Ottawa's Great Forest: The South March Highlands

South March Highlands – Carp River Conservation Inc.

[*All photos in this presentation were taken in or of the South March Highlands*]

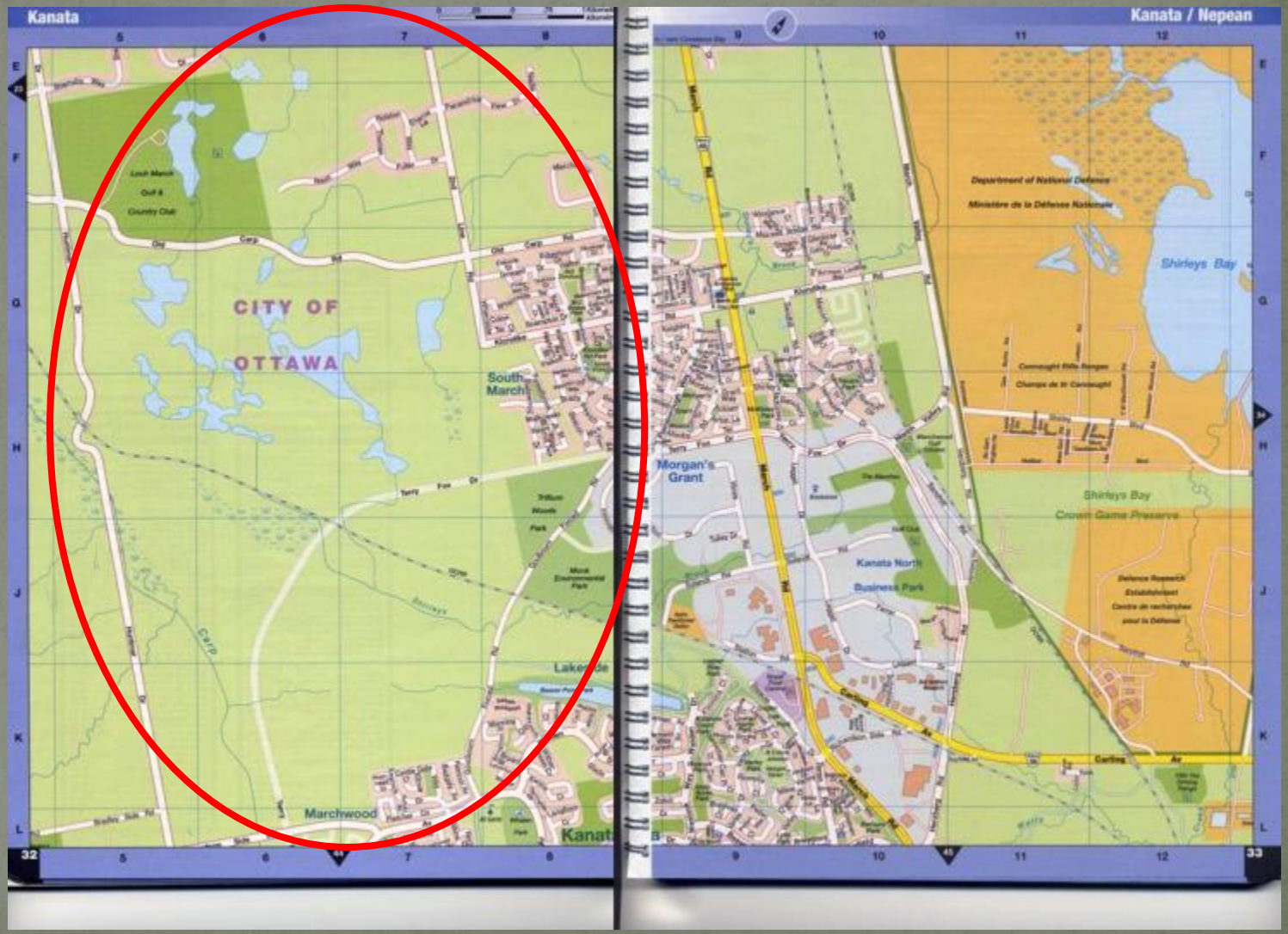
Where are the South March Highlands?

South of March Road

East of Huntmar

West of March Road

North of Where we Are Now



A “Wild Island” Inside Ottawa

10,000 Years Old

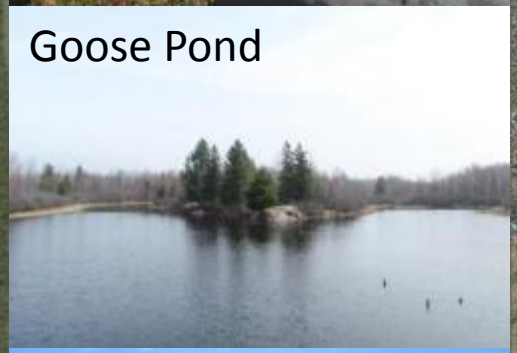
3x Larger Than Stanley Park

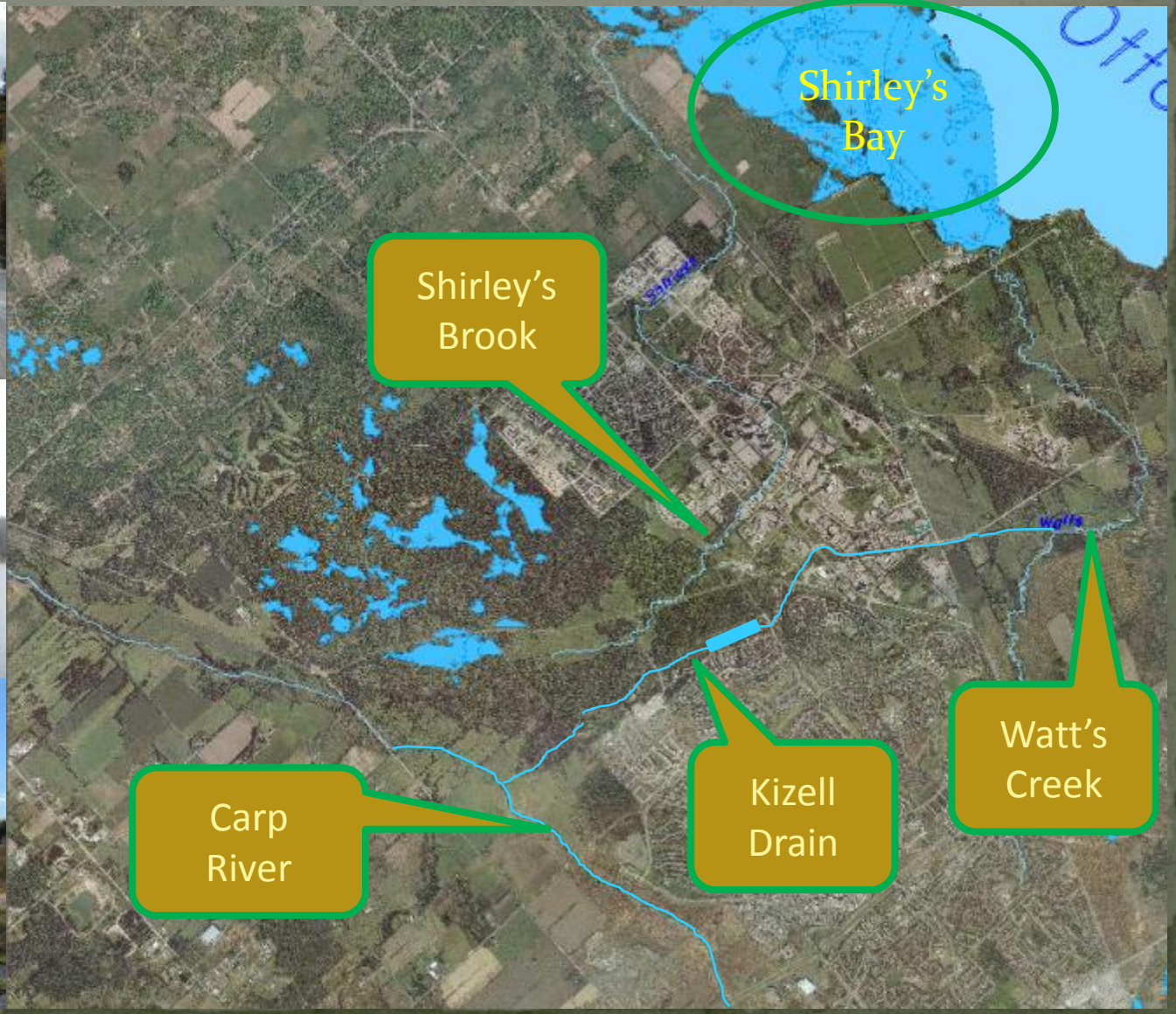
National Capital's 3 Major Eco-Corridors

