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Regional Assessment of Offshore Wind Development in Nova Scotia
Impact Assessment Agency of Canada
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Please accept the following supplemental information regarding the PDAs on Sable/Western Bank and Middle Bank on behalf of the Eastern Canadian Offshore Scallop Fleet (ECOSF), which holds all offshore commercial licences for Sea Scallops in Atlantic Canada.

The ECOSF is comprised of five licence holders operating five factory-freezer trawlers and three wetfish vessels. There is no 'fleet separation' policy in place for this fishery and therefore these licence-holders also operate significant shore-based processing facilities as well. With these advanced processing capabilities, licence-holders are able to serve international markets and produce high-quality, value-added products and helps bring prosperity to many rural communities across Nova Scotia. Notably, First Nations hold a significant number of licences in the ECOSF which some sources have described as "an emerging model of economic reconciliation."[1] That said, the offshore scallop fishery is capital intensive fishery, with some modern vessels requiring crews of up to thirty supported by onshore processing facilities employing hundreds. As a result, the fleet constantly strives to increase efficiency and places a heavy reliance on DFO and industry funded science when planning their operations. The industry invests almost $1 million into science and research each year, including supporting DFO's dredge survey each year (which last year undertook 115 stations on Sable/Western and 15 on Middle Bank).

The ECOSF operates in three "Scallop Fishing Areas" situated with the RA study area, which are further broken down into seven management units under DFO Maritimes.[2] In most cases, each management unit receives its own science advice and receives its own Total Allowable Catches (TACs). Middle Bank and Sable Island Bank are surveyed separately but one combined TAC is set by DFO for those banks each year. While the management units appear broad, commercial scallop densities occur

[1] Jason Kirby, "Can reconciliation and profit coexist? Clearwater Seafood thinks so" *The Globe and Mail* (2 April 2024): https://www.theglobeandmail.com/business/rob-magazine/article-clearwater-seafood-indigenous-reconciliation-profits/
[2] Appendix 1.

in only specific areas within each management unit,[3] which have been exploited for decades (in some cases from the 1940s). Commercial scallop habitat is limited, unique and any loss of such habitat is material to the ECOSF given the limited and irreplaceable nature of these offshore beds. Sea scallops have a habitable range from North Carolina to Newfoundland & Labrador. However, some sources suggest that commercial abundances are changing within this habitable area due to climate change.[4] Sea scallops are sessile in their adult form and are unable to migrate, but with climate change the conditions supporting commercial densities may shift from more Southern scallop beds to more Northern scallop beds, such as those found on Sable/Western and Middle Banks.

We are concerned that the RA, in developing its PDAs, did not take into account the activities of the offshore Sea Scallop fishery and did not take into consideration the life history of Sea Scallops. While the initial PFDAs appeared to take some of the limited fisheries information into account, [5] the offshore scallop fishery has apparently been disregarded with the development of PDAs, despite the ECOSF providing additional landings information.[6] The additional landings data were meant to better show historic footprint of this fishery on the banks in question, and given the limited availability of commercial scallop habitat, that the RA should not allow for these to be developed. However, as noted, the RA has greatly expanded the footprints of the Sable/Western and Middle Bank PDAs and therefore seems to be viewing these historic scallop fishing grounds as appropriate for immediate development.[7]

The ECOSF's interest in Sable/Western and Middle Banks is also demonstrated by the amount of time and resources they spend in surveying these banks. As noted, the ECOSF supports DFO's scallop surveys and these surveys continue to show that there are significant and healthy scallop populations on these banks (albeit not of commercial size at the moment and therefore provided with no weight in certain analyses to date).[8] You will note that when Sea Scallops were successfully growing to commercial sizes in significant numbers, that Sea Scallop landings and TACs in these areas were considerably higher than the time series used in the Marine Planning Atlas.[9] This period of increased abundance predates the impacts of climate change that are currently being observed, meaning that these areas of importance might play an even more important role for the ECOSF in the near future.

