

Included in this document are: 1. The EA Submission, 2. An email addendum to EA submission, 3. EA Submission attachment of Caribou Groundings and Wrecks, 4. not submitted to EA, a Caribou Harbour Hydrographic Services Canada map – a partial map was in Section F of Northern Pulp’s application.

## **1. NORTHERN PULP NOVA SCOTIA ENVIRONMENTAL ASSESSMENT REGISTRATION DOCUMENT Replacement Effluent Treatment Facility**

Public Input Submission

Contact Information:

Janice Cruikshank, B.Sc.(Health Education)

Firstly, I acknowledge the economic benefits Northern Pulp brings to the community, volunteer sector and non-profit groups. For 22 years, I have called Caribou Island my home. Within my line of vision in the harbour, I see Farming, Fishing (sport and commercial), Forestry, Tourism, and Active Living co-existing and integrated. I do not see the Northern Pulp pipeline and outfall as compatible with the highest and best use of Caribou Harbour and the Northumberland Strait. The “quality” of the partially treated effluent is by Northern Pulp’s admission not expected to be an improvement from that of Boat Harbour i.e. temperature, salinity, TSS etc. The elements that are not treated onsite at the proposed ETF will still be at polluting levels in the pipeline for example BOD’s and then dispersed in the Northumberland Strait by dilution and will negatively impact the Marine environment. There is no indication that pipeline leak prevention monitoring is different from Boat Harbour – visual. For damage by ice, ice scour, or malfunction from sediment, the diffusers will be checked by divers but no frequency is indicated other than annual. **To come into a sensitive ecosystem with minimal monitoring is unthinkable.** As to air emissions, there is inadequate information as to the new sludge burning in the power boiler at maximum production, the emissions and the impact to existing scrubber? Precipitator? capacity. More recently, a significant methyl mercury contamination is reported to exist adjacent to the proposed replacement ETF. There is not enough clarity about heavy metals and the potential health impacts.

**I request that the Caribou option be rejected by the Honourable Minister because of the significant environmental effects that can’t be mitigated:**

**Please note that the map used in the Executive Summary does not show Gull Spit as a notable geographic feature.** The Canadian Hydrographic Services nautical chart used by Makai Engineering in Appendix F, Figure 1 shows only half of Caribou Harbour but does indicate the presence of Gull Spit which relates to the **narrow silting harbour entrance**. A nautical chart shows water depths, land elevations, North orientation, marshlands, tidal information, watercourse feeding Caribou Harbour. **I request that the Honourable Minister and any other reviewers of the application be made aware of what appears to be an oversight in the Executive Summary as it could impact one’s understanding of the significance of Gull Spit to the harbour flushing capacity and sedimentation.** Without Gull Spit noted, the map in the Executive Summary implies a wider harbour entrance.

The ferry channel is dredged regularly due to sedimentation. A May 2008 Transport Canada report about the most recent ferry dredging is found at: <https://www.canada.ca/en/news/archive/2008/05/federal-government-improves-caribou-nova-scotia-ferry-terminal.html>. The proposed NP pipeline marine portion of the 15.5 km route would run parallel to the ferry channel. In pipeline construction, 4.1 km of a trench 3 metres deep and 10 metres wide would increase sedimentation in the harbour and off of Caribou Point. The description of armour stone to cover the proposed pipe could also change the sediment patterns in the harbour and off of Caribou Point : creating a new artificial “reef(s)” that crosses the harbour perpendicular to the harbour entrance and then parallel to the Caribou Island south shore. Gull Spit at the harbour entrance is a significant feature as is the Nature Preserve, Munroe’s Island (opposite Gull Spit) which is part of the Caribou Provincial Park. Approximately 30 years ago, the Little Caribou Entrance to the harbour was still open but is now connected to Caribou Park because of sedimentation. The modelling in the Receiving Water Study which used July 2016 conditions shows that outfall effluent would be inside the harbour. (*Appendix E1-E2 Figure 2.11 CHB Discharge Simulated Effluent Concentration for Typical Tide – Slack High Tide at 11:00 July 22; Figure 2.12 CHB Discharge: Simulated Effluent Concentration for Typical Tide – Ebb Tide at 1400 July 22*) Yet in the application, there is no mention of the flushing capacity of the harbour. A mussel farm license was rejected approximately 18 years ago due to inadequate flushing. **Effluent sediment in Caribou Harbour would impact /reduce / eliminate prospects for existing and future non-polluting socioeconomic development.** To add another source of sediment in the harbour and environs is short-sighted and an avoidable negative impact. The impact of the 25-37 degree effluent as a 15.5 km thermal heat pump isn’t addressed nor is the broad impact of cooling effluent in the strait and the currents created or altered by the diffusers and the temperature differential of the effluent and the receiving waters. Whether property sellers on the harbour would need to highlight effluent as one of the disclosure items has not been addressed and neither negative property value and tax base impact nor the quiet enjoyment of current owners.