Transit Systems To The Wild Island

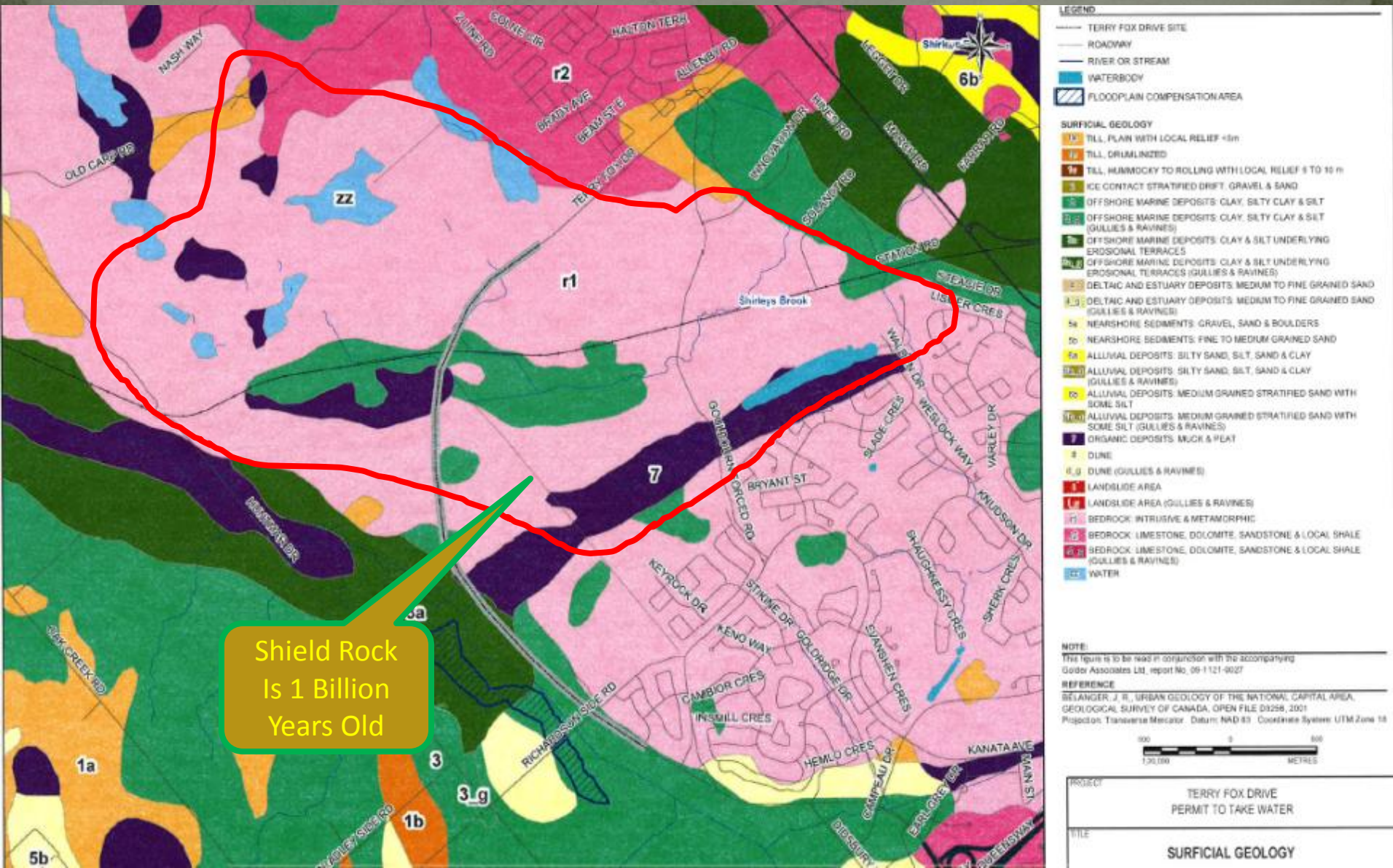
SMH is the Aquifer for North Kanata

Hydrology Affects 3 Sub-Watersheds

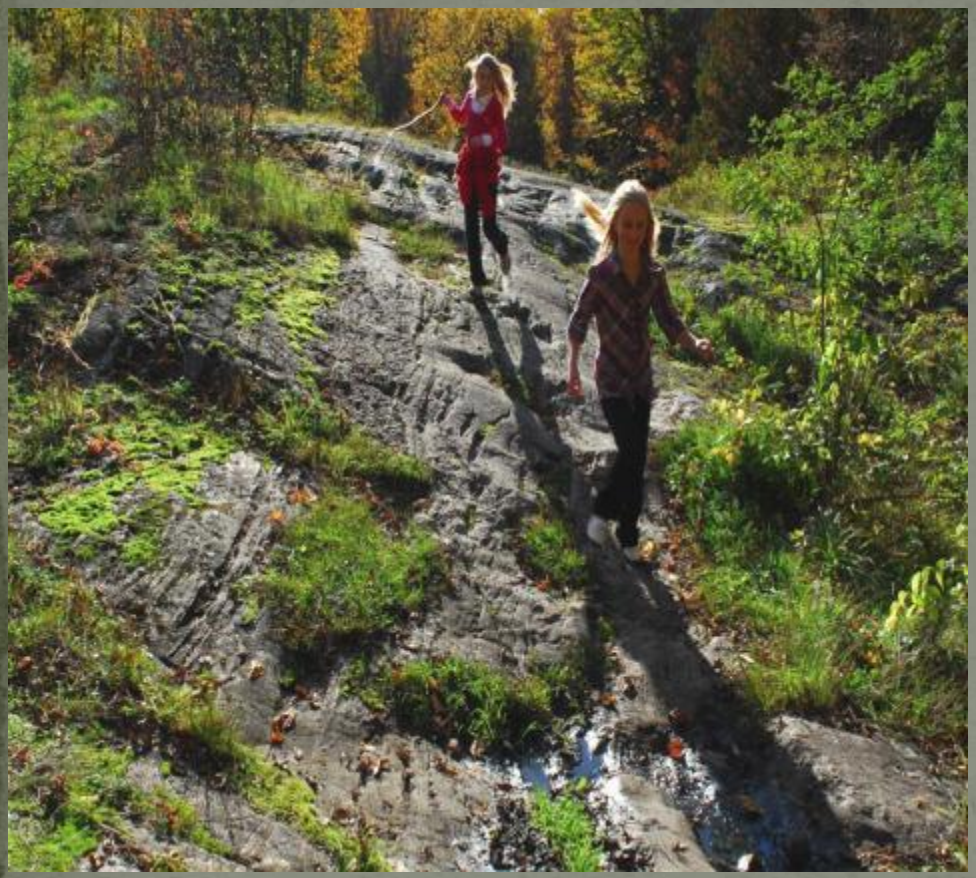




Rich GeoHeritage – Shield Rock is Extensive



Only Location In Ottawa with Exposed Canadian Shield



One of Many Locations Where Shield is Magnificently Displayed

Impressive Even after “Development”