Further, we are concerned that the RA did not take into account the life history of scallops and did not undertake a study of the potential oceanographic/hydrodynamic impacts on Western/Sable and Middle Banks before designating them as PDAs and PFDAs. Permanent Sea Scallop beds are generally found in areas where oceanographic features ensure a regular larval supply and food availability along with suitable temperatures and substrates. Sea scallops have sexes and reproduce by releasing sperm

[3] Appendix 2.
[4] Stokesbury, Kevin and N David Bethoney, *How many sea scallops are there and why does it matter?* (2020) 18(9) Front Ecol Environ 513 at 514, citing Cooley SR, Rheuban JE, Hart DR, *et al, An integrated assessment model for helping the United States sea scallop (Placopecten magellanicus) fishery plan ahead for ocean acidification and warming* (2015) PLoS ONE **10**: e0124145.
[5] Appendix 3
[6] Mapping in appendix 4, but see the survey time series at appendix 6.
[7] Appendix 5.
[8] See DFO's survey time series at appendix 6.
[9] Appendix 7.

and eggs into the water column, where fertilization takes place. After fertilization occurs, scallops spend about 4-7 weeks in the water column in larval stage. After feeding and growing in the water column, the larvae then search for suitable substrate on which to settle and they become less mobile as they mature. In most of these early stages Sea Scallops are dependent on local hydrodynamics and most banks of importance in this fishery have gyres and other hydrodynamic features that help distribute Sea Scallops and their food. This can perhaps be inferred by the distribution of Sea Scallops landings on Western/Sable Island Banks as a ring around shallower areas.[10] And, while individual banks are managed so as to avoid local depletion, there is a good possibility that there is demographic connectivity between management areas and that interference with hydrodynamic conditions would imperil those connections. There have been numerous studies on hydrodynamics on the Scotian Shelf and the life histories of benthic invertebrates that should have been reviewed as part of a credible regional study.[11] While we support the use of DFO's Marxan with Zones Approach, we urge the RA committee to recognize that this is not dispositive of DFO's role in assessing fish and fish habitat impacts later on and furthermore that DFO should make all of its experts available for consultation as we better understand where development is likely to occur.

Sea Scallops and the ECOSF stand to be profoundly impacted by offshore renewable energy development. The gear used by the ECOSF cannot be used in or near wind farms and therefore selection of WEAs must be sensitive to this usage. While the ECOSF does fish on multiple offshore banks, this should not be interpreted that it is acceptable to develop wind energy in historic scallop fishing beds such as those on Sable/Western and Middle Banks. As discussed, the ECOSF is a capital-intensive fishery and achieves efficiency through good planning, which in turn demands that operators have flexibility in harvesting scallop 'pulses' when and where they arise. To this end, any loss of scallop beds will materially impact the licence-holders in the fishery. These complexities must be taken into account in the RA's final report and by governments and regulators as wind development progresses (as required under clause 98.7(c) of the new Accord Acts).

To this end, SPANS submits that the RA committee do the following:

1. Reconsider its PDA and PFDA shapes on Western/Sable and Middle Banks in light of the fisheries and environmental information that is available to better protect the ECOSF and the communities that rely on the ECOSF;
2. Clearly articulate gaps in knowledge regarding Western/Sable and Middle Bank PDAs and that further study is needed before governments treat them as WEAs;

[10] See appendix 2.

[11] See for example Stortini CH, Petrie B, Frank KT, Leggett WC (2020) *Marine macroinvertebrate species–area relationships, assemblage structure and their environmental drivers on submarine banks*. Mar Ecol Prog Ser 641: 25–47. See also figure 54 from M.J. Tremblay, Black & Branton, *The distribution of common decapod crustaceans and other invertebrates recorded in annual ecosystem surveys of the Scotian Shelf 1999-2006*. 2007 Canadian Technical Report of Fisheries and Aquatic Sciences 2762, included as Appendix