In addition to the fishers who are based at the Caribou wharf, **Caribou Harbour has 4 Oyster licenses** – verified as current on the NS Department of Fisheries website. The pamphlet I recently obtained at NS Fisheries and Aquaculture, “Harvesting Shellfish in Atlantic Canada” 2004, indicates that “Three federal government agencies work together to deliver the CSSP (Canadian Shellfish Sanitation Program) : Environment Canada, the Canadian Food Inspection Agency and Fisheries and Oceans Canada.” “An international reputation for quality and safety”. Also, the application does not include what Priority Substances (Canadian Environmental Protection Act, Priority Substances List Assessment Report No. 2, Effluents from Pulp Mills Using Bleaching 1991) are in the effluent when it exits the diffusers. **Backflow of effluent to the harbour** is possible because of the harbour’s Easterly exposure, including Nor’easter’s. High sustained winds with tides and surges flooding land of low elevation and saltwater marshes. The food chain that is impacted and can’t be mitigated because of the scope of the Caribou Harbour ecosystem, impacts food security. There are also climate change predictions for low lying land of at least 1.5 metres.

I was aware of **2 sunken ships in Caribou Harbour** so did a scan of some public records (**Eastern Chronicle, Pictou Advocate, Maritime Museum of the Atlantic, The News**) and **found not 2 but 22 reports of strandings and wrecks** – a listing is attached. There were also 3 ferry crossing points from Caribou Island to “the mainland” years ago – one at the West end, one mid-island and one at the East end. I don’t know if there is evidence of old wharf pilings at the East end of the island but there are at the other 2 locations. This information relates to **Section 10.2.8 Discovery of a Heritage Resource**. The **Special Places Protection Act, Historical Sites & Monuments Board of Canada and the Heritage Trust of Nova Scotia** also need to be considered for ensuring that the Marine Heritage of Caribou Harbour and area is not sacrificed.

The ferry service operates from May 1 - December 20 between Caribou Harbour and Wood Islands PEI. There is no mention of the impact of pipeline construction sedimentation to accelerating the next channel dredging timeline or whether the contents of effluent sediment will curtail or complicate the ferry channel dredging in the future. The ferry is the only direct connection between PEI and Nova Scotia. Both provinces emphasize the natural setting and recreational activities in tourism promotion. **The ferry interacting with the effluent plume isn’t addressed in the application; for example: colour, odour, froth and aerosolizing of the effluent** – potential negative impact to the iconic tourist experience that reaches beyond the ferry ride. Pictou Island is experiencing success as a recreational destination and that ferry also operates out of Caribou Harbour.

**“Those who fail to learn from history are condemned to repeat it”** – Winston Churchill, 1948. In 1994, an effluent pipeline proposal into the Strait was refused. What is different today? However, Jean Francois Guillot, Vice President Operations East with Paper Excellence Canada, owner of Northern Pulp stated in a *Northern Pulp Press Release, March 6, 2019*. “Northern Pulp’s new wastewater treatment facility **will ensure no untreated wastewater ever leaves the site** and will then continue our practice of releasing treated wastewater into the Northumberland Strait.” Honourable Minister, the promise is highly dependent on the criteria for the definition of treated and pointedly omits the same assurance for the pipeline and effluent which is in my understanding no way close to the quality of the Middle River which is supplied to Northern Pulp for processing – defining “treated” to align with the public’s understanding of treated isn’t clear and wouldn’t be further clarified until after operations are well underway. The comparison of the borrowed Middle River prior to diversion for processing, compared to the partially treated effluent at the outfall, then at the 360 degree? 100 metre mixing zone isn’t addressed in the application. I disagree with Northern Pulp’s standard for considering the effluent treated and ready for the pipeline. If onsite the processing allows for cooling of product and adjustment of process substances/chemicals, **why does the design of the Effluent Treatment Facility determine it as “pipeline ready” when the effluent is still at polluting levels when it leaves the ETF?** Who has the **Liability** for the effluent which escapes or is expelled offsite, on land and/or in the marine environment? This is not addressed in the application and isn’t that related to mitigation? Reversing the effect may not be possible so is a significant environmental effect. There is an old saying about closing the barn door after the horse is out. The implication is that “new” or “replaced” means improved. What I’ve understood is that the effluent will be the same and TSS will be increased, therefore **not an improvement**. I believe this is misleading to the public and may have affected understanding and responses about this

