

Environmental Assessment Branch  
Nova Scotia Environment  
P.O. Box 442

Email: [EA@novascotia.ca](mailto:EA@novascotia.ca)

Dear Ms. Miller:

Re: Northern Pulp Nova Scotia - Environmental Assessment Registration Document-  
Replacement Effluent Treatment Facility

In addition to my Submission on March 6th I would like to add this comparison of The Northern Pulp Mill that is proposing to build a AST system to a mill in Birtish Columbia that is using an AST system and show the major difference in their receiving waters.

I have also added in this document attachment the scollop buffer zone that the fishermen must abide by within there conditions for scollop fishing. This shows the difference in how Northern pulp shows the Buffer zone in their EA virus how DFO has set it in according to the Fisheries Act.

Also in the document is a image of the ice report showing the gulfs ice conditions and what ice affects the Strait.

After looking through my document I hope you agree and understand why there are many issues that are of great concern for me that need more review and information to insure the heath and safety for both the people of Nova Scotia and the Northumberland Strait to which we fish and share with surrounding Provinces.

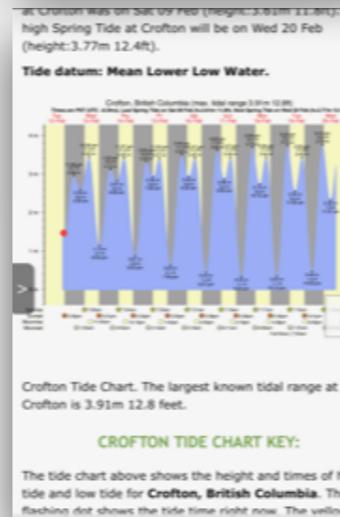
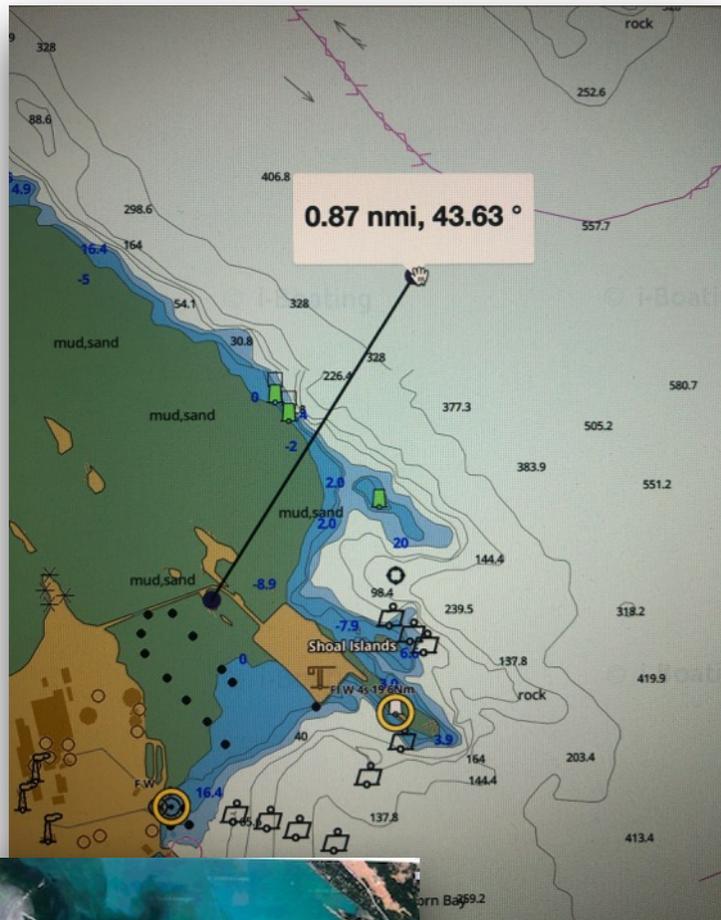
I am asking that you, as the Minister for Nova Scotia Environment to order an environmental assessment report of Northern Pulp's proposed effluent treatment facility.

Thank you  
Ryan MacDonald  
Pictou County N.S.

Outfall Comparison of Crofton, BC Mill & Northern Pulp  
Depths of Proposed NP Outfall Location  
Ice Chart of Northumberland Strait  
Outfall and pipeline fall within Scallop Buffer Zone  
Threats to Gulf of St. Lawrence

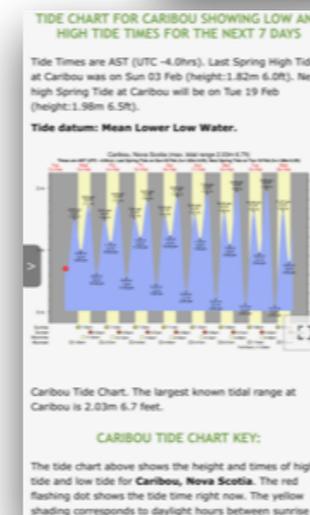
# Catalyst Paper Outfall Crofton, British Columbia

# Northern Pulp Proposed Outfall



**Water depth:** 400-500 feet  
**Distance from Shore:** 1.96 nautical miles  
**Tidal Range:** 12.8 feet (Feb 12/19)

sources: [gpnauticalcharts.com](http://gpnauticalcharts.com); [tideforecast.com](http://tideforecast.com); <https://sites.google.com/dillon.ca/northernpulpetf/frequently-asked-questions>



