TANKER TRAFFIC AND TAR BALLS:

What TransCanada's Energy East Pipeline Means for the Bay of Fundy and Gulf of Maine

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The Conservation Council of New Brunswick is a non-profit organization that creates awareness of environmental problems and advances practical solutions through research, education and interventions.

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The Fundy Baykeeper works for the Conservation Council to defend the public's right to a healthy Bay of Fundy. This right is inherent in laws written to protect the marine environment and the species that inhabit it. The Fundy Baykeeper's top priority is to make sure environmental laws are enforced.

Front Cover: Coastline at the community of Red Head, near Saint John, New Brunswick.

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TransCanada's proposed Energy East Pipeline project has garnered a great deal of media and political attention since it was announced in August 2013. There has been, however, woefully little discussion of how the bitumen pipeline would impact the New Brunswick environment. Of particular concern to New Brunswickers is what this project would mean for the Bay of Fundy – an integral part of the Gulf of Maine ecosystem – and its impact on the diverse marine habitats, fisheries, ecotourism and aquaculture industries the bay supports along the eastern seaboard of Canada and the U.S.

The Saint John area, the Bay of Fundy, and Gulf of Maine face particularly elevated risks as the export port for the project. Whales and other important marine species; the traditional fishery, tourism, and aquaculture industries; and coastal communities all rely on the dynamic but stressed Bay of Fundy/Gulf of Maine ecosystem.

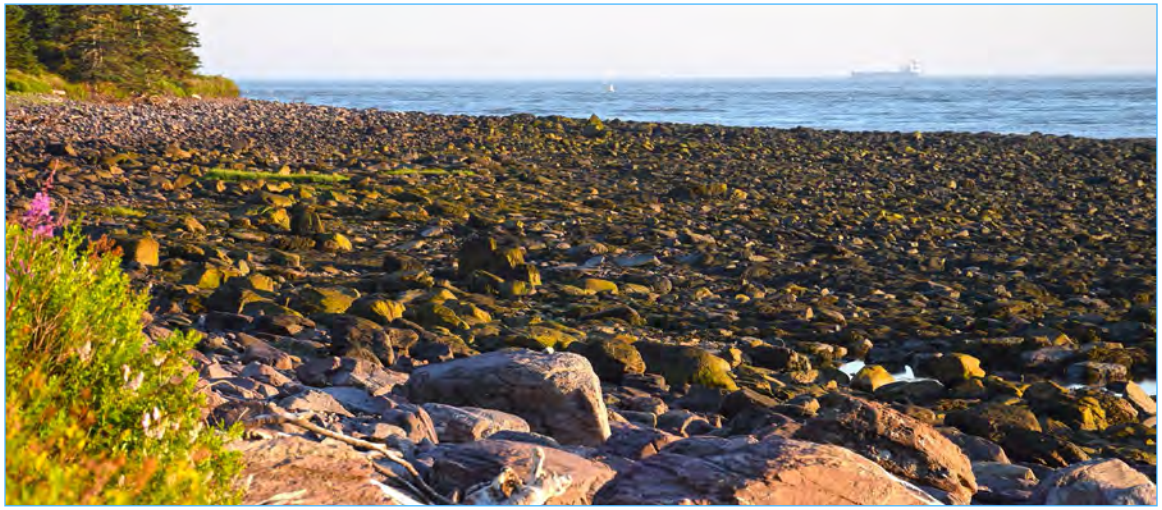
This report touches briefly on the many impacts the pipeline would have and takes a more specific look at potential impacts to the Bay of Fundy/Gulf of Maine system from tanker traffic, impacts on existing industries and businesses and the risks of potential spills.

Path to the Sea, Energy East Pipeline Route to the Bay of Fundy

The Energy East oil pipeline is a proposal of Alberta-based TransCanada Corporation to pipe up to **1.1 million barrels-per-day** of bitumen from the oil sands in Alberta and Saskatchewan for export out of Eastern Canada.

The pipeline would stretch approximately **4,600 kilometres** across six provinces and would be the largest pipeline in North America. The proposal involves the conversion of existing natural gas pipeline in Ontario and the construction of approximately **1,400 kilometres** of new pipeline in New Brunswick. It would be the first oil pipeline to span the length of the province of New Brunswick from the border at Quebec through the St. John River valley and ending beside the Bay of Fundy at a marine terminal at Red Head, a community in east Saint John.

