



Non-traditional management of Double-crested Cormorants

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Tommy Thompson Park
Toronto's Urban Wilderness



The Living City
Foundation



Toronto and Region
Conservation
for The Living City®



A Misunderstood Species

- Persecuted for:
 - Being gluttonous
 - Impacting fisheries
 - Being ecosystem engineers
 - It's black colour
- Faced near extinction:
 - Intense hunting post-European arrival
 - DDT in 1970s and 1980s







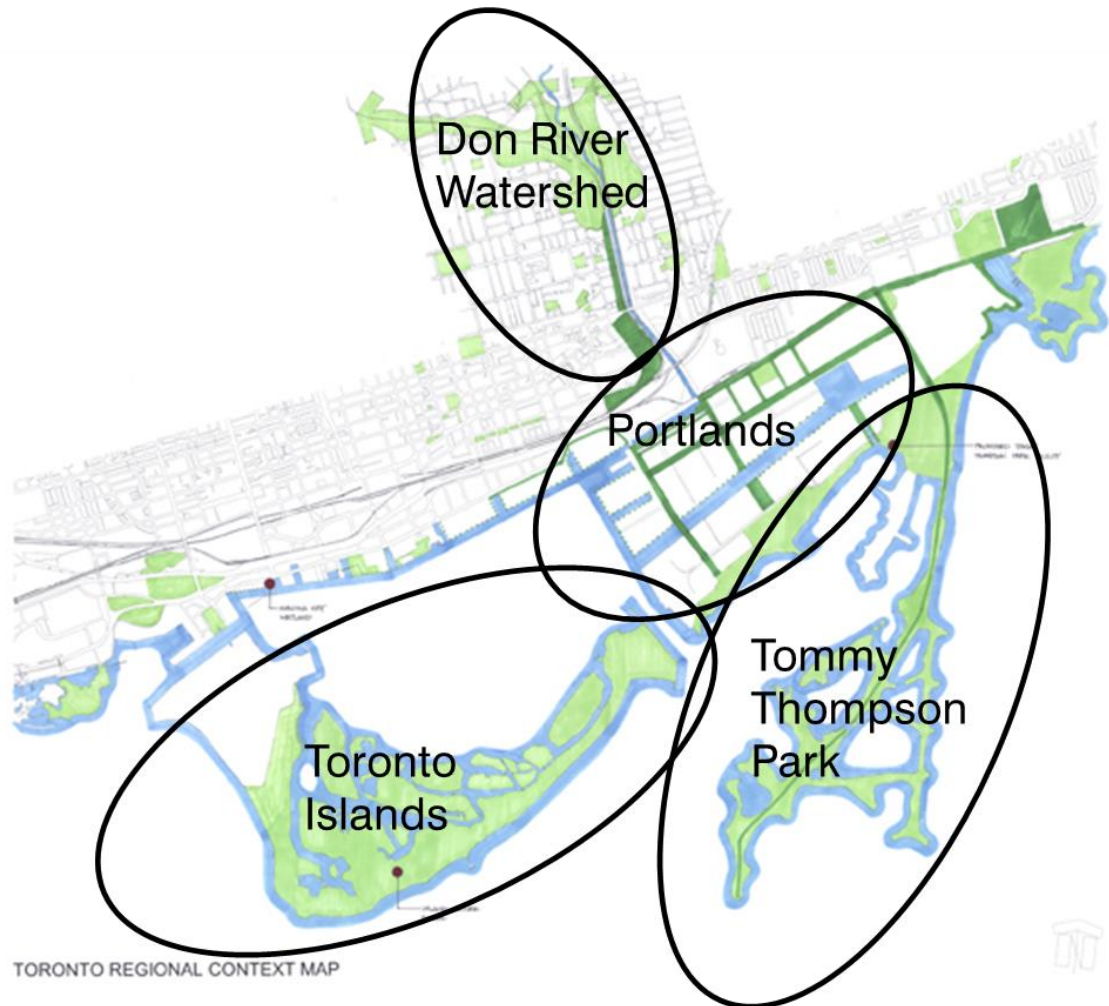
Population Recovery in Toronto

- 1990
 - 6 pairs nested at Tommy Thompson Park
- Colony growth
 - Expanded across 3 of 4 Peninsulas at the park
 - Now the largest colony in North America





