TANTRAMAR

Picture Port Elgin

TANTRAMAR 2040

Coastal Issues Workshop

Port Elgin

February 2011

5:30 to 9:00pm



Outline

5:45 Welcome, Introductions

6:00 Climate Change and Coastal Impacts

6:30 Port Elgin case study

8:30 Wrap-up

Where Does Coastal Planning Fit?

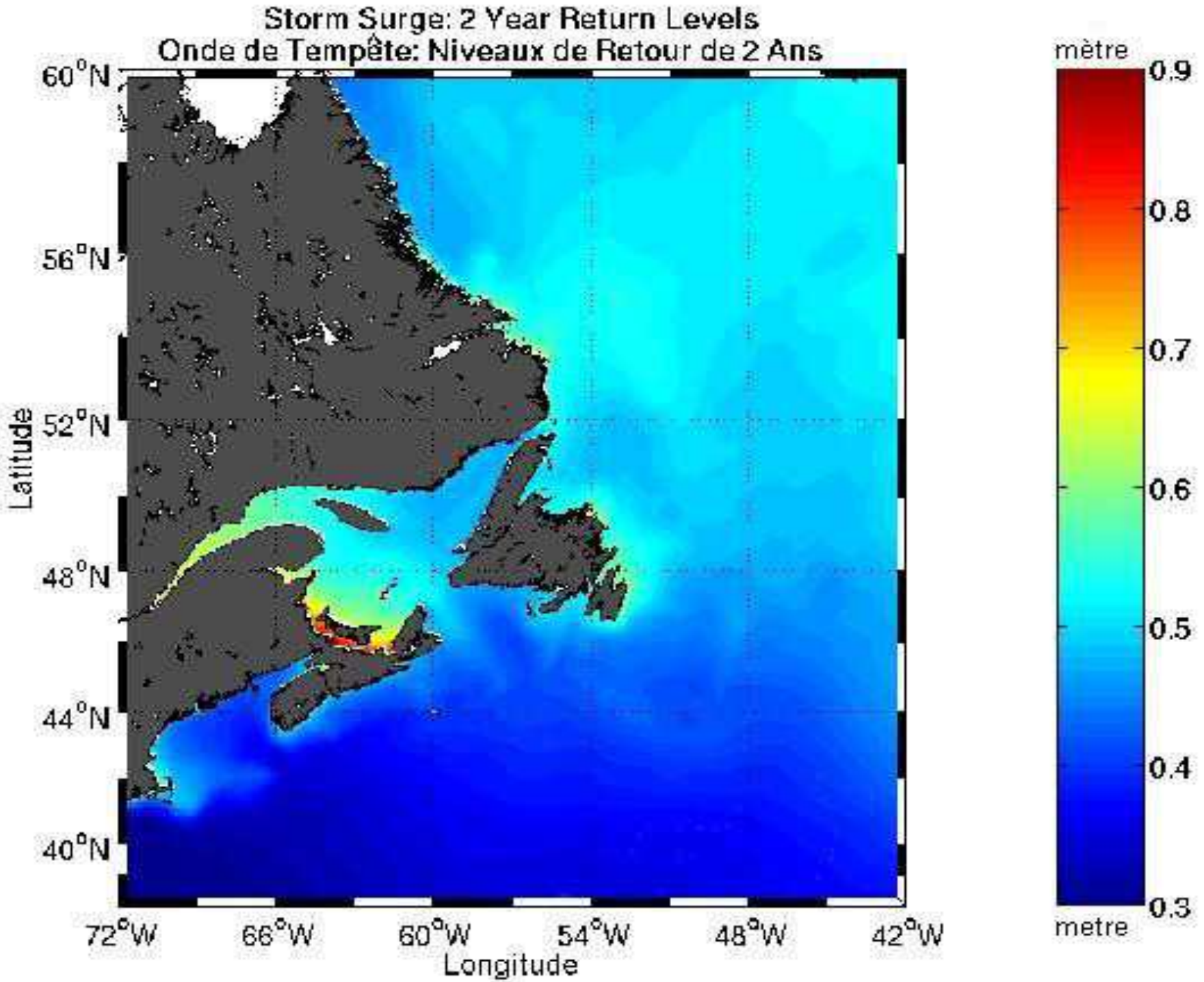
- *Picture Port Elgin*
- *Tantramar 2040*
- *Tantramar Rural Plan*
- *Municipal Plan & Zoning By-law*
- *Emergency Measures Plan*

Coastal Events & Activities


Courtesy of NB DOE

- Jan. 2010 storm surge
- April 2010 - Gary Lines, Environment Canada at PERS
- July 2010 – Insurance Bureau of Canada and Department Of Environment reps at Baie Verte
- Oct. 2010 storm surge
- Dec. 2010 storm surge
- Storm Surge mapping (Oct. - Jan.)


PLAN
DU FORT SITUÉ SUR LA
POINTE DES GASPAREAUX
1751 French Plan of Fort Gaspareaux
Illustrating present Seawall and Land loss
Through Erosion and Storm Surge Activity
Current Seawall
Lost to Erosion since 1751
Approximately 45meters



Definitions

- **Weather** - atmospheric conditions and forecasts
- **Climate** - average weather over 30 year period.

Focus of this Workshop

- Go through 7 steps to assess water and climate change issues in Port Elgin (and area)
- Process will help us plan for issues that are happening in the community now and in the future.
- Focus is NOT on stopping climate change.

