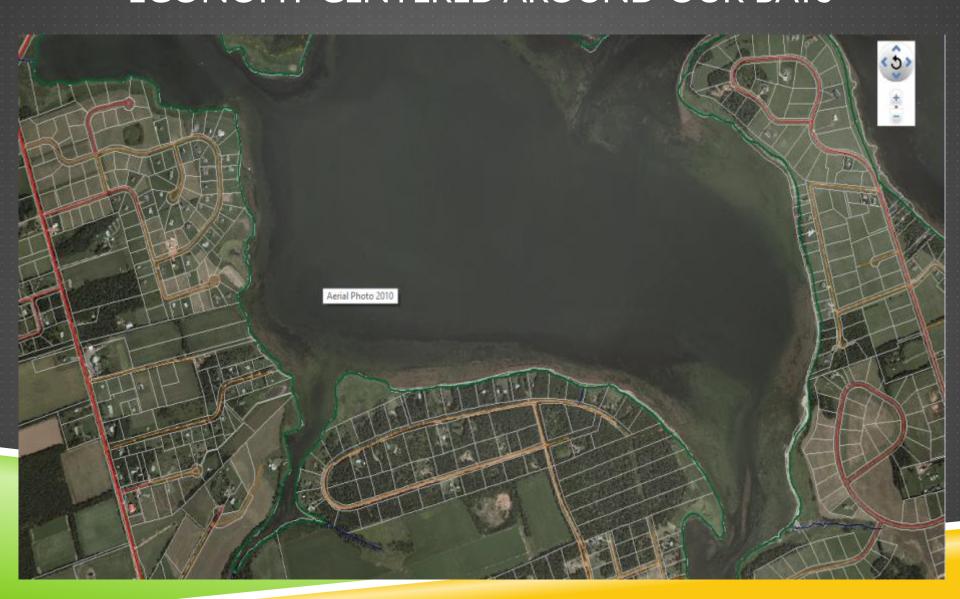
OUR WATERSHED



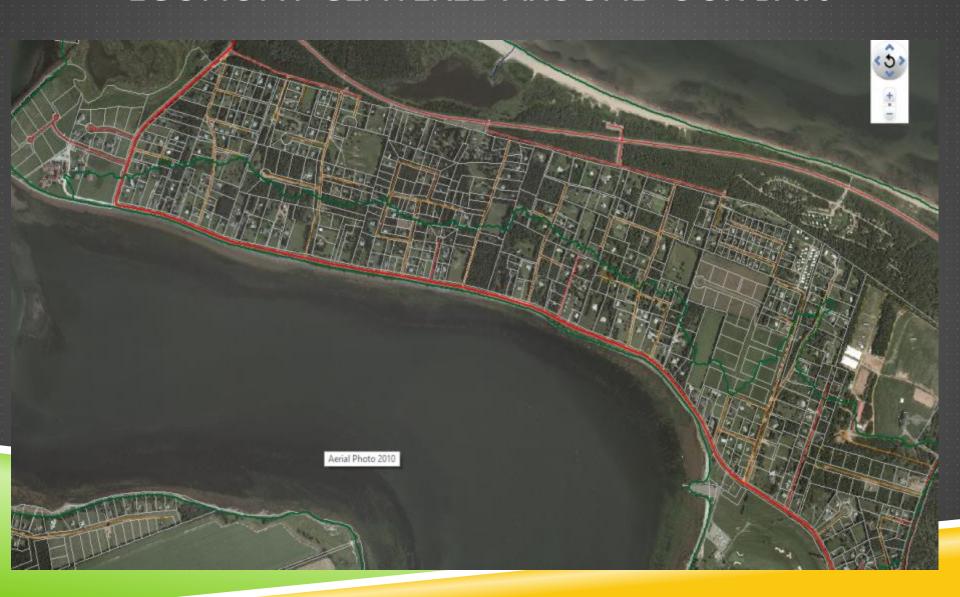
FRIENDS OF COVEHEAD-BRACKLEY BAYS

- by residents alarmed about watershed degradation
- Communities include- Brackley Beach, Brackley Point, Covehead Road, West Covehead, Stanhope, Harrington, North Milton, Winsloe North and Union Road
- Our Watershed Management Plan -approved in 2008
- We are charter members of the PEI Watershed Alliance

LARGE POPULATION & A LARGE TOURISM BASED ECONOMY CENTERED AROUND OUR BAYS



LARGE POPULATION & A LARGE TOURISM BASED ECONOMY CENTERED AROUND OUR BAYS



PEI'S WATER ACT STATES AS ITS GOAL....

- Our Water is an Important Public Resource ... Prince Edward Island is the only province in Canada that is completely dependent on groundwater for its source of drinking water."
- The goal of the Water Act is to protect the quality and quantity of the Island's water and ensure that our water supply is healthy and sustainable now and into the future. WA p. l

FCBB RECOMMENDATIONS ABOUT THE GOAL OF THE WATER ACT

Frame the priority goal in terms more basic than "resource" which is linked to commodification, ie control by the highest bidder...

