



MANAGEMENT OF COLONIAL WATERBIRDS AT TOMMY THOMPSON PARK

CORMORANT ADVISORY GROUP
MEETING #14

Thursday January 21, 2016
6:30 to 9:00 p.m.
Metro Hall, Room 303, 55 John Street, Toronto





AGENDA

6:30pm	Welcome	Karen McDonald
6:35pm	Review of 2015 colonial waterbird data and cormorant management strategy	Karen McDonald / Ryan Stephenson
7:30pm	Update on York University studies	Gail Fraser
7:45pm	Proposed Strategic Approach for 2016 <ul style="list-style-type: none">• Work plan for 2015 season• Discussion• Timeline• TRCA Board Meeting	Karen McDonald
8:30pm	Wrap-up and next meeting	Karen McDonald



GOAL & OBJECTIVES

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



RECENT PUBLIC CONSULTATION SUMMARY

TRCA Board	January 31, 2014	<ul style="list-style-type: none">• Present the 2014 Strategy for TRCA Board action
Advisory Group Meeting #13	February 26, 2015	<ul style="list-style-type: none">• Review the 2014 population data and monitoring program• Review 2014 strategy and research results• Develop the 2015 Strategy
Colonial Waterbird Interpretation and Presentations	March – December, 2015	<ul style="list-style-type: none">• Winter Waterfowl event• Spring Bird Festival• Butterfly Festival• Various universities and colleges• TTP Educational programs• Agencies and Partners (Environment Canada, TD Canada Trust, Coca-Cola Canada, etc.)• Various media
Advisory Group Meeting #14	January 21, 2016	<ul style="list-style-type: none">• Review the 2015 population data and monitoring program• Review 2015 strategy and research results• Develop the 2016 Strategy



PUBLIC OUTREACH - HIGHLIGHTS

- Bell Media documentary
 - *The Spit* (airing in 2016)
- TTP featured on Reuters Earthprints series
 - print and video





PRESENTATIONS

- International Association of Great Lakes Research
 - *Twenty-four years of cormorant monitoring at Tommy Thompson Park: What have we learned?*
- Waterbird Society
 - *Non-traditional management of the largest Great Lakes cormorant colony in Toronto, Canada*