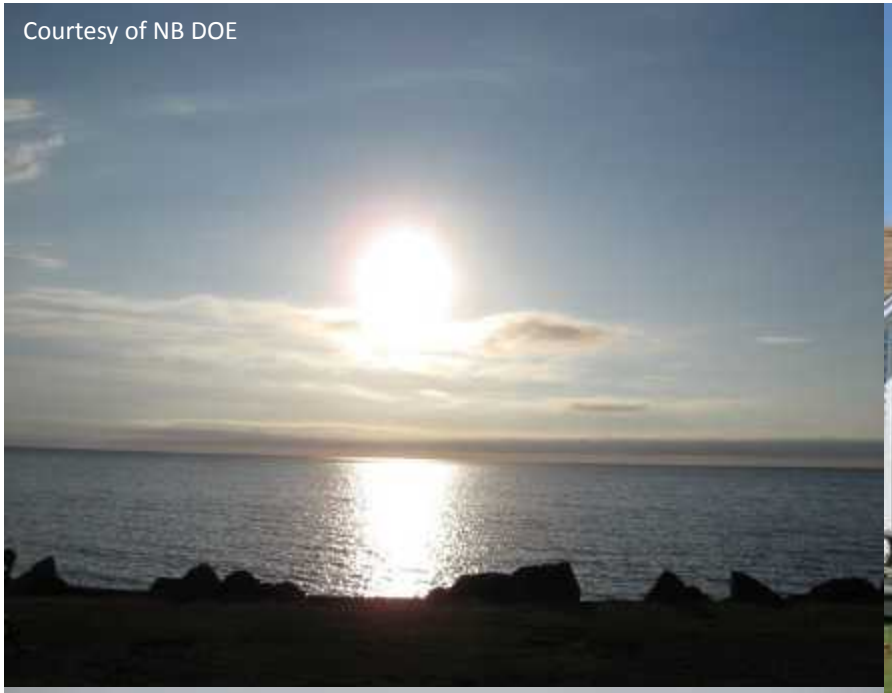
Impacts of Climate Change

Projected Temperature Increases

- **1.8 - 4.0** degrees Celsius by 2100

Sea Level Rise

- Most likely scenario **1.43 m** by 2100 (Rahmstorf et al. 2007)


Courtesy of NB DOE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Projections of Future Changes in Climate

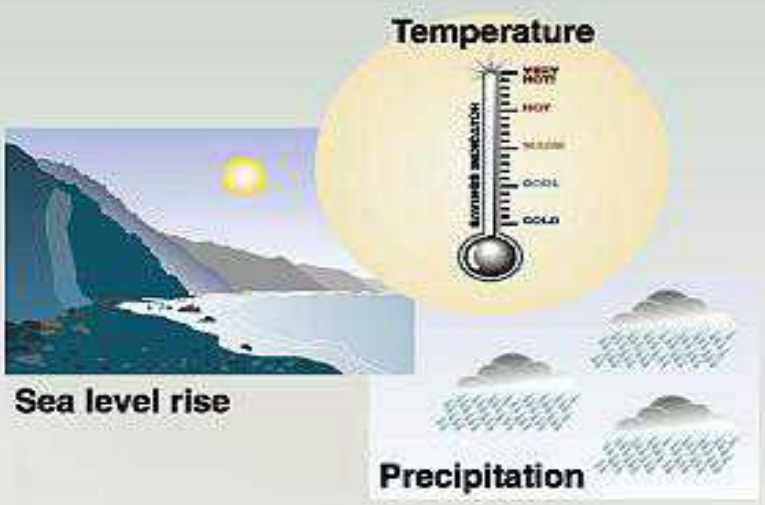
- *Very likely* that hot-cold extremes, heat waves, and heavy precipitation events will continue to become more frequent.
- *Likely* that future tropical cyclones will become more intense, with larger peak wind speeds and more heavy precipitation.
- Extra-tropical storm tracks projected to move poleward with consequent changes in wind, precipitation, and temperature patterns.

Source: IPCC Fourth Assessment Report Feb 2007

High Water Levels

- **High water** results from a combination of sea level rise, storm surge, sinking land and wave run-up.
- **Storm surge** results from ever-increasing intensity of storms crossing Atlantic Canada. It is a low pressure weather system associated with high winds. A surge can occur regardless of increases in storm intensity.
- On average storm surge ranges from **0.5 to 0.8m**
- In extreme cases, storm surges can be **2-3m** (e.g., 2000 surge in Shediac was close to 2m)
- **Sinking land** adds **20-30cm** to relative sea level rise
- Wave run-up, event-based, could exceed 5m.

Potential climate changes impact



Impacts on...

Health

Weather-related mortality
Infectious diseases
Air-quality respiratory illnesses

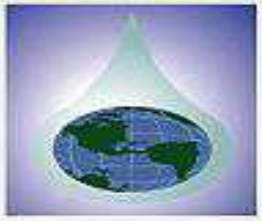
Agriculture

Crop yields
Irrigation demands

Forest

Forest composition
Geographic range of forest
Forest health and productivity

Water resources



Water supply
Water quality
Competition for water

coastal areas

Erosion of beaches
Inundation of coastal lands
additional costs to protect coastal communities

Species and natural areas

Loss of habitat and species
Cryosphere: diminishing glaciers

GRID Arendal UNEP

GRAPHIC DESIGN : PHILIPPE REKACEWICZ

Source: United States environmental protection agency (EPA).

Most often climate change does not present new risks,

but rather it serves as a multiplier of current risks

Photos courtesy of DENV