

NORIGS 3 Coalition

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Introduction

It is my privilege to address the Law Amendments Committee today in regard to Bill 82 on behalf of Norigs 3. The Norigs 3 coalition of fishermen, seafood processors, environmentalists and aboriginal communities that fish on Georges Bank (list of members attached) has been advocating a permanent ban on oil and gas development for the Georges Bank Moratorium Area since 2008 when the previous Nova Scotia government indicated that a review of the 20 year old moratorium would take place.

The decision by this government to introduce legislation to provide permanent protection for what is arguably the most productive marine ecosystem in Atlantic Canadian waters is welcome news to our coalition and to the many communities in Southwestern Nova Scotia that depend on the rich commercial fishery that brings more than \$200 million annually to the Nova Scotia economy.

The recent explosions of oil wells and platforms in the Gulf of Mexico and near Australia in the Timor Sea have highlighted the damage that can occur to a marine ecosystem and to the fishing and tourism industries in the wake of large oil spills.

Georges Bank is home to more than 200 marine species, including the endangered North Atlantic Right Whale, and is an important feeding ground for other whales, tuna, swordfish, sharks, turtles and seabirds.

Georges Bank is a special marine ecosystem that warrants protection. Spawning by at least one commercial species is taking place on Georges continuously throughout the year. The risk of disrupting spawning aggregations, damaging eggs and larvae is too great a risk to bear.

Growth rates of fish on Georges Bank surpass those in other areas of the Scotian shelf. The circular gyre current resulting from tidal action and currents traps nutrients, eggs and larvae and makes Georges Bank a truly unique spawning and nursery area.

Georges Bank is the one place in Atlantic Canadian waters where we have seen a significant recovery of groundfish stocks. The haddock biomass is at the highest level in 50 years. Cod and yellowtail flounder are also rebuilding. These groundfish stocks, scallops and lobsters from Georges Bank sustain the fishing and seafood processing industries in many South West Nova communities.

Georges Bank is an example of successful joint Canadian and American groundfish stock management. The Americans have an oil and gas moratorium on the 80% of Georges Bank that is American waters until at least 2017. As a result of the review taking place after the Deep Water Horizon tragedy, the American government recently decided that its entire Atlantic coast will remain closed to oil and gas exploration and development until at least 2017.

If the present moratorium on the Canadian portion of Georges Bank is lifted to allow petroleum exploration and development, the repercussions for Nova Scotia in terms of relations with our New England neighbours in the event of a major spill or blowout could be quite serious. There could also be various other serious repercussions at the national level.

I want to make it clear before I comment on Bill 82 directly that the fishing industry and Norigs 3 members have not opposed oil and gas development in other, less sensitive areas of the Scotian shelf. We recognize the importance of oil and gas revenues and jobs to the Nova Scotia economy. We support co-existence but co-existence doesn't mean oil and gas exploration and development everywhere. A very large portion of Canada's Atlantic Coast is already open.

This is the third time since the late 1980's that Norigs has fought to protect Georges Bank. We applaud the government for introducing Bill 82. We do feel, however, that Bill 82 as it is worded falls short of the government's stated intention of providing the Georges Bank Moratorium Area with protection from the risks of petroleum exploration and development. As Premier Dexter stated on November 3, **"It's just not worth the risk to drill in an area this important to Nova Scotians. Rather than continue the debate every few years, this legislation will**

provide certainty about our intentions around Georges Bank. Until a compelling case can be made for this decision to be reconsidered, the moratorium will stand."

Norigs 3 has sought legal advice and an analysis of Bill 82, the Accord and the Accord Acts. The comments that I am going to make about specific sections of Bill 82 derive from the legal analysis that we have received and our desire to have Bill 82 provide as much or more protection as with the previous two moratoriums.

Bill 82

For ease of presentation, I shall state the section or sections followed by our proposal for changes.

1. This Act may be cited as the Offshore Licensing Policy Act.
2. The purpose of this Act is to direct the Minister of Energy to use the Minister's powers and authority under the Accord Acts to ensure that no person engages in exploration or drilling for or the production, conservation, processing or transportation of petroleum on Georges Bank until a resolution is passed by the House of Assembly accepting a recommendation to permit the licensing of petroleum interests and activity, in whole or in part, on Georges Bank.
3. In this Act,
 - (a) "Accord" means the Canada-Nova Scotia Offshore Petroleum Resources Accord dated August 26, 1986, and entered into by the Government of Canada, as represented by the Prime Minister of Canada and the Minister of Natural Resources, and by the Government of Nova Scotia, as represented by the Premier of Nova Scotia and the Minister of Mines and Energy;
 - (b) "Accord Acts" means the Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act (Canada) and the Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation (Nova Scotia) Act;
 - (c) "Board" means the Canada-Nova Scotia Offshore Petroleum Board established under the Accord Acts;
 - (d) "fundamental decision" has the same meaning as in the Accord Acts;
 - (e) "Georges Bank" means that portion of the offshore area described in Schedule IV in each of the Accord Acts;

(f) "Minister" means Minister of Energy;

(g) "moratorium" means the prohibition on exploration or drilling for or the production, conservation, processing or transportation of petroleum on Georges Bank.