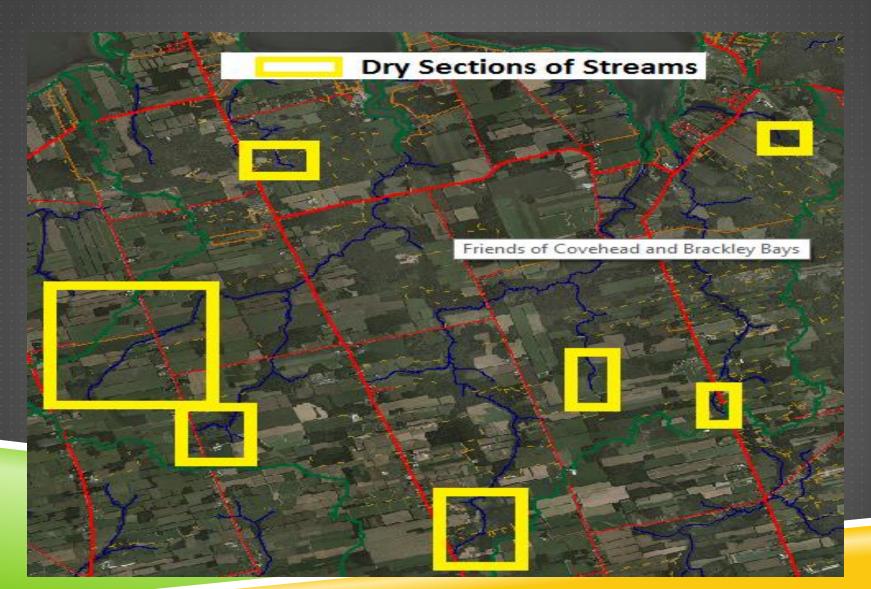
Make "Water is a necessity for all living beings" the basic proposition

FCBB RECOMMENDATIONS ABOUT THE GOAL OF THE WATER ACT

- THE GOAL OF THE WATER ACT SHOULD BE TO PROTECT AND ENSURE THE HEALTH OF ALL AQUATIC ECOSYSTEMS
- ► IT MUST SERVE THE NEEDS OF ALL LIVING BEINGS, FOR ALL GENERATIONS
- WATER IS A LIFE NECESSITY NOT A COMMODITY

This could be the most important environmental initiative PEI has ever initiated

SECTIONS OF FCBB STREAMS THAT DRY UP EVERY YEAR



RECOMMENDATIONS FOR FUTURE WATER SUPPLY MANAGEMENT

We need comprehensive data on the condition and supply of PEI ground water

Monitoring efforts by watershed groups should be coordinated by qualified researchers.

All research must be made public

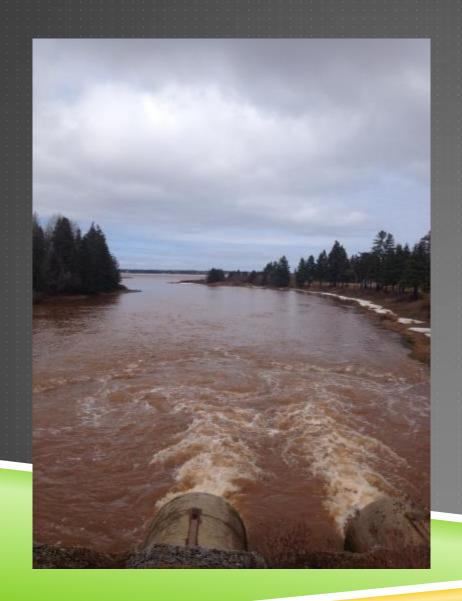
RECOMMENDATIONS FOR FUTURE WATER SUPPLY MANAGEMENT

Allowable usage must consider that demand for water is highest when recharge is lowest

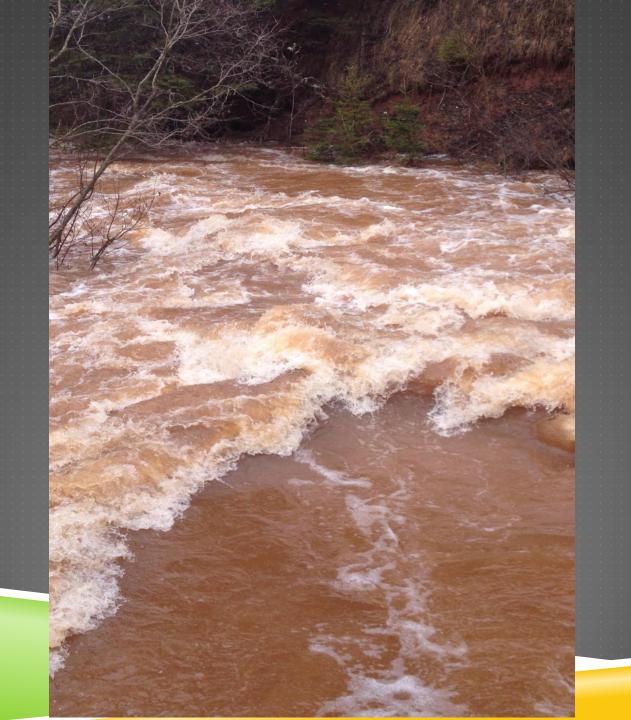
We need to improve forest cover along streams

