

Visitor Management in the Niagara Glen Nature Reserve

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Society of Outdoor Recreation Professionals

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Trailhead

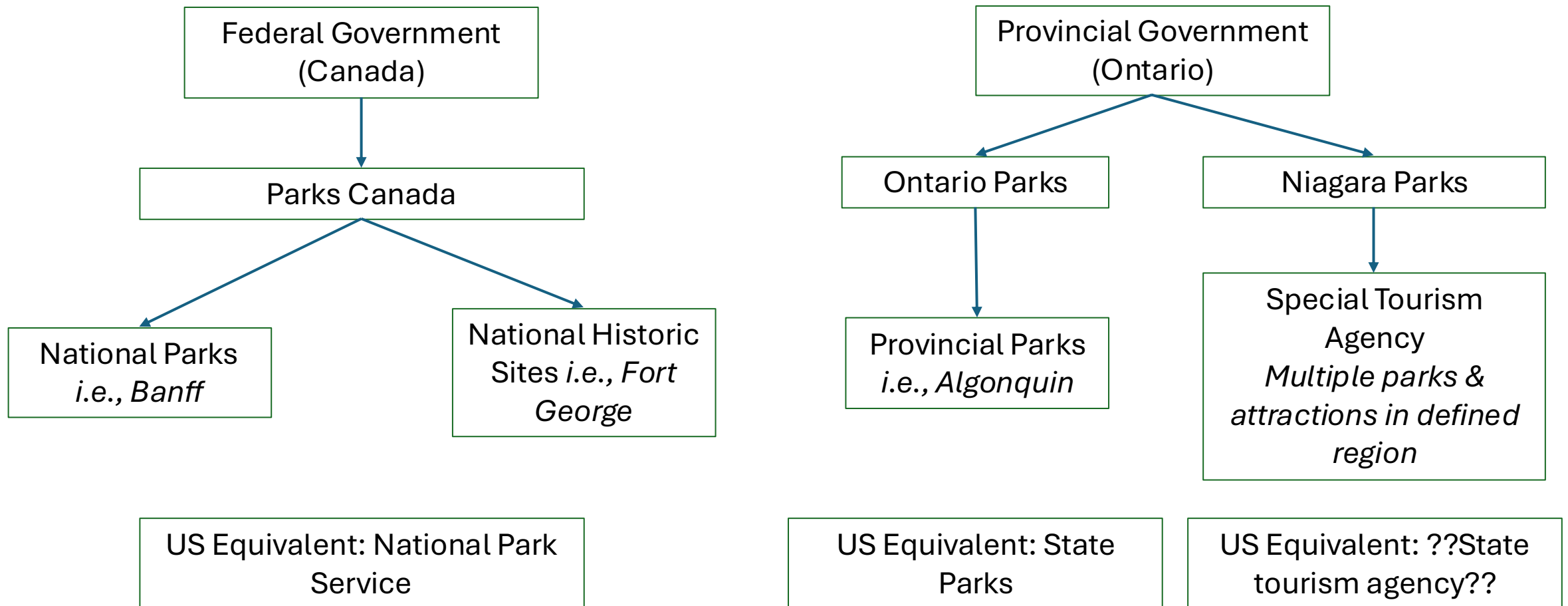
- Background context
- The challenge
- The plan
- The solution
- The outcome
- Takeaways