The proposed marine terminal will be built on land owned by Irving Oil, a New Brunswick-based company that owns the refinery in Saint John and is a partner in the Liquefied Natural Gas (LNG) facility adjacent to the proposed Energy East Pipeline export terminal. Current plans include **18 large storage tanks**, often referred to as a "tank farm," directly across from homes on Anthony's Cove Road with storage capacity of up to 7.6 million barrels. A large jetty would be built out into the Bay of Fundy to the southwest of the existing Canaport LNG dock. According to current information, the jetty would accommodate up to two supertankers for loading. The size and scope of the planned marine export terminal could change as TransCanada has yet to announce where or whether they will build a second export terminal along the St. Lawrence River. TransCanada cancelled plans for an export terminal in Cacouna, Que., amid widespread public opposition to the plan, especially in light of sensitive beluga whale habitat likely to be affected.



Shoreline at Anthony's Cove Road, Red Head

Oil for Export

While pipeline proponents argue that Energy East is designed to service Eastern Canadian refineries, including the Irving refinery in Saint John, analysis shows that the product is primarily for export. According to calculations based on TransCanada's documentation and the capacity of Canadian refineries to accept crude, it has been determined that approximately **80%** of the total daily volume flowing through the pipeline would be shipped out of Canada.[1]

The National Energy Board: A flawed regulatory process

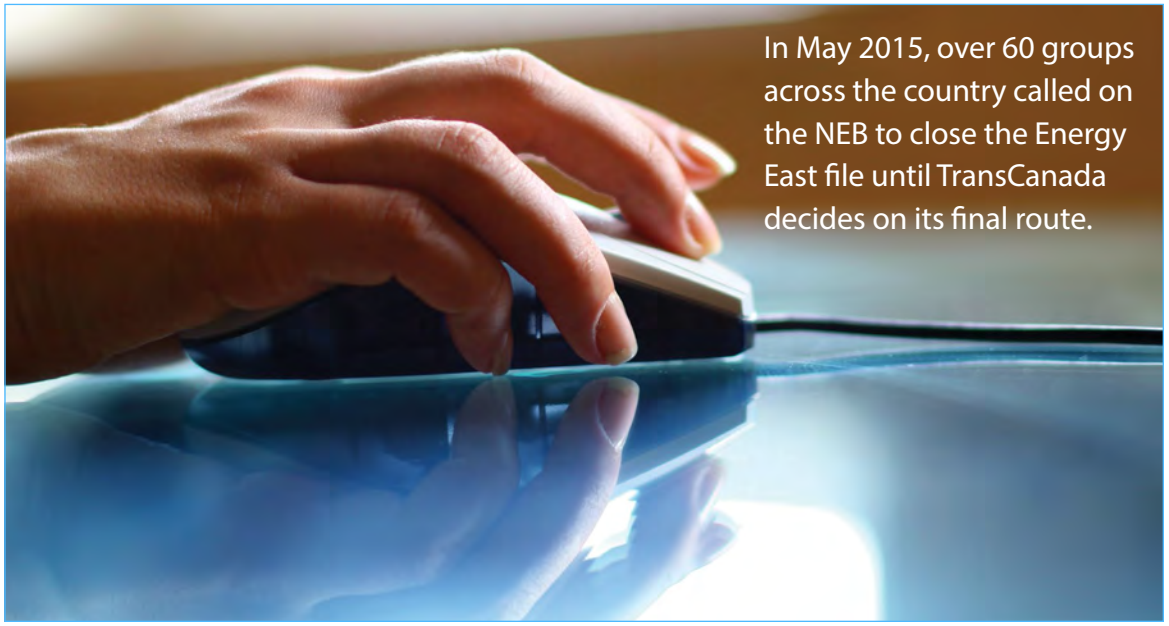
Before delving into the implications of TransCanada's pipeline project to the Bay of Fundy, it is important to examine the regulatory environment under which the project is being assessed.

Pipeline proposals that cross provincial boundaries, such as the Energy East Pipeline project, go before the National Energy Board (NEB), the federal regulator on cross-jurisdictional energy projects. Founded in 1959, the NEB has undergone changes over the years. There was a significant change in 2012 that, critics including the Conservation Council of New Brunswick argue, has significantly limited the capacity of members of the public to participate in NEB hearings. Timelines imposed on the NEB review

Irving Oil Refinery, Saint John New Brunswick

process also threaten to stifle important discussion and limit constitutionally required consultation with First Nations, since hard deadlines may rush a complex regulatory process. Further, the NEB no longer has the final say regarding whether a pipeline should be built; it merely passes on its advice to the government of the day who is in no way bound to follow the recommendation.