4. (1) In the event of a conflict between this Act and the Accord Acts, the Accord Acts prevail.

(2) In the event of a conflict between this Act and the Accord, the Accord prevails.

5. (1) This Act does not affect the current moratorium provided for in the Accord Acts.

(2) This Act does not affect the Minister's authority under any enactments other than the Accord Acts.

We understand the need for these sections and have no problem with the wording.

6. For the purpose of this Act, the Minister shall

(a) exercise the Minister's power and discretion in respect of fundamental decisions so as to effect the moratorium;

(b) inform the Board that it is a matter of public interest that no petroleum licensing or commercial seismic activities take place on Georges Bank unless a resolution has been passed by the House of Assembly accepting a recommendation to permit the licensing of petroleum interests and activity, in whole or in part, on Georges Bank;

(c) seek agreement from the Minister of Natural Resources for Canada to take a similar position and jointly direct the Board under the Accord Acts accordingly; and

(d) consult with the Minister of Natural Resources for Canada to develop mirror provincial and federal legislation to implement this Act.

In part (b), we propose that "commercial seismic" be changed to "seismic" by deleting "commercial". The June 1999 Georges Bank Panel reported on scientific literature suggesting that seismic surveying impacts on many marine species could range from lethal, sub-lethal and impacts that cause behaviour change in some species. This was a major reason for the Panel's recommendation to extend the moratorium. Norigs 3 can provide the Committee with a recent

review of the state of scientific knowledge regarding seismic impacts on marine species prepared by a respected scientist who participated in DFO led discussions on impact issues during the past year. As well, I would point out that page 20 of the 1999 Panel Report contains an excellent chart showing the spawning times on Georges Bank of major marine species. There is no time window when spawning is not taking place. It is our view that the previous moratoriums protected the marine mammals, fish and crustaceans on Georges Bank from all forms of seismic testing (commercial or otherwise). Bill 82 seems to open the window to seismic impacts and there has been no scientific case made since the 1999 Panel Report for doing so.

7. Where at any time the Minister is of the opinion, based upon evidence, that

(a) adverse environmental risks from petroleum activities on Georges Bank are not significant, given the industry practices in Canada and technology for environmental protection;

(b) offshore petroleum exploration and development activity on Georges Bank is attractive to industry due to the cost of developing potential petroleum resources and the long-term projections for resources prices; and

(c) there are prospects for revenue streams and economic impacts of a significant nature to the benefit of all Nova Scotians, including those in southwest Nova Scotia, from petroleum activity on Georges Bank,

the Minister may recommend that Executive Council order a public review to determine if the moratorium should be continued or be lifted in whole or in part.

The very first words of section 7 "where at any time" essentially means that from our perspective our coalition must be constantly vigilant to protect Georges Bank, but unable to critique "evidence" presented to the Minister by sources unknown to us (vigilant because there is no indication what might constitute "evidence" and what might be considered a credible source for that evidence). Also, would evidence of a scientific or of a technical nature be "peer reviewed"?

Clauses (a) (b) (c) use subjective, vague terms with no definitions. There seems to be no transparency in how the Minister might make the determination that the criteria suggested in these three clauses have been met.

We ask that Section 7 be replaced with wording that would implement continuation of the present moratorium for a specific time period beyond December 31, 2012 with an automatic "rollover" extension of the same length of years, unless the Minister (in agreement with the appropriate federal Minister) decides to convene another Public Review (one year prior to expiry). We propose that five years be the appropriate block of time for the continuous extensions unless a Public Review is held.

Section 7 would essentially say that the Minister will attempt to implement a continuation of the current moratorium that will expire on Dec. 31, 2012 for another five years to Dec. 31, 2017. The two Ministers would make a decision by Dec. 31, 2016 as to whether the moratorium should be extended for another block of five years or whether there are sufficient grounds for holding a Public Review of the environmental and socio-economic impacts of exploration and development activities in the Georges Bank Moratorium Area.

