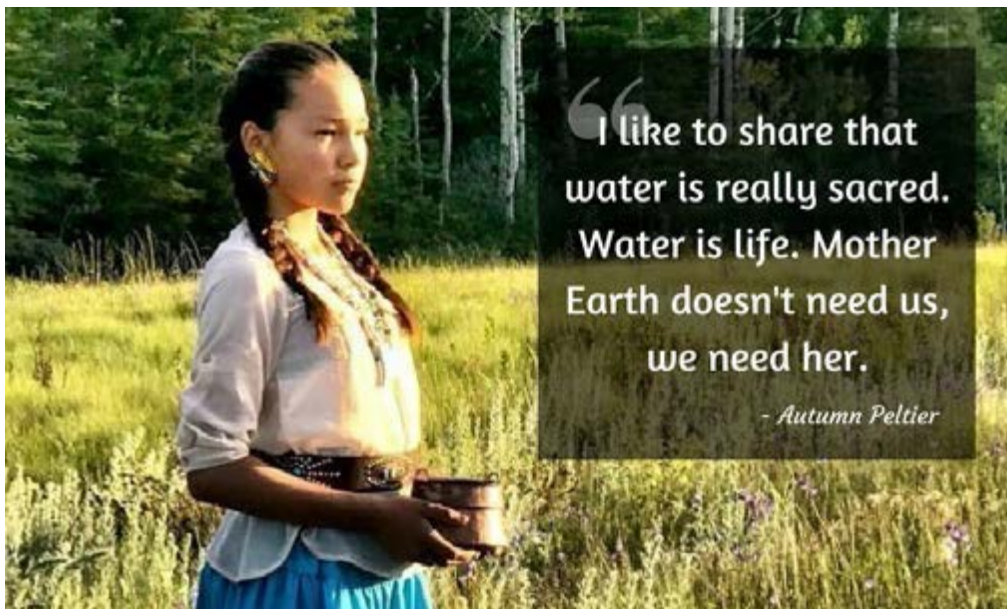




ATLANTIC CONFERENCE COASTAL PROTECTION & RESTORATION

**ATLANTIC CONFERENCE COASTAL PROTECTION & RESTORATION
FINAL REPORT AND RECOMMENDATIONS**

<https://swwatsmeet.wixsite.com/conferences>



Autumn Peltier, Keynote Speaker

SHEDIAC MULTIPURPOSE CENTRE

April 23, 2018



ATLANTIC CONFERENCE COASTAL PROTECTION & RESTORATION

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LETTER TO MINISTER HARVEY

Hon. Andrew Harvey,
Minister of Environment and Local Government
P.O. Box 6000 Fredericton, NB E3B 5H1

Dear Minister Harvey;

Re: Final Report – Atlantic Conference Coastal Protection and Restoration

The Organizing Committee for the April 23, 2018 Atlantic Conference Coastal Protection and Restoration is pleased to present our Final Report and Recommendations drawn from Conference presentations and delegate discussions.

We trust they will inform future public policy decisions, legislation and regulations concerning the protection and restoration of our coastline, flood plains and wetlands.

We thank the many residents of Shediac, Pointe-du-Ch n , Br le Ouest, Br le Est, Beaubassin and Cap Pel  who volunteered their time and expertise to make this Conference happen.

The Conference would not have been possible without our sponsors and more than 160 paying delegates. Special thanks to the Town of Shediac, the Universit  de Moncton, Beaubassin Est, Cap Pel , Shediac Bay Cruises, IGA COOP, Brainworks-Razor Marketing and Adorable Chocolat and Official Languages GNB.

Most importantly, the lack of clear legislation and enforcement has created a climate of protectionism-citizens, communities, developers and authorities protecting their own turf. People have been at odds with each other for years, The result has been people working against each other rather than working with each other.

Our laws have fallen short or non-existent and our environmentally sensitive land continues to be stressed. Fifty percent of New Brunswick's salt marshes have already been lost to diking and draining (approximately 134 Km²).

We hope that you will consider our recommendations. With clear and protective laws we can regain our sense of community.

Respectfully submitted

Andy Malolepszy

Chair, Organizing Committee for Atlantic Conference Coastal Protection



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1. EXECUTIVE SUMMARY

On April 23, 2018, SWWAT, a consortium of seasonal and full-time residents from Southeastern New Brunswick hosted the Atlantic Conference on Coastal Protection and Restoration with support from the New Brunswick Environment Network (NBEN) at the Multipurpose Centre in Shediac. SWWAT is an association of volunteers. The New Brunswick Environmental Network (NBEN) established in 1991, is a communication network that links together more than 90 non-profit environmental organizations.

The conference brought together scientists, academics and more than 160 delegates representing municipal and provincial governments, business leaders, residents of Southeastern New Brunswick and other regions across the Province to share their expertise, research and experience with a view to helping people better understand the gravity of climate change issues, sea-level rise, the essential role of coastal wetlands in providing floodwater absorption, filtration, fish and wildlife habitat and to explore what can be done to restore and protect these vital resources for future generations.

The seven speakers were extremely well prepared with facts and informed projections which attracted considerable attention from the media.

The Keynote speaker was Autumn Peltier an inspirational 13-year-old Anishinaabe girl from the Wikwemikong First Nation in Northern Ontario. She delivered her message that “water is life and we need to protect it if we want to survive on this planet”. Delegates listened intently to Autumn as she spoke truth in her low, earnest tone. She has previously spoken truth to the Assembly of First Nations and Prime Minister Justin Trudeau and just weeks ago she spoke to the United Nations General Assembly in New York.

Dr. Tom Delworth, Senior Scientist at the Geophysical Fluid Dynamics Laboratory, a Faculty Member in Atmospheric and Oceanic Science at Princeton University and a Fellow of the American Meteorological Society. He has led the development of successive generations of state of the art computer climate models for the study of climate variability and change. Dr. Delworth told Conference delegates that if the projected trajectory of climate change continues without change, most of the Atlantic coast, Pointe-du-Chêne and much of Shediac will be under water by the year 2100.

Dr. Michael Chadwick is Adjunct Professor at the Université de Moncton, where he teaches a graduate course on environmental impacts. Dr. Chadwick’s presentation focused on the importance of coastal zones including: productive ecosystems, the disappearance of salt-water marshes and wetlands, carbon storage and sea-level rise

Mr. Robert Capozzi, Adaptation Specialist with the New Brunswick Climate Change Secretariat presented his audience with some burning temperature information. Based on his projections we could see an estimated 40 days a year where the temperature is plus 30°C — virtually the whole summer. Impacts would include a rise in heat related



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sickness, new pests/species affecting agriculture, forestry and water quality, increasing deer ticks and Lyme disease.