Biological Centre of Organization





Important Bird Area



- Globally significant Important Bird Area
 - 7 Species of colonial nesting waterbirds
 - Concentration area for migratory bird species
 - Significant overwintering area for waterfowl





Colonial Waterbirds at TTP





Data Collection Overview

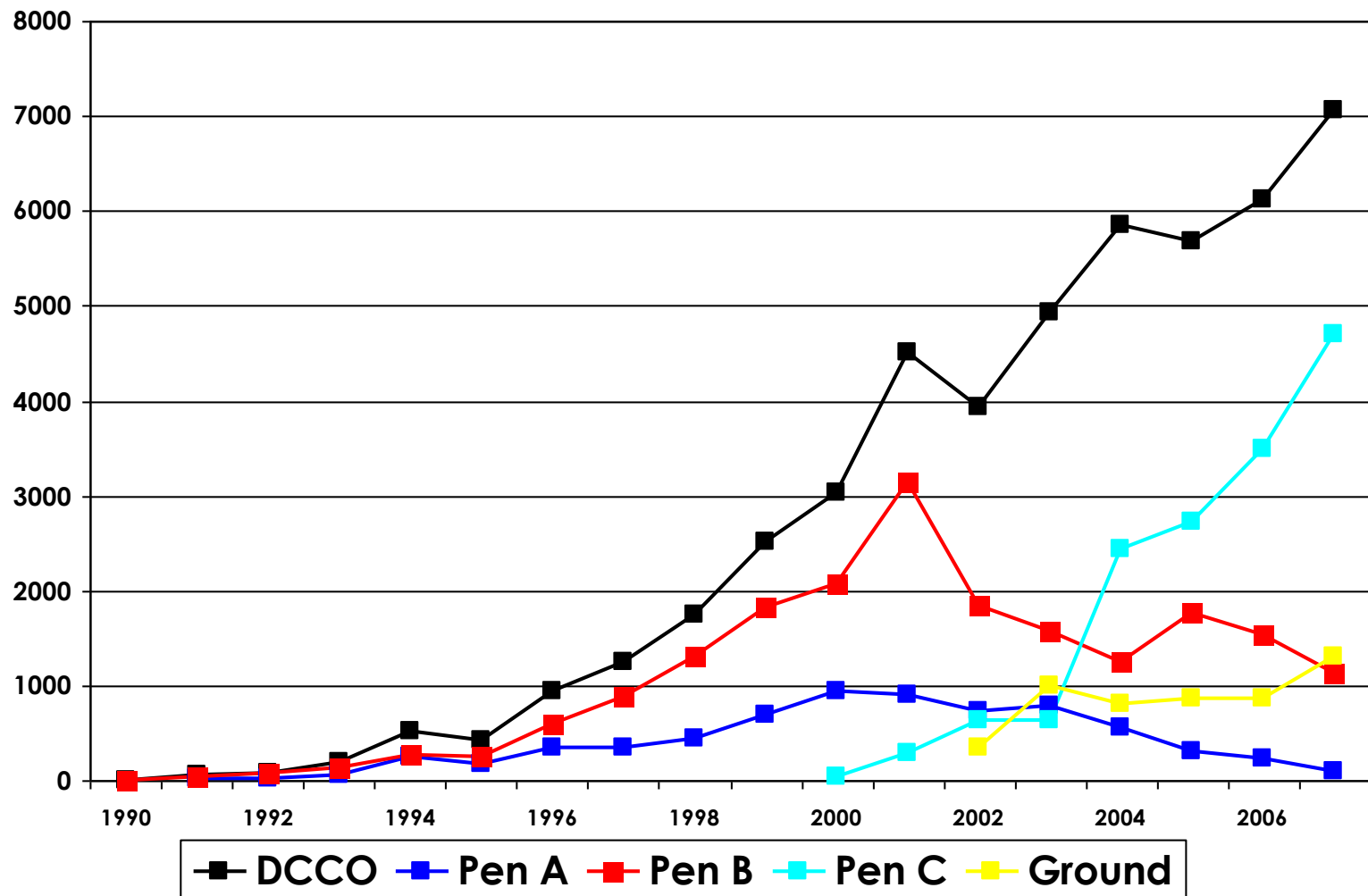
- TRCA has monitored the cormorant population since 1990
- Since 1992 all trees containing nests are tagged and mapped using GIS
- Every active nest is counted annually
- Annual tree health surveys are undertaken to track the impact of nesting cormorants on the eastern cottonwood forest