COLONIAL WATERBIRDS OF TTP, 2015



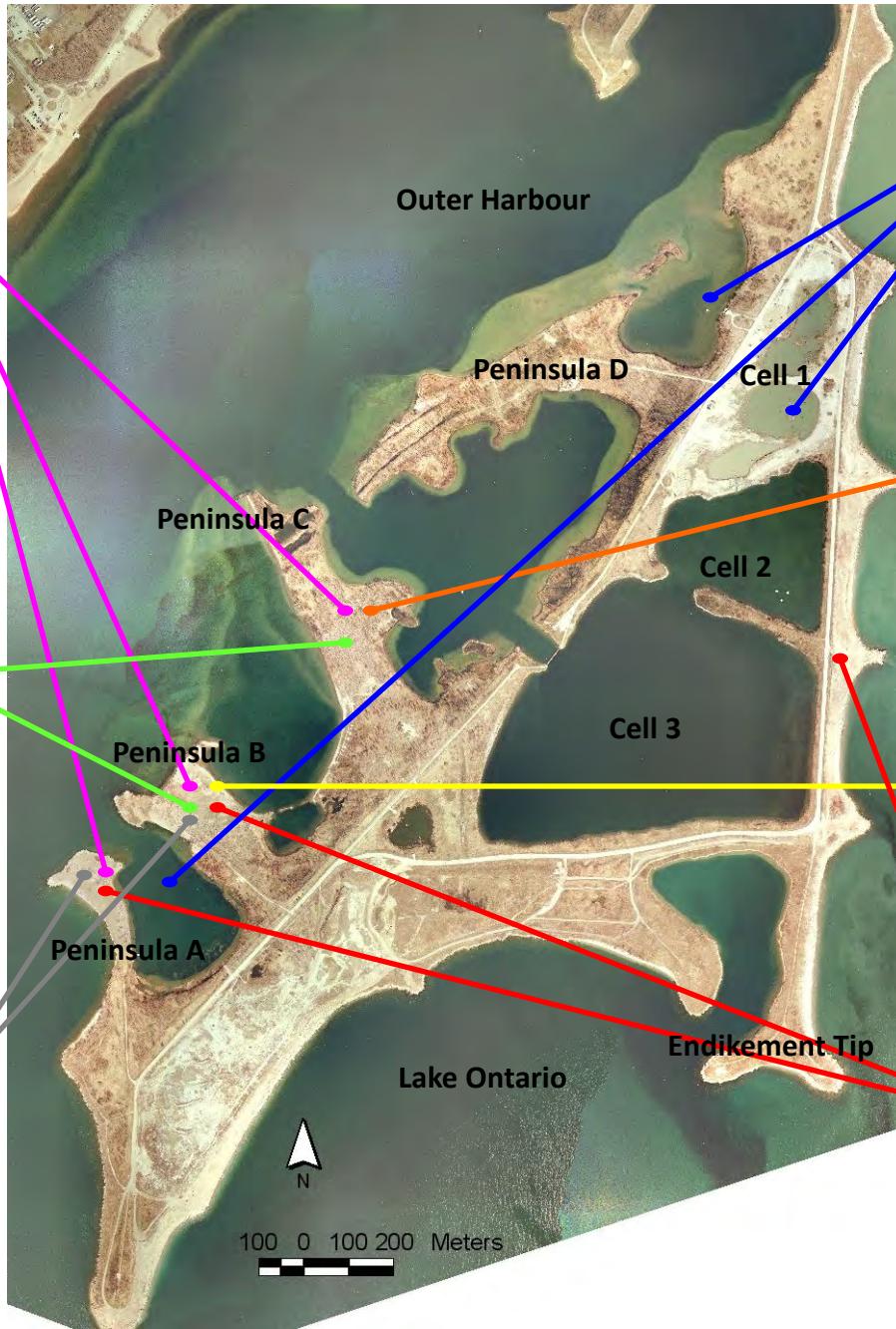
DCCO - 11,908



BCNH - 194



HEGU - NC



COTE - 176



GREG - 6



CATE - 263 (2014)



RBGU - 35,000 est.



Cormorant Nests by Peninsula



DCCO NEST DENSITY (# Nests/Tree)

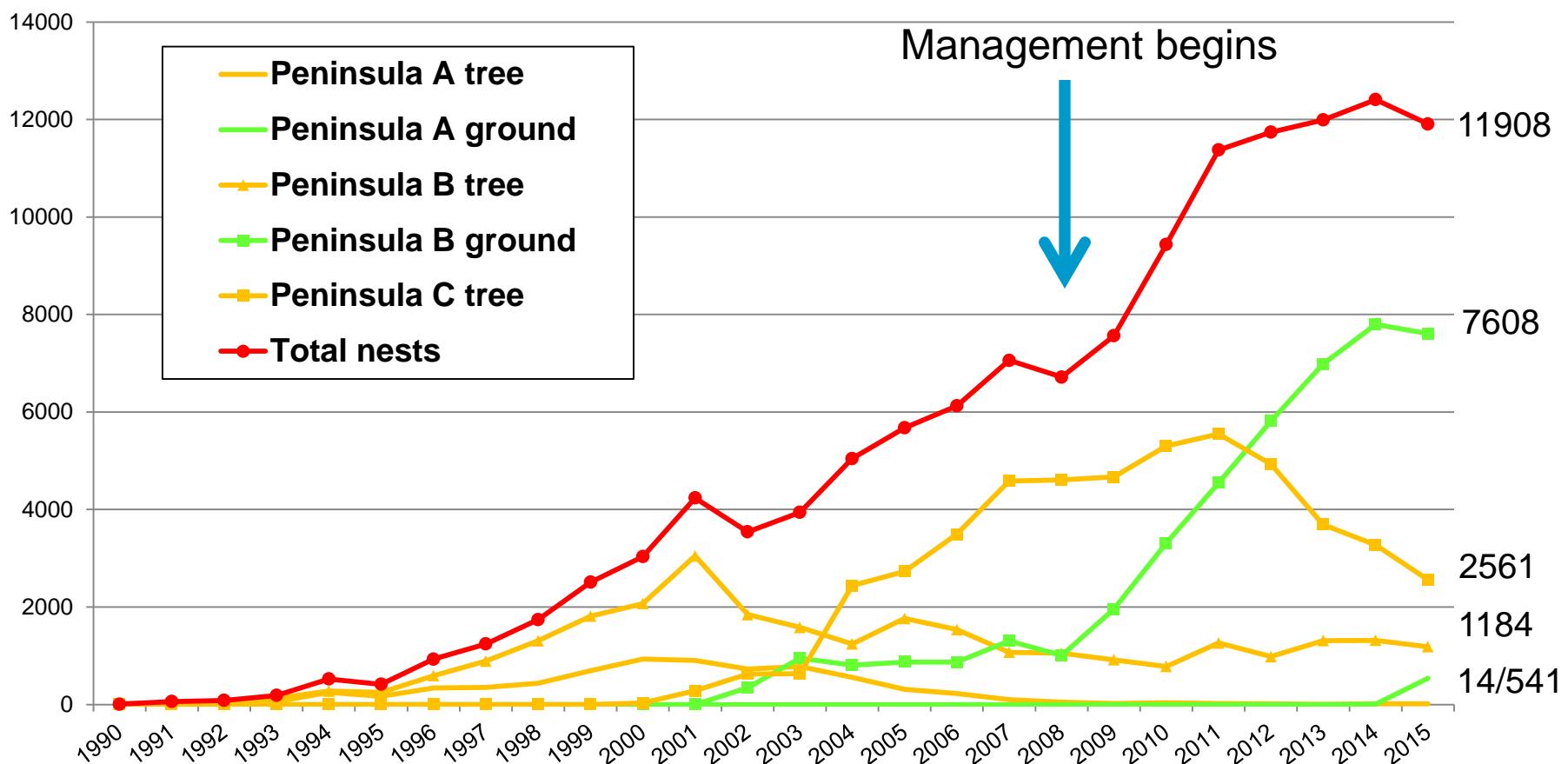
	2011	2012	2013	2014	2015
Peninsula A	19	13	5	14	14
Peninsula B	6.64	5.99	7.66	7.15	8.05
Peninsula C	6.3	6.2	6.25	6.31	6.03