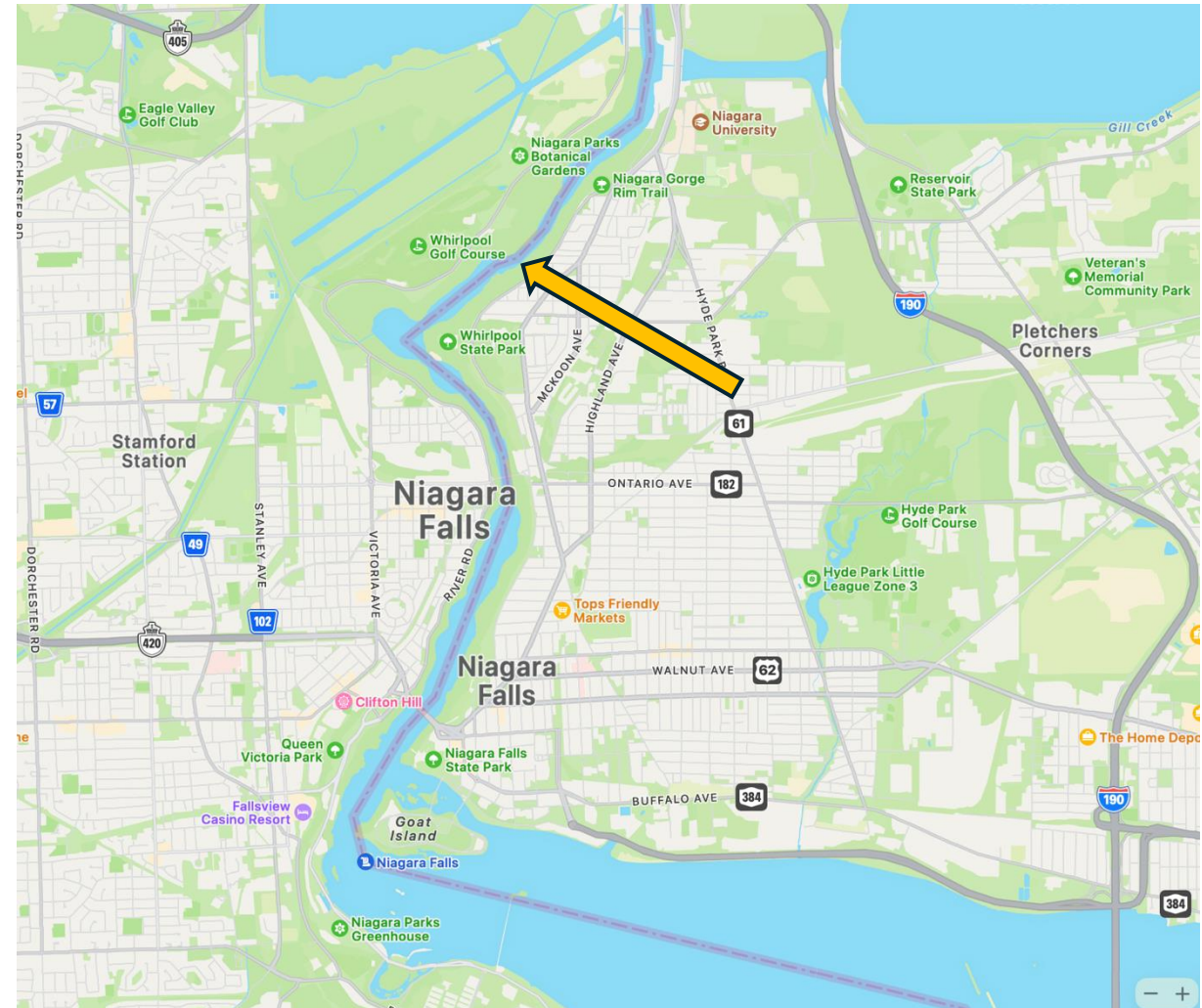