G. Fraser



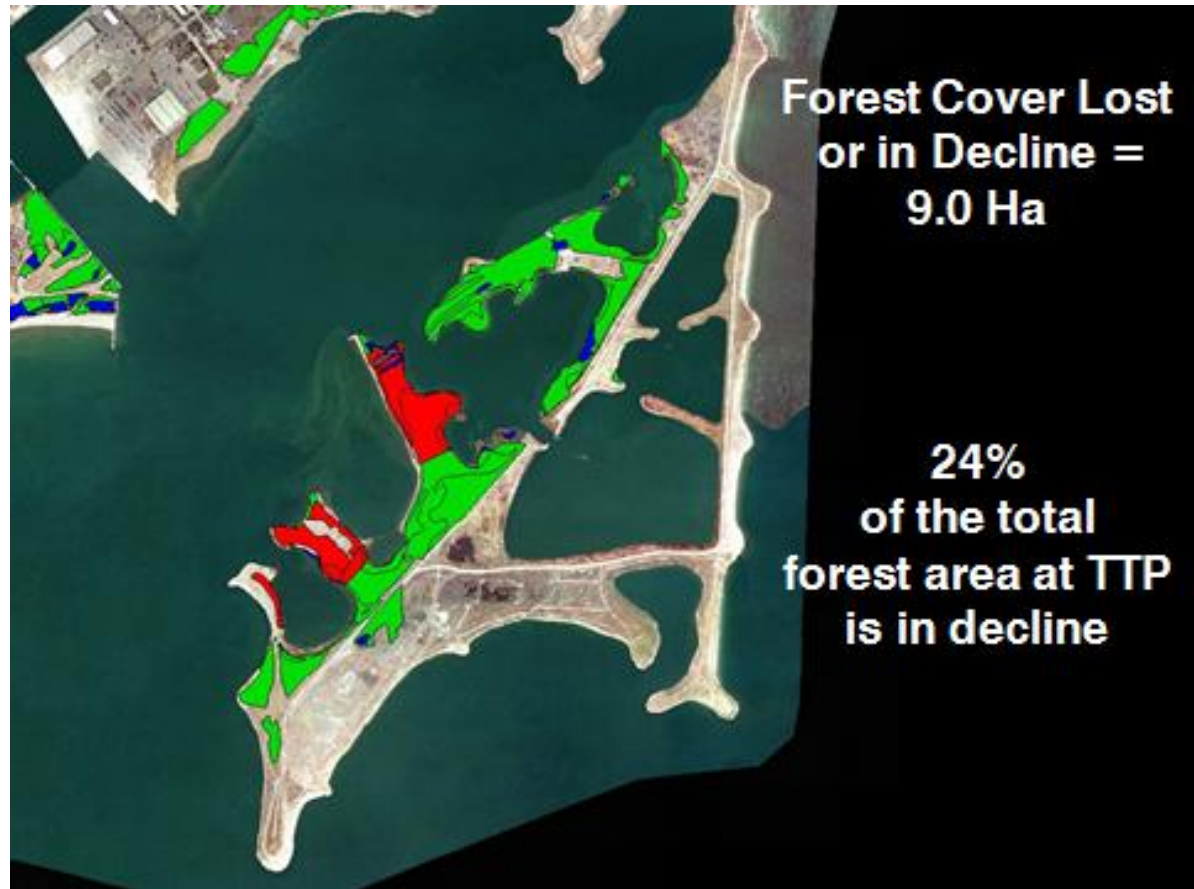
Cormorant Population to 2007





Nesting Impacts on Trees

- Nesting pressure had directly impacted the health of 24% forest at TTP by 2007
- Without management, colony would expand and likely spread beyond TTP





