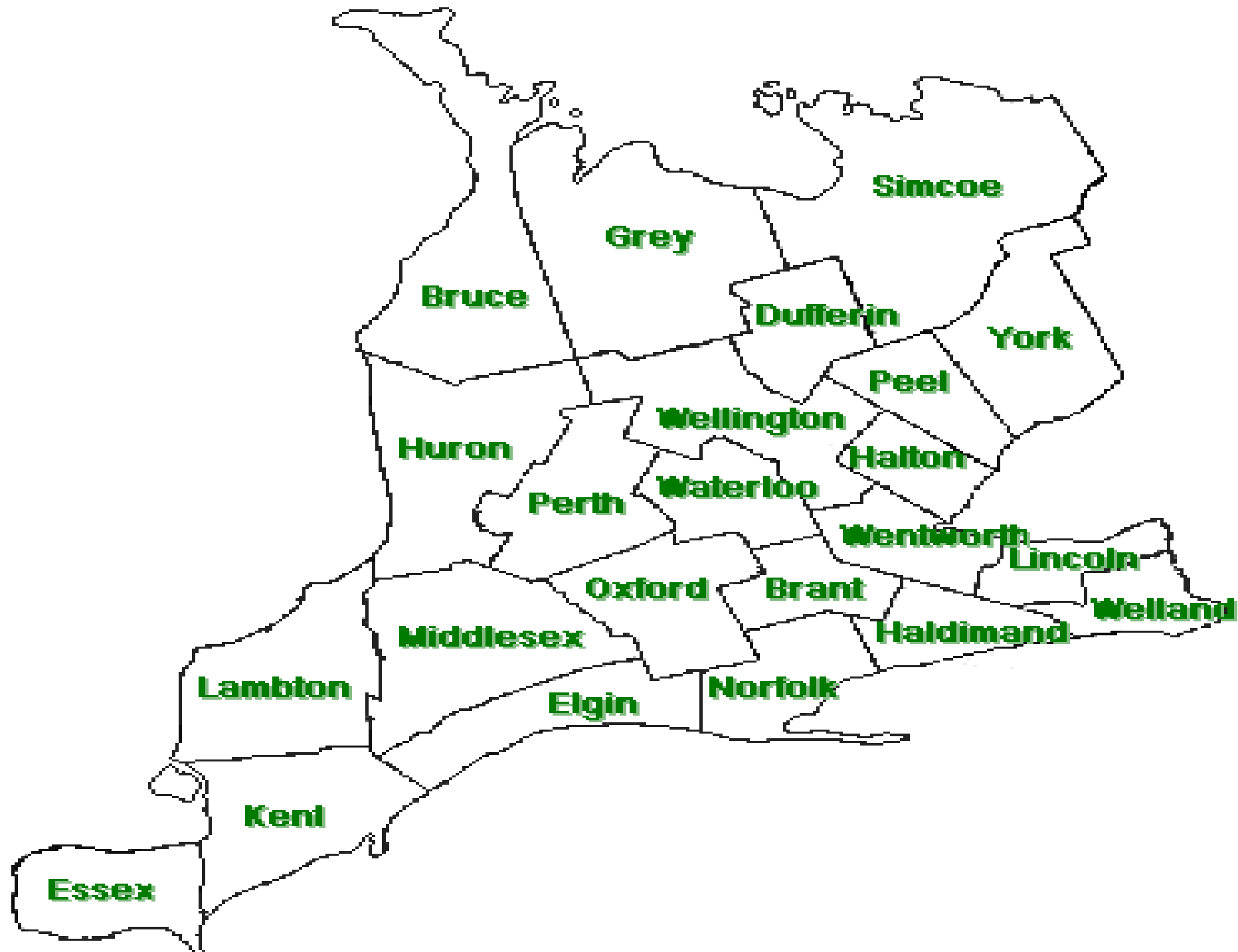




BEACH WATER MONITORING PROGRAM

Tracking Sources of Microbial Impairment to Water Quality April 6, 2004



HURON COUNTY



from Kincardine/Owen Sound
* (10 minutes/1 hour)

from Barrie/Orlia
* (2.5 hours)

from Listowel/Guelph
* (10/35 minutes)

from Kitchener-Waterloo
* (35 minutes)

from Stratford/Toronto
* (20 minutes/2.5 hours)



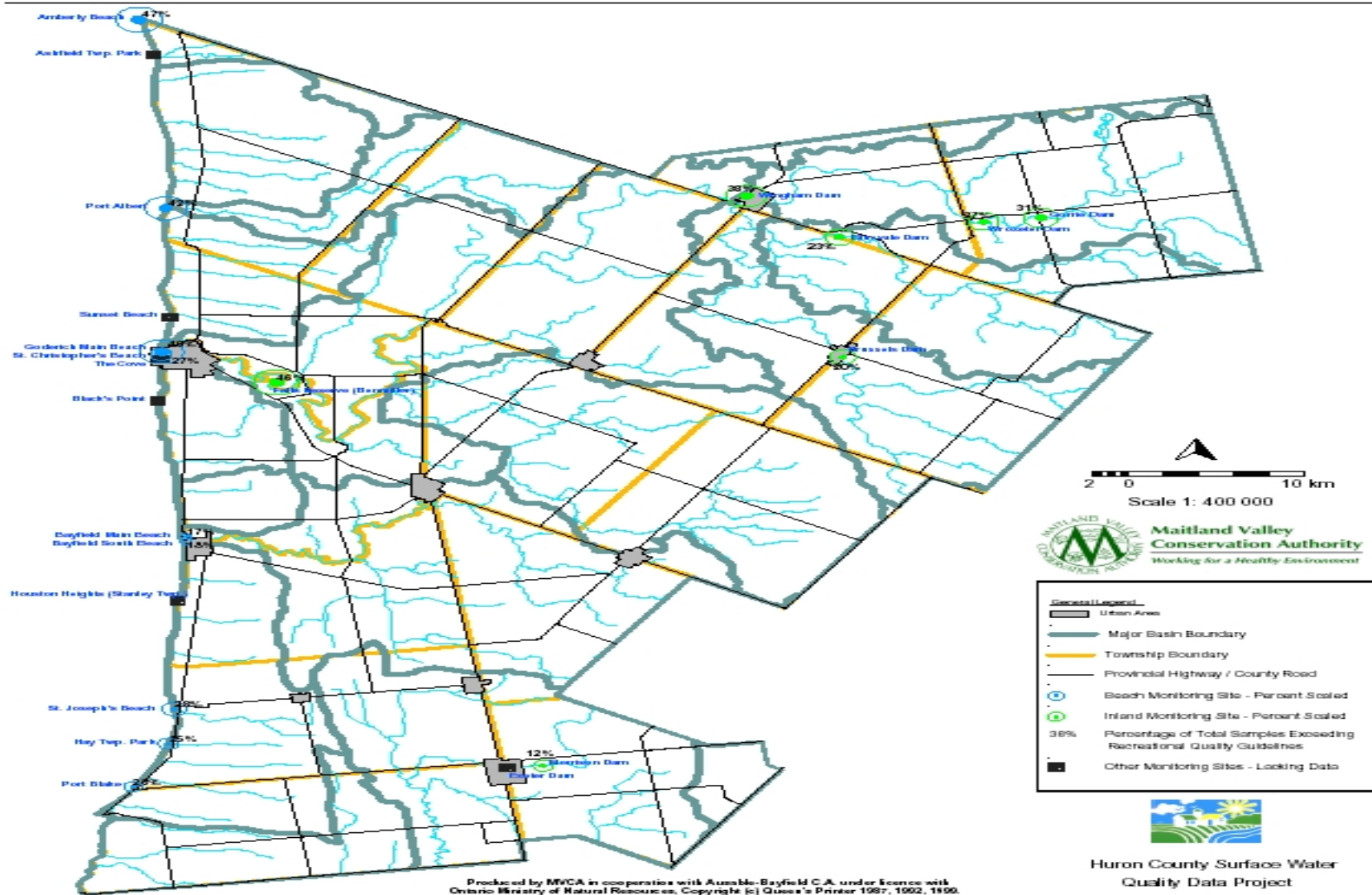
Provincial Protocol

- MOHLTC Beach Management Protocol.
- The protocol sets out requirements for Ontario Health Units for recreational water sampling and reporting.