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Pen A	311	228	101	49	22	39	19	13	5	14	14
Pen A ground	-	-	-	-	-	-	-	-	-	10	541
Pen B	1763	1535	1072	1050	917	781	1262	982	1310	1316	1184
Pen B ground	872	868	1302	1009	1957	3310	4547	5812	6986	7799	7608
Pen C	2728	3494	4584	4609	4668	5304	5546	4934	3689	3270	2561
Total	5674	6125	7059	6717	7564	9434	11374	11741	11990	12409	11908



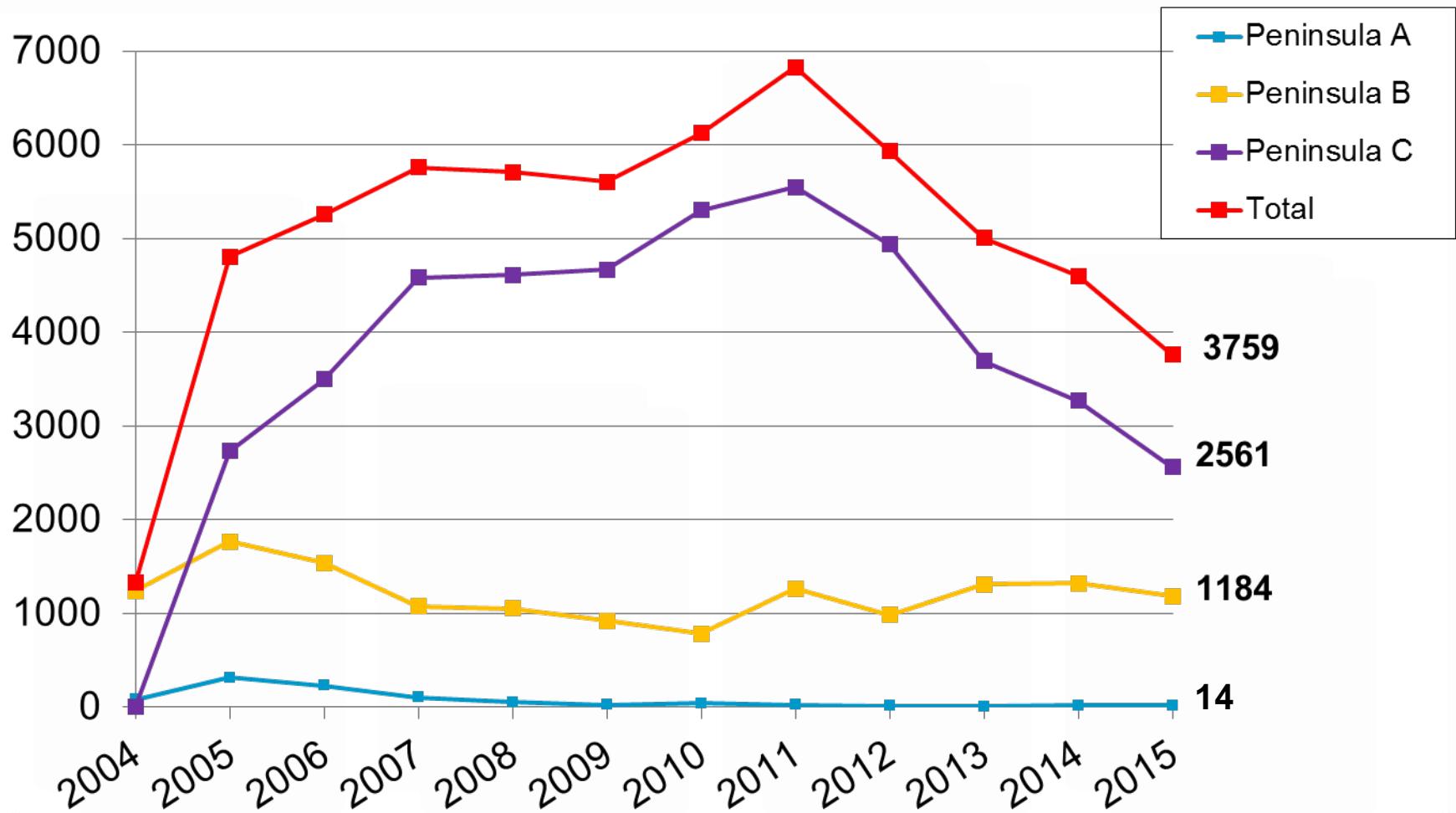
Cormorant Population – all nests

In 2015, 68% of the colony nested on the ground.
Overall population increase is now supported solely by ground nesting.





