



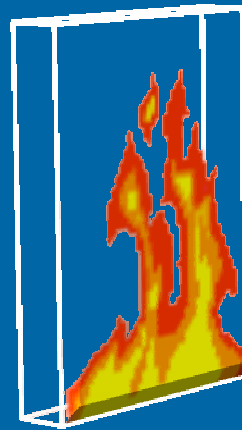
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Fire history, ecology and management in Point Pelee National Park

¹Leonardo Cabrera, ¹Sanjay Tewari, ²Clint Jacobs and ¹Steve Travis

¹ Point Pelee National Park; ² Walpole Island First Nation

The faces of fire



*“Fire is both incredibly destructive and naturally renewing,
a problematic hazard and key management tool.”*

C. Kull



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Point Pelee National Park



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The current natural context

- Dominance of marsh and ponds
- Mesic Carolinian forest
- Lake Erie Sand Spit Savannah (LESSS) (dunes, grasslands, tickets, shrub and woodlands)



A globally rare ecosystem



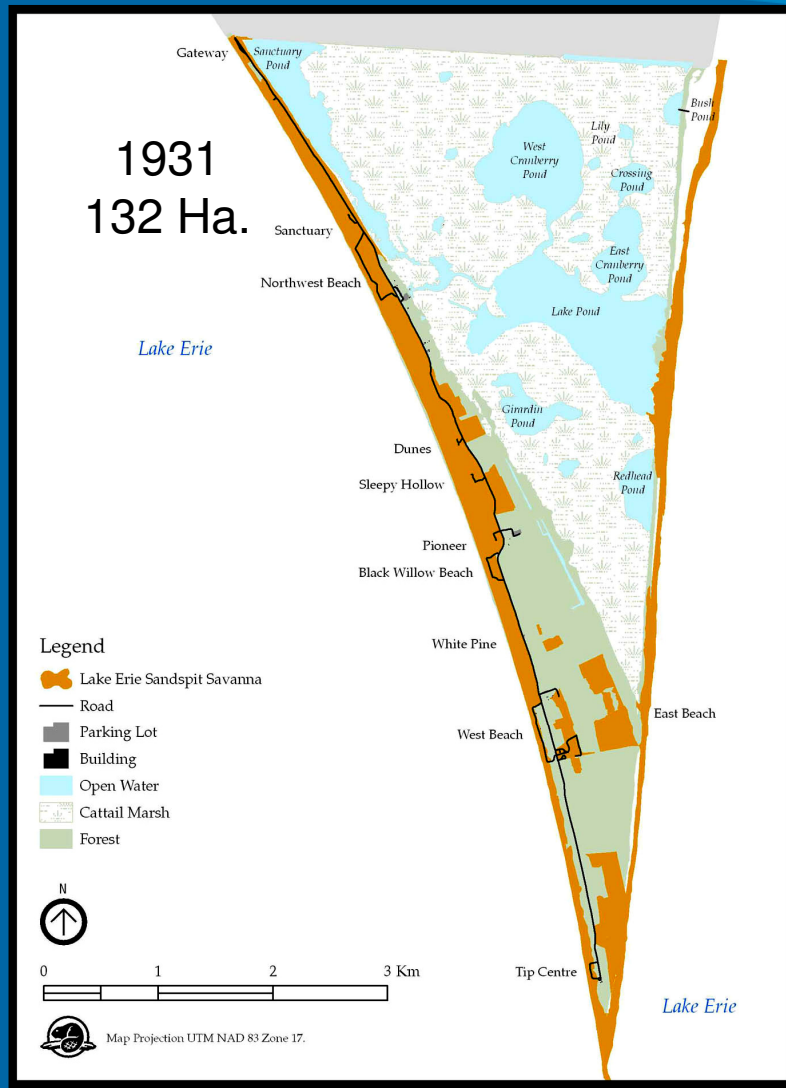
The Lake Erie Sand Spit Savannah



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LESSS integrity is threatened



Methods

- Field observations
- Literature review
- Workshops
- First Nations engagement
- Integrated monitoring



Workshop at Point Pelee, 2009.