application. The temperature and salinity are not managed onsite. Public engagement sessions about the Caribou site could have provided this distinction. The Nov. 2017 engagement panels are not all applicable to the Caribou option. Because there was no public engagement session, I request that the Minister allow time for public comment on any new information following the Honourable Minister's decision. If thought could be given to the variety of literacy levels, that would make the information more accessible.

"One of the most environmentally responsible mills in Canada". Northern Pulp promotes it's smaller footprint for partially treating it's effluent onsite but doesn't acknowledge and to my understanding doesn't include the continuation of that footprint as the pipeline is laid adjacent to Pictou's watershed or the **pipeline's end destination in lobster grounds at risk for losing international certification for the Maritime lobster fishery**. The footprint comparison is a false assurance as is the comparison to other mills which can't be compared reliably to this unique setting.

**Negative effects for emissions from burning the sludge are unclear.** There must be a thorough analysis of what will be burned, the by-products, the precipitates and the potential health effects before adding to our air.

Caribou River Cottage Lodge, Pictou Lodge, Waterside Beach Provincial Park, Munroe's Island & Caribou Provincial Park, the Fisheries including the Caribou Harbour Oyster Licenses, Gull Spit narrowing the harbour entrance, the 22 ship groundings/ wrecks, the sedimentation conditions that already exist, the Pictou Watershed, no improvement to the effluent, location of the outfall in an ecologically sensitive area, the fluctuating ice conditions with no indication of protection of the diffusers from ice scour, the lack of an early warning detection plan for leaks or pipeline/diffuser loss of integrity, the migratory bird flyway, the numerous sensitive salt water marshes, dune grasses, edible beach plants, the flushing challenges of the harbour, the low lying farmland that is flooded by tides and surges, negative impact to cottage rentals and property values / transactions / leases just as the province has simplified short term rentals, the ferries that are being improved to "green" standards churning through the effluent plume, the present and future uses that are in direct opposition to the polluting presence of the effluent outfall. Algae impact to Caribou Harbour is an example of how the balance may be tipped before any testing occurs. In appendix J1-1 the prediction for algae effect in Caribou Harbour won't occur until "after" the pipeline is commissioned. There is no indication in the application as to how this could be mitigated after the fact. Would the pipeline be closed or continue to be permitted to pollute if testing post commissioning determined issues not in keeping with the predictive modelling? Local knowledge is relevant to this application. There is insufficient time for this project to meet the legislated obligations to PLFN for January 31, 2020.

**I do not support the acceptance of this application. This is not a grandfathering of an operation. Relocation of the effluent outfall adds new layers of complexity and risk.**

Respectfully submitted,  
Janice Cruikshank  
March 8, 2019

## 2. Addendum to my submission to proposal for NP replacement ETF



**Janice Cruikshank** <[redacted]@gmail.com>

Mar 9, 2019, 10:26 PM  
(5 days ago)

to EA

I request the following references I had misplaced be added to my submission - context for some of my comments.