**Water depth:** 67 feet  
**Distance from Shore:** 1.84 nautical miles  
**Tidal Range:** 6.7 feet (Feb 12/19)

# Water depths surrounding proposed pipe location & outfall

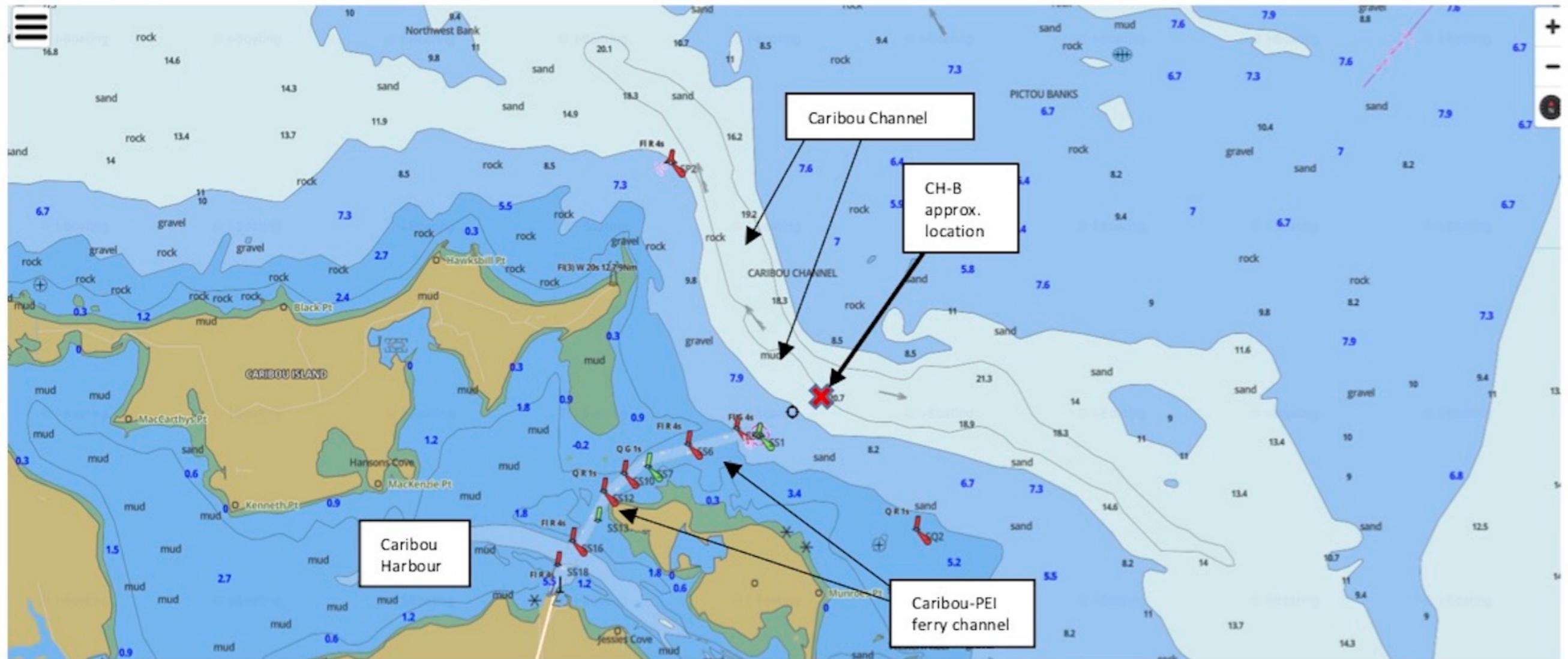
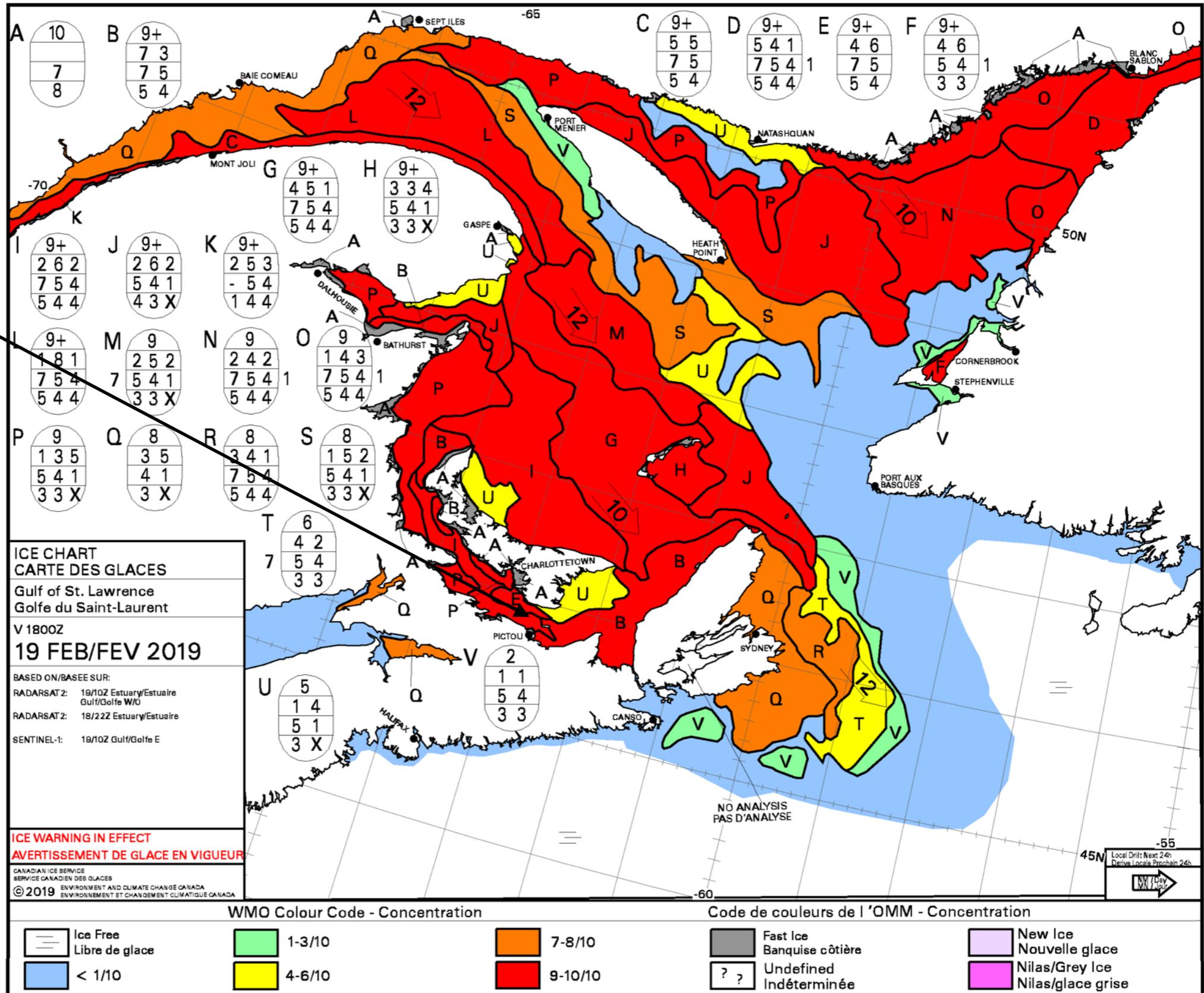


