

Mitigating Road Mortality of Herpetofauna,
including Species at Risk,
on the Long Point Causeway 2008-2010



Long Point Causeway Improvement Project Steering Committee

Long Point World Biosphere
Reserve Foundation
Bird Studies Canada
Long Point Bay Anglers' Association
Long Point Country Chamber of
Commerce
Long Point Region Conservation
Authority
Long Point Waterfowlers'
Association
Long Point Waterfowl

Nature Conservancy of Canada
Norfolk County
Norfolk Field Naturalists
Norfolk Land Stewardship Council
Ontario Ministry of Natural Resources
Ontario Ministry of Transportation
Upper Thames River Conservation
Authority
Toronto Zoo

Individual members: Jim Abbey, Bob Scott,
Stephana Johnston, Dr. Dave Ankney



Goals of the Improvement Project

- Restore water connections between Big Creek Marsh and Inner Bay
- Reduce wildlife road mortality
- Provide for safe wildlife movement between Big Creek Marsh and Inner Bay
- Create safer conditions for motorists, residents, pedestrians and bicyclists
- Enhance recreational opportunities (biking, birding, fishing)



Long Point Causeway Improvement Project

Long Point Causeway Improvement Plan



Photo: S. Gillingwater

Prepared for:
Long Point World
Biosphere Reserve
Foundation

Long Point Causeway Improvement Project



Temporary measures to reduce road mortality

- Funded by Environment Canada's Habitat Stewardship Program (HSP) which also funded the Ecoplans study
- Funded by Ontario's Species at Risk Stewardship Fund
- Together, these agencies provided \$78,000 in 2008, \$69,000 in 2009 and nearly \$200,000 this year to support our roadkill reduction and community relations and education work
- Most of this money has been spent here in Norfolk County



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Alerting and educating drivers

- Installed a temporary electronic message sign last summer that was purchased in a 50/50 joint venture with the County Roads department
- Installed Turtles Crossing signs this year obtained from the Kids for Turtles program
- More drivers seem to be avoiding wildlife on road or stopping to help turtles across the road



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Temporary barrier fencing

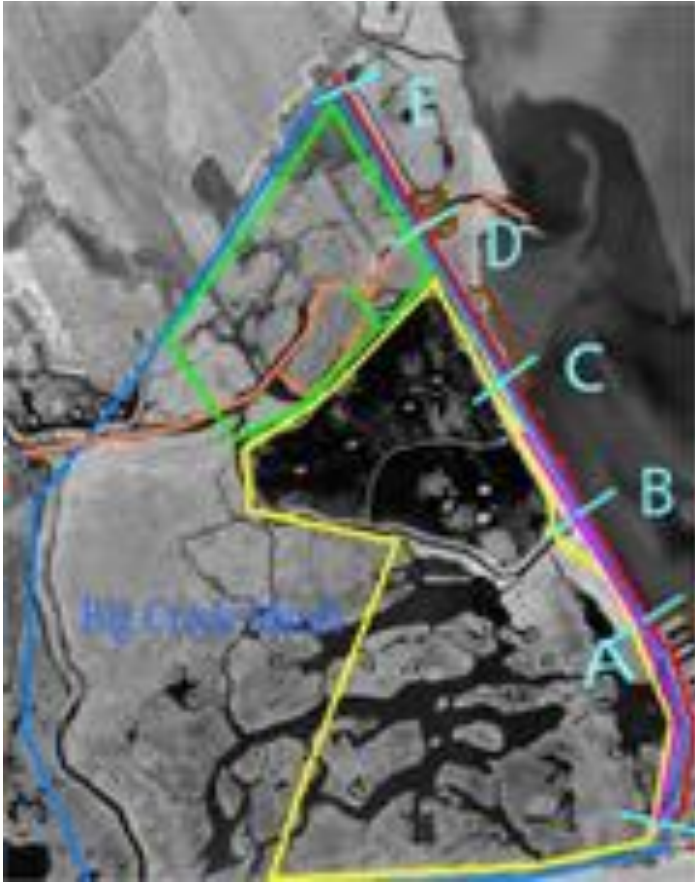
- 2008: Installed 2,500 metres of fencing on west side of Causeway and around CWS property in 2008
- 2009: Installed an additional 2,300 metres of fencing on the west side of the road to Big Creek and on the east side from the northernmost marina to the first cottage
- No fencing installed north of Big Creek as this area of the Marsh is not inhabited by many SAR turtles
- 2010: Replaced almost all fencing with more durable, purpose-designed fencing material recommended by MTO



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Map of barrier fencing and prime turtle habitat