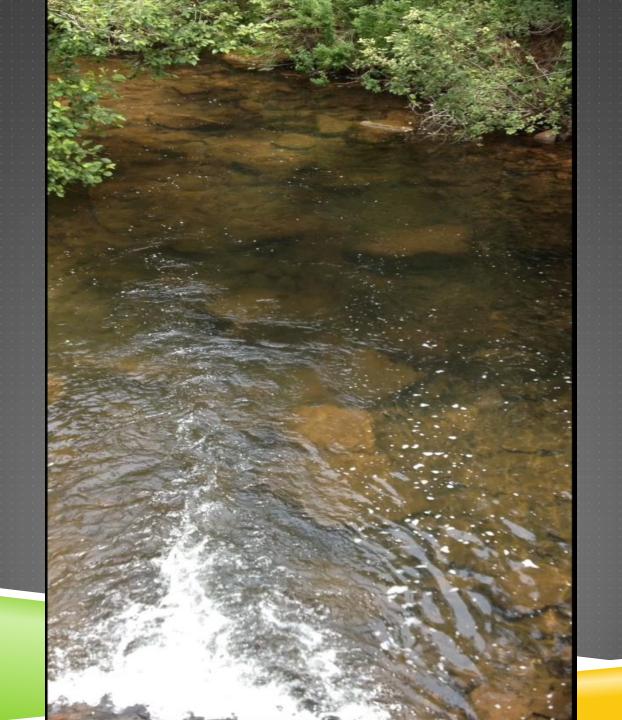
We must avoid any potentially disastrous activity such as hydraulic fracturing

SEDIMENTATION









SPRING EROSION AND FLOODING





BLACK RIVER BRACKLEY POINT ROAD CROSSING APRIL VS. JULY





BELL'S CREEK KILKENNY ROAD APRIL VS. JULY





SERVICE ACCESS ROAD OFF AULD'S CREEK (APRIL)