Changes to the NEB process made in 2012 now require that all First Nations, landowners, concerned members of the public, and organizations must apply for permission to participate in the hearing process. In order to be considered eligible, applicants must demonstrate that they are either directly affected by the pipeline or have relevant expertise related to the project. The NEB then decides who can participate in the process and who can write a letter of comment. Applications to participate in the review of the Energy East Pipeline project had to be submitted by March 3, 2015, well before TransCanada's application could be deemed complete.



As noted above, TransCanada has made a major revision to the Energy East application by canceling the export terminal in Cacouna, Que. In May 2015, **over 60 groups** across the country called on the NEB to close the Energy East file until TransCanada decides on its final route, arguing it would be irresponsible of the regulator to proceed with a review of an incomplete project application. The NEB has refused to close the file and has, instead, continued with the process. In a *Letter to all Parties* on July 16, 2015, the NEB announced the list of Aboriginal intervenors and stated that it will soon rule on who else will be granted intervenor status in the hearing,[2] all well before TransCanada has even finalized its plans.

The Bay of Fundy, a Natural Treasure

Sitting on the northeast corner of the Gulf of Maine and nestled between the Nova Scotia and New Brunswick coastlines, the Bay of Fundy is a truly unique and awe-inspiring marine environment.

Twice every day 160-billion tonnes of seawater rushes into, and back out of, the Bay of Fundy, creating the largest tides in the world. These dramatic tides drive a unique and diverse ecosystem. The Bay of Fundy is exceptionally biologically productive, attracting several species of large whales, porpoise, dolphins, seals, and many kinds of fish, birds, scallops, clams, and crustaceans such as lobster and krill.

While separated from the rest of the Gulf of Maine by the Canada/USA border, the Bay of Fundy is an integral part of the Gulf ecosystem. The dramatic tides and relatively shallow waters of the Bay of Fundy make it particularly productive, producing plankton (small organism that live at the top of the water) that feed species throughout the Gulf.

The unique characteristics of the Bay of Fundy

drive vibrant human communities, as well as animal ones. The waters of the Bay of Fundy boast dynamic coastal fisheries seeking lobster, herring, scallops, sea urchins, shad, gaspereau, halibut, clams, and periwinkles. In addition to wild fish, the harvest of sea vegetable (dulse, nori, and sea lettuce to name a few) is important locally. While fish stocks in the Bay of Fundy/Gulf of Maine have changed significantly over the last several decades, coastal waters still support diverse fisheries. Wild seafood remains the mainstay of the economic, cultural, and culinary lives of the communities surrounding the Bay of Fundy, as it has been for thousands of years.

Conservation Council of New Brunswick: Champion of a pristine Bay of Fundy

The Conservation Council of New Brunswick (CCNB) was one of the first organizations to raise widespread awareness among citizens, other environmental groups and government institutions to the threats facing the marine environment of the Bay of Fundy and their implications for the broader Gulf of Maine ecosystem. Through the continuous, focused attention of its **Marine Program**, CCNB has been key to advancing solutions and superior pollution controls for the past 25 years.

Today, staff continue to work closely with researchers, coastal communities, First Nations, government agencies and departments, fishermen and fisheries associations, the tourism sector, and non-governmental organizations.

Through a combination of rigorous research, the development of meaningful relationships with key groups, stakeholders, and decision makers, and the dedication of staff to achieve results over time, the Marine Program has been a key force in the preservation and restoration of natural habitats and in the removal of pollution from the Bay of Fundy/ Gulf of Maine ecosystem.

Matthew Abbott, The Fundy Baykeeper

Existing industrial activity in the Bay of Fundy

Busy Traffic Lanes about to get busier

The Bay of Fundy is already an industrialized coastal region. Saint John is a very active shipping port receiving imports of crude oil, and liquefied natural gas (LNG); exporting potash; handling container traffic; and seeing regular traffic from cruise ships.