- Big Creek Marsh (blue line)
- Big Creek (orange lines)
- Area most habitated by SAR turtles (yellow lines)
- Area dominated by cattails, fewer turtles, mostly painted and snapping (green line)
- Causeway road surface (red line)
- Monitoring zones from Ashley-Robinson study (turquoise bars and letters)
- Location of existing fencing: Zones A, B, partial C (purple line)
- New fencing installed in areas B and C



Comments on fencing operations

- Fencing installation guided by best available science and Ministry of Transportation guidelines for this type of work
- Own Science Committee that includes staff from the Parks Canada, Canadian Wildlife Service and Ministry of Natural Resources
- Proposal to install fencing was reviewed and approved by scientists at Environment Canada and MNR when funding was granted
- Have necessary permits and permissions from the Ministry of Natural Resources under the new Endangered Species Act and other legislation

The logo features a stylized landscape with a winding road, trees, and a blue sky. The text "Long Point Causeway Improvement Project" is written in a blue, curved font above the landscape.

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Alternative turtle nesting sites

- Installed six nest mounds west of fencing in 2008 and another 10 mounds in 2009
- Turtles began using within one week
- Most nests predated same night as eggs laid;
- Anti-predation measures limited success



Road Mortality Monitoring Program

- Have continued our road mortality monitoring program following the protocols of previous studies conducted by CWS
- In 2008, we found a notable reduction in road kill in fenced off area (only 2500 metres) compared to previous studies
- In 2009, even more marked reduction in road mortality among reptiles and amphibians (4800 metres of fencing)



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LPCIP Monitoring Programs 2008-10: Reptiles

Reptiles		2010	2009	2008
Painted Turtle	<i>Chrysemys picta marginata</i>	34	39	36
Spotted Turtle	<i>Clemmys guttata</i>	1	4	0
Snapping Turtle	<i>Chelydra serpentina</i>	27	31	96
Blanding's Turtle	<i>Emydoidea blandingii</i>	8	3	3
Northern Map Turtle	<i>Graptemys geographica</i>	9	8	11
Eastern Gartersnake	<i>Thamnophis sirtalis</i>	30	35	92
Northern Watersnake	<i>Nerodia sipedon</i>	0	1	0
Eastern Foxsnake	<i>Pantherophis gloydi</i>	2	1	8
Milksnake	<i>Lampropeltis triangulum</i>	0	0	0
Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	2	4	12
TOTAL REPTILES		113	126	258

*Species denoted in **RED** are designated species at risk by COSARO

**Note that 2009 totals include specimens killed along the causeway prior to the drift fence being erected.



Multi-year findings of Monitoring Programs: Reptiles

Reptiles		2010	2009	2008	1993	1992	1980	1979
Painted Turtle	<i>Chrysemys picta marginata</i>	34	39	36	79	93	74	95
Spotted Turtle	<i>Clemmys guttata</i>	1	4	0	9	7	0	1
Snapping Turtle	<i>Chelydra serpentina</i>	27	31	96	78	45	74	75
Blanding's Turtle	<i>Emydoidea blandingii</i>	8	3	3	18	17	7	19
Northern Map Turtle	<i>Graptemys geographica</i>	9	8	11	6	2	5	12
Eastern Gartersnake	<i>Thamnophis sirtalis</i>	30	35	92	32	13	43	26
Northern Watersnake	<i>Nerodia sipedon</i>	0	1	0	2	0	2	4
Eastern Foxsnake	<i>Pantherophis gloydi</i>	2	1	8	3	3	13	5
Milksnake	<i>Lampropeltis triangulum</i>	0	0	0	0	0	1	0
Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	2	4	12	1	0	0	0
TOTAL REPTILES		113	126	258	228	180	219	237

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**Note that 2009 totals include specimens killed along the causeway prior to the drift fence being erected.



LPCIP Monitoring Programs 2008-10: Amphibians

Amphibians		2010	2009	2008
Northern Leopard Frog	<i>Lithobates pipiens</i>	13	7	375
Bullfrog **	<i>Lithobates catesbeianus</i>	14	29	72
Green Frog	<i>Lithobates clamitans</i>	3	8	18
Gray Treefrog	<i>Hyla versicolor</i>	0	0	1
Western Chorus Frog	<i>Pseudacris triseriata</i>	0	0	0
American Toad	<i>Anaxyrus americanus</i>	0	0	151
Fowler's Toad	<i>Anaxyrus fowleri</i>	0	0	0
Unidentifiable Anuran		15	41	198
TOTAL AMPHIBIANS		45	85	815

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Multi-year findings of Monitoring Programs: Amphibians