Shield Rock is Always Close To Surface

Max Depth of Shield is 1m

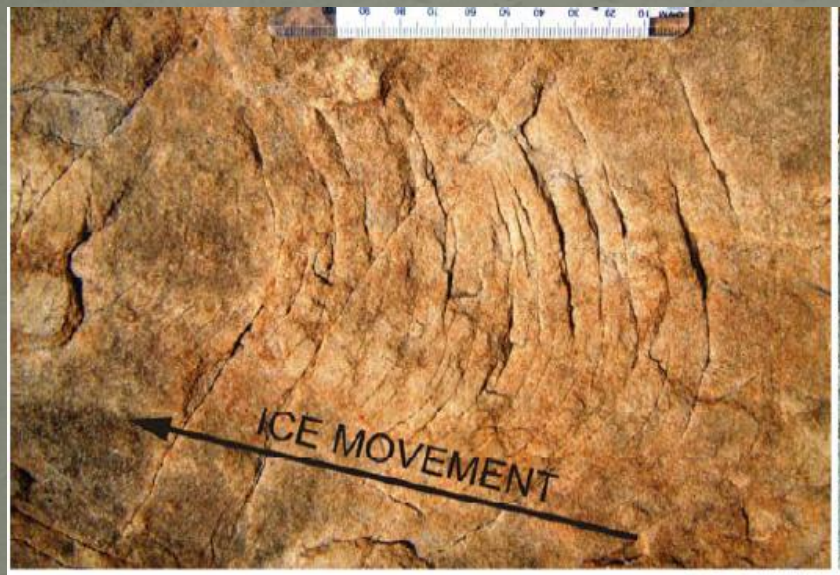
Any Development Requires Blasting

Distinctive and Unique GeoMorphology

Heron Pond's Sandstone Barren Was Once Polished Like a Mirror

500m Long Nepean Sandstone Pavement Barren

Reminders of Ancient Glaciers



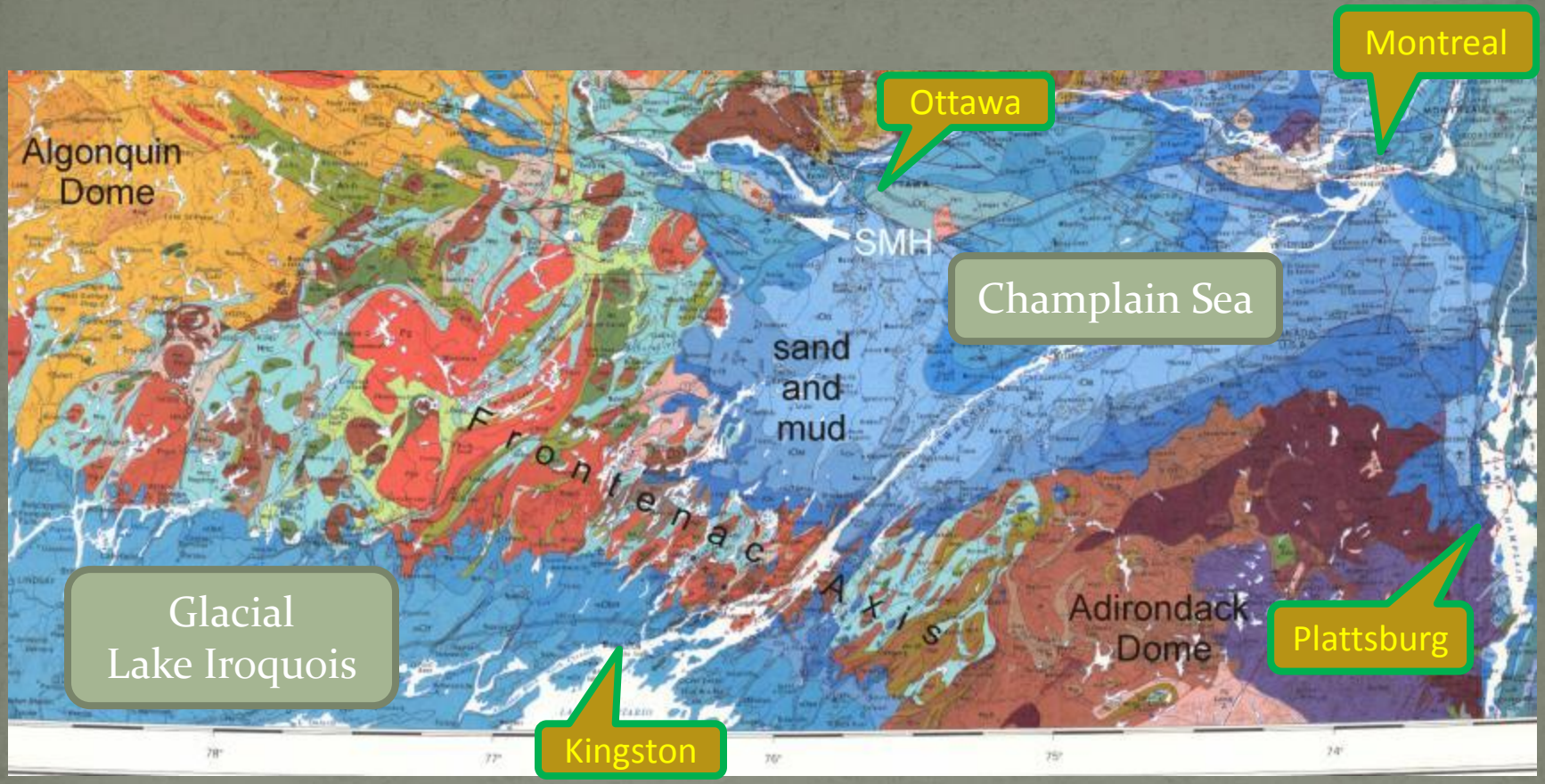
In area B, glacial chatter marks (above); striations (top right) and crescent gouges are evident. Only chatter marks and crescent gouges provide ice movement direction. The striated surface retains a remnant mm-thick glacial pavement of semi-fused quartz grains.

Ancient Sea on Display

A – remnant (symmetrical?) ripple marks; B, C - trough cross beds; D- Eroded Algal mounds? All features suggest a low energy tidal, perhaps estuarine, setting when the area was close to the equator with no vegetation as we know it.

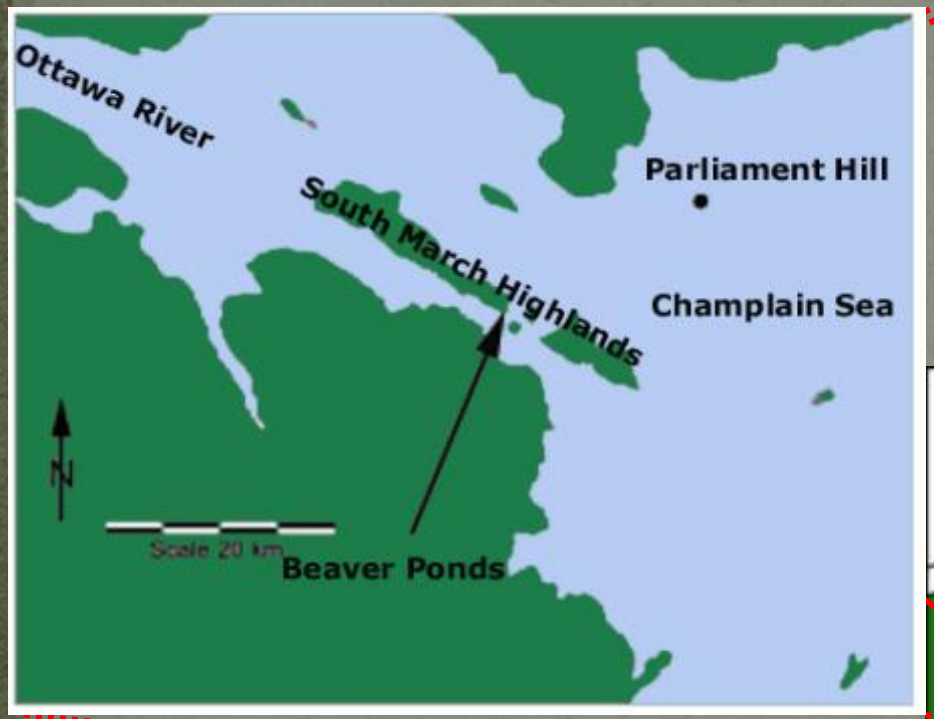
The only known area in Ottawa with unequivocal dewatering cylinders preserved in Paleozoic sandstone – An Ancient Spring

The Original Turtle Island in the Champlain Sea?



The SMH was an island at a time when Frontenac Axis geological formation separated Glacial Lake Iroquois (precursor to Lake Ontario) from salt waters of the Champlain Sea 8,000 - 12,000 years ago