TransCanada's Energy East Pipeline is not being proposed in a vacuum. As explored below, there are several proposals likely to increase marine traffic in the next several years. While Energy East is likely to be the largest single contributor of increased marine traffic to the Bay of Fundy — ranging between **115 and 290 tankers** (depending whether a second export facility is announced or not)[3] – there are a number of other projects that are also slated to contribute to tanker traffic increases in the next 5-10 years. In order to service increases in production from the Picadilly Mine, PotashCorp is slated to begin building an expanded export facility this year to increase potash export from 60-70 ships to **125-135 ships** per year.[4]

The Canaport LNG import facility, located adjacent to the proposed Energy East marine terminal, is applying for permission to switch to an export facility.[5] Due to market conditions, LNG import traffic has been low. It is likely that there would be significantly more traffic to and from an export facility, though precise estimates are not available at this time.

There is also an LNG import/export facility proposed for Robbinston, Maine, in Passamaquoddy Bay, directly across from St. Andrews, New Brunswick. Vessels servicing this facility, if built, would enter Passamaquoddy Bay through the outer Bay of Fundy. At a minimum, we would expect **30 or so** ships a year.[6]

This spring, a new barge terminal in Lorneville, west Saint John, was announced which will contribute more barge traffic to the Bay of Fundy.[7]

In July of this year the federal and provincial governments announced funding improvements to the container terminal in West Saint John, which would create capacity for an increase in container ship traffic as well as allowing for larger ships.[8]

Port in Saint John New Brunswick

It's a Noisy Bay Out There: Risks to whales from increasing tanker traffic

As explored below, existing industrial activities in the Bay of Fundy have been shown to negatively impact marine animals, especially large whales, and traditional fishery activities. In addition to the stress and disruption caused by noise, whales are also at risk of being hit by ships, referred to as ship strikes.

Vessels moving through the water make noise. The low frequency noise created by large vessels is within the range that large whales, including the North Atlantic right whale, use to communicate. Right whales form social groups while in the Bay of Fundy, an important part of their life cycle, relying on their ability to communicate to form these groups. Through studies conducted in the Bay of Fundy we know that noise levels associated with large vessel traffic (tankers) causes stress to right whales in the Bay of Fundy and that right whales are calling louder than they did in the past in order to communicate above the existing noise levels.

In 2001, *Rolland et al.* conducted a study that measured stress hormones in right whale

faeces in the Bay of Fundy. Following the attacks on World Trade Centre in New York on September 11, 2001 there was a short term but significant decrease in shipping traffic in the Bay of Fundy. This provided an opportunity to assess whether whales experienced stress associated with regular shipping traffic. This research demonstrated that when noise levels associated with shipping traffic decreased, the right whales exhibited less stress.[9]

Further to evidence that whales are stressed, we also know that right whales effectively have to shout to hear each other over the traffic noise. *Parks et al.* showed that right whales increase the amplitude of their calls to deal with the increased background noise caused by tanker traffic in the Bay of Fundy. Indeed right whales are subjected to more background noise in the Bay of Fundy than they are in their other habitat areas such as Cape Cod and off the coast of Georgia.[10] Discussing her research with *Discovery News*, Dr. Susan Parks compared marine traffic noise right whales experience with traffic noise humans might experience:

> *"On a country road, a single car going by would increase the noise you experience for a short period of time … In contrast, standing next to a busy downtown road during rush hour would have both higher levels of noise and more continuous noise."*[11] In the same article, Dr. Parks warns *"that when noise exceeds a certain level, right whales will not be able to increase their call amplitude enough to compensate."*[12]

Increased tanker traffic increases the risk of collisions with right whales and other large mammals that depend on large areas to swim and find food. In the past ship strikes were one of the primary risks to right whales in the Bay of Fundy. It should be noted that in 2003 the shipping lane in the Bay of Fundy was moved to mitigate against ship strikes on the endangered North Atlantic right whales.[13]

While no ship strikes have been reported since 2003, right whales, and other whale species, still need to pass through the shipping lane. Whales may begin to congregate closer to the shipping lane if their food source moves. Increased traffic from the Energy East Pipeline, along with potential increases from LNG, potash, barge, and container traffic would lead to a much busier shipping lane.

As traffic increases in the shipping lane the whales will face much greater risk when passing in front of and between tankers.

Photo by Florida Fish and Wildlife Conservation Commission, taken under NOAA research permit #15488

North Atlantic Right Whale and calf

Energy East Increases Oil Spill Risk

If a spill of conventional oil or diluted bitumen (dilbit) were to occur it would likely spread fast and far in the Bay of Fundy's extreme tides, as demonstrated by past examples explored below. Past spills in the Bay of Fundy have not been cleaned up at sea, and some have been lost in the fog and bad weather (responsible agencies were not able to track the whereabouts of a spill due to weather conditions).