Results



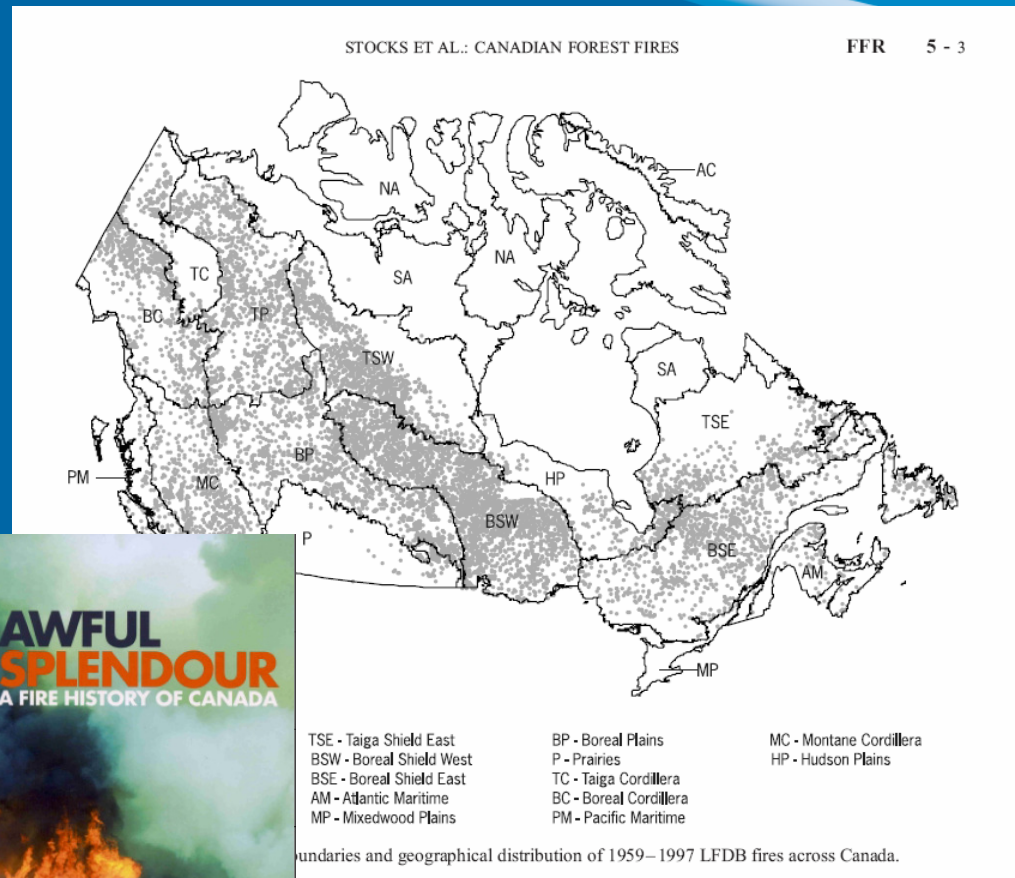
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Canada: a pyrogenic country !

- “Fire in Canada” (a million of hits on Google scholar)
- “Fire in Ontario” (thousand of hits on Google scholar)
- However, there is an informational gap on Canada’s southern mainland



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Ancient Fires: before 1600



Fuel and people fed intensively grassland and marsh fires (Sharp, 1994; Vale, 2002; Pyne, 2007)

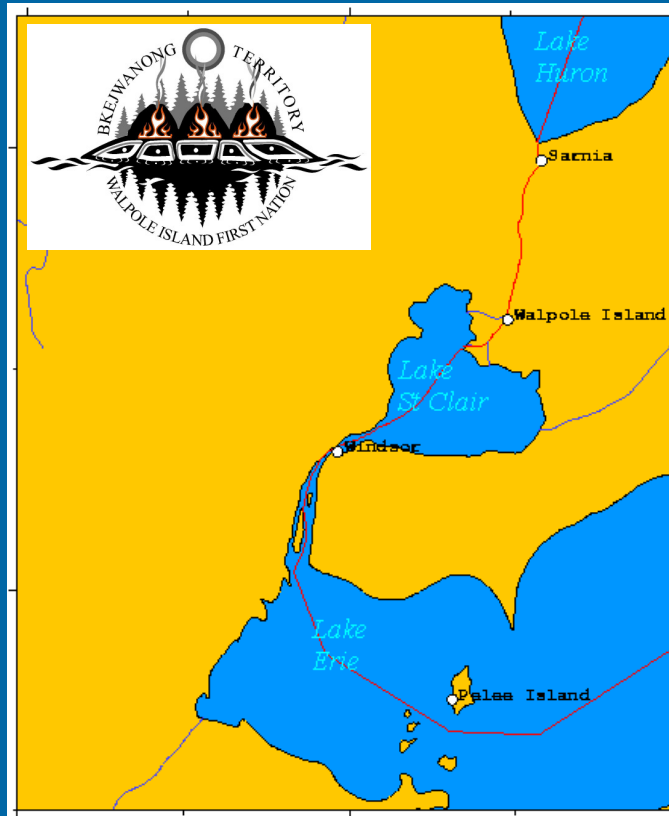
Terasamae's (1967) paleo-ecology study demonstrated the ancient fire presence in Point Pelee marsh