Cormorant Population – tree nests



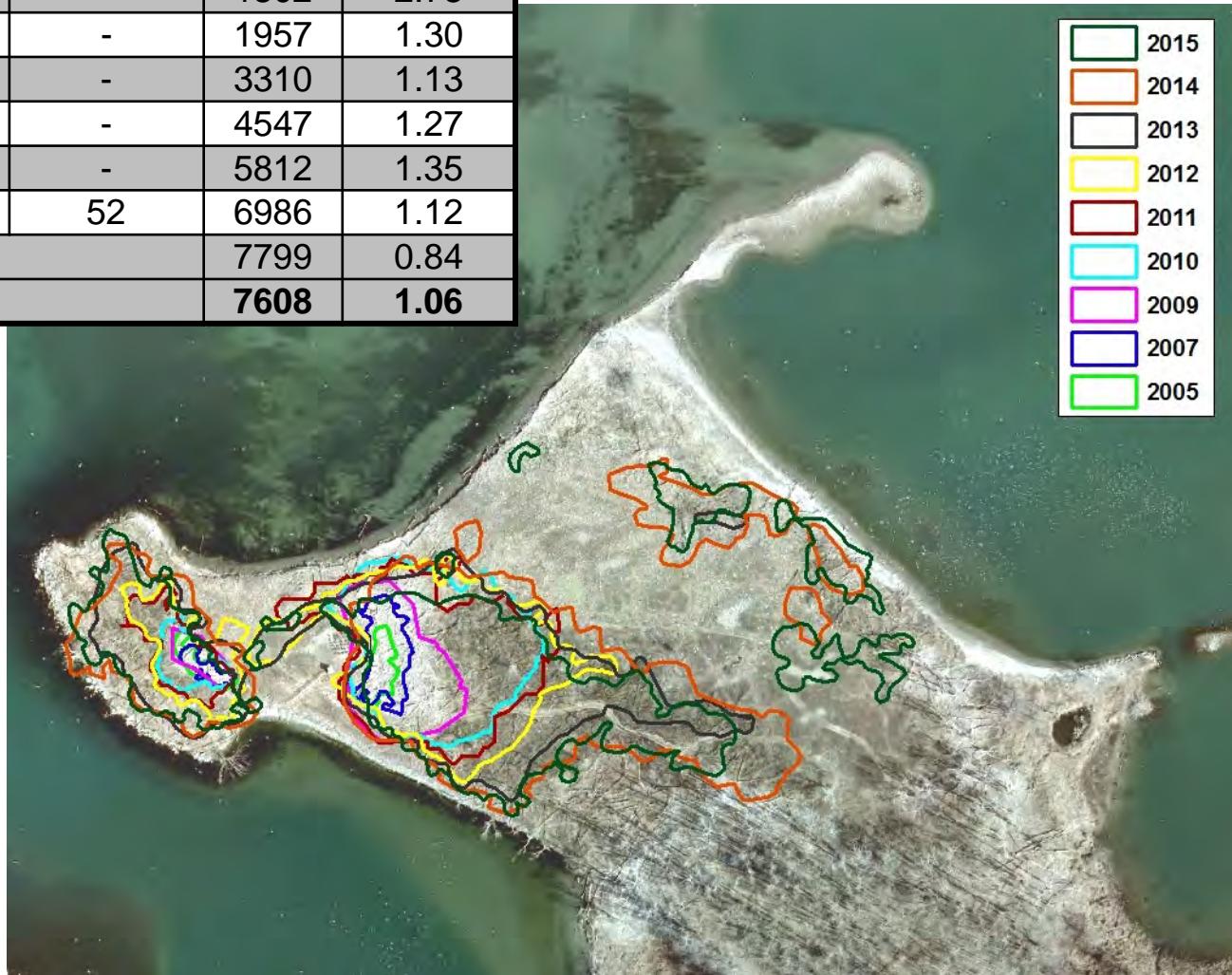


Ground-nesting expansion on Peninsula A 2014-2015

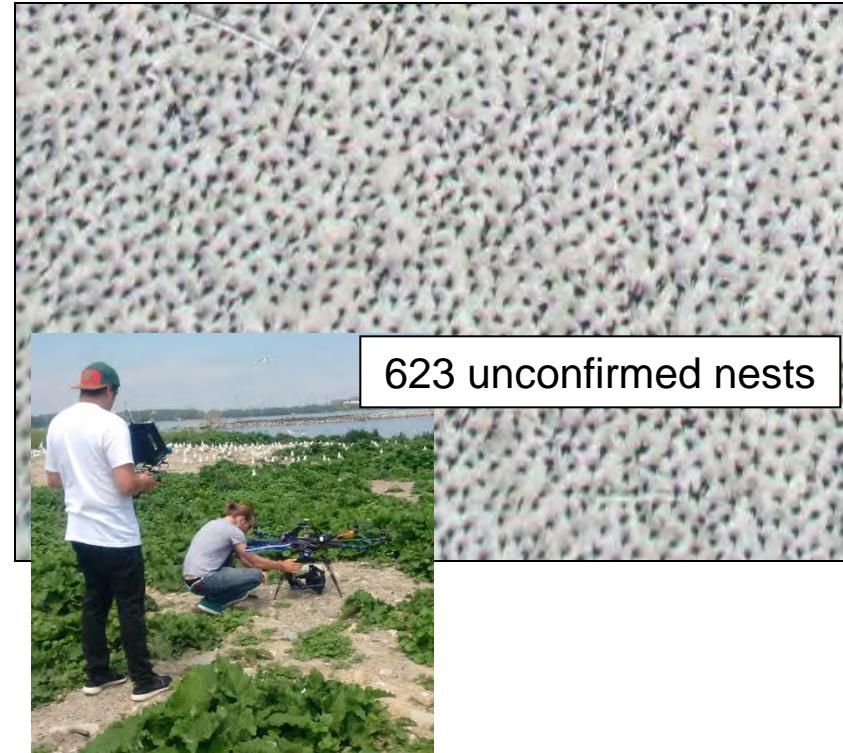


Ground-nesting Expansion on Peninsula B: 2005-2015

YEAR	AREA A (m ²)	AREA B (m ²)	AREA C (m ²)	NESTS	DENSITY
2005	180	139	-	872	2.73
2007	394	83	-	1302	2.73
2009	1327	180	-	1957	1.30
2010	2622	319	-	3310	1.13
2011	3025	559	-	4547	1.27
2012	3491	828	-	5812	1.35
2013	6193	52		6986	1.12
2014		9265		7799	0.84
2015		7154		7608	1.06



AERIAL GROUND NEST COUNTS METHODS: Helicopter vs. drone



2014 Helicopter Flight

- Excellent photo resolution
- Challenging to stitch photos together

2015 Drone Flight

- Poor photo resolution
- Drone was able to photograph entire nesting area
- Large file sizes

Aerial Ground Nest Count: 2015

- = confirmed nest
- = unconfirmed nest (N= 623)





Annual Population Change (Percentage)

	2008	2009	2010	2011	2012	2013	2014	2015
Overall	-4.84	12.61	24.72	20.56	3.23	2.12	3.49	-4.04