While the Bay of Fundy has seen crude oil transport for a long time, the Energy East Pipeline would bring significant quantities of dilbit to the Bay of Fundy for the first time. As has been demonstrated with spills of bitumen into freshwater, such as the spill into the Kalamazoo River in Michigan,[14] bitumen does not always behave like conventional oil when spilled into freshwater. There has been discussion, however, over how bitumen is likely to behave in saltwater. A 2013 Canadian federal report confirmed that when dilbit is mixed with sediment in salt water it forms "tarballs" and sinks.[15] Given the amount of time it has taken in the past to find spilled oil in the Bay of Fundy, the prospect of oil sinking before we can even get to it adds significant environmental risk to the Bay of Fundy/Gulf of Maine from the Energy East Pipeline.

The possibility of bitumen sinking, however, is not the only new risk facing the Bay of Fundy and Gulf of Maine should an oil spill occur. In May 2014 the federal Minister of Transport announced that, as part of the World Class Tanker Safety Program, *"legal barriers on the use of dispersants and other cleanup alternatives"* would be lifted.[16] Dispersants are chemicals used to break up oil slicks. Dispersants work by breaking surface oil down into smaller particles that distribute through the water column. It is important to note that dispersants do not reduce the amount of oil in the environment, but rather move it under water instead of at the surface. There is an ongoing debate over the toxicity of dispersants and whether dispersants mixed with oil are more toxic than the oil itself. A 2012 study by scientists at the *Georgia Institute of Technology* in the U.S.A and *Universidad Autonoma de Aguascalientes* in Mexico found that an oil-dispersant mixture can be up to 52 times more toxic than the oil itself to some important marine organisms.[17]

History of Oil Spills from Tanker Ships in the Bay of Fundy

To better understand the risks of future oil spills, it is instructive to examine what has happened when oil has spilled in the Bay of Fundy in the past.

1979

On **August 20, 1979** the tanker *George M. Keller* spilled crude oil fuel while discharging oil at Canaport, near Saint John NB. The spill, estimated at 1.5 tonnes of crude oil, travelled southwest toward *New River Beach Provincial Park*. The spill encountered a weir (a large herring trap) near New River Beach damaging twine, netting, and rendering unmarketable 1500 hogshead of herring, valued at $127,500.[20]

1989

On **June 18, 1989**, the tanker *Carmague* overflowed fuel during filling. The overflow occurred in fog and, as such, "the actual amount of oil discharged could not be accurately determined."[21] The spill was initially reported to be a few litres but was eventually estimated to be 480 barrels. With respect to this spill, the *Ship-source Oil Pollution Fund* annual report for 1992 -1993 states that "In particulars provided on September 10, 1992, it is alleged by the Crown that several resources and industries were threatened by the pollution, such as the lobster fishery under way, the aquaculture industry in the immediate vicinity valued at $58,000,000, an important sea bird sanctuary and tourist base in the Bay of Fundy area as well as the Fundy park and beach areas." [23]

1994

On **January 11, 1994**, the tanker *Tito Tapias* spilled bunker oil while refueling.[24] Initially reported as one or two barrels, later estimates put the spill between 17 and 34 tonnes.[25] The oil slick crossed the Bay of Fundy and made land fall on February 1 near Digby, NS, from Delap Cove to Hampton (note that it was floating in the Bay for 3 weeks before coming ashore).[26] Shore clean-up operations were delayed until February 14 due to inclement weather.[27]

2007

On **Feb 18 and 19, 2007**, there was a spill that was not able to be assessed or tracked due to adverse weather and fog. It is not known what happened to it.[28]

The Traditional Fishery, a diverse and dynamic heritage at risk from Energy East

Traditional Fishery

The traditional fishery is and has been the lifeblood of the economy and culture in communities surrounding the Bay of Fundy/Gulf of Maine for thousands of years. Long before contact with Europeans, the Bay of Fundy/Gulf of Maine system, and the rivers that flow in to it, supported diverse and dynamic Wabanaki societies, the original inhabitants of what is now called New England and the Maritimes. The Passamaquoddy, Mi'Kmaq, Wolastoqiyik (Maliseet), Penobscot, and Abanaki peoples of the Wabanaki territory all relied on clams, salmon, porpoise, pollock and other groundfish, herring, gaspereau and countless other species that call the Bay of Fundy/Gulf of Maine home. While the Bay of Fundy has seen major declines over the last century, the Bay still provides for Wabanaki peoples, and for the many settlers who have called the Bay of Fundy and Gulf of Maine home for hundreds of years. Currently the Bay of Fundy supports an estimated **5,000 direct fishing jobs**.