Ancient Civilization Populated Shoreline of Champlain Sea & Lampsilis Lake



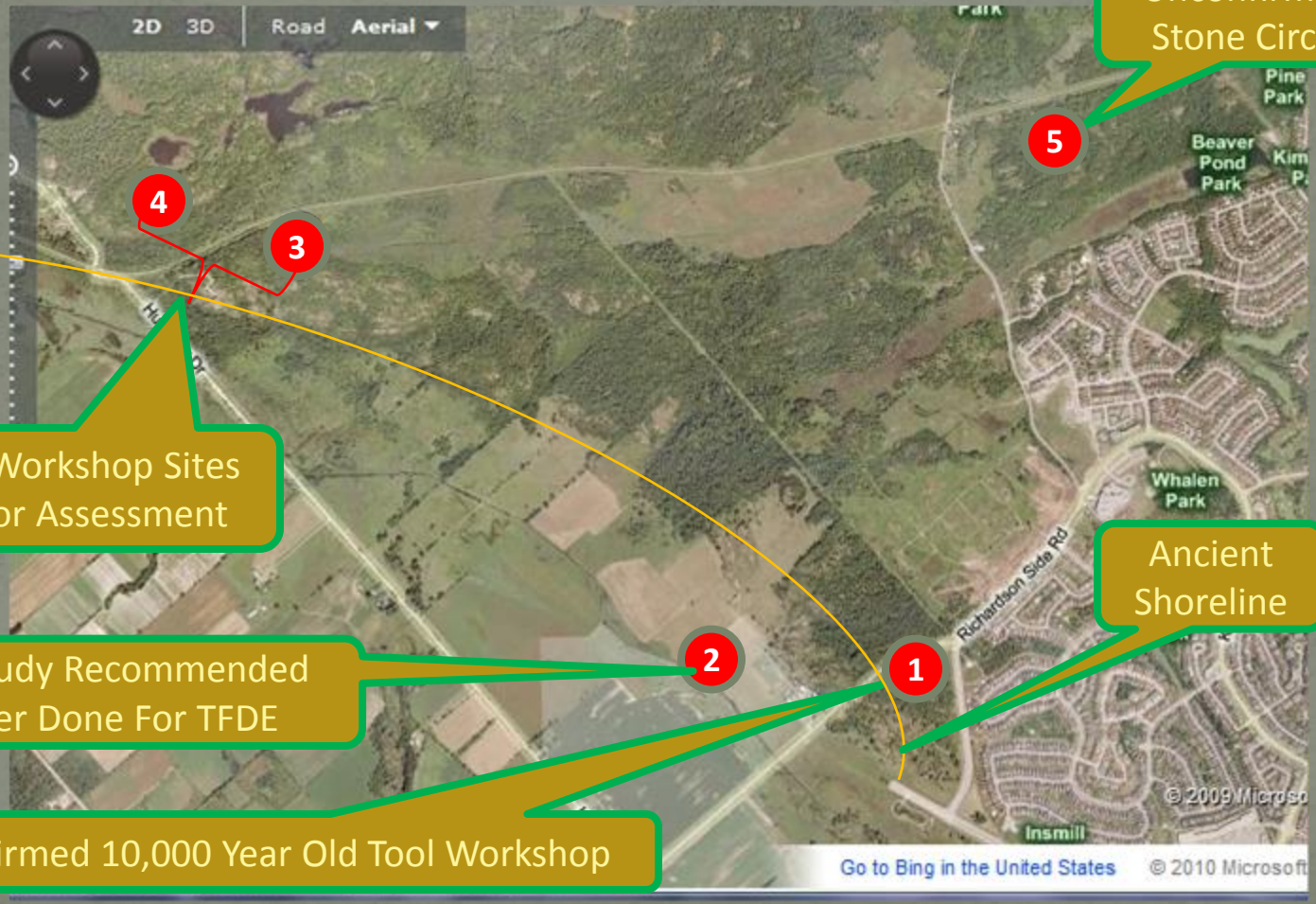
"… the rocky upland areas …. should be considered to be of high potential for occupation by early postglacial sea mammal hunters along subsequent shorelines as local sea levels dropped from about 120 m above current sea level at around 11,000 years ago, to 90 meters above sea level at some time around 9,000 years ago. "

Dr. Robert McGhee – Retired Curator Canadian Museum of Civilization

"Several centuries later, circa 9,800 BCE, a huge freshwater table, Lampsilis Lake, replaced the Champlain Sea in the Ottawa Valley and throughout the St. Lawrence lowlands…we estimate the level of Lampsilis Lake in the central Ottawa Valley … to have been roughly 70 meters. "

Dr. Marcel Laliberte – National Capital Commission Archaeological Resource Potential [1998]

National Historic Value
Known Archaeological Sites In SMH



Unconfirmed Stone Circle

5

4

3

Validated Workshop Sites Waiting For Assessment

Ancient Shoreline

Stage 3 Study Recommended But Never Done For TFDE

2

1

Confirmed 10,000 Year Old Tool Workshop

8,000 – 10,000 Year Old Chopping Tool

Bi-Face clearly developed by hand and consistent with Late Paleo- Early Archaic Indian tool technology

Found at location (1) at elevation where approximate age is 8,000 - 10,000 BCE

Still sharp !

500 Generation Old – Chiselled Core

Tool marks clearly developed by hand

Quartzite indicates Paleo-Archaic Indian

Found at location (3) workshop

Elevation indicates approximate age as 10,000 BCE

Ancient Stone Tool Twice As Old As Stonehenge or Egyptian Pyramids

Pyramidal shape developed by hand

Quartzite material indicates Late Paleo-Indian origin

Found at location (4) workshop

Elevation (115 m) consistent with approximate age of 10,000 BCE

Euro-Canadian Cultural Sites Too

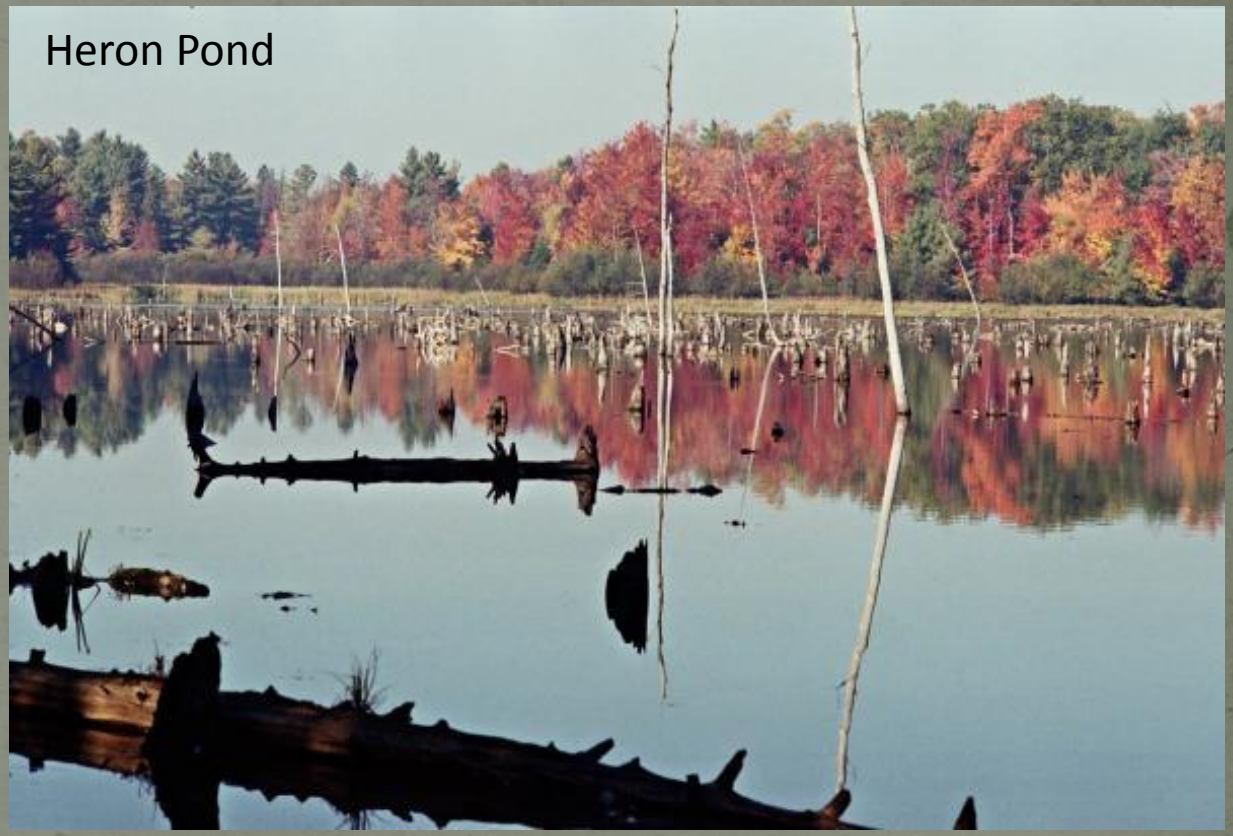
McMurtry's Tannery
(Circa 1860)

Also:

- Several 19th Century homestead sites dating back to 1820 (as old as Pinhey's Point)
- Richardson Stone House dating back to approx. 1860 (as old as the Log Farm)
- A Feldspar Mine dating approximately to 1919-1921 (unique in Ottawa)

SMH Saves March Township from 1870 Fire

- 1870 Forest Fire destroyed most of Ottawa Valley
- Highlands and Wetlands of SMH provided critical firebreak
- Signs of that Fire can still be seen today
- Several trees survived the great Fire and are over 130 years old



Old Growth Commonly Found

MNR Technical Handbook: "Old Growth" (pages 45-46)

- ✓ Large proportion of trees in older age classes
- ✓ Many 120 – 140 years old
- ✓ Broad spectrum of tree sizes with some very tall trees
- ✓ Uneven canopy due to fallen trees
- ✓ Abundant fallen logs various stages of decomposition
- ✓ Forest supports a high diversity of wildlife species