Requirements

- Beach Pollution Survey
- Routine Beach Surveillance
- Sampling Protocol
- Posting Public Bathing Beaches

Pollution Survey



Produced by MVCA in cooperation with Ausable-Bayfield C.A. under license with Ontario Ministry of Natural Resources. Copyright (c) Quasa's Printer 1987, 1992, 1999.

Figure 4: Huron County Swimming Beach Monitoring Network

Huron County Surface Water
Quality Data Project

- Provincial mandate is to sample public beaches with lifeguards.

Definition of a public beach:

“A beach area, owned and operated by a municipality, which has a supervised aquatics program or is staffed by a lifeguard.”

The MOH may also monitor any other swimming area, except Provincial Parks to which the public have access, and where the MOH has reason to believe that recreational use of the water may result in waterborne illness. The MOH is NOT responsible for routine monitoring of private residential beaches which are not used by and accessible to the public at large.

Historically HCHU has sampled all public beaches and some private beaches such as children camps and trailer parks.

- samples are taken from swimming areas only
- sampling sites must be fixed for the sampling season
- 5 sampling sites per beach area are established
- 1000 metres or less – 5 sites
- 1 kilometre or more – 1 site per 200 metres

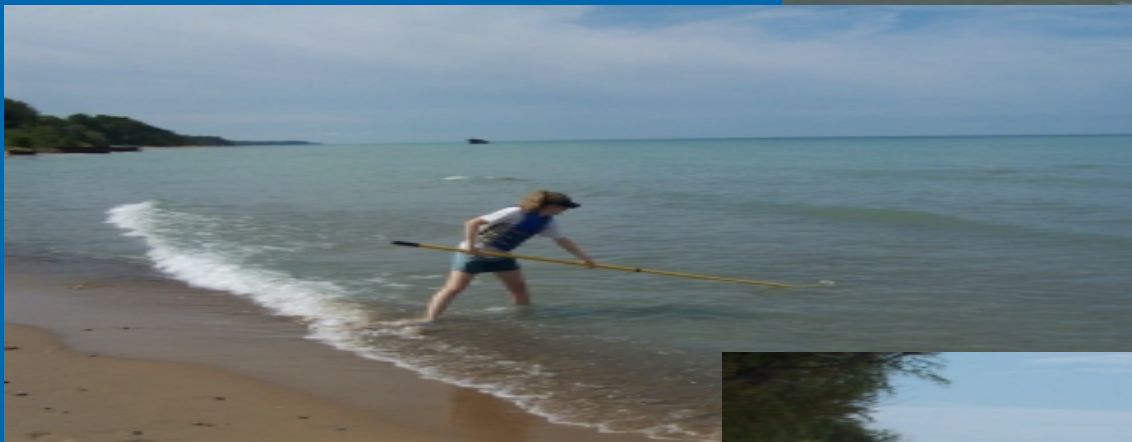


Julie taking a sample at waist depth

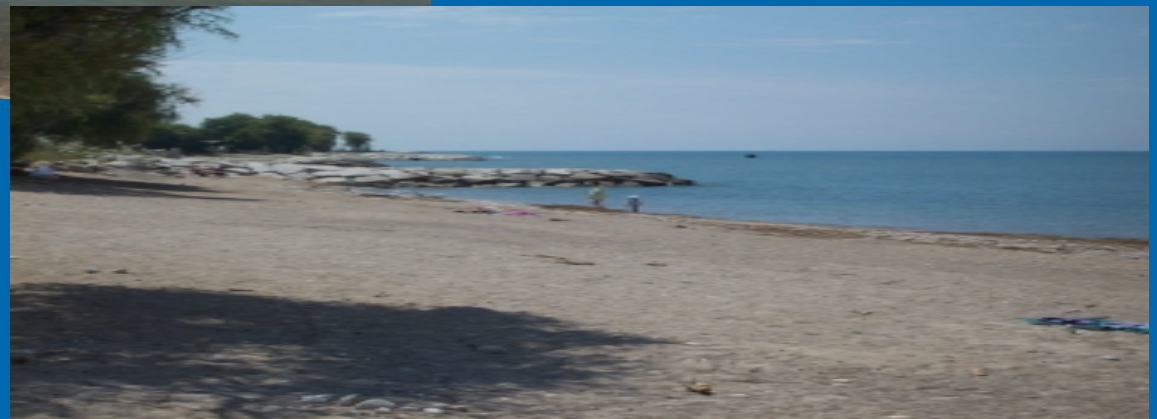
Sarah taking a shoreline survey sample at Bayfield Main 