Dr. SABINE DIETZ, BA, MES, PhD biologist, environmental and climate change adaption consultation-specialist leading development of a Green Energy Strategy for the rural communities of Beaubassin-Est, Shediac and Cap Pelé region by the summer of 2018. Sabine briefed the audience on a Green Strategy that will embrace actions that help ensure a healthy environment that can support economic development, a high quality of life, and vibrant communities along the Northumberland Strait coast within the reality of a changing climate.

Ms. LOIS CORBETT, Executive Director of the Conservation Council of New Brunswick offered a glimpse into the history of the Conservation Council of New Brunswick including: the 1969 Saint John River Act and the Clean Water Act (1989). In the first Quarter 2017, the Council undertook a comprehensive public opinion survey used to inform the Council's communication strategy and help empower government.

Climate change is real and potentially catastrophic for the coastal regions of New Brunswick. Provincial governments have failed to provide leadership in respect to the delineation, protection and restoration of natural defense mechanisms including but not limited to sand dunes, deeply rooted grasses that hold the dunes in place, salt water marshes and coastal wetlands that absorb flood waters, filter storm-water run-off and serve as natural wild-life habitat. If we continue to allow development on wetlands and known flood plains, we'll be looking at billions of dollars in property damage and replacement as well as loss of life and/or major dislocations of people. The Provincial Government is encouraged to provide leadership by assuming jurisdictional control of all coastal lands, dunes, salt marshes, wetlands and flood plains and advancing public policy, legislation, regulation and enforcement measures to protect them from development.

Conference delegates recommend that the Federal Government delineate a clear regulatory and enforcement regime informed by established public policy objectives for protection of coastal waters, coastline and coastal marshes in anticipation of sea-level rise.

They recommend that the Provincial Government acknowledge the threats to life and property implicit in climate change and sea-level rise projections and lead the development/implementation of a public education/information program that could make the general public receptive to new legislation and regulations — particularly targeting schools and young people as potential leaders in the battle for a safe environment.

They want to see the Provincial Government delineate a clear regulatory and lawful enforcement regime which is based on established public policy objectives for water quality, protection of wetlands and buffers to sea-level rise.



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They want the Provincial Government to partner with the Federal Government to establish a Climate Change Defense Fund, which would be used to purchase, manage, protect and preserve wetlands along the Northumberland coast, and restore the health of wetlands, salt marshes and dunes where possible and in perpetuity.

W.E. (Bill) Belliveau

On behalf of the Organizing Committee

Atlantic Conference Coastal Protection and Restoration

2. OBJECTIVE OF THE CONFERENCE

The objective of the conference was to increase public awareness of the importance of watershed lands adjacent to the Northumberland Strait and the role of wetlands in absorbing storm surges and delivering filtration services that help protect the quality of recreational waters, wildlife habitat and a tourism industry that contributes to the regional economy and is important to people who live in our coastal communities. Public awareness will be further enhanced by distribution of this report online at <https://swwatsmeet.wixsite>

3. INTRODUCTION

On April 23, 2018, SWWAT, a consortium of seasonal and full-time residents from Southeastern New Brunswick hosted the Atlantic Conference on Coastal Protection and Restoration in partnership supported by the New Brunswick Environment Network (NBEN) at the Multipurpose Centre in Shediac.

SWWAT is an association of volunteers. The New Brunswick Environmental Network (NBEN) established in 1991, is a communication network that links together more than 90 non-profit environmental organizations. The role of the NBEN is to improve communication and co-operation among environmental groups and between these groups and government and other sectors of the economy.

The Keynote speaker was Autumn Peltier an inspirational 13-year-old Anishinaabe girl from the Wikwemikong First Nation in Northern Ontario. Autumn was the only teenager in Canada to be nominated for the 2017 International Children's Peace Prize, launched during the 2005 World Summit of Nobel Peace Laureates and awarded annually to an inspirational child/teenager who has made a positive difference in the lives of children worldwide. Prior to her Shediac appearance, Autumn addressed the General Assembly of the United Nations in New York about the need to protect our waters. Her New York appearance helped kick off the International Decade for Action on Water for Sustainable Development.



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The Conference was chaired by the respected author and community activist, **Warren Redman**. Speakers at the Conference included: **Autumn Peltier**, 13 year old inspirational speaker from Northern Ontario; **Dr. Tom Delworth**, Physical Scientist, GFDL/NOAA; Lecturer, Princeton University, Department of Atmospheric and Oceanic Sciences; **Dr. Michael Chadwick**, Professeur associé, Université de Moncton, Maîtrise en études de l' environnement and Chair Vision H2O; Mr. **Robert Capozzi** Specialist in Climate Change Adaptation, Secretariat (Branch) Environment and Local Government with the Government of New Brunswick; **Dr. Sabine Dietz**, Chair of the Aster Group, consultant and conservation biologist and specialist in Environmental & Climate Change Adaptation who is heading up development of a Green Energy Strategy for coastal communities along the Northumberland Strait; **Ms. Amanda Marlin**, Executive Director and Energy Coordinator, EOS Eco-Energy Inc. and lead member of the Tantramar Collaborative and **Ms. Lois Corbett**, Executive Director of the Conservation Council of New Brunswick. Each speaker spoke for about twenty minutes and then took questions from the delegates

Following the speaker presentations, more than 80 delegates split up into discussion groups of six to ten people. Each group was assigned one of the following topics: Wetlands, Climate Change & Sea Level Rise, Economic Impacts and Water quality and asked to answer the following three questions as related to their assigned subject.

- 2.1.1 What does responsible development look like?
- 2.1.2 How can we best engage with policy and decision-makers in order to ensure that we protect the environment?
- 2.1.3 What can I, as an individual do?