Such a process would provide the means for an on-going moratorium, while requiring a Public Review at established time periods if the two Ministers feel a review is appropriate. A Panel established for the Public Review would be selected and operate in a manner consistent with what is in the Accord Acts and that took place in the late 1990's.

To be clear, to lift the Moratorium after the next five year block (Dec. 31, 2017) the two Ministers would have to establish a Public Review. The resolution before the House would take place only if a Public Hearing resulted in a recommendation to lift the moratorium.

Thus, there are two ways the on-going nature of the moratorium could continue without further legislation. The two Ministers could decide to "roll-over" the Moratorium for another five years without a Public Review, or the automatic roll-over could occur if the result of the Public Review is a Panel recommendation to continue the moratorium.

We have chosen the five year time period for the blocks because that seems to be the time period being used by the American government in its decision making.

8. (1) Where Executive Council orders that a public review be conducted, the Executive Council shall specify the time within which the public review is to take place, the manner in which it is to take place and the form and manner in which a recommendation is to be prepared for the Minister's consideration and may

(a) establish terms of reference and a timetable that will permit a comprehensive review of all aspects of the matter;

(b) appoint one or more persons to conduct the review; and

(c) direct those persons to hold public hearings in appropriate locations in the Province and report to the Minister.

(2) The Governor in Council may confer on the persons appointed pursuant to clause 8(b) all or any of the powers, privileges and immunities conferred on persons appointed as commissioners pursuant to the Public Inquiries Act.

To be consistent with our recommendation for revising Section 7, the "Executive Council" in 8(1) should be replaced by a "decision of the two Ministers". The sections in the Accord Acts that describe the Panel selection process and reporting for the required Review like the one conducted in the late 90's should also be inserted.

9. Where a public review under this Act results in a recommendation that the moratorium is no longer necessary, in whole or in part, the recommendation must be presented to the House of Assembly by the Minister for a vote in whether to accept the recommendation.

This wording is acceptable.

10. Where a resolution under Section 9 to accept the recommendation is passed by a majority vote of the House of Assembly, the Minister shall endeavour to implement the outcome of the resolution through the authority given to the Minister under the Accord Acts.

This wording is acceptable.

Conclusion

In conclusion, we believe that the changes contained in this presentation accomplish the government's intent as stated by the Premier on Nov. 3, 2010.

- **The moratorium would be continuous.**
- **If the government contemplates lifting the moratorium, there would be a mandatory Public Review.**
- **It would be called only at pre-established times.**
- **There would be a transparent process for establishing and weighing the evidence, followed by a resolution and vote in the legislature only if the recommendation in a Panel Report is to let the moratorium expire.**

I want to express my appreciation to the Chairman and to the Committee for the invitation to address the Law Amendments Committee today. I am passionate about the cause of protecting Georges Bank. Some of the members of our Coalition have been involved for over 25 years with the Moratorium issue and are just as passionate as I am. We hope that our recommendations today for strengthening Bill 82 will find favour with you. The fisheries resources, habitat, environment, and all the people who rely on Georges Bank will thank you.

Denny Morrow

Chair – Norigs 3 Coalition

NORIGS Members

Acadian Fish Processors Ltd.
Atksym Fisheries Limited
Charlesville Fisheries Ltd.
Ecology Action Centre
Eskasoni First Nation
Groundfish Enterprise Allocation Council
Inshore Fisheries Ltd.
Lobster Fishing Area 33 Committee
Lobster Fishing Area 34 Committee
Make n Break Fisheries
Maritime Aboriginal Peoples Council and
Maritime Aboriginal Aquatic Resources Secretariat
Membertou First Nation
NCH Fisheries Ltd.
Nova Scotia Fish Packers Association
Nova Scotia Fixed Gear 45'-65' Society
Nova Scotia Swordfishermen's Association
Potlotek First Nation
Sable Fish Packers (1988) Limited
Scotia Fundy Inshore Fishermen's Association
Scotia Harvest Seafoods Inc.
Scotia Quota Inc.
Sea Star Seafoods Limited
Seafood Producers Association of Nova Scotia
Shelburne County Quota Group
South West Nova Tuna Association
Unama'ki Institute of Natural Resources
Vernon d'Eon Lobster Plugs Limited
Wagmatcook First Nation
Waycobah First Nation
Xsealent Seafood Company

Seismic Surveys and Georges Bank: A Summary of the Potential Environmental Effects

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If the current moratorium on petroleum exploration on Georges Bank were ever lifted, the first activity at sea would be a seismic survey. If the data indicated oil or gas and drilling followed, it would be accompanied by more seismic work around the drill site. Should commercially-viable reserves be discovered, the production project would include continuing "4D" seismic surveys. Curiously, a myth has arisen that, whatever else the petroleum industry might do, all of this seismic work would be essentially harmless. That is false: **On Georges Bank, seismic shooting would be the principal problem.**