**Table 4.2-4 Pg 67-68** " Preliminary modelling indicated that Pictou Harbour has limited mixing with the Northumberland Strait - water in Pictou Harbour tends to stay within the harbour. Though treated, effluent would therefore result in the accumulation and increasing concentration of residual contaminants contained in the treated effluent over time. Given the discharge rate, effluent contamination accumulation could result in result in negative effects on the harbour over time." The application does not support why Caribou Harbour was clearly deemed better than the Pictou Harbour site even in **Table 6.7-1**. Nor did it illustrate an overlay of nautical maps of both sites to clearly show Caribou Harbour as inferior to the already rejected site. The statement does confirm that when Northern Pulp uses the term "treated effluent" or "treated wastewater" throughout its application and in public engagement , that **when treated, the effluent will accumulate and concentrate residual contaminants over time**. The distance between the 2 points is less than 6 km. An average walker can do that distance in an hour and a half. If compared by modelling for an average current, the time from effluent outfall would be less than that.

**Appendix I-1** "all treatment will occur on site" - this contradicts the admission that the effluent will accumulate and concentrate residual contaminants over time. Dilution postpones, not treats and is retrogressive. Together with today's (March 9/2019) report in the Halifax Examiner that a Dalhousie researcher is claiming misrepresentation of her air emissions report in the application, the application has gaps.

**Appendix I-1 Panel 6** Footprint "Can the process fit on the mill property, without impacting adjacent natural features and property owners?" There is an omission that the part that doesn't fit on the property, namely the pipeline and the effluent coming from it, would have impacts on adjacent natural features and property owners. The term footprint is not sufficiently defined and skews the understanding of the degree of benefit being claimed by Northern Pulp.

**2.4** "...potential environmental effects of the project have been considered for all phases of the project including those potentially arising from credible accidents, malfunctions, and unplanned events." Ship groundings and wrecks are part of the history of the CHB option but no mention in the assessment and no indication of updated , effective monitoring , for the effluent parameters and integrity of the pipeline and diffusers.

**2.5.2 Env. Protection Measures** " Siting of the marine outfall to minimize the potential impact to marine water quality." Contradictory to I-1 that all treatment will occur on site.

**Please note in Appendix E1, Figures 2.11 and 2.12 must be zoomed to more accurately see the simulated effluent in CHB. There is no scale and it isn't entered on a nautical chart.** The other figures in that section are likely the same. Without that, the key is of limited benefit unless the reviewer knows to zoom in. Very limited, and misleading to a reviewer not familiar with CHB. It would be more transparent and credible to cue the reader to zoom to view and to indicate the altitude.

**Appendix E3 2.2 Far-Field Modelling Results** "Modelling provides relatively higher dilution and less potential effluent impact on Caribou Harbour water. ...transported predominantly with the off-shore currents in northwest and southeast directions. The effluent intrusion into Caribou Harbour is predicted to be minimum" The words in this statement are indefinite

and more of a wait and see. Given what is at stake environmentally, this too low a standard to go forward with this application.

#### **4.2.5.3 Marine Civil Engineering Geotechnical Considerations "Caribou Island has not had this study".**

**5.3.1.10 Appendix F** Pipe Installation "Removal and disposal of dredged material is not anticipated." The 4.1 km long, 3 metre wide trench for the 1 metre pipe will displace seabed material. The 2008 ferry dredging under Transport Canada's jurisdiction was barged and disposed on land. What information was not included in the application to explain why there would not be removal and disposal?

**Land to Marine (Near Shore) Connections "The near shore portion of the pipeline will require planning and management of worksite construction and logistics affected by water depth, fluctuating tidal levels, and ice scour."** The application does not indicate why this would be acceptable at CHB but not at Pictou Harbour less than 6 km away - a conflicting unsupported statement.

**5.6.2 Air Contaminant Emissions** "Potential for odour to be perceived." This is not sufficiently described.

**5.7.2.7 Marine Environment 5th bullet refers to protecting the pipeline from ice scour but doesn't address diffuser protection.** This would be an oversight and an error with negative consequences.

**6.5 "Engineering considerations for Caribou Harbour"** These are not clearly laid out to show the distinction from Pictou Harbour which is more detailed. This is a significant gap for reviewers and can't support CHB as a viable option, just as for the rejected Pictou Harbour option.

**Table 6.6-1** Typo? I believe the year would be 2019, not 2018 (Native Council of Nova Scotia shows January 10, 2018)

**Table 6.7-1 Effluent quality** "Point C results and the discharge from the proposed facility will be similar." The proposed ETF will not be improving the effluent state.

