Draft Report: Regional Assessment of Offshore Wind Development in Nova Scotia

October 2024

Draft Final Report here: 159507E.pdf

Weather Radars

Comment 1: ECCC guidance for wind farm development in Canada recommends that wind turbines should not be installed in the 0-10km distance from a Radar, with consultation and mitigation measures recommended for all installations within 60km of any Radar.

> **Recommended text:**
>
> - Wind turbine height and distance from weather radar are key parameters when considering potential interference with the functioning of ECCC weather radars.
> - Proponents should write to radarsmeteo-weatherradars@ec.gc.ca in order for ECCC to conduct a preliminary visibility analysis.
> - For more information, please consult Guidelines for Wind Turbine and Weather Radar Siting - Canada.ca (https://www.canada.ca/en/environment-climate-change/services/weather-general-tools-resources/radar-overview/wind-turbine-interference/guidelines-for-wind-turbine-weather-radar-siting.html

5.6.1 Atmospheric Environment

Comment 2: ECCC acknowledges that the Strategic Assessment of Climate Change (SACC) is referenced in Table 5.3. In addition to this, wording should be included referencing the SACC outside of mitigation measures.

> **Recommendation:** ECCC recommends the inclusion of the following wording above Table 5.3: "Offshore wind projects, if designated, would need to follow all applicable climate change and greenhouse gas (GHG) guidance presented in the Strategic Assessment of Climate Change and the Technical Guides, which may include consideration of the GHG emissions from the construction (including pre-construction), operations, and decommissioning phases of off-shore wind projects, as well as mitigation measures."

Comment 3: Table 5.3 (page 179) lists mitigation measures but does not include reference to the use of other low-carbon fuel types.

> **Recommendation:** ECCC recommends adding a mitigation measure referencing the use of low-carbon fuel types such as hydrogen or biofuels as a GHG mitigation measure.

2.0 Approach, Activities, and Outcomes & 2.3 Identified Data Gaps and Limitations

Comment 4: This section describes the data gaps and limitations (page 49) of the "Several studies conducted in recent years merit specific reference (detailed in section 2.2) as being useful and directly relevant to the identification of Potential Development Areas (PDAs) within the RA Study Area. These studies have enabled a comparison of the conclusions reached independently using the same data but have also provided a baseline level of understanding for the Committee to interpret other information gathered and submissions received" (page 35).

ECCC's prior comments about the studies referenced in the report, and the limitations of those studies, are not reflected in this section and should be. The limitations of these approaches with respect to aerofauna species could be clearly stated.

Recommended text:

"The identification of PDAs within the RA Study Area was directly informed by several studies conducted in recent years (detailed in section 2.2). Among these studies, only one incorporated aerofauna data (Nagel et al., 2024) meaning the influence of aerofauna considerations on PDA locations was limited. Additionally, the study that did include aerofauna data highlighted several limitations, including:

1. The study did not examine all marine or aerofauna species present within the study area;
2. The study did not include information on migratory movements or connectivity for aerofauna (e.g., flight paths, migration corridors);
3. The study did not include areas of use by COSWEIC assessed Leach's Storm Petrel;
4. The study did not include ECCC predictive density models, which help to understand pelagic distributions of migratory birds using habitat covariates;
5. The study did not include foraging radius work for Leach's Storm Petrel because it obfuscated the regional foraging patterns of NS colonies. Other data exist to help inform this, which is important as Country Island is a significant location and movement and foraging areas are collocated within the PDAs;
6. Regional important shorebird sites were not included in the DFO model; and
7. The study did not include collision and displacement vulnerability data for seabird species as they were unavailable at the time of development, and have since been provided."

4.0 Existing Conditions & 4.3 Ecological Characteristics and Structure & 4.3.5 Bats

Comment 5: On page 107, it is stated "all three species have been designated as Endangered by COSEWIC (2023)."

COSEWIC Status Assessments do not designate status, rather they assess it. The Status Assessment Report is a part of the COSEWIC Assessment Process. The Status Report will recommend a status based on the assessment. The word designated should be changed to assessed.