Advisory Group Establishment

MANDATE

- Provide input and advice
- Ensure all perspectives are considered
- Provide linkages with other stakeholders

TRCA

Restoration Services

Federal/Provincial

Canadian Wildlife Service

Ontario Ministry of Natural Resources

Toronto Port Authority

Transport Canada

City of Toronto

Parks, Forestry and Recreation

Academia

York University

University of Toronto

McMaster University

Interest Groups

Aquatic Park Sailing Club

Cormorant Defenders International:

Animal Alliance of Canada

Canadians for Snow Geese

Earthroots

Zoocheck Canada Inc.

Friends of the Spit

Ontario Nature

Toronto Island Residents

Toronto Ornithological Club

Local Experts



Cormorant Management Strategy

GOAL

To achieve a balance between the continued existence of a healthy, thriving cormorant colony and the other ecological, educational, scientific and recreational values of Tommy Thompson Park.

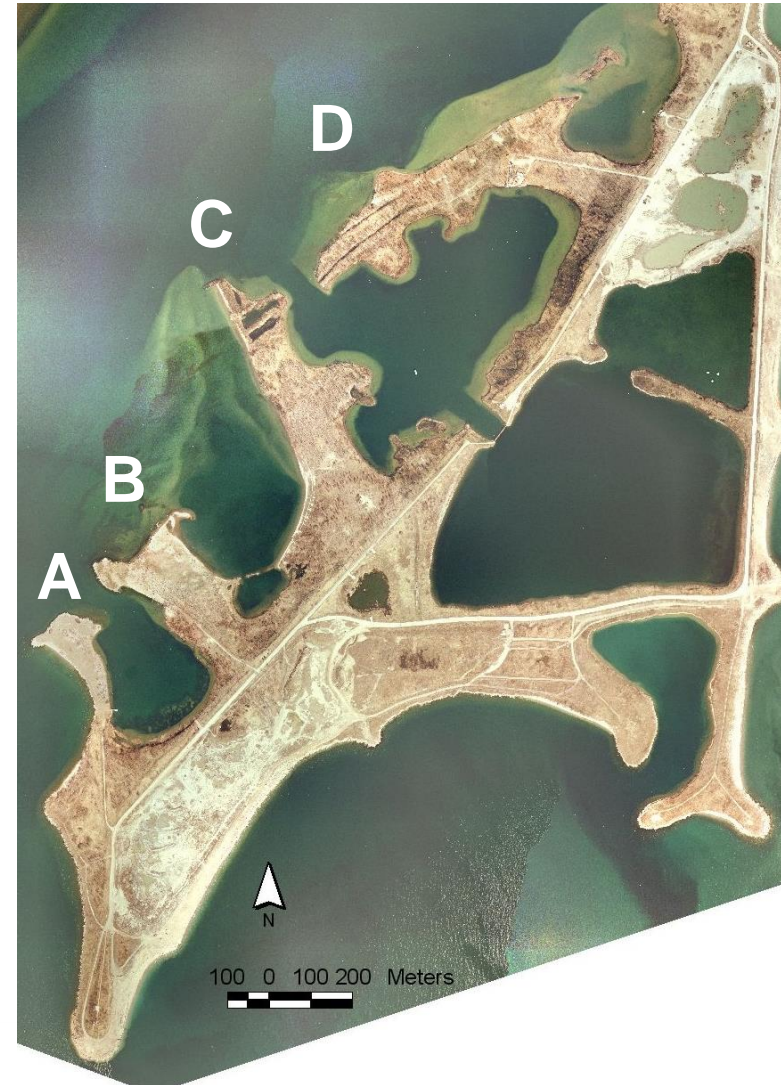
OBJECTIVES

- Increase public knowledge, awareness, and appreciation of colonial waterbirds
- Deter cormorant expansion to Peninsula D
- Limit further loss of tree canopy on Peninsulas A, B and C
- Continue research on colonial waterbirds in an urban wilderness context