Julie taking a shoreline survey sample in Bayfield



What a picturesque view of the beach in Goderich 

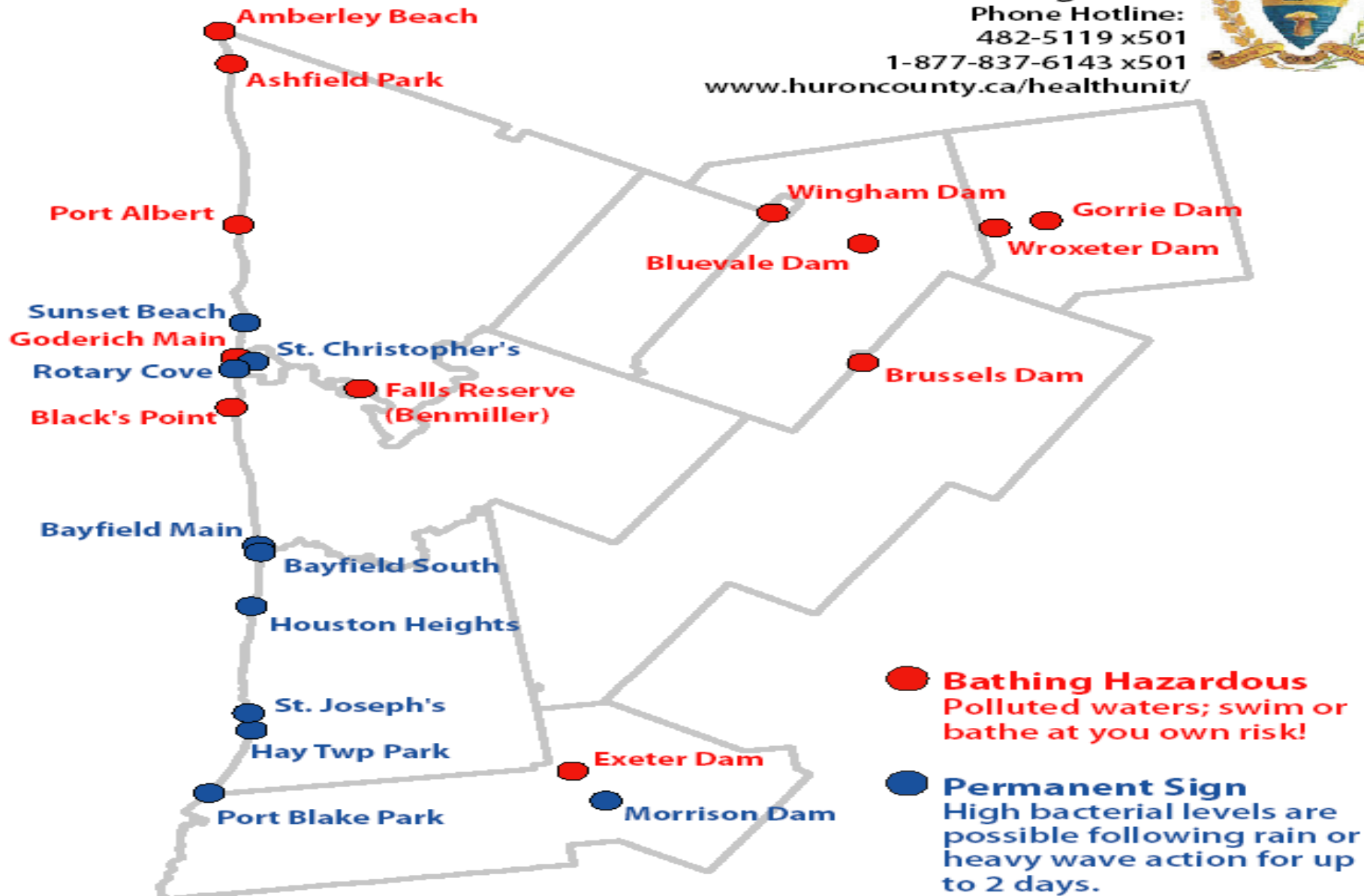


Huron County Health Unit Beach Status for 11 August 03

Phone Hotline:
482-5119 x501

1-877-837-6143 x501

www.huroncounty.ca/healthunit/



Be sure to check www.huroncounty.ca/healthunit/ for the most current information.

Geometric Mean

- The geometric mean is used because it is required by the provincial protocol and is used for comparative purposes with other Health Units.
- It reduces the biasing effect of a single spike and weights the results according to how frequently they happen.

POSTING OF BEACHES

- Notices are **“POSTED”** in prominent location at swimming areas when there is evidence that the water is potentially dangerous to the health of swimmers.
- Beaches are not **“CLOSED”** due to elevated E.coli



WARNING
UNSAFE FOR SWIMMING
HIGH LEVELS OF BACTERIA IN
THESE WATERS MAY POSE A
RISK TO YOUR HEALTH.

Beach Water Quality Hotline:
482-5119 ext. 501
Website: www.huron.ca/health

Medical Officer of Health
County of Huron



NOTICE

**THESE WATERS MAY
BE POLLUTED WITH
HIGH LEVELS OF
BACTERIA FOR UP TO
2 DAYS FOLLOWING
HEAVY RAINFALL.**

Beach Water Quality Hotline:
482-5119 ext. 501
Website: www.huron.ca/health

Medical Officer of Health
County of Huron

CLOSING OF BEACHES

- Immediate health risk such as:
 - Evidence of gross contamination such as visible sewage; chemical/oil spill; toxic algae.

Issue of how to enforce beach closure

2003 Sampling Initiatives

- HCHU had been collecting data for 30 years with little change to protocol.
- Hired Michael Brodsky to review data for period 1992 to 2002.
- Adopt running GM on most recent 3-5 years of data.
- 3 year GM for stable sites.
- 5 year GM for data fluctuates above the provincial guidelines.

- Increase sampling for unstable sites.
- Decisions based on “seasonal” data rather than:
 - always working with at least a **24 hr.** delay;
 - from taking the sample → delivery same day to the lab → water sample incubation period (18-24 hrs) → lab report back to Health Unit;
 - results are from the day of sampling, not the present water quality; and
 - short-term contamination problems may have terminated prior to laboratory confirmation of the condition.

Huron County Beach Samples		1998 to 2002		2000 to 2002	
	beach	samples	5 year	samples	3 year
HIGH RISK	Black's Point	405	130	215	221
	Family Paradise Campground	335	103	190	115
	Wingham Dam	179	101	124	132
	Port Albert	370	98	190	112
	Ashfield Twp Park	430	96	250	117
	Amberly Beach	430	85	235	72
	Goderich Main Beach	385	85	200	88
	Exeter Dam	125	84	78	84
MEDIUM RISK	West Wawanosh Conserv. Area	158	75	28	144 *
	Gorrie Dam	265	73	140	135
	Bluevale Dam	245	70	125	124
	Camp Kintail	250	67	170	72 *
	Houston Heights (Stanley Twp.)	170	66	125	91
	Falls Reserve (Benmiller)	25	61	20	64 *
LOW RISK	St. Joseph's Beach	325	59	165	94
	Kitchigami Camp	135	58	45	97 *
	St. Christopher's Beach	370	57	195	61
	Paul Bunyan Campground	336	56	171	75
	Hay Twp Park (con. 15-16)	194	55	119	83
	Wroxeter Dam	165	55	100	73
	Driftwood Camp South	190	50	110	121
	The Cove (Goderich South)	375	49	200	50
	Brussels Dam	175	49	110	84
	Bayfield South Beach	393	42	225	53
	Port Blake Park	360	40	195	55
	Sunset Beach	280	37	130	33
	Bayfield Main Beach	378	36	220	45
	Ron's Camp	35	34	15	21 *
	Bogies Beach	136	33	41	16 *
	Morrison Dam	75	28	30	122 *
	Pine Echo Campground	90	18	45	30 *
	Pine Lake Trailer Camp	85	15	35	27 *
Driftwood Beach Park	55	12	15	12 *	
Camp Wyoka	98	11	18	14 *	

* not sampled each year

- Permanently post 7 locations for the 2003 season due to **5 year** GM indicating high risk swimming locations due to high levels of bacteria:

Amberley

Ashfield Park

Black's Point

Goderich Main

Exeter Dam

Port Albert

Wingham Dam

- Increase weekly sampling of unstable beaches based on **3 year** geometric mean:

Hay Township

Houston Heights

St. Joseph's Beach

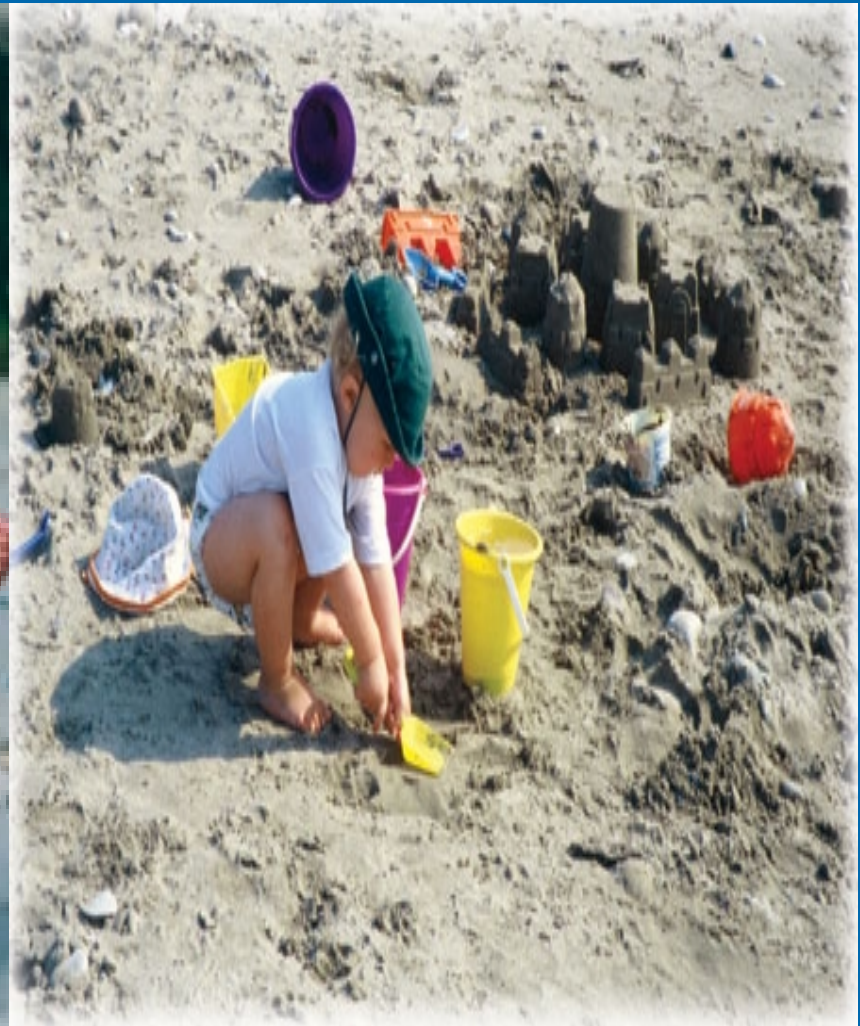
Bluevale Dam

Brussels Dam

Gorrie Dam

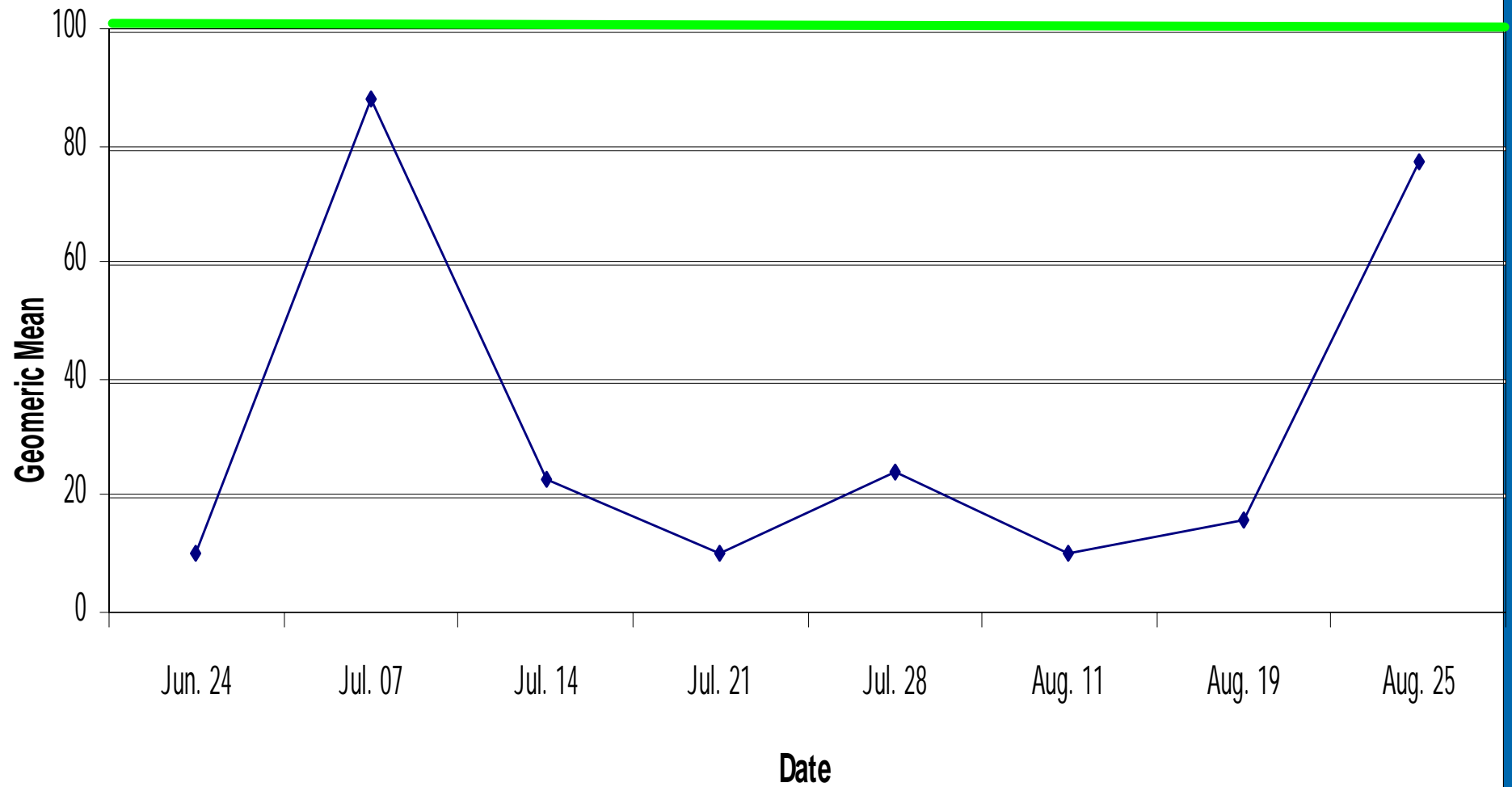
Morison Dam

Shoreline Sampling