BRUSHMATS

2011 2012 2013

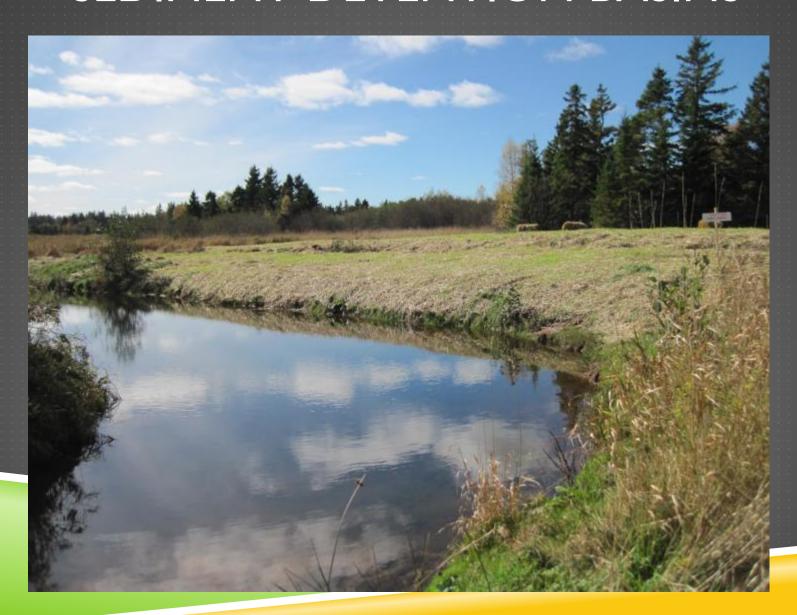


ROCK CHECK DAMS

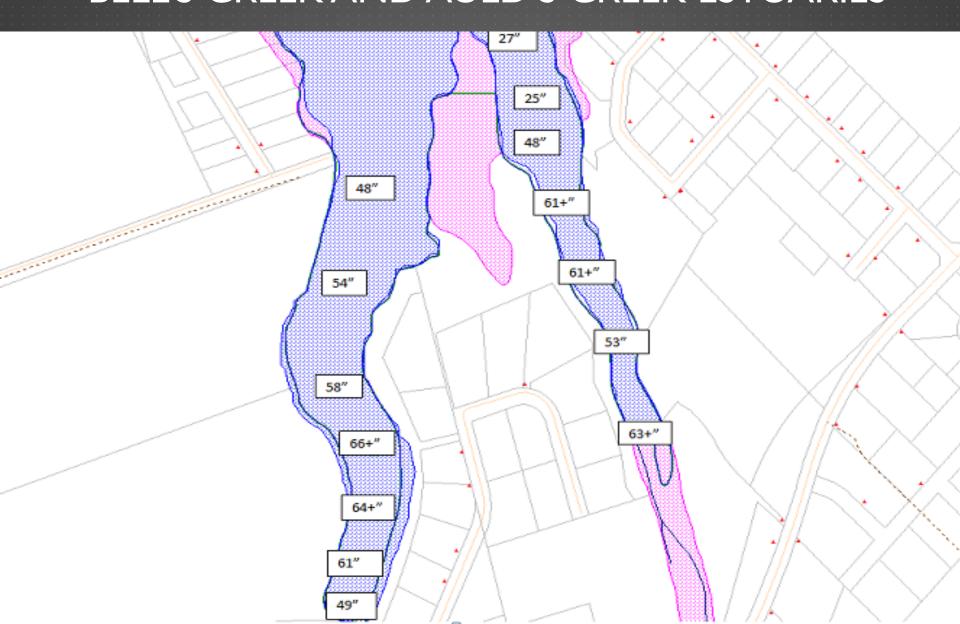




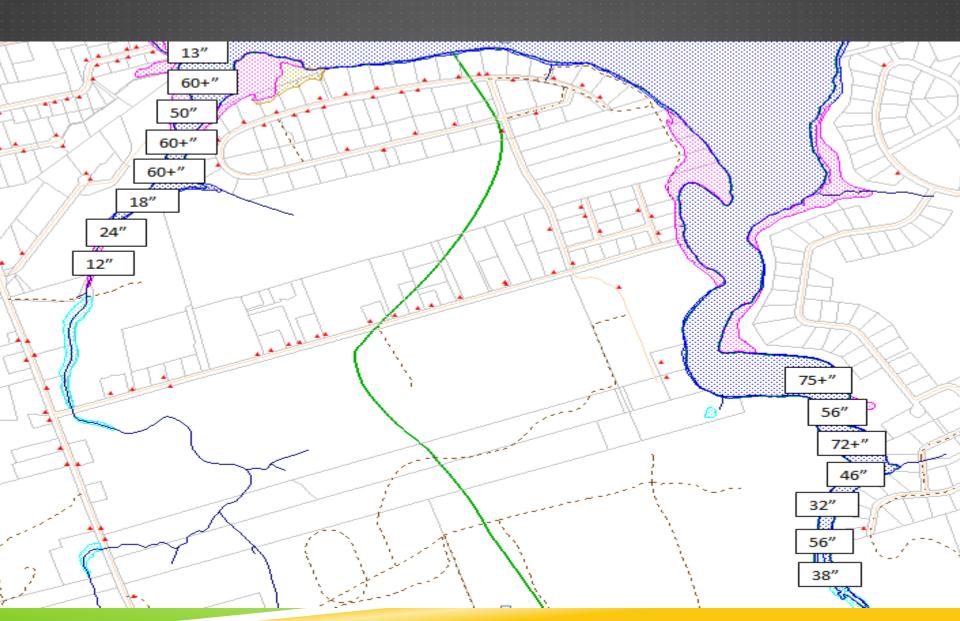
SEDIMENT DETENTION BASINS



SILT DEPTHS BELL'S CREEK AND AULD'S CREEK ESTUARIES



SILT DEPTHS BLACK RIVER AND MACCALLUM'S CREEK ESTUARY



RECOMMENDATIONS TO REDUCE SEDIMENTATION

- Vary buffer zone size according to topography and land use & penalize infringements
- Assist land owners especially farmers in creating berms and better drainage infrastructure
- Highway construction must utilize the most environmentally sensitive practices

RECOMMENDATIONS TO REDUCE SEDIMENTATION

Amend crop rotation rules to designate corn as a row crop

Prohibit row crops on sloped lands bordering watercourses

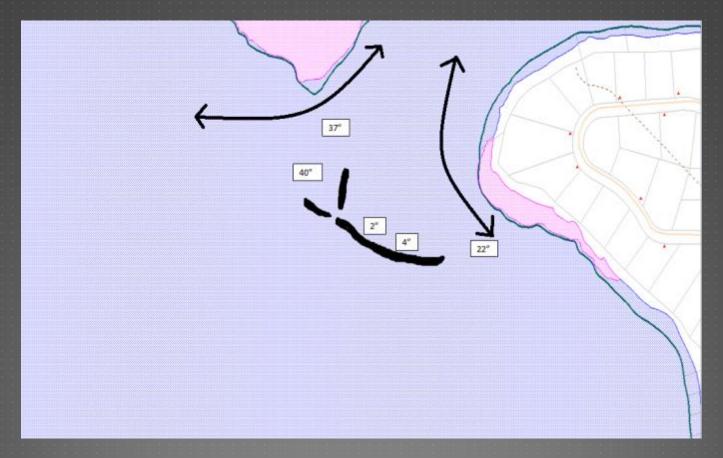
Increase use of cover crops and reduce fall cultivation

LACK OF TIDAL FLUSHING

- ► Tidal changes in Covehead Bay are delayed by approximately I hour
- ► Tidal changes in Brackley Bay are delayed by approximately 2 hours