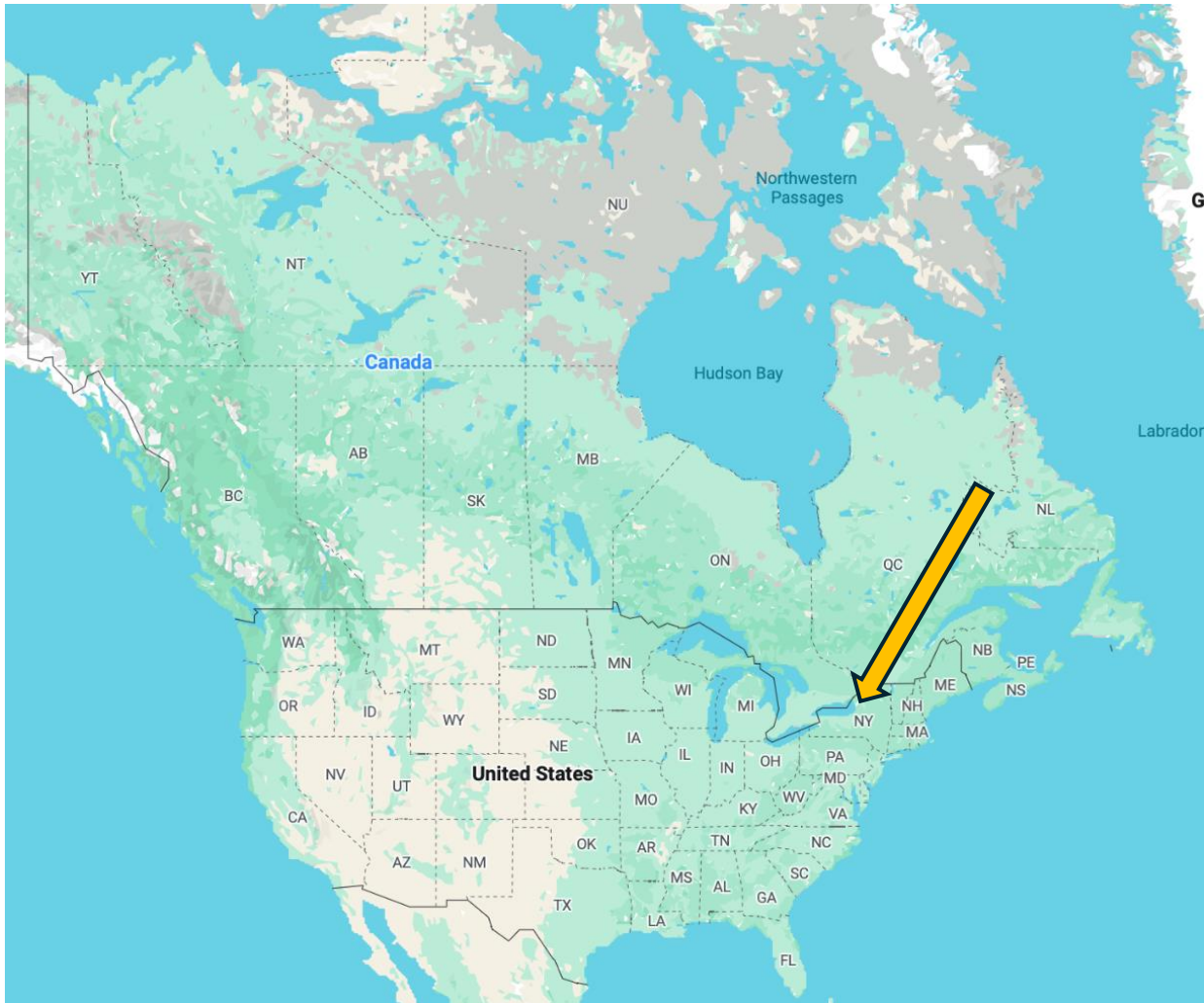
Niagara Parks Commission