Peninsula A	-51.49	-55.10	77.27	-51.28	-31.58	-61.54	180	0
Peninsula A Ground	-	-	-	-	-	-	-	5310
Peninsula B	-2.05	-12.67	-14.83	61.59	-22.19	33.40	0.46	-10.03
Peninsula B Ground	-22.50	93.95	69.14	37.37	27.82	20.20	11.64	-2.45
Peninsula C	0.55	1.28	13.62	4.56	-11.03	-25.23	-11.36	-21.68





DCCO NEST TREE OCCUPATION

TREES OCCUPIED WITH DCCO						
	2010	2011	2012	2013	2014	2015
Peninsula A	2	1	1	1	1	2
Peninsula B	162	190	164	171	184	147
Peninsula C	883	885	796	590	518	425
TOTAL	1047	1076	961	762	703	574



CHANGE IN TREE OCCUPANCY

	2010	2011	2012	2013	2014	2015
Peninsula B	-10%	+17%	-14%	+4%	+8%	-20%
Peninsula C	+2%	+0.2%	-11%	-26%	-12%	-18%
Overall	+0.2%	+3%	-11%	-21%	-8%	-18%

Peninsula C



Peninsula B



All Peninsulas





Caspian Terns

- Returned to nest at TTP in 2013 for the first time in 6 years
- In 2014, 263 nests were confirmed with fledglings observed
- In 2015, CATE fared poorly, no fledglings were observed