**"Fresh water from Middle River makes its way to the Northumberland Strait whether NPNS uses the water or not, therefore the same volume and fresh water mixing occurs naturally."** This is a **false** statement. What is "natural" (from my understanding of the term) is the Middle River entering Loch Broom, then Pictou Harbour, then the Strait - fresh water and saltwater mixing occurring along the way by tides and currents and temperature and salinity ambient. The Northern Pulp manmade intervention is **not natural**. In the application, the Middle River is diverted at Loch Broom, to use in mill processes including the proposed ETF, then pumped from the mill site for 15.5 km via pipeline with the last 4.1 km on the seabed before being discharged at velocity from 3 diffusers set 25 meters apart and 100 more metres before predicted to be at ambient temperature and salinity.

**7.0 Integration of Study Components** "Under the nearshore effluent dispersion scenario, the potential effects zone based on the sublethal toxicity testing is within 323 metres of the discharge at Boat Harbour. Under the offshore effluent dilution scenario, the potential effects zone extends to greater lengths (to ~ 7.3 km)". The accumulation would still occur but in an extended zone. The modelling uses the 85% figure for predominant southeast and north west flow. There is no comment on the modelling of the other 15% which I believe would include winds and currents that come up the harbour from any easterly direction. There would also be currents intersecting from the west across the north shore of Caribou Island. There is no mention of this as part of the modelling.

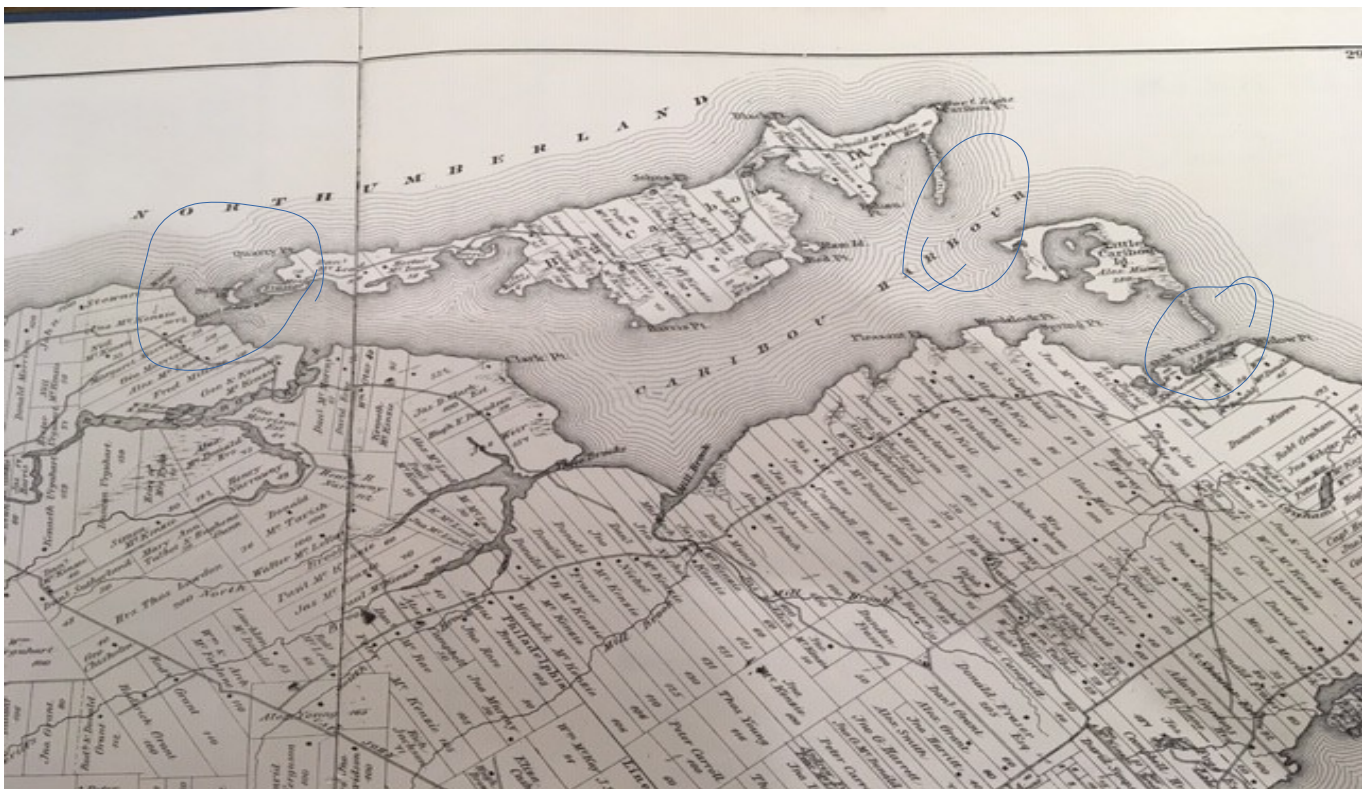
Many residents who live elsewhere far and wide for the winter have been away during this process. Although I registered face to face in Nov 2017 at the New Glasgow engagement session, by email and online, I didn't receive the update notifications volunteered by Northern Pulp - not one. **Appendix 11 Panel 17** "We are particularly looking for your input on the recommended route and outfall area (Nov. 2017). I did give input to the Pictou option and again with the Caribou option but didn't receive a response except for one where NP defended its history of effluent into the strait as a given for the future.

