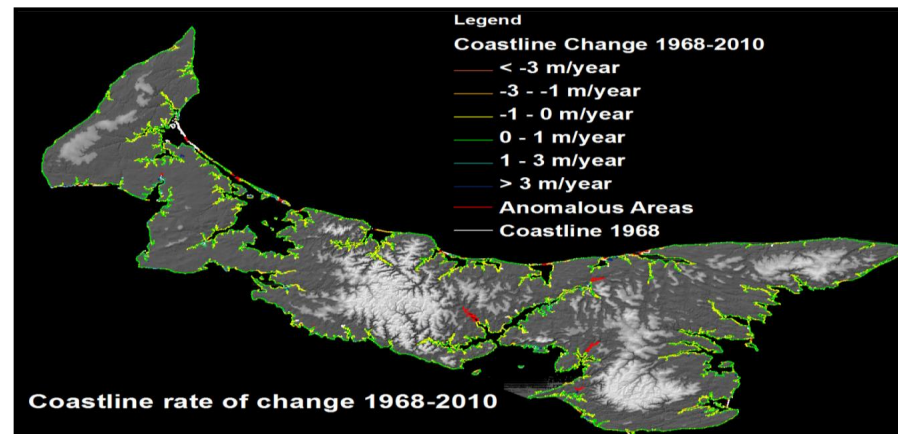




PEI's Changing Coasts



Dr. Adam Fenech, University of Prince Edward Island
Presented, Prince Edward Island
16 September 2014

PEI Sensitive to Coastal Erosion

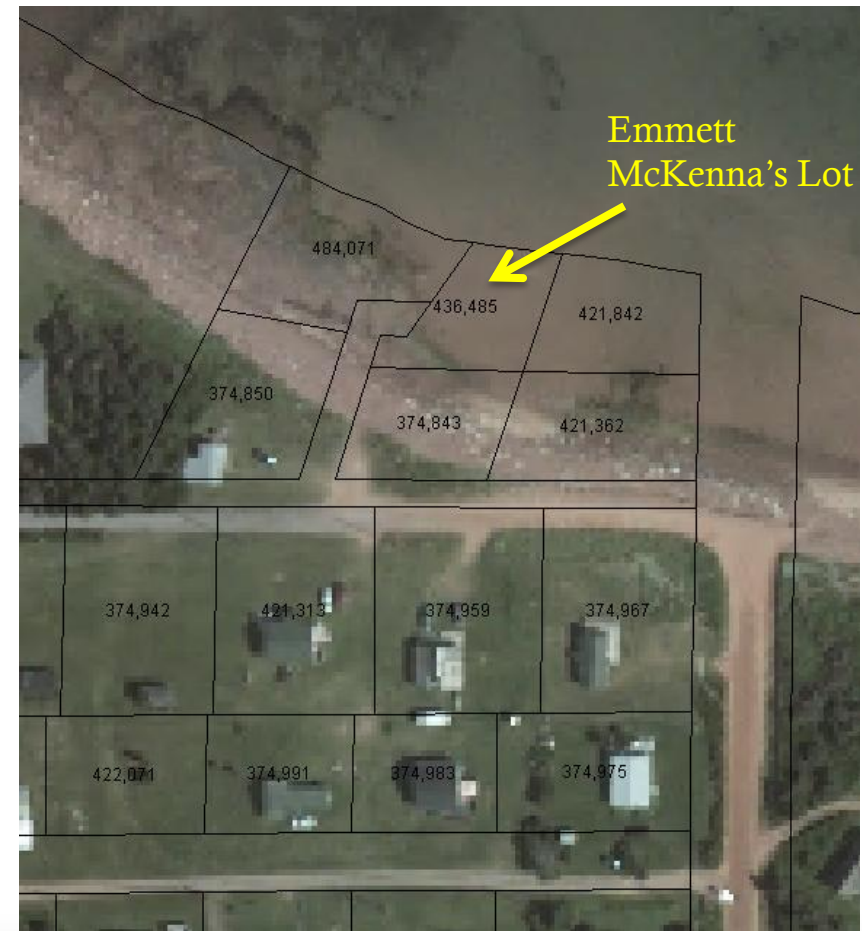


- PEI made of Sand and Sandstone
- Sea Level Rise
(36cm 1900s, ~1m by 2100)
- Land Falling
(-10cm to -20cm per century)
- Increased Storminess (10-20%)
- Loss of winter ice cover