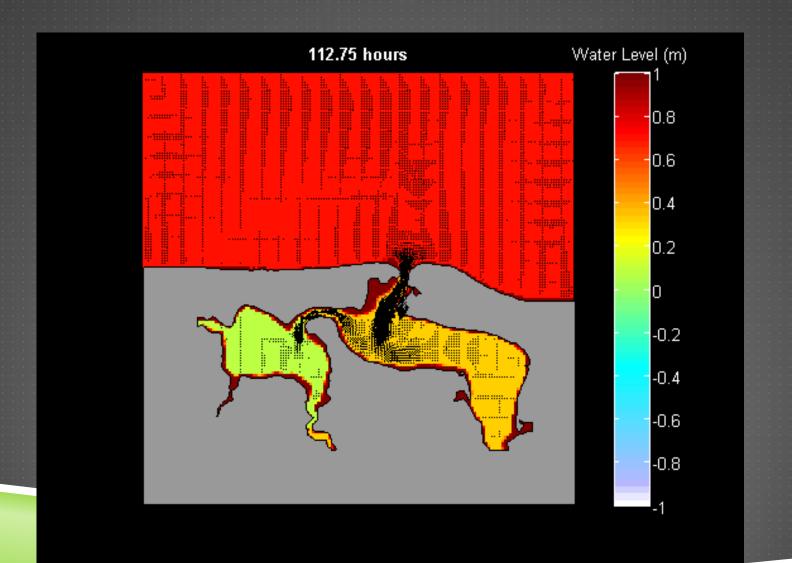


BERM AT THE MOUTH OF BRACKLEY BAY





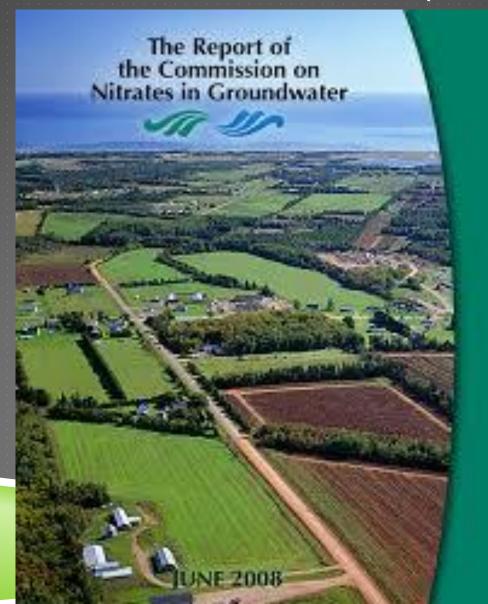
HYDRODYNAMIC MODEL



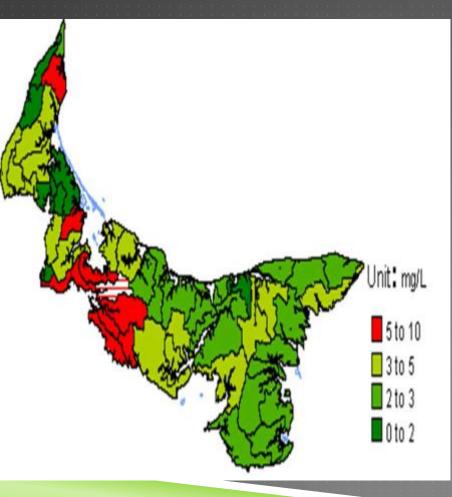
RECOMMENDATIONS ON TIDAL FLUSHING

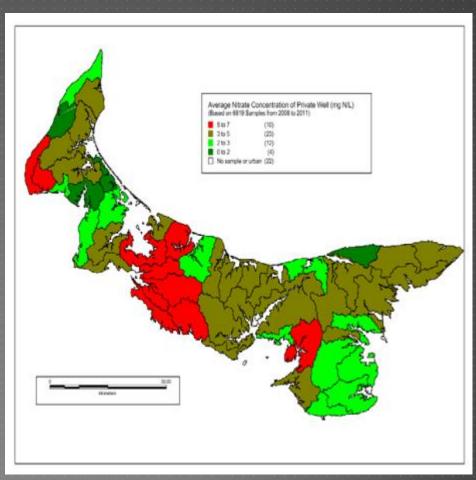
- Recognize infilling of PEI's estuaries and bays as a major source of ecological degradation and a serious problem for aquatic life, fishers, land owners, and tourist operators
- Given jurisdictional divisions, develop new forms of <u>federal</u> and <u>provincial collaboration</u> to remedy infilling and tidal issues
- Consider test projects to find new means of improving tidal flushing

NUTRIENT ENRICHMENT (NITRATES)



NUTRIENT ENRICHMENT (NITRATES)