- Established in 1885 (before Banff National Park!)
- Two founding principles:
 - That Niagara Parks would never be a burden to the taxpayer of Ontario
 - That, as much as possible, the parks would be free to enjoy
- Board-governed operational enterprise of the Ontario Ministry of Tourism, Culture and Gaming
- Niagara Parks welcomes 4 million unique visitors annually across parks and attractions
 - Annual economic impact of over \$1.2 billion

Parks and protected areas in Canada



Locale



Niagara Parks Commission

1325 hectares along the entire Niagara river

1	Experiences	Attractions, Events, Educations, Eco-tourism, Active Living, Adventure, Natural Wonders
2	Infrastructure	56 Km Niagara Parkway, 53 Km Recreation Trail, Attractions, Facilities, Parking Lots, Service Roads, Golf Courses
3	Gardens and Parks	Queen Victoria Park, Botanical Gardens School of Horticulture, Queenston Heights Park, Kings Bridge Park
4	Natural Areas	Niagara Falls, Niagara Gorge, Niagara Glen, Niagara Escarpment, Niagara River Shoreline, Species at Risk
5	Heritage	Old Fort Erie, Chippawa Battlefield, Laura Secord Homestead, McFarland House, Queenston Heights





Niagara Parks

Niagara Glen

- Located 7km down river from Niagara Falls
- Cut into the Niagara Gorge by thousands of years of erosion
- Indigenous presence since time immemorial, first documented in colonial records in 1791
- One of the last remaining remnants of old-growth Carolinian forest
- Home to ~490 species of vulnerable flora and fauna



Niagara Glen

- Now home to a 6.7-kilometer trail network that brings visitors into the gorge and along the mighty lower Niagara River
- Averages ~248,754 visitors per year – peaked in 2020 with over 300,000 visitors
- Open to the public year-round

Elevation



Elevation Gain

104 m

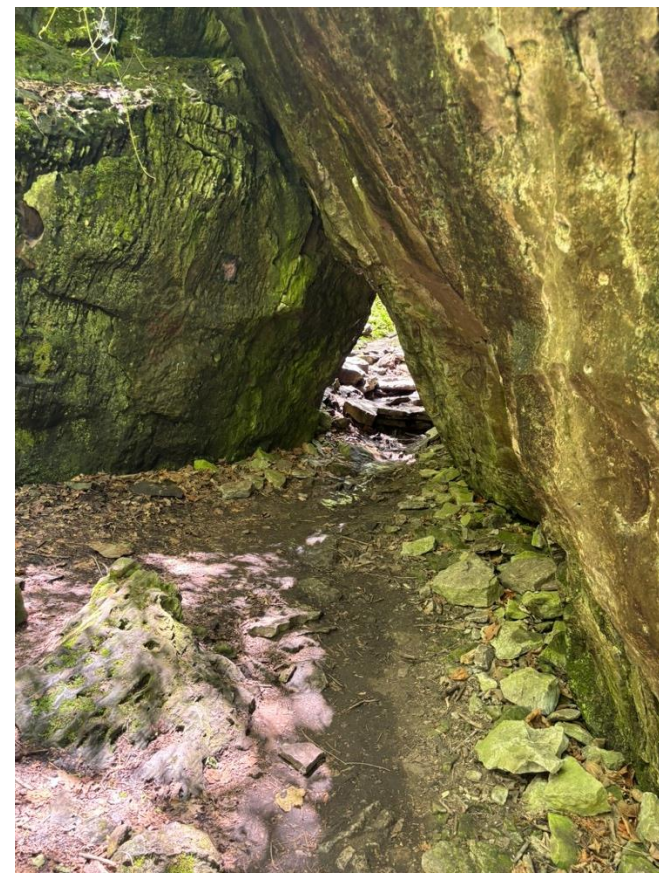
Max Elevation

165 m

Niagara Glen

- *Complex* visitor management environment
 - No ability to implement permits, quotas, or fee systems (legislation)
 - No ‘forced’ visitor touch points
 - Limited law enforcement capacity
 - Significant environmental risks
 - Elevation
 - Uneven & rocky terrain
 - River with class 6 rapids
 - Historic organizational focus on tourism promotion





Niagara Glen is

Man rescued from the Niagara Gorge dies

Hiker dies despite rescue efforts at Niagara Gorge

Rescue crews responded yesterday after 55-year-old went into medical distress



By Don I

Posted J

ThoroldToday Staff
Aug 24, 2021 2:16 PM



to remove the victim from the rugged terrain.

Pair of rescues prompts Niagara Glen safety war

Last year, a record 300,000 people took advantage of the scenic views and hiking trails.

Man rescued from Niagara River after leaving trail

May 17, 2021 | 1 min read



A man who wandered off the hiking trail in the Niagara Gorge found himself briefly swept into the river Tuesday night.