Chart of Caribou Channel and surrounding area

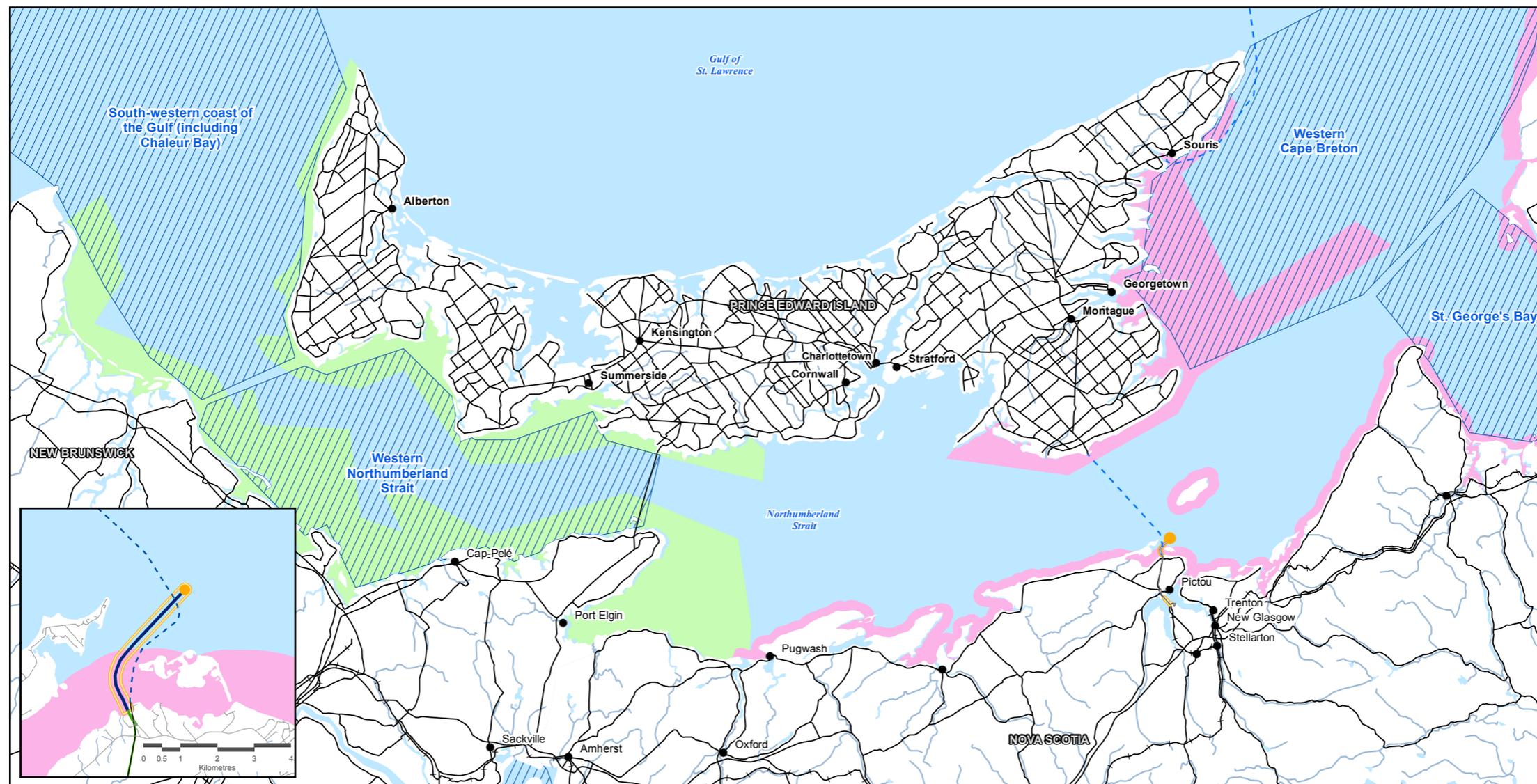
Northern Pulp's proposed outfall at point CH-B in the Caribou Channel is to be placed in a relatively small area with a depth of 20 metres. As this chart illustrates, the area becomes significantly shallower within a short distance. Depths are more typically between <1 to < 8 metres in most of the surrounding Caribou Harbour and Pictou Banks area.