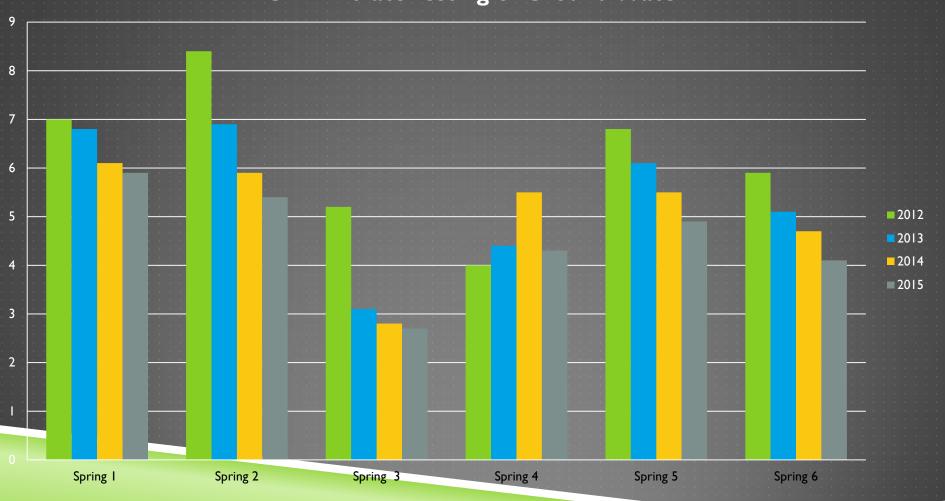




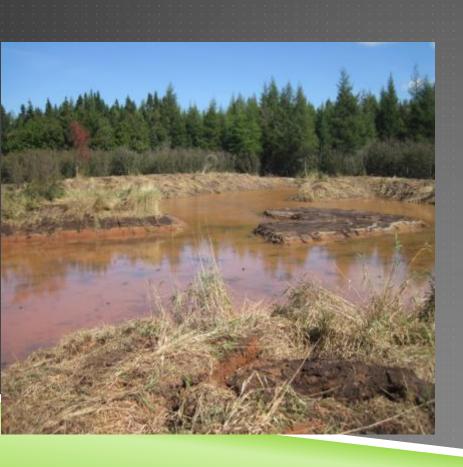
2010 2012

NUTRIENT ENRICHMENT (NITRATES)

FCBB Nitrate Testing of Ground Water



WETLAND CREATION





RECOMMENDATIONS ON REDUCING NITRATE CONTAMINATION

At the source increase support for research and application of the many methods of improving nutrient management

Establish clear nitrogen loading targets, and means of reaching these targets

RECOMMENDATIONS ON REDUCING NITRATE CONTAMINATION

- Encourage agricultural producers to adopt new more sustainable farming practices
 - Nutrient Management Plans (4R's)
 - New fertilizer application techniques
 - More emphasis on maintaining a high organic material content in soil
 - Better top soil retention strategies
- Increase new wetland development

ANOXIC EVENTS

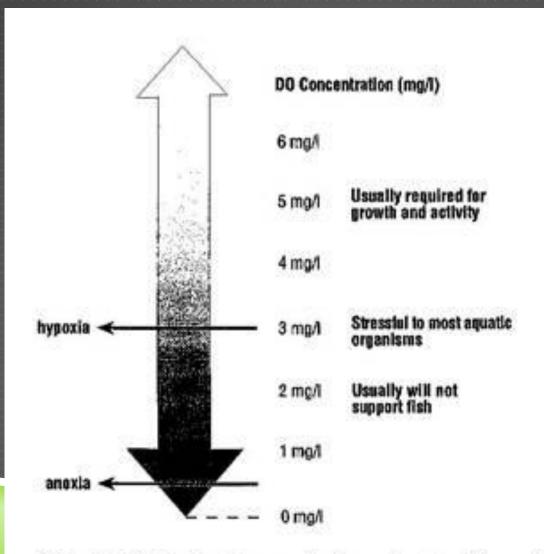
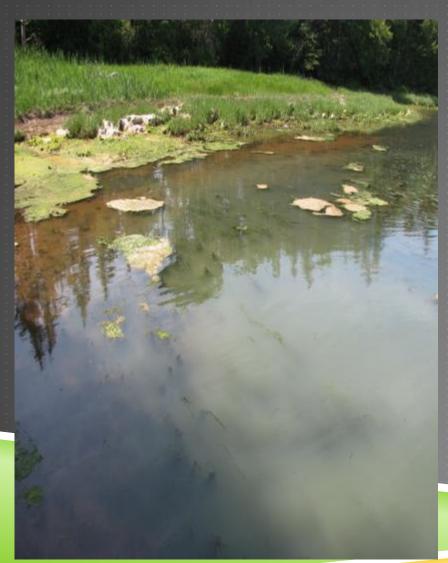
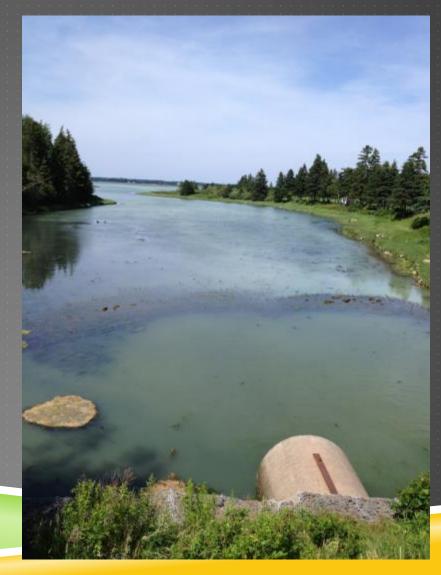