Amphibians		2010	2009	2008	1993	1992	1980	1979
Northern Leopard Frog	<i>Lithobates pipiens</i>	13	7	375	7,476	445	10,753	9,172
Bullfrog **	<i>Lithobates catesbeianus</i>	14	29	72	154	101	514	576
Green Frog	<i>Lithobates clamitans</i>	3	8	18	10	26	19	12
Gray Treefrog	<i>Hyla versicolor</i>	0	0	1	11	4	0	0
Western Chorus Frog	<i>Pseudacris triseriata</i>	0	0	0	0	0	12	0
American Toad	<i>Anaxyrus americanus</i>	0	0	151	131	83	55	164
Fowler's Toad	<i>Anaxyrus fowleri</i>	0	0	0	1	0	16	12
Unidentifiable Anuran		15	41	198	34	40	109	104
TOTAL AMPHIBIANS		45	85	815	7,817	699	11,478	10,040

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Study on Effects of Road Mortality on SAR Turtles

"Results of the study, based on the best available information, suggest that the populations of Spotted Turtle and Blandings Turtles are declining in the Big Creek National Wildlife Area, and that reducing road mortality via barriers and ecopassages along the Long Point Causeway may reduce or stop these declines".

Brian Craig, Chair, Science Advisory Committee

The Committee would like to thank Jeff Robinson of the Canadian Wildlife Service for funding and overseeing this important study



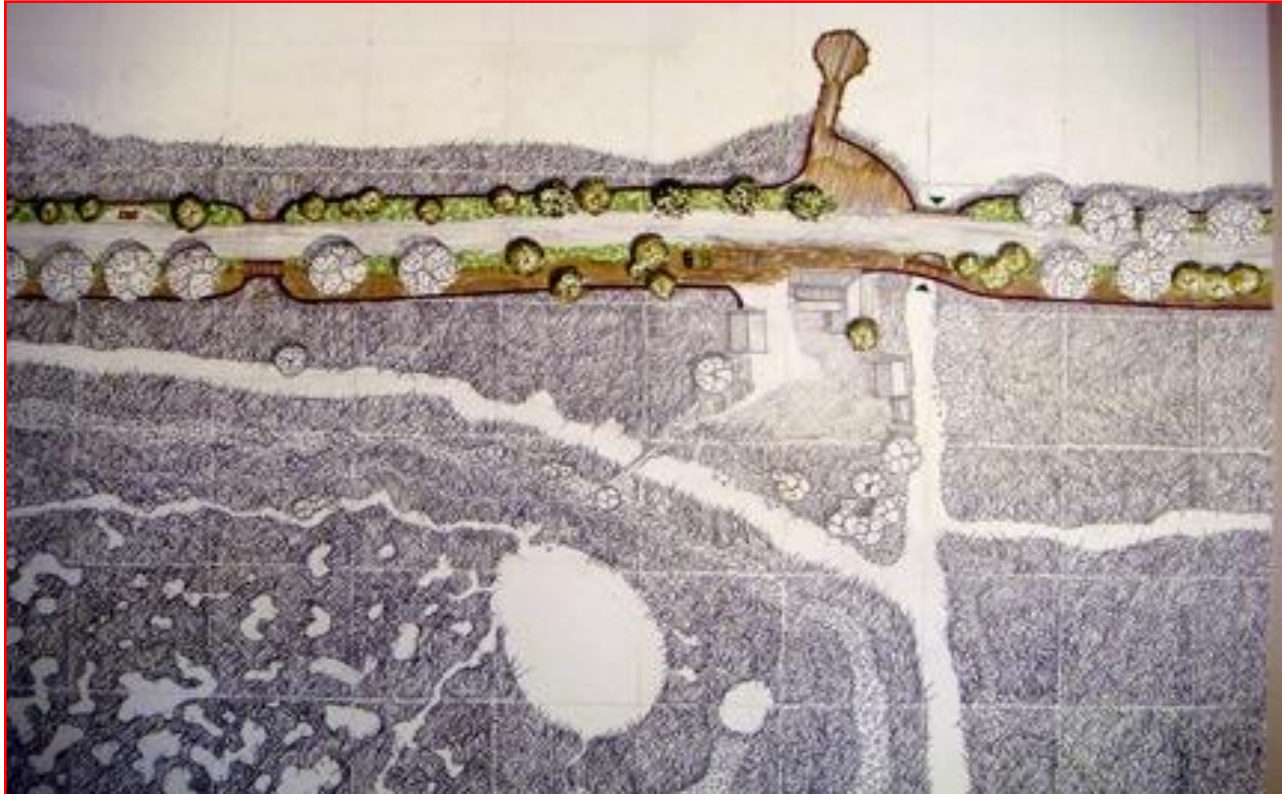
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Proposal to install Ecopassages