10,000 Year Old Transition Zone

Coniferous

Meets

Deciduous

Natural Heritage: Densest Bio-Diversity In Ottawa

[*Gidakiiminaan*]

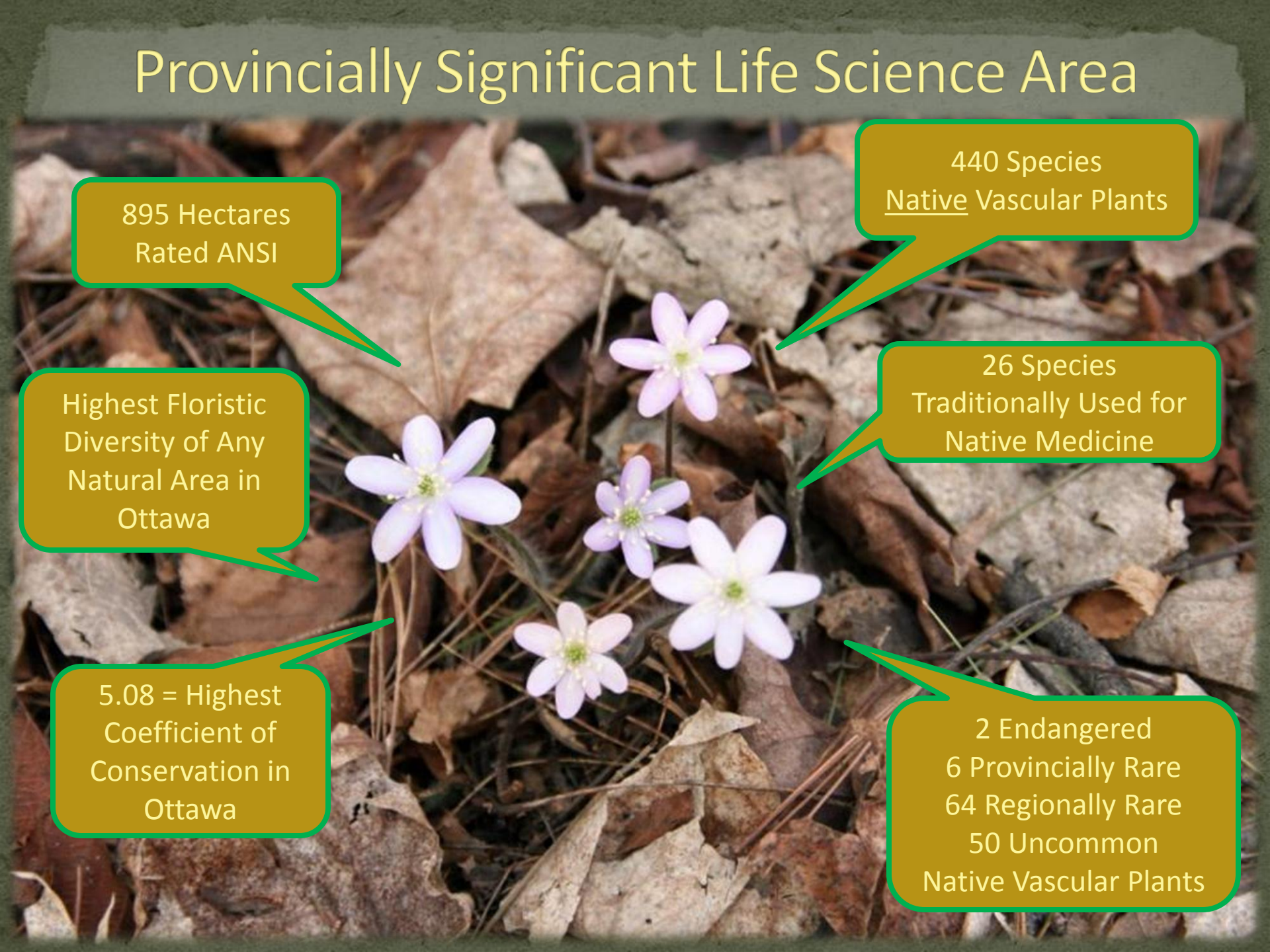
Just Some of the Wildlife Documented

- Red Wolf, Coyote
- Canada Lynx, Red Fox
- Black Bear
- Fischer, Long-tail Weasel
- Beaver, Muscrat
- Ermine, River Otter, Mink
- Snoeshoe Hare, Cottontail Rabbit
- Meadow Jumping Mouse, Deer Mouse, House Mouse, White Footed Mouse
- Meadow Vole, Star-Nosed Mole, Southern Red-Backed Vole
- Barred Owl, Eastern Screech Owl, Great Grey Owl, Great Horned Owl, Long Eared Owl, Northern Saw-whet Owl
- Cooper's Hawk, Red Tail Hawk, Red Shouldered Hawk, Sharp Skinned Hawk, Broad Winged Hawk
- Northern Flying Squirrel
- Silver Haired Bat, Hoary Bat, Big Brown Bat, Little Brown Bat
- Common Shrew, Northern Short-tailed Shrew, Pygmy Shrew, Smokey Shrew
- Blanding's Turtle, Snapping Turtle, Eastern Painted Turtle, Musk Turtle

Largest Deer Wintering Yard In Ottawa

- 875 ha deer habitat

Provincially Significant Life Science Area



Trillium Woods is Part of SMH

"Trillium Woods, which is like a chunk of the Gatineau in the urban landscape of Ottawa, with rich plant and animal life found nowhere else in the urban part of the City"

Ottawa Urban Natural Areas Environmental Evaluation
[Muncaster & Brunton, 2008]