Lobster and scallops are currently the primary wild fisheries in the Bay of Fundy and northern Gulf of Maine, though there are also fisheries for herring, sea urchins, shad, gaspereau, halibut, clams, and periwinkles. The harvest of sea vegetables is important in certain regions as well. The primary concern for the traditional fishery is the risk of an oil spill which would severely harm the environment which they rely upon. Given that most of the sought-after species are bottom dwelling means that the prospect of transporting large quantities of bitumen – which would likely sink in sea water if spilled – adds additional concern for fisheries that already contend with significant fossil fuel and other shipping activities.

The proposed marine terminals, and related tanker traffic, will disrupt and displace existing and future fishing activities especially around Saint John Harbour, but also to some extent along the length of

the shipping lane through the Bay of Fundy and into the Gulf of Maine affecting fishing activities in Nova Scotia, Maine, and New Brunswick. Fishing adjacent to fossil fuel transport and other shipping traffic poses serious logistical challenges for fishers as they are forced to navigate around large vessels and tugs that generally have the right of way. When tankers and tugs navigate fishing grounds they often displace or destroy fishing gear. Loss of lobster traps has been an ongoing problem in Saint John Harbour. While the fishing industry has been proactive in trying to retrieve lost traps, they continue to lose gear to existing activity. Increased traffic is likely to exacerbate the problem.

More and more, consumers are able to track where their premium seafood comes from. A region's reputation is thus critical to the success of its fishing industries. Increased industrialization, especially if a spill occurs, could damage the Bay of Fundy's deserved reputation as a relatively pristine environment that produces healthy, wholesome seafood and put local fishery jobs at risk.

Tourism

The Bay of Fundy and Gulf of Maine have a deserved reputation as a special natural area. Unsurprisingly people from across Canada and around the world visit the region to experience high tides, delicious seafood, vibrant local culture, whale watching and a dynamic marine ecosystem. In 2009 the Bay of Fundy was a finalist in a global competition to name the *New 7 Wonders of Nature*, highlighting that the Bay of Fundy is internationally recognized as an ecological treasure.

The ecotourism industry relies on the presence of the many charismatic animals that visit the Bay of Fundy seasonally or live here year round, including whales, porpoise, seals, ocean sunfish, sharks, and seabirds. Noise from tankers can harm whales and other animals and drive them away from the areas where tourism is experienced. Oil spills or ship strikes that harm whales or other animals will harm the ecotourism industry. Harm to the animals that tourism operators rely on will affect jobs in coastal New Brunswick and Nova Scotia.

Tourists come to enjoy the Bay of Fundy because of its deserved reputation as a dynamic, exciting marine area. Increased industrialization of the Bay, especially in the event of an oil spill, will damage this reputation and will make it harder to attract tourists in a very competitive market.

Conclusions

While likely to produce significant profits for TransCanada and Irving Oil, the Energy East Pipeline should cause concern for those who love and rely on the Bay of Fundy and Gulf of Maine. While already under significant stress from existing industrial activity, climate change, and instability in fish and other animal populations, the Bay of Fundy remains a dynamic marine ecosystem which supports vibrant coastal communities. It is essential that highly productive regions like the Bay of Fundy be protected from additional stress so they can be strong enough to withstand environmental change and continue to support communities well into the future.

With respect to protecting the diverse and unique habitats of the Bay of Fundy and Gulf of Maine ecosystem, as well as the considerable employment afforded by the region through traditional fisheries and tourism, the Conservation Council submits the following recommendations to the company, TransCanada Corp., and decision-makers:

1. Fisheries and Oceans Canada, with the assistance of Transport Canada, should be given a mandate to undertake an assessment of marine traffic noise in the Bay of Fundy to determine existing impacts of marine noise on marine mammals and to determine existing tipping points of noise that would increase impacts on marine mammals in the Bay of Fundy.

2. The provincial government should commission, and seek assistance from appropriate federal agencies such as the Coast Guard, Department of Fisheries and Oceans and Parks Canada, an independent assessment of the impacts of increased tanker traffic, noise and a bitumen spill would have on fisheries and tourism industries and jobs in the Bay of Fundy.