Management Actions

	Pen A	Pen B	Pen C	Pen D
Inactive Nest Removal (prior to breeding season)		*	*	
Pre-Nesting/Nesting Deterrents		*	*	*
Post-Breeding Deterrents			*	*
Enhanced Ground Nesting	*	*		
Habitat Restoration	*	*	*	*

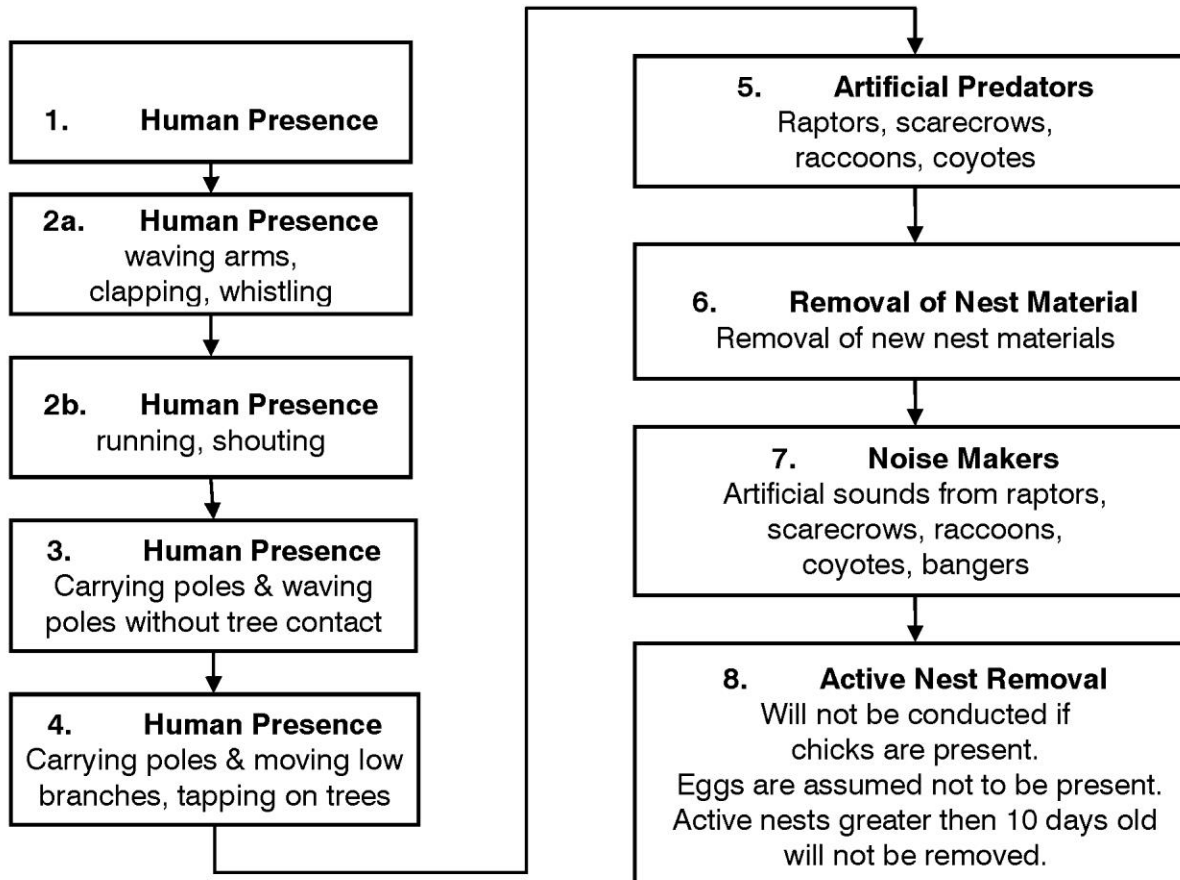


Ground Nest Enhancements



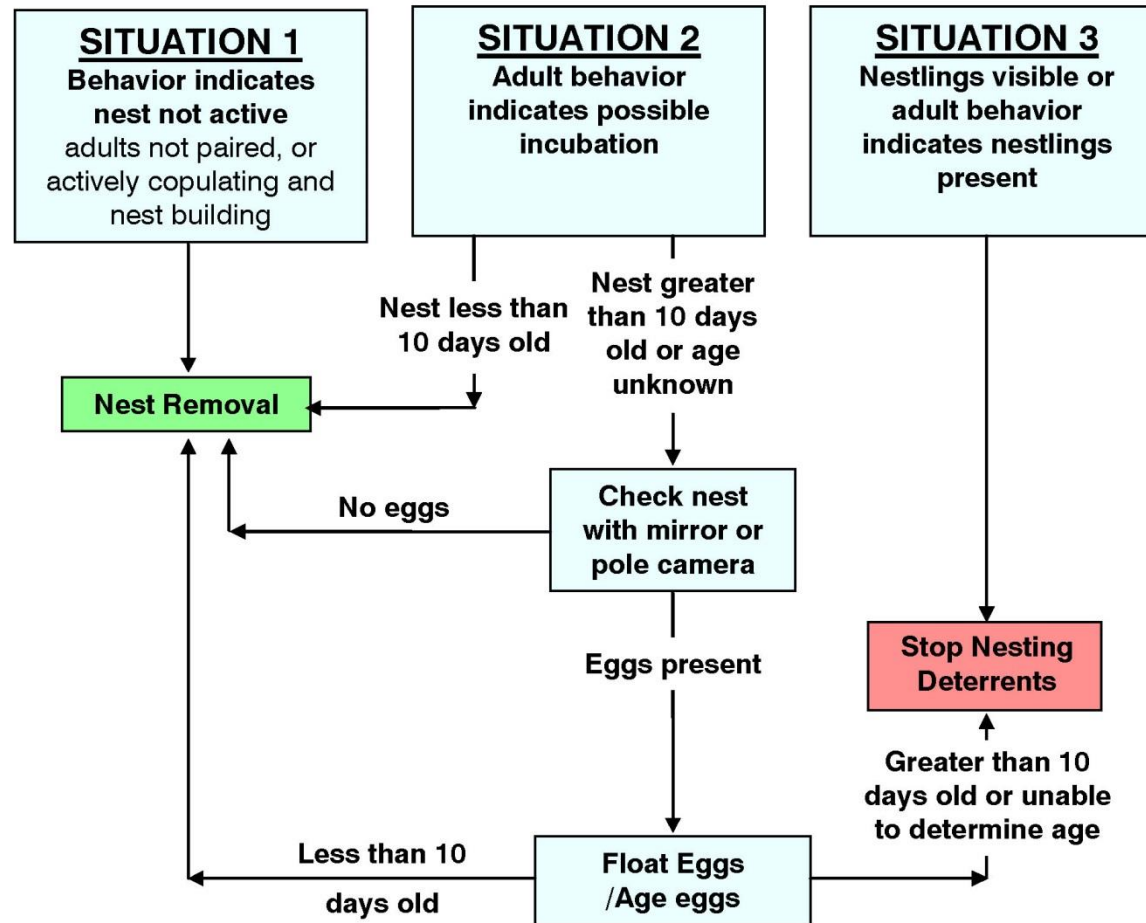


Deterrent Escalation



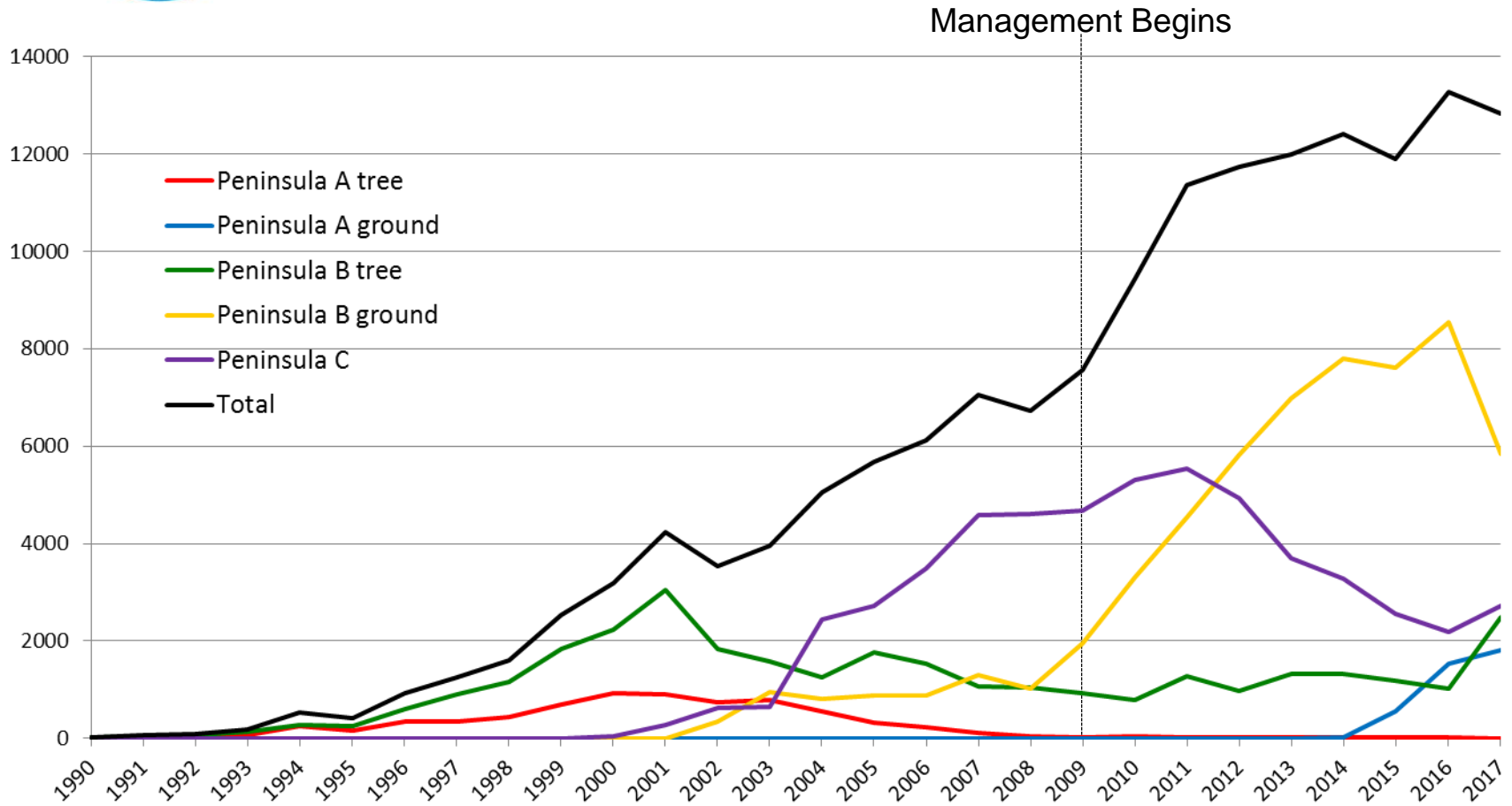


Active Nest Removal





Cormorant Population



In 2017 60% of the colony nested on the ground.

- 16% decrease from 2016, due to flooding.

Flooding caused increased pressure in the tree nesting colonies.



Cormorant Population Table

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Pen A	101	49	22	39	19	13	5	14	12	4	0
Pen A (Gr)	0	0	0	0	0	0	0	10	541	1525	1821
Pen B	1072	1050	917	781	1262	982	1310	1319	1184	1007	2474
Pen B (Gr)	1302	1009	1957	3310	4547	5812	6986	7799	7608	8555	5836
Pen C	4584	4609	4668	5304	5546	4934	3689	3346	2561	2184	2710
Total	7059	6717	7564	9434	11374	11741	11990	12488	11908	13275	12841





Ground-nest Expansion



Tommy Thompson Park
DCCO Nest Counts

Legend

- 2017
- 2016
- 2015
- 2014
- 2013
- 2012
- 2011
- 2010
- 2009
- 2007
- 2005

100

Meters









Questions