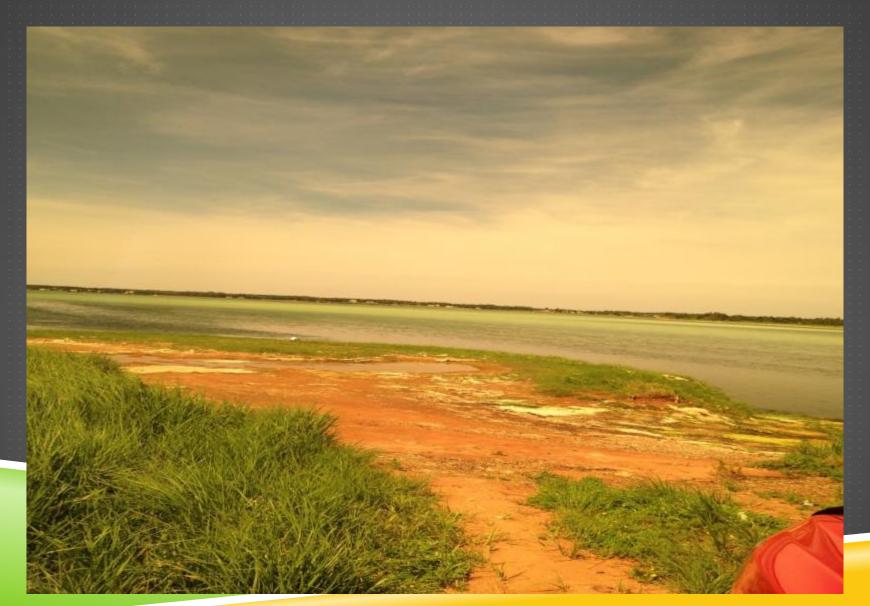
Figure 9-2. Dissolved oxygen in the water. A minimum DO concentration of 5 mg/l is usually necessary to fully support aquatic life.

ANOXIC EVENT IN BELL'S CREEK ESTUARY JULY 10, 2014

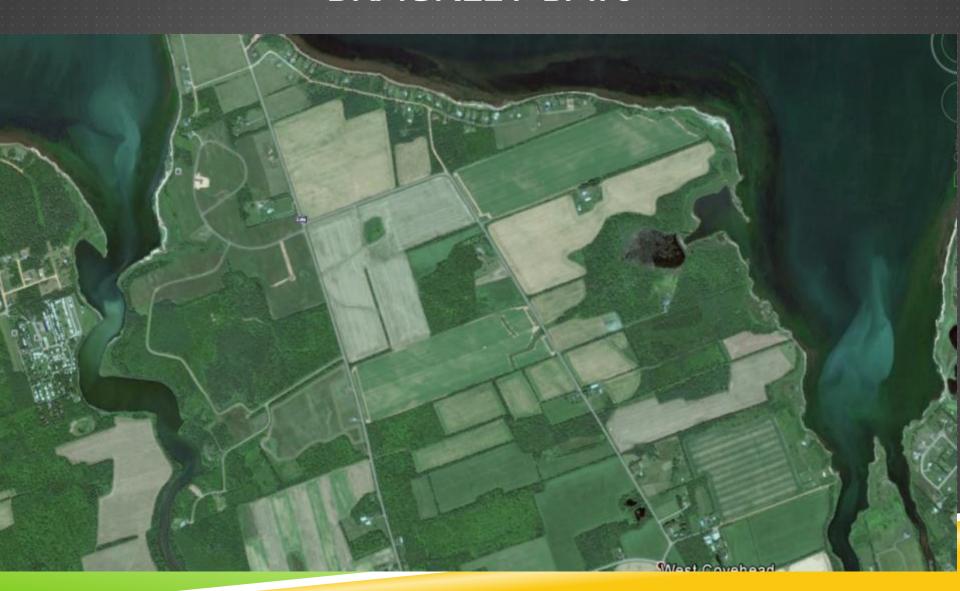




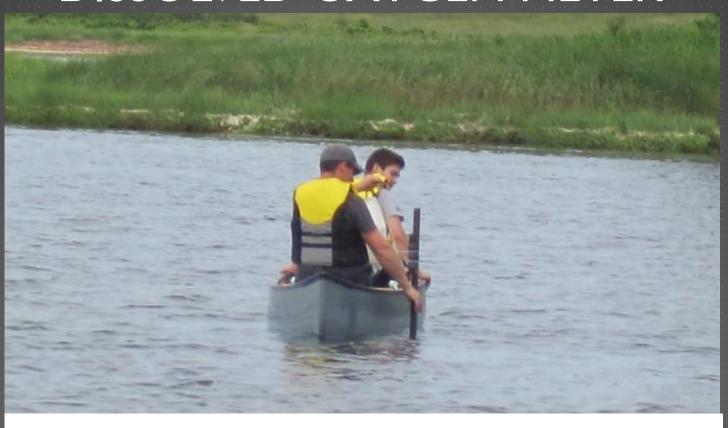
ANOXIC EVENT IN COVEHEAD BAY JULY 10, 2014