+ Provincially Significant Wetland Complex

136 Nesting Bird Species in the SMH

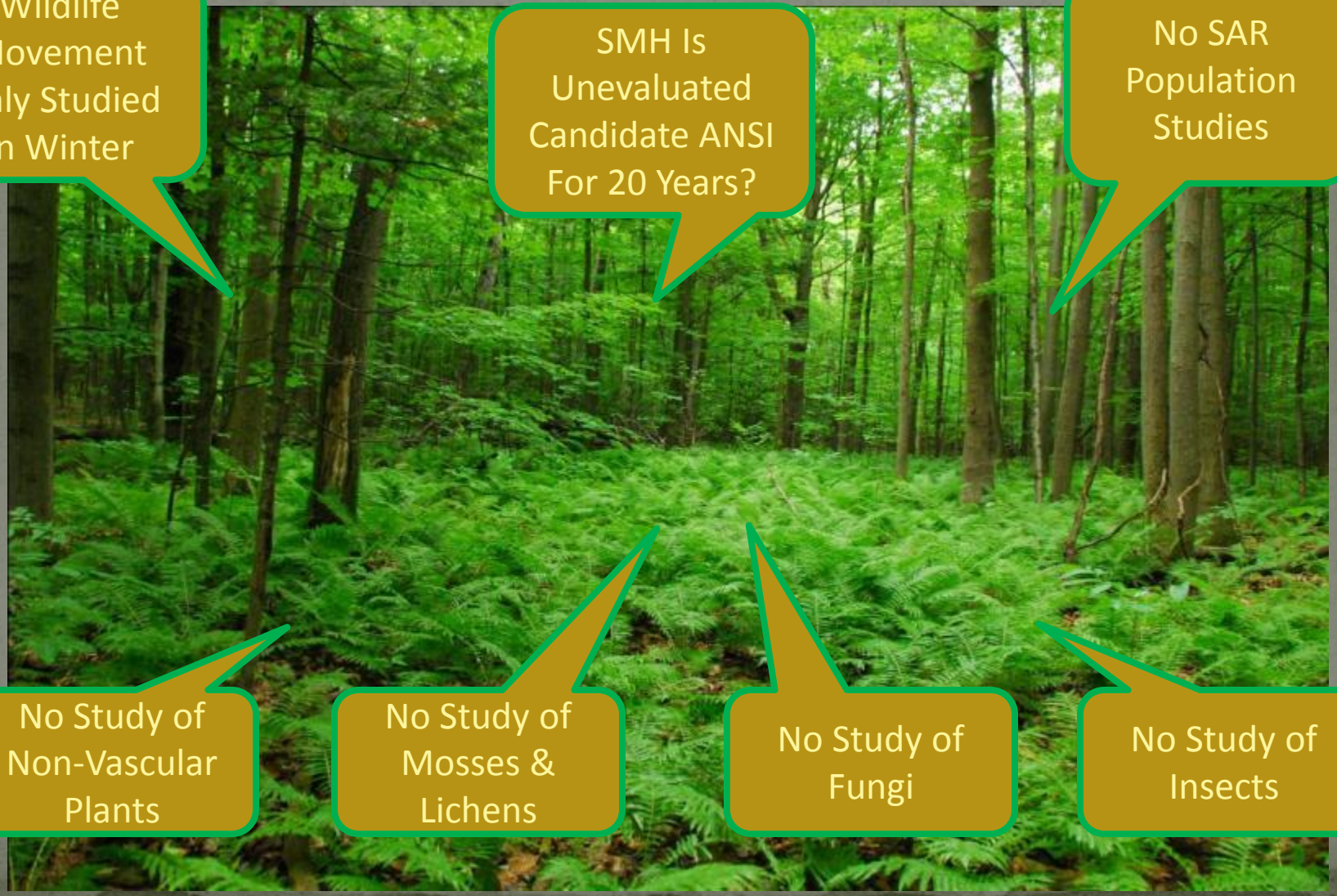
Undocumented Number of Vernal Pools

Over 26 identified species of Herpetofauna

Monarch Butterfly is Species-at-Risk in South March Highlands

3 Threatened Species
2 Special Concern

Yet No Comprehensive Biological Survey Ever Done



20 Documented Species At Risk

Endangered or Threatened

- American Ginseng
- Butternut
- Loggerhead Shrike
- Bobolink
- Whip-poor-will
- Golden Winged Warbler
- Olive Sided Flycatcher
- Western Chorus Frog
- Blanding's Turtle
- Eastern Musk Turtle
- Chimney Swift

Special Concern

- Bridle Shiner
- Short Eared Owl
- Black Tern
- Common Nighthawk
- Snapping Turtle
- Eastern Milksnake
- Monarch Butterfly
- Bald Eagle
- Red Headed Woodpecker

18 Candidate SAR Also Found in SMH

- Evening Grosbeak
- Eastern Wood Peewee
- Wood Thrush
- Bank Swallow
- American Bullfrog
- American Kestrel
- Belted-Kingfisher
- Field Sparrow
- Eastern Red-Backed Salamander

- Blue-Spotted Salamander
- American Toad
- Bluntnose Minnow
- Boreal Chickadee
- Killdeer
- Midland Painted Turtle
- Green Frog
- Wood Frog
- Northern Two-Lined Salamander

Species Found In SMH That Are Also Listed For Evaluation by COSEWIC as Potential Species at Risk

11 Species Extirpated By Development

- Cathcart's Woodsia
- Oregon Woodsia
- Spiny Coon-tail
- Adder's-tongue Fern
- Back's Sedge
- Large Duckweed
- Long-spurred Violet
- Showy Orchis
- Southern Arrow-wood
- Strawberry-blight
- Virginia Spring Beauty

Development Eats Away at Ottawa's Great Forest

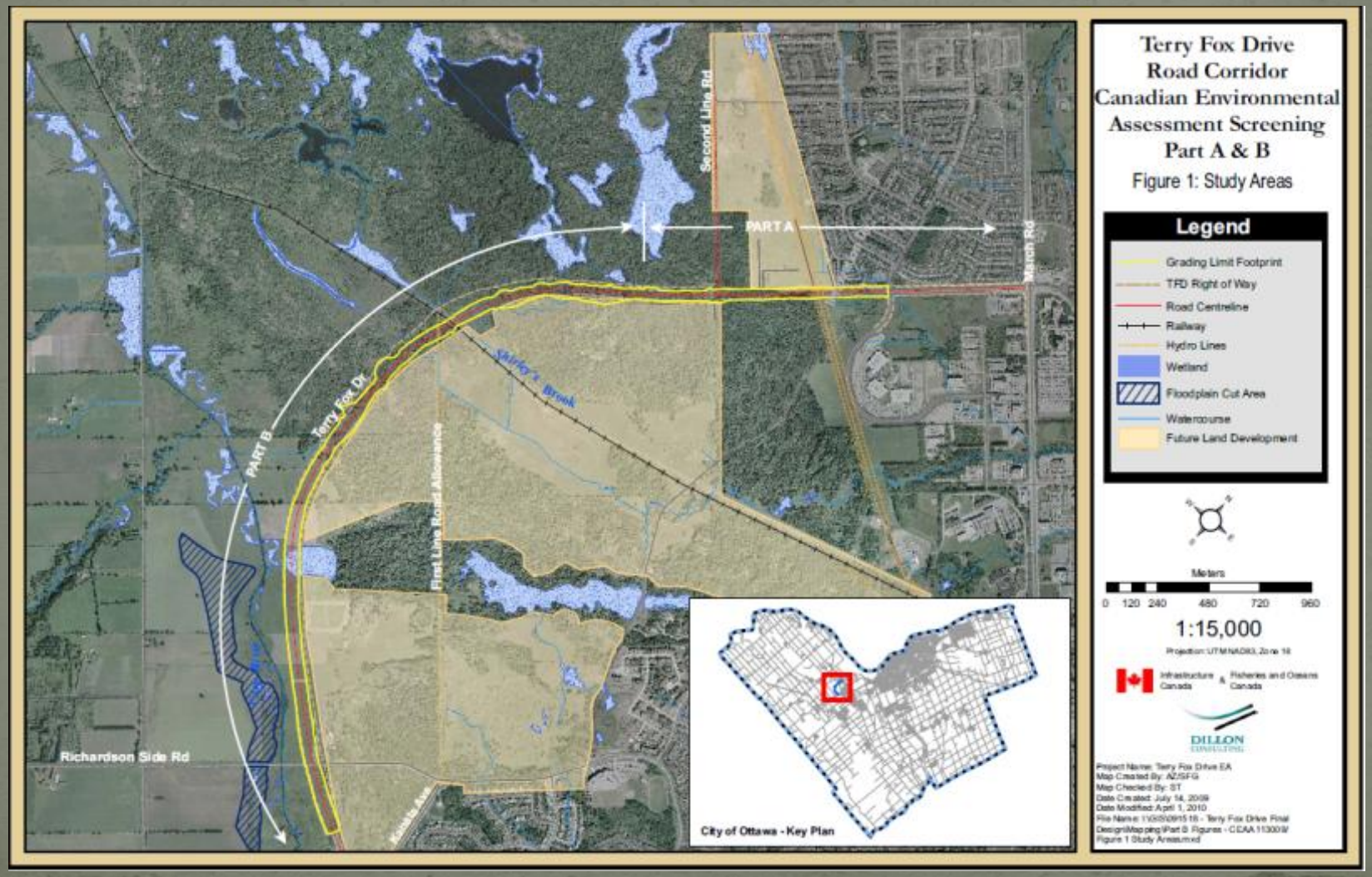
Impact of Winter Tree Clearing on Wildlife

- Denning mammals killed by tree-cutting machines or freeze-to-death due to loss of shelter

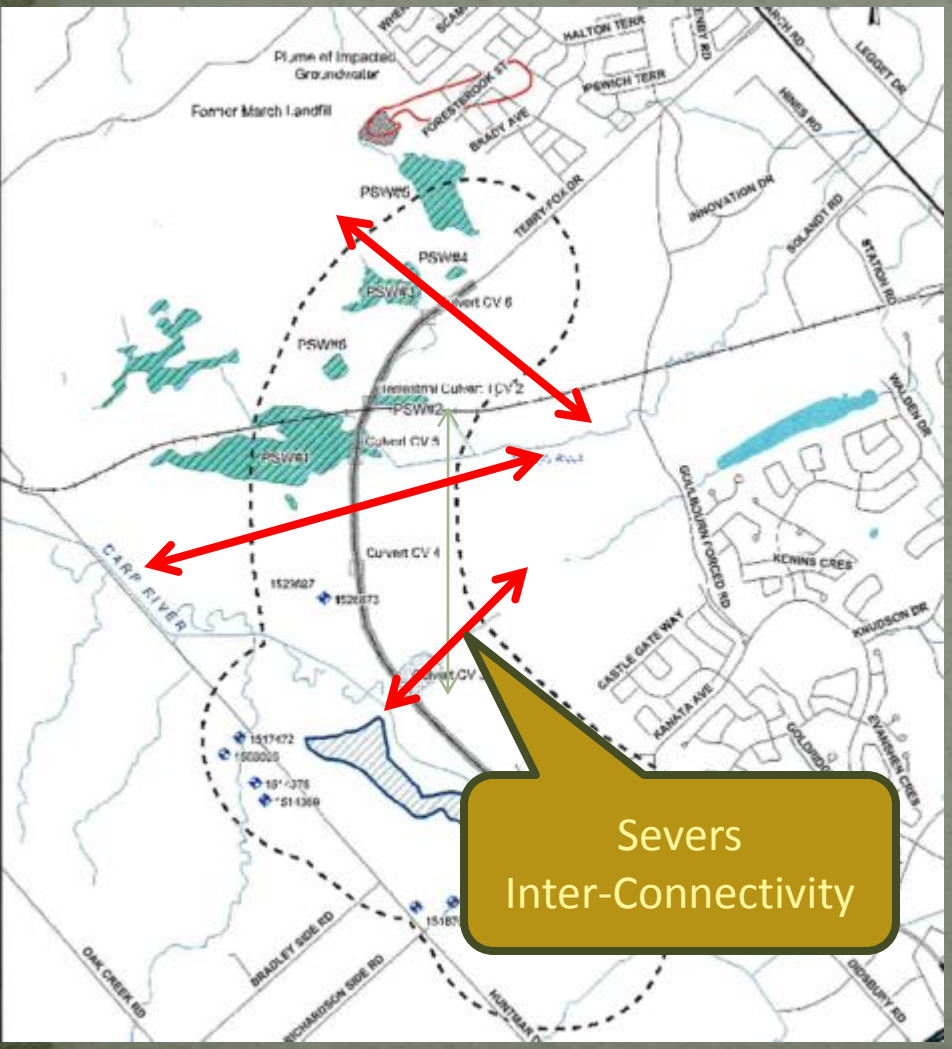
- 2/3 of Porcupine Population estimated killed in Beaver Pond Forest due to Winter Clearcut