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Ancient fires



Purpose	Specific use
Conservation	Protect specific plant species
Cultural	Identity
Field preparation	Fertilize land
Cleaning	Remove pests and fight bush
Travel	Clear trails
Food provision	Promote hunting grounds and early successional plants

Source: Walpole Island First Nation (spring 2010)

The Council of Tree Fires
Ottawa, Ojibway and Pottawatomi “–Keepers of the fire”



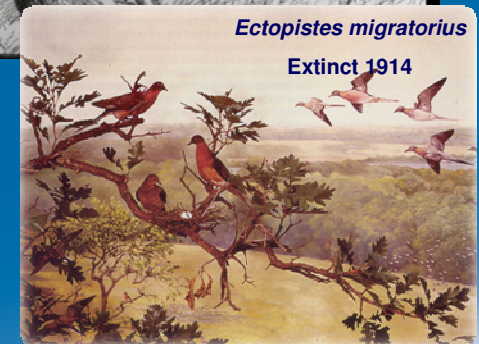
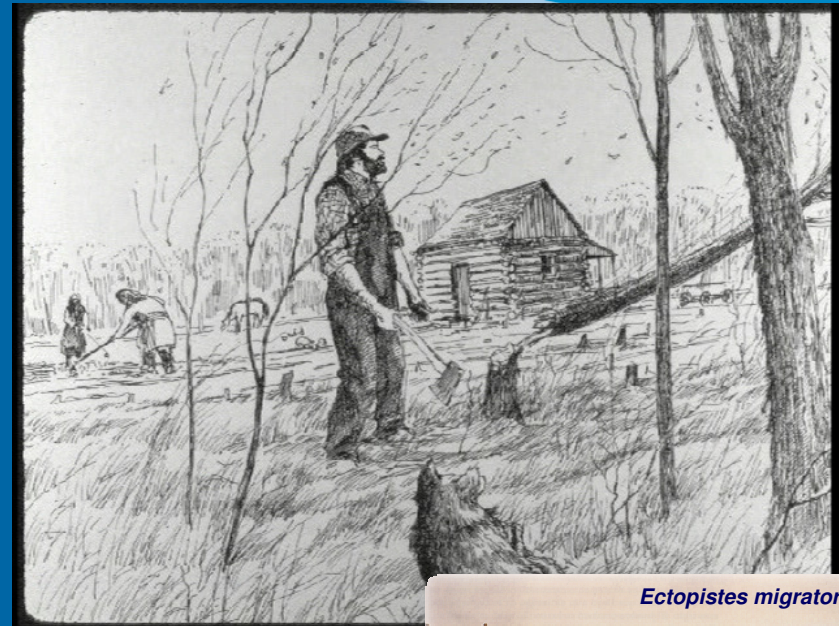
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Historic Fires: from XIV century to 1918

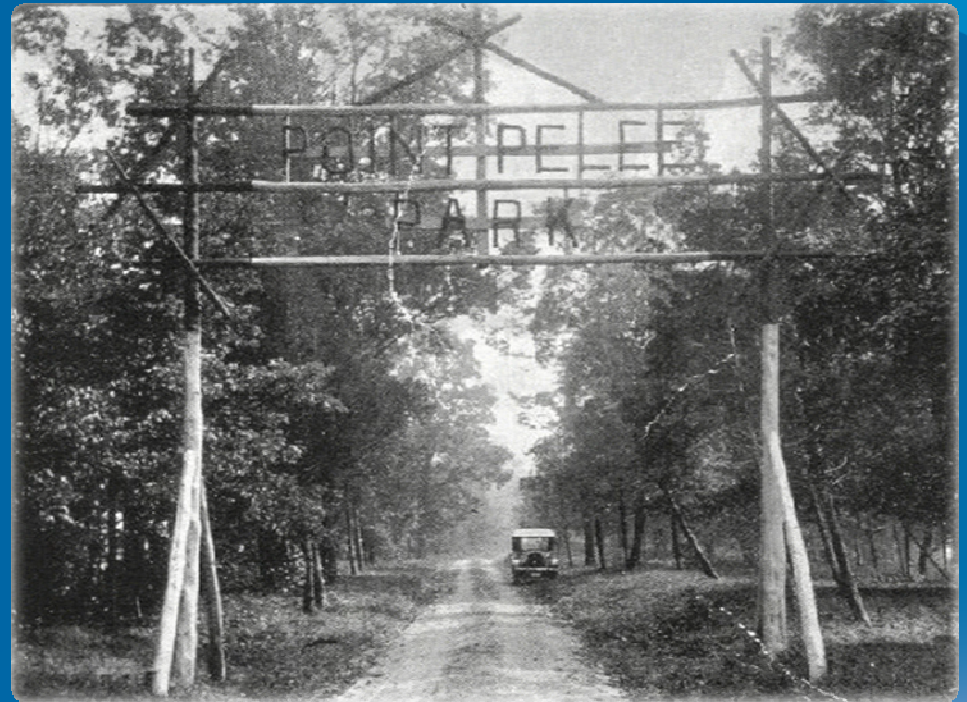
- Diverse societies promoted drastic changes on land-people relationships
- Land privatization forced new landscapes and altered Indian fire regimes. Marsh fires continued for hunting, and slash and burn for agricultural practices.
- Regional and global extinctions did happen. The point was heavily used.