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4. PRESENTATIONS

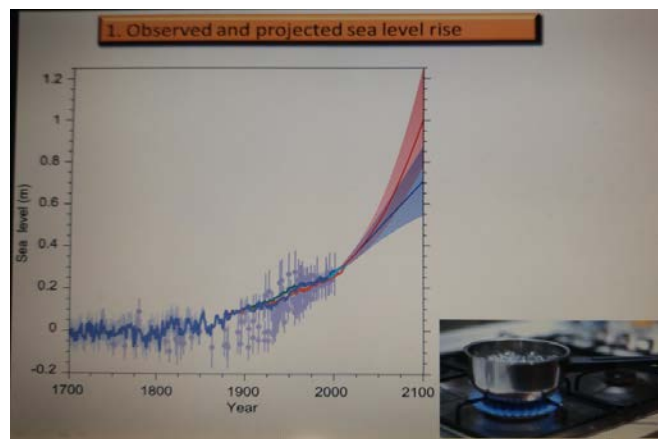
AUTUMN PELTIER, KEYNOTE SPEAKER: Her message “water is life and we need to protect it if we want to survive on this planet”. Delegates listened intently to Autumn as she spoke truth in her low, earnest tone. She intuitively understands the teachings of her culture, having learned from a celebrated Elder in her community (her Aunt Josephine), her mother and her grandfather. She speaks their truth: protect and respect the earth’s elements, they ensure your survival.

She has previously spoken truth to the Assembly of First Nations with a pan-Canadian audience. Autumn has also spoken truth to Prime Minister Justin Trudeau, expressing sorrow that her words may be largely ceremonial. Most recently, she spoke to the United Nations General Assembly in New York. Conference delegates listened intently as she took them through her PPT presentation and photos of water walks, family members and their activist activities.

Later in the day Autumn spoke to students at Polyvalente LJR, high school in Shediac, before returning to the Conference in late afternoon to deliver closing remarks. At the school, a video was presented, showing Autumn making a speech to the Assembly of First Nations’ Chiefs following her return from Sweden. In the YouTube video, Autumn sings a ceremonial water song. Halfway through the ceremony, she tears up but continues on, determined to finish the traditional song. The chiefs standing behind her on the stage approach to lay their hands on her shoulders. This steadies her and she completes her singing. The message is ‘take good care of our water; water is sacred’.

DR. TOM DELWORTH, SENIOR SCIENTIST at the Geophysical Fluid Dynamics Laboratory, a Faculty Member in Atmospheric and Oceanic Science at Princeton University and a Fellow of the American Meteorological Society. His research has included climate variability and change on decadal to centennial time scales, with emphasis on the role of the oceans in climate. He has led the development of successive generations of state of the art computer climate models for the study of climate variability and change. The Geophysical Fluid Dynamics Laboratory has been one of the world leaders in climate modeling and simulation for the past fifty years.

Dr. Delworth told delegates at the Conference that if the projected trajectory of climate change continues without change, most of the coast, Pointe-du-Chêne and much of Shediac will be under water by





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the year 2100. Major weather events could advance the date by years or even decades.

The current trajectory of climate-change and projected temperature increases predict a 1.2 metre rise in sea levels by the Year 2100. That would put Pointe-du-Chêne and parts of Shediac under water.



As water warms, it expands. Climate change and temperature rise will expand the Atlantic Ocean. That translates into sea-level rise, flooding and coastal disaster. The melting of Greenland would increase sea-level rise by up to 7 metres. The melting of Antarctica would raise sea-levels by as much as 70 metres.

The Ocean's circulation has not been this sluggish in 1,000 years. The projected sea-level rise from collapse of Atlantic Ocean Circulation is 0.6 metres in the Shediac, Beaubassin region. The Greenhouse effect is real and essential to life on earth. Humans are strengthening greenhouse effects. Future warming is up to us. Warming will lead to substantial sea-level rise. The key issue is how fast will land-based ice sheets melt.

Actions that could mitigate the impacts of climate change include: on a Global scale, movement to renewable energy. This is rapidly developing. On a local scale protect the coastal environment that is a natural defense – wetlands and coastal ecosystems. Tom makes two recommendations (a) that government (provincial and federal) purchase and preserve wetlands along the Northumberland coast and (b) purchase areas where coastal wetlands have been destroyed and restore them to full service. This could reduce the tension between property owners who want to develop coastal wetlands for commercial projects and the general population who has an interest in preserving and restoring the wetlands.



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DR. MICHAEL CHADWICK, Associate Professor at the Université de Moncton, where he teaches a graduate course on environmental impacts. He is Chair of the Science Committee for Atlantic Lobster Sustainability Foundation and President of the watershed group Vision H20. He has conducted fisheries related and environmental research throughout Canada and worked with the Department of Fisheries and Oceans for 33 years in Moncton, NB. He has chaired the Atlantic Science Directors Committee, the Major Resources Support Committee of Natural Sciences and Engineering Research Council, the Atlantic Federal Science and Technology Council, the Southern Gulf Research Network and the West African Science Capacity Building Working Group.

Dr. Chadwick's presentation focused on the importance of coastal zones including: productive ecosystems, the disappearance of salt-water marshes and wetlands, carbon storage and sea-level rise

Productive Ecosystems

Estuaries and salt marshes feed the coastal waters, migrating species of birds, fish and numerous mammals. They are the most productive ecosystems in the world, as productive as tropical rain forests, nearly 10,000 kcal (kilocalories) per square meter per year, which is equal to 10 kWh of electricity or one liter of gas in stored energy which is a lot of stored energy.

At least 50% of NB fisheries depend on estuaries, important nurseries for many species of fish with a production that is three-fold higher than coastal or inland waters. Eel grass is the dominant plant in estuaries providing habitat and nutrient for the food chain; it is a preferred food for geese. Estuaries are key to the survival of migrating shore birds. Many ducks reside in estuaries during the breeding season.

The food chain of a salt marsh begins above ground with photosynthesis of fast growing *Spartina* and below ground on the root systems with fungi, algae and sulphate reducing bacteria that release sulfur instead of oxygen. This high productivity is a result of fluctuating levels of nutrient, salinity, water submergence and oxygen levels, shaped by daily tidal surges, seasonal fluctuations of freshwater and saltwater. The released nutrients are grazed by diatoms, mollusks, insects, crabs, fishes, birds and mammals...the food chain.

Disappearance of salt marshes

About 50% of New Brunswick's salt marshes remain, 134 Km². An equal amount has been lost to diking and draining. The most important feature to preserve along the coast is the natural capacity of cliffs, beaches, dunes and marshes that migrate landward as the sea level rises. The list of ecosystem services along the coastal zone include land protection against erosion and storm surges, the regulation of water flow, the filtration of nutrients, sediment and contaminants from storm-water run-off, the feeding of various fish, migratory birds and mammals that support recreational and commercial fisheries,



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bird watchers and nature lovers. U.S. President Barack Obama's Scientific Advisors valued these services at \$200,000 USD per hectare annually, more than any other biome (a large naturally occurring community of flora and fauna occupying a major habitat),

A national coastal assessment in 2010 found water quality problems along the northeast coast of the U.S. where the biological quality of an estimated 1/3 of the salt marsh area is poor. There have been no comprehensive studies on the health of Canadian salt marshes whereas a U.S. index of vegetation health indicates that over 40% of salt marshes are in poor or fair health, largely due to damming, ditching and hardening surfaces; elevated levels of nutrients like nitrogen and phosphorus; heavy metal contamination and invasive species. Most concerning is that almost all estuarine fish showed signs of contamination by heavy metals or organic toxins. We don't know the situation in New Brunswick but the situation is likely similar.