# Ice Chart of Gulf of St Lawrence and Northumberland Strait, Feb 19, 2019

Approximate Effluent Pipe Location & Outfall



# Scallop Buffer Zones as depicted in Northern Pulp's EA



<p>Northern Pulp Nova Scotia Corporation Replacement Effluent Treatment Facility Environmental Assessment</p> <p>Special Areas of Importance for Marine Fish and Fish Habitat in and Around the Northumberland Strait Figure 8.12-10</p>	Outfall Diffuser Location	Ecologically and Biologically Significant Area (EBSA)	Marine Local Assessment Area
	Scallop Buffer Zone (SFA) 22	Marine Project Footprint Area	Scallop Buffer Zone (SFA) 24

MAP CREATED BY: HW  
MAP CHECKED BY: SS  
MAP PROJECTION: NAD 1983 UTM Zone 20N

0 2.5 5 10 15 20  
Kilometres

\*Precise Project Footprint to be determined following completion of detailed design

PROJECT: 17-6461 Date: 1/24/2019

## 8.12.2.7 special areas 382

Scallop Buffer Zones SFA 22 and 24 are part of a system of Scallop Buffer Zones in SFA 21, 22, and 24 that covers a total area of 5,835 km<sup>2</sup> (DFO 2017). **Scallop Buffer Zones were established to protect juvenile American lobster as they are known to contain lobster nursery habitat** (DFO 2017). Scallop Buffer Zone SFA 22 is in the western Northumberland Strait, approximately 85 km to the west of the marine PFA. Scallop Buffer Zone SFA 24 is in the eastern Northumberland Strait and the effluent pipeline will cross through the Scallop Buffer Zone SFA 24 close to shore (**Figure 8.12-10**) in Caribou Harbour near Jessies Cove. The location of the outfall is outside this buffer zone.

# Outfall and pipeline fall within Scallop Buffer Zone which protects juvenile lobster habitat

In the text accompanying image 8.12.2.7, special areas 382, which includes this inset map, Northern Pulp states, "The location of the outfall is outside this [scallop] buffer zone."

The scallop buffer zone for this area is defined in Fishing Season Conditions 2018 Document DFO-0000471625. Scallop Condition 7 reads:

*No person shall fish for scallops in that portion of scallop fishing area 24 in those waters adjacent to the Province of Nova Scotia within one [1] nautical mile from the nearest point of land in the counties of Cumberland, Colchester, Pictou, including Pictou Island in the Northumberland Strait, and Antigonish.*

The map provided by Northern Pulp does not include the scallop buffer zone around Munroe's Island and Caribou Island (the white shorelines that are missing pink outlines.) This is clear on the inset map. The omission of the buffer zones in these areas makes it appear that the outfall location (orange dot) is farther from the buffer zone than it actually is.<sup>1</sup>

Measuring one nautical mile (1.852 km) from every point of land in the area, as defined in Scallop Condition 7, **the proposed outfall location would fall within the buffer zone, not outside it as Northern Pulp states.** Although Northern Pulp has not provided precise lat-long co-ordinates for the outfall, its location on Northern Pulp's map and the description that it is situated in one of the few deep areas would place it within the scallop buffer zone.

Northern Pulp also states "the effluent pipeline will cross through the scallop buffer zone SFA 24 close to shore."

The distance from shore that the effluent pipeline would cross through the scallop buffer zone as represented on Northern Pulp's map is 1.85 kilometers (1 nautical mile.) Because the term "close to shore" is vague, it is important to note the actual distance is almost 2 kilometers.

However, an accurate representation of the scallop buffer zone would show that **the entire 4.1km pipeline would run through the scallop buffer zone.**

In the list of marine refuges, Fisheries and Oceans Canada describes the [conservation objective for Scallop Buffer Zones \(SFA 21, 22, 24\)](#) as "to protect juvenile lobster habitat."<sup>2</sup>

They further state:

"The following ecological components of interest are conserved through the prohibitions.

**Species of regional importance:** juvenile American lobster

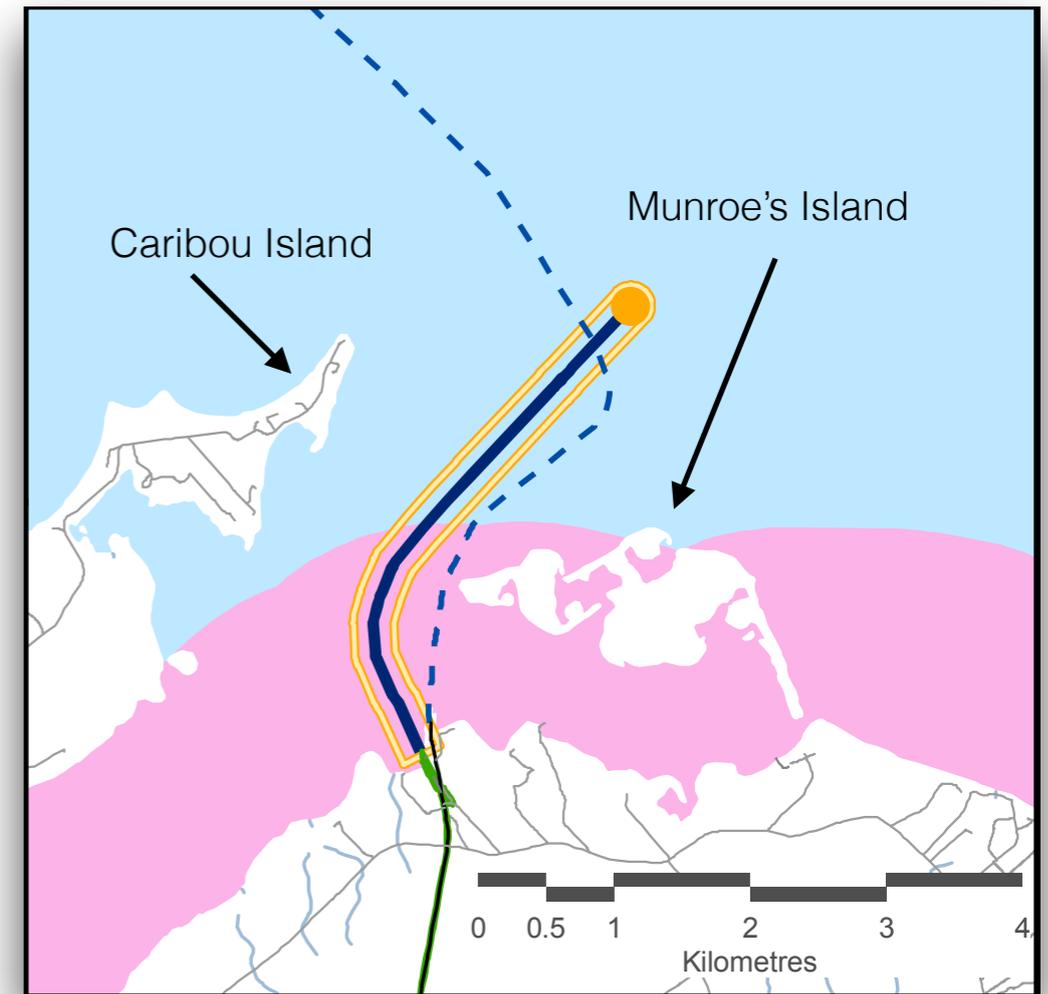
- **Why it is important:** American lobster is a commercially important species.