The very worst environmental harm that the offshore petroleum industry can cause comes from a major well blowout – such as the *Deepwater Horizon* disaster in the Gulf of Mexico this year and the one on Australia's Montara field in 2009. **Such appalling accidents are, however, very rare** and it is most unlikely that there would be one during the discovery and extraction of the small amount of oil or gas expected on Georges. Lesser (but still serious) spills are more common, however, while minor accidents are almost inevitable, despite the industry's best efforts to prevent them. **Thus, spills remain a significant concern on Georges.**

The full suite of other environmental effects of offshore petroleum activities remains poorly known and currently-unanticipated ones may prove significant in future¹. **Other than accidents and seismic, however, the known, substantial effects arise from discharges of drill muds and cuttings and of produced water.** There are also significant economic effects on the fishing industry from public perceptions of tainting of seafood products and from loss of access to fishing grounds.

Wells were once drilled using toxic diesel-based muds, diesel being discharged to the sea as a coating on drill cuttings. To the industry's credit, less-toxic substitutes are now used

¹ The oft-repeated claim that areas like the North Sea and Gulf of Mexico have seen major petroleum development without harm are simply empty propaganda: the marine ecosystems and fisheries in both of those seas are severely degraded. While the petroleum industry has been but one contributor to a much bigger problem, real-world experience does not demonstrate any lack of damage. Similarly, the frequent claim that Environmental Effects Monitoring ("EEM") in Canadian waters has shown no significant impacts is misleading. EEM that finds nothing merely indicates the inadequacy of the monitoring, unless there is evidence that that effects would have been detected if present – something too rarely provided in EEM reports.

and cuttings are cleaned before discharge. On Georges, however, **wells would likely be drilled mostly with water-based muds**. Those have negligible toxicity but they are bulk discharged to the sea following drilling – a process thought to be harmless to marine life until research at BIO in the 1990s showed that some **filter-feeding animals, including scallops, are extremely sensitive to the major solid components of dill muds**: barite and bentonite. The result is reduced feeding, growth and spawning, as well as deaths. **Should wells ever be drilled on Georges, the harm to the ecosystem, to the scallop resource and to the fishing industry could be significant**, depending on where and when the drilling occurred. However, BIO's modelling and calculations suggest that **the losses would be local and temporary** – real but neither bank-wide nor severe.

Produced water is water that comes up the wells along with the oil and gas. It is separated from those products and discharged to the sea – often in enormous quantities. At the end of the discharge pipe, **produced water is nasty**: a salty brine, laden with toxic material and contaminated with traces of oil. However, the currents swirling around the legs of an offshore platform swiftly disperse the discharged water. Where there are multiple production projects in semi-enclosed waters, the cumulative effects of their produced water can be of concern but the offshore location of Georges, the exceptional tidal streams and the very limited amount of oil or gas expected to ever be produced there combine to make this **a non-issue on the Bank**.

What is left is seismic. The surveys generate extremely loud sounds (effectively shock waves), which penetrate deep into the rocks beneath the seabed and echo back. The echoes are detected by sensors at the surface and analyzed to produce information on the rock strata. Early seismic work used explosives and thereby killed many fish. For decades, however, the sound-sources used have been airguns, which create a slower pressure pulse and are less damaging. There is no known technology that could fully replace airguns in the foreseeable future. The environmental effects of airgun shooting comprise (immediately) lethal, non-lethal (but physical or physiological) and behavioural impacts – though for animals in the wild, any kind of negative impact reduces fitness and increases the risk of death, so even behavioural impacts can have lethal consequences.

The immediately-lethal range of an airgun is very short (5 m at most) and few large, swimming animals will go so close. There is, however, some loss of less mobile, planktonic animals – which include the eggs and larvae of most fishery-resource species. Fortunately, the lethal range is so short, relative to the distance between survey lines, that deaths amount to only a few percent of the plankton within the survey area. The only real risk of greater losses would arise if a species was concentrated near the depth of the guns, in the surveyed area at the time of the survey. That is unlikely on Georges, where the tidal streams mix the water and animal populations span across the Bank, while seismic surveys would be confined to the Canadian portion.