Gail Fraser



Caspian Terns

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2016 planned enhancements

- Install pea gravel mounds targeting CATE nesting
- Monitor



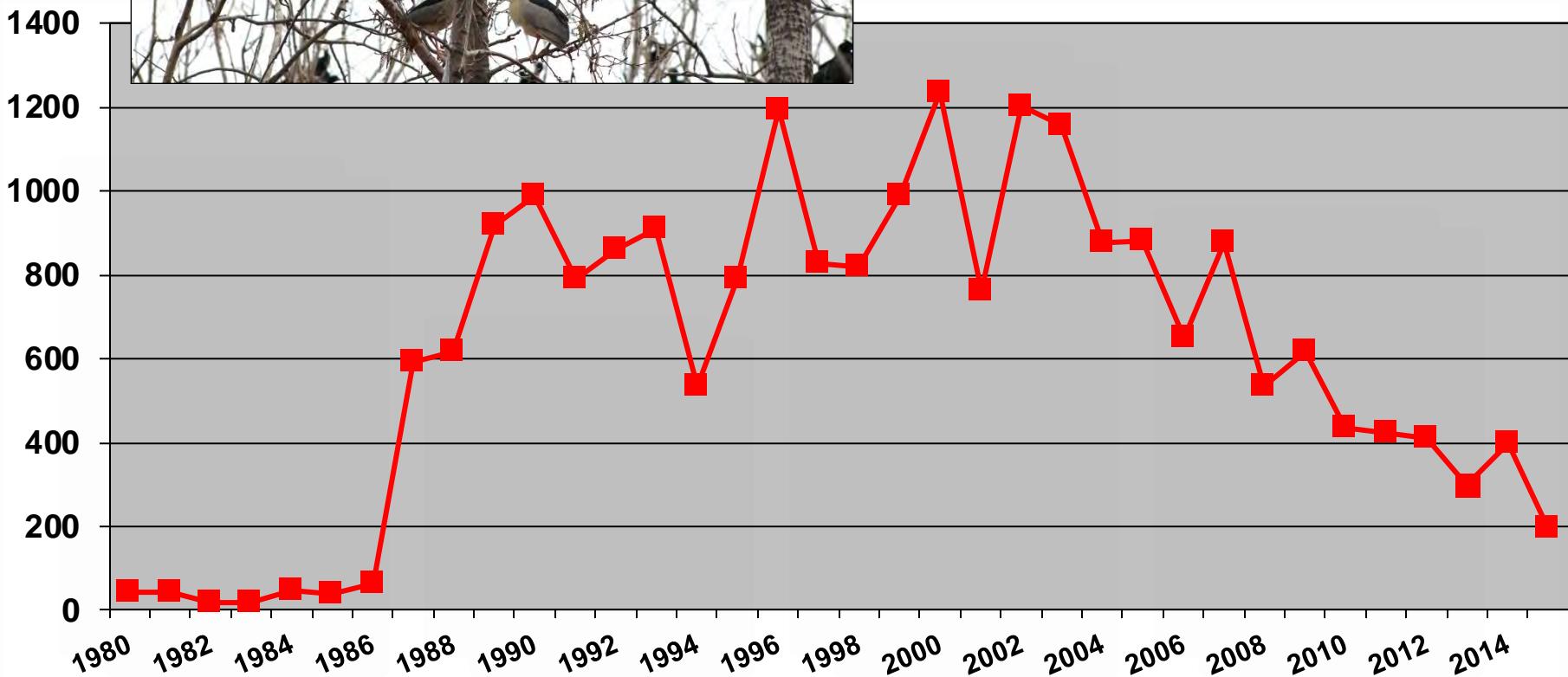
BCNH NESTS BY PENINSULA



Again in 2015, most of the BCNH colony nested at the western base of Peninsula C in healthy trees away from DCCO.

	2004	2005	2006	2007	2008	2009*	2010	2011	2012	2013	2014	2015
Peninsula A	0	0	0	0	0	0	0	0	0	0	0	0
Peninsula B	278	270	145	146	81	38	3	100	10	14	181	55
Peninsula C	601	610	504	730	455	546	431	323	400	283	216	139
Total	879	880	649	876	536	584	434	423	410	297	397	194

BLACK-CROWNED NIGHT-HERON PEAK NESTS 1980-2015



New Tree Nest Expansion in 2015

2015 NEW NEST TREES (all species)						
	2010	2011	2012	2013	2014	2015
Peninsula A	-	-	-	-	-	-
Peninsula B	7	25	7	13	126	52
Peninsula C	37	23	29	69	103	148
TOTAL	44	48	36	82	229	200



2015 Tree Nest Expansion Breakdown

	DCCO nests	BCNH nests
Peninsula B	28	54
Peninsula C	128	141



REVIEW OF 2015 STRATEGIC APPROACH

	Peninsula A	Peninsula B	Peninsula C	Peninsula D
Inactive Nest Removal (prior to 2015 breeding season)		*	*	
Enhanced Ground Nesting	*	*		
Pre-Nesting Deterrents		*	*	*
Post-Breeding Deterrents			*	*



