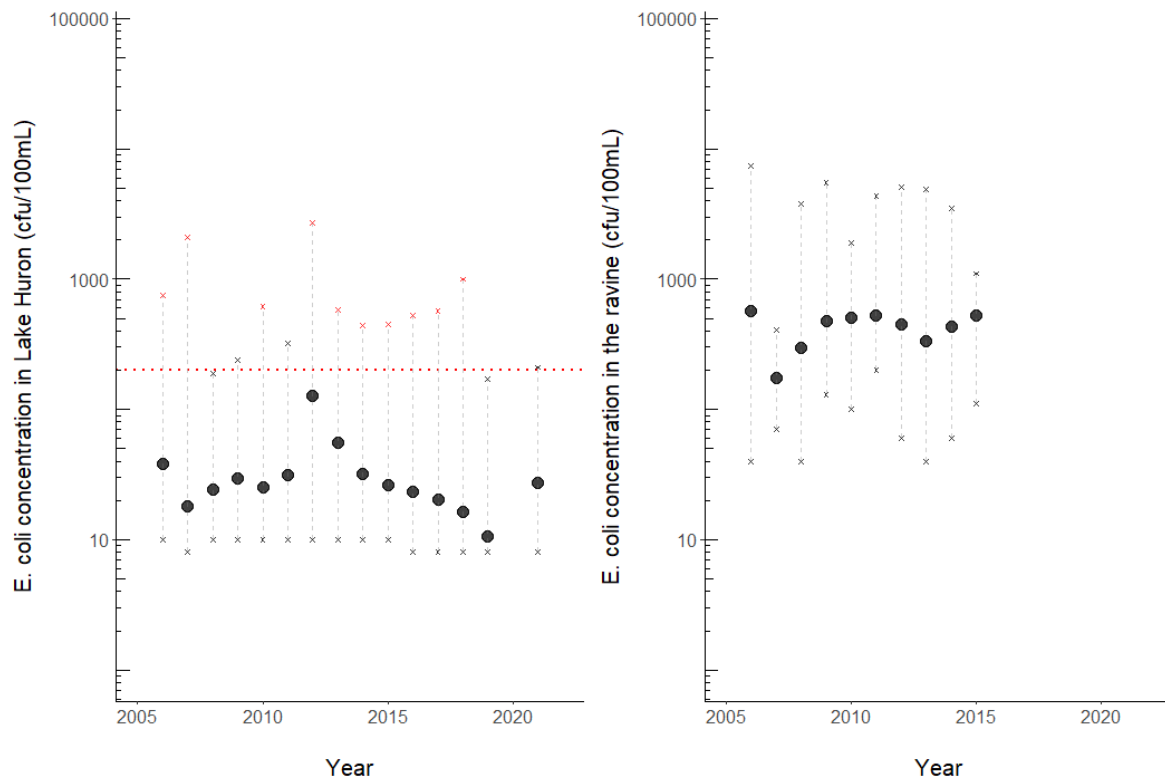


Figure 7. Seasonal geometric mean *E. coli* concentration at Houston Heights sampled at left) five sites in Lake Huron, and right) one site in a ravine just upstream of Lake Huron. A dotted red line indicates the Recreational Water guideline of 200 colony forming units per 100 millilitres of water. Vertical lines indicate the maximum and minimum concentration within each year. A red cross indicates a maximum concentration  $\geq 400$  cfu/100 mL at the beach sampling location.



### 3.1.4 Water quality at St. Joseph Beach & Ravine

Annual *E. coli* concentrations at the St. Joseph beach are within the current Canadian Recreational Water Quality Guideline (Figure 8, left; Table 2), but annual geometric mean is often higher than other beaches in the region. These concentrations have not changed significantly over the fifteen years.

The current recreational guideline was not met on forty-eight occasions in the past fifteen years; 37 times based on a geometric mean concentration exceeding 200 CFU/100 mL and 11 times based on a single sample maximum exceeding 400 CFU/100 mL (Figure 17). The percentage of samples exceeding the guideline has remained stable (Table 5) with a higher percentage in 2021 than other years.

Maximum *E. coli* concentrations were highest in 2014 and 2015 (Table 6) Since 2016, Huron Perth Public Health data has been used for this beach with a laboratory that returns any value  $\geq 1000$  CFU/100 mL as 1000 CFU/100 mL. Samples were recorded above 1000 CFU/100 mL 28 times prior to 2016 (~5% of all samples), so it is likely that many of the 1000 CFU/100 mL concentrations recorded post-2016 were higher than reported. Geomeans calculated by the Huron Perth Public Health in their *Beach Water Monitoring Report* (2018) were significantly different from those calculated by ABCA staff for the same years (2006–2015) ( $t = 2.63$ ,  $df = 16$ ,  $p = 0.018$ ).

Yearly concentrations of *E. coli* in the ravine at St. Joseph were consistently above the concentrations measured in Lake Huron (Figure 8, right; Table 3; Figure 24). There was not a significant trend in ravine *E. coli* concentrations over the ten-year period (Table 7).

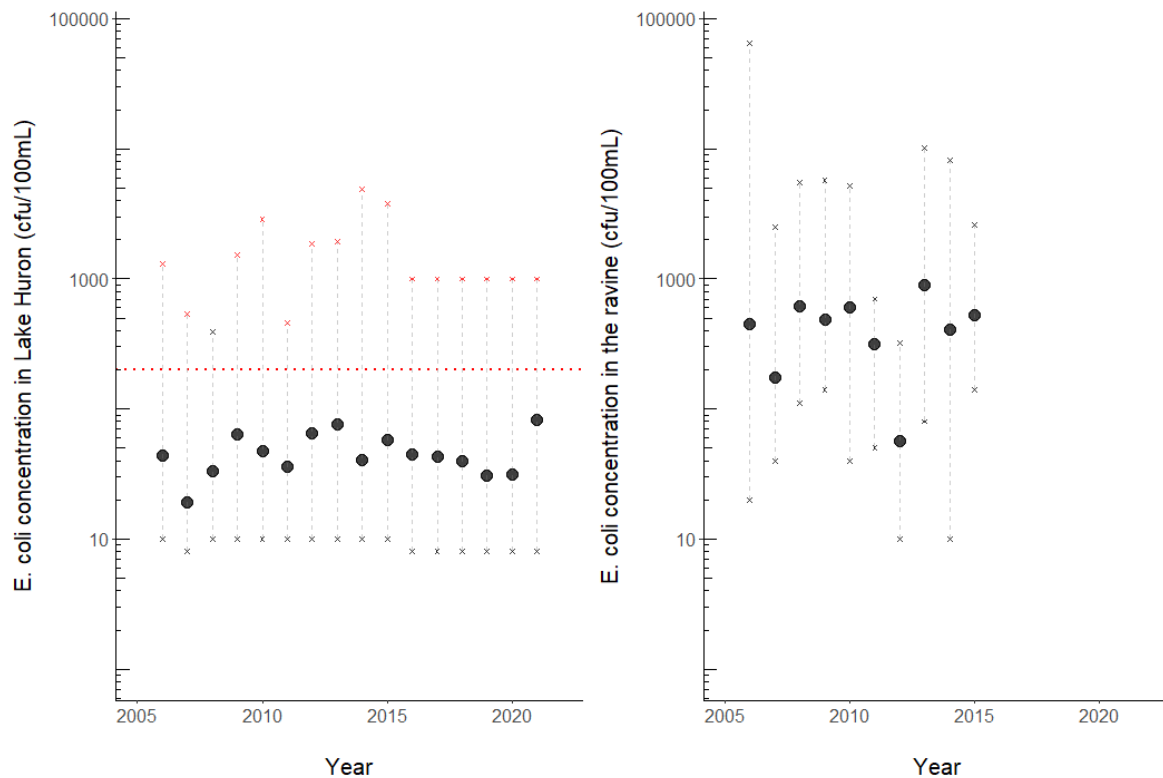


Figure 8. Seasonal geometric mean *E. coli* concentration at St. Joseph sampled at left) five sites in Lake Huron, and right) one site in a ravine just upstream of Lake Huron. A dotted red line indicates the Recreational Water guideline of 200 colony forming units per 100 millilitres of water. Vertical lines indicate the maximum and minimum concentration within each year. A red cross indicates a maximum concentration  $\geq 400$  cfu/100 mL at the beach sampling location.

### 3.1.4 Water quality at Ridgeway Beach & Ravine

Annual *E. coli* concentrations at the Ridgeway beach are well within the current Canadian Recreational Water Quality Guideline (Figure 9, left; Table 2). These concentrations have not changed significantly over the sixteen-year period.

The current recreational guideline was not met on twenty-three occasions in the past fifteen years; 21 times based on a geometric mean concentration exceeding 200 CFU/100 mL and twice based on a single sample maximum exceeding 400 CFU/100 mL (Figure 18). The percentage of samples exceeding the guideline has remained stable (Table 5). Maximum *E. coli* concentrations have fluctuated at this site but were highest in 2013 (Table 6) with a maximum of 3030 CFU/100 mL. Geometric mean has also remained stable, with a high in 2022 of 67 CFU/100 mL.

Concentrations of *E. coli* in the ravine at Ridgeway ravine were consistently above the concentrations measured in Lake Huron (Figure 9, right; Table 5; Figure 25). These concentrations have not changed significantly over the 17-year period. Geomean concentrations were particularly high in 2006, 2020, and 2021 (Table 7). Very high single sample concentrations were recorded in 2013 (26,500 CFU/100 mL) and 2020 (26,500 CFU/100 mL).

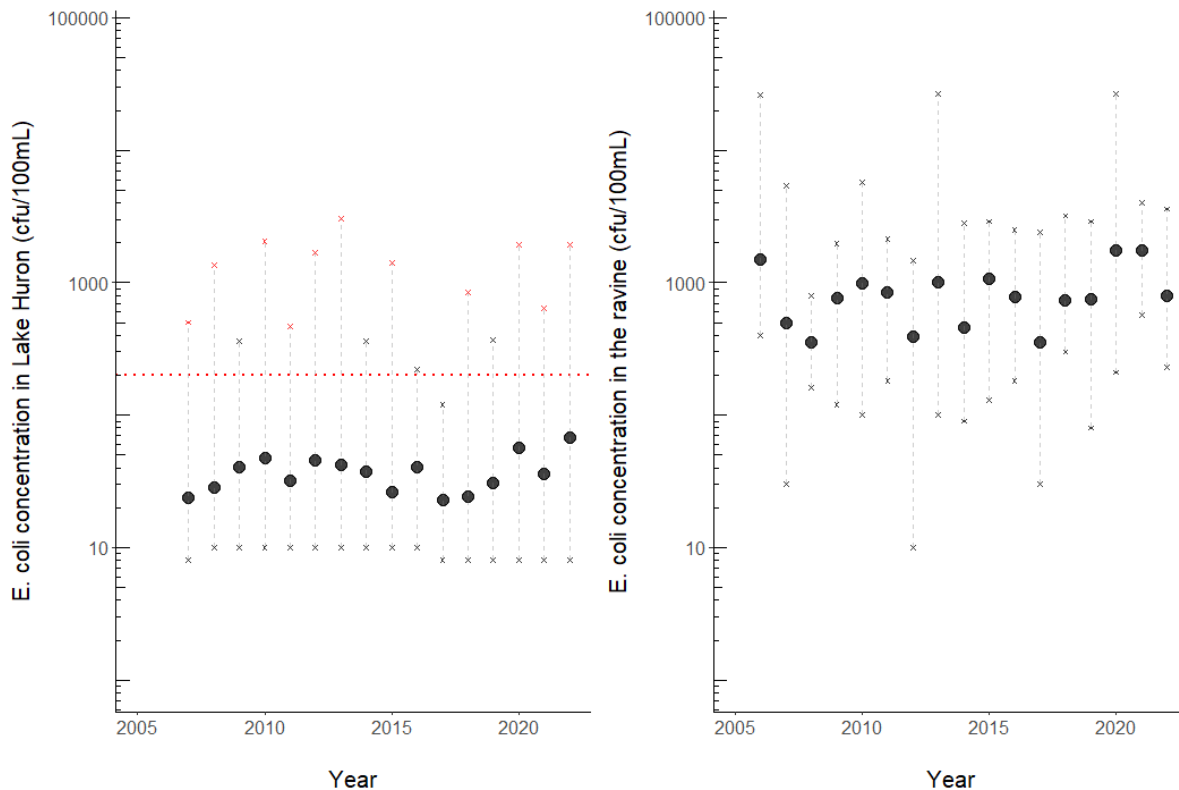


Figure 9. Seasonal geometric mean *E. coli* concentration at Ridgeway sampled at left) five sites in Lake Huron, and right) one site in a ravine just upstream of Lake Huron. A dotted red line indicates the Recreational Water guideline of 200 colony forming units per 100 millilitres of water. Vertical lines indicate the maximum and minimum concentration within each year. A red cross indicates a maximum concentration  $\geq 400$  cfu/100 mL at the beach sampling location.

### 3.1.6 Water quality at Turnbull's Grove Beach & Ravine

Annual *E. coli* concentrations at the Turnbull's Grove beach are well within the current Canadian Recreational Water Quality Guideline (Figure 10, left; Table 2), with higher than usual geometric mean concentrations in 2016 and 2022. These concentrations have not changed significantly over this seven-year period.

The current recreational guideline was not met on ten occasions in the past seven years; 8 times based on a geometric mean concentration exceeding 200 CFU/100 mL and twice based on a single sample maximum exceeding 400 CFU/100 mL (Figure 19). The percentage of samples exceeding the guideline has remained fairly stable (Table 5). Maximum *E. coli* concentration was over 1000 CFU/100 mL in 2019 and again in 2022 (Table 6).

Yearly concentrations of *E. coli* in the ravine at Turnbull's Grove ravine were consistently above the concentrations measured in Lake Huron (Figure 10, right; Table 3; Figure 26). Single sample *E. coli* concentrations were highest in 2018 (10,500 CFU/100 mL) and 2022 (14,400 CFU/100 mL) (Table 7). There was not a significant trend ravine *E. coli* concentration over this nine-year period.

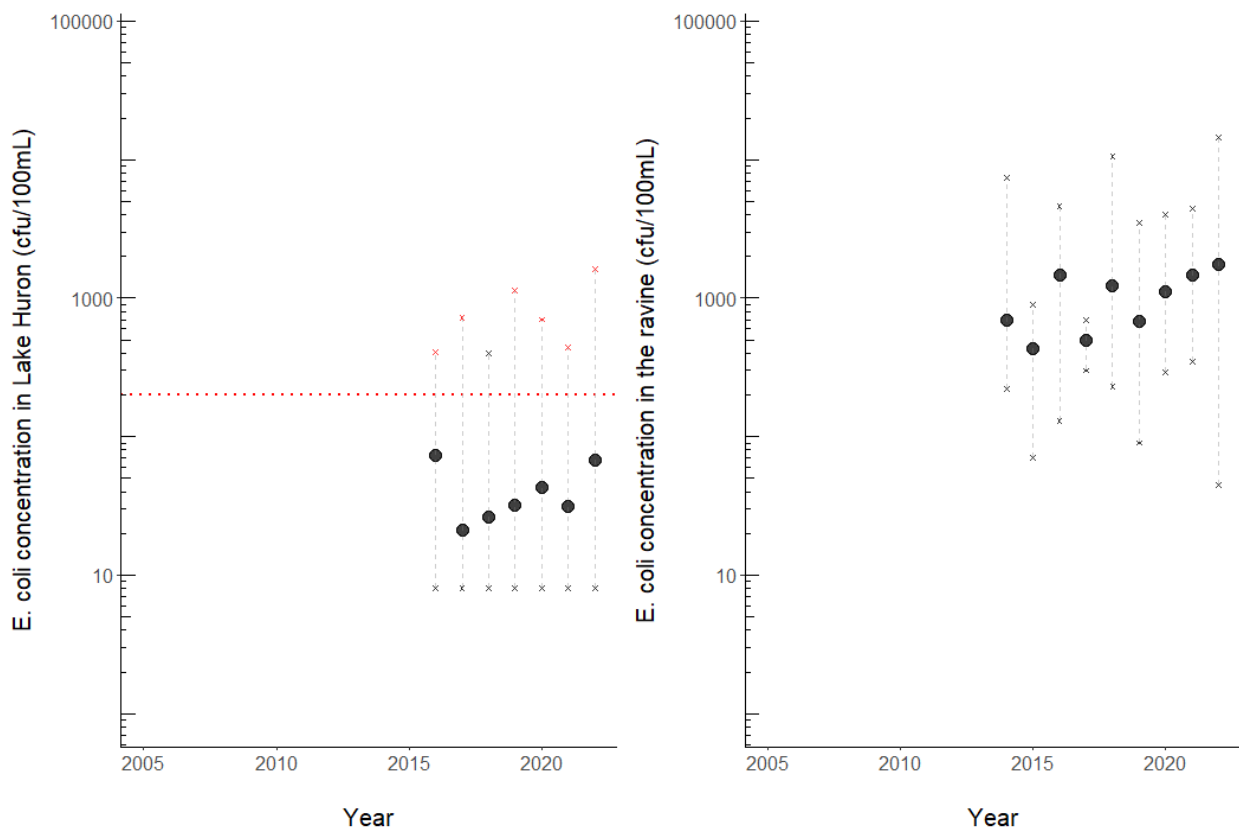


Figure 10. Seasonal geometric mean *E. coli* concentration at Turnbull sampled at left) three sites in Lake Huron, and right) one site in a ravine just upstream of Lake Huron. A dotted red line indicates the Recreational Water guideline of 200 colony forming units per 100 millilitres of water. Vertical lines indicate the maximum and minimum concentration within each year. A red cross indicates a maximum concentration  $\geq 400$  cfu/100 mL at the beach sampling location.