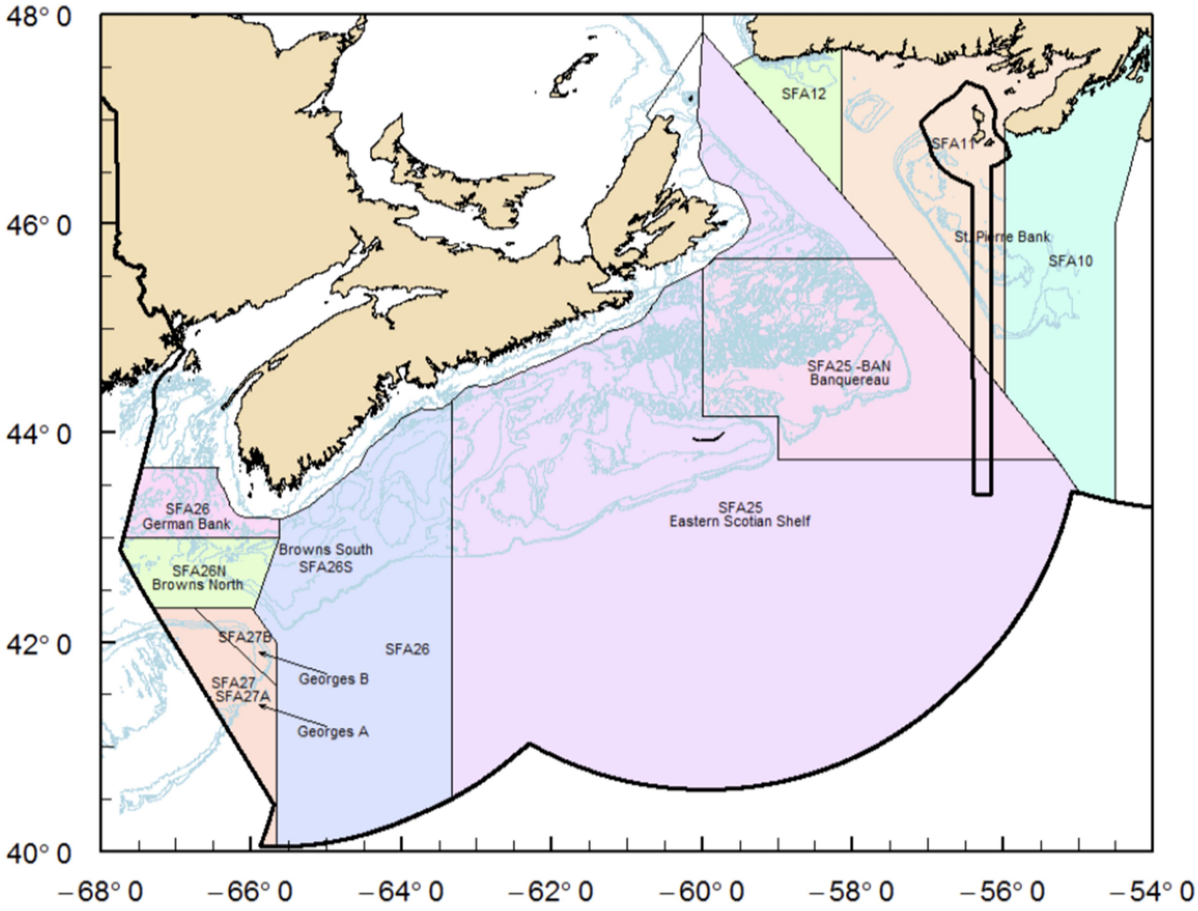
3. Clearly set out that DFO's work to date is not dispositive of its legislative requirements regarding fish and fish habitats and that DFO should provide access to all types of subject-matter experts to better refine WEAs;
4. Call on governments and regulators to provide a clear framework for operationalizing clause 98.7(c) of the Accord Acts (ie giving importance to fishing activities in the submerged land licence process).

