

EXHIBIT 5

PRE-FILED TESTIMONY OF ARTHUR MACKAY

Q. What is your name?

A. Arthur MacKay.

Q. Where do you reside?

A. Along the shores of Passamaquoddy Bay in Bocabec, New Brunswick, Canada.

Q. Where do you work?

A. I recently retired as the Executive Director of the St. Croix Estuary Project Inc., a non-profit, charitable community group that does work on the natural and social environment of the Passamaquoddy area. I have been professionally involved as a Biologist studying the Bay since 1961.

Q. What is your education history?

A. I graduated from St. Stephen High School, St. Stephen, N.B. in 1957; attended the University of New Brunswick, Fredericton, N.B., Canada where I graduated with a Bachelor of Science with Honours in Biology and was named to the Dean's List and attended McGill University, Montreal, P.Q., Canada from 1957 to 1961 where I carried out graduate studies in Mammalian Zoogeography, Ecology and Taxonomy in the western islands of the Quoddy Region with particular focus on Grand Manan, Campobello, Deer Island and the outer islands of Grand Manan. I was trained in the Royal Canadian Navy, Executive Branch, and was commissioned as a Sub-Lieutenant in 1962. My rank was subsequently upgraded to Lieutenant.

Q. What is the purpose of your testimony?

A. I am testifying about the impacts that the proposed Calais LNG facility and its associated LNG tanker traffic would have on the natural resources of Passamaquoddy Bay. These impacts will have a significant effect not just on the environment but on the economic use of those natural resources.

Q. How would you describe Passamaquoddy Bay?

A. Passamaquoddy Bay is unique in a number of ways. It is one of the only embayments that

serves as a border between two countries' land masses. It is home to one of the largest whirlpools in the world, Old Sow. It is home to the oldest settlement in North America north of Florida, St. Croix Island. It provides critical habitat for endangered species such as the right whale and Atlantic salmon. It is part of the world renowned Bay of Fundy where extreme tides are the world's highest and where the unique bottom topography of the Quoddy Region combine to provide a resource-rich environment for thousands of marine creatures such as fish, herring, lobster, seals, whales and seabirds. Indeed, "Passamaquoddy Bay" means "Bay full of pollock."

The combination of warm water from the St. Croix River watershed and the cold water of the Atlantic make the St. Croix estuary home to both warm and cold water species. And as someone who has lived on its shores, worked on its waters and studied its history, people and environment for over 50 years, it is an essential part of an ecosystem that is unparalleled in its high level of biodiversity, history, and beauty. It is one of the reasons why the Bay of Fundy has been proposed as one of the Seven Natural Wonders of the New World.

Q. Are you familiar with prior efforts to industrialize Passamaquoddy Bay?

A. Yes. Prior to the First World War there was a proposal to build a huge port in the St. Croix Estuary. In the 1930's there was a proposal to build massive tidal power plants which was revisited again in the 1960's. In the 1970's there was a proposal to build a massive oil refinery in Eastport, Maine. Those projects carried significant risks to the health and safety of Passamaquoddy Bay and ultimately were abandoned.

Q. Are you familiar with the proposals to develop LNG plants on Passamaquoddy Bay?

A. Yes. As a concerned citizen and Executive Director of the St. Croix Estuary Project I have been following these proposals closely. Separately, each of them will have a significant adverse impact on the attributes and uses of the Bay. Combined those impacts will be magnified. I have made numerous presentations on the variety of negative impacts to the environment and economy from these projects

and attach the most recent version. (CLF/SC – 7).

Q. What are the impacts to the natural resources of Passamaquoddy Bay associated with the Calais LNG project?

A. The impacts to the Bay from the Calais LNG project that I can testify about are associated with the release of LNG and LNG tanker traffic itself as well as the negative impacts of water use by vessels and the facility.

Although the project proponents obviously do not intend nor wish for there ever to be a release of LNG from their tankers or their storage tanks, the recent disaster in the Gulf of Mexico is stark proof that accidents happen and human effort is fallible. What makes Passamaquoddy Bay so unique – extreme tides and currents, frequent and dramatic shifts in the weather, rocky ledges and stark islands – also makes it extremely difficult to navigate. It is certainly far easier and far less risky to deliver an LNG tanker to LNG terminals offshore or the St. John LNG facility or other planned and existing sites than it is to Calais or Robbinston.

While LNG when released does eventually evaporate that does not mean a release is without consequences.

First, a release of LNG in its cryogenic form will pool and spread out on the water before evaporating. It will freeze and kill anything on the water's surface (birds) or by its surface (krill, fish) that it comes into contact with. It will also kill or severely injure any animal that surfaces to breathe (whales, porpoises, seals) or otherwise takes in the fluid (e.g., fish, clams, mussels, and barnacles). This would include terrestrial animals if the pool is on or by land.

Second, a cold vapour of LNG would have much of the same effect.

Third, LNG that has warmed and sufficiently dispersed is likely to catch fire or explode. Again, any animal on the water's surface in the fire or within the thermal radiation zones will die or be severely injured. This includes surfacing animals, terrestrial animals, and animals exposed to sufficient

heat. The ensuing fires may well spread these impacts beyond the officially designated thermal radiation zone.

Fourth, an explosion will kill or severely injure all animals in the vicinity. An explosion can kill fish because it damages or destroys their swim bladders. This fact is well known for dynamite fishing, and natural gas blowouts have been known to cause mass fish mortality.

Q. What about the impacts from tanker traffic?

A. This proposal is to have two LNG tankers a week transiting Passamaquoddy Bay from Head Harbour Passage to Calais. Putting aside the fact that the Canadian government has consistently said it will not allow, or cooperate with, the passage of such ships through its waters, it is important to understand the size of these ships and their operation (See CLF/SC – 7 at 35 – 37). In short, they are massive, bigger than anything else that has ever transited the Bay, and will severely disrupt the values and uses of the Bay's natural resources.

Ship traffic by LNG tankers will strongly increase the risk of ship strikes of whales, especially the endangered northern right whale and listed species of concern such as finback whale and harbour porpoise. The northern right whale is the most endangered whale in the world, with only about 350 animals left. Each dead individual is an extreme threat to the survival of the species because of extremely low population growth rates. It is a slow moving whale that likes to swim at the water surface. Since 1970, 20% of all known right whale deaths along the coast of Canada and the US were the result of collision with ships. Most lethal or severe injuries of whales are caused by ships like these LNG vessels that are over 80 m in length or travelling 14 knots or faster. Other whales such as finback, humpback and sperm whales are also commonly hit by ships.

Ship traffic will also cause general disturbance of animal feeding, breeding, migrating, and nursing behavior. Many marine mammals, birds, and fish are very sensitive to physical and auditory disturbance created by the tankers, tugs, and security vessels and may abandon the area temporarily or

completely. For example phalaropes which once occurred seasonally in the millions in Head Harbour Passage and Friar's Bay off Eastport virtually abandoned this area for about 10 years as a result of, some believe, changes induced by releases from local industry. As disturbance rises the impacts grow and animals will move to other areas where the required forage species may not be adequate. In addition, vital krill (*Meganyctiphanes norvegica*) and copepods (*Calanus finmarchicus*) are essential to all feeding invertebrates, birds, and mammals that occur in the Quoddy Region. Also plankton contains many other species including the larvae of vital commercial fish and invertebrates such as cod, haddock, herring, and lobster. The use of sea water for cooling and/or warming in vessels and processing facility operations will kill millions of essential organisms, their eggs and larvae. As noted above, for many animals the area is a critical feeding, breeding, or nursing ground and cannot be replaced by other areas. Several of these animals are endangered or threatened and the loss of this important area will threaten their existence.