Rescues at Niag

An increase in visitors results in an increase in

March 25, 2020

1 min read



July 4, 2020

3 min read



Glen

The challenge

- Drastic increases in visitation during the pandemic resulted in increased visitor behaviour and safety-related management challenges
 - 2019: 210,973
 - 2020: 303,644
 - 2021: 298,520
- Expensive emergency rescues and calls for service increased alongside visitation booms – 2-3 rescues per weekend!
- Common issues included lost, missing, and injured hikers; swimming in Cripps' Eddy (!!!), & environmentally depreciative behaviour

The plan

- A partnership between Niagara Parks, Brock University's Environmental Sustainability Research Centre, and the Ontario Trails Council was formed to address challenges
- Niagara Parks contributed funding, access to the site and staff, and background information
- Brock contributed a research assistant (me!) supervised by a professor (Dr. Garrett Hutson)
- Ontario Trails Council provided transferable insight from aligned work

Brock grad student talks trail safety in new Niagara Parks video

WEDNESDAY, JULY 22, 2020 | by Garrett Hutson



The plan

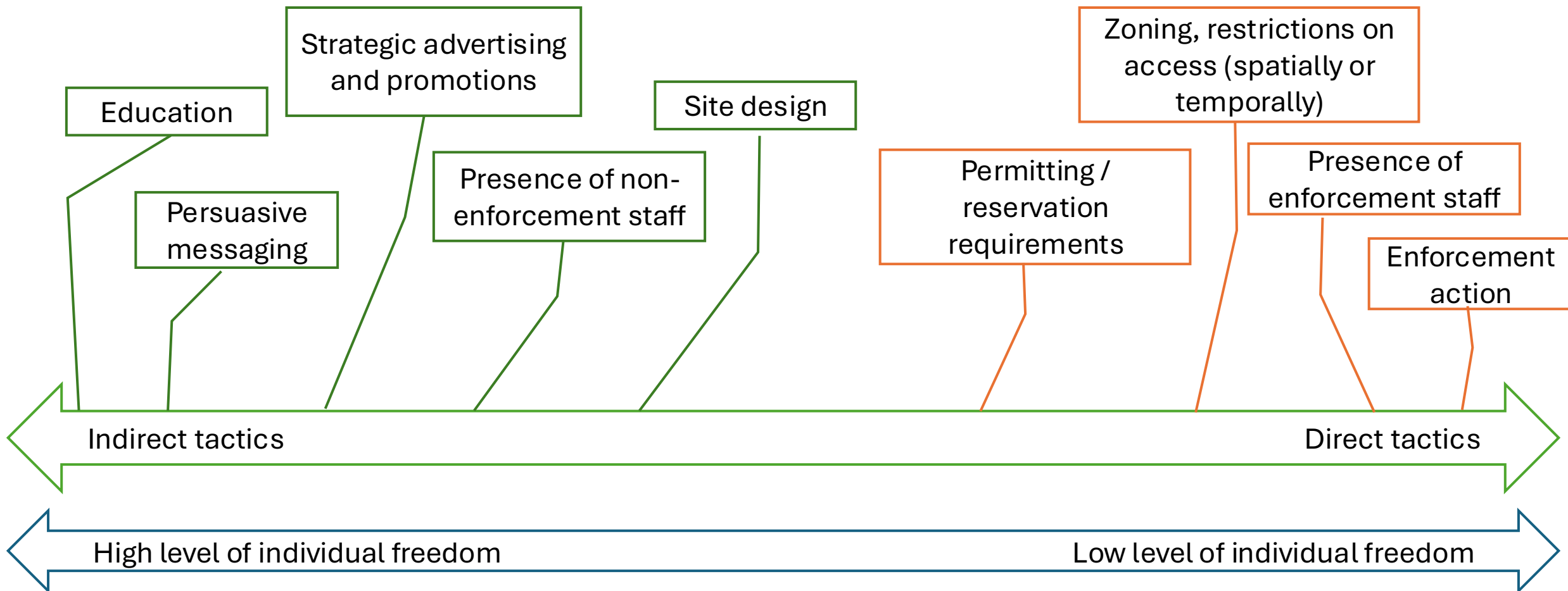
- Consider relevant recreation and park management theories
 - Indirect and direct management tactics
 - Visitor use management frameworks, guidelines
- Consider Niagara Parks organizational goals and requirements
 - Niagara Parks Act, other relevant legislation
 - Niagara Parks' vision statement
 - *By 2028, Ontario's Niagara Parks will be:*
 - *An innovative example of sustainability as the environmental and cultural stewards of the Niagara River corridor*
 - *A welcoming, accessible and inspiring place offering world-class natural, historical, and authentic experiences*