Carbon storage

Another feature of salt marshes is their capacity to store carbon. A study of a salt marsh in northern California published in 2018 found that carbon storage was 2 kg per m² per year, eight times greater than a forest because carbon is stored forever in peat. New-Brunswick's salt marshes have a capacity to capture 1/3 million tons of carbon per year, close to 1/15 of New Brunswick's emissions, an important defense against climate change that needs to be protected.

Sea Level Rise

Sea-level projections in the Northumberland Strait by Natural Resources Canada (NRCan) estimate sea-level rise at 1.2 meters to 1.4 meters by the year 2100, almost 2 centimeters per year. Sea level rise is increasing largely because of thermal expansion in a warming ocean and could increase exponentially with melting of Greenland and Antarctic ice caps

The implications for New-Brunswick, analyzed by the Department of Environment and Local Governments (DELG) and data on the rate of coastal erosion in meters per year are available on the DELG website. Along the Northumberland Strait, cliffs will lose 0.25 m per year, dunes 0.85 m per year, beaches 1.0 m per year and salt marshes 0.30 m per year.

Since 1944 the Northumberland Strait has lost 20-40% of its beaches, dunes and salt marshes. In the USA, the National assessment of shoreline change evaluated the erosion in New England and mid-Atlantic at 1.4 meters per year on 2/3 of the coast. Marram grass with its extensive root network helps stabilize and prevent coastal erosion. It binds the dune together and quickly repairs any movement resulting from storm surges. Sand dunes are able to move and absorb energy from a storm. None are visible on our salt-water marshes.



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Mr. ROBERT CAPOZI, Adaptation Specialist with the New Brunswick Climate Change Secretariat. His role focuses on facilitating the dissemination of climate change knowledge and technical expertise to a broad range of stakeholders with the ultimate goal of creating more resilient communities, improving local economies and advancing research on climate change. He has held the position of Coastal Lands Manager with the New Brunswick Department of Environment, Habitat Specialist with the NB Department of Natural Resources and Wetlands Management Specialist with Ducks Unlimited Canada.

Mr. Capozzi opened his presentation with some burning temperature information. The annual mean temperature today ranges from 1.7° to 8.8°C versus 6.5° to 13.6°C projected by the year 2100. Based on these projections we could see an estimated 40 days a year where the temperature is plus 30°C — virtually the whole summer. Impacts would include a rise in heat related sickness, new pests/species affecting agriculture, forestry and water quality, increasing deer ticks and Lyme disease.

Rising temperatures will increase precipitation and intensity of weather events, more often rain than snow that will increase flooding, erosion and damage to infrastructure — roads, bridges, wharves, property, trees, buildings. Sea-level rise will increase coastal erosion.

Water infrastructure – storm water, waste water and drinking water systems located underground will be saturated or completely flooded – relocation or redesign will be necessary to increase resiliency and that will be very expensive. Coastal-infrastructure including fish processing plants, small craft harbours, marinas, roads, etc. will require relocation or redesign at significant cost.

Properties / Residences / Buildings will be subject to flooding, saltwater intrusion in drinking water, backflow from storm water / sewage systems into buildings, erosion of property, etc. Home insurance and mortgages will be scrutinized more closely and denied in some circumstances. Natural infrastructure along the coast will be impacted by erosion. Coastal squeeze will impact natural assets such as dunes, wetlands, beaches, etc., diminishing the ability of these assets to buffer impacts from damaging storm surges.

Mr. Capozzi says we need to plan for flooding, particularly in low-lying areas, near watercourses in coastal areas and tidal water inlets. The new realities will mean shorter winters, changing precipitation forms, extreme weather, disturbances in forestry and agriculture, more forest fires, increases in forest pests and diseases, changing tree species, invasive species, droughts and dry soil. Winter harvesting of trees may be affected. Higher temperatures and extended growing seasons could result in more droughts and soil damaging conditions.



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Sea levels are predicted to rise up to one metre by 2100. High water marks will be much higher than today. Storm surges will be higher. Decreasing ice cover in the Gulf of St. Lawrence & Northumberland Strait will impact our natural coastal features such as dunes, coastal wetlands, beaches, tidal flats and sand bars. The result will be increased erosion, narrowing and segmenting of these features, reducing the ability of natural infrastructure to provide protection from storm surges and other weather events that damage critical infrastructure, installations, assets, properties, etc.

Dr. SABINE DIETZ, BA, MES, PhD Biologist, environmental and climate change adaption consultation-specialist leading development of a Green Energy Strategy (Eco Vision 2025) for coastal communities. She has over 15 years in developing, managing and delivering programs in the area of ecosystem conservation, species and habitat inventories, environmental education, species-at-risk protection, sustainable tourism and climate change adaption.

Eco Vision 2025 is a project to develop a Green Strategy for the rural communities of Beaubassin-Est, Shediac and Cap Pelé region by the summer of 2018. The Eco Vision 2025 website will provide regular updates and information concerning the project that will be managed by the consultant firm Aster Group.

Dr. Sabine briefed the audience on the Green Strategy that will embrace actions that help ensure a healthy environment that can support economic development, a high quality of life, and vibrant communities along the Northumberland Strait coast within the reality of a changing climate. It's a joint initiative of municipal governments Shediac, Beaubassin-Est and Cap Pelé. The strategy combines short, medium and long-term actions that are easy to implement but have a significant impact. Lead agencies and/or organizations have been identified and will be encouraged to become engaged. Key initiatives will include: public education, public communication and marketing. The strategy is the culmination of stakeholder meetings including with municipalities and individuals, surveys, public meetings and focus groups conducted over a period from December 2017 through April 2018. The Final Report and recommendations will be delivered to Municipal Councils in late May of 2018.