**Habitat that is important to biodiversity conservation:** American lobster nursery habitat

- **Why it is important:** American lobster nursery habitat is important for the life-cycle of the species.

In addition to prohibition on scallop dragging, the section on prohibitions also notes:

**"No other human activities that take place in this area are incompatible with the conservation of the ecological components of interest."**



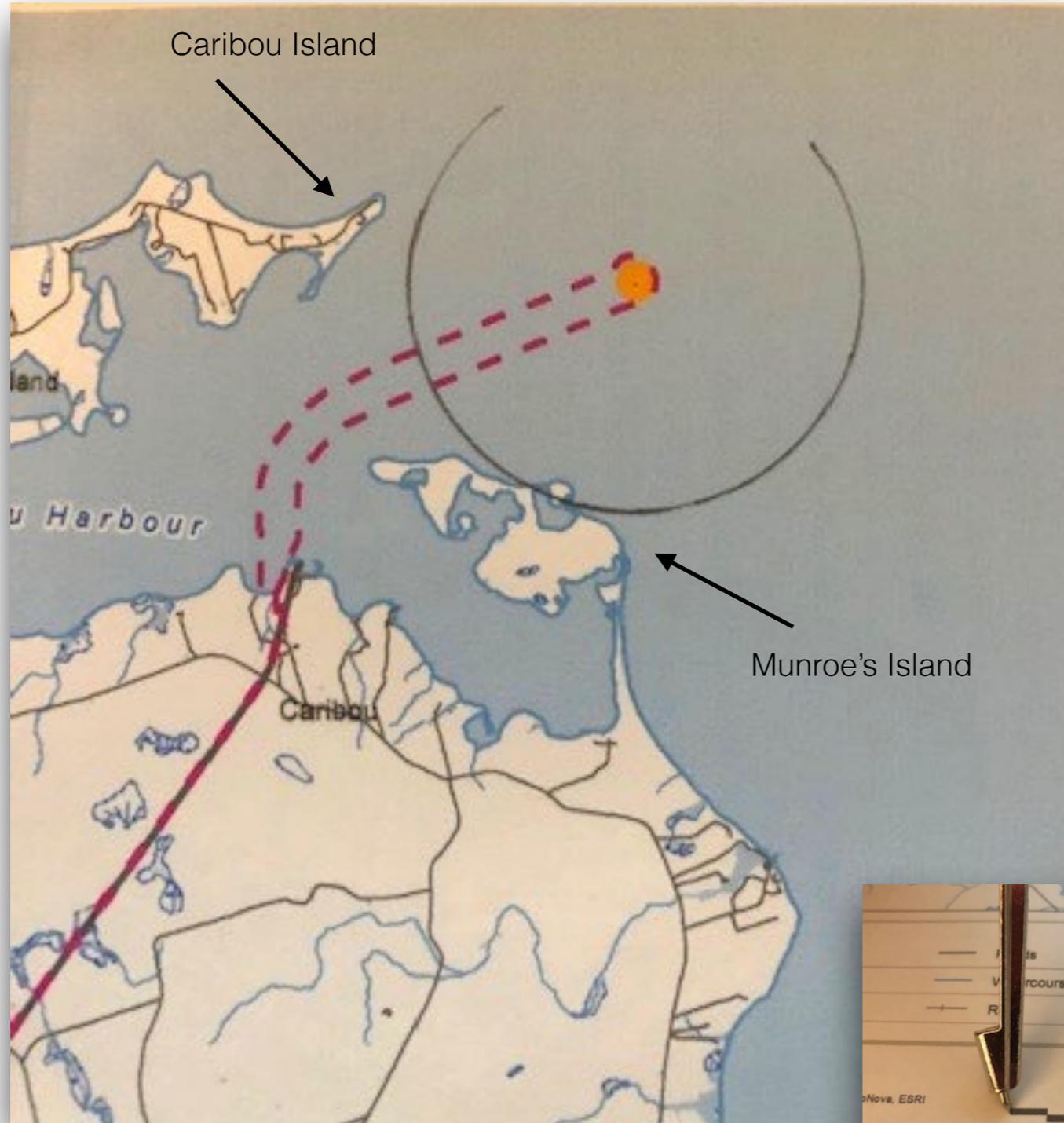
The Environmental Context for the scallop buffer zone notes, "**These closures offer protection to other important species and habitats** in the southern Gulf of St. Lawrence. For example, SFA 22 contains the last remaining area in which the winter skate (a population under the endangered designation by [COSEWIC](#)) is found during the summer. It also includes a unique population of lady crab (suspected to be endemic to the region), and the rock crab (an important prey for several species and a commercial species)."