All of which is respectfully submitted,

Ian A. McIsaac
President, SPANS

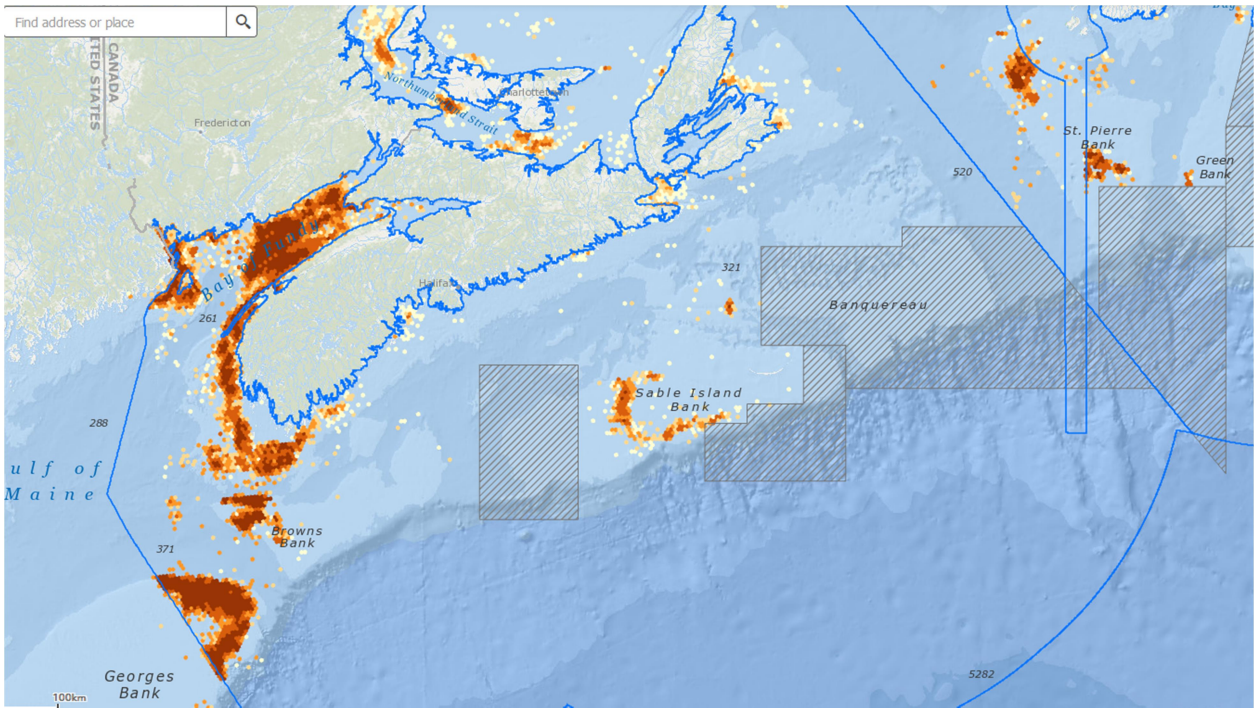
Appendix 1

DFO Scallop Fishing Areas



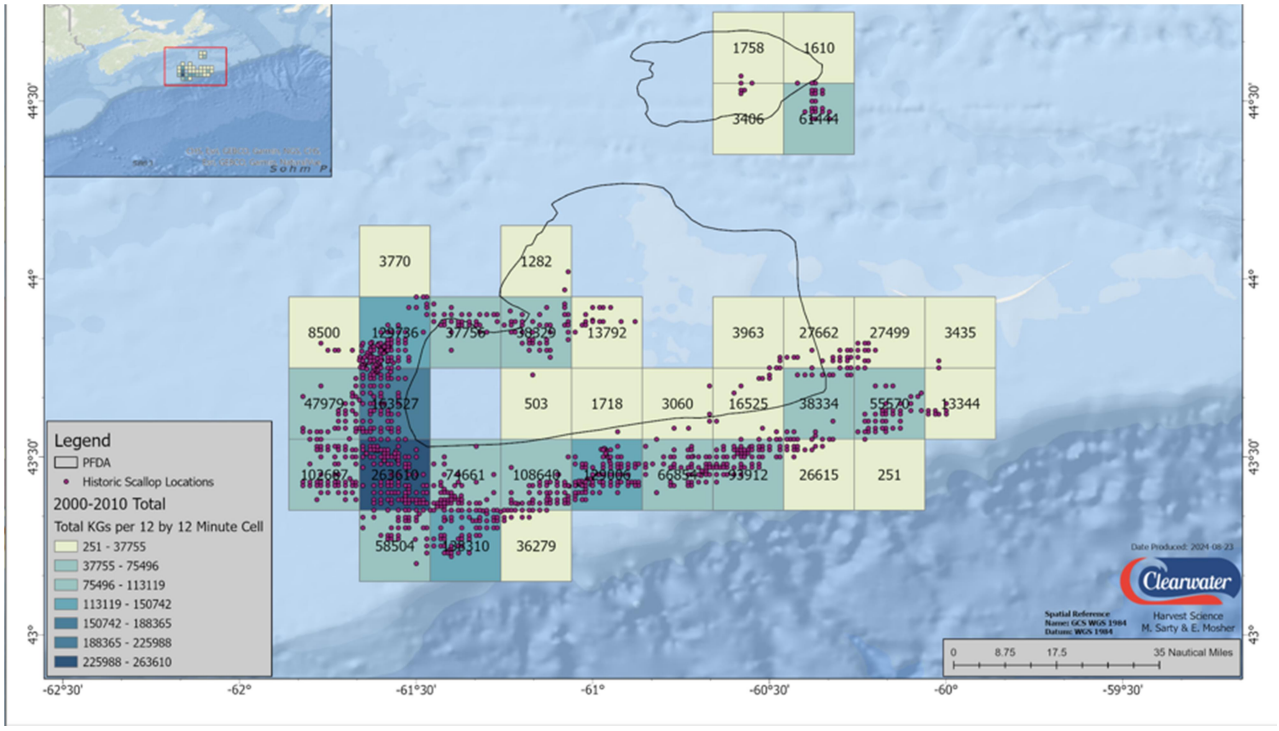
Appendix 2

DFO Marine Planning Atlas
Scallop Landings (including inshore and offshore landings)