Dr. Dietz spoke of clean water as essential for all of us (including Nature). A number of issues have been identified in the region that affect water quality including: continued development pressure on our coasts and shorelines affecting sensitive and critical natural systems so that capacity to maintain good water quality is reduced (shoreline damage, wetland infringement and infilling); the presence of effluents from private homes, businesses and sewage treatment facilities containing various contaminants as well as coliform bacteria that affect water quality negatively, a lack of consistent, comprehensive water testing and open communication of testing results and impacts



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have produced considerable public concern. Sabine's remarks reinforced the water protection message delivered by Autumn Peltier.

Ms. AMANDA MARTIN, MSc Executive Director at EOS Eco Energy Inc. She has over ten years experience working on a wide range of community development projects across Atlantic Canada, including with First Nations. Her work and research focuses on the conservation of protected areas, environmental education, climate change adaptation, salt marsh restoration, rural transportation, sustainable development, literacy and poverty, community capacity building, strategic planning and Aboriginal education, history and culture. Amanda spoke on volunteered community collaboration.

Ms. LOIS CORBETT is the Executive Director of the Conservation Council of New Brunswick. She oversees the Organization's programs, policies and fund-raising. A long-time environmental activist, Lois has worked as Senior Policy Advisor to three Ministers of the Environment in the Government of Ontario. She provided advice on environmental legislation including the Endangered Species Act, Clean Water Act, the Greenbelt Act, the Green Energy Act, the Lake Simcoe Protection Act and the Far North Act. An environmental policy expert, Lois has experience with a large number of progressive policy files in a wide range of environmental issues including: toxics, wetlands, waste management, forestry, water, climate change, energy and fisheries.

In her presentation, Ms. Corbett offered a glimpse into the history of the Conservation Council of New Brunswick including: the 1969 Saint John River Act, the Environment Protection Act (1980), Underground Storage Tanks (1987), Bay of Fundy, Bay of Chaleur/Northumberland Strait work, the Clean Water Act (1989) Lakes and rivers (2002), Shale gas and water protection (2010-16) and Comprehensive watershed based plans.

In First Quarter 2017, The Council undertook a comprehensive public opinion survey, a random sample of 500 plus citizens. The results were used to inform the Council's communication strategy and help empower government.

<https://www.conservationcouncil.ca/en/our-programs/freshwater-protection/>

Top line results;

- 79% of those surveyed said they are worried about pollution going into our rivers, lakes and streams as a result of illegal dumping and storm-water runoff tolerated by the Department of Environment.
- 76% are concerned about water quality in their lakes, rivers and streams.
- 70% of New Brunswickers strongly believe governments are mismanaging fresh water.
- 44% of respondents say they have experienced a boil-water advisory, about double the national average.
- 77% of respondents believe they are not at risk of flooding or drought (prior to the 2018 St. John River flooding)



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- while 28% believe that their family is likely or very likely at risk of flooding.

New Brunswickers love their water

What worries New Brunswickers the most!



Risks to New Brunswick's Water

People who took part in the survey are concerned about: large-scale clear-cutting, water pollution, release of sewage; nutrient and chemical run off from farms, roads and highways; loss of coastal shorelines, wetlands and salt marshes caused by indiscriminate development.

Respondents to the survey believe there is need for a comprehensive Provincial Government water protection policy, supported by clear regulation and enforcement. They want to see watershed-based plans and, sub-watershed plans. They want the Provincial Government to partner with federal government departments like Environmental and Climate Change, Fisheries and Oceans. Respondents are optimistic and point to the Fracking Moratorium as a positive as well as the Technical working group on watershed protection at DELG, revisions to the Fisheries Act and release of the Parlee Beach Water Quality reports as other positives.

Respondents are also pessimistic, particularly with the absence of strong forest management plans, the opposition of businesses and developers to better water-management policies, under-resourced Provincial Government departments and the recycling of out-dated ideas by those who are responsible for the stewardship of our waters. New Brunswick's current water strategy was introduced in the December 2015 Throne Speech. DELG released a discussion document on guiding principles and vision in May 2016 and a summary of public feed back in the fall of 2016, The Minister of Environment and Local Government established a technical advisory committee on rivers classification and integrated watershed management in late 2016.



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DELG released a draft water strategy for public comment in September 2017 and a Final Report in December 2017. The Shediac Bay/Parlee Beach Water Report was released in April 2018. The Water Strategy calls for new legislation and watershed protection plans to include: a baseline (classification) water quality, broad public participation and understanding of the state of the watershed (science, pollution sources, threats); better data collection and reporting. It also requires that Water Quality guidelines be changed from objectives to enforceable standards; that wetlands protection be improved with wider buffer zones and that our coasts and estuaries be protected from extreme weather events and sea-level rise.

There is need for all-party legislation and protective regulations. People are encouraged to meet with their local MLAs to move legislation forward, to report pollution when they see it and to work on a comprehensive protection plan for our rivers, lakes, bays and coastal waters.

5. BREAK-OUT DISCUSSIONS

Following the seven speaker presentations, more than eighty of the delegates divided themselves into eleven groups (two French and nine English). Each group discussed one of the following the following topics:

5.1 WETLANDS

5.2 CLIMATE CHANGE & SEA LEVEL RISE

5.3 ECONOMIC IMPACTS OF CLIMATE CHANGE & SEA LEVEL RISE

5.4 WATER QUALITY

As part of their discussion, each Group was tasked with answering the following questions and highlighting the most important points.

- 5.1.1 What does responsible development look like?
- 5.1.2 How can we best engage with policy makers and decision-makers in order to ensure we protect the environment?
- 5.1.3 What can I, as an individual, do?





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5.1 WETLANDS

WHAT DOES RESPONSIBLE DEVELOPMENT LOOK LIKE?

- Salt marshes and wetlands are under-appreciated by the general public
- Need to educate both the public and developers on the valuable services delivered by wetlands—water absorption, filtration, wild-life habitat and coastal protection.
- Declare all salt marshes and wetlands draining into Shediac Bay or the Northumberland Strait a provincial government responsibility with no exceptions for private ownership.
- Need on-ground delineation of salt marshes and coastal wetlands — no exceptions.
- Protection of wetlands: need Best Practice public policy, supported by clear regulations and zero tolerance enforcement.
- Zero development on wetlands and a 100 metre “no build” buffer zone
- Coastal buildings/infrastructure setbacks minimum 5 metres from “high water mark”.
- Need tougher zoning laws and public consensus on building projects
- No new development on coastal flood plains and projected HWL (sea-level rise)

HOW CAN WE BEST ENGAGE WITH POLICY MAKERS AND DECISION MAKERS IN ORDER TO ENSURE WE PROTECT OUR ENVIRONMENT

- Make the protection and restoration of salt water marshes, coastal wetlands and dunes a matter of provincial responsibility as distinct from a municipal responsibility.
- Develop/implement a public “shock campaign” focused on projected images of sea-level rise, coastal flooding and loss of property, infrastructure (Robert Capozzi DELG)
- Get to know your MLA, call and write to government officials
- Ask provincial election candidates if they support the protection of our natural assets a priority of the Provincial Government.
- Educate, Educate, Educate starting with children and their parents, the general public, businesses and public officials.