We note that fishers in the Caribou area are aware that the immediate area of the proposed outfall and surrounding areas contain a population of rock crab and juvenile rock crab.

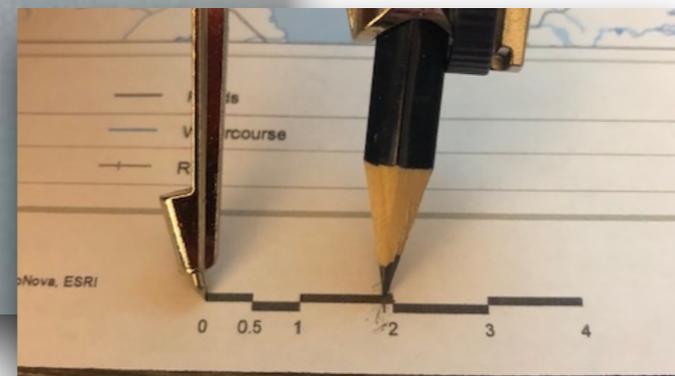
<sup>1</sup> We have spoken to DFO. They confirm that the conditions of the license are the conditions enforced under the Fisheries Act. DFO recognizes that there are errors on the on-line map and they are in the process of making corrections.

<sup>2</sup> <http://www.dfo-mpo.gc.ca/oceans/oeabcm-amcepz/refuges/sfa-zpp-eng.html>

# Northern Pulp proposed outfall with Scallop Buffer Zone



Measuring one nautical mile (1.852 km) from every point of land in the area, as defined in Scallop Condition 7, the proposed outfall location would fall within the buffer zone, not outside it as Northern Pulp states. Although Northern Pulp has not provided precise lat-long co-ordinates for the outfall, its location on Northern Pulp's map and the description that it is situated in one of the few deep areas would place it within the scallop buffer zone.



1.852 km = 1 nautical mile

# DFO Scallop Buffer Zone Regulations/Coordinates

Fisheries and Oceans Canada / Pêches et Océans Canada  
 Document No: DFO-0000471511 Page 9 of 15

28		
29	46° 47' 15"N	60° 53' 46"W
30	46° 49' 12"N	60° 51' 38"W
31	46° 53' 33"N	60° 44' 27"W
32	46° 55' 34"N	60° 42' 32"W
33	46° 58' 42"N	60° 40' 47"W
34	46° 58' 59"N	60° 40' 21"W
	46° 58' 41.8"N	60° 39' 56.8"W

6. No person shall fish for scallop in that portion of scallop fishing area 24, in those waters adjacent to the Province of Prince Edward Island inside rhumb lines (similar to straight lines plotted on a nautical chart) joining the following points in the order they are listed:

Point	Latitude North	Longitude West
1.	46°22'17"N	62°06'55"W
2.	46°20'39"N	62°06'54"W
3.	46°19'03"N	62°15'18"W
4.	46°04'39"N	62°15'38"W
5.	46°07'06"N	61°55'09"W
6.	46°04'42"N	61°53'06"W
7.	45°59'28"N	62°25'31"W
8.	45°56'47"N	62°30'38"W
9.	45°56'20"N	62°50'36"W
10.	46°02'25"N	63°04'17"W
11.	46°03'00"N	63°02'25"W

7. No person shall fish for scallop in that portion of scallop fishing area 24, in those waters adjacent to the Province of Nova Scotia within one (1) nautical mile from the nearest point of land in the counties of Cumberland, Colchester, Pictou, including Pictou Island in the Northumberland Strait and Antigonish.

8. No person shall fish for scallop in that portion of scallop fishing area 24, in those waters adjacent to the western coast of Cape Breton, Nova Scotia, within one (1) nautical mile from the nearest point of land, from the Canso Causeway, northward including Henry Island and Port Hood Island, to the Mabou Harbour entrance range lights.

**Note:** Unless otherwise specified, when the geographic boundary of an area is expressed in Latitude and Longitude those point references are based the Geodesic System North American Datum 1983 (NAD83). Positions are expressed in degrees, minutes, seconds.

Canada

Fisheries and Oceans Canada / Pêches et Océans Canada  
 Document No: DFO-0000471511 Page 1 of 15

**REGISTRATION(S) AND/OR FISHING LICENCE(S) - 2018**

This document authorizes the registration card holder and/or licence holder to engage in fishing and related activities on the Atlantic coast of Canada subject to the provisions of the Fisheries Act, the Species at Risk Act and the Regulations made thereunder.

This licence and/or registration is issued under the authority of the Minister of Fisheries and Oceans Canada.