(Norris & Pain, 2002; Santana, 2005)



Point Pelee National Park, 1918



Use and conservation: a growing conflict



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Intensive use at the Point



POINT PELEE PARK COLONY
Point Pelee on the Lake
A COMMUNITY OF SUMMER HOMES

42 Miles from Detroit by Auto

Electric and Steam Road Transportation to Leamington

THE properties of the Point Pelee Park Co., Ltd. borders the Canadian National Park and the shore of Lake Erie.

No finer home site is to be had than is afforded on this beautiful property. The wonderful and varied tree growth, the vast stretch of wide sand beach, the point stretch-

character and all improvements will give a distinct advantage aside from the beautiful natural surroundings and the joys of fishing, hunting and boating.

The well known Landscape Architect, Mr. T. Glenn Phillips has beautifully platted the property into lots aggregating one-fourth acres.



Present Fires: from 1918

Year	Day	Details	Ignition	Information Source
1931	?	Fire destroyed wooden shanties on east beach	Accidental	Battin., et al 1978
1936	August 4th	<i>"Swept across marsh and continues to threaten Park on a two mile front for eight days" "The musk being dried to such an extent bordering park and making it very hard to extinguish".</i> Burned area 30 acres ranging from 6 inches to 2 feet in depth.	Resistant fires ?	Parks records
1937		<i>"A fire began on the northwest corner of the marsh. It burned 20 acres of marshland before it was controlled"</i>	Resistant fires ?	Parks records
1966	March 9th	Experimental burning was carried out in the northeast corner of the marsh under moderately dry conditions with a 13 mph winds. The area burned was 1sq. mile.	Prescribed burn	Parks records
1975	July	21-30 acres fire on the northeast corner of the marsh.	Natural/ Lightening	Leamington Post July 16, 1975 Windsor Star July 17, 1975
1997	June 11	Red cedar savannah restoration – 60x60m plots subdivided into four 30x30m plots	Prescribed burn	Falkenberg , 2000



Map of fires for Point Pelee NP



Marsh fire, PPNP 1988



Where are we?
What are the challenges?
What are the faces of fire?