I believe there must be a solution to safe, non-polluting effluent management that doesn't infringe on others. Caribou Harbour and the Northumberland Strait isn't an acceptable choice. As a stakeholder, I don't give permission for effluent or residue on my property.

Thank you for adding my reference points to my submission.

### 3. Caribou Harbour Ship Groundings and Wrecks

By Janice Cruikshank, at Hector Centre , Pictou, NS 2019-02-28 The local papers are a source of marine incidents. To be noted, the list of **22 incidents** is not exhaustive. Map of Caribou Harbour from Illustrated Historical Atlas of Pictou County Nova Scotia, J.H. Meacham & Co., 1879 shows 3 entrances to Caribou Harbour. 1 at the west end referred to as Ford at Low Tide (a sandbar). Little Caribou entrance referenced with the HILDA was at the southeast of today's (2019) Munroe's Island. Both of those have since silted in and the one remaining entrance - "Big Entrance" - is regularly dredged for the ferries to PEI.



#### KEY:

E.C. Eastern Chronicle; P.A. Pictou Advocate; M.M.A. Maritime Museum of the Atlantic On the Rocks ([novascotia.ca/museum/wrecks/wrecks/year.asp](http://novascotia.ca/museum/wrecks/wrecks/year.asp))

E.C. Jne 25, 1846 pg. 3

Brigatine **JUSTINE**, Capt. Smart of and from St. John's, Nfld., bound for Pictou, went ashore June 19<sup>th</sup> at the big entrance of Carriboo Harbour

E.C. Dec.3, 1846 pg.3

Schooner **CATHERINE**, Webster, master, ashore at Carriboo Harbour – part of cargo taken without damage, taken to Ch'town to be sold by Lloyd's agent

E.C. Nov.28,1850 pg. 3

Schooner **SPREE**, of Ch'town, Capt. Griffiths. Was wrecked Nov. 21<sup>st</sup> at Carriboo Island

E.C. Nov. 29, 1855 pg.3

Schooner **HELEN**, Matatall, master of Tatamagouche was wrecked on Carriboo Island on the 24<sup>th</sup> inst.; crew saved

M.M.A. **HARRIETT** 1868-10-17 stranded Caribou Island

Schooner, leak, loss, ran ashore

Voyage from Pannel Bay. Registered at Arichat, NS

M.M.A. **SHANNON** 1868-10-17 stranded Caribou Island

Brigatine loss cause of event – unknown “No room to wear”

Voyage from Georgetown to Charlottetown

M.M.A. **EMMA** 1870-06-09 stranded Caribou Point

Brigatine loss judgement error total loss

Voyage from France to Quebec

M.M.A. **BELLE** capsized and sank July 1, 1875 Capt. William Biggar. (?July 8, 1875)

M.M.A. **OCEAN** 1875-09-04 (01?) stranded Caribou Island tonnage 353

Barque loss fog

Voyage from Cardiff, South Glamorgan, Wales to Quebec, Quebec, Canada

Registered at Memel, Klaipedos, Lithuania

M.M.A. **MARY HART** 1875-10-24 stranded Caribou Island Shoal, Pictou Harbour

(note: I think this is an entry error and would more likely be Caribou Harbour, not Pictou Harbour) tonnage 26

Schooner loss stress of weather Total loss Cargo accounted for \$200 of loss

Voyage from Cheticamp, NS Registered at Arichat, NS

M.M.A. **ELLEN** 1875-11-20 stranded Caribou Harbour, entrance tonnage 49

Schooner loss Navigation Error Mistook Light Partial loss

Voyage from Charlottetown, PEI to Pictou, NS Registered St. John's Nfld.