LICENCE HOLDER: [REDACTED]

FIN: [REDACTED]

ISSUANCE DATE: October 20, 2018  
 ISSUING REGION: GULF

Licence No.	[REDACTED]
Species	SCALLOP, SEA
Homeport	CARIBOU/FERRY WHARF
Operator	[REDACTED]
Vessel	[REDACTED]

NAME: [REDACTED] IGA: [REDACTED]

**2018 LICENCE CONDITIONS  
 VALID FOR FISHING SCALLOP  
 IN SCALLOP FISHING AREA 24**

This licence confers on the licence holder/operator, subject to the Fisheries Act and Regulations made thereunder, the authority to fish under the conditions set out below:

- FISHING AREA
  - These licence conditions are valid for fishing Scallop in Scallop Fishing Area 24.
  - It is prohibited to fish in the portions of scallop fishing area 24 as described in Annex B -Definitions of the Scallop Buffer Zones.
- FISHING GEAR
  - These licence conditions authorize the use of the following gear: Drag(1)
  - While at sea during the daily closed times, all scallop gear must remain on board the vessel.
  - The maximum cumulative width of scallop drag buckets must not exceed 5.08 meters (outside measurement). The measurements must be taken on the outside of each bucket.
  - All rings used in the scallop drag must have unobstructed circular openings, the inside diameter of which shall not be less than 82.6 mm with the exception of the first row of rings attached to the bucket frame where the inside diameter of all rings shall not be less than 76.2 mm. The use of rings or solid blocking in the end of the drag bucket is authorized. When using chain sweeps, the mesh used must create an opening equal in size to the 82.6 mm rings.
  - WASHERS

Canada

# Warmer Water Poses Threat to Gulf of St. Lawrence

TELEGRAPH JOURNAL

Warmer waters pose threat to province's seafood stocks

JACOB LORINC TIMES & TRANSCRIPT

Sept. 28, 2018

A University of Washington study shows the Gulf of St. Lawrence is losing oxygen faster than almost anywhere else in the world's oceans, threatening a range of species vital to the Maritime economy.

Published last week, the study found the decline to be directly connected to climate change, as increased carbon dioxide from urbanization and industry seeps into ocean currents and flows into freshwater regions.

Study leader Mariona Claret said water from the Gulf Stream, which flows northwards along the eastern coast of North America, is filtering into the St. Lawrence Seaway as the Labrador Current – which flows southwards toward the Maritime region and typically blocks the entrance of gulf stream waters – weakens.

In turn, temperatures rise in deep-water areas of the Gulf of St. Lawrence, producing a decline in oxygen levels.

"The change is being amplified in this area because now what's

happening is that the Gulf Stream is blocking the Labrador current from transporting oxygen-rich waters toward the Grand Banks," Claret explains. "Warmer water then enters the Gulf which lowers the oxygen level."

Katja Fennel, a professor of oceanography at Dalhousie University, says the lower oxygen levels are unsuitable for species such as Atlantic wolffish, Atlantic salmon, Atlantic cod, and snow crabs, who dwell in lower levels of the gulf.

"Some species are better at withstanding lower oxygen levels than others," she says. "But if these oxygen levels continue, Atlantic cod, for example, will not be able to thrive because of oxygen levels."

Some of these species are crucial to New Brunswick fisheries. According to Fisheries and Oceans Canada, snow crab, is the second-most valuable commercial fishery in Atlantic Canada.

"The crabs are also the least resistant to low oxygen levels, though, which poses a problem for them in areas of the gulf," says Fennel.

She notes that changing oxygen levels may lead snow crabs to migrate to other areas in the gulf, forcing commercial fishing zones to be redrawn.

"It could have an impact for fishing, yes, but it's difficult to say where they would relocate and how that would be accommodated for fishing," Fennel says.

Fennel says snow crab numbers dipped in 2012 as a result of warming temperatures, but notes that the changes in temperature won't always be consistent.

"There's a lot of variability in the ocean, so some years oxygen will be low and some years it will be high. But we do know that, on average, the levels are declining, which in time-scales of three to four decades will pose problems for the fish."

Declining oxygen levels in the gulf have been monitored for years. Fisheries and Oceans Canada has tracked rising temperatures in the St. Lawrence area since 1920, and began following oxygen levels in 1960.

In 2005, the department reported that oxygen levels declined

dramatically, but could not specify the cause.

"What we show is that much of this change is related to climate change, and is associated with the carbon emissions that are released into the atmosphere," says Claret.

"This is happening now," says Fennel. "I can't tell you whether it's going to be in five or seven years when something really bad happens, but we're talking about within our lifetime."

Original Submission: March 6, 2019

Dear Ms. Miller:

**Re: Northern Pulp Nova Scotia - Environmental Assessment Registration Document- Replacement Effluent Treatment Facility**

The Northern Pulp Nova Scotia Replacement Effluent treatment Facility has many concerns for me and my spouse. As residence of Pictou County, Nova Scotia this issues hits us right in our backyard. I myself am a second generation fishermen and father of two - a three year old and a one month old new born.

Besids my knowledge as a fishermen I am also a Red Seal Tradesmen trained as an Industrial Mechanic (Millwright) which gives me more insight into the industrial workings of a pulp mill.

In Northern Pulp's EA submission, there are many issues that are of great concern for me that need more review and information to insure the heath and safety for both the people of Nova Scotia and the Northumberland Strait to which we fish and share with surrounding Provinces. I am asking that you, as the Minister for Nova Scotia Environment, order an environmental assessment report of Northern Pulp's proposed effluent treatment facility for the following reasons.

**1. Protection of Fish and Fish Habitat:**

Since I am a lobster licence holder, the new treatment facility outfall is a major concern - what affects will it have on lobsters and their habitat as well as the lobsters reproduction system which includes their larvae. This information is so important because it is what will allow the survival and future sustainability of our industry. In Appendix R of Northern Pulp's EA is where you find the lobster study information which is very limited. Here in the executive summery it states *"It is important to note that the values and distances in the Stantec reports (Stantec 2017, Stantec 2018) have been generated through modelling and not through onsite testing. Therefore, if modeling predictions prove to be inaccurate, then the predicted impact on lobsters as described in this report are invalid.*

This statement here concerns me as to how valid the receiving waters study is as well the lobster study. This area needs much much more information and in-depth studying to ensure our lobster and larvae are not harmed from the effluent leaving the outfall location.