Comment 6: On page 107, it is stated “bats are essentially land-based animals. Consequently, their activity in the RA Study Area is primarily in the nearshore environment. However, evidence from the United States and Europe indicates that larger species of bats have been recorded far from shore – as much as 817 km away – although most records along the Atlantic shore of the US were < 42 km from land (Peterson et al., 2016).”

A more appropriate term would be "terrestrial", not "land-based". Additionally, there is evidence that smaller bats (e.g. Myotis bats) also move offshore (as per the Doucette et al. 2024 references cited in the draft Final Report). Recent ECCC work on offshore bats shows bats during spring migration move up to 160km from the coastline over the Gulf of Maine (see bats reference document submitted in August 2024, and attached map: https://drive.google.com/drive/u/1/folders/1aY8E6cT8wV4ySpue_vx49_OozASD0mNj

> **Recommendation:** Please update the species of bats that are known to occur offshore. Also, update this section with the work done by ECCC in Nova Scotia indicating that there is also evidence from Canada.

Comment 7: On page 108, the first paragraph states, “Lucas and Hebda (2011) reported three species on Sable Island —silver-haired bat, hoary bat and eastern red bat — that were seen on several occasions during the summer months. These are medium to large-bodied bats compared with other species in NS and have very wide distribution in North America (COSEWIC, 2023). There is no evidence of their breeding on Sable Island: sometimes their arrival there coincided with recent storms or strong winds, suggesting that their presence may have been inadvertent (Bleakney, 1965; McLaren et al., 2006), but Doucette et al. (2024) consider that a southerly migration may in fact be occurring.”

Note that Doucette et al. also found Myotis species on Sable Island National Park Reserve (SINPR), and that the timing of occurrence for the bats on SINPR was until December 12.

> **Recommendation**: ECCC recommends including Myotis bats from the Doucette report in this summary. It is recommended to include the times of year that bats were seen in SINPR (fall and into early winter). ECCC also recommends including the timing of bats offshore in the spring migration as provided in ECCC's August 2024 submission: https://drive.google.com/drive/u/1/folders/1aY8E6cT8wV4ySpue_vx49_OozASD0mNj)

Comment 8: Migratory bat species are found on the island of Newfoundland, likely with migration routes from Nova Scotia, including Cape Breton to NL's south coast. Myotis bats have also been documented during the breeding season on St. Paul Island, off the coast of Cape Breton, implying smaller scale movements offshore to and from hibernation sites.

> **Recommendation:** ECCC recommends adding information on the connectivity of migration movements through Nova Scotia, including the migratory tree bats (NL to NS, NS to Sable Island National Park Reserve, NS to Maine), and the resident Myotis bats (short-distance migrations).

4.3.6 Birds

Comment 9: On page 108, the third paragraph states, “marine birds, including petrels, cormorants, gannets, gulls, terns, auks, phalaropes, sea ducks and geese, loons and herons, are ubiquitous over the inshore Scotian Shelf, i.e., within 25 km of the coastline, at all times of year (Bundy et al., 2024).”

There are species of petrel that use Nova Scotia waters that should be highlighted (e.g. Bermuda Petrel). However, we have storm-petrels that nest in the region, and specifically in NS.

> **Recommendation:** ECCC recommends changing petrels to storm-petrels. Alternatively, include storm-petrels as another group.

Comment 10: There is no summary of listed or assessed wildlife species of concern, though there is a specific table presented for fish species. Additional information on aerofauna SAR can be taken from this ECCCC submission: https://docs.google.com/document/d/1XX9J8pXhOXxdkOwhDbi37il6NeXCErMj/edit?usp=drive_link&ouid=102763576301057601153&rtpof=true&sd=true

Example of ECCC product that could be referenced/drawn from: https://iaac-aeic.gc.ca/050/documents/p84343/159089E.pdf

> **Recommendation:** ECCC recommends adding a section on wildlife with conservation status, similar to fish species in Section 4.3.3.2.
>
> Recommend adding the ECCC submissions related to Species at Risk to the Registry. For example: https://iaac-aeic.gc.ca/050/documents/p84343/159089E.pdf.