- Received funding from HSP and SARSF to design and construct 3 ecopassages under Causeway
- Chosen locations closest to prime SAR habitat and where most road kill occurs
- Environmental Assessment process to begin January with June completion date
- Construction could occur in fall of 2011



Proposed location of large aquatic ecopassage



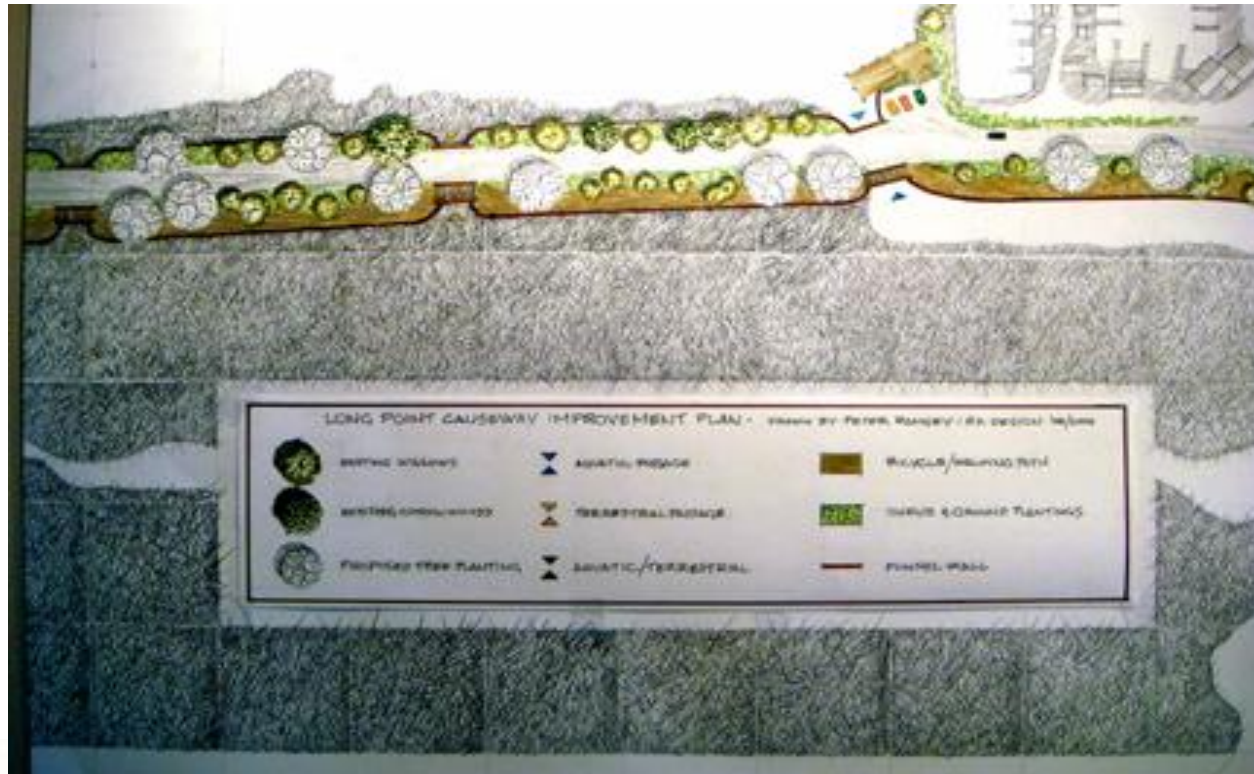
Typical concrete aquatic culverts



Model of aquatic ecopassage
flanked by sheet pile barrier walls



Proposed location of small terrestrial ecopassages



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Examples of terrestrial ecopassages

- Typical concrete box culvert



- MNR-designed steel ecopassage



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What we have learned

- Road ecology is a relatively recent science
- Methods and technologies are even newer and untested
- Each project must be customized to suit the surrounding ecosystem
- Creating public awareness is just as important to success as science and technology.

The logo is a circular emblem with a blue border. Inside, a grey road with a yellow dashed center line curves through a green landscape with trees. Two blue figures are walking on the path. The text "Long Point Causeway Improvement Project" is written in blue along the top inner edge of the circle.

Long Point Causeway Improvement Project

Summary

- Initiated, funded and commissioned comprehensive feasibility study
- Initiated, funded and carried out measures to reduce road kill: fencing, nest mounds, signage, public education
- Gathered scientific information and data to support proposed work
- Succeeded in reducing road of reptiles and amphibians, incl. SAR
- Secured hundreds of hours of volunteer time in support of project
- Secured \$600,000 in funding to support project

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