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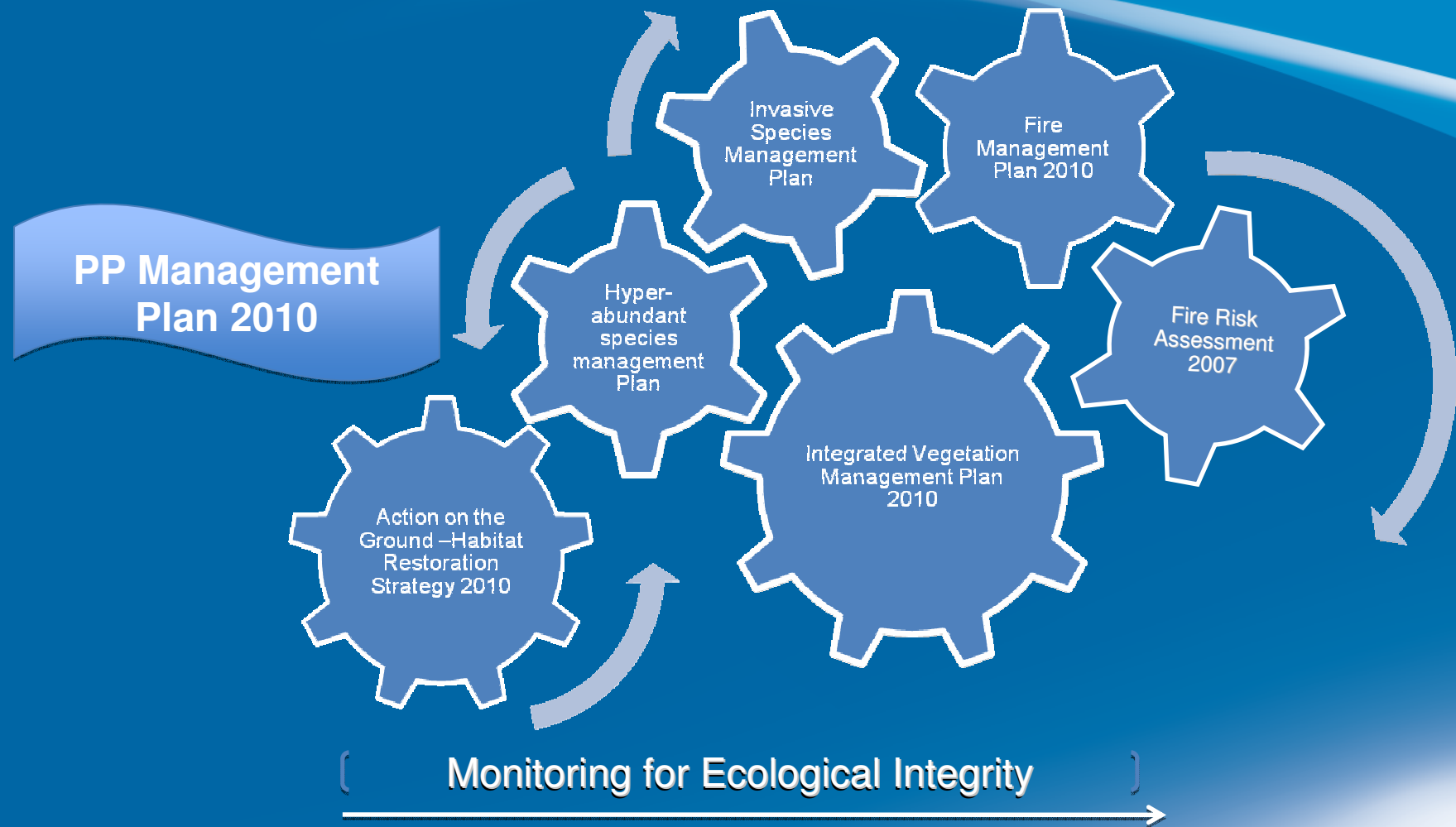


Reintroducing fire in Point Pelee

- Vision: to improve the ecological integrity of the park under a holistic, adaptive, participative and sustainable strategy.



A synergistic process begin...



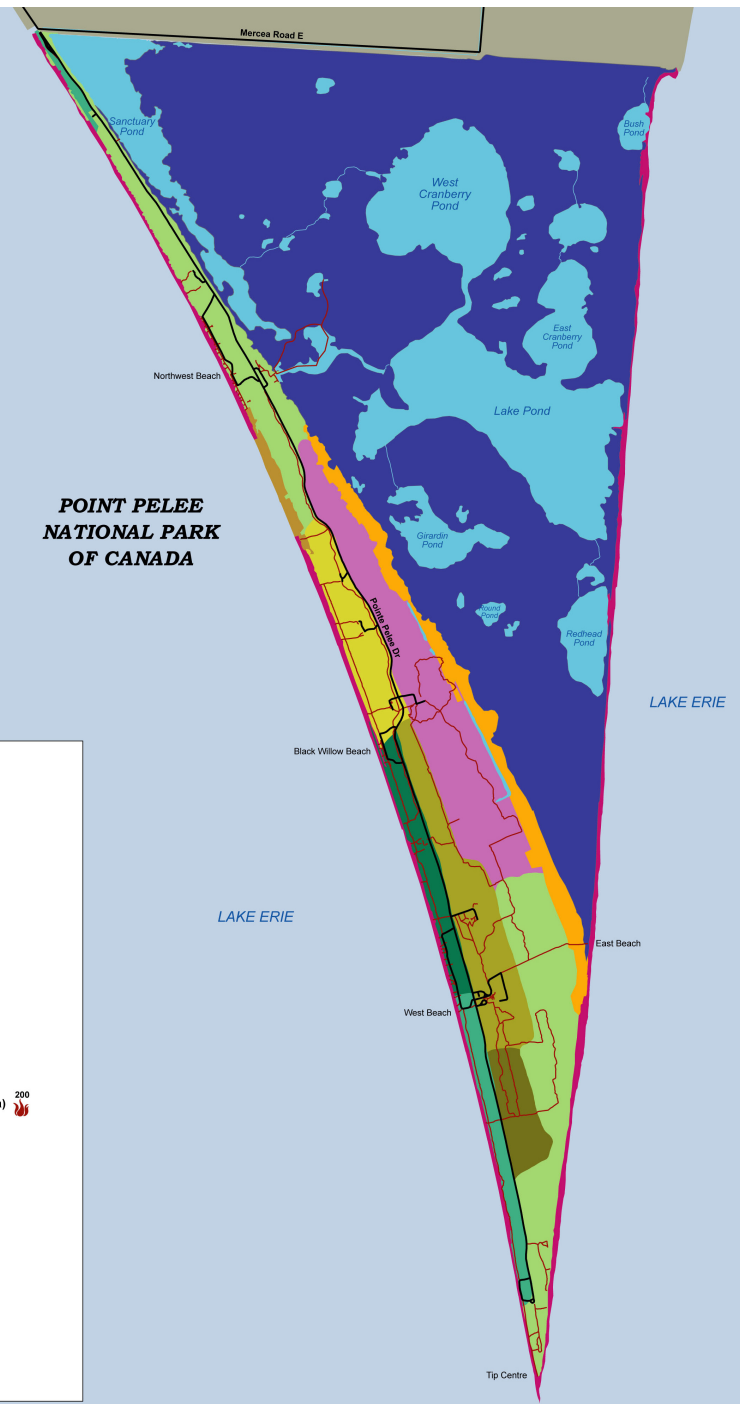
Vegetation communities, fire dependency and fire cycles are defined in the Fire MP (2010)