CORMORANT CONSERVATION ZONES





CORMORANT DETERRENT AREAS

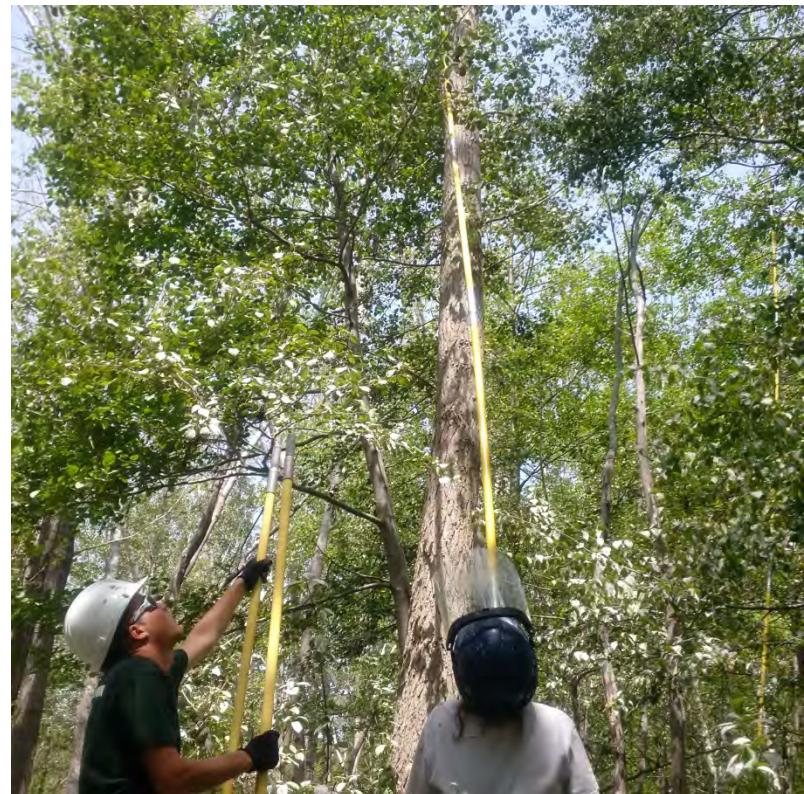




INACTIVE NEST REMOVAL

- 2015 nest removal was done with forestry poles

Year	Nests Removed
2001	31
2002	281
2003	647
2004	~400
2010	32
2011	236
2012	183
2013	115
2014	101
2015	67





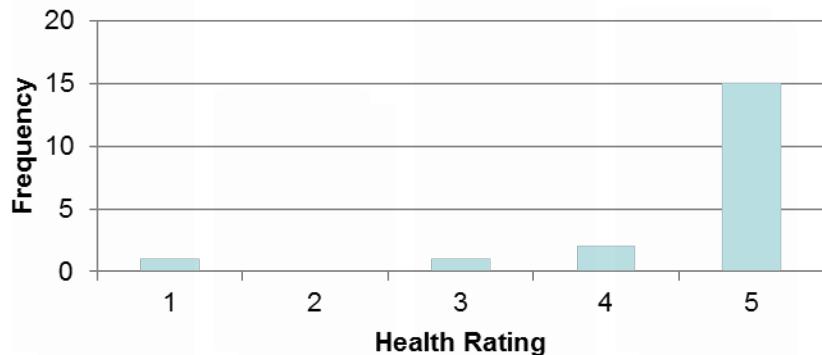
2015 PRE-NESTING & ACTIVE DETERRENTS

- Pre-nesting deterrents were utilized on Peninsula C prior to BCNH arrivals. DCCO were quickly desensitized to the progressing level of deterrents.
- 2015 saw even more DCCO nest expansion pressure than in 2014
- Active nest removal took place in strategic locations on Peninsulas B and C to prevent DCCO expansion into new trees
 - April 15 to June 12
 - 1082 nests removed
 - 793 nests on Peninsula C
 - 289 nests on Peninsula B
 - Prior to removal, nests were closely monitored ensure eggs were no greater than 10 days old

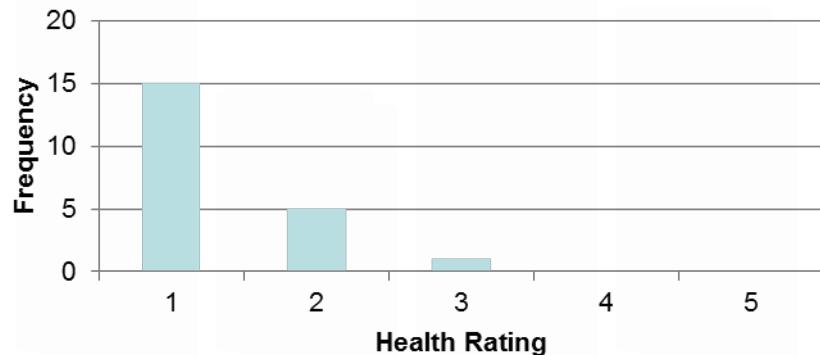


2015 TREE HEALTH

**Random Trees on Peninsula C:
Frequency of Health Rating
(sample size 20)**

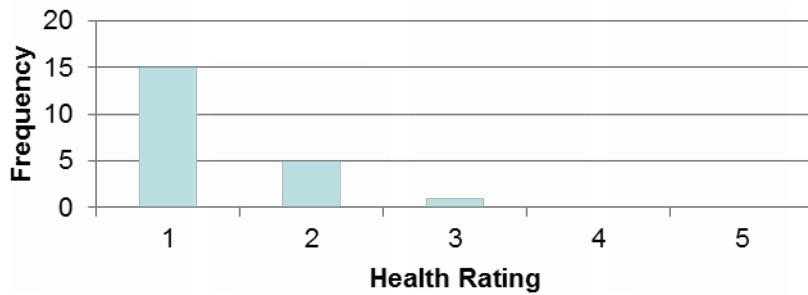


**BCNH Colony on Peninsula C:
Frequency of Health Rating
(sample size 20)**



Site	Average	Mode
Pen C DCCO area	4.6	5
Pen C BCNH area	1.3	1
Pen D control	1.6	1

**BCNH Colony on Peninsula C:
Frequency of Health Rating
(sample size 20)**





2015 DCCO MANAGEMENT SUMMARY

Peninsula A

- Ground nest enhancements = straw
- 541 ground nests!!!