WHAT CAN I DO TO HELP PROTECT OUR COASTAL ENVIRONMENT?

- Put pressure on the Provincial Government—MLAs, public servants, influencers to quickly introduce legislation, regulation and tough enforcement measures to protect and where possible, restore our natural coastal environment and its defenses
- Sell/donate wetlands, beaches, dunes to the Provincial government in return for legislated and permanent protection of their irreplaceable services.
- Establish community influence/watch-dog groups to hold government accountable
- Report violations of wetland and coastal protection regulations to the Authorities.
- Help restore/ protect coastal dunes, estuaries, salt water marshes and wetlands
- Pressure the Provincial Government to update ground-delineated maps of rivers, streams and wetlands draining into Shediac Bay and Northumberland Strait
- Maritime College of Forest Technology course on wetland delineation (take it!)



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5.2 CLIMATE CHANGE & SEA LEVEL RISE

WHAT DOES RESPONSIBLE DEVELOPMENT LOOK LIKE?

- Accepts that sea-level rise and climate change are a reality
- Protects and restores our natural defenses including dunes, grasses, wetlands, rivers, streams and estuaries
- Compliments strong zoning laws and regulations with responsible land use planning and sustainable neighborhoods that promote less use of cars
- Prohibits development in sea level rise flood zones and buffer zones
- Promote green energy policies within all communities

HOW CAN WE BEST ENGAGE WITH POLICY-MAKERS AND DECISION-MAKERS IN ORDER TO ENSURE WE PROTECT THE ENVIRONMENT?

- Know your area and be aware of your surroundings. Have a plan.
- Educate policy-makers and their influencers
- Form grass root movements – lots of voices
- Address the MLAS and/or municipal councils on issues of substance.
- Help create public policy, legislation, regulations that will protect coastal assets.

WHAT CAN I DO TO HELP PROTECT OUR COASTAL ENVIRONMENT?

- Be informed, educate yourself about your area **Note:** flood mapping layers at GCONB
- Share your knowledge with friends and neighbours
- Maintain and check your own infrastructure – i.e. wellheads and septic systems
- Get involved with local environmental groups (SWWAT, Red Dot, SBWA, etc)
- Plan climate-change adaptation measures for my property to minimize environmental impact - plant trees, dig ditches, clean up dog waste
- Become active in community environmental protection movements ...
- Use the media to help educate and deliver messages

5.3 ECONOMIC IMPACTS RELATED TO CLIMATE CHANGE & SEA-LEVEL RISE

- Cost of flood mitigation, Cost of replacing and/or relocating infrastructure
- Loss of property and relocation of population
- New investment, job creation, new buildings and infrastructure
- New protective laws/regulations/enforcement
- Underlines the need for public education on impacts of climate change

WHAT DOES RESPONSIBLE DEVELOPMENT LOOK LIKE?

- Sensitized Developers / Municipalities / Provincial Government
- Informed visitors at Parlee Beach, in restaurants / hotels and other tourism domains
- Rebuilt infrastructure (bridges, sewers, etc.)



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- Adjusted property values especially near the coast and water courses
- A more informed/educated population, especially among young people
- Increased use of mobile trailers and fewer cottages, reduced tax revenue
- More responsible laws/regulations / increased setbacks from wetlands/coast
- Plastic road materials, greener energy – wind, solar, other
- Zero development on wetlands, improved Storm water management,
- Personal cooling aids,(ice-packs, water, air conditioning)

HOW CAN WE BEST ENGAGE WITH POLICY-MAKERS AND DECISION-MAKERS IN ORDER TO ENSURE WE PROTECT THE ENVIRONMENT?

- Develop a provincial vision and public education/communications plan
- Use the Media to increase communication with Government, Developers/ Investors
- Mandatory climate-change education, professional development
- Improved standards/regulations
- Provide decision-makers with all the facts and be transparent
- Educate and support politicians who will make decisions necessary to protect and restore wetlands and natural coastal defenses e.g. dunes, estuaries, eel grass etc.
- Form citizen groups to push for legislation, regulation and enforcement practices that will protect and restore our natural environment where possible.
- Cost/benefit analysis: climate change impacts, weather-events next 20 to 30 years

WHAT CAN I DO TO HELP PROTECT OUR COASTAL ENVIRONMENT?

- Arm yourself with facts/info, talk to/vote for/or run as MLA or municipal council
- Home improvements/energy management
- Recycle/ Repair, not replace, Run/biking
- Inform politicians of your concerns for the environment
- Join and participate in an environmental association
- Inform and educate the public via public conferences, social media, pamphlets, other
- Make young people more aware - they will educate us about the environment
- Economic analysis – what are the side effects / not just immediate effects
- Determine what works in other regions / countries of the world

5.4 WATER QUALITY/ QUALITÉ DE L'EAU

WHAT DOES RESPONSIBLE DEVELOPMENT LOOK LIKE?

- Integrated planning No development or building in a flood plain! Or on a wetland! No exceptions, No grand-fathering
- Amended building regulations that adhere to HHWLT standards for storm sewage
- Mandatory pump-outs for septic systems and holding tanks — boats and mobile trailers
- On-going monitoring of effluent (sewage) discharge on Parlee Beach lift stations
- Mandatory testing program for water (drinking) and recreational waters



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- Community rain gardens – and long-rooted plants and grasses
- Strict regulations re use of herbicides, personal care products and toxic products
- Establish a regulatory hierarchy that positions the protection of our environment above development of any kind.
- Incorporate trees, native plants in development
- Require farmers to protect against storm water run-off adjacent to or bordering on a watercourse (Farmers' Alliance) with a natural buffer zone

HOW CAN WE BEST ENGAGE WITH POLICY-MAKERS AND DECISION-MAKERS IN ORDER TO ENSURE WE PROTECT THE ENVIRONMENT?