3. The Department of Fisheries and Oceans should undertake a process, that includes participation from fisheries, tourism and science stakeholders, to create and implement a coastal area management plan, which may include *Marine Protected Areas* for the Bay of Fundy that takes into consideration thresholds for tanker traffic noise on the aquatic life, especially the North Atlantic right whale, an endangered species listed under the *Canadian Species at Risk Act*.

4. The effect of diluted bitumen on the cargo tanks where dilbit is stored during transport on oil tankers is largely unknown. Transport Canada should commission a comprehensive, independent analysis of the risks posed by transporting diluted bitumen by tanker.

Recommendations to TransCanada Corporation and decision-makers:

5

The Province of New Brunswick needs to undertake a provincial *Environmental Impact Assessment,* separate from the National Energy Board, to review and assess the provincial interests and risks to the Bay of Fundy.

6

The Department of Fisheries and Oceans and the Canadian Coast Guard should be given a mandate to carry out an evaluation of its tanker accident or bitumen spill response capacity in the Bay of Fundy specifically, due to the Bay's unique characteristics including extreme tides and fog.

7

The National Energy Board process should be reviewed and improved to make it fair and easy for communities and members of the public to receive information and provide input, in both official languages, into the pipeline and tank terminal review process.

8

The federal government needs to undertake extensive and meaningful consultation with communities of the three New Brunswick First Nations with inherent rights and traditional and current-day uses of the Bay of Fundy, the Mi'Kmaq, Wolastoqiyik (Maliseet), and Passamaquoddy peoples.

9

Finally, there is no need to accept the risk of a pipeline to, and increased super tanker through, our Bay of Fundy. All levels of government need to commit to increase investments in energy efficiency programming and renewable energy generation in order to create jobs, reduce climate change-causing pollution and better position communities to be competitive in the emerging global low carbon economy.

Endnotes

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[3] *TransCanada, "Energy East Pipeline Project, Project Description," Volume 6, March 2014, page 7-2 and 7-18, https://docs.neb-one.gc.ca/ll-eng/llisapi.dll/fetch/2000/90464/90552/2432218/2540913/2543426/2540590/Vol_6B_Facility_Design-Marine_Terminals%2C_General_and_Site-Specific_-_A4D9D6.pdf?nodeid=2541347&vernum=-2. 175 Tankers were estimated for the, now cancelled, Cacouna marine terminal. 115 tankers were estimated for the Canaport marine terminal in Saint John, NB. With no other marine export terminal currently proposed, our upper estimate of tanker calls to Canaport considers the possibility that it will be the only export terminal.*

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[20] *Ship-source Oil Pollution Fund, "Ship-source Oil Pollution Fund - The Administrator's Annual Report 1989-1990," Ship-source Oil Pollution Fund, 1990, Page 9.*

[21] *Ship-source Oil Pollution Fund, "Ship-source Oil Pollution Fund - The Administrator's Annual Report 1997-1998," Ship-source Oil Pollution Fund, 1998, Page 17.*

[22] *Ship-source Oil Pollution Fund, "Ship-source Oil Pollution Fund - The Administrator's Annual Report 1992-1993," Ship-source Oil Pollution Fund, 1993, Page 16.*

[23] *Ship-source Oil Pollution Fund, "Ship-source Oil Pollution Fund - The Administrator's Annual Report 1995-1996," Ship-source Oil Pollution Fund, 1996, Page 2.*

[24] *Ship-source Oil Pollution Fund, "Ship-source Oil Pollution Fund - The Administrator's Annual Report 1995-1996," Ship-source Oil Pollution Fund, 1996, Page 21.*