GOOGLE EARTH IMAGE OF COVEHEAD & BRACKLEY BAYS

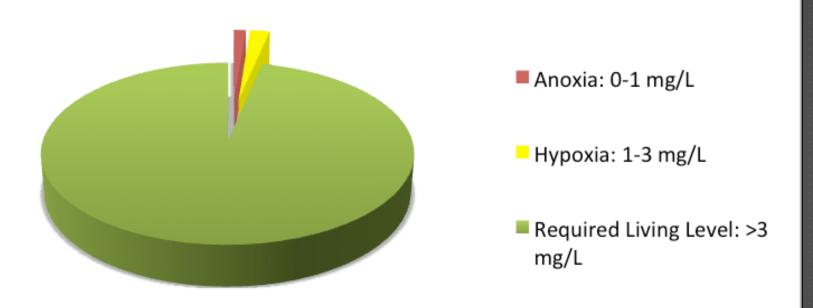


DISSOLVED OXYGEN METER

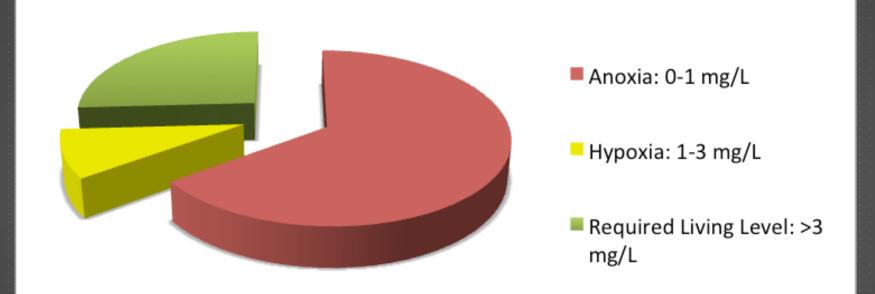




Data from Dissolved Oxygen Sensor in Bell's Creek Estuary



Data from Dissolved Oxygen Sensor in Black River Estuary



SEA LETTUCE HARVESTING PILOT PROJECT



SEA LETTUCE HARVESTING FOR COMPOST TRIALS





RECOMMENDATIONS ON ANOXIC EVENTS

- Invest in better water quality testing equipment (Dissolved Oxygen Meters, Tidal Flow Gauges, etc.) because anoxia is not always visible on the surface
- Coordinate better monitoring efforts provincially and make results accessible for planning initiatives
- Possibly establish a sea lettuce harvesting and composting industry
- Invest in practices that increase tidal flow in estuaries and reduces the amount of nutrient contamination of ground water

PUBLIC EDUCATION AND AWARENESS IS THE FIRST STEP IN THE RIGHT DIRECTION. ISLANDERS MUST BE PROPERLY EDUCATED IN ORDER TO MAKE AN INFORMED DECISION



YOUTH ECO-LEARNING DAY









TOO MANY ISSUES TO COVER IN 20 MINUTES

- Most of the agriculture producers in our watershed go to great lengths to protect our streams and rivers by participating in the ALUS Program, creating wetlands, installing berms, adopting new sustainable farming practices, creating nutrient management plants, etc.
- These responsible landowners should receive property tax discounts for buffer zones, assistant in foresting these areas, and incentives for adopting new more sustainable land use practices
- Agriculture producers own a lot of property adjacent water courses but it is unfair to expect farmers to resolve all of PEI's watershed problems
- All levels of government, municipalities, watersheds, and property owners have to work together to resolve these complicated long standing issues

RECOMMENDATIONS PEI WATER ACT

Manage all water on a watershed basis linking municipalities, communities, watershed groups and government

Include Watershed Groups in policy and regulation formation and implementation

RECOMMENDATIONS PEI WATER ACT

Develop water quality targets for all watersheds

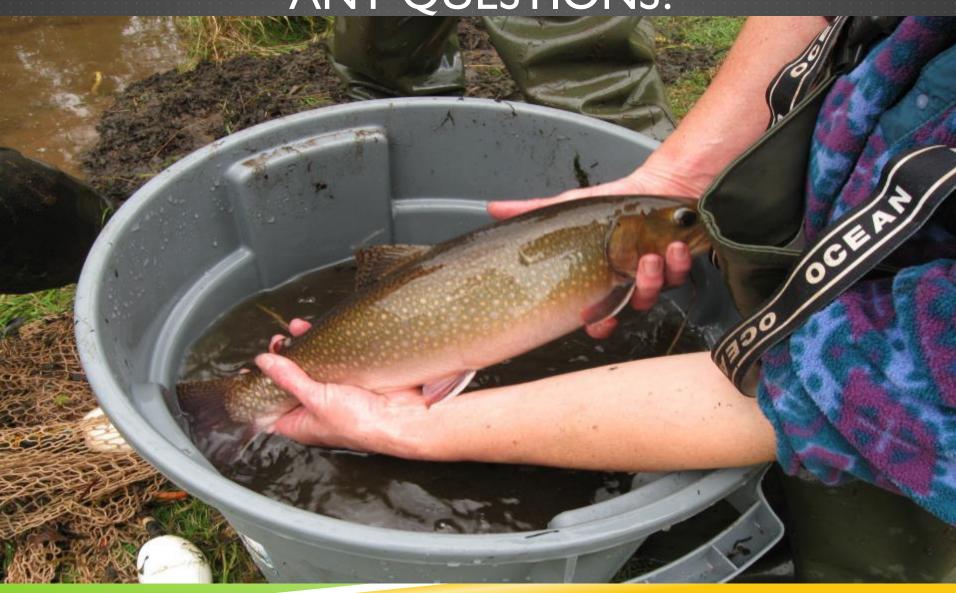
Regulate users, assign responsibility and enforce compliance

Proceed only on the basis of reliable scientific evidence (Precautionary Principle)

MAY THE WATER ACT ENSURE WE NEVER FORGET THAT....

Water is a necessity and not a commodity: it's the basis of all life on our planet.

THANK YOU FOR YOUR TIME. ANY QUESTIONS?



Social Media

Website

http://www.fcbbwatershed.ca

Facebook

@friendsofcoveheadbrackleybays