- Form a diversified advocacy group - fishers, youth, seasonal tax payers
- Communication, public awareness, social media
- Ecotourism initiatives; economic benefits
- Engage youth, public consultations, petitions before election

WHAT CAN I DO TO HELP?

- We need an environmental “champion” e.g. deputy minister of environment
- Be an advocate for protection of our coastal lands, salt marshes and wetlands
- Develop trust and relationships with decision-makers
- Get on a committee, get involved!, be persistent, tell somebody, discuss
- Rain barrels, rain gardens, permeable driveways for shorefront properties

5.5 NOTE: SEA-LEVEL RISE WILL PUT INFRASTRUCTURE AT RISK

(extracts from DELG -Robert Capozzi Presentation: April 23, 2018)

Properties / Residences / Buildings will be at risk from flooding, saltwater intrusion into drinking water supplies, backflow from storm water / sewage systems into buildings, erosion of property, etc. Home insurance and mortgages will be scrutinized more closely.

Natural Coastal Infrastructure – erosion and coastal squeeze will impact natural assets such as dunes, wetlands, beaches, etc. This will decrease the ability of these natural assets to buffer impacts from storm surges on infrastructure and communities.

- Sea-level rise of up to 1 meter by year 2100 – impacts to many sectors.
- Ordinary High Water Mark of today will be higher in 2100.
- Storm surges will be higher and flooding more frequent.
- Water infrastructure – storm water, waste water and drinking water systems located underground will be saturated or completely flooded – relocation or redesign will be necessary to increase resiliency and that will be very costly.





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6. CONCLUSIONS

- a. Climate change is real and now and potentially catastrophic for the coastal regions of New Brunswick. The Provincial government has failed to provide leadership in respect to the delineation, protection and restoration of natural defense mechanisms including but not limited to sand dunes, deeply rooted grasses that hold the dunes in place, salt water marshes and coastal wetlands that absorb flood waters, filter storm-water run-off and serve as natural and essential wild-life habitat.
- b. If we continue to allow development on wetlands and flood plains, we'll be looking at billions of dollars in property damage and replacement as well as loss of life and/or significant dislocation of people.
- c. The situation is not hopeless. We can do something about it. The Provincial Government should be encouraged to provide leadership in the defense against climate change and sea-level rise by assuming jurisdictional control of all coastal lands, dunes, salt marshes, wetlands and natural flood defenses.
- d. The Government should develop public policy, legislation and regulations to:
prevent all development on coastal wetlands including and within a 100 metre buffer zone; (b) prevent all new development (no exceptions) on coastal lands projected as flood plain — defined as an area which has a 1% chance of being flooded in any given year due to sea-level rise or extreme weather events and coastline setbacks for development whereby all new buildings and infrastructure be set back at least five metres from projected high water marks resulting from ice-melts, temperature increases and sea-level rise.
- e. As part of our defense against sea-level rise, we need to protect and enhance our natural defenses including dunes with deeply rooted sea grass, estuaries and wetlands that drain into Shediac Bay or the Northumberland Strait. All wetlands, whether on private property or not should be ground-delineated to include a no development 100 metre buffer zone (no exceptions, no grand-fathering) and such information should be made available to the general public to ensure public monitoring and oversight of essential and/or at risk natural defenses against sea-level rise.
- f. The fall election could be a catalyst for increased public awareness events that engage young people and focus on water issues along the coastline. The health of people living along the Northumberland Strait, and the health of local



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businesses is at stake. More summers with “No swimming” warning signs on our beaches could translate into jobs lost in the local tourist industry. Young people could lose part-time summer jobs that help fund their education. And local businesses could lose income that helps support their families. No one wants this outcome. The time is right for all of us to get involved.

- g. The April 2018 Government of New Brunswick’s Final Report on Parlee Beach Water Quality concludes that there are no chronic sources of contamination and no single source points of contamination but contributing factors include: agricultural run-off, dog, bird and wild animal waste, septic tank leaching, on-site sewage disposal and mobile trailer discharges — all components of storm-water run-off. This underlines the importance of wetland and salt marsh filtration services and the need to protect them in perpetuity. Delegates concluded that the public interest is not served by development when it puts these natural filters at risk.

THE FOLLOWING RECOMMENDATIONS REFLECT ACTUAL COMMENTS AND SUGGESTIONS OFFERED BY CONFERENCE DELEGATES PARTICIPATING IN GROUP DISCUSSIONS MONDAY, APRIL 23, 2018.



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7 RECOMMENDATIONS

- 7.1 That the Provincial Government place all coastal wetlands, salt water marshes, dunes and projected flood plains along the Northumberland Strait in protective custody, supported by: a permanent ban on new development on such lands — commercial, recreational, institutional or residential; a strong regulatory regime; tough enforcement strategies and an Annual Status Report to the Provincial Legislature.
- 7.2 That the Provincial Government partner with the Government of Canada in the guardianship of custodial lands by establishing a Climate Change Fund, which would be used to:
 - 7.2.1 Purchase, manage, protect and preserve wetlands along the Northumberland coast.
 - 7.2.2 Purchase coastal wetlands that have been destroyed and restore them to full service
 - 7.2.3 Manage, protect and restore the natural defenses of provincial protected-custody lands against storm-water surge, sea-level rise and flooding.
- 7.3 That the Provincial Government (i) acknowledge the threats to life and property implicit in climate change and sea-level rise projections and (ii) lead the development and implementation of a public education/information program that will help make the general public more receptive to new legislation and regulations — heavy emphasis on schools and young people as leaders in the battle for a safe environment.
- 7.4 That the Provincial Government delineates a clear regulatory and lawful enforcement regime which is based on established public policy objectives for water quality, protection of wetlands and buffers to sea-level rise.
- 7.5 That candidates in the 2018 Provincial Election be asked to respond to/and/or state their position on the above recommendations prior to the Provincial Election.