M.M.A. **NANCY** 1879-10-19 stranded Caribou Island tonnage 63

Schooner loss stress of weather capsized and stranded Total Loss Cargo accounted for \$250 of loss

### **Lives Lost 5**

Voyage from Richibucto, NB to Pictou, NS Registered Shelburne NS

M.M.A. **MAGGIE** 1883-11-17 stranded Caribou, off tonnage 85

Schooner loss stress of weather snowstorm partial loss

Voyage from Bermuda to Charlottetown PEI Registered at Hamilton, Bermuda

M.M.A. **EMMELLE** 1885-04-11 wrecked Caribou Island tonnage 100

M.M.A. **HILDA** 1886-05-09 stranded Little Caribou Entrance tonnage 719

Barque loss stress of weather total loss



Voyage from Liverpool Merseyside, England to Pictou, NS Registered at Pictou, NS  
M.M.A. **CAPE BRETON** 1887-11-07 Foundered Caribou Island tonnage 100  
Dredge loss stress of weather partial loss  
Voyage from Wallace, NS to Pictou, NS  
M.M.A. **BOUNTY** 1887-12-20 stranded Caribou Island tonnage 55  
Schooner loss stress of weather partial loss Cargo accounted for \$300 of loss  
Voyage from Charlottetown, PEI to Pictou, NS  
M.M.A. **UNION** 1910-07-20 stranded Caribou Island tonnage 77  
P.A. **CHARLES A. DUNNING** 11 Oct. 1951 P. 1  
Ferry grounded on Gull Rock, Caribou Island  
P.A. **SAULT AU COCHON** Nov. 12, 2010 Barge grounded on reef off Munroe's  
Island / Caribou Provincial Park High winds and 4 metre seas

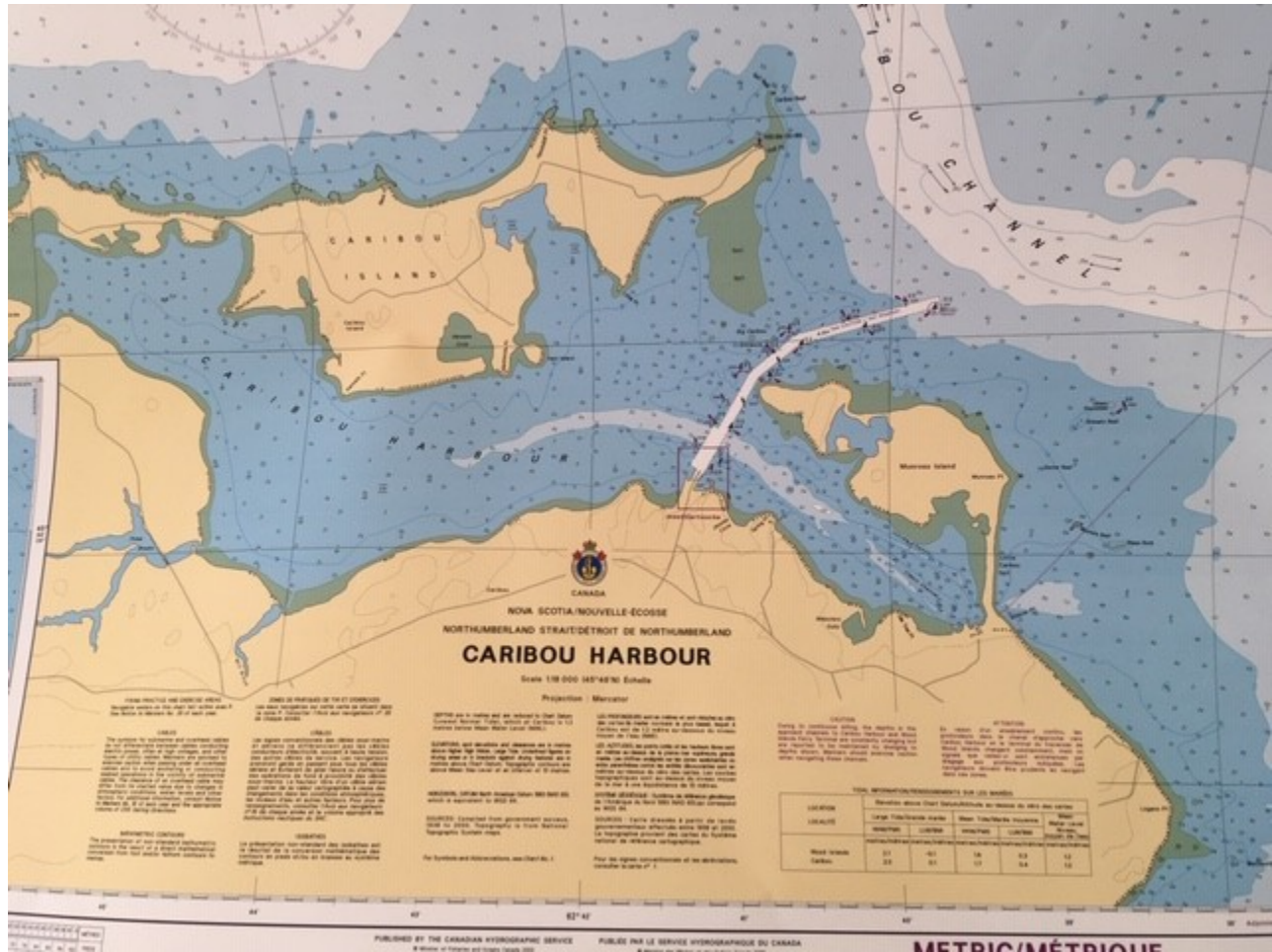
The News July 16, 2015, Excerpted from Past Times, John Ashton.