Passamaquoddy Bay has been recognized as important ecologically by the US Fish and Wildlife Service, Canadian Wildlife Service, Parks Canada and the Roosevelt Campobello International Park Commission. Birdlife International designates the area as "globally significant" for marine birds and Canada has designated the St. Croix as a "heritage river" and the Head Harbour Passage environs as "nationally significant".

Increased light and noise pollution will cause similar disturbance of marine animals, which are often very sensitive and known to avoid industrialized areas. For example, Atlantic herring are extremely light sensitive and the increased lighting for the terminal and pier, and the LNG vessels while anchored, will have an impact on when and where they will school.

The large scale industry such as an industrial LNG facility will disrupt and potentially displace existing and traditional industry that depends on the Bay's unique attributes. The fishing and tourism industry may be disrupted or even displaced. The LNG tankers with exclusion zones will disrupt

fishermen, and aquaculture operations. The tankers and tugs will snag gear.

Likewise other existing activities that are based on the ecology such as research; education; tourism; whale watching; bird watching; swimming; kayaking; hiking; visits to parks such as St. Croix Island, Ganong Nature Park, and Devil's Head Recreational Area and other public sites as well as the pure enjoyment on land and on the water will be disrupted. It is important to realize that many individuals pursue these activities from Cobscook Bay, Lubec, Eastport and other communities along the shore of Passamaquoddy Bay while First Nations Passamaquoddy at Pleasant Point still pursue traditional fishing activities internationally. It is essential to understand that both Canadians and Americans who live in the Quoddy International Community have cooperated with each other for generations and there has been long-term access to the most important Canadian area for these activities, the waters of Head Harbour Passage, by local Maine tourism operators, recreational anglers, boaters, research establishments and others. While Canadian operators will be negatively impacted at a greater level, Maine operators will suffer the same restrictions as tankers pass through Head Harbour Passage and occasional hold over in Friars Bay and Passamaquoddy Bay.

Q. Overall, how will the development of an LNG terminal in Calais affect the environment of Passamaquoddy Bay?

A. Existing and long-term life and practices in Passamaquoddy Bay will be altered forever by the development of an LNG terminal in the St. Croix Estuary, not just from the direct impacts of the project but also from the indirect impacts of the increased industrialization of Passamaquoddy Bay. While the ocean is resilient, this project will impact both the ecosystem of Passamaquoddy Bay and the communities that depend on them far into the future.

Personally appeared before me the above-named Arthur MacKay and made an oath that the foregoing is true and accurate to the best of his knowledge and belief.

Dated: June 1, 2010
Arthur MacKay

Arthur MacKay

Notary: David A. Bartlett



Commission: My appointment expires
when I cease to be a practising
member of the Law Society of
New Brunswick

**64 King Street
Saint Andrews, NB
Canada E5B 1Y3**

EXHIBIT
CLF/SC - 7

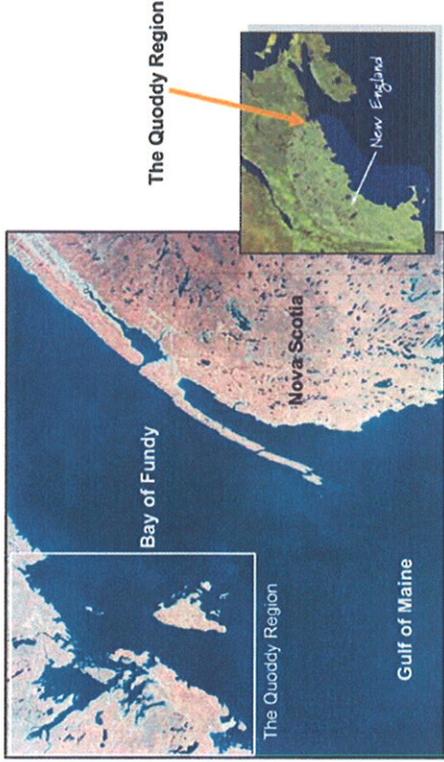
Welcome to Quoddy

A unique International Community

01/06/10



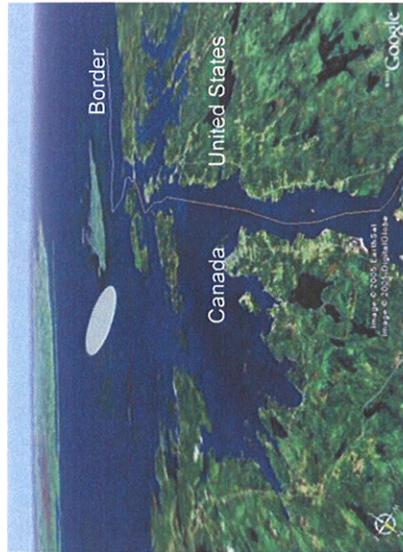
Where is the Quoddy Region?



It's located in northern Gulf of Maine on the border between Maine and New Brunswick

01/06/10

Why is it so Special?



Quoddy is a rich ecosystem that, through an accident of history, lies primarily in Canada

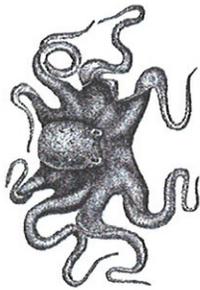
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Quoddy's international eco-economy approaches a billion dollars each year and employs thousands



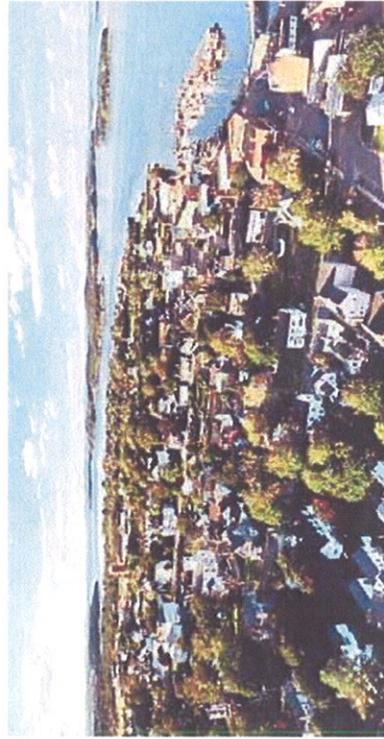
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It supports over 3,000 marine creatures including endangered species such as....



01/06/10

... and it's a great place to live!