Comment 11: Division of species into "waterfowl" and "marine birds" could be better represented using the exposure categories provided by ECCC: marine birds and coastal/offshore migrants. Additionally, geese are mentioned as "marine birds" but should be "waterfowl"

> **Recommendation:** ECCC recommends an introductory paragraph for this section using the exposure categories provided by ECCC to identify how birds are likely to be impacted by OSW energy development. Please change the identification of geese as "marine birds" to "waterfowl".
>
> See ECCC submission on Marine Bird Vulnerability: https://drive.google.com/file/d/1ZhDF_k4KAdC51Mk2bHlPq7UQtG9ht20h/view?usp=drive_link

Comment 12: On page 108, the last paragraph states “in existing OSW developments in Europe, the impact on marine birds, especially during migrations and feeding forays has led to concern about their ability to avoid contact with the turbines. Initial studies in Europe suggest that many species might be at little risk because the birds appear to avoid wind farms, but concerns remain regarding limitations in existing monitoring technologies (ADGC, 2024).”

Collision is just one impact OSW farms could have on aerofauna. Other major concerns are avoidance (e.g., migrating birds changing their flight paths to avoid OSW) and displacement (e.g. birds that need to move around OSW farms in order to forage, move, roost, loaf, etc.).

Displacement is a significant concern for aerofauna and OSW, as it could potentially force birds into substandard foraging habitats, increase energetic costs of foraging, and increase transit flights between nest sites and foraging areas. This could lead to an impact on the nest, colony, regional, and population scale. "Avoidance" of wind farms (i.e., being displaced from foraging / loafing habitat or changing migration patterns) cannot be overlooked as only a "risk." Levels of risk will vary by species, season, and by phase of the offshore wind (OSW) energy development. The report may be interpreted as birds avoiding OSW is preferable. Consideration of the major direct threats of OSW to aerofauna should be described.

> **Recommendation:** Include a discussion on the full range of potential impacts to birds from offshore wind as captured in the Williams et al. 2024 publication (https://www.frontiersin.org/articles/10.3389/fmars.2024.1274052) to help describe these effects. ECCC recommends that the Committee include Figure 2 from Williams et al 2024 publication. We recommend the following text be included in this section:
>
> "Initial studies in Europe suggest that many species might be at little risk because the birds appear to avoid wind farms, but concerns remain regarding limitations in existing monitoring technologies (ADGC, 2024). **However, the effects of OSW energy development impacts on aerofauna is not limited to collision with infrastructure. As per Williams et al, 2024, effect types are classified into three broad categories: Collisions; Behavioural Change; and Habitat-mediated Change".**

Comment 13: On page 108, the second paragraph states, "large fall and spring congregations of Common Eider, numbering more than 10,000 (approximately 2% of the total North American Common Eider population), forage in the coastal waters of the Scotian Shelf."

> **Recommendation:** Given the large congregation numbers, ECCC recommends adding Common Eider to Table 4.3.

Comment 14: In Table 4.3 (page 109), for Roseate Terns, Country Island and Brothers Island are identified as "coastal islands" rather than "breeding islands".

> **Recommendation:** ECCC recommends identifying Country Island and The Brothers as breeding islands for Roseate Terns, as they are referenced later in the document.

Comment 15: In table 4.3 (page 109), additional potentially breeding dabbling duck species occur in coastal NS.

> **Recommendation:** ECCC recommends adding the following: Mallard, Gadwall, American Wigeon.

Comment 16: There are additional species to add to ensure representation of the aerofauna / birds that breed in the offshore wind development area in Table 4.3 and 4.4. For example, Canada Geese are not included in table 4.3 and they breed in coastal areas of NS (including islands). Common Eider are also one of the main species of waterfowl breeding along the coast of NS. Tables can also be expanded to not only include birds found along the coast, but also those species that use offshore waters as these will be the areas with higher overlap with offshore wind energy development. Both Table 4.3 and 4.4 can be supplemented using various ECCC products and RA

Submissions including the Atlantic Colony Database and ECCC Theoretical Colonial Foraging Range data product could be used to supplement Table 4.3.

The Species at Risk and general Species Lists provided by ECCC include additional species that should be captured in the Final Report table.

The Collision and Displacement Vulnerability assessment further ranks species by exposure group.