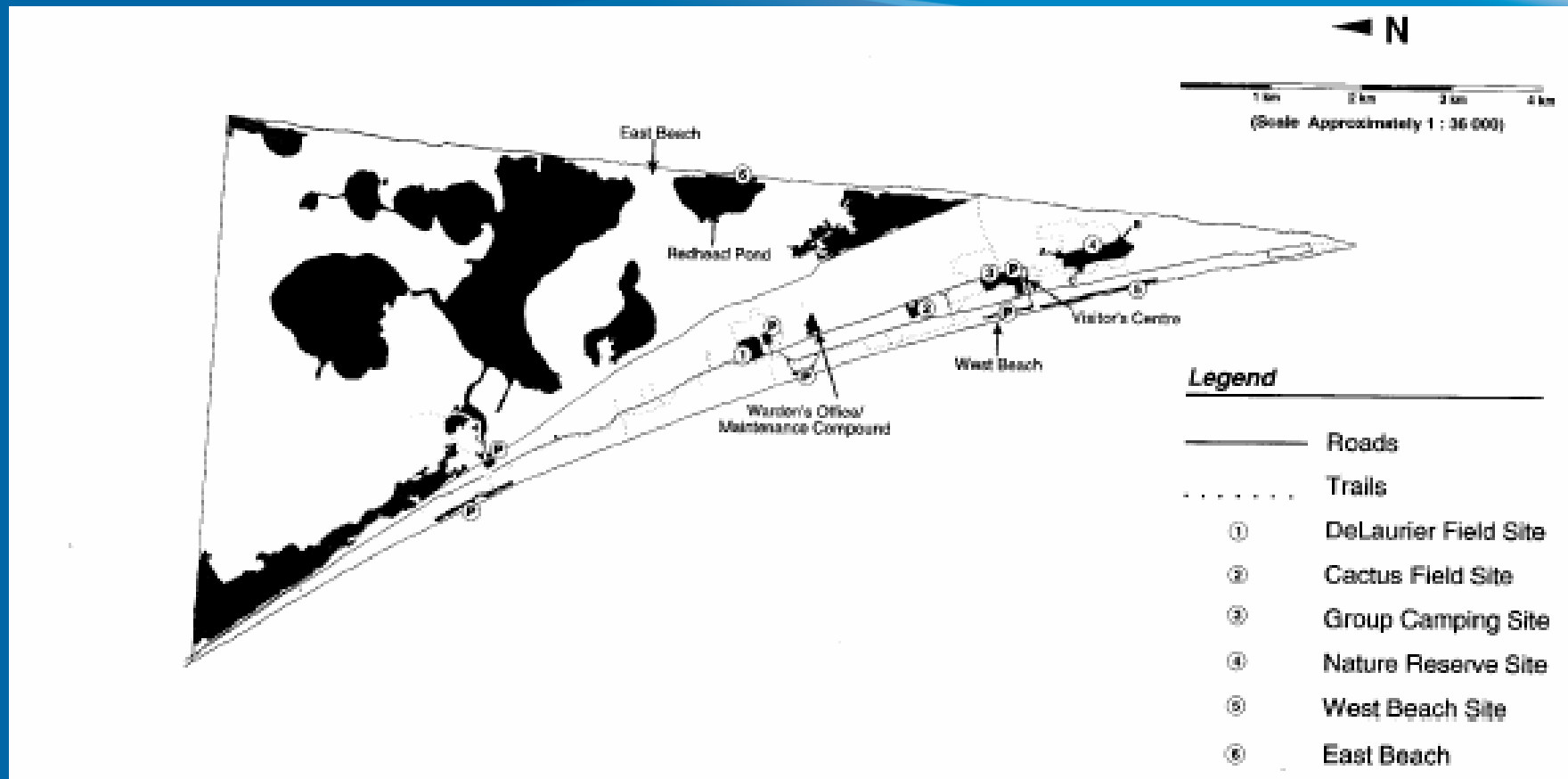
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VEGETATION COMMUNITIES