**2. Scallop Buffer Zone:**

While on the topic of lobster, I would like to bring to your attention a link to the DFO website that describes our scallop buffer zone. Here is how the buffer zone reads as to the conditions for the commercial fishers licence set out by DFO and Enforced by DFO fishers officers as to the fisheries act and is found as Scallop condition 7: *No person*

*shall fish for scallops in that portion of scallop fishing area 24 in those waters adjacent to the Province of Nova Scotia within one [1] nautical mile from the nearest point of land in the counties of Cumberland, Colchester, Pictou, including Pictou Island in the Northumberland Strait, and Antigonish.*

With this pointed out I would then like to refer to Northern Pulps EA, registration document- section 8, page 382 figure 8.12-10 and then the wording on page 384 where they state the outfall location is outside of this buffer zone. If Northern pulp worked with DFO more, they would have been shown and explained that their figure in there EA was incorrect and that the scallop buffer zone is one nautical mile from any point of land. This means their outfall is located inside a marine refuge area which is intended to protect the juvenile American lobster <http://www.dfo-mpo.gc.ca/oceans/oeabcm-amcepz/refuges/sfa-zpp-eng.html>.

Here are other limitations within scallop buffer zones that are set out by DFO.

*Prohibitions:*

- *Scallop dragging.*
- *No other human activities that take place in this area are incompatible with the conservation of the ecological components of interest.*

### **3. Total Suspended Solids**

The outfall location is located just off the Caribou Harbour channel and the accumulation affects from the suspended solids in the effluent is another huge concern. One of the first meeting with Northern Pulp and the fishers was held at the Pictou County Wellness Center in early December of 2018. At this meeting Guy Martin from KSH solutions stated when asked the following question "Where does the heavy solids go?", his response was, " Away". Well on page 84 of the EA document, Table 5.6-1 the total suspended solids (TSS) is 48mg/L . When you do the long hand and work that out for their daily water usage of 85 million litres a day that is just over 4 tons of solids sent out into the Northumberland Strait daily. This is unacceptable. Four ton of solids won't just go away as KSH stated. The accumulative affect and build up is unknown and needs to be addressed.

### **4. Shell Fish Closure Zone:**

Also a concern not addressed in Northern Pulp's EA is what will or what is the probability of a shell fish closure zone around the outfall. Will it be based on depth and volume of water affected? Will it be left up to DFO, not a Northern Pulp issue, but only to be a issue and concern to the fishermen? The area of the proposed outfall is one of the last remaining herring school breeding/ spawning ground for which I fish during the fall herring season 16F. As fishers we have drastically reduced our quota to continue to protect and look after the herring stocks for generations to come. As DFO knows the herring stocks are in very poor shape and as a precautionary measure, have cut quota in hope to rebound the stocks.

What is this outfall going to do to these herring spawning grounds? This is just one more reason that more in-depth studies need to be done to these very critical species.

These are just a few of my concerns as a fisher, but working full-time this winter as a Millwright and with a new born in the house, having time to study this EA in such a short time has been challenging.

## **5. Power Boiler**

Now my next few points of concern are with the burning of the sludge and what will be taken out of the new effluent treatment system to be burnt in there power boiler and sent out into the air - the power boiler that does not have a precipitator! This is the same power boiler that failed emissions tests in 2015, 2016 and 2017. As stated in a news article in the The NG News, dated Jan 22 2018, the reason for the failure of the emission limits was because of what was burned in it -

*"These included changes to what went into the boiler, and how it was burned, which led to more efficient burning of that material and fewer particles leaving the boiler. One significant improvement was to reduce the amount of sawdust and shavings, and to increase the size of the bark put into the power boiler. That had a significant improvement on performance"*

If this boiler is what is going to be burning the sludge it concerns me that this was not addressed fully. How they will get there mixture right to pass any emission limits test? How will the particular mater be taken out of the air? I feel Nova Scotia Environment needs more information on this matter to insure public heath is not at risk.

## **6. Plant Drainage**

Now my finial point that I'm going to mention and touch on is an in Plant issue that deals with there drainage and cleaning of their systems like the digester, pumps, and their pipe lines within the plant that are full of green liquor, brown liquor, white liquor , black liquor and any other chemical substances that are used in the pulp making process. During shut-down periods, these substances get flushed with acid for cleaning purposes. During these shut-downs or during emergency break-downs within the plant, at any given time, these substances are flushed down a drain and out into Boat Harbour. Any process interruption is drained off and sent down a drain out into Boat Harbour as well.

No where in Northern Pulp's EA does it mention a process for kraft interruption or their cleaning processes for the items mentioned above. The EA does not mention how the new system will handle these chemicals in their raw formate or how the microorganisms that are used in the AST system will interact with these chemicals. This is a major concern because these types of incidents happen far too often in this plant and more information should be addresses to what will the affects be on the AST

system. Any slight mix up in their process will affect there AST system which then affects the outfall discharge.

I want to thank you for your time in reading my submission and hope that you take my concerns as serious as I do for the heath and well being of the Northumberland Strait. That all species and their larvae are protected and studied to ensure they will be around for years to come. If fishermen are held to respect Marine Refugee Areas to insure safety of the juvenile lobster, so should Northern Pulp. There should be no risk put on any species in the Northumberland Strait that could cause adverse affects to a commercial fisheries and to human recreational enjoyment. Let's get this assessment done right and protect the water and the air from harm that can not be reversed. I look forward to hearing from you with regards to these issues.

Thank you

Sincerely:

Ryan MacDonald

Jackie Ewart

Plymouth Pictou County