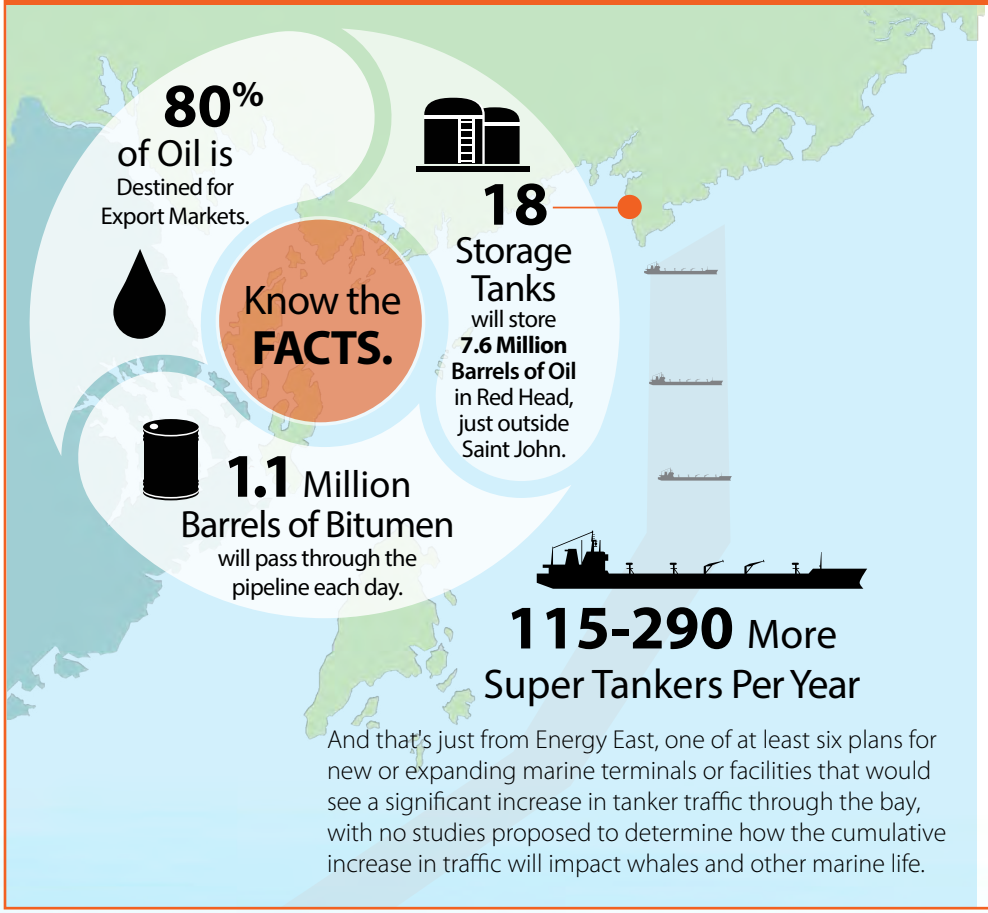
[25] *Ship-source Oil Pollution Fund, "Ship-source Oil Pollution Fund - The Administrator's Annual Report 1995-1996," Ship-source Oil Pollution Fund, 1996, Page 20.*

[26] *Ship-source Oil Pollution Fund, "Ship-source Oil Pollution Fund - The Administrator's Annual Report 1995-1996," Ship-source Oil Pollution Fund, 1996.*

[27] *Emails from Andrew Boyne, Canadian Wildlife Service, Environment Canada to Environmental NGOs in South West New Brunswick, "Oil slick in the Bay of Fundy," February 19, 2007, and "Oil spill in the Bay of Fundy – Update", February 20, 2015.*

[28] *Personal Communication with Maria Recchia, Executive Director of Fundy North Fishermen's Association.*

What TransCanada's Energy East Pipeline Means for the Bay of Fundy and Gulf of Maine



115-290 More Super Tankers Per Year

And that's just from Energy East, one of at least six plans for new or expanding marine terminals or facilities that would see a significant increase in tanker traffic through the bay, with no studies proposed to determine how the cumulative increase in traffic will impact whales and other marine life.

510 Endangered Right Whales Exist Today.

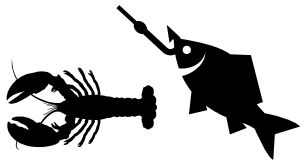
Endangered Northern Right Whales travel through the Bay of Fundy on their annual migration. Increased tanker traffic leads to risk of whale strikes and noise from the tankers causes stress for the whales.

Thousands of Tourists Visit Each Year.

Tourists are attracted to the natural beauty of one of the world's most dynamic tidal coastlines and biologically productive ecosystems. Many local communities rely on ecotourism.

75 Communities Along the Bay of Fundy

Increased tanker traffic means increased risk from oil spills when tankers refuel their loads. There is a history of 4 spills from tankers refuelling in the Bay of Fundy.



5000 Fishers Rely on the Bay of Fundy

Risk of a spill will threaten the livelihood of thousands of local fishers. Increased tanker traffic displaces fishing grounds and propellors from ships cut trap lines.