I - SHORELINE (42.4 ha)	0
Shoreline	
II - BEACHGRASS DUNE (5.7 ha)	5
Beachgrass Dune	
III - WOODLAND (103.2 ha)	50
White Pine	
Red Oak	
Red Cedar	
IV - L.E.S.S.S. - BEACH (46.3 ha)	75
Cedar Hoptree Dune	
Cedar Sand Dune	
V - UPLAND DECIDUOUS FOREST (130.8 ha)	200
Upland Deciduous Forest	
VI - SWAMP FOREST (36.8 ha)	0
Swamp Forest	
VII - L.E.S.S.S. - INTERIOR (87.6 ha)	50
Meadow, Grassland, Thicket	
VIII - MARSH (1037.6 ha)	50
Marsh	
Pond	
	50
Fire Cycle (years)	



Priority sites for restoration

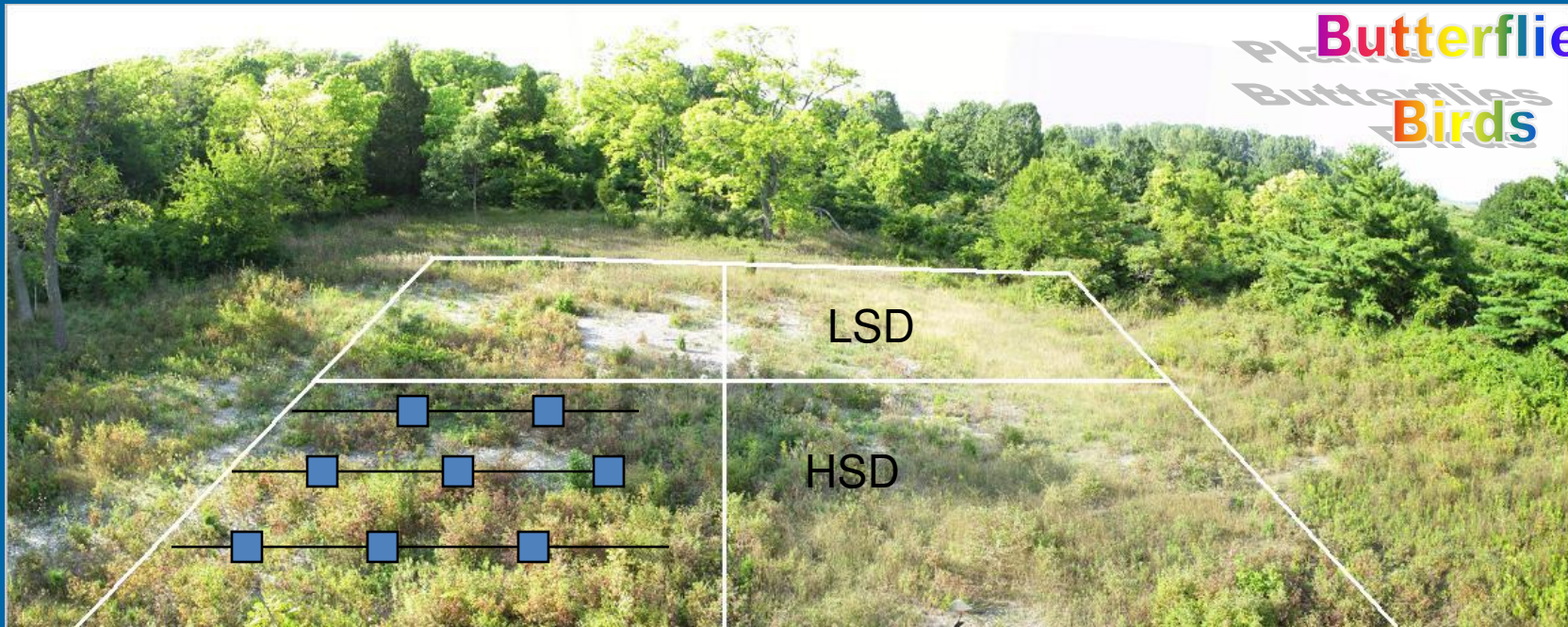


Integrated Multiscale Biodiversity Monitoring Program

Plants

Butterflies

Birds



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Walpole Island collaborative research

- Traditional ecological knowledge (Berkes, 1993) on fire at Walpole Island First Nation



are there conflicts or concerns?