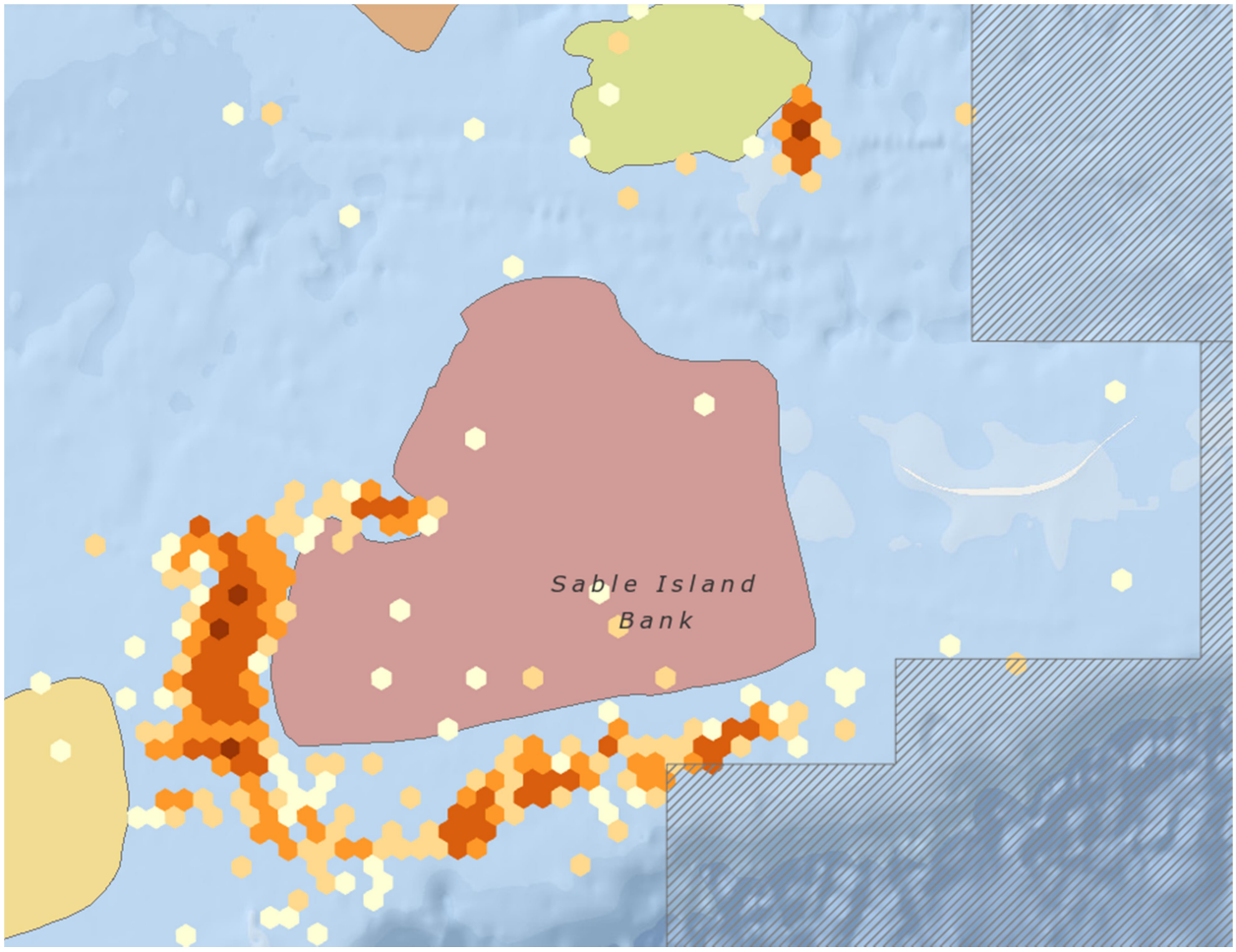
Appendix 3

Map of Sea Scallop Landings on Sable/Western and Middle Banks
from period in DFO survey time series with high fully recruit biomass and abundance.