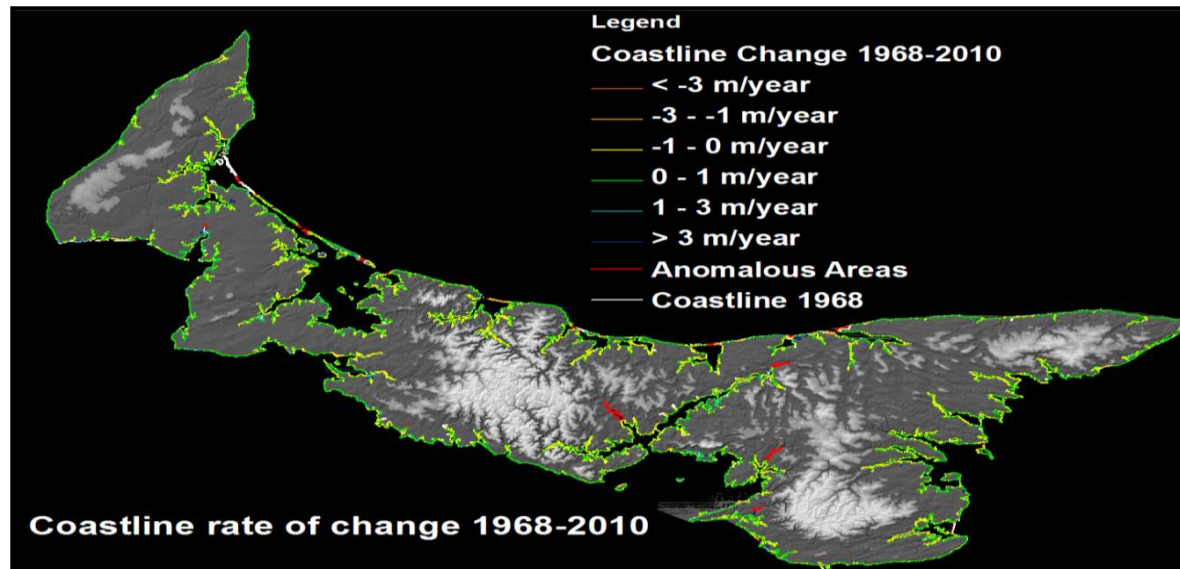
Coastal Erosion Example

- Pigot's Point, Savage Harbour
- McKenna's purchase Lot in 1959
- At the time there was a large sand dune, 50 feet high on the shore side of their cottage
- Over 200 metres of bank have been lost to the sea in this area since 1962



PEI's Coastal Erosion

- average rate of coastline change measured for every meter of the entire island from **1968 to 2010** is **28 cm/year** (Webster and Brydon, 2012)



Wind Turbine



Type	Higher Risk (2040)	Medium Risk (2070)	Lower Risk (2100)	Total
Barn	0	2	6	8
Bridge	124	0	2	126
Commercial	50	49	47	146
Foot Bridge	9	0	1	10
Garage	8	14	20	42
Gazebo	5	1	1	7
Lighthouse	6	5	6	17
Outbuildings	90	165	191	446
Residential	148	380	476	1004
Settling Pond	1	1	2	4
Tower	0	0	1	1
Wind turbine	0	1	0	1
Total	441	618	753	1812



Time Span	Land Area Lost	Land Area Gained	Net Loss/Gain
1968-2010	35.21 km ²	14.54 km ²	-20.67 km ²

Our Province is Shrinking!



Emergency Warnings!

From: Libby,Linda [Charlottetown] [mailto:Linda.Libby@EC.GC.CA]

Sent: Wednesday, December 04, 2013 09:04 AM

To:

Subject: Update on expected waves/storm surge for north shore

The latest computer models are consistent with the information provided yesterday. The strong northwest winds will generate 5-7+ metres waves just off shore of the eastern half of PEI's north shore by late morning while a storm surge will build westward as water piles up in the eastern end of the Northumberland Strait.

Linda

Linda Libby

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Telephone [902-566-7038](tel:902-566-7038)
Facsimile [902-566-7279](tel:902-566-7279)
Government of Canada



Who is CLIVE?

- CoastaL Impacts Visualization Environment
- An interactive climate change, sea level rise, storm surge, coastal erosion visualization tool
- developed in partnership with Spatial Interface Research Lab at Simon Fraser University
- Nick Hedley, Ph.D. Simon Fraser University

Students

- Alex Chen, Simon Fraser University
- Andrew Doiron, University of Prince Edward Island



Go Watch CLIVE!

- <http://www.youtube.com/watch?v=pzocV3RMOz8&feature=youtu.be>





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