### 3.1.3 Water quality at Port Franks Beach & Ravine

Annual *E. coli* concentrations at the Port Franks beach are well within the current Canadian Recreational Water Quality Guideline (Figure 11, left; Table 2). While this beach has the lowest *E. coli* concentrations of the seven beaches included in this report—and arguably the best water quality—*E. coli* concentrations have significantly increased since 2017 ( $R^2 = 0.81$ ,  $F = 17$ ,  $p = 0.014$ ). *E. coli* was barely detectable in 2017, but the geomean has increased three-fold to ~30 CFU/100 mL in recent years. It should be noted that a value of 30 cfu/100 mL is still very low, and well within the recreational guidelines.

The current recreational guideline was not met on one occasion in 2022 (Figure 20), with no known exceedances in previous years (Figure 20). The highest recorded *E. coli* concentration at this site was 500 CFU/100 mL, recorded in 2022. Concentrations are often very low (i.e., near or at the detection limit of the laboratory). Higher concentrations at this site are still rarely above 100 CFU/100 mL.

Concentration of *E. coli* in the ravine at Port Franks ravine (Mud Creek) also met the Canadian Recreational Water Quality Guideline in all years (Figure 11, right; Table 3; Figure 27). These concentrations have not significantly changed over the six-year period. Concentration of *E. coli* in this ravine are among the lowest of the ravine sites in this report, though high concentrations have been recorded occasionally. The highest concentrations were recorded in 2022 (1040 CFU/100 mL and 800 CFU/100 mL (Table 7). The maximum recorded in 2022 is more than double the previous maximum recorded in other years (500 CFU/100 mL in 2019), but the geometric mean in 2022 included several low values and remained low at 30 CFU/100 mL.

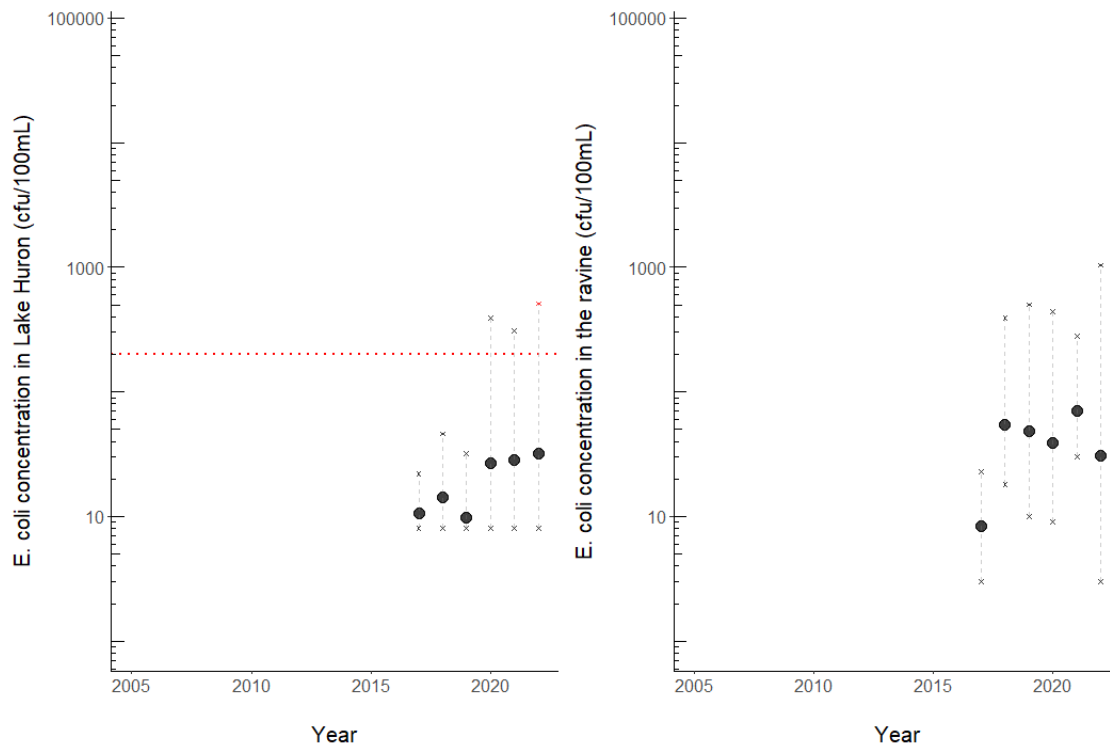


Figure 11. Seasonal geometric mean *E. coli* concentration at Mud Creek sampled at left) five sites in Lake Huron, and right) one site in a ravine just upstream of Lake Huron. A dotted red line indicates the Recreational Water guideline of 200 colony forming units per 100 millilitres of water. Vertical lines indicate the maximum and minimum concentration within each year. A red cross indicates a maximum concentration  $\geq 400$  cfu/100 mL at the beach sampling location.

### 3.1.4 Water quality comparisons

#### Beaches

Annual geometric mean *E. coli* concentrations are consistently below 100 cfu/100 mL most years for sampling in Lake Huron (Figure 12). Within a given year, the beach at St. Joseph typically had the highest annual geometric mean of the seven beaches in this report, with Turnbull's Grove and Ridgeway also often experiencing high concentrations compared to other beaches in the area. Gully, Wildwood, Houston Heights, and Port Franks (i.e., Mud) were consistently lower in annual *E. coli* concentrations than other beaches. *Escherichia coli* appeared to be somewhat higher in 2021 and 2022 and 2012–14 compared to other years in this report.

#### Ravines

*Escherichia coli* concentrations in ravines tended to be highest at Ridgeway and Turnbull's Grove compared to other locations, although *E. coli* were not consistently high every year at these two sites (e.g., see Turnbull in 2015) (Figure 13). Concentrations appeared particularly high at Ridgeway in 2020 and 2021 and Turnbull's Grove in 2022. Mud Creek very consistently had the lowest ravine concentrations compared to all other ravine sites.

While St. Joseph often has the highest *E. coli* concentrations in Lake Huron of the seven beaches, concentrations in the ravine were rarely highest, and sometimes among the lowest, at the St. Joseph ravine compared to other ravine sites. It is important to note, however, that ravine concentrations are unknown for both Houston Heights and St. Joseph after 2015. In general, locations with high *E. coli* concentrations in the ravine tended to also show high concentrations in Lake Huron, though there is variability by site and season and the ravine with the highest *E. coli* within a year does not always correspond to the highest beach. This variability makes it difficult to draw clear conclusions between water quality in the ravine and water quality in the lake, but in general it appears that locations with the lowest *E. coli* in the ravine are also low in the lake (e.g., Port Franks), and sites with higher concentrations in the ravine are also relatively high in Lake Huron.

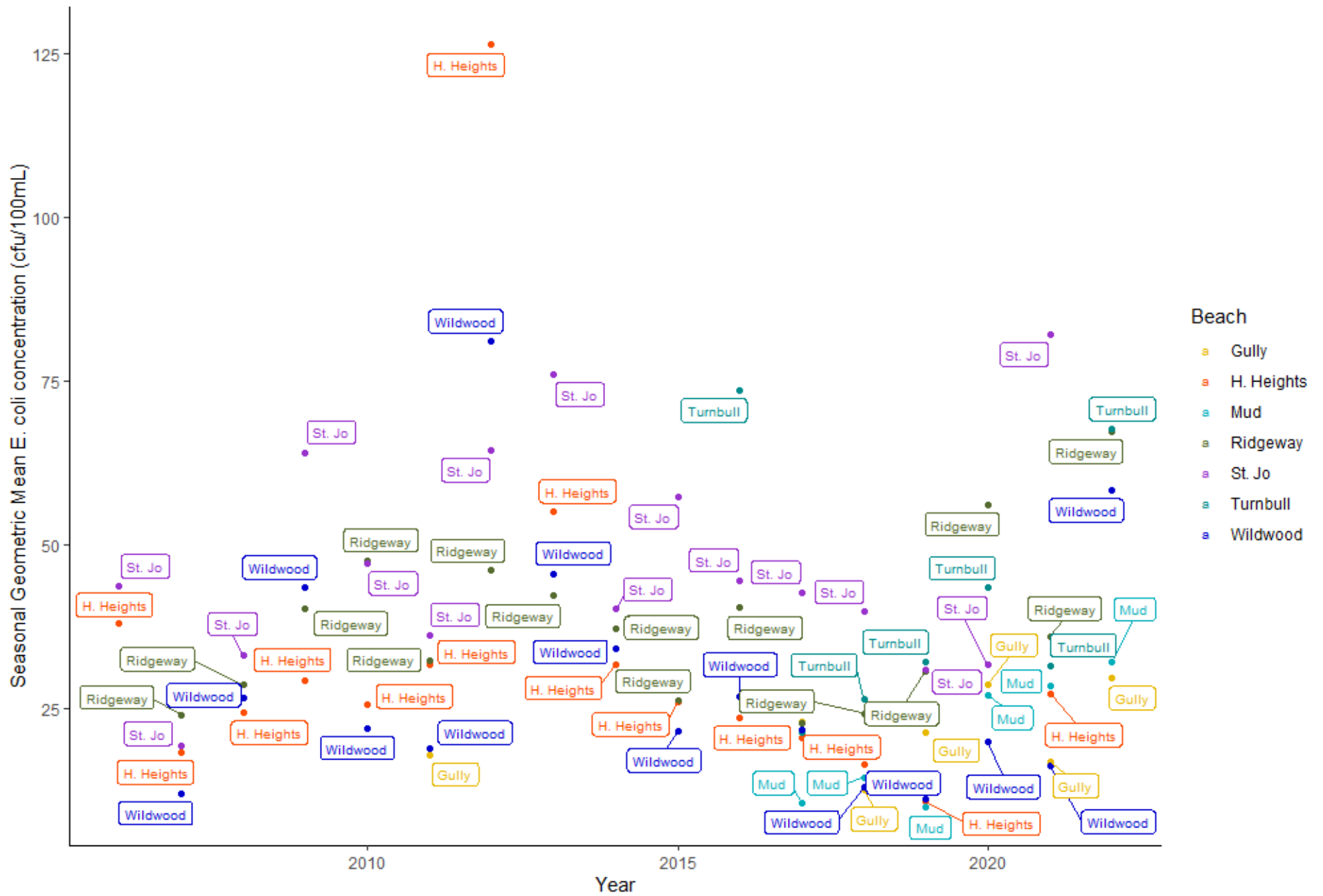


Figure 12. Seasonal geometric mean *E. coli* concentration at seven beaches along Lake Huron. **Note** that data were not available for all years for all beaches.

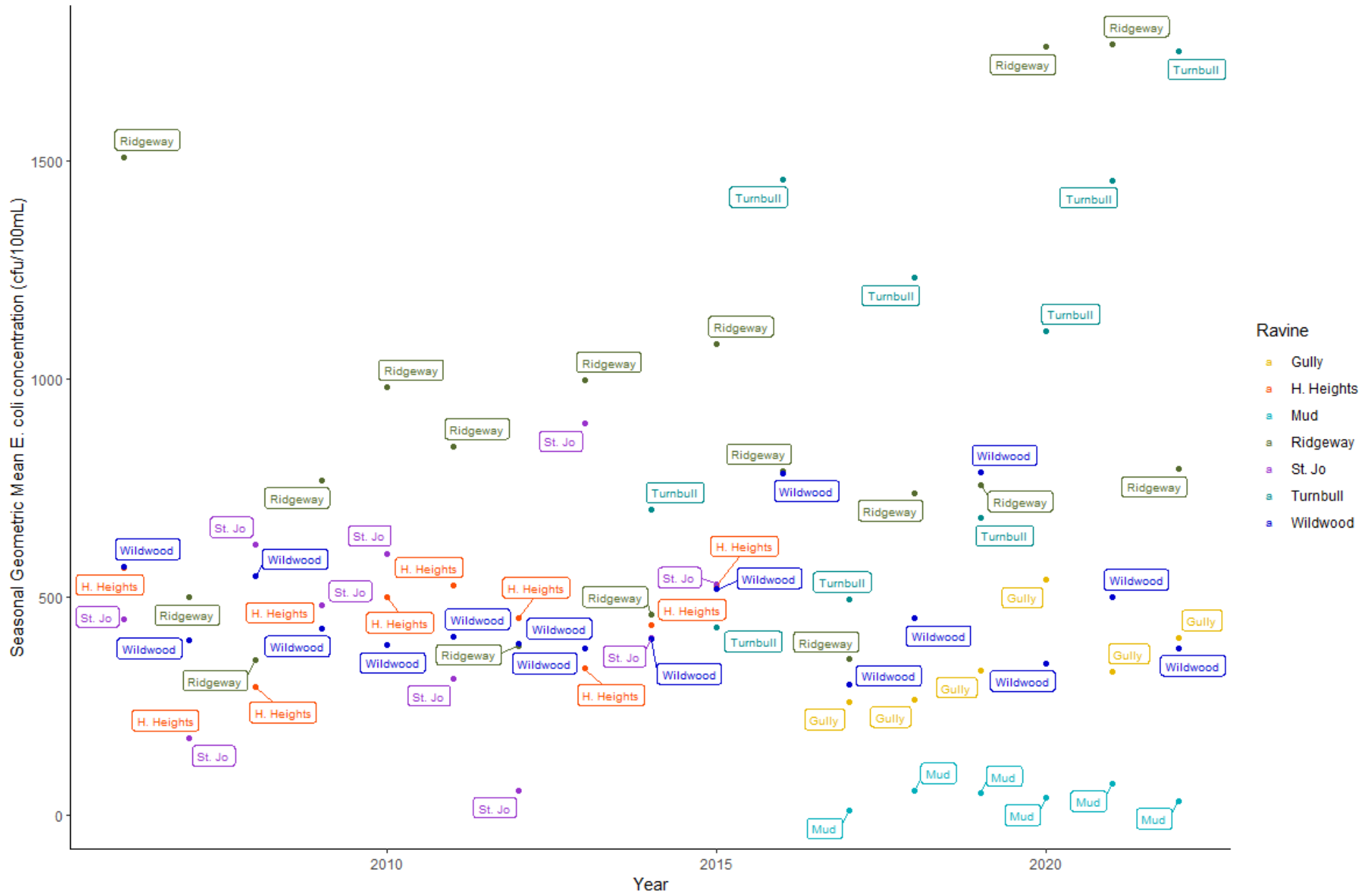


Figure 13. Seasonal geometric mean *E. coli* concentration at seven ravines upstream of beaches along Lake Huron. **Note** that data were not available for all years for all ravines.

### 3.2 Annual Geometric Mean Concentration of E. coli at all seven beaches and ravines

Table 2. Annual geometric mean E. coli concentration (CFU/100 mL) at seven Lake Huron Beaches.

Beach	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Gully						18						23	12	21	29	17	30
Wildwood		12	27	43	22	19	81	46	34	22	27	22	13	11	20	16	58
Houston Heights	38	18	24	29	25	32	126	55	32	26	23	20	16	11	-	27	
St. Joseph	44	19	33	64	47	36	64	76	40	57	45	43	40	31	32	82	
Ridgeway		24	29	40	48	32	46	42	37	26	40	23	24	31	56	36	67
Turnbull											74	21	26	32	43	31	68
Port Franks												11	14	10	27	28	32

Table 3. Annual geometric mean E. coli concentration (CFU/100 mL) in seven ravine watercourses entering Lake Huron.

Ravine	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Gully												259	265	332	539	329	406
Wildwood	569	401	548	426	389	408	393	382	404	517	783	297	450	785	347	499	382
Houston Heights	567	176	294	480	501	527	451	335	436	525							
St. Joseph	448	176	619	482	600	313	56	897	405	530							
Ridgeway	1509	499	354	767	981	846	387	998	459	1080	788	356	738	757	1761	1769	793
Turnbull									699	430	1458	494	1232	681	1109	1456	1751
Port Franks												8	55	49	39	71	31



### 3.3 Recreational water quality guideline exceedances at all seven beaches and ravines

Table 4. Percentage of samples with an *E. coli* concentration above 100 CFU/100 mL at Lake Huron beaches.

Beach	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total (%)
Gully												17	0	7	20	8	10
Wildwood		5	18	27	10	8	45	22	28	2	10	20	0	0	4	10	15
Houston Heights	23	10	11	16	17	13	51	37	18	8	17	7	6	3	-	18	16
St. Joseph	26	16	17	29	37	22	34	48	20	28	30	26	30	23	20	43	24
Ridgeway		20	18	35	38	20	28	27	27	12	22	3	12	29	38	24	23
Turnbull											43	3	17	29	37	17	24
Port Franks												0	0	0	4	16	5
Total %	25	13	16	27	25	16	39	33	23	13	23	14	12	13	19	21	20

Table 5. Percentage of samples within a year with an *E. coli* concentration above 200 CFU/100 mL at Lake Huron beaches.