> **Recommendation:** ECCC recommends cross-referencing previous submissions from ECCC: https://docs.google.com/spreadsheets/d/1dUW4u40tZi6-nzVDfLao0QuUY2CcA2l/edit?gid=1629750320#gid=1629750320 and https://docs.google.com/spreadsheets/d/1EFHk7fiz0jkZuR6eKHM8x8lswyMFRRWO/edit?gid=913252223#gid=913252223. We also recommend consulting the Maritime Breeding Bird Atlas.
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> Maritimes Breeding Bird Atlas - Atlas des oiseaux nicheurs des Maritimes
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> For reference, the NL Committee captured this information in the following: 159089E.pdf
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> Recommendation: ECCC also recommends changing the table title to reflect that this is only a selection of species occurring in the area.

Comment 17: In Table 4.4 (page 110), the species listed are not dabbling ducks, they are diving ducks. Please change the title in the third row from "Dabbling Ducks" to "Diving Ducks".

Comment 18: On page 111, the first paragraph states, "While the data are limited by the intermittent nature of the surveys, it is evident that there is considerable variation in density on a per species basis within the RA Study Area waters. Some species are low to absent in offshore areas, e.g., ring-billed gull, while other species such as storm petrels utilize the offshore area extensively. During winter, many species seem to congregate closer to shore in the southern portion of the RA Study Area, south of Yarmouth, NS. It should be noted that winter data are lacking for several species due to lack of surveying effort during this time period."

The report references at-sea densities from ECSAS, as provided by ECCC. However, the modelling done by ECCC (incorporating ECSAS data with habitat covariates over 4 seasons) provides an opportunity to discuss seasonal patterns. Although this section does report some of the broad trends of pelagic densities, the information submitted is considered the best available for birds in the offshore, aside from the movement models. Increased consideration of the patterns of birds should be added, ensuring that ECCC's work is included in the description of existing conditions for birds in the offshore.

> **Recommendation:** ECCC recommends increasing the description of the existing conditions of birds in the pelagic areas of the NS study area.

Comment 19: Also, the above text (page 111) states that ECSAS surveys are intermittent (via ships of opportunity). It is important to note in this section that even though gaps do exist (temporally and spatially), this is still a key data set in understanding pelagic bird densities.

The DFO marxan model, which was used to delineate the PFDAs, used 50km hex grid cells from

ECSAS to accommodate marine bird distribution into their model. We noted to DFO that one area (Sable Island) that was highlighted as potentially low conflict for offshore wind has a gap in spatial coverage in that area. This is due to the physical characteristics of the area and difficulties with vessel navigation. This resulted in the data gap in ECSAS coverage being presented as an optimal solution for the Marxan Model. Given the lack of survey effort for seabirds in this particular region, some of the PFDA's may not be optimized to minimize conflicts with aerofauna.

> **Recommendation:** ECCC recommends clear identification of the known gaps in all ecological or biological surveys, what that means for inferring spatial and temporal distribution, and what that means for any preliminary statements on significant cumulative effects, or the ability to avoid impacts to these species.

Comment 20: This section does not reference the various species that are extralimital and use the NS study area for foraging during the year. This includes the endangered Bermuda Petrel.

Information on extralimital species is provided in the ECCC submission: https://docs.google.com/document/u/1/d/1XX9J8pXhOXxdkOwhDbi37il6NeXCErMj/edit?usp=drive_web&ouid=102763576301057601153&rtpof=true

> **Recommendation:** ECCC recommends Including a discussion about the presence of endangered birds from other jurisdictions that use the NS study area.

Comment 21: On page 111, the last paragraph states, “ducks, scoters, shearwaters and others are well known to travel substantial distances to reach highly productive areas of the coastal ocean”.

These species move to productive areas away from the coast as well, so please remove the word “coastal”.

Comment 22: Page 111 also states, “although the proposed 25 km buffer is designed in part to minimize the impact on these species, it is probable that many birds will exceed that distance”.

Please clarify if this is referencing the 25 km coastal buffer or is there an additional 25 km buffer for bird colonies nesting on offshore islands. There are some bird colonies found on islands outside of the 25 km coastal buffer (e.g., St. Paul Island), or other colonies that are found within the coastal buffer but close to the boundary edge (e.g., Seal Island). In both cases, these bird colonies will not be afforded the same buffer against disturbance or development that the coastal colonies will have.