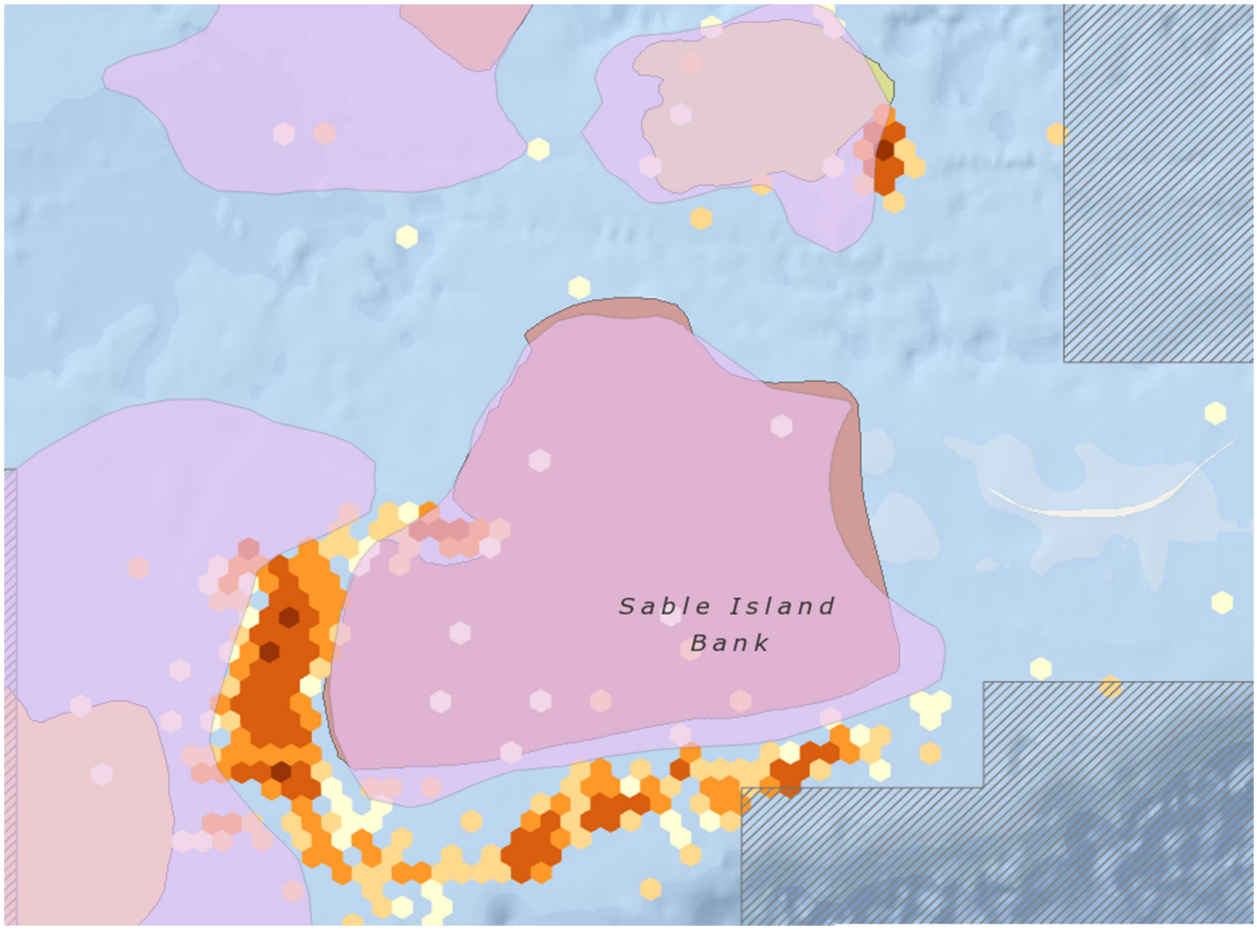
Appendix 4

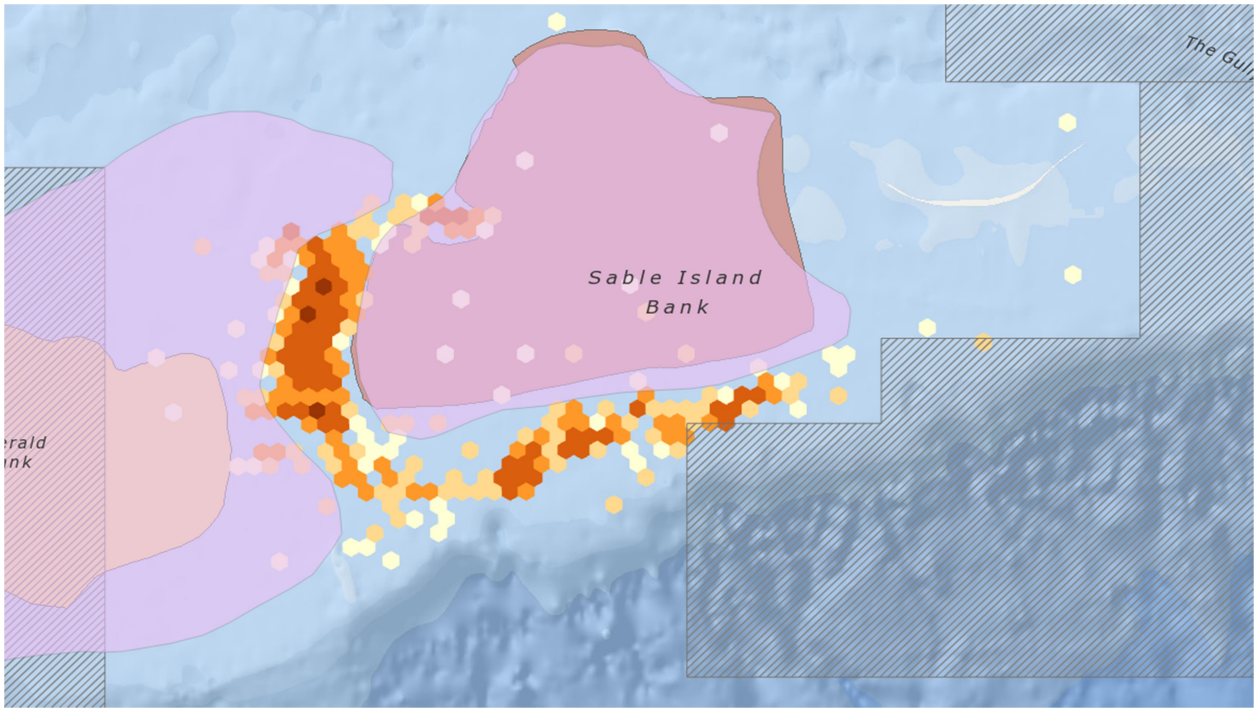
Map of Scallop Landings in
DFO Marine Planning Atlas (2012-2021) compared to PFDAs



Appendix 5

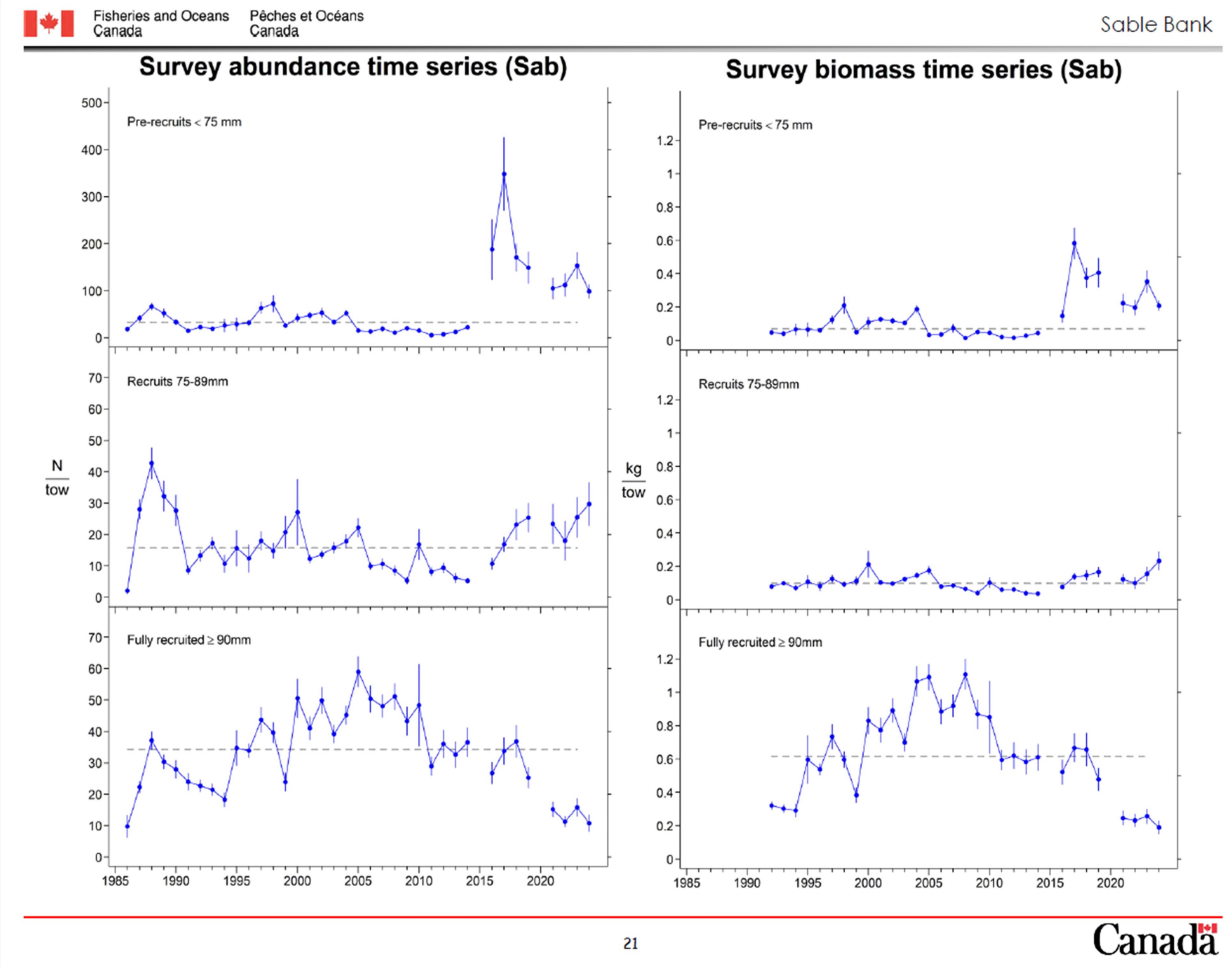
Maps of PDAs with DFO Marine Planning Atlas Landings and PFDAs