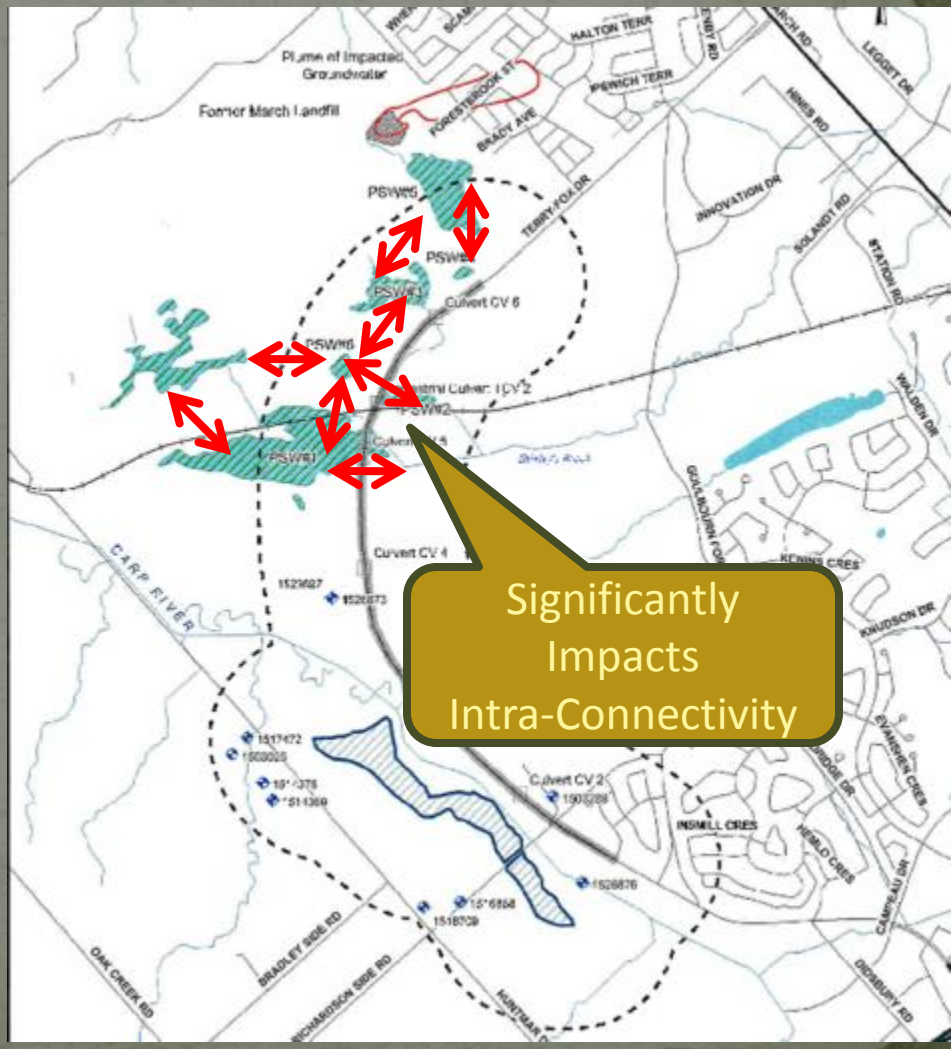
- Hibernating amphibians & reptiles are crushed by heavy equipment

Terry Fox Drive Extension Severs SMH by ½ Development Currently Underway in Interior Half



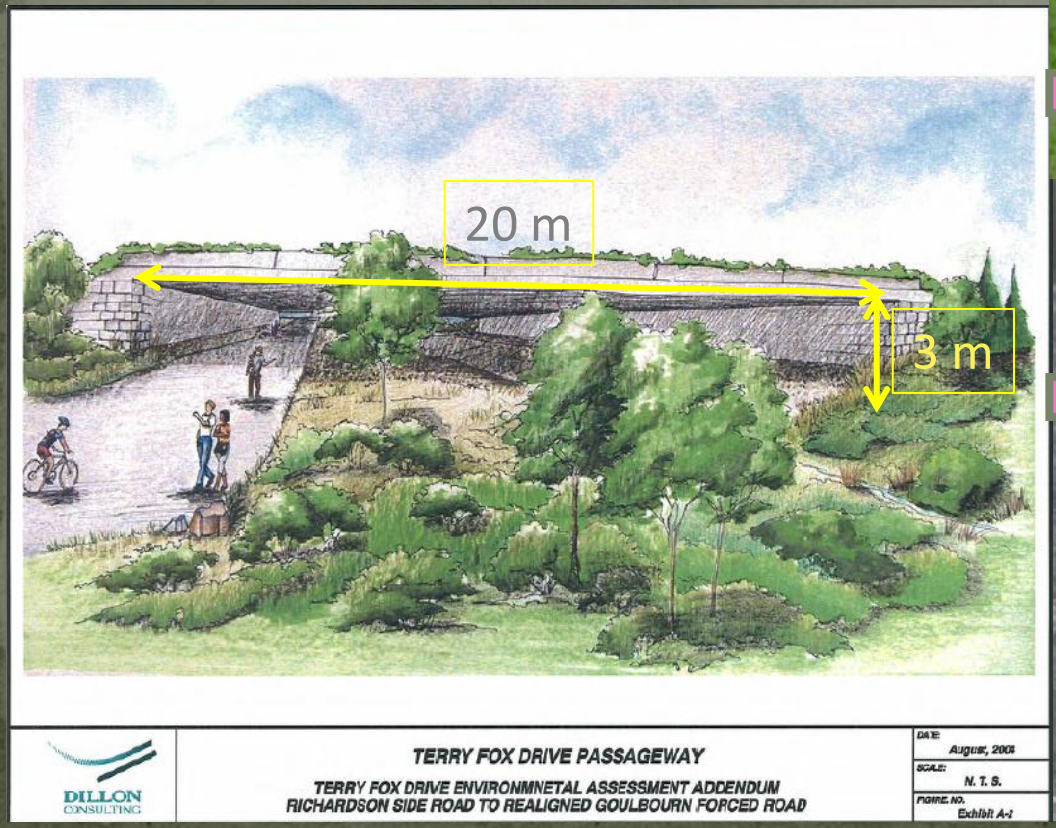
City Admits That TFDE Severs Eco-Connectivity