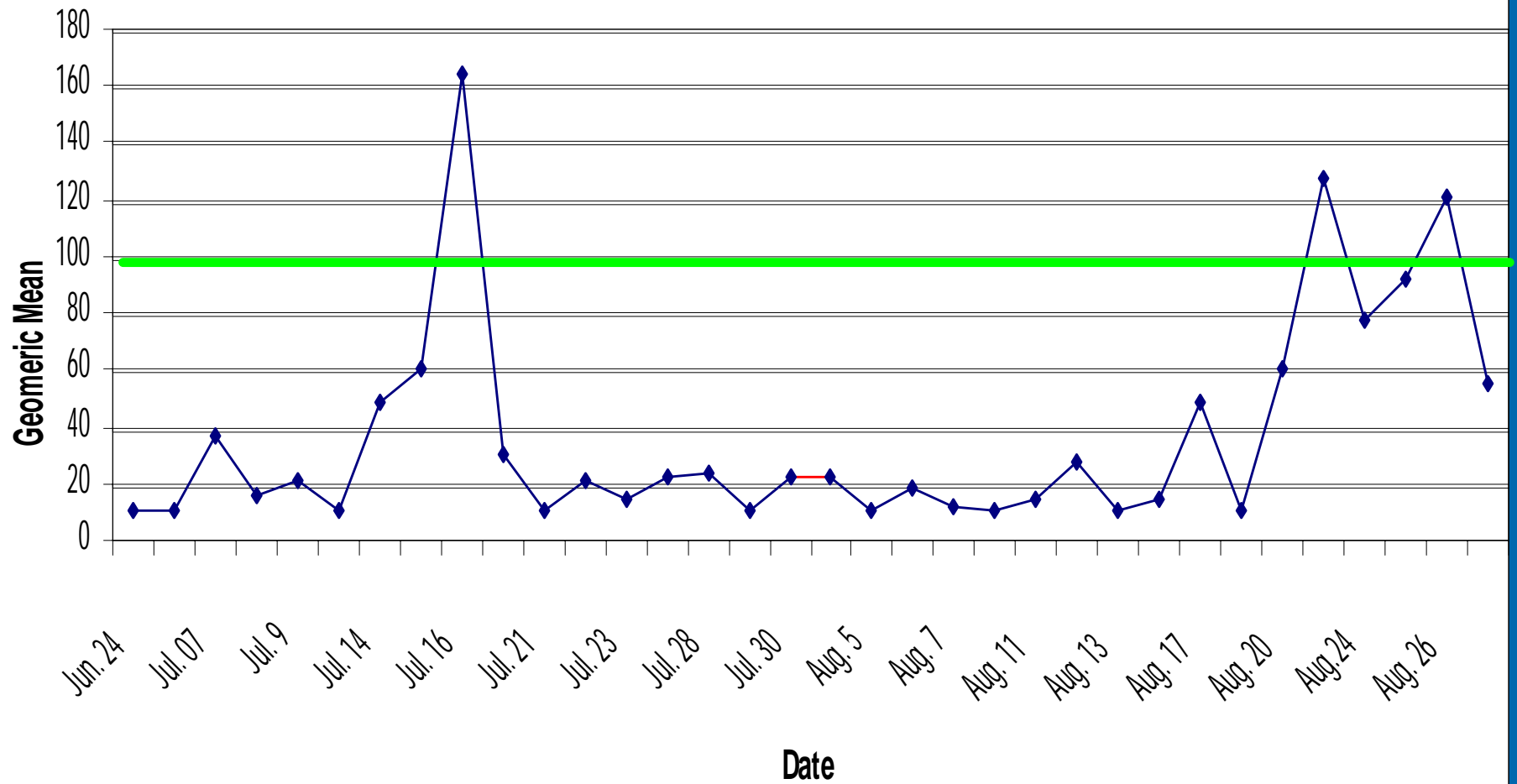


Tracking Sources of Microbial Impairment to Water Quality April 6, 2004

Port Albert 2003 Weekly Shoreline Data

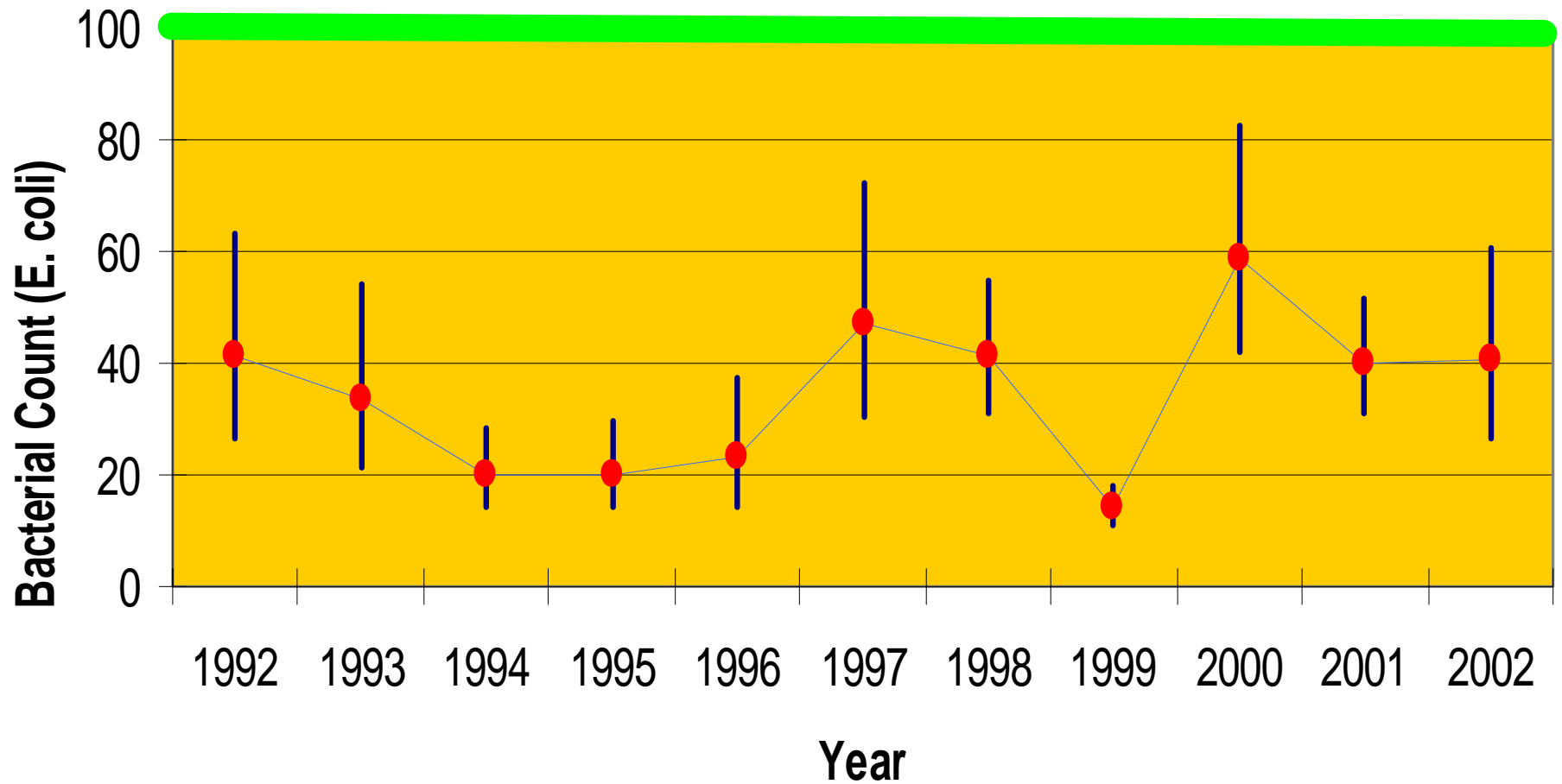