> **Recommendation**: ECCC recommends that buffers are applied to all bird colonies, including island colonies, so as to ensure the buffer reduces exposure to offshore wind energy development consistently, regardless of whether the colony is coastal or not.
>
> In the attached document, ECCC provides an exposure analysis, demonstrating the effectiveness of various colony-specific buffer sizes at reducing risk for foraging birds around colonies.
>
> Proponents should contact ECCC to develop colony and species-specific setback metrics during project-level planning phases.

Comment 23: On page 112, the first paragraph states, “the heights at which these birds fly is often poorly known; their vulnerability to OSW turbines therefore is not yet clear.”

While this statement is partially true, the collision vulnerability assessment models provided by ECCC includes flight height values for some species. Further, it is known that behaviour (migration vs foraging) and weather can impact flight heights.

> **Recommendation:** Provide additional details of flight height and collision vulnerability.
>
> Reference and include information from the Collision and Displacement Vulnerability work provided by ECCC and available here: https://drive.google.com/drive/u/1/folders/1PbzmOiT5Z-QQWzu1g3u9FzrfJGgaICsR.

Comment 24: On page 112, the second paragraph states, “vulnerability of birds during migration to OSW installations may be significantly different from vulnerability during feeding/foraging. Many species migrating north through the region in spring tend to stay close to land (Figure 4.8) as they adjust their northward movement according to the progress of warming temperatures. However, some shorebird species heading south to wintering grounds during the fall may fly further away from the shore, more directly over the RA Study Area (Figure 4.9).”

Because there are different types of direct impacts to aerofauna, it would be useful to know what vulnerability is being discussed. The statement is true that different functional groups have different exposure to the impact. ECCC identified two functional groups to the committee: marine birds and coastal/offshore migrants. Marine birds have much higher exposure to offshore impacts compared to the coastal/offshore migrants.

As the shorebird migrations are referenced, the shorebird movement map should be displayed, to show how many tagged birds transit through, over, and near the PFDAs. This is available from the Shorebird Collective report in Figure 2c:
https://drive.google.com/drive/u/1/folders/1ViZ8FuunkQZfrYQFsgMSQG8yB-SF-qWx
Also available in this figure:
https://drive.google.com/drive/u/1/folders/1Pnyh5FlWlrNeEw8MYr0sD9ldjw1B_V4E

> **Recommendation:** Include the exposure functional groups provided by ECCC in the Marine Bird Vulnerability submissions (specifically, the species vulnerability results https://docs.google.com/spreadsheets/d/1h4xxDYVMYkoYk0OK_s5SS-dYaezZis3N/edit?usp=drive_link&ouid=102763576301057601153&rtpof=true&sd=true) to give context to the risk described here and how exposure relates to vulnerabilities. Recommend using the shorebird, Ipswich Sparrow, and various movement models to help show the movement of birds in and around the PFDAs.

Comment 25: Page 112 also states, "the limited information about the timing, frequency, abundance, flight height, foraging areas and reactions to OSW turbines of breeding and migratory birds needs to be remedied before permits to build are issued."

There is a current version of population, collision, and displacement vulnerability assessments provided to the committee (Marine Bird Vulnerability:

https://drive.google.com/drive/u/1/folders/1PbzmOiT5Z-QQWzu1g3u9FzrfJGgaICsR)

Knowledge gaps do remain, and this approach is common in other jurisdictions to identify what species are relatively more vulnerable than others. ECCC also mapped these using the density models to show where vulnerabilities might be distributed in the region.

> **Recommendation:** ECCC recommends including information from the ECCC Marine Vulnerability Report and include this report as a link on the Registry. https://drive.google.com/file/d/1ZhDF_k4KAdC51Mk2bHlPq7UQtG9ht20h/view?usp=drive_link

Comment 26: On page 113, the second paragraph states "all OSW developments have the potential to adversely affect marine birds through collision mortality, disturbance and displacement."

Alternative terminology is already in use by jurisdictions with active OSW developments:

- Collision
- Displacement
- Avoidance
- Attraction

> **Recommendation:** ECCC recommends to adapt the language used by other jurisdictions. Please address the issues of attraction.
>
> **Recommended text:** "All