Theoretical backing

Direct and indirect management tactics (Manning, 1999)

- A spectrum of management tools (or tactics) to help manage visitation in outdoor recreation settings, including parks and protected areas
 - Indirect management tactics – an individual retains significant freedom to choose
 - Direct management tactics – an individual's ability to choose compliance/non-compliance is restricted, land managers exercise a high degree of control

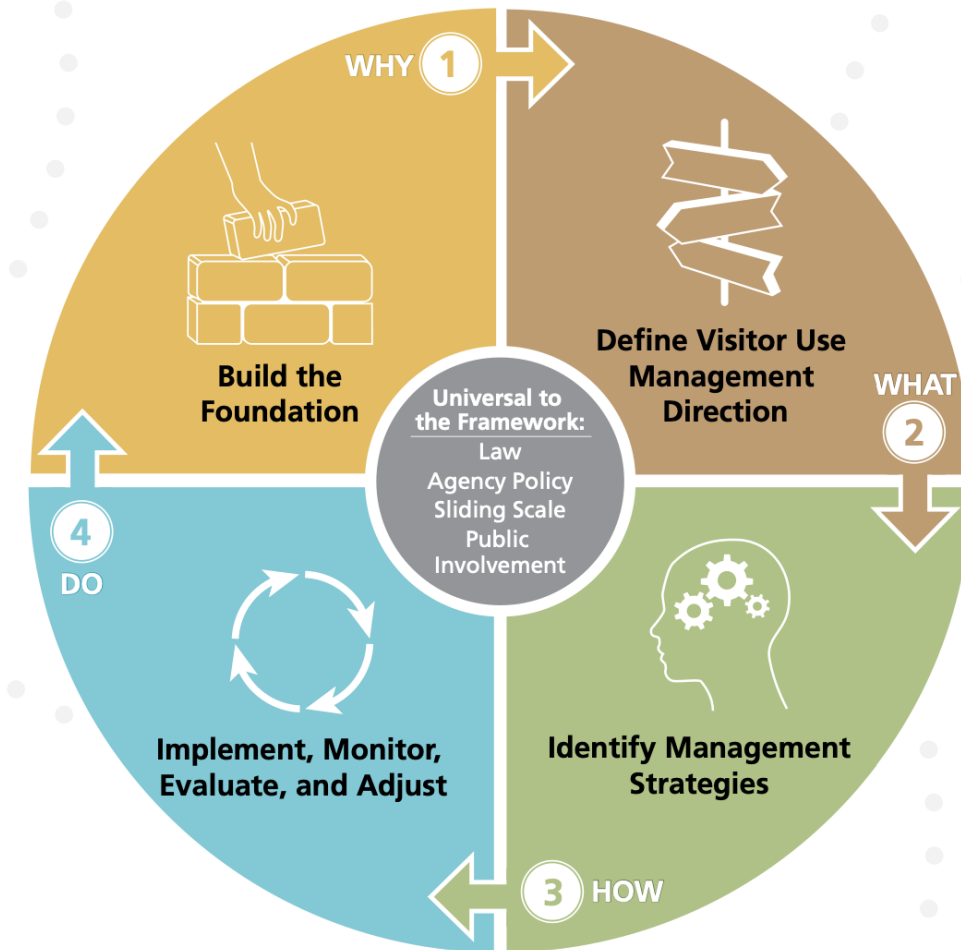
Theoretical backing



Theoretical backing

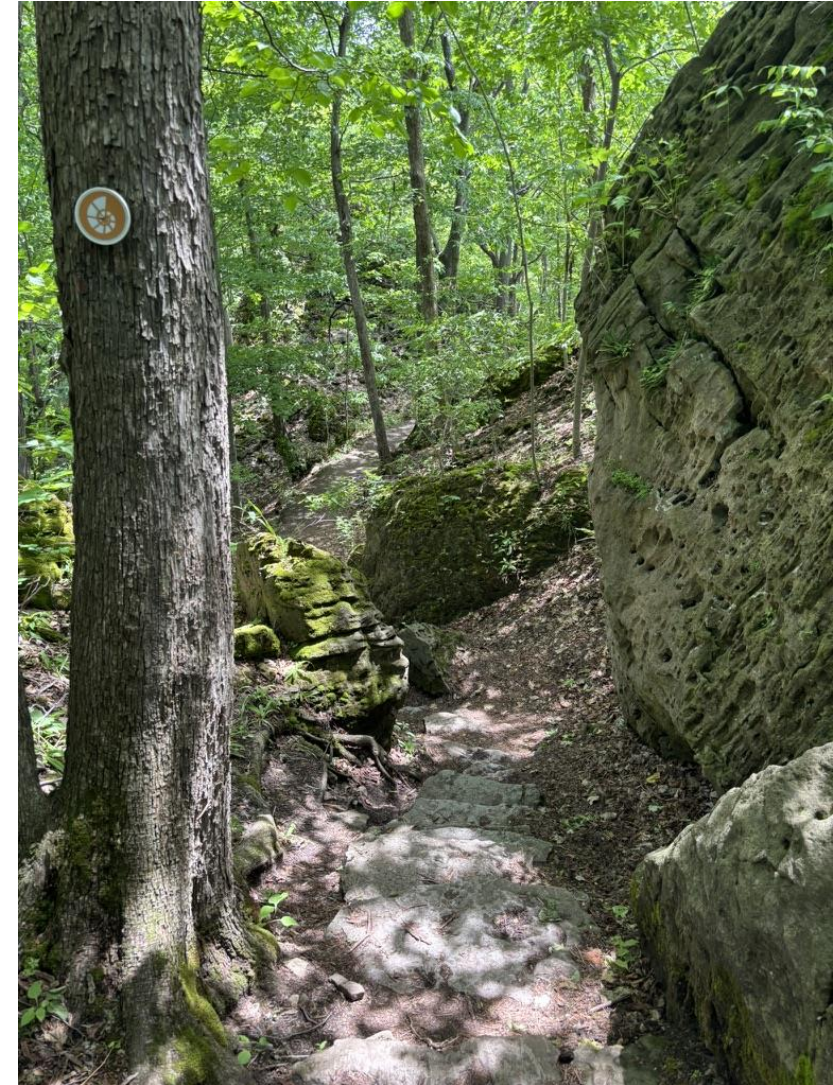
- Consulted the Interagency Visitor Use Management Council's guidelines for sustainable outdoor recreation management, particularly:
 - Identifying desired conditions, experiences, and opportunities
 - Understand how visitors use and engage with the space
 - Identify management strategies
 - Implement, monitor, evaluate, and adjust

Overview of the Visitor Use Management Framework



The solution – lost/missing hikers

- Hikers were getting lost, injured, and disoriented enough to call for rescue
- Upon evaluation, research, conversations with visitors and first responders, a trail network realignment project was implemented





Niagara
Parks

FLOW OF
WATER

DANGER

DANGER

CRIPPS EDDY

TO WHIRLPOOL

NIAGARA PARKWAY



DANGER

NO EXIT TO
NIAGARA PARKWAY

- ① **TULIP TREE**
A member of the Magnolia family, Tulip Trees are associated with the Canadian Life Zone.
- ② **SEA-LILIES**
Erosion undercutting the limestone here is better to be of these Silurian Crinoids or "Sea-Lilies" present today in the Atlantic Ocean.
- ③ **TRILOBITES**
On this earth for 325 million years, they became extinct 250 million years ago. Trilobites grew to a maximum of 2 feet long, but in our studies they are only 2 inches.