Port Albert 2003 Lake Sample Data



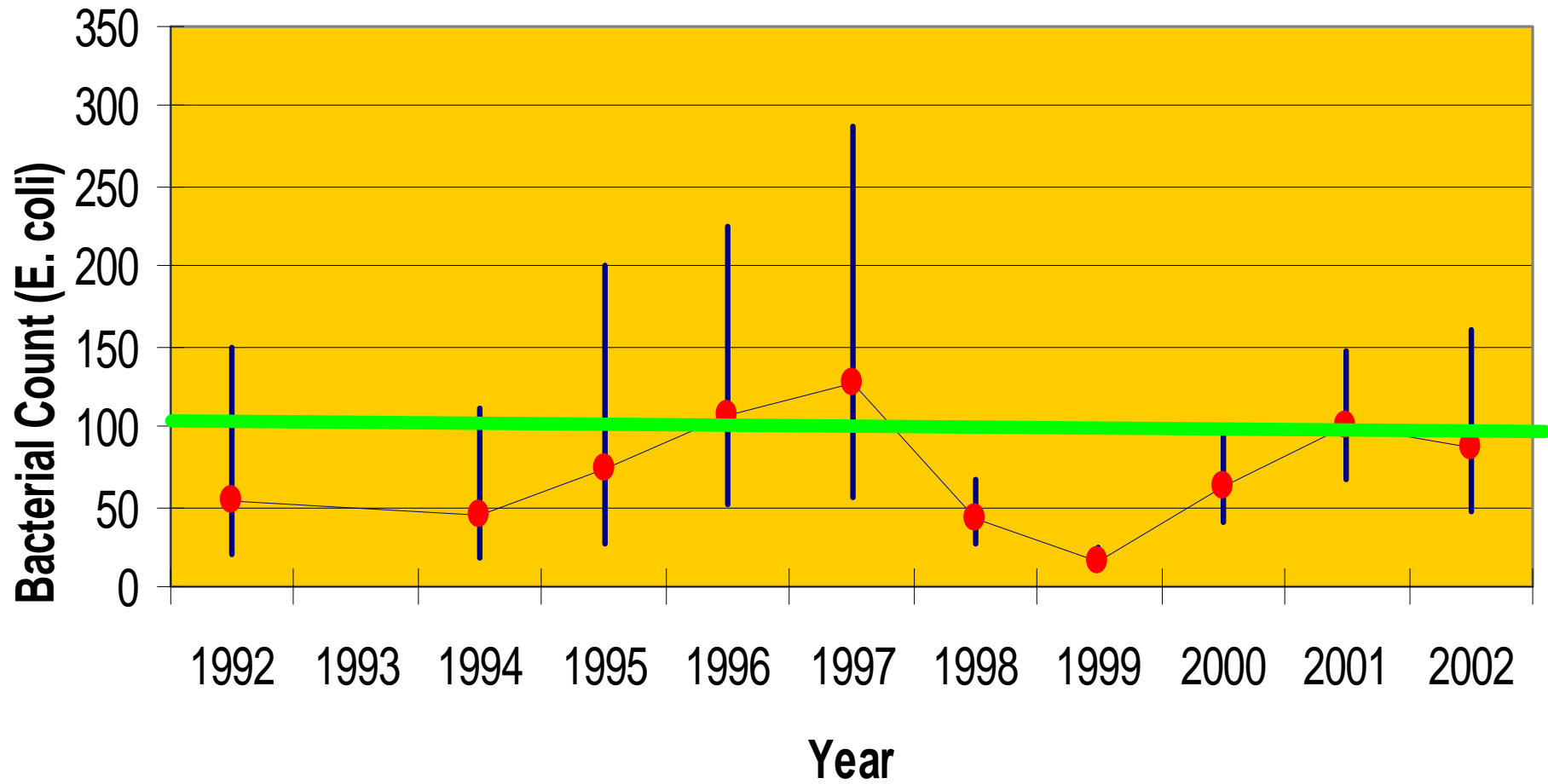
10 Year Beach Data 1992 - 2002

Bayfield Main Beach



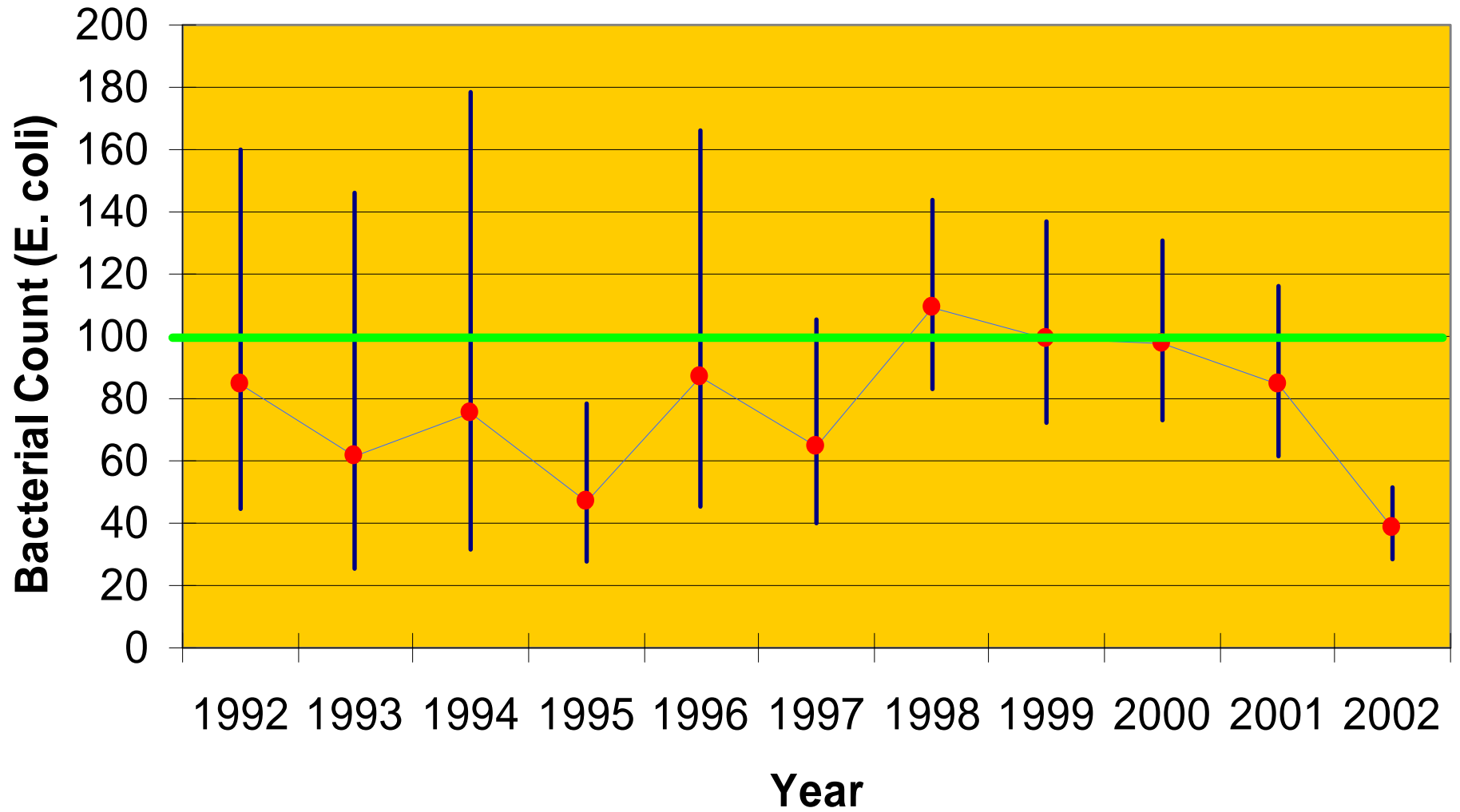
● Annual Geometric Mean

Hay Twp Park (con. 15-16)