Beach	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total (%)
Gully												7	0	2	10	2	4
Wildwood		0	15	15	8	8	26	8	15	0	0	5	0	0	4	4	8
Houston Heights	17	3	0	2	12	3	40	18	17	4	8	4	5	0	-	2	8
St. Joseph	17	11	9	16	12	10	26	25	10	16	23	14	23	11	13	33	14
Ridgeway		5	8	15	10	11	25	18	17	2	2	0	7	16	20	8	11
Turnbull											13	3	10	25	22	13	14
Port Franks												0	0	0	2	10	3
Total %	17	5	8	12	10	8	29	18	15	6	11	7	8	7	11	11	11

### 3.4 Maximum *E. coli* concentrations

Table 6. Maximum *E. coli* concentration (CFU/100mL) at Lake Huron beaches.

Beach	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Gully						180						800	70	210	1260	1110
Wildwood		160	1070	740	530	360	1700	310	1770	180	180	320	87	100	240	210
H. Heights*	750	210	190	240	620	320	2690	580	440	450	530	570	1000	170	-	210
St. Joseph*	1300	540	390	1520	2880	460	1860	1940	4920	3770	1000	1000	1000	1000	1000	1000
Ridgeway		500	1360	360	2040	470	1680	3030	360	1400	220	120	840	370	1920	640
Turnbull											410	720	400	1130	700	440
Port Franks												22	46	32	390	310

\*Since 2016, Houston Heights and St. Joseph have been sampled by HPPH, which does not report values above 1000 CFU/100 mL.

Table 7. Maximum *E. coli* concentration at ravines entering Lake Huron.

Ravine	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Gully												1500	1300	1300	11800	1300
Wildwood	8500	65000	14900	3100	8100	1210	5790	2400	5100	2800	2200	1700	5100	5600	3200	1500
H. Heights	7400	410	3800	5500	1910	4370	5070	4900	3500	1100						
St. Joseph	65000	2500	5500	5700	5220	700	320	10200	8100	2600						
Ridgeway	2610	5400	790	1970	5690	2140	1470	26500	2800	2900	2500	2400	3200	2900	26500	4000
Turnbull									7400	900	4600	690	10500	3500	4000	4400
Port Franks												23	390	500	440	280

### 3.5 Daily water quality at beaches and ravines

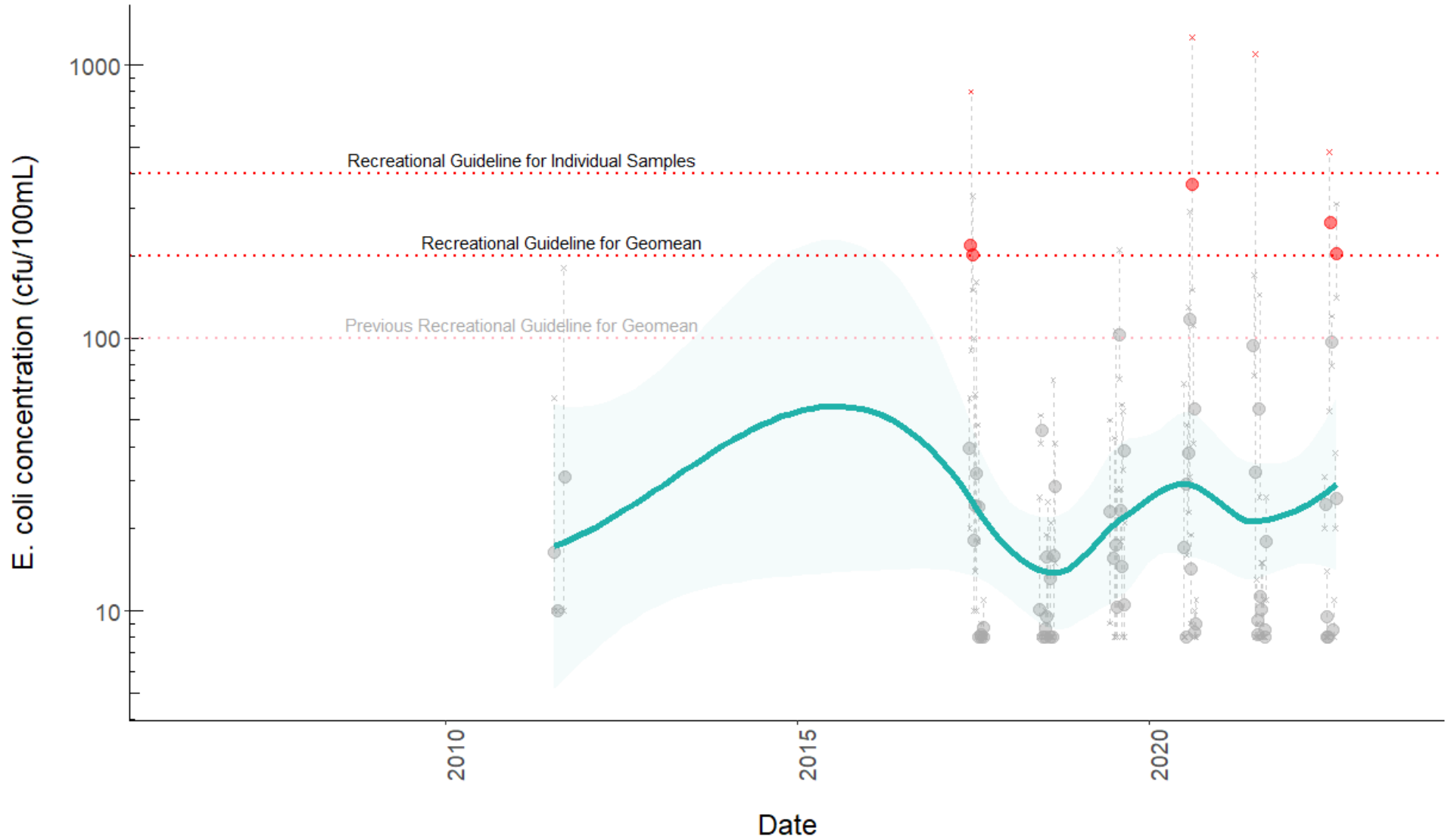


Figure 14. Daily geometric mean *E. coli* concentration of water samples from Lake Huron at the Gully Creek beach. Dots represent daily geometric mean of five samples, with crosses indicating daily maximum and minimum *E. coli* concentrations. Red dots indicate a geometric mean above Health Canada's Guidelines for Recreational Water Quality of 200 colony forming units per 100 millilitres (CFU/100 mL). Single values above 400 CFU/100 are indicated by a red cross. Geometric mean, maximum, and minimum values that met Health Canada's guidelines are shown in grey. A turquoise local regression (loess) line models the relationship between geometric mean *E. coli* concentration and date. Sampling in 2011 took place on three days (July, August, September) instead of the weekly sampling schedule followed in more recent years.

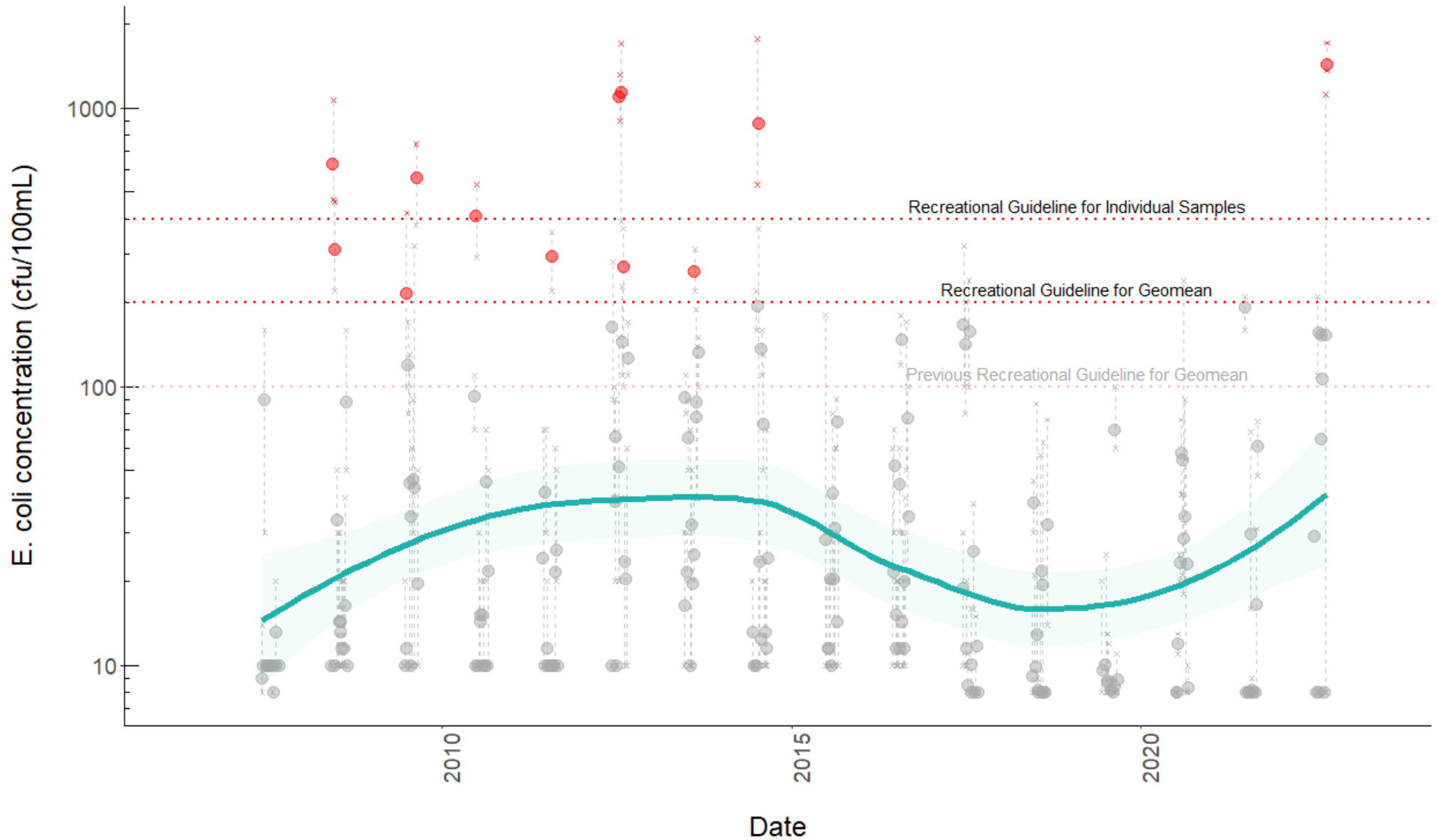


Figure 15. Daily geometric mean *E. coli* concentration of water samples from Lake Huron at the Wildwood beach. Dots represent daily geometric mean of three samples, with crosses indicating daily maximum and minimum *E. coli* concentrations. Red dots indicate a geometric mean above Health Canada's Guidelines for Recreational Water Quality of 200 colony forming units per 100 millilitres (CFU/100 mL). Single values above 400 CFU/100 are indicated by a red cross. Geometric mean, maximum, and minimum values that met Health Canada's guidelines are shown in grey. A turquoise local regression (loess) line models the relationship between geometric mean *E. coli* concentration and date.

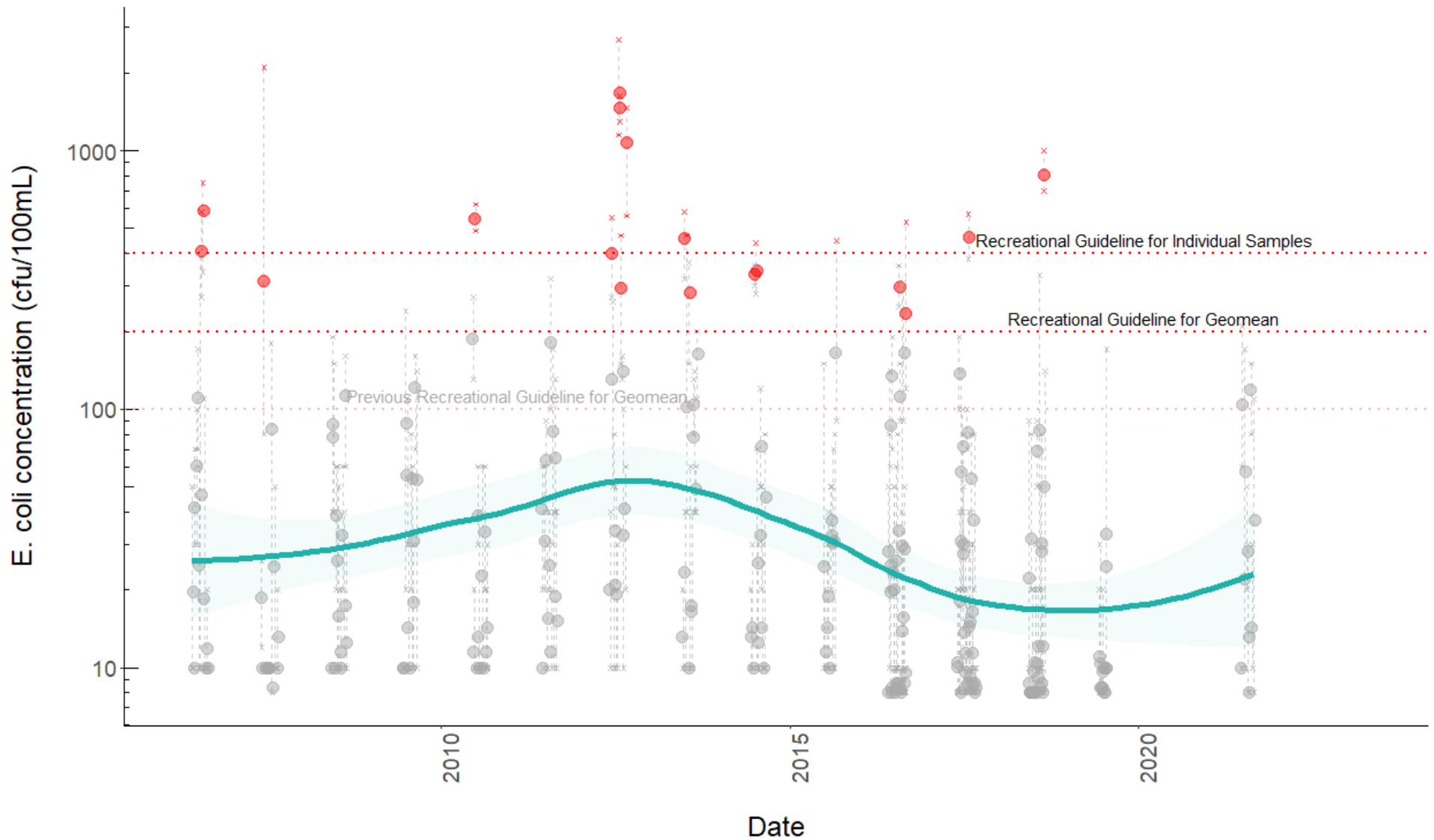


Figure 16. Daily geometric mean *E. coli* concentration of water samples from Lake Huron at the Houston Heights beach. Dots represent daily geometric mean of five samples, with crosses indicating daily maximum and minimum *E. coli* concentrations. Red dots indicate a geometric mean above Health Canada's Guidelines for Recreational Water Quality of 200 colony forming units per 100 millilitres (CFU/100 mL). Single values above 400 CFU/100 are indicated by a red cross. Geometric mean, maximum, and minimum values that met Health Canada's guidelines are shown in grey. A turquoise local regression (loess) line models the relationship between geometric mean *E. coli* concentration and date. Huron Perth Public Health data (2016-present) has a laboratory maximum of 1000 CFU/100mL.