DEFINITIONS

Protective Custody: *the protective care or guardianship of property to prevent loss from catastrophic weather events, storm surges, sea-level rise and flooding.*

New development: *construction of commercial or recreational buildings, residential housing or other infrastructure not currently sited on coastal marshes, dunes, wetlands or projected flood plains.*

Projected Flood Plains: *defined by current DELG maps as projected to the year 2100*

Delineated Wetlands: *the most recently recorded surface delineation of wetlands as recorded by DELG*

Current: *as of May 31, 2018*



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8 APPENDICES

i. AGENDA

CONFERENCE DAY

April 23, 2018 Shediac Multipurpose Center

9:00	Autumn Peltier, Keynote Speaker Advocacy for clean and sacred water
9:30	Session 1: Tom Delworth, Ocean Sciences, Princeton University The importance of coastal zones and climate change, most of Atlantic coast, Pointe-du-Chêne and much of Shediac could be under water by 2100.
10:00-10:15	Coffee
10:00-10:45	Session 2: Dr. Michael Chadwick: Importance of coastal zones including: ecosystems, the disappearance of salt-water marshes and wetlands, carbon storage and sea-level rise
10:45-11:45	Session 3: Robert Capozzi Climate Change Projections. Adapting to new realities
12:00-1:15	LUNCH and Kiosk Tour
1:15-2:00	Session 3: Sabine Dietz/Amanda Martin Green Strategy: actions that help ensure a healthy environment that can support economic development and quality of life,
	Session 4: Lois Corbett Provincial Water Strategy and comprehensive public opinion survey to inform Council's communication strategy and help empower government.
2:00-3:45	Delegate Breakout Discussion Groups, Issues, solutions and actions
3:45-4:00	Report Outs
4 :00	Autumn Peltier Closing Remarks



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ii. DELEGATES' EVALUATION OF CONFERENCE

Delegates to the Conference were asked to fill out an evaluation report – four questions and comments. More than 40 percent responded. While their response cannot be statistically validated, it was amazingly consistent and it's reasonable to consider it representative. On a scale of one to five where 1 is negative and five is excellent, 76 percent of respondents rated the Conference as Excellent while 23 percent rated the Conference as good and informative and 1 percent rated it Okay.

On the quality of information and learning, 80 percent of respondents rated the content and information as excellent, 16 percent rated it as good or informative and 4 percent rated it as good. One respondent rated the information and learning as poor. On the subject of organization and adherence to schedule, 81 percent rated Conference organization and observance of schedule as excellent. 19 percent thought it was good.

The following reflects the unscripted comments of delegates. "Thank you; it was a really good conference. It was well organized, ran without delay, stayed on schedule, great speakers. They were well prepared and professional". Information was excellent, very informative, motivating and encouraging. Please send copy of the Conference Report.

Others commented that we could have done a better job in French and they would like to receive the Final Report in French. A number of people commented positively on the gender balance in speakers and the range of issues covered. There was particular mention of Autumn Peltier and how inspirational she was in her opening presentation.

Some delegates felt there should have been more Mi'kmaq representatives at the Conference to show support for Autumn. Tom Delworth was singled out for the simplistic and understandable way he presented complex information in ways that could be easily understood by the audience.

A few delegates suggested a next time conference should be better promoted with more radio interviews. Others congratulated the volunteer organizers and said they should be proud of themselves. Perhaps the most complimentary comment was that the speakers and their information were perfectly targeted for the audience.

Others commented that the Conference was great with a large audience, great speakers, nifty location, quality discussion, good networking event, excellent food and beverage service at both the breaks and lunch. The speakers provided food for thought and suggested clear actions for the future. The Conference was considered very informative, especially concerning sea-level rise and projected impacts on coastal communities along the Northumberland Strait.

To quote one person "I learned a lot. It was well done and truly informative. I hope it will lead to more or similar endeavors and/or to public education seminars. Thank you".



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iii. MEDIA COVERAGE

URL's that promoted the conference or reported after the conference.
CJSE 98.5 FM interviews concerning the conference not included.

BEFORE THE CONFERENCE

[Conférence atlantique sur la protection et la restauration des côtes - Acadie Nouvelle](#)



Conférence atlantique sur la protection et la restauration des côtes - A...

La première Conférence atlantique sur la protection et la restauration des côtes aura lieu à Shediac

- [23 et 24 avril à Shédiac SMEET accueillera la conférence de d'Atlantique sur la protection et la restauration du littoral - Le Moniteur Acadien](#)
- <http://digital.olivesoftware.com/Olive/ODN/EtoileKent/#> Edition Journal L' Étoile, April 5, 2018
- [Organizers want wetland conference to push decision makers Times & Transcript April 5 Tom Bateman](#)



[Audio fil du lundi 23 avril 2018 | Le réveil / Nouveau-Brunswick](#)



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AFTER THE CONFERENCE

Water protection advocate renews calls to halt coast development: Report by Tom Bateman



Coastal protection top of mind at Northumberland Strait meeting | CBC News



Les municipalités côtières se préparent à la montée du niveau de la mer | Segment | Le Téléjournal Acadie | ICI Radio-Canada.ca





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iv. VOLUNTEER ORGANIZING COMMITTEE (REPRESENTING SHEDIAC, POINTE-DU-CHÊNE, BRÛLÉ WEST, BRÛLÉ EST, BEAUBASSIN EST AND CAP PELÉ)

Andy Malolepszy, Chair of the Organizing Committee
Warren Redman, Conference Master of Ceremonies

Natasha Bell
Art Melanson
Bill Ross
Janet Gordon
Janet & Don Leblanc
Nicole Tremblay
Trudy Brydges
Maxine Trynor
Elaine Capstick

Bill Belliveau
Diane Melanson
Pattie Moody
Jeannie Collins Beaudin
Tim Borlase
Anne Young
Brenda Ryan
Nancy Leblanc

v. SPONSORS

Thank you to the sponsors for their generous contributions to the organization and execution of this Conference. We also thank the residents in our community who contributed so generously with their financial donations, time and expertise as we organized and prepared for the Conference. Thank you also to the New Brunswick Environmental Network for their guidance and contributed resources.



Official Languages





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vi. Water (a poem by Zev Bagel)

Our fragile lands poke up from three great oceans –
The Peaceful Sea, the Sea of Atlas, the Sea of Great Waters.
Pacific, Atlantic and Indian Oceans. What have we done to you?
Five trillion plastic items float in your waters.
The great Pacific garbage patch is
Twenty times New Brunswick's size.
Too big for us to imagine.
Too big for us to change?
Are we too late?
How can we change what we have done?
We start with now. We start with here.
This land is at the edge, lapped by waters from the Strait.
It brings us life, and joy and wealth.
We bring it toxic waste – and threaten more.
We are the stewards of this land. The answers lie within us all.
We'll learn respect, we'll understand,
We'll listen to the water's cry.
And when new generations come
They'll see we turned our tide of foolishness
And greed to hope and harmony.
Here is our promise to this patch of earth, these
Coastal seas. We'll show the world what we can do,
Return the Peaceful Sea, the Seas of Atlas and Great Waters
To their natural state, by starting with the place we love.