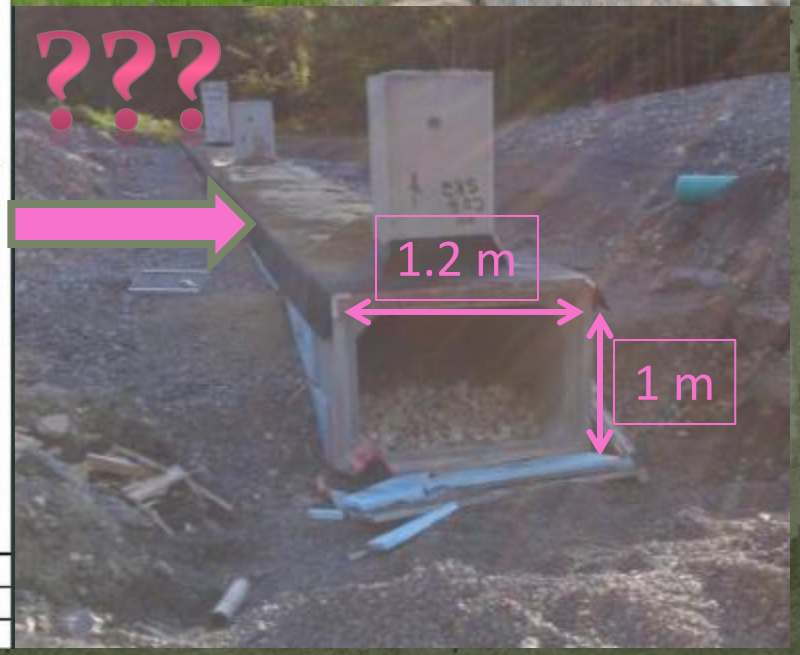




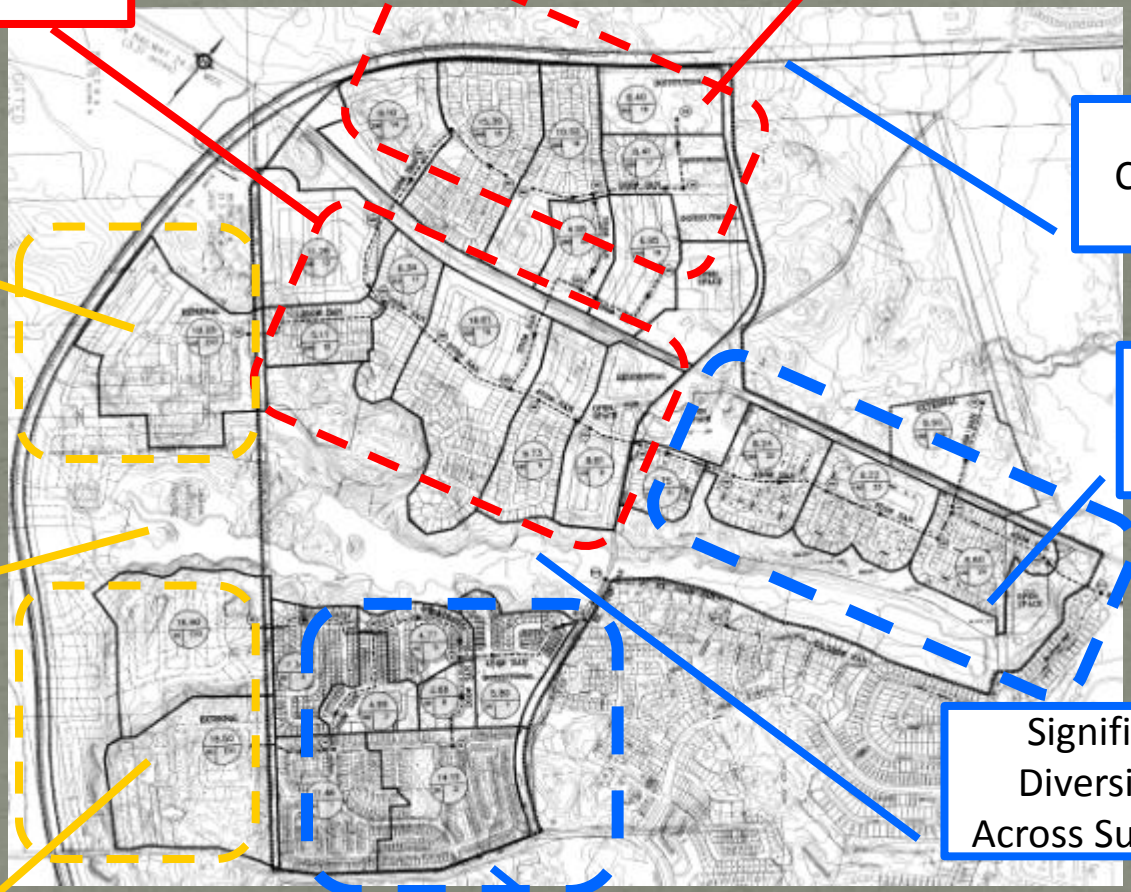
Unmitigated Environmental Impact

- 2007 EA Addendum
  - Promised Eco-passages & No Fencing
- 2010 As-Built Road
  - Eco-passages replaced by unusable tunnels
  - Fencing creates “Berlin Wall”





Current Status of Development



KNL Phase 7 (Future)

KNL Phase 8 (Future)

Richardson Ridge Phase II (Regional Group)

TFDE Now Chokes Trillium Woods

Planned SWM Facility In PSW

KNL Phase 9 Clearcut (Beaver Pond)

Richardson Ridge Phase I Clearcut (Regional Group)

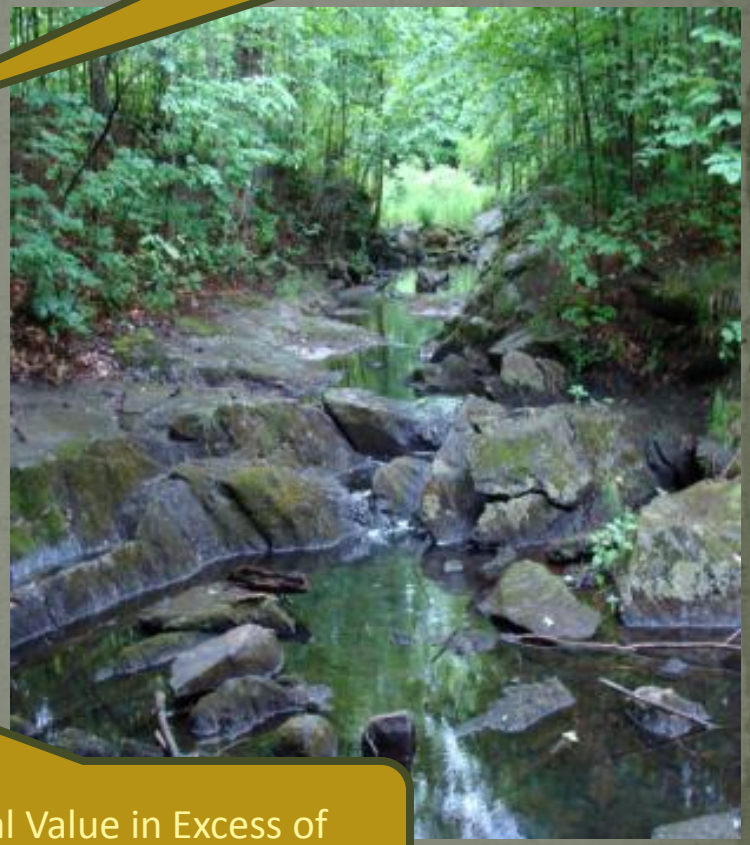
Significant Water Diversion Planned Across Sub-Watersheds

Urbandale & Richcraft In Progress Phases 1 - 6

Green Infrastructure is Multi-Purpose

- **Regulating**
  - Wetland water storage & retention
  - Filtering and cleaning air & water
  - Natural control of pests & insects & related diseases
  - Natural prevention against invasive species
  - Climate & temperature regulation
- **Provisioning**
  - Replenishment of natural resources
  - Renewable supply of food, fibre, water
  - Habitat for Biodiversity
  - Eco-corridor Functions
  - Agricultural Pollination
- **Cultural**
  - Educational & Artistic Value
  - Health & Spiritual Benefits
  - Recreational & Eco-Tourism Value
- **Supporting**
  - Soil formation & Erosion control
  - Carbon storage & GHG uptake
  - Nutrient Cycling

All These Functions Are Free and Automatically Renewable at Zero Cost



Total Value in Excess of $35 M per year in SMH

“Developed” Infrastructure is Single Purpose

- “Development” reduces multi-purpose landscape to a single purpose
  - Housing
  - Commercial, etc.
- “Developed” Infrastructure must be rebuilt / repaired periodically
  - Roads, Bridges
  - Subdivisions
  - Storm Water Management Facilities
  - Construction = Temporary job creation vs. Eco-Tourism = Permanent jobs
- “Development” impacts adjacent environment
  - Loss of wetland function directly related to reduced water quality in Ontario
  - Significant loss of biodiversity and increase in invasive species

Located Just Beyond Current Greenbelt Corridor

SMH Mistakenly Excluded from 3 working Concepts for Greenbelt Master Plan

“Shepherd’s Hook” Extends Greenbelt

Alternative Vision of Eco-Corridors Revitalizing The Emerald Necklace

Will You Defend This Forest?

Questions About South March Highlands?