Nevertheless, airguns do kill and **it is better to avoid killing even a few percent of the larvae of species of economic importance**: Future catches depend on the recruitment of occasional strong year-classes – with good years only known after the event. A survey

that deleted even 5% of a strong year-class could, in some cases, reduce catches by a similar percentage for the next decade. Hence, it is normal practice to schedule seismic surveys outside spawning seasons. On Georges Bank, however, there is at least one commercial species with larvae in the water in each month of the year. Thus, **seismic surveys cannot be conducted on Georges without interacting with fish eggs or larvae, reducing future fishery production.**

Sublethal impacts are both far more complex and far less well understood than the lethal kind. There has been some research into effects on smaller toothed whales (e.g. dolphins) and a scatter of studies of fish and shellfish. However, the proportion of a population affected, the severity of the impacts and even their nature remain very poorly understood. It is known that airgun shooting at ranges beyond those immediately lethal can tear nerve endings away from the otoliths (or "ear bones") of some fish – affecting their hearing ability, with consequences equivalent to blinding a land animal and letting it loose in the woods. **Major losses to fish and fisheries from sublethal damage caused by seismic shooting cannot yet be confirmed but neither can they be dismissed.**

The seismic industry does go to considerable lengths to avoid sublethal injuries to whales: shooting starts at lower power and "ramps up", while observers aboard survey ships are empowered to shut down the shooting if whales approach too closely – though effectively only in daylight and clear weather. Unfortunately, similar approaches are impractical for most fish, which cannot be observed from above the surface.

Twenty years ago, recognition that the lethal impacts of seismic are minor (though not always negligible) and ignorance of the sublethal impacts led to the obvious conclusion that the surveys were not a major environmental concern. Subsequently, however, **the behavioural impacts have become better understood and they can now be seen to be among the most serious environmental effects of the offshore petroleum industry.**

Knowledge of the effects of airgun shooting on whale behaviour was long confused by only observing from the bridge of a seismic vessel, since some individual whales will approach an airgun array while it is shooting, suggesting that they are not much concerned by the noise. Later research has painted a more complex picture. Canadian studies in the Beaufort Sea, for example, have found that **bowhead whales tolerate high levels of seismic sound when feeding but avoid airgun shooting by tens of kilometres when migrating.** The highly-endangered right whale, a close relative of the bowhead, migrates across Georges on its way to summer feeding grounds in the Bay of Fundy and on the Scotian Shelf. Whether their migrations would be displaced and what effect that might have on the tenuous recovery of the species is unclear. Meanwhile, **right whales use sound for long-distance communication.** The frequencies of their calls are similar to those generated by airguns, **leading to a concern that shooting will mask the communications** – perhaps at considerable ranges and with unknown biological consequences. **Even such a potential risk of harm is problematic when the species in question is critically endangered.**

Behavioural impacts on fish were first noted as changes in fishery catch rates, which may increase (as fish move into gillnets, across longlines or towards the bottom and into the path of draggers) or decline (as fish move off fishing grounds, cease taking hooks or seek shelter). **Those effects are real and can be serious for the fishermen concerned** but are local (tens of kilometres from airguns) and short term. They can often be mitigated by selecting the season for the seismic and providing adequate notice so fishermen can work other grounds during a survey. **Georges, however, is small, crowded and fished year-round, severely limiting the mitigation alternatives.**

The ecological consequences of behavioural changes are much more poorly known and yet potentially far more serious. There has only been one full-scale study. That concerned cod and haddock, species of prime concern on Georges, but it was conducted on the broad feeding grounds in the Barents Sea, north of Norway, and its results may not be directly applicable to the relatively-restricted Bank. Still less can they be extrapolated to spawning or migrating fish. In that sole experiment, however, **seismic shooting caused the cod and haddock to move at least 35 km – out of the study area and an unknown distance beyond. They did not return within the period of the experiment, which monitored the area for five days after the shooting ended. If such impacts were reproduced on the Canadian portion of Georges Bank, a seismic survey could displace the fish off their feeding or spawning grounds or simply drive them across the international boundary, away from Canadian fishermen and into American nets.** The end result would probably not be a population crash of the groundfish resources on the Bank. However, the possibility of a substantial reduction in feeding, and hence in growth and gonad development, during the year of the survey cannot be dismissed – with worse effects being possible if mating and spawning were disrupted.

Currently, surveys off Nova Scotia are subject to the *Statement of Canadian Practice with Respect to the Mitigation of Seismic Sound in the Marine Environment* of 2007, which serves to mitigate some consequences of seismic – but only to mitigate. It does not provide for rejection of surveys entirely where they would be inappropriate. It contains some measures that help protect whales but does little for fish, save suggesting avoidance of known spawning grounds. In short, **the Statement does little or nothing to ameliorate the most serious effects of seismic that would appear on Georges Bank if the moratorium were ever removed.**

This summary has been prepared for lay readers. A more detailed account, complete with citations of supporting studies, will be provided by the author on request.