Peninsula B

- Active nest removals in strategic locations
- Tree nesting decreased by 10% (132 fewer nests and 31 fewer nest trees, however 7 new nest trees were added)
- Ground nesting decreased by 2.5% (191 nests), however new drone method resulted in 623 unconfirmed ground nests

Peninsula C

- Continued increase in nest expansion pressure
- Active nest removals in strategic locations
- Tree nesting decreased by 22% (709 fewer nests and 88 fewer nest trees, however 35 new nest trees were added)



2015 SEASON SUMMARY

- Prevented expansion onto Peninsula D
- Ground nesting has increased 708% from 2008
 - In 2008 15% of the total colony ground-nested
 - In 2015 68% in 2015
- Tree nests decreased by 18%
- Overall population decreased by 4% (confirmed nests)
- Viewing blind on Peninsula C with views of DCCO
- BCNH population decreased by 203 nests
- CATE fared poorly with no fledglings observed



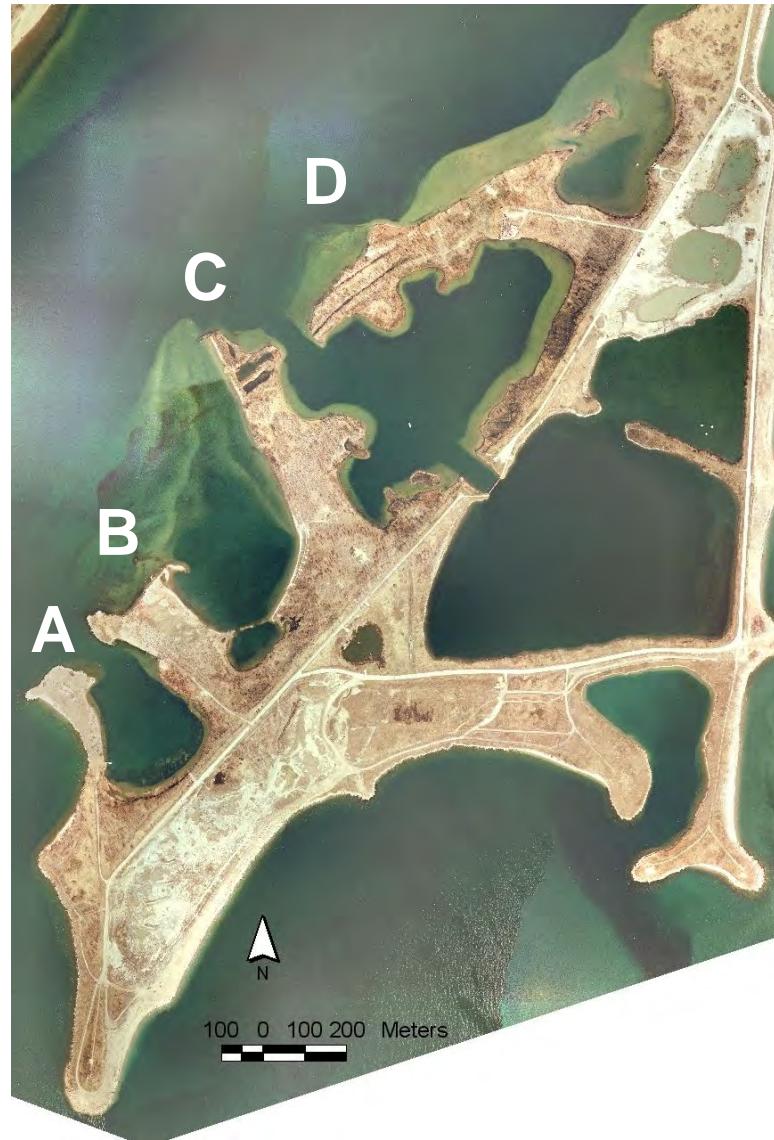


UPDATE ON YORK U RESEARCH



2016 Proposed Management Approach

	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	*			*





DCCO CONSERVATION ZONES





DCCO DETERRENT AREAS





AUTHORITY BOARD

As directed in 2014, the strategy will be presented to the TRCA Board every second year.



Cormorant Management Strategy will be presented on
April 1, 2016



SPRING BIRD FESTIVAL

Saturday May 14, 2016
8 a.m. to 4 p.m.

- Early bird hikes
- Family walks, guided bird hikes
- **Colonial waterbird hikes**
- Great Canadian Birdathon
- Bird banding demonstrations
- Children's activities
- Educational displays





Thank you!



B. Von Bockenstale