- ④ **WINTERGREEN BANK**
This area the banks of the river abandoned 10,000 years ago!
- ⑤ **MAMMOTH POT HOLE**
Naturally formed holes in the limestone for harder stone spinning and drilling into the rock by water currents.

TRAIL RATING CLASSIFICATION

* All Niagara Glen trails are classified as "Moderate" difficulty with the exception of Whirlpool Trail, which is considered "Difficult".

- MODERATE**
Suitable for most visitors with basic trail experience; infrequent obstacles; gently rolling with short, steep sections. Always wear proper footwear and bring water when hiking.
- DIFFICULT**
Suitable for visitors with trail experience; trails have non-established surfaces; many steep sections that may continue for long periods; obstacles common. Always wear proper footwear and bring water when hiking.

NIAGARA GLEN TRAILS

- RIVER TRAIL
- TERRACE TRAIL
- BOULDERING TRAIL
- COBBLESTONE TRAIL
- TRILLIUM TRAIL
- CLIFFSIDE TRAIL
- WOODLAND TRAIL
- EDDY TRAIL
- WHIRLPOOL TRAIL ♦*
- PARKING
- RESTROOMS
- ACCESS TO GLEN

Visit niagaraparks.com for more information

USA

NO EXIT
TO NIAGARA
PARKWAY

DANGER

FLOW
OF WATER

LEGEND

- Washrooms
- Parking Lot
- Main Loop Trail
- River Trail
- Terrace Trail
- Bouldering Trail
- Cobblestone Trail
- Stairway Access to Glen
- Length of Trail
- Trail Elevation
- Cliffside Trail
- Trillium Trail
- Woodland Trail
- Whirlpool Trail

MAP NOT
TO SCALE

CANADA

TO WHIRLPOOL



The solution – depreciative behaviour

Injuries due to unpreparedness, bad behaviour choices (swimming in the river)

- Increased signage and staff presence in the Niagara Glen, especially on weekends of peak visitation
- Niagara Parks Police conducted targeted patrols, education, and enforcement
- Trail Ambassador program established
- Improved online communications campaigns targeting visitor safety





The solution – environmentally depreciative behaviour

- Primarily loss of vegetation understory and surface compaction from social trails and overuse
 - Trail realignment and blazing project helped
- Niagara Parks is undertaking social trail remediation projects on an ongoing basis



The outcome

- Anecdotaly, realigned trail network improved visitor experience and reduced instances of lost/missing hikers
- Increased/sustained staffing levels during summer months
- Visitor management remains an ongoing challenge (e.g. closing of social trails)
- Greater focus on education related to experiencing sensitive natural areas (ethics, hazards, impacts, etc.)



Takeaways

- Partnerships work!
- Applying a visitor lens to your work is crucial
- Visitor management is a spectrum
- Balancing recreation and conservation will always be challenging
- Organizational culture must consider visitor management and safety, field staff must be equipped and supported to engage with trail users

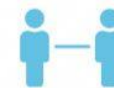


BEST PRACTICES FOR PUBLIC TRAIL USE



1

If you have COVID-19 symptoms, you must stay home and self-isolate. Consider getting tested. Do not use the trails.



2

Trail users must practise physical distancing. Stay at least 2 metres (6ft) apart and wear a face covering when physical distancing is not possible. Do not gather in large groups.



3

Be prepared for limited access to trail facilities. Garbage receptacles, washrooms and potable water may not be available.



4

Travel only on marked trails. The use of closed or unmarked trails is unsafe and may result in fines or penalties.



5

Practice 'Leave-No-Trace' principles while visiting the area.

- Plan ahead and prepare for your visit.
- Travel only on marked trails.
- Do not disturb wildlife or plants.
- Dispose of all waste properly.
- Be considerate of other trail users.