Sable Island
Bank

Appendix 6

Survey time series and survey map – 2024



Appendix 7
Historic Landings and TACs on Eastern Scotian Shelf

Year	TAC	Landings
1990	-	434
1991	-	389
1992	-	524
1993	-	250
1994	150	116
1995	150	150
1996	175	175
1997	175	174
1998	355	265
1999	350	277
2000	200	195
2001	200	199
2002	250	178
2003	250	229
2004	250	246
2005	250	235
2006	150	140
2007	150	150
2008	125	87
2009	75	33
2010	75	31

Appendix 8

Map of Sea Scallops observed in DFO summary survey

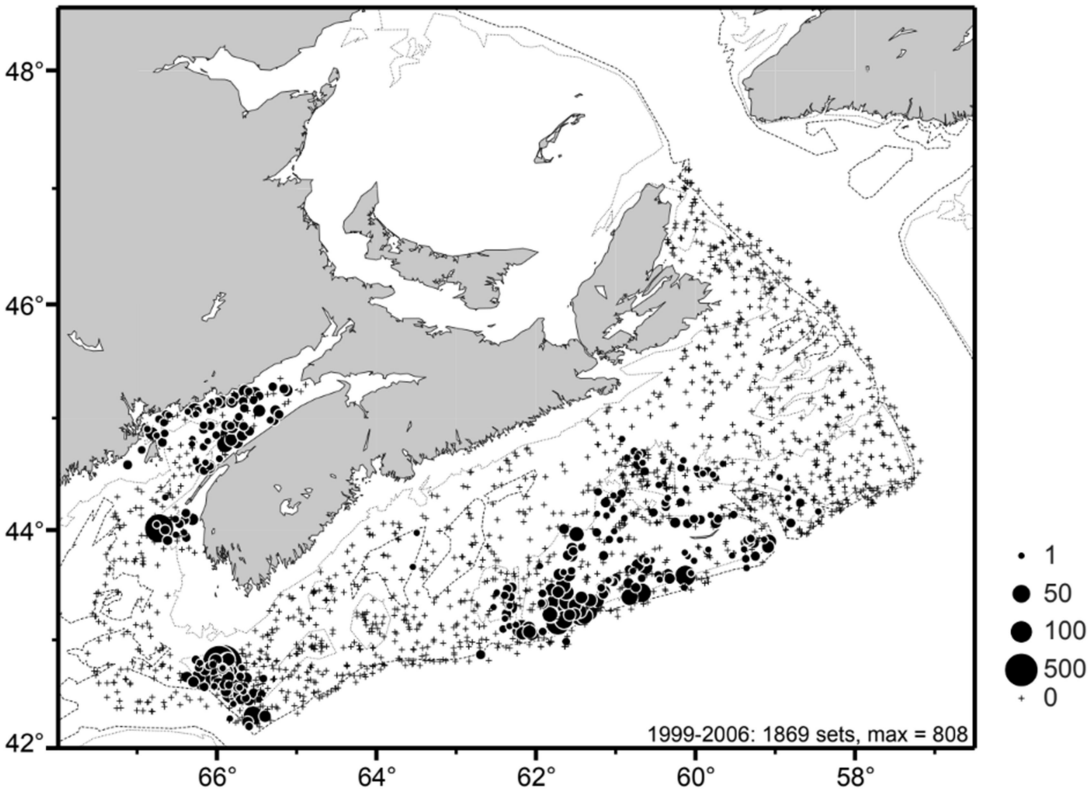


Fig. 54. Number of Sea Scallop per tow from the 1999-2006 Summer Ecosystem Surveys.