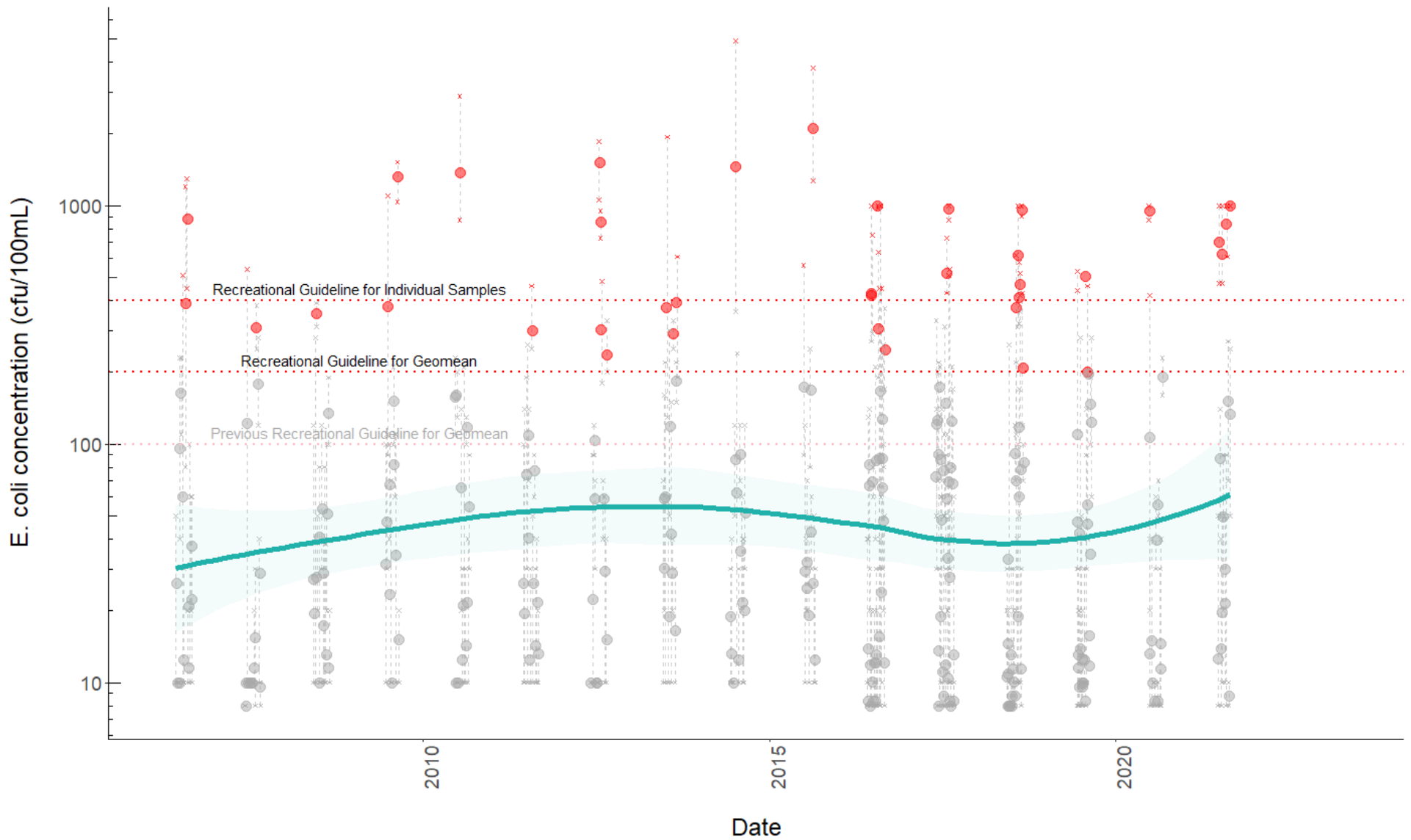


Figure 17. Daily geometric mean *E. coli* concentration of water samples from Lake Huron at the St. Joseph beach. Dots represent daily geometric mean of five samples, with crosses indicating daily maximum and minimum *E. coli* concentrations. Red dots indicate a geometric mean above Health Canada's Guidelines for Recreational Water Quality of 200 colony forming units per 100 millilitres (CFU/100 mL). Single values above 400 CFU/100 are indicated by a red cross. Geometric mean, maximum, and minimum values that met Health Canada's guidelines are shown in grey. A turquoise local regression (loess) line models the relationship between geometric mean *E. coli* concentration and date. Huron Perth Public Health data (2016-present) has a laboratory maximum of 1000 CFU/100mL.

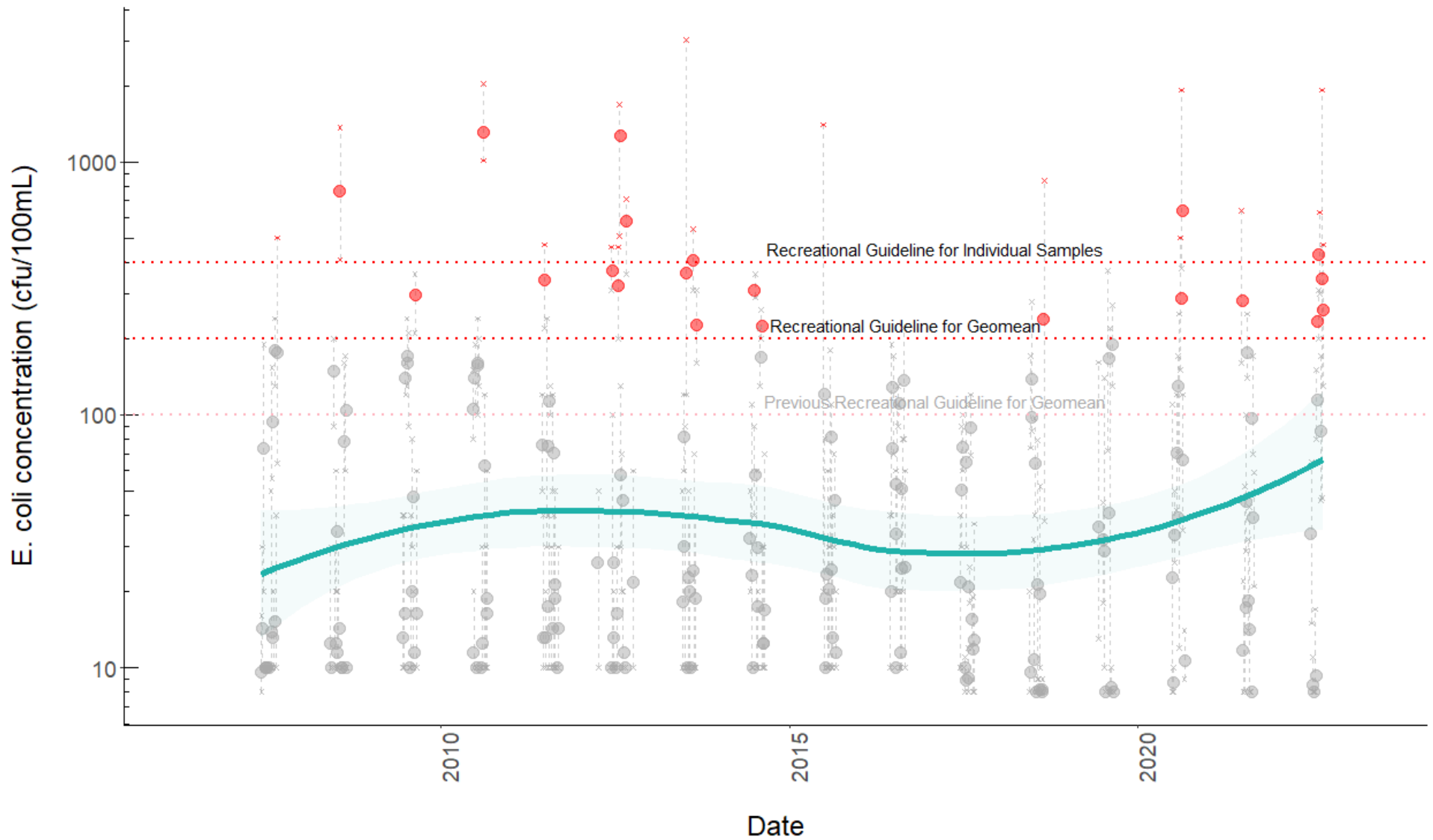


Figure 18. Daily geometric mean *E. coli* concentration of water samples from Lake Huron at the Ridgeway beach. Dots represent daily geometric mean of five samples, with crosses indicating daily maximum and minimum *E. coli* concentrations. Red dots indicate a geometric mean above Health Canada's Guidelines for Recreational Water Quality of 200 colony forming units per 100 millilitres (CFU/100 mL). Single values above 400 CFU/100 are indicated by a red cross. Geometric mean, maximum, and minimum values that met Health Canada's guidelines are shown in grey. A turquoise local regression (loess) line models the relationship between geometric mean *E. coli* concentration and date.

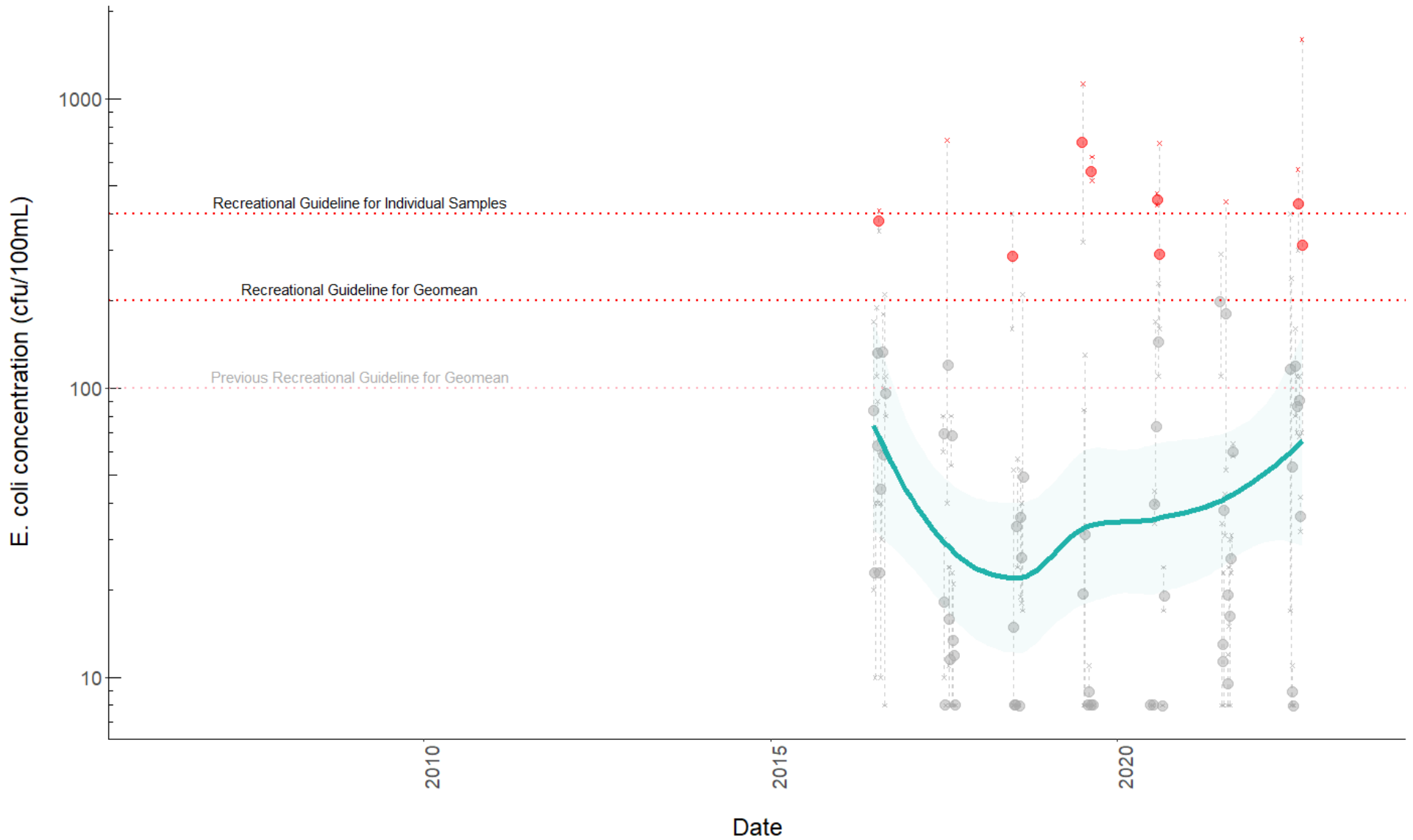


Figure 19. Daily geometric mean *E. coli* concentration of water samples from Lake Huron at the Turnbull beach. Dots represent daily geometric mean of three samples, with crosses indicating daily maximum and minimum *E. coli* concentrations. Red dots indicate a geometric mean above Health Canada’s Guidelines for Recreational Water Quality of 200 colony forming units per 100 millilitres (CFU/100 mL). Single values above 400 CFU/100 are indicated by a red cross. Geometric mean, maximum, and minimum values that met Health Canada’s guidelines are shown in grey. A turquoise local regression (loess) line models the relationship between geometric mean *E. coli* concentration and date.



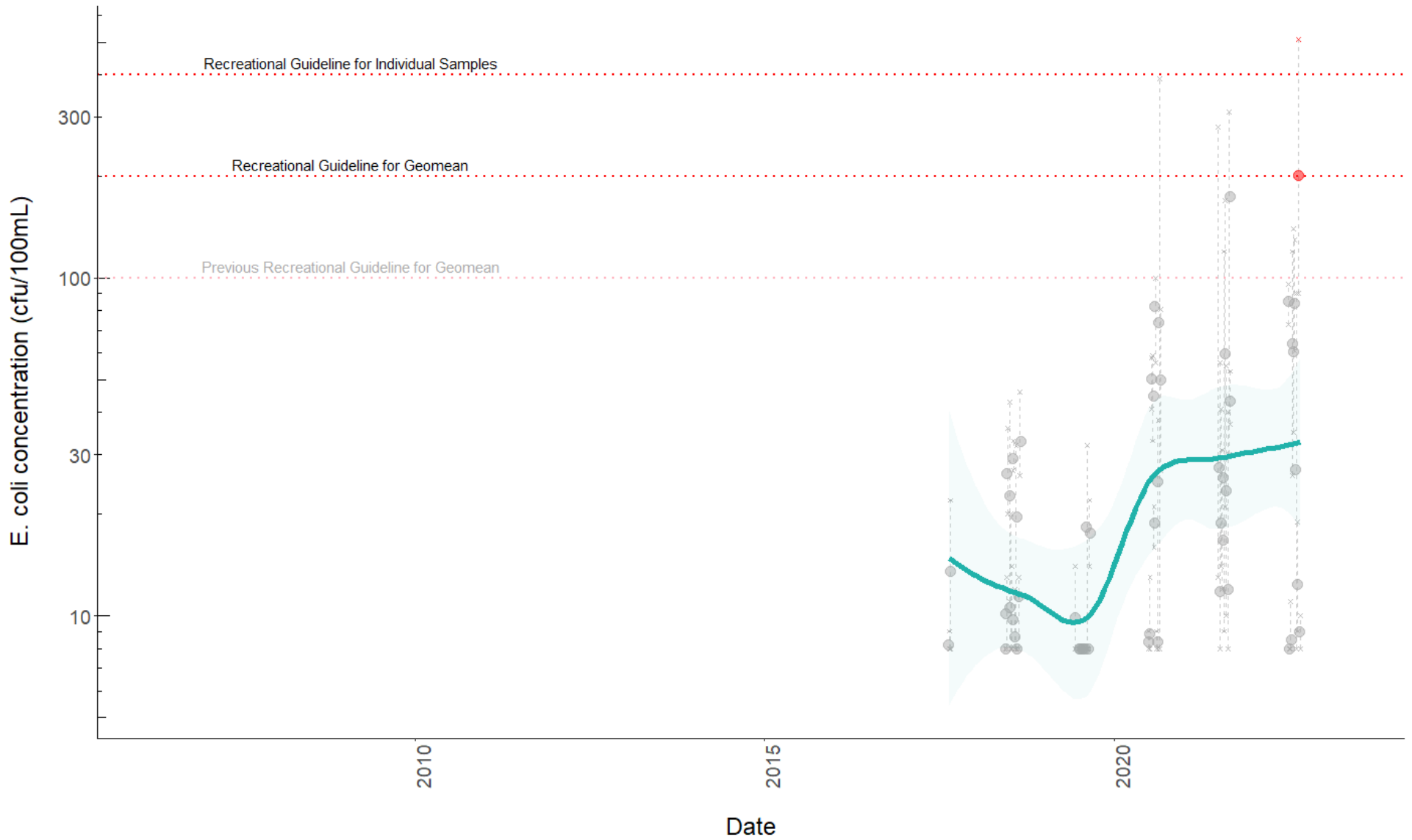


Figure 20. Daily geometric mean *E. coli* concentration of water samples from Lake Huron at the Port Franks beach. Dots represent daily geometric mean of five samples, with crosses indicating daily maximum and minimum *E. coli* concentrations. Red dots indicate a geometric mean above Health Canada's Guidelines for Recreational Water Quality of 200 colony forming units per 100 millilitres (CFU/100 mL). Single values above 400 CFU/100 are indicated by a red cross. Geometric mean, maximum, and minimum values that met Health Canada's guidelines are shown in grey. A turquoise local regression (loess) line models the relationship between geometric mean *E. coli* concentration and date.