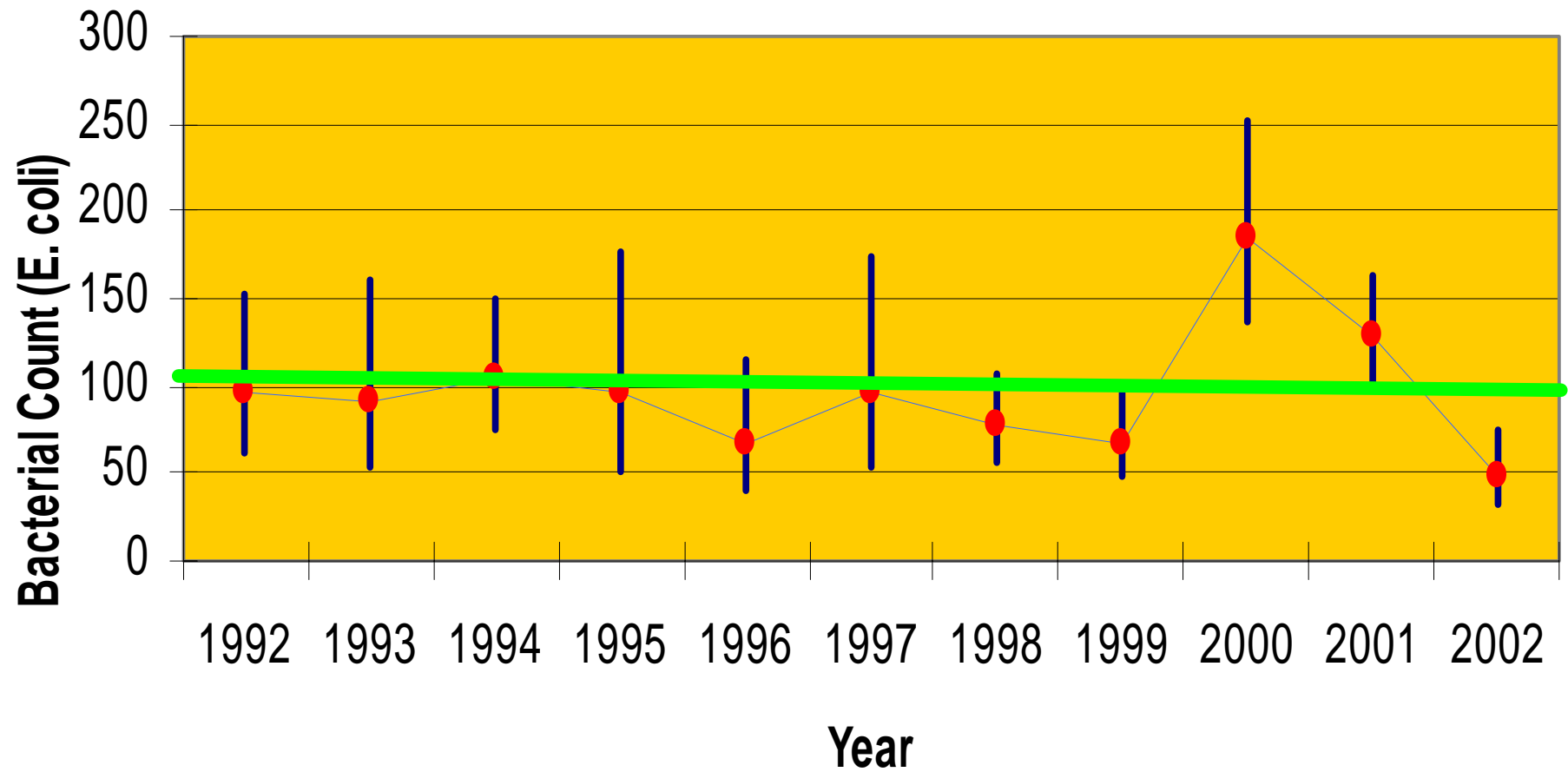
—●— Annual Geometric Mean

Amberly Beach



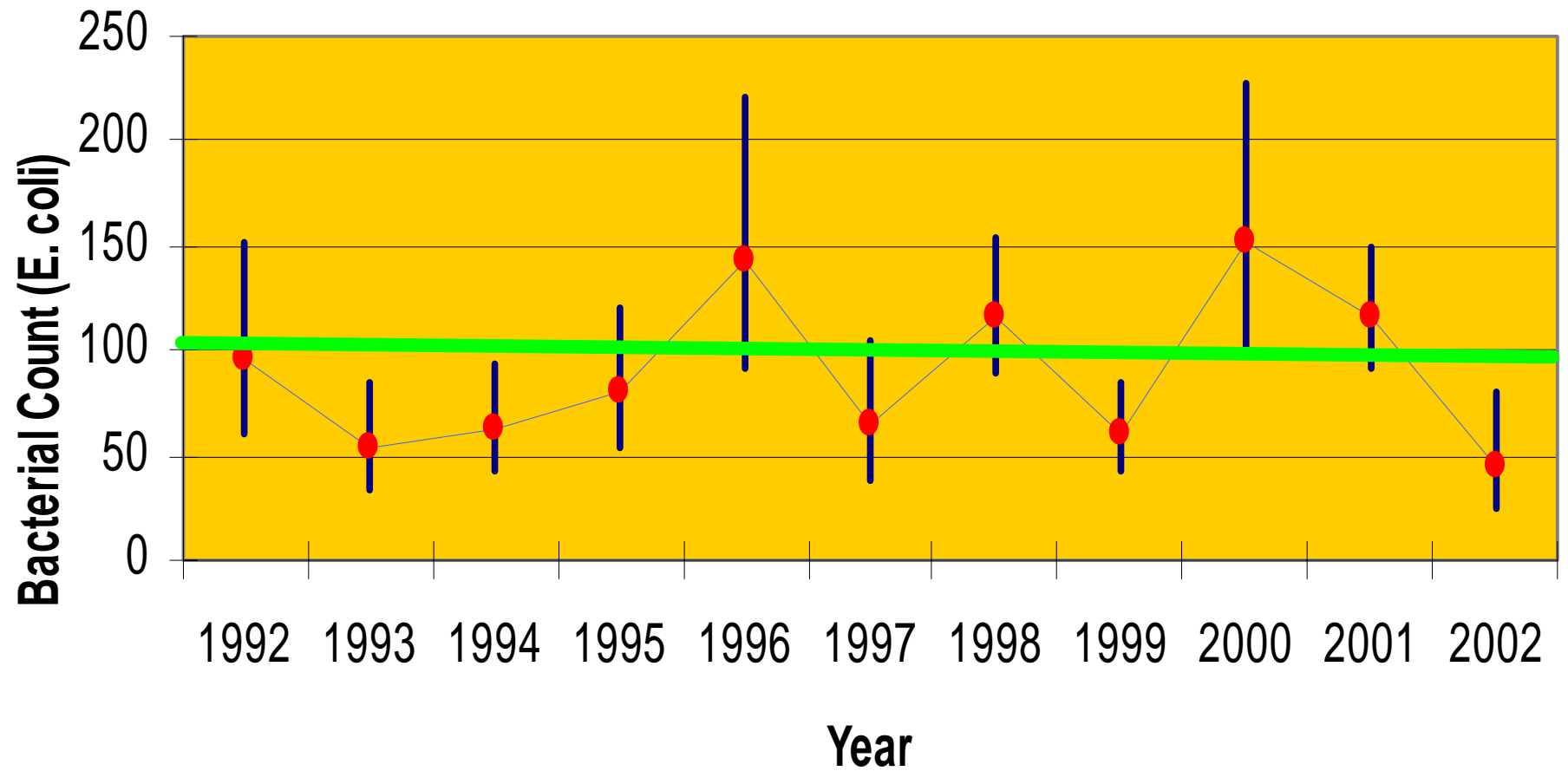
● Annual Geometric Mean

Ashfield Twp Park



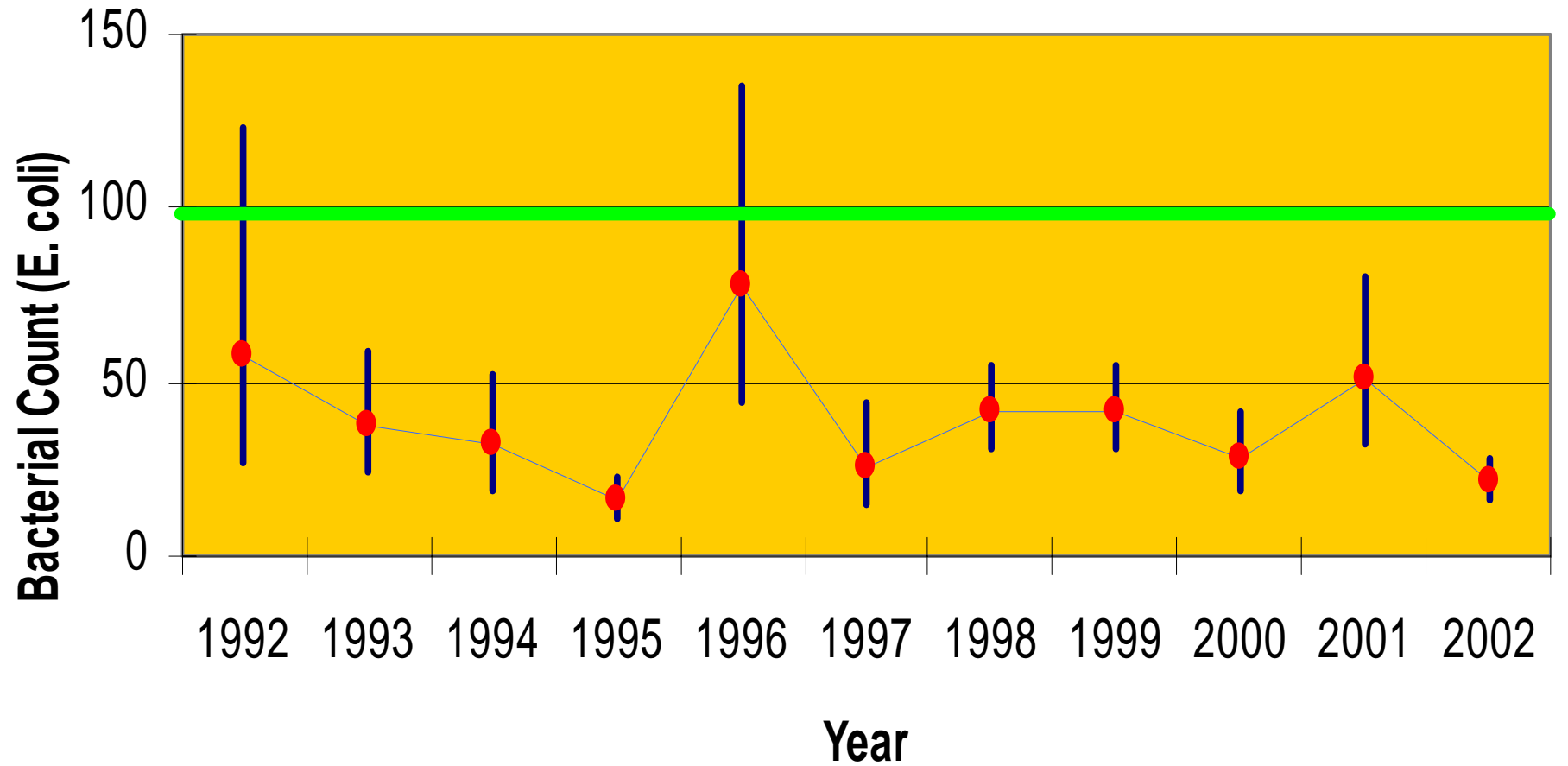
● Annual Geometric Mean

Port Albert



● Annual Geometric Mean

Sunset Beach

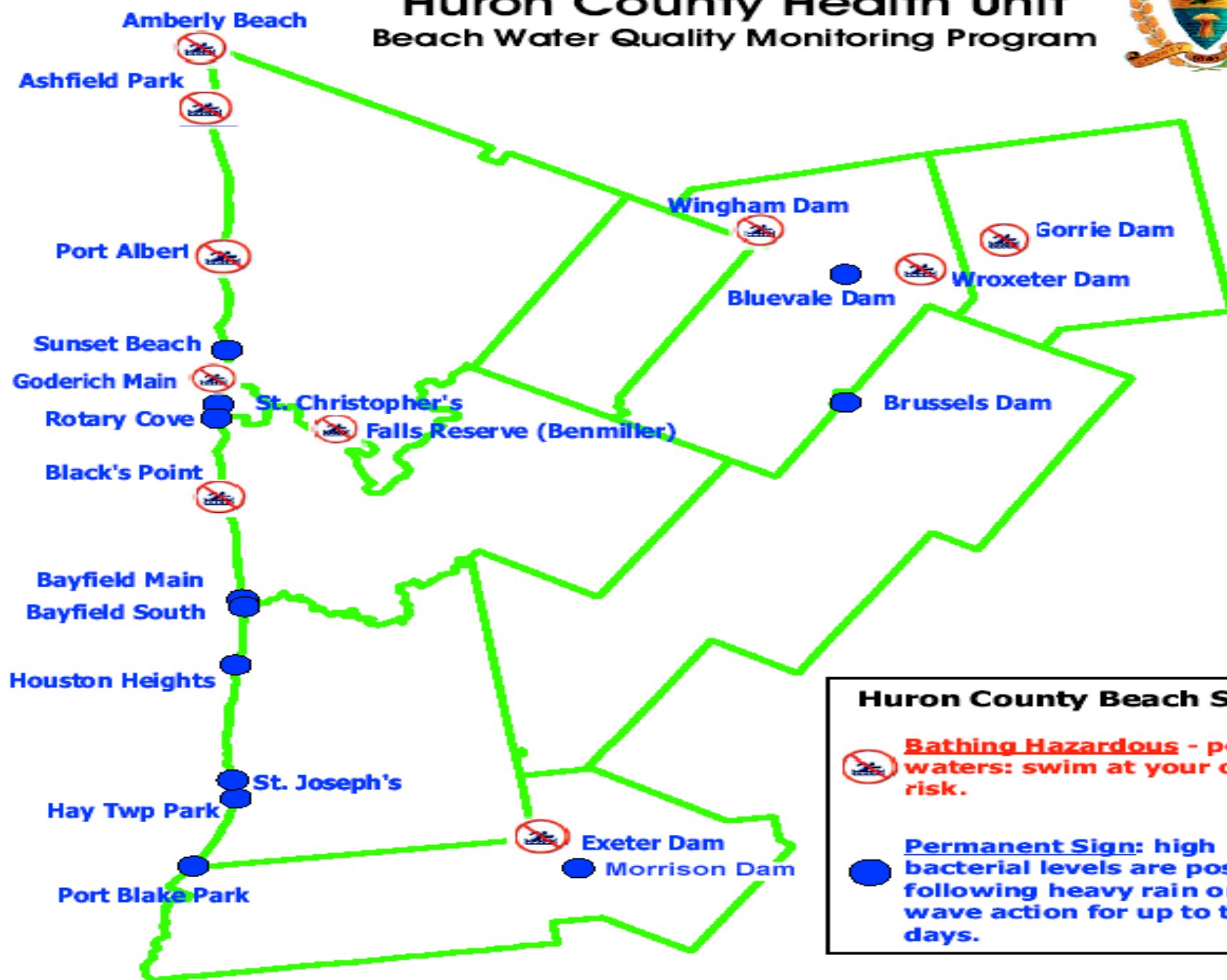


● Annual Geometric Mean

2004 INITIATIVES

- Changes to website.
- Increased pollution survey.
- Mapping of pollution sources & sampling locations.
- Water sampling upstream.
- Increase access to reliable rainfall data.
- Sediment sampling of lake bed and of dry sand (new or old pollution?)

Huron County Health Unit Beach Water Quality Monitoring Program



Huron County Beach Status

 **Bathing Hazardous** - polluted waters: swim at your own risk.

 **Permanent Sign:** high bacterial levels are possible following heavy rain or high wave action for up to two days.