"... Pictou County has had accounts reported of buried treasure within its seacoast and landmass. Some are very well known, such as the buried gold of Caribou Island. The story has been passed down for generations and attempts have been made over the years to retrieve the riches. Supposedly, in 1755 a French frigate buried a large cache of gold destined to pay the soldiers at Quebec. They built a "well of stone" and deposited the bullion deep within its rock walls. Over the years attempts have been made to recover the fortune, but have proved unsuccessful. Ghostly sightings at night have been reported of French sailors walking about the beach near Gullrock Lighthouse protecting their stash."

"Another well-known buried treasure story was reported in Rev. George Patterson's A History of the County of Pictou, 1877. A French war ship containing salvaged treasures had escaped the British attack on Louisburg, Cape Breton, in 1758. The French vessel was chased into Caribou Harbour and eventually beached at a little inlet off the Little Caribou River.

Instructions were left with the Mi'kmaq First Nation people that if discovered by the English, the craft was to be burned. The father and uncle of Pictou Deputy Sherriff Thomas Harris found the abandoned French ship. When they returned with implements to move her, she had been torched. Forty-four years later a vessel was reported travelling up the Caribou River at night and in the morning the people of the area discovered a shallow hole dug at the head of tide where all clues point to a buried treasure dig. This author visited this site in 2007 and could see the actual areas that had been dug and examined by treasure seekers..."

"John Ashton is the Nova Scotia Representative for the Historical Sites & Monuments Board of Canada and the Regional Representative for the Heritage Trust of Nova Scotia. "



4. \*\*\*I didn't include this **Caribou Harbour Hydrographic Services Canada** map in my EA submission but I did reference Section F of the NP application, where Makai Engineering inserted a partial map of Caribou Harbour. **Please note:** the proposed route for the pipeline is parallel and to the left of the pictured ferry channel in the map above. What doesn't show in the map in the NP Application Executive Summary is **Gull Spit** – a significant feature (in green, east end of Caribou Island extending south to ferry channel) which negatively impacts harbour flushing, accelerates sedimentation and reduces the width of the harbour entrance. Northern Pulp uses other maps in their information which do not show Gull Spit, water depths, land elevations, salt marshes. Therefore, the impression given is that Caribou Harbour has a wider entrance – a key omission that could falsely influence decision makers. 2019-03-14 J.C.