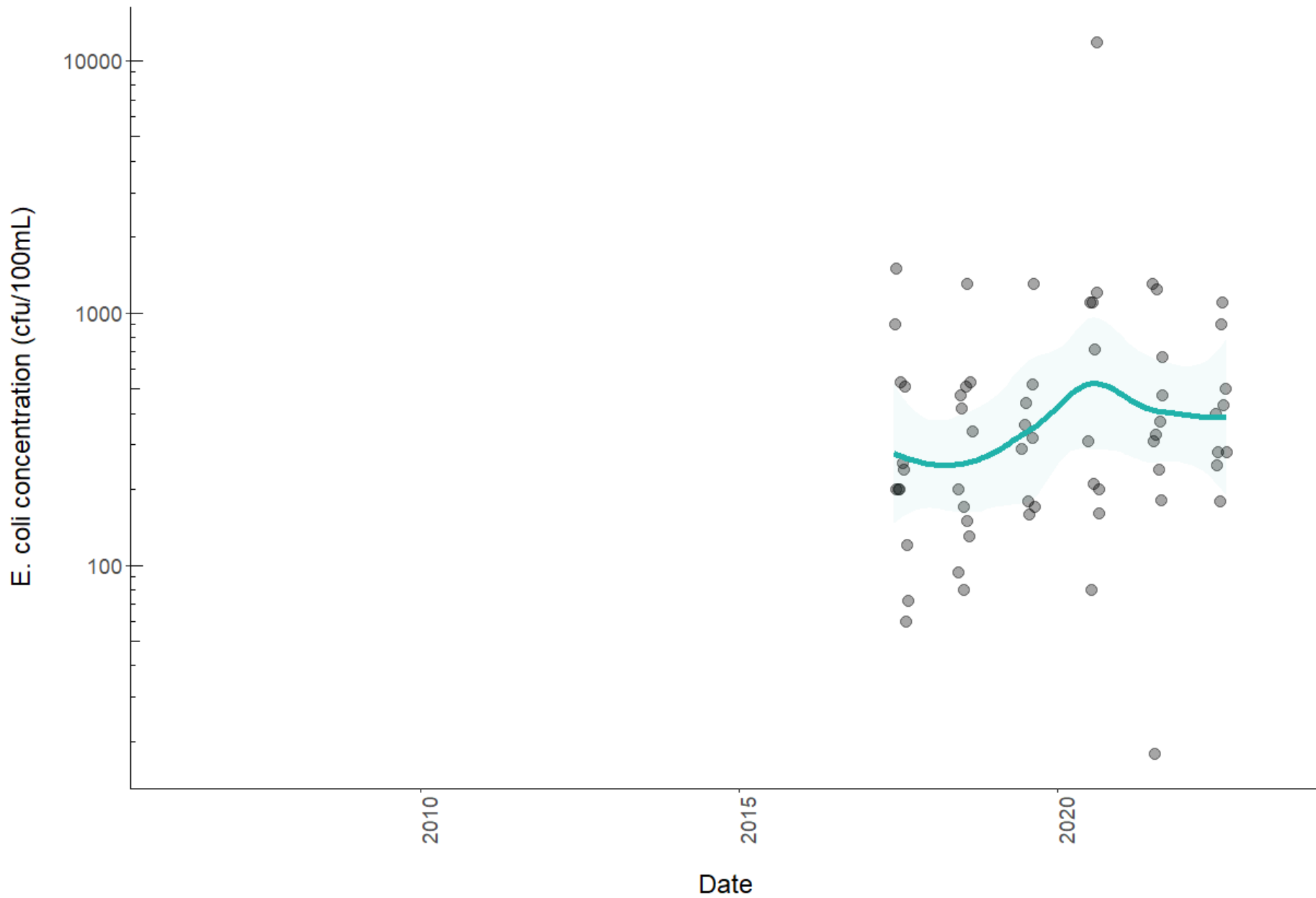


Figure 21. *Escherichia coli* concentration of water samples from the Gully Creek ravine. A turquoise local regression (loess) line models the relationship between *E. coli* concentration and date.

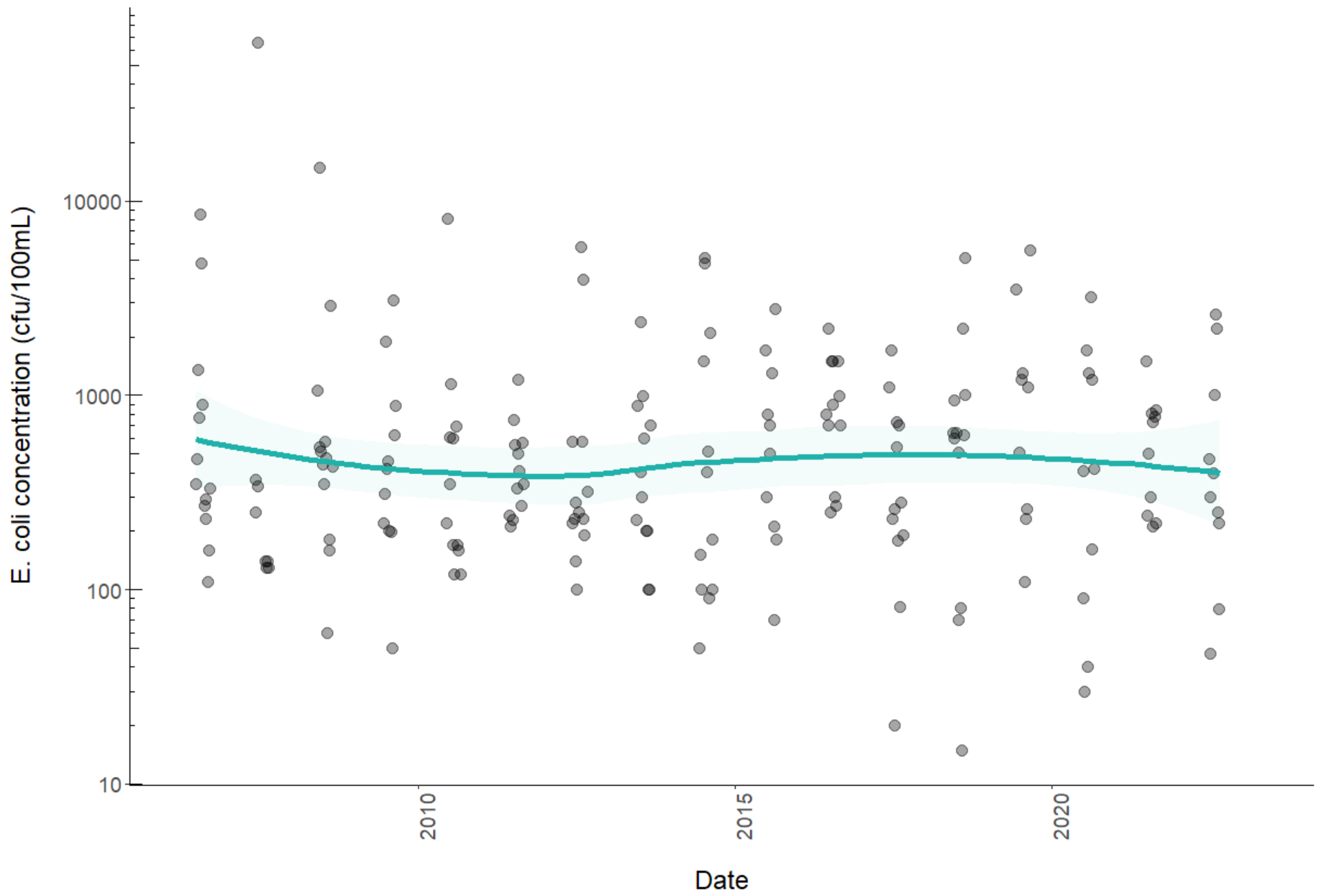


Figure 22. Escherichia coli concentration of water samples from the ravine at Wildwood. A turquoise local regression (loess) line models the relationship between E. coli concentration and date.

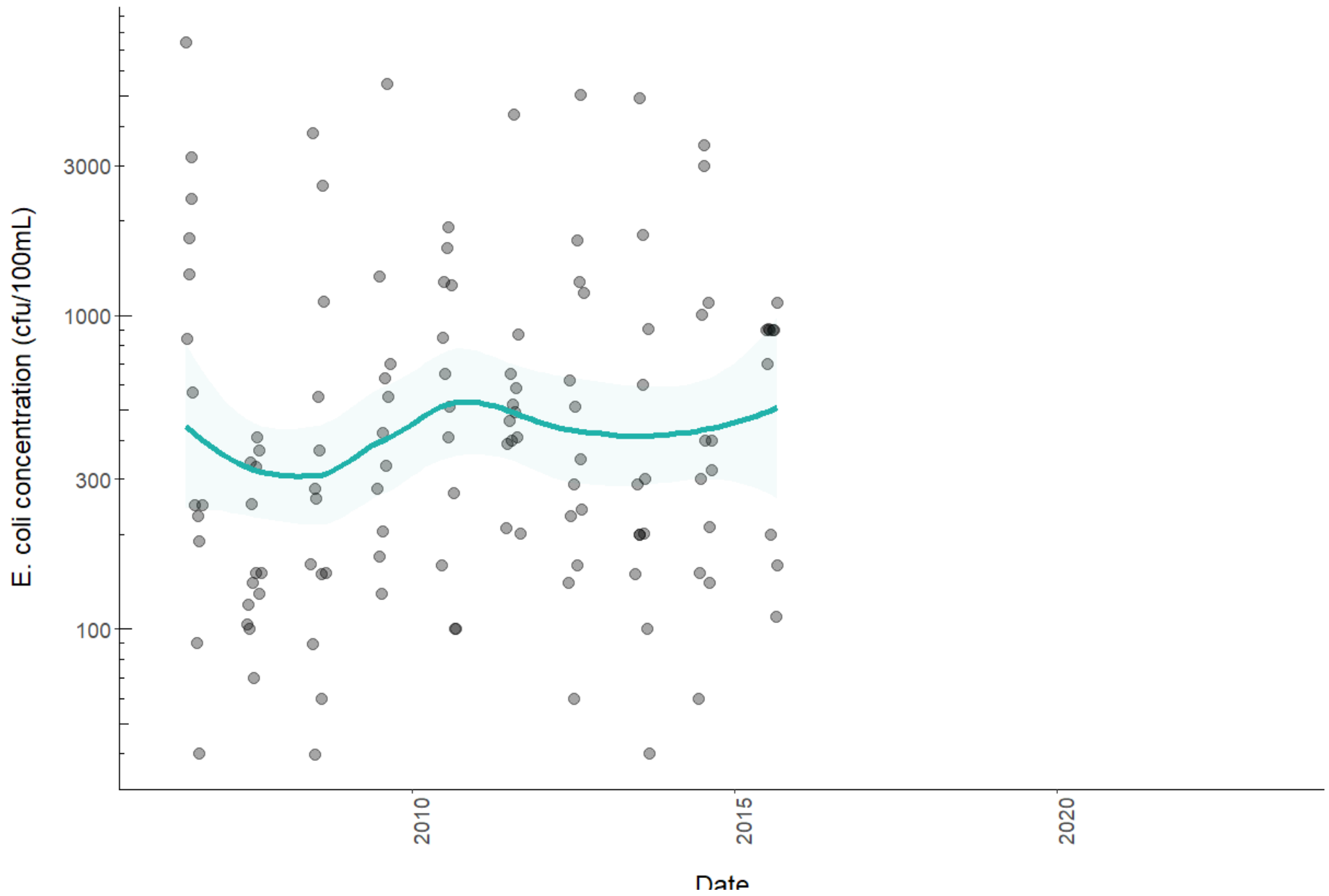


Figure 23. *Escherichia coli* concentration of water samples from the ravine at Houston Heights. A turquoise local regression (loess) line models the relationship between *E. coli* concentration and date.

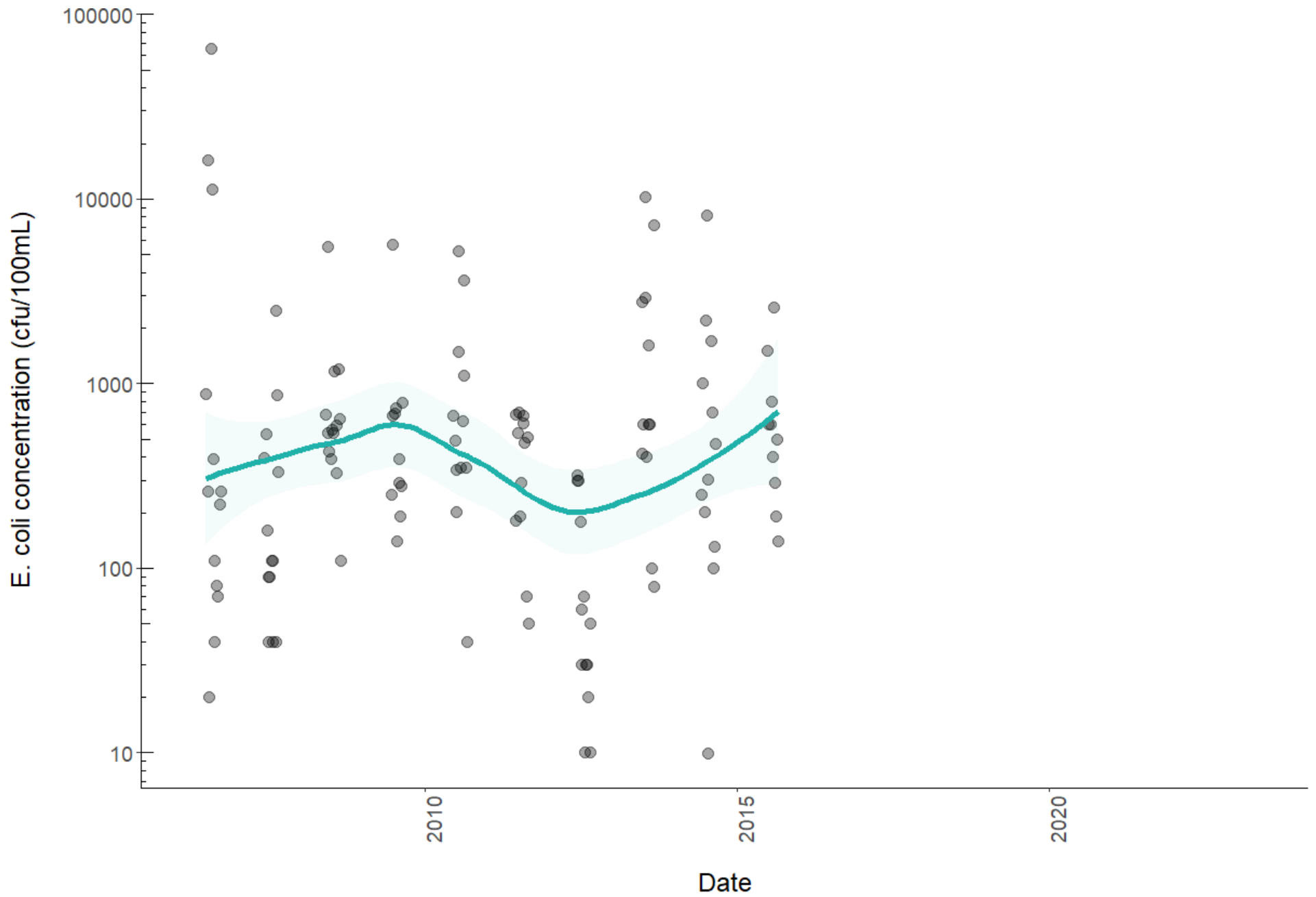


Figure 24. *Escherichia coli* concentration of water samples from the ravine at St. Joseph's. A turquoise local regression (loess) line models the relationship between *E. coli* concentration and date.

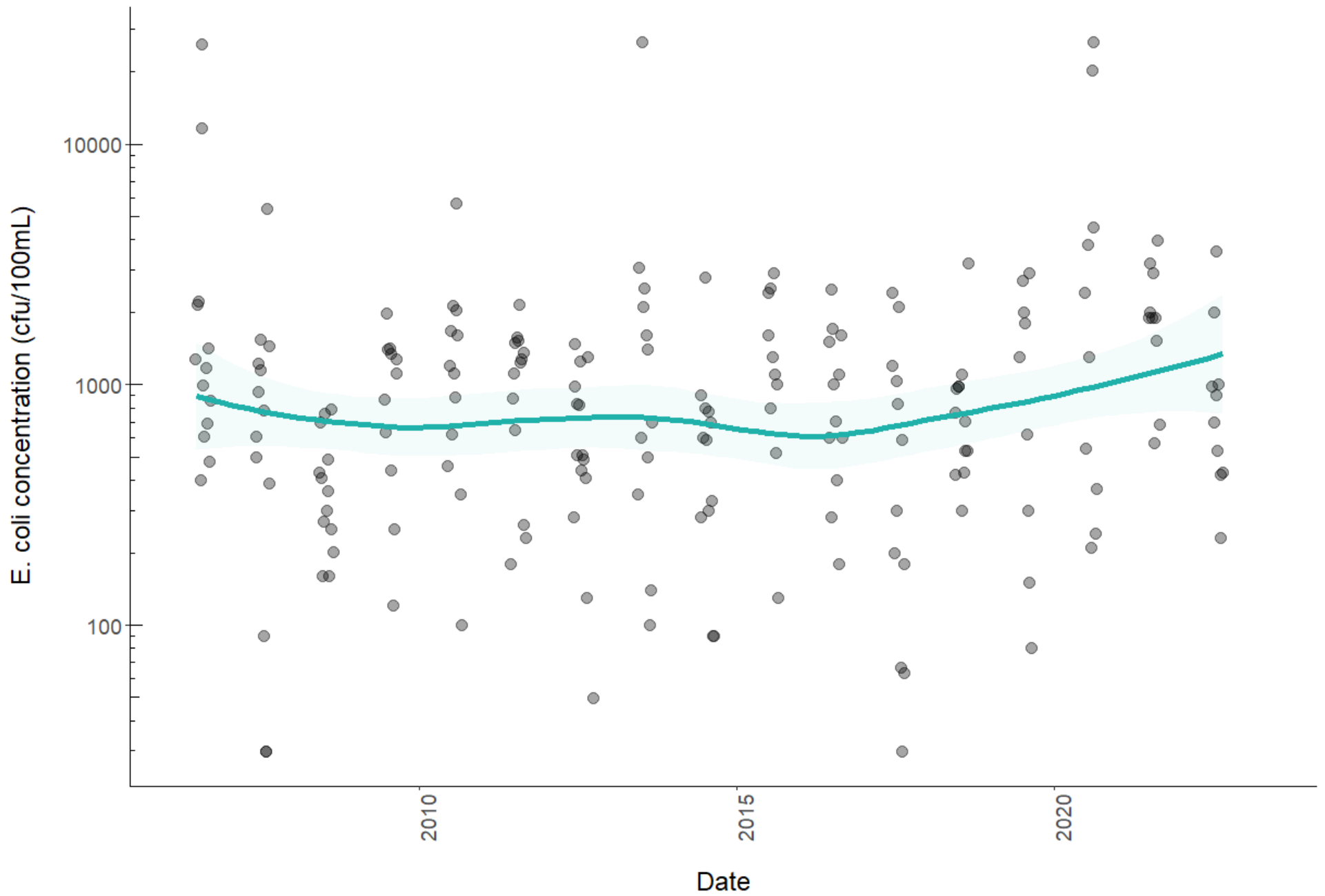


Figure 25. *Escherichia coli* concentration of water samples from the ravine at Ridgeway. A turquoise local regression (loess) line models the relationship between *E. coli* concentration and date.

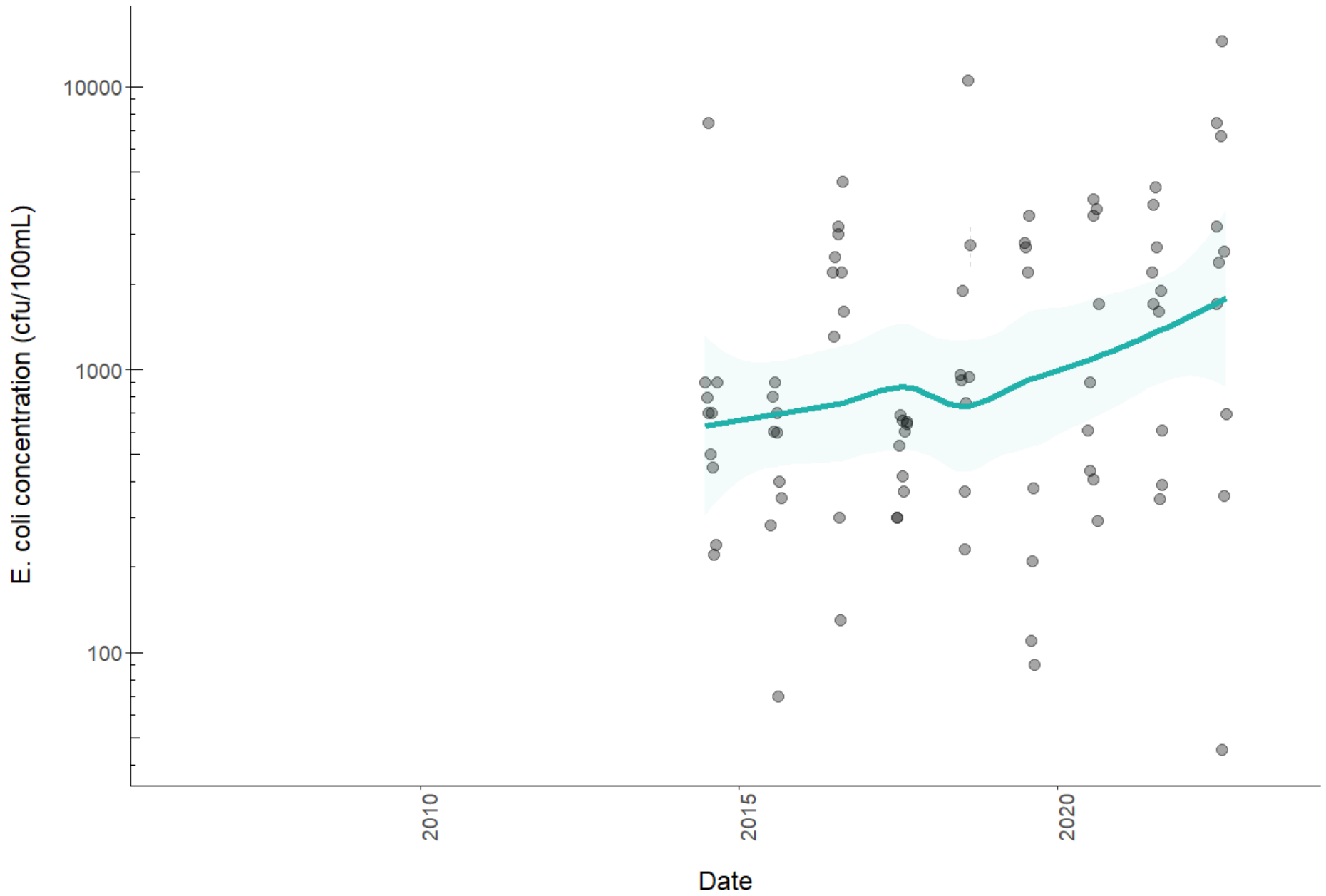


Figure 26. *Escherichia coli* concentration of water samples from the ravine at Turnbull's Grove. A turquoise local regression (loess) line models the relationship between *E. coli* concentration and date.

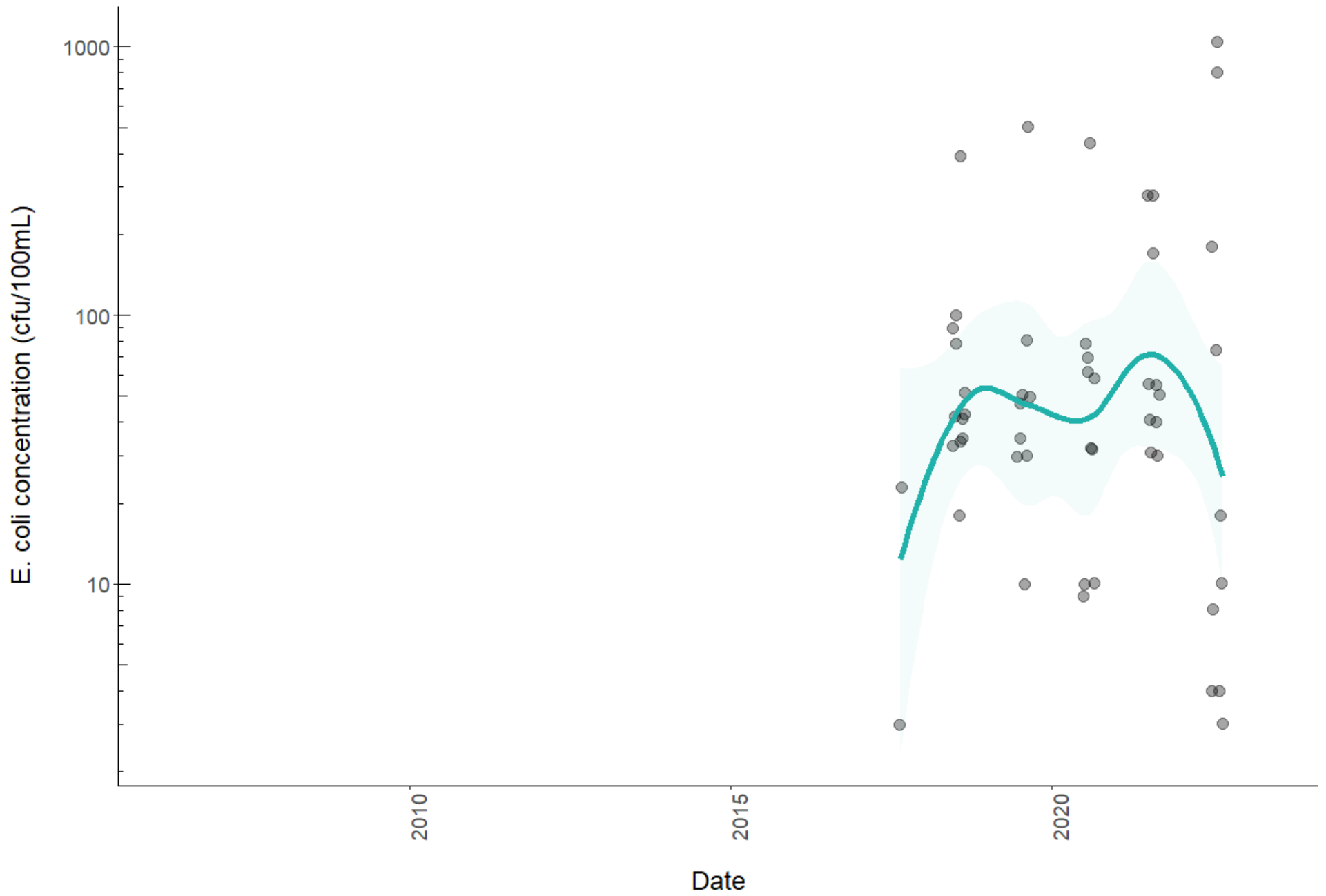


Figure 27. *Escherichia coli* concentration of water samples from the ravine at Port Franks. A turquoise local regression (loess) line models the relationship between *E. coli* concentration and date.



## 4. Discussion and Conclusions

### Overall Trends

Nearshore water quality at most beaches has remained steady over the past fifteen years. *Escherichia coli* concentrations typically fluctuate within and between seasons, but six of the seven beaches did not have an overall trend in annual *E. coli* concentrations. One exception is that concentrations of *E. coli* appear to be increasing at Port Franks. Despite an overall upward trend at Port Franks, water quality consistently meets the current Recreational Guideline, and *E. coli* concentrations are typically low. Port Franks was also the only site to meet the recreational guideline in the ravine (Mud Creek). Continued monitoring at this site will be important to determine if conditions continue to change. The results at Port Franks are based on six years of monitoring, so these results may become clearer with additional years of sampling.

Water quality appears steady at most beaches, but one caveat is that the true maximum concentrations at St. Joseph and Houston Heights have been unknown for several years. While it is understandable that Health Units are focused on whether concentrations are above or below a safe value for recreational activities, it is unfortunate that the actual values are now unknown for 2016-present for both St. Joseph and Houston Heights. Ideally, results would reflect the actual upper values so trends can be more accurately detected, especially at St. Joseph, where concentrations were known to regularly exceed this maximum.

*E. coli* concentrations are consistently high in ravines, indicating that water from ravines continues to be a source of bacterial contamination in Lake Huron. Areas where ravines flow through the beach are sometimes seen as attractive for families with small children as they are shallow, calm, and often warmer than the lake. However, *E. coli* is often very high in these areas and recreational use should be avoided. Reducing *E. coli* in ravine water is an important component of improving water quality in Lake Huron, as water in these ravines is known to carry bacteria into the lake.

Water quality in Lake Huron can change dramatically from day to day, hour to hour, and minute to minute when there is heavy rainfall or high wave action ([healthylakehuron.ca](http://healthylakehuron.ca)). Geometric means summarizing annual data are useful when looking at trends, but do not tell the entire story about water quality and recreational safety. Daily geometric means did not meet the current recreational guidelines at least once per year at most beaches, indicating that there are days most years when swimming is not recommended by Health Canada standards. Sampling also occurs just once or twice per week, so a sample taken early in the week may not reflect conditions later in the week, especially if there has been rainfall or high wave action. It is important to heed beach signs and public health information related to beach safety (e.g., avoid swimming 24–48 hours after heavy rainfall, and avoid swimming if you cannot see your feet in waist-deep water) ([healthylakehuron.ca](http://healthylakehuron.ca)).

### Comparisons with CURB

Water quality information from approximately thirty years ago is available for Port Franks and St. Joseph beaches, in addition to several public beaches not included in this report (see Hocking 1995; Hocking 1996 for more information). Currently, water quality at Port Franks appears comparable to the mid-1990s when looking at annual geometric means. Port Franks was not posted in 1994 or 1995 (Hocking, 1996), which is a result similar to recent years as water quality is typically very good. Approximately nine

percent of 1995 samples from the Port Franks beach exceeded the guideline at the time of 100 CFU/100 mL, which is similar to the five percent exceeding this guideline from 2017 to 2021. The geometric mean of weekly samples was usually between 10 and 100 CFU/100 mL in the mid-1990s, which is similar to today (Figure 20; Appendix 2). Of interest, there was one notable value approaching 1000 CFU/100 mL recorded in July 1995; this value is several times higher than any value seen in recent years and indicates there may have been some improvement that is difficult to detect when looking at annual values.

In 1995, the annual geomean at St. Joseph was 43 CFU/100 mL with a maximum value of 5,900 CFU/100 mL. The annual geomean at this site has fluctuated between 19 and 76 CFU/100 mL from 2006 to 2021, with many annual values close to the 1995 annual geomean. It appears that annual geomean today is similar to thirty years ago; however, there may have been a reduction in maximum bacterial counts since the mid-1990's. Some values in 1995 approached 10,000 CFU/100 mL (Appendix 4), which is much higher than any maximum seen in recent years. While there continues to be a need for water quality improvement at St. Joseph, this is some indication that the maximum values may have decreased compared to nearly thirty years ago.

### **Next Steps**

While it is encouraging that *E. coli* has not increased over time, most beaches do not consistently meet the current recreational guidelines throughout the entire swimming season. Furthermore, trends in annual results suggest that water quality at most beaches has held steady but has not clearly improved. This report therefore indicates that there continues to be a need for monitoring and improvement.

Actions to manage water running off the land continue to be important for maintaining and improving water quality in Lake Huron. Water quality was consistently poor in most ravines, which demonstrates that actions upstream of Lake Huron impact downstream areas. Many non-point sources across a watershed lead to cumulative impacts downstream, so identification of main sources can be challenging.

Individuals and communities upstream of local beaches can make a difference by following urban and rural best management practices that prevent bacteria and nutrients from entering watercourses (e.g., avoid runoff). Focused studies or plans at the subwatershed level may further identify areas for water quality improvement. Subwatershed plans may identify measures to protect, conserve, and restore the watershed by addressing environmental issues and recommending mitigation impacts from potential future land uses. For example, this type of plan for the Mud Creek watershed may begin to identify factors contributing to the apparent decline in water quality at the Port Franks beach. Watershed residents should also ensure that septic systems are properly maintained or decommissioned. While typically a minor source of *E. coli* in rural areas compared to septic and agricultural sources, wild birds such as geese and gulls can also be a source of bacteria at Ontario beaches. Their impacts can be minimized by letting grasses grow long along the shoreline, thereby reducing sightlines to the water. These actions—taken together across the Ausable Bayfield area—move us in the right direction for improving conditions at local beaches.

## Acknowledgements

This work took place in the traditional territory of the Anishinaabe and Haudenosaunee, who were the original stewards of this land. We recognize that this territory was subject to the Dish with One Spoon wampum, under which multiple nations agreed to care for the land and resources including plants and animals, in peace. We acknowledge the inherent and treaty rights of the Indigenous peoples of Turtle Island including the many diverse First Nations, Métis and Inuit peoples who live here now. As shared stewards of this land and water, the ABCA is grateful to have the opportunity to meet in this territory.

We would like to thank the communities of Wildwood, Houston Heights, St. Joseph, Ridgeway, Port Franks, and Turnbull's Grove for access to sampling locations. We would also like to thank Huron Perth Public Health for access to their water quality data at St. Joseph and Houston Heights.

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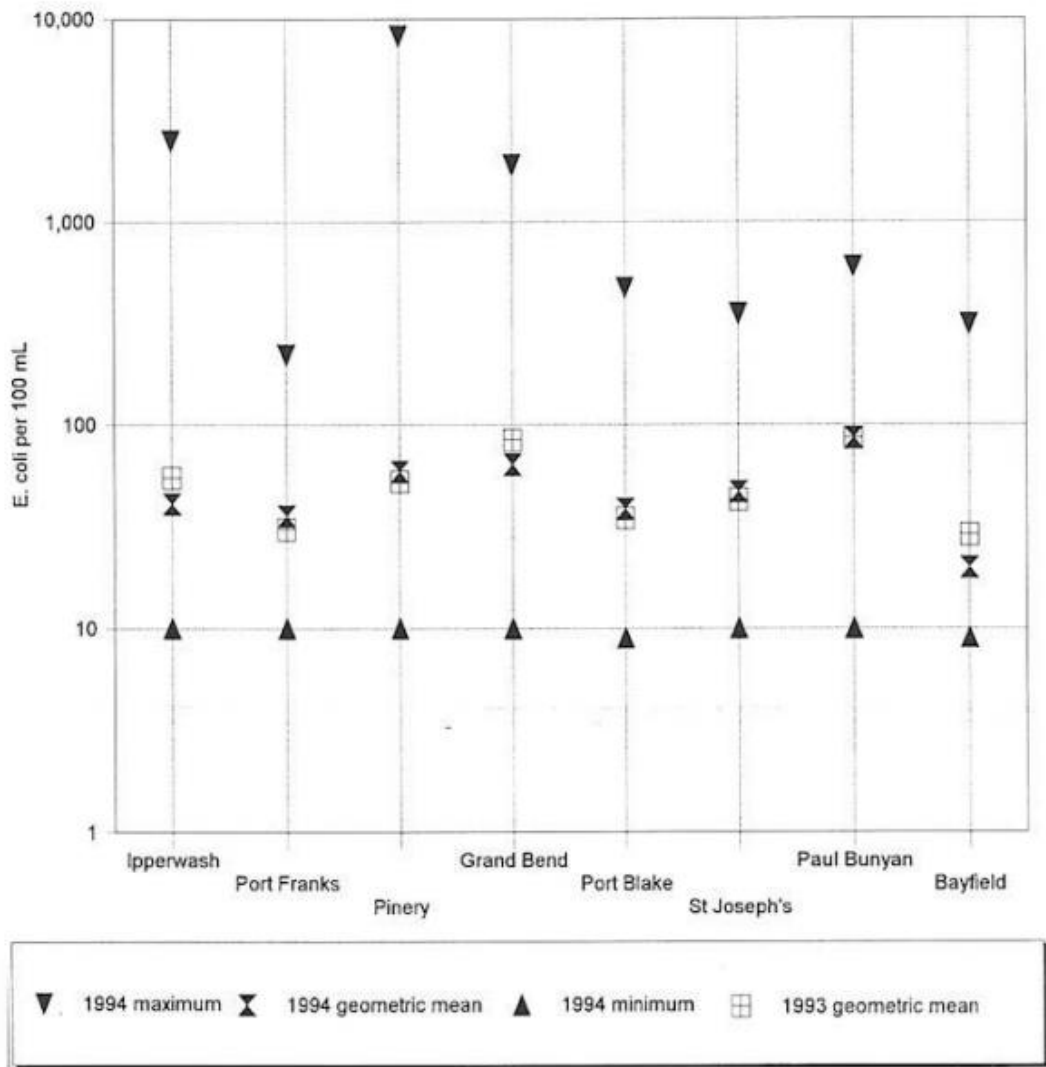
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## Appendices

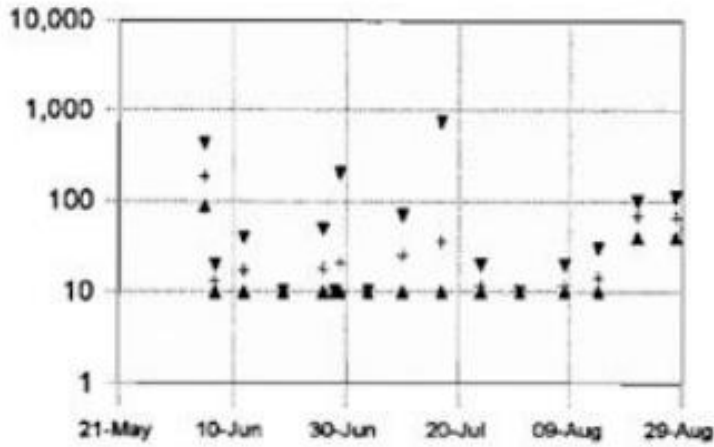
Appendix 1. Ausable Bayfield Conservation Authority site names for beaches and ravines where water samples were collected.

Location Name	Site Name (lake)	Site location (in lake)	Watercourse Name (ravine)	Site Name (ravine)
Gully Creek	LH-GUL-LNA	North of ravine	Gully Creek	GULGUL6
	LH-GUL-LNB	North of ravine		
	LH-GUL-LM	Mouth of ravine		
	LH-GUL-LSA	South of ravine		
	LH-GUL-LSB	South of ravine		
Houston Heights	LH-HH-LNA	North of ravine	Unknown Stan G Drain	GULHH1
	LH-HH-LNB	North of ravine		
	LH-HH-LM	Mouth of ravine		
	LH-HH-LSA	South of ravine		
	LH-HH-LSB	South of ravine		
Port Franks	LH-MUD-LNA	North of ravine	Lower Mud Creek	GULMUD1
	LH-MUD-LNB	North of ravine		
	LH-MUD-LM	Mouth of ravine		
	LH-MUD-LSA	South of ravine		
	LH-MUD-LSB	South of ravine		
Ridgeway	LH-RW-LNA	North of ravine	Ridgeway Drain / Kading Drain	GULRW2
	LH-RW-LNB	North of ravine		
	LH-RW-LM	Mouth of ravine		
	LH-RW-LSA	South of ravine		
	LH-RW-LSB	South of ravine		
St. Joseph	LH-SJ-LNA	North of ravine	Pergel Gully	GULSJ1
	LH-SJ-LNB	North of ravine		
	LH-SJ-LM	Mouth of ravine		
	LH-SJ-LSA	South of ravine		
	LH-SJ-LSB	South of ravine		
Turnbull's Grove	LH-TG-LNA	North of ravine	Unknown Hay H Drain	GULTG2
	LH-TG-LM	Mouth of ravine		
	LH-TG-LSA	South of ravine		
Wildwood	LH-WW-LNA	North of ravine	Unknown Stan D Drain	GULWW1
	LH-WW-LNB	North of ravine		
	LH-WW-LM	Mouth of ravine		
	LH-WW-LSA	South of ravine		
	LH-WW-LSB	South of ravine		



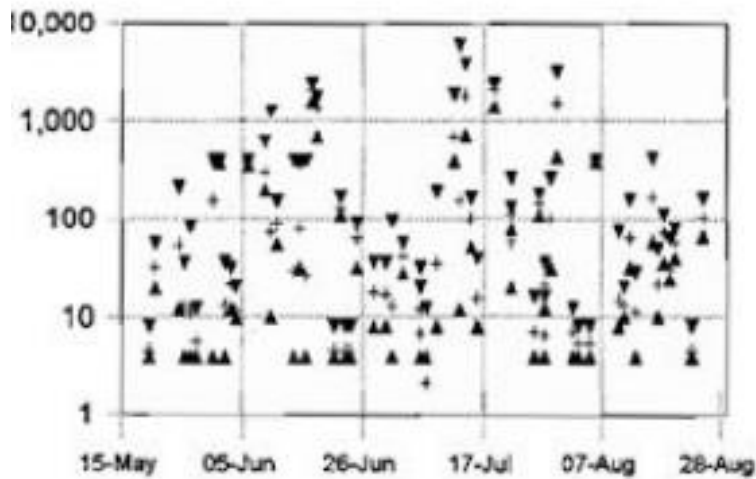
Appendix 2. Maximum, minimum, and geometric mean *E. coli* concentrations at the major Lake Huron beaches in 1994. Geometric means for 1993 are shown (from Hocking, 1995).

### Port Franks



Appendix 3. Weekly *E. coli* concentrations at Port Franks beach in 1995. Maximum (inverted triangle), minimum (triangle), and the geometric mean (cross) are indicated for each sampling day (from Hocking, 1996).

### RDS - St. Joseph's



Appendix 4. Daily summary of Lake Huron Public Beaches Rapid Detection Study Data (RDS) for St. Joseph's beach in 1995 (from Hocking, 1996). Under this study, a mobile lab was located at the Lake Huron Water Supply System (Ontario Clean Water Agency) in Grand Bend. Five beaches were sampled regularly five days per week including weekends, excluding July 1 and August 1 long weekends.

## Lake Huron waters in Grand Bend polluted

GRAND BEND - Swimmers could be returning to the waters of Lake Huron here at this popular resort community today if tests prove pollution levels have dropped.

Friday morning, the Lambton County Health Unit reported there were high fecal coliform counts, posted pollution warning signs.

More tests were conducted Monday and the results were expected back today.

"We sampled on Monday and Wednesday (last week) and we obtained fecal coliform bacterial counts," said Clayton Wardell, Director of Inspections for the Lambton County Health Unit.

He said that normal sampling near Grand Bend is done every Monday, but it was retested on Wednesday. Friday the signs were posted.

"We do not close the area, we post warning signs to swim at your own risk," said Wardell.

Saturday morning at 10:30 a.m. some swimmers went into the water. Signs which had been posted had apparently fallen to the ground. Archie Gibbs, owner of the main beach in Grand Bend, said he had gathered the signs up.

"That's not unexpected. We could put up dozens of signs...it doesn't surprise me," said Wardell.

On Saturday, Christopher and Courtney Amlinger of Kitchener went into the water. When their parents were told about the high pollution, their children were not allowed back in.

"It doesn't surprise me...they've closed it other years. We didn't hear about it," said Teresa Amlinger. Life guards along the beach warned of the polluted waters all weekend, but Grand Bend reeve Bruce Woodley and his family still went swimming.

Woodley said he had all the information and said it was not unsafe to swim in.

"It wasn't a high count, it wasn't like 1983," said Woodley of the last time the waters were posted as being polluted.

"They (Health Unit) could have put a complete ban on it but they didn't," added Woodley.

Tests showed more than the minimum standard of 200 fecal coliforms per 100 millilitres. The bacteria increases the risk of picking up eye, ear and intestinal infection.

## *Pollution cause remains a puzzle*

GRAND BEND - While it is easy to measure bacterial pollution and post beaches as being unsafe for swimming, determining exactly what causes such pollution is not as simple.

The Lambton County Health Unit, using Friday's and Monday's measurements, have determined that fecal coliform counts in lake water near Grand Bend are above the acceptable 200 coliforms per hundred millilitres of water.

Where that contamination comes from is uncertain.

Donna Dean, a water quality technician with the Ausable Bayfield Conservation Authority, said she is unaware of any one "point-source" causing the high bacteria levels. No manure spills or anything of the sort have been reported or discovered in recent weeks.

One key to the puzzle may be the high levels of rainfall experienced in the district in the past month. In fact, the flooding in the area surrounding Exeter two weeks ago could have washed freshly-spread manure from fields and into the river system, or brought contaminants from faulty septic systems into the river.

It would have taken at least two weeks for the contamination to travel the distance to the lake.

"It could have easily travelled that far that quickly," said Dean, referring to the high flow in the river at the moment.

Rural drainage ditches that had lain dry in the summer months in the past two years are presently showing high rates of water flow, making for another possible factor in the beach pollution scenario.

Another possibility, however, is that the lake may have been responsible for its own undoing. Fecal coliforms are always present in higher numbers in lake sediments than the water, explains Dean. Given enough disturbance from high winds, or even from bathers, those sediments could rise to contaminate the water.



## ABCA Program Information

**To:** Board of Directors  
**Date:** May 18, 2023  
**From:** Geoffrey Cade, Water & Planning Manager  
**Subject:** Section 28, Conservation Authorities Act  
Hearings

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All conservation authorities have permitting roles under the *Conservation Authorities Act* (CA Act). Locally this is administered through the ABCA specific regulation - Ontario Regulation 147/06. A copy of this regulation is attached for information.

At the ABCA, staff is only permitted to issue permits for those applications which meet the formal approved policies of the authority - as those policies have been previously approved by the Board of Directors. Conservation Authority policies are based on criteria which include:

- accepted science or engineering
- consistency with provincial policies, technical guidelines
- watershed characteristics

The policies adopted by the ABCA have been refined over the years and represent a measured approach to managing activities in hazardous areas. This measured approach protects the proponent, existing and future residents, municipal interests (including emergency services) and limits negative impacts which may occur - including beyond the property in question.

Approvals under the Conservation Authorities Act are based on *technical information*. Paragraphs 2 and 3 of O.Reg. 147/06 states that the ABCA shall not issue a permit until such time it is satisfied that tests have been addressed - i.e. that the works will not be impacted by or further worsen flooding.

Where an application does not meet accepted policy, ABCA staff work with an applicant to seek revisions which would bring the proposal into conformity with the approved policy. Where an applicant is either unable or unwilling to amend an application, they have the option of requesting a Hearing under the CA Act.

**Staff cannot, and does not, deny any application.** Staff can only issue a permit when the application conforms with Board approved policy. At a Hearing an application can be either denied or approved.

At the ABCA, a hearing is held before the full Board of Directors (sitting as Hearing Officers). Hearings are not part of a Board meeting, but are generally scheduled on the same day.

A Hearing under the CA Act is a quasi-judicial proceeding at which time the Hearing Officers act

as 'judges'. At a hearing it is very important that each Hearing Officer is privy to the same evidence as all other Hearing Officers. Hearing Officers should not be receiving evidence outside of the Hearing process and which other Hearing Officers are not privy. For example: visiting the site or receiving information from the applicant which other Hearing Officers or ABCA staff have not received. It is important that there is no reasonable apprehension of bias.

The Hearing follows a formal process which is outlined by the Hearing Chair (The Chair of the Board of Directors) at the start of the Hearing. First, ABCA staff provides evidence outlining the application, the hazard concerns, and the policy regime in which it is working and the science or engineering which supports staff's position and policy. Hearing Officers and the proponent are then permitted to ask questions of staff. The applicant is then afforded the same opportunity to provide evidence and answer questions of the Hearing Officers and staff.

Upon receiving evidence the Hearing Offices have multiple courses of action such as deliberating and returning a decision, or deferring a decision to a later date. In deliberation, Hearing Officers consider the technical aspects of the evidence before them. At the ABCA deliberation is generally done in camera.

Once a decision is rendered by the Hearing Officers the applicant is provided formal notice. An applicant can appeal a Hearing decision to the Ontario Land Tribunal.

A copy of the ABCA's Hearing Guidelines is also attached for information.

**PROCEDURE FOR HEARINGS  
UNDER ONT. REG. 147/06**

**INTRODUCTION**

The Ausable Bayfield Conservation Authority administers Ontario Regulation 147/06 as per section 28 of the Conservation Authorities Act R.S.O. 1990. This regulation controls development, as defined by the Conservation Authorities Act, in specific areas defined by all schedules and maps which form part of Ontario Regulation 147/06.

Before refusing permission required under the regulation, the Authority's Board of Directors or Committee designated by the Board of Directors, shall hold a hearing to which the applicant/agent shall be a Party. Ten working days notice are required prior to the hearing.

If an agent is representing the applicant, in the applicants absence, the agent must have written authorization from the applicant to act as their agent.

**PROCEDURES**

- 1) The Hearing is held outside of the regular Board Meeting.
- 2) The Applicant/Agent, if present, is introduced.
- 3) The Authority Staff present information relative to the application within 15 minutes.
- 4) The Board of Directors or committee designated by the Board of Directors, and/or the applicant/agent are given an opportunity to ask questions of Authority Staff.
- 5) The Applicant/Agent presents information relative to their application within 15 minutes.
- 6) The Board of Directors or committee designated by the Board of Directors, and/or Authority Staff are given an opportunity to ask questions of the applicant/agent.
- 7) The Board of Directors or committee designated by the Board of Directors make a motion to:
  - i) defer their decision
  - ii) to make a decision
    - a) to support the staff recommendations
    - b) to support the applicant's appeal
    - c) other
- 8) After a decision by the Board of Directors or committee designated by the Board of Directors, a verbal notification by the General Manager/Secretary-Treasurer or designate of the decision and reasons will be made to applicant/agent with written confirmation to follow.

**APPEAL**

- 1) An applicant who has been refused permission may, within thirty calendar days of the receipt of notice of the decisions and the reasons for the decision, appeal to the Minister of Natural Resources (Mining and Lands Commissioner) who may dismiss the appeal or grant the permission.

**Conservation Authorities Act**  
**Loi sur les offices de protection de la nature**

**ONTARIO REGULATION 147/06**

**AUSABLE BAYFIELD CONSERVATION AUTHORITY: REGULATION OF DEVELOPMENT,  
INTERFERENCE WITH WETLANDS AND ALTERATIONS TO SHORELINES AND  
WATERCOURSES**

**Consolidation Period:** From November 28, 2022 to the [e-Laws currency date](#).

**Note:** This Regulation is revoked on the day section 25 of Schedule 4 to the *Building Better Communities and Conserving Watersheds Act, 2017* comes into force. (See: 2022, c. 21, Sched. 2, s. 16)

Last amendment: 2022, c. 21, Sched. 2, s. 16.

Legislative History: 49/13, 2022, c. 21, Sched. 2, s. 16.

*This Regulation is made in English only.*

**Definition**

1. In this Regulation,

“Authority” means the Ausable Bayfield Conservation Authority. O. Reg. 147/06, s. 1.

**Development prohibited**

2. (1) Subject to section 3, no person shall undertake development or permit another person to undertake development in or on the areas within the jurisdiction of the Authority that are,

(a) adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to inland lakes that may be affected by flooding, erosion or dynamic beaches, including the area from the furthest offshore extent of the Authority’s boundary to the furthest landward extent of the aggregate of the following distances:

- (i) the 100 year flood level, plus an allowance of 15 metres for wave uprush and other water related hazards,
- (ii) the predicted long term stable slope projected from the existing stable toe of the slope or from the predicted location of the toe of the slope as that location may have shifted as a result of shoreline erosion over a 100-year period,
- (iii) where a dynamic beach is associated with the waterfront lands, an allowance of 30 metres inland to accommodate dynamic beach movement, and
- (iv) the lesser of an allowance of 15 metres inland or the landward extent of Lakeshore Area 2 as defined in the most recent document entitled “Ausable Bayfield Conservation Authority Shoreline Management Plan” available at the head office of the Authority;

(b) river or stream valleys that have depressional features associated with a river or stream, whether or not they contain a watercourse, the limits of which are determined in accordance with the following rules:

- (i) where the river or stream valley is apparent and has stable slopes, the valley extends from the stable top of bank, plus 15 metres, to a similar point on the opposite side,
- (ii) where the river or stream valley is apparent and has unstable slopes, the valley extends from the predicted long term stable slope projected from the existing stable slope or, if the toe of the slope is unstable, from the predicted location of the toe of the slope as a result of stream erosion over a projected 100-year period, plus 15 metres, to a similar point on the opposite side,
- (iii) where the river or stream valley is not apparent, the valley extends the greater of,
  - (A) the distance from a point outside the edge of the maximum extent of the flood plain under the applicable flood event standard, plus 15 metres, to a similar point on the opposite side, and
  - (B) the distance from the predicted meander belt of a watercourse, expanded as required to convey the flood flows under the applicable flood event standard, plus 15 metres, to a similar point on the opposite side;

(c) hazardous lands;

(d) wetlands; or

(e) other areas where development could interfere with the hydrologic function of a wetland, including areas within 120 metres of all provincially significant wetlands, and areas within 30 metres of all other wetlands. O. Reg. 147/06, s. 2 (1); O. Reg. 49/13, s. 1 (1-3).

(2) All areas within the jurisdiction of the Authority that are described in subsection (1) are delineated as the “Regulation Limit” shown on a series of maps filed at the head office of the Authority under the map title “Ontario Regulation 97/04: Regulation for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses”. O. Reg. 49/13, s. 1 (4).

(3) If there is a conflict between the description of areas in subsection (1) and the areas as shown on the series of maps referred to in subsection (2), the description of areas in subsection (1) prevails. O. Reg. 49/13, s. 1 (4).

#### **Permission to develop**

**3.** (1) The Authority may grant permission for development in or on the areas described in subsection 2 (1) if, in its opinion, the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development. O. Reg. 147/06, s. 3 (1).

(2) The permission of the Authority shall be given in writing, with or without conditions. O. Reg. 147/06, s. 3 (2).

(3) Subject to subsection (4), the Authority’s executive committee, or one or more employees of the Authority that have been designated by the Authority for the purposes of this section, may exercise the powers and duties of the Authority under subsections (1) and (2) with respect to the granting of permissions for development in or on the areas described in subsection 2 (1). O. Reg. 49/13, s. 2.

(4) A designate under subsection (3) shall not grant a permission for development with a maximum period of validity of more than 24 months. O. Reg. 49/13, s. 2.

#### **Application for permission**

**4.** A signed application for permission to undertake development shall be filed with the Authority and shall contain the following information:

1. Four copies of a plan of the area showing the type and location of the proposed development.
2. The proposed use of the buildings and structures following completion of the development.
3. The start and completion dates of the development.
4. The elevations of existing buildings, if any, and grades and the proposed elevations of buildings and grades after the development.
5. Drainage details before and after the development.
6. A complete description of the type of fill proposed to be placed or dumped.
7. Such other technical studies or plans as the Authority may request. O. Reg. 147/06, s. 4; O. Reg. 49/13, s. 3.

#### **Alterations prohibited**

**5.** Subject to section 6, no person shall straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or change or interfere in any way with a wetland. O. Reg. 147/06, s. 5.

#### **Permission to alter**

**6.** (1) The Authority may grant permission to straighten, change, divert or interfere with the existing channel of a river, creek, stream or watercourse or to change or interfere with a wetland. O. Reg. 147/06, s. 6 (1); O. Reg. 49/13, s. 4 (1).

(2) The permission of the Authority shall be given in writing, with or without conditions. O. Reg. 147/06, s. 6 (2).

(3) Subject to subsection (4), the Authority’s executive committee, or one or more employees of the Authority that have been designated by the Authority for the purposes of this section, may exercise the powers and duties of the Authority under subsections (1) and (2) with respect to the granting of permissions for alteration. O. Reg. 49/13, s. 4 (2).

(4) A designate under subsection (3) shall not grant a permission for alteration with a maximum period of validity of more than 24 months. O. Reg. 49/13, s. 4 (2).

#### **Application for permission**

**7.** A signed application for permission to straighten, change, divert or interfere with the existing channel of a river, creek, stream or watercourse or change or interfere with a wetland shall be filed with the Authority and shall contain the following information:

1. Four copies of a plan of the area showing plan view and cross-section details of the proposed alteration.
2. A description of the methods to be used in carrying out the alteration.

3. The start and completion dates of the alteration.
4. A statement of the purpose of the alteration.
5. Such other technical studies or plans as the Authority may request. O. Reg. 147/06, s. 7; O. Reg. 49/13, s. 5.

**Cancellation of permission**

8. (1) The Authority may cancel a permission granted under section 3 or 6 if it is of the opinion that the conditions of the permission have not been met. O. Reg. 147/06, s. 8 (1); O. Reg. 49/13, s. 6 (1).

(2) Before cancelling a permission, the Authority shall give a notice of intent to cancel to the holder of the permission indicating that the permission will be cancelled unless the holder shows cause at a hearing why the permission should not be cancelled. O. Reg. 147/06, s. 8 (2).

(3) Following the giving of the notice under subsection (2), the Authority shall give the holder at least five days notice of the date of the hearing. O. Reg. 147/06, s. 8 (3); O. Reg. 49/13, s. 6 (2).

**Period of validity of permissions and extensions**

9. (1) The maximum period, including an extension, for which a permission granted under section 3 or 6 may be valid is,

(a) 24 months, in the case of a permission granted for projects other than projects described in clause (b); and

(b) 60 months, in the case of a permission granted for,

(i) projects that, in the opinion of the Authority or its executive committee, cannot reasonably be completed within 24 months from the day the permission is granted, or

(ii) projects that require permits or approvals from other regulatory bodies that, in the opinion of the Authority or its executive committee, cannot reasonably be obtained within 24 months from the day permission is granted. O. Reg. 49/13, s. 7.

(2) The Authority or its executive committee may grant a permission for an initial period that is less than the applicable maximum period specified in subsection (1) if, in the opinion of the Authority or its executive committee, the project can be completed in a period that is less than the maximum period. O. Reg. 49/13, s. 7.

(3) If the Authority or its executive committee grants a permission under subsection (2) for an initial period that is less than the applicable maximum period of validity specified in subsection (1), the Authority or its executive committee may grant an extension of the permission if,

(a) the holder of the permission submits a written application for an extension to the Authority at least 60 days before the expiry of the permission;

(b) no extension of the permission has previously been granted; and

(c) the application sets out the reasons for which an extension is required and, in the opinion of the Authority or its executive committee, demonstrates that circumstances beyond the control of the holder of the permission will prevent completion of the project before the expiry of the permission. O. Reg. 49/13, s. 7.

(4) When granting an extension of a permission under subsection (3), the Authority or its executive committee may grant the extension for the period of time requested by the holder in the application or for such period of time as the Authority or its executive committee deems appropriate, as long as the total period of validity of the permission does not exceed the applicable maximum period specified in subsection (1). O. Reg. 49/13, s. 7.

(5) For the purposes of this section, the granting of an extension for a different period of time than the period of time requested does not constitute a refusal of an extension. O. Reg. 49/13, s. 7.

(6) The Authority or its executive committee may refuse an extension of a permission if it is of the opinion that the requirements of subsection (3) have not been met. O. Reg. 49/13, s. 7.

(7) Before refusing an extension of a permission, the Authority or its executive committee shall give notice of intent to refuse to the holder of the permission, indicating that the extension will be refused unless,

(a) the holder requires a hearing, which may be before the Authority or its executive committee, as the Authority directs; and

(b) at the hearing, the holder satisfies the Authority, or the Authority's executive committee, as the case may be,

(i) that the requirements of clauses (3) (a) and (b) have been met, and

(ii) that circumstances beyond the control of the holder will prevent completion of the project before the expiry of the permission. O. Reg. 49/13, s. 7.

(8) If the holder of the permission requires a hearing under subsection (7), the Authority or its executive committee shall give the holder at least five days notice of the date of the hearing. O. Reg. 49/13, s. 7.

(9) After holding a hearing under subsection (7), the Authority or its executive committee shall,

(a) refuse the extension; or

(b) grant an extension for such period of time as it deems appropriate, as long as the total period of validity of the permission does not exceed the applicable maximum period specified in subsection (1). O. Reg. 49/13, s. 7.

(10) Subject to subsection (11), one or more employees of the Authority that have been designated by the Authority for the purposes of this section may exercise the powers and duties of the Authority under subsections (2), (3) and (4), but not those under subsections (6), (7), (8) and (9). O. Reg. 49/13, s. 7.

(11) A designate under subsection (10) shall not grant an extension of a permission for any period that would result in the permission having a period of validity greater than 24 months. O. Reg. 49/13, s. 7.

**Appointment of officers**

**10.** The Authority may appoint officers to enforce this Regulation. O. Reg. 147/06, s. 10.

**Flood event standards**

**11.** The applicable flood event standards used to determine the maximum susceptibility to flooding of lands or areas within the watersheds in the area of jurisdiction of the Authority are the Hurricane Hazel Flood Event Standard, the 100 Year Flood Event Standard and the 100 year flood level plus wave uprush, described in Schedule 1. O. Reg. 147/06, s. 11.

**12.** REVOKED: O. Reg. 49/13, s. 8.

**13.** OMITTED (REVOKES OTHER REGULATIONS). O. Reg. 147/06, s. 13.

**SCHEDULE 1**

1. The Hurricane Hazel Flood Event Standard means a storm that produces over a 48-hour period,

(a) in a drainage area of 25 square kilometres or less, rainfall that has the distribution set out in Table 1; or

(b) in a drainage area of more than 25 square kilometres, rainfall such that the number of millimetres of rain referred to in each case in Table 1 shall be modified by the percentage amount shown in Column 2 of Table 2 opposite the size of the drainage area set out opposite thereto in Column 1 of Table 2.

**TABLE 1**

73 millimetres of rain in the first 36 hours
6 millimetres of rain in the 37th hour
4 millimetres of rain in the 38th hour
6 millimetres of rain in the 39th hour
13 millimetres of rain in the 40th hour
17 millimetres of rain in the 41st hour
13 millimetres of rain in the 42nd hour
23 millimetres of rain in the 43rd hour
13 millimetres of rain in the 44th hour
13 millimetres of rain in the 45th hour
53 millimetres of rain in the 46th hour
38 millimetres of rain in the 47th hour
13 millimetres of rain in the 48th hour

**TABLE 2**

Column 1	Column 2
Drainage Area (square kilometres)	Percentage
26 to 45 both inclusive	99.2
46 to 65 both inclusive	98.2
66 to 90 both inclusive	97.1
91 to 115 both inclusive	96.3
116 to 140 both inclusive	95.4
141 to 165 both inclusive	94.8
166 to 195 both inclusive	94.2
196 to 220 both inclusive	93.5
221 to 245 both inclusive	92.7
246 to 270 both inclusive	92.0
271 to 450 both inclusive	89.4

451 to 575 both inclusive	86.7
576 to 700 both inclusive	84.0
701 to 850 both inclusive	82.4
851 to 1000 both inclusive	80.8
1001 to 1200 both inclusive	79.3
1201 to 1500 both inclusive	76.6
1501 to 1700 both inclusive	74.4
1701 to 2000 both inclusive	73.3
2001 to 2200 both inclusive	71.7
2201 to 2500 both inclusive	70.2
2501 to 2700 both inclusive	69.0
2701 to 4500 both inclusive	64.4
4501 to 6000 both inclusive	61.4
6001 to 7000 both inclusive	58.9
7001 to 8000 both inclusive	57.4

2. The 100 Year Flood Event Standard means rainfall or snowmelt, or a combination of rainfall and snowmelt producing at any location in a river, creek, stream or watercourse, a peak flow that has a probability of occurrence of one per cent during any given year.

3. The 100 year flood level means the peak instantaneous still water level plus an allowance for wave uprush and other water-related hazards for Lake Huron in the Great Lakes-St. Lawrence River System that has a probability of occurrence of one per cent during any given year.

O. Reg. 147/06, Sched. 1.

[Back to top](#)



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# MINUTES

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## ARKONA LIONS MUSEUM MANAGEMENT COMMITTEE

Monday, May 8, 2023  
9:30 a.m.

Rock Glen Conservation Area  
Arkona Lions Museum and Information Centre

### MEMBERS PRESENT

Glenn Stott - Arkona Lions Club  
Adam Wisniewski – Arkona Lions Club/Museum Curator  
Dave Marsh – ABCA  
Wayne Shipley - ABCA

### OTHERS PRESENT

Nathan Schoelier, Abigail Gutteridge, Mike Bax – ABCA Staff

### CALL TO ORDER

Chair Glenn Stott called the meeting to order at 9:30 a.m. and welcomed everyone to the meeting, specifically welcoming our two new members representing the ABCA. Introductions were made by all members.

### ADOPTION OF AGENDA

#### **MOTION #MC 1/23**

**“RESOLVED, THAT the Arkona Lions Museum Management Committee agenda for May 8, 2023 be approved.”**

**Carried by Consensus.**

### ADOPTION OF MINUTES

#### **MOTION #MC 2/23**

**Moved by Dave Marsh  
Seconded by Adam Wisniewski**

**“RESOLVED, THAT the minutes of the Arkona Lions Museum Management Committee meeting of October 4, 2022 be approved.”**

**Carried.**

### BUSINESS OUT OF THE MINUTES

Nathan Schoelier reminded the Arkona Lions members about the development of museum policies. The Lions members are waiting for Bob O’Donnell to be available to go over the original policies and help develop relevant policies going forward.

Additionally, Nathan noted that the ABCA is still waiting on an invoice for the electrical work that was done with the installation of the new heater at the museum. The Lions members will follow up with the contractor. In addition, so work may be needed for the electrical switch in the mineral room.

#### 2022 FINANCIAL STATEMENT & GATE ATTENDANCE

Abbie Gutteridge presented the Profit and Loss Statement for January through December 2022. In general expenses were as expected throughout the year, with the exception that utility costs increased slightly. Gate attendance at Rock Glen Conservation Area remains healthy. Number of attendees have returned to a more typical level, in comparison to the high numbers during the pandemic, but still remain slightly higher. The ABCA would like to maintain this level of attendance.

#### 2023 APPROVED BUDGET

Nathan Schoelier, Manager of Stewardship and Conservation Lands, noted that the budget for 2023 was based on previous years numbers, with slight increases to account for rising costs of utilities and the new heater that has been installed.

#### EVENTS & PROJECT UPDATES

##### a) Ted Baxter Day

Glenn Stott and the Lions members are planning a grand re-opening of the Museum, noting that it will be advertised as Ted Baxter Day. He spoke with the family to find out if it could correspond with Ted Baxter's birthday or another significant day, but it would fall outside of the season that the Museum is open. Nathan asked if there were any other dates that may have been significant to Ted, such as a date he discovered a particular artifact. Glenn will follow up with the Baxter family about this. At present, they are aiming toward August when the weather is good. They are hoping that the family will be present and involved.

##### b) Antique Car Show

The Car Show has been planned for September 16, 2023. Nathan will be meeting with the organizers this week to further discuss plans for the event.

#### HERITAGE SARNIA LAMBTON

Glenn Stott has not been in contact with the Heritage Sarnia Lambton group as of late. During the pandemic they were having regular meetings via Zoom, but these have not been as frequent. Last year, the Passport Program ran and the Arkona Lions Museum participated by stamping passports at the gate house. Staff have not been approach about this program in 2023.

Glenn also noted that his son, Greg, is working on a book about the history of Rock Glen, which may be of great interest in the future.

### CONSERVATION AREA STAFFING & OPERATING SEASON

Two positions have been filled for Rock Glen Conservation Area for the season. Mike Bax has returned as Superintendent, and has already begun working at the conservation area. Kelly Graham will also be returning for the season. The ABCA was approved for the Canada Summer Job program and will be hiring a young person as Park Attendant for 10 weeks.

The committee members asked Mike about the enforcement of gate entry fees. Mike noted that most attendees are good about paying the fee, and if he notices vehicles that have not paid at the gate he does ask them to pay on the way out. In addition, having a Monaris machine at the gatehouse helps with gate fees. A new machine was ordered and should arrive soon.

### MUSEUM CURATOR REPORT

Adam Wisniewski reported that they are continuing to work on displays and signage. He noted that there may be opportunities to work with the ABCA to produce some posters or other signage to help fill out the displays.

Abbie Gutteridge asked if there has been any consultation done with local First Nations regarding the displays. At present, this has not been done; however, Adam suggested that David Plain from Sarnia may be willing to look at the displays and will contact him. He may also be able to provide an appropriate contact at the Kettle and Stoney Point First Nations. Abbie will also investigate possible contacts at Kettle Point.

Adam also wondered about the possibility of getting a map of the conservation area, and perhaps other local trails, as visitors are often interested and asking about this. Nathan Schoelier noted that he will talk to ABCA staff about getting a map made.

### OTHER BUSINESS

Nathan Schoelier reported that the Education Department at the ABCA is currently in a transition phase and that a new educator would be hired soon. He expects that this person will work with the committee, especially with regard to the Education room at the Museum and Information Centre.

### NEXT MEETING

The next meeting is scheduled for Monday, October 2 at 9:30 a.m., unless the Chair calls an earlier meeting.

### ADJOURNMENT

Glenn Stott adjourned the meeting at 10:34 a.m.