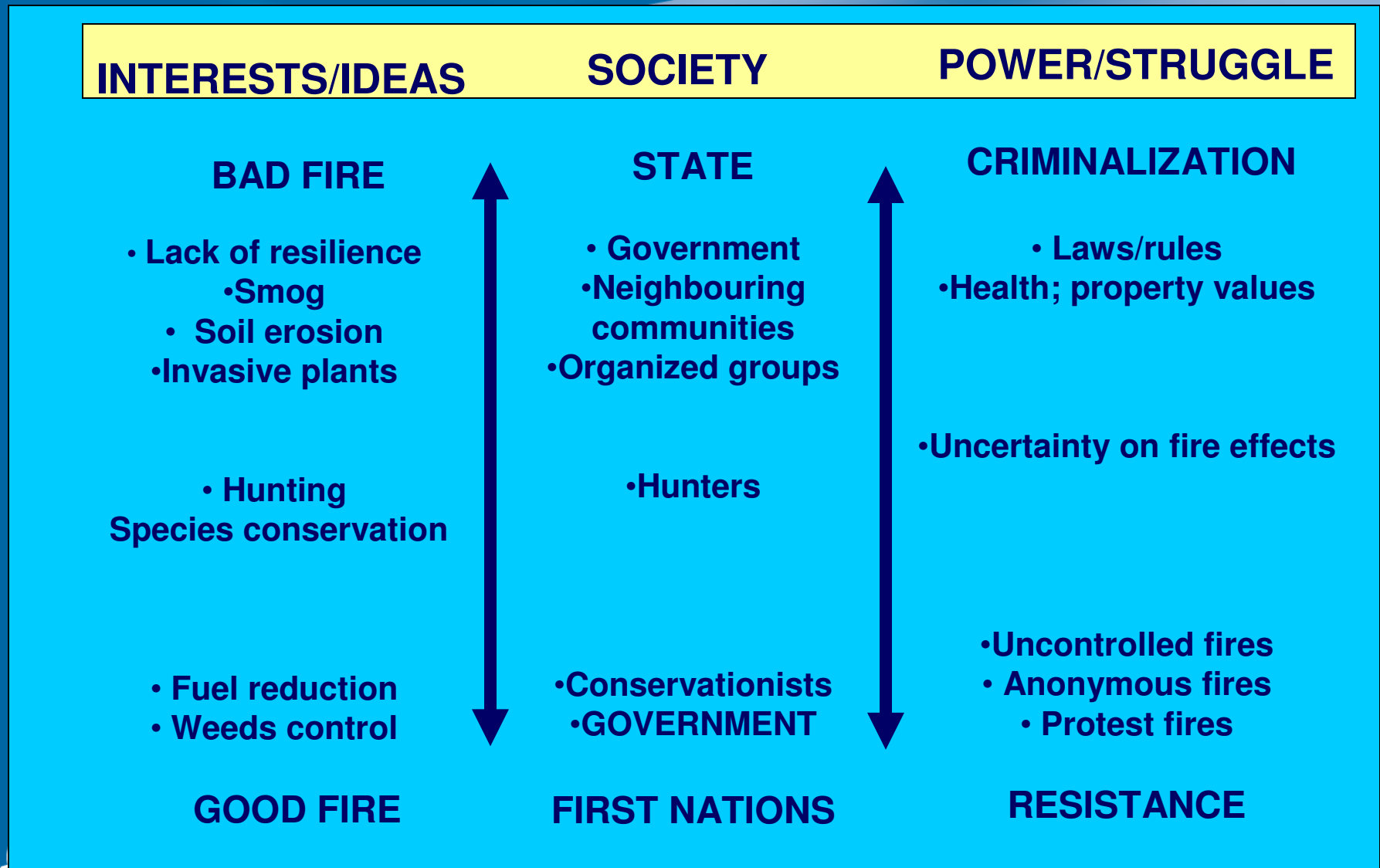


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Social-ecological complexity



Acknowledgments

- Victor Kafka (Parks Canada)
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- Walpole Island First Nation
- OMNR-Provincial Parks
- Point Pelee National Park RES CON Team



Thank you!



*“While places would still aflame,
they would not longer have a fire problem”*

(C. Kull, 2004)



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