Eastport, Maine – the most easterly city in the United States. Canadian islands in the background

01/06/10

Some Listed Marine Species in the Quoddy Region

Special in red are known to occur at one or both proposed LNG Sites

(Last updated in 2007)

ENDANGERED

- Atlantic Salmon (Maine)
- Butternut (Canada)
- Eskimo Curlew (Birds)
- Jacob's Ladder (Vascular Plant) pdf
- North Atlantic Right Whale (Mammals)
- Peregrine Falcon (Bird)
- Porbeagle (Fishes)

THREATENED

- Bald Eagle (Bird)
- Cusk (Fishes)
- Least Bittern (Birds)
- Peregrine Falcon (Birds)
- Striped Bass (Fishes)
- Tomah Mayfly (Arthropod)
- Winter Skate (Fishes)
- Yellow Lampmussel (Freshwater Mollusc)

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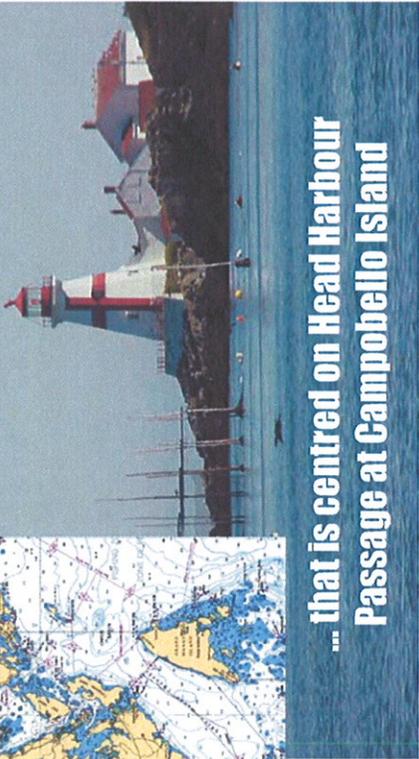
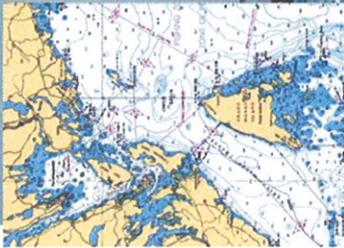
SPECIAL CONCERN

- Atlantic Cod (Maritime population) (Fishes)
- Atlantic Wolffish (Fishes)
- Barrow's Goldeneye (Birds)
- Bicknell's Thrush (Birds)
- Canada Lynx (Mammal)
- Eastern Cougar (Mammal)
- Fin Whale (Atlantic population) (Mammals)
- Gray Wolf (Mammal)
- Harbour Porpoise (Mammals)
- Harlequin Duck (Eastern population) (Birds)
- Monarch (Arthropods)
- Redbreast Sunfish (Fishes)
- Red-shouldered Hawk (Birds)
- Short-eared Owl (Birds)
- Shortnose Sturgeon (Fishes)
- Sowerby's Beaked Whale (Mammals)
- Wood Turtle (Reptiles)
- Yellow Rail (Birds)

Why is this place so different?

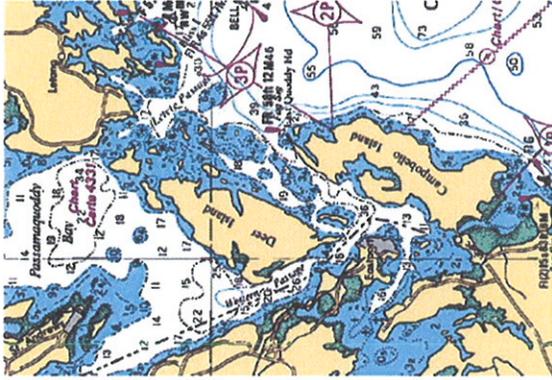
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Because of a unique natural phenomenon



... that is centred on Head Harbour Passage at Campobello Island

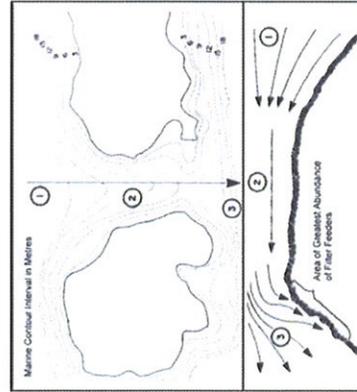
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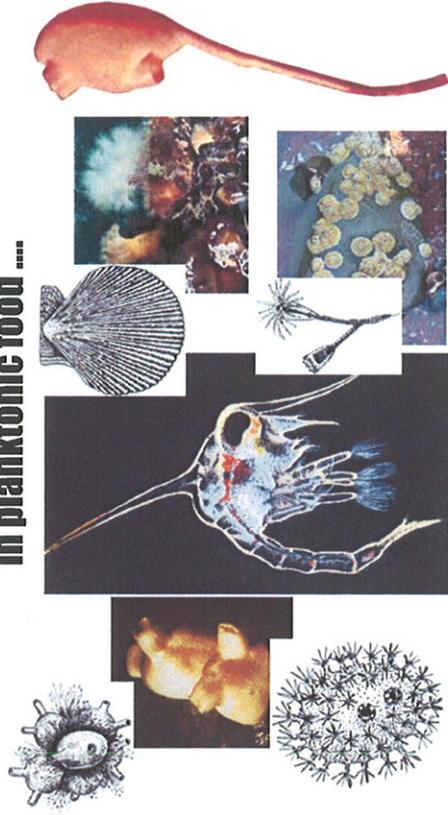
Huge tides that reach 28 feet rush in and out between the dozens of islands and ledges twice every day ...

Plankton concentrates in the passages supporting an abundance of bottom life



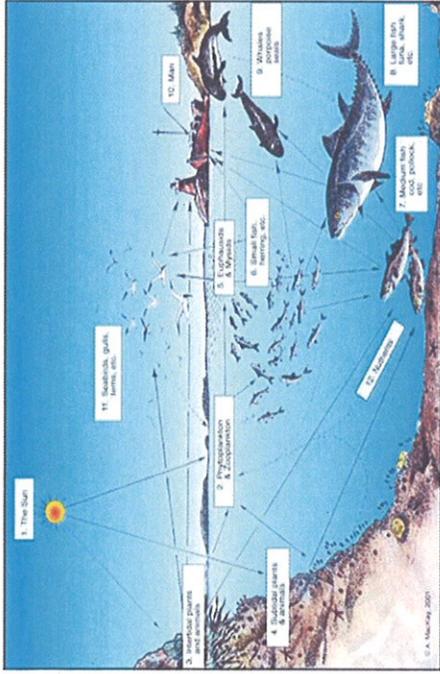
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The resident creatures also spew their larvae into the water creating an astounding local elevation in planktonic food



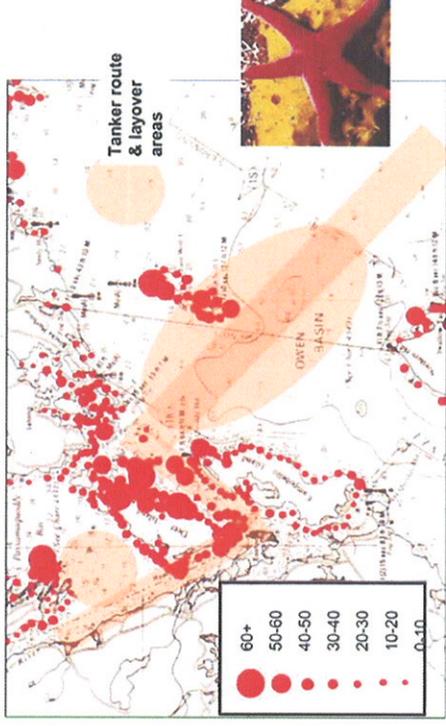
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This plankton "spike" feeds a complex food web that is the foundation of all the natural wealth of this area.



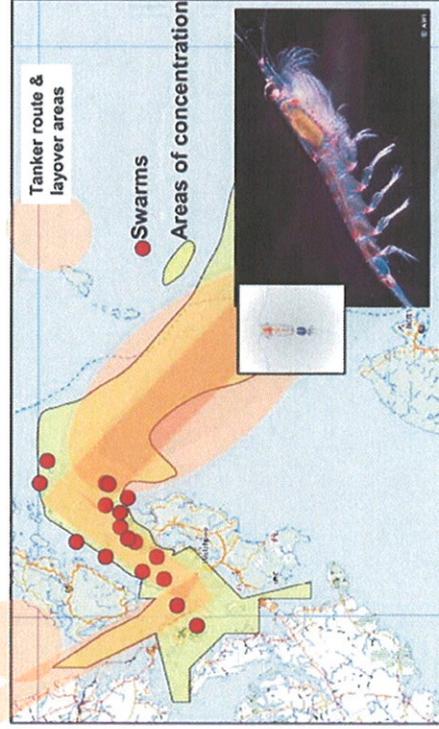
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In fact, scientific studies have shown that the Quoddy area has the highest level of biodiversity in the Bay of Fundy.



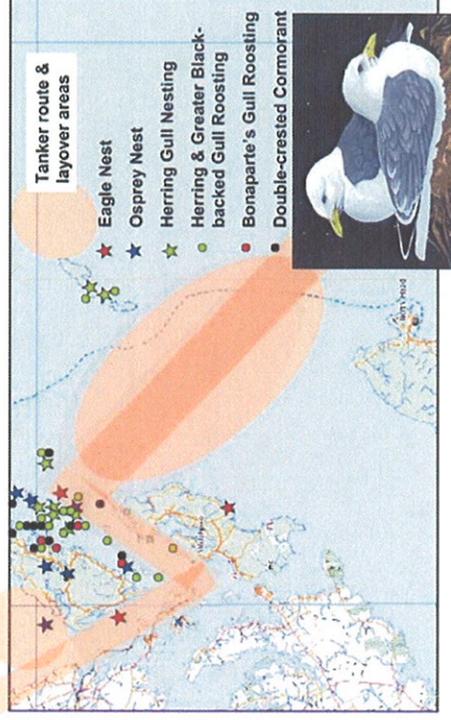
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Krill and Plankton Swarms provide food for fish, birds, and whales.



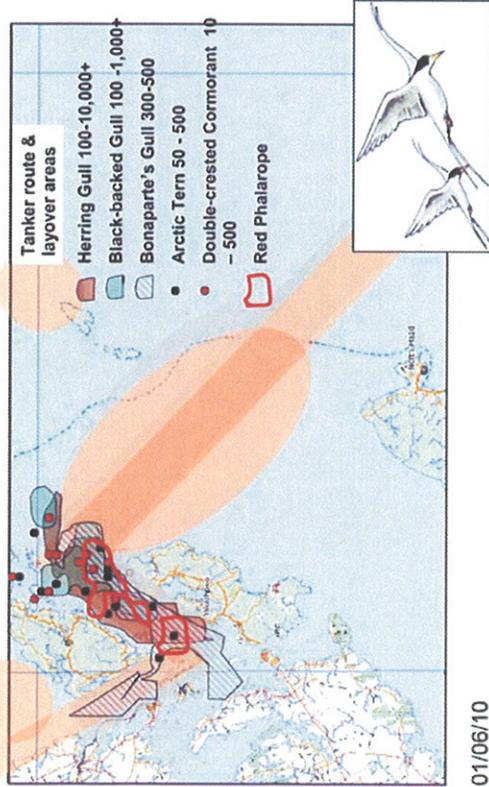
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Huge flocks of birds nest and roost in Head Harbour Passage ...



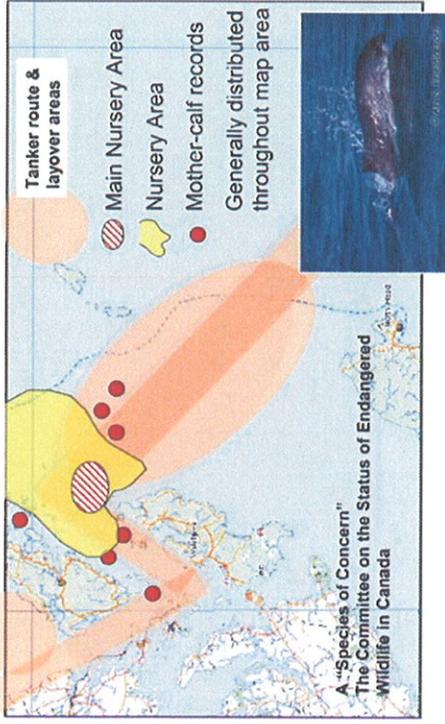
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.... where they feed on enormous quantities of krill and plankton.



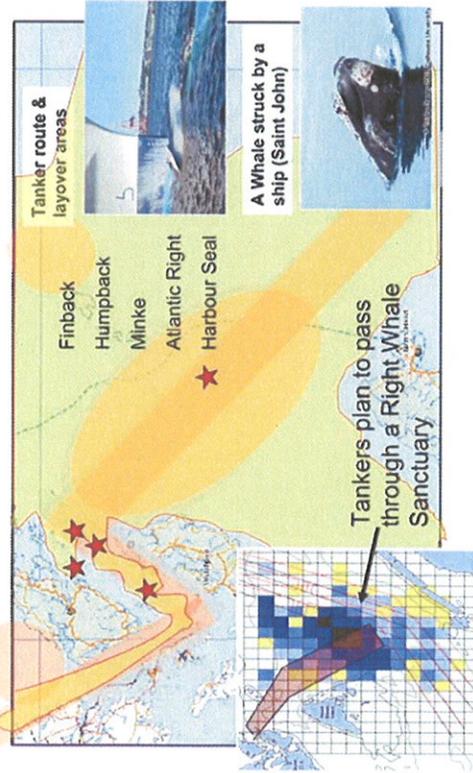
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Harbour Porpoise require the Head Harbour Passage area for calving and feeding, and ...



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it's a vital area for seals & great whales, including the endangered Northern Right Whale



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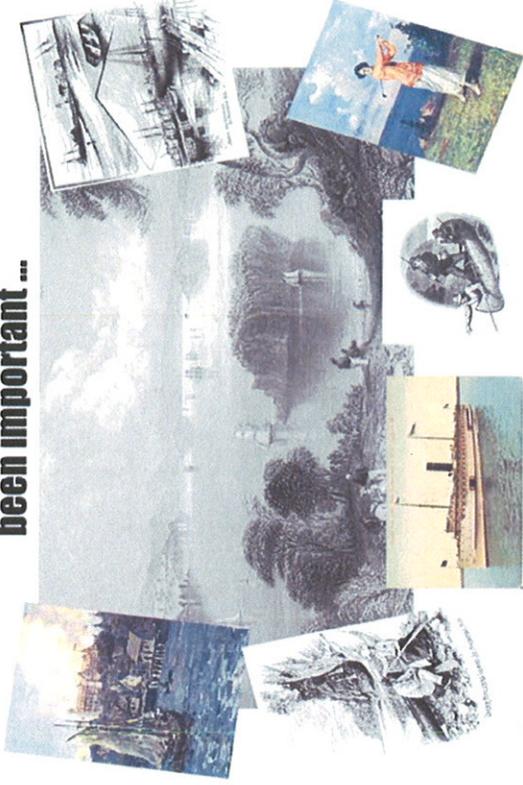
This is an Economic Contest with a Huge Environmental Backdrop.

Here's What We Can Lose.

Our Billion Dollar Eco-Economy includes:

| | Washington Co. | Charlotte Co. | Employment | Total Value |
|-----------------------------------|-----------------------------|---------------|------------|---------------|
| Aquaculture* | \$26 million | \$223 million | 2,700 | \$249 million |
| Agriculture* | \$5 million | \$5 million | ? | \$10 million |
| Fisheries* | \$31 million (lobster only) | \$173 million | 3,500 | \$204 million |
| Forestry* | - | - | - | - |
| Research* | Unknown | \$75 million | ? | \$75 million |
| Shipping | Unknown | Unknown | 100 ships | ? |
| Tourism* | \$50 million | \$300 million | ? | \$340 million |
| Education | Unknown | Unknown | ? | ? |
| Arts, Crafts, Light Manufacturing | Unknown | Unknown | ? | ? |
| Real Estate | Unknown | Unknown | ? | ? |
| 01/06/10 Seasonal & Retirement | Unknown | Unknown | ? | ? |

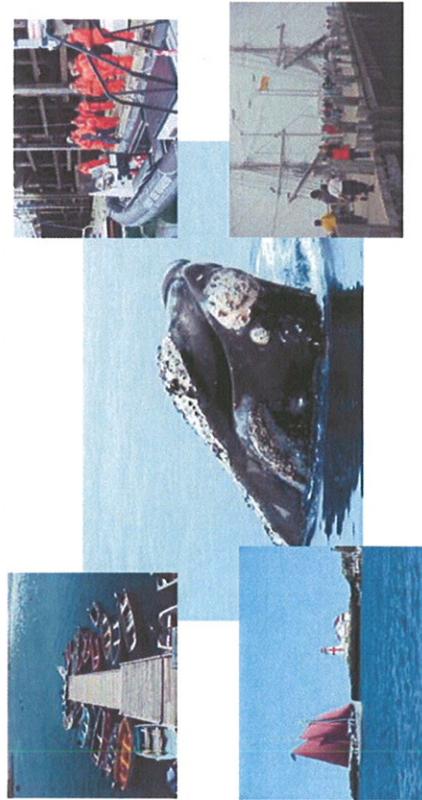
The Business Of Tourism has always been important ...



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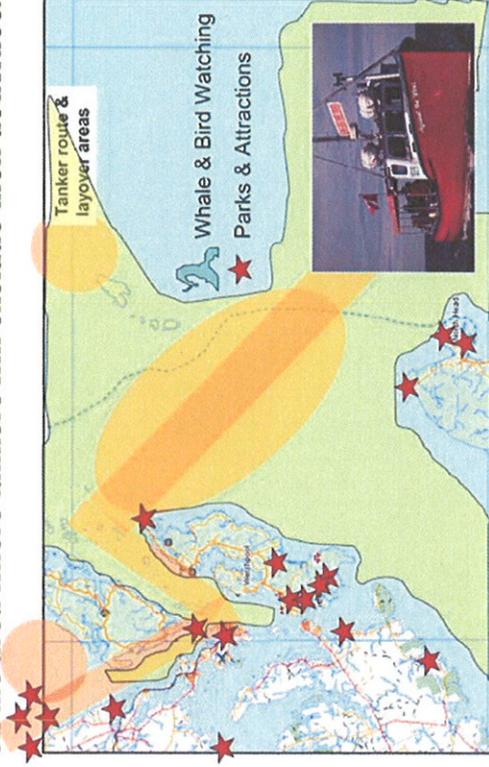
Today it's a billion dollar industry!

\$1.2 Billion – Province Wide in NB
Estimated \$300- \$400 Million locally



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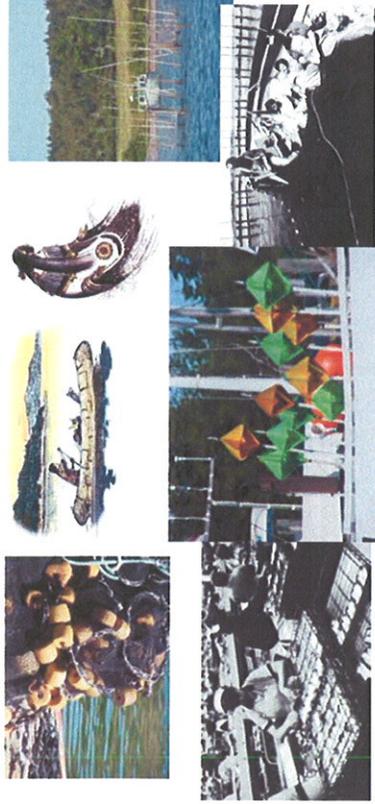
Drawn by whales and birds, tourist operators depend on the area where tankers will exclude their activities.



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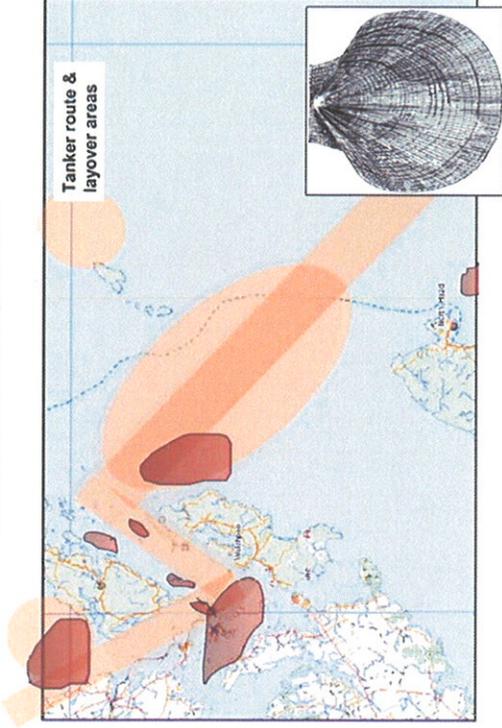
The traditional fishery has sustained our society for more than 10,000 Years.

It's worth about \$173 million today. Employs 3,500.



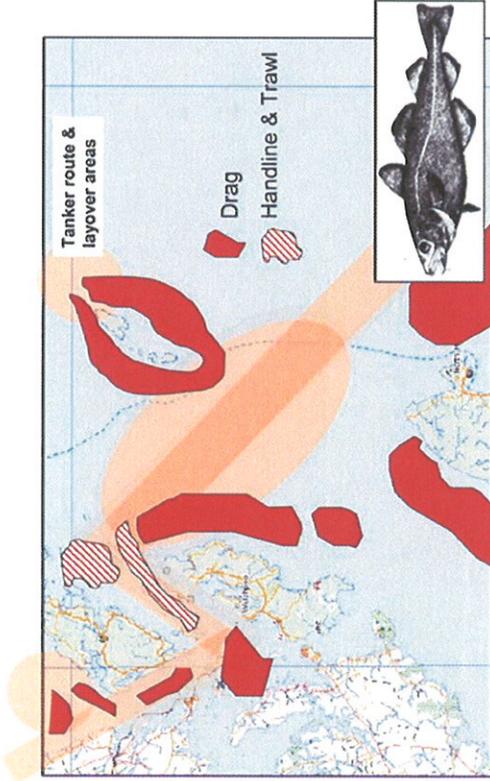
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Scallop Fishing Areas



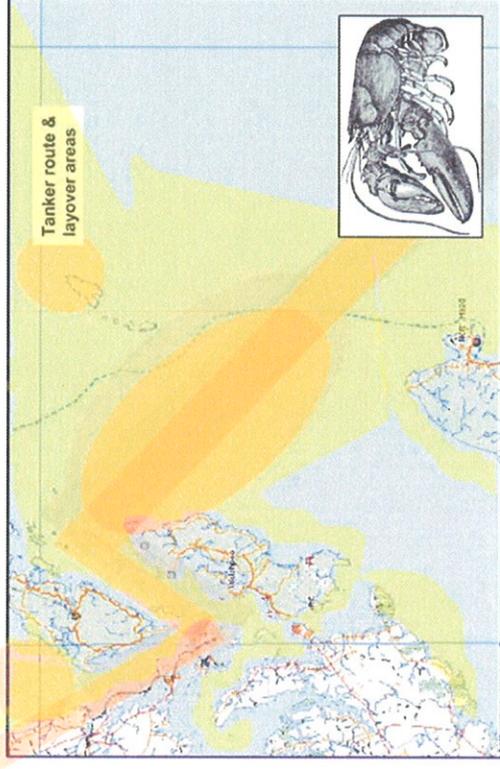
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Groundfishing Areas



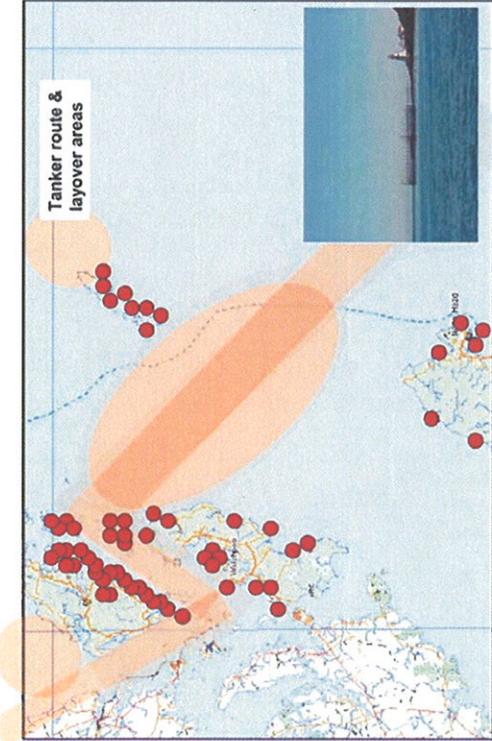
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Lobster Fishing Areas



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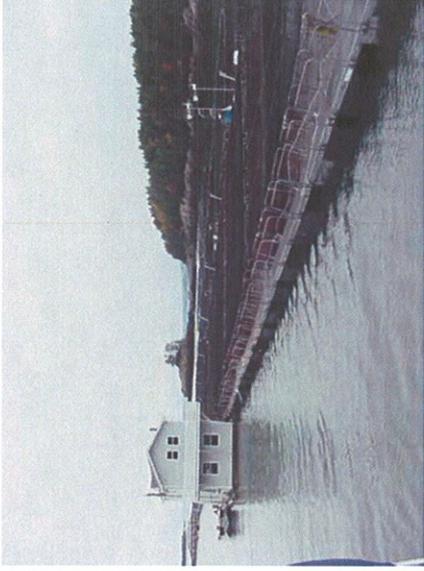
Head Harbour Herring Weir Sites



01/06/10

Aquaculture

Averages \$200 - \$300 million on the Canadian side alone. Employs 2700.



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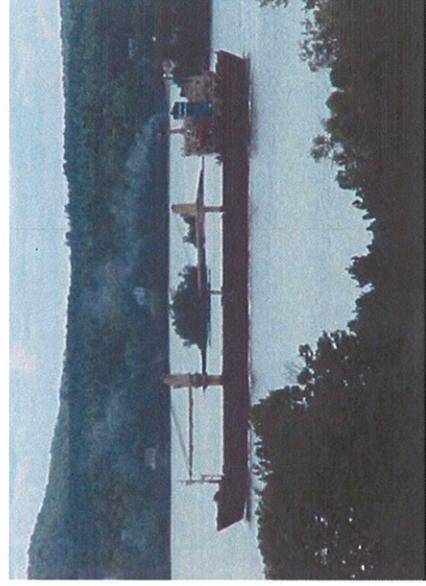
Aquaculture Sites



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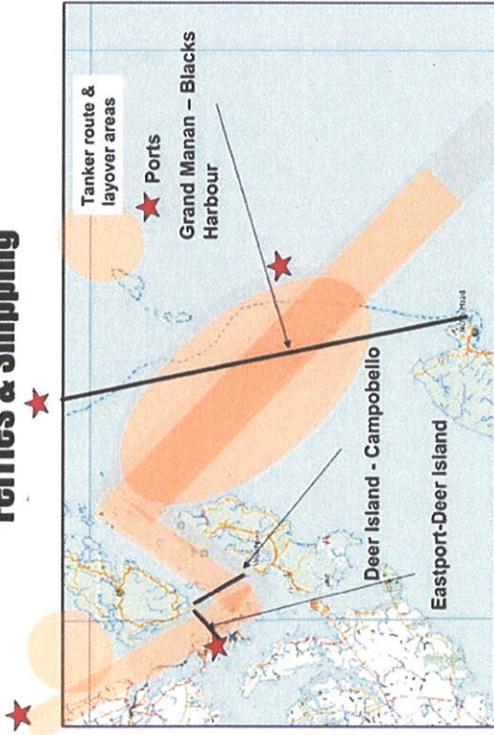
Vital Ferry Traffic and Small Scale Shipping

Unknown local value



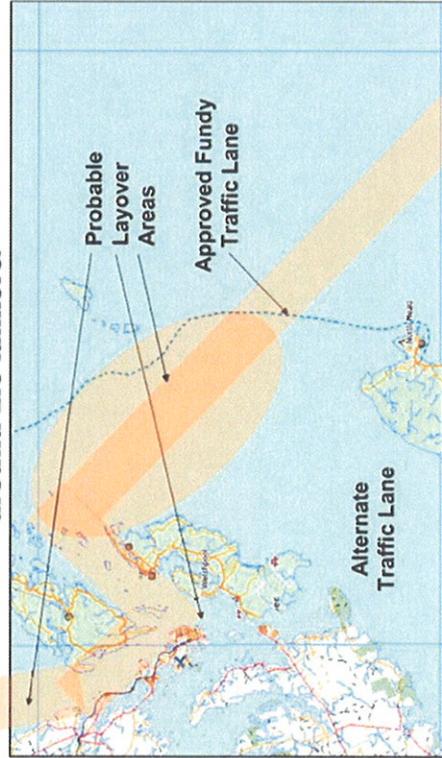
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Ferries & Shipping



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To get there they must pass through our most sensitive area - All activity will cease within an exclusion zone around the tankers.



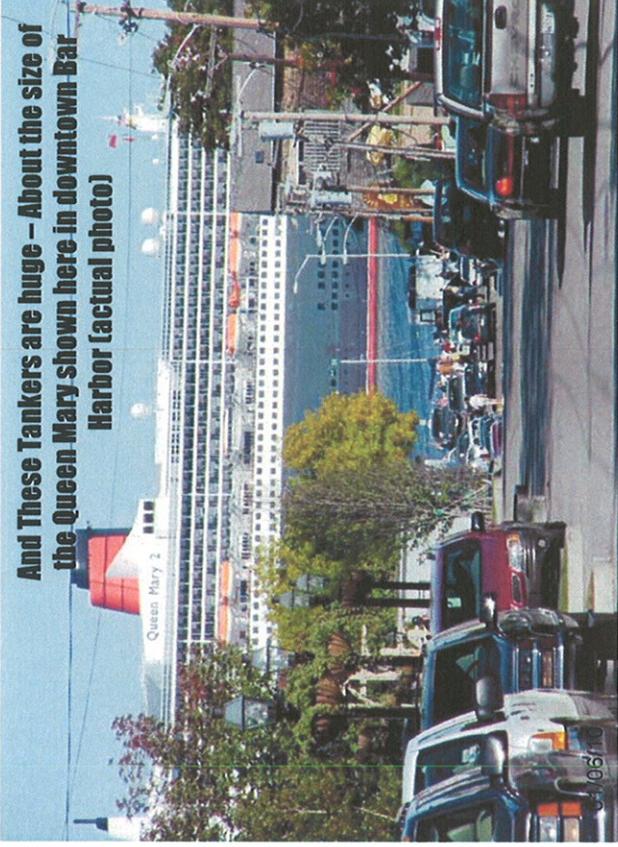
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There are Two Proposed Terminal Sites

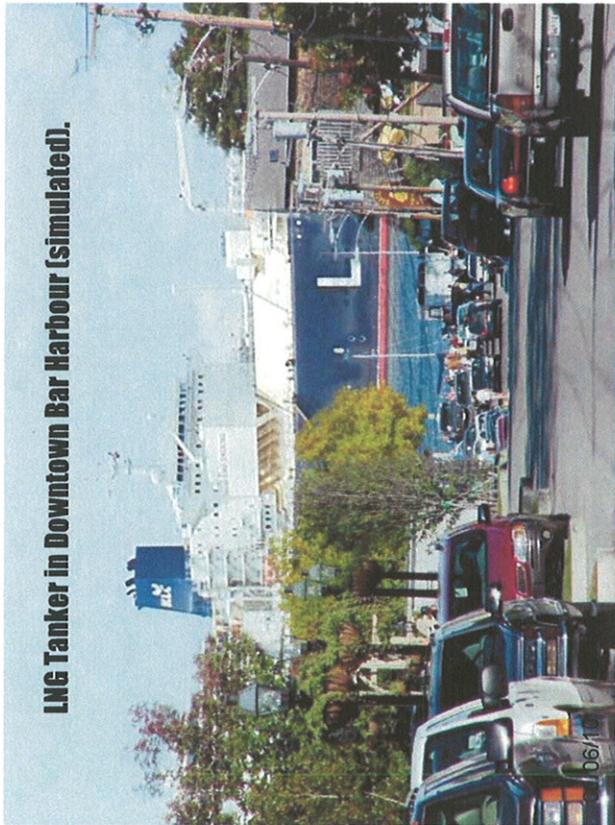
May, 2010



01/06/10



LNG Tanker in Downtown Bar Harbour (simulated).



Tanker Size

At about 290 meters, LNG Tankers are slightly smaller than very large Crude Carriers. They require several large tugs to pass through Head Harbour and into Passamaquoddy Bay. LNG Tankers currently under contract will be as large as VLCCs

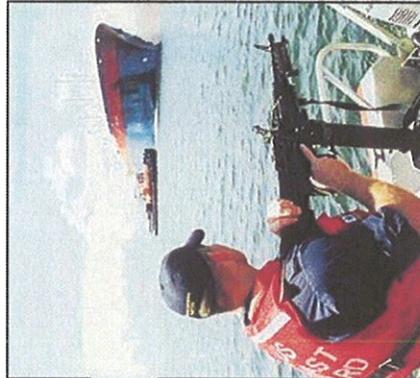


QE 2
 150,000 tons
 14 decks above water
 1,132 feet long
 136 feet wide
 33 foot draft

LNG Tanker
 130,000 – 150,000 tons
 12 stories above water
 800 – 1000 feet long
 150 – 200 feet wide
 40-50 foot draft

01/06/10

Exclusion Zone Armed boats prevent boats from entering the exclusion zone.



Exclusion Zone = 2 miles

All activities cease within the exclusion zone during anchorage or passage. Ships are protected by gun boats.

2 Miles ahead
1 Mile behind
500 yards on either side

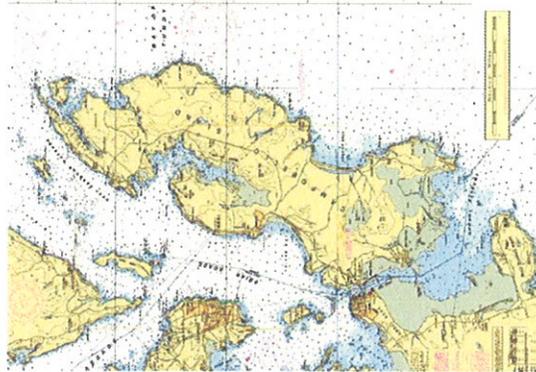
Area may be extended if Terror Alert rises.
Arrival is not announced

01/06/10

30% – 100% Downtime for the Tourism, Fisheries, Transportation, and Aquaculture Businesses

All activities cease within the exclusion zone. 2- 9 ships per week could pass in and out of Passamaquoddy Bay resulting in potential downtime ranging from 30% – 100% for operators in the passage and terminal areas. Losses will be in the millions

Elsewhere, potential layover time to fog during May – October (Green lines show inner and outer daytime limits) could be as high as 20 days/month average.



01/06/10

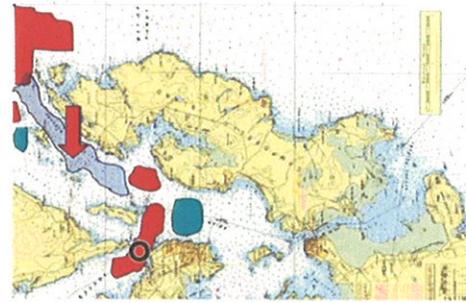
Terrorist Risks

- LNG is highly volatile and in the era of terrorism offer opportunities for terrorist strikes on vulnerable energy infrastructure.
- A terrorist attack by a boat bomb - such as the one used against the French tanker Limburg off the coast of Yemen in 2002 - could cause at least half a cargo hold's worth of LNG to seep out of the ship and ignite.



01/06/10

Navigation Risks



01/06/10

Sources of LNG

- Trinidad and Tobago
- Indonesia
- Algeria, Nigeria, Libya
- Malaysia
- Australia
- Alaska
- Qatar, Oman, United Arab Emirates
- Russia, soon
- Iran, soon, worlds second largest supply

01/06/10

Fire Risks

- In just over 3 minutes, a fire could spread 2/3 of a mile from the ship.
- There is nothing safety officials can do in such a case. They would have no time to evacuate people or to put out the fire.
- Intense heat within a mile radius of the tanker would set fire to homes and cause significant losses of life and property.
- Costs for safety, rescue, and fire services will be large. Each community will have to pay for this upgrade.



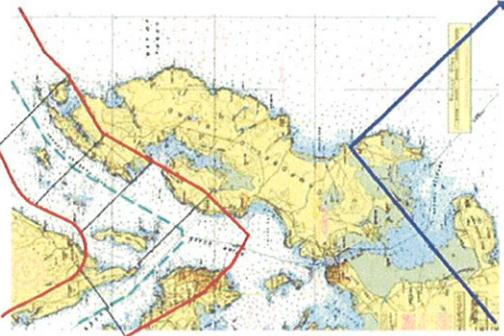
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Zone of Fire Risk

Fire Danger Zones

Red lines for 5 kilowatts/sq.m. Level allowed by FERC

Blue lines for 1.6 kilowatts/sq.m. Level at which humans are affected



01/06/10

Increased Air Pollution

Current available data show an average of more than 1 ton of Toxic chemicals are released by Industry into the air each day - 2000/01 (Red are cancer causing chemicals)



| Chemical | Air | | | | Av/Day |
|--------------------------------|-------------------------|---------|-----------|---------|--------|
| | Flakeboard Woodschem | Sawmill | Pulp Mill | Total | |
| Ammonia* | 220 | 0 | 160,500 | 160,720 | 440.33 |
| Catechol* | 0 | 0 | 0 | 0 | 0 |
| Chlorine* | 0 | 0 | 3,305 | 3,305 | 9.05 |
| Chlorine Dioxide* | 0 | 0 | 6,014 | 6,014 | 16.48 |
| Cyanide* | 0 | 0 | 0 | 0 | 0 |
| Diethylamine* | 0 | 0 | 0 | 0 | 0 |
| Formic Acid* | 0 | 0 | 0 | 0 | 0 |
| Hydrochloric Acid* | 0 | 0 | 0 | 0 | 0 |
| Manganese Compounds* | 750 | 0 | 0 | 750 | 2.00 |
| Methanol* | 0 | 0 | 0 | 0 | 0 |
| Nitrate Compounds* | 0 | 0 | 0 | 0 | 0 |
| Nitric Acid* | 0 | 0 | 0 | 0 | 0 |
| Phenol* | 0 | 0 | 0 | 0 | 0 |
| Polycyclic Aromatic Compounds* | 0 | 0 | 0 | 0 | 0 |
| Sulfuric Acid* | 0 | 0 | 0 | 0 | 0 |
| Zinc compounds* | 0 | 0 | 0 | 0 | 0 |
| Total | | | | | |

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Local Water Pollution

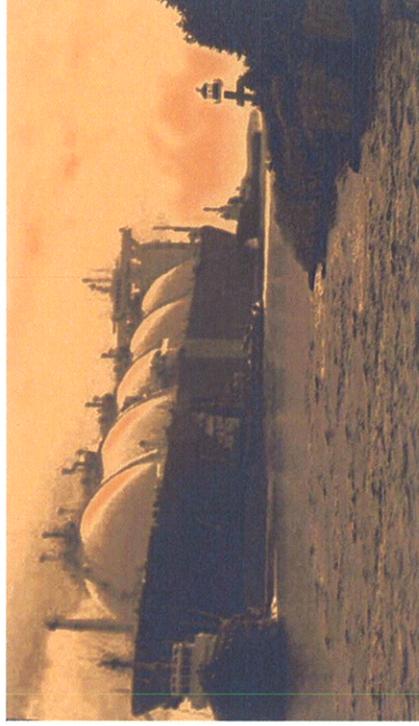
Chemical Releases

Table 8.1 Environmental Releases, Transfers, and Production-Related Waste (Pounds from TRI (total Release Inventory) sources)

| Year | Air Releases | Water Releases | Land Releases |
|------|--------------|----------------|---------------|
| 1988 | 3,352,445 | 27,195 | 0 |
| 1989 | 2,460,654 | 33,780 | 0 |
| 1990 | 2,078,702 | 28,820 | 0 |
| 1991 | 2,091,422 | 202,060 | 139 |
| 1992 | 1,823,063 | 141,050 | 91 |
| 1993 | 1,007,585 | 125,890 | 5,376 |
| 1994 | 816,266 | 111,850 | 10,320 |
| 1995 | 935,755 | 59,890 | 9,267 |
| 1996 | 679,577 | 122,773 | 4,148 |
| 1997 | 742,305 | 276,460 | 67,994 |
| 1998 | 748,905 | 310,260 | 128,561 |
| 1999 | 547,477 | 138,239 | 109,959 |
| 2000 | 591,556 | 256,110 | 58,374 |

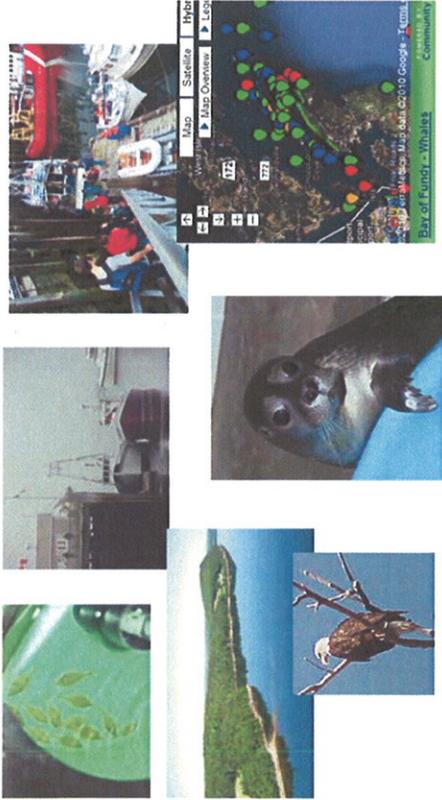
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Water Pollution Impacts of releases from tankers, terminal, tugs, escort vessels, dredging is unknown.



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A Sustainable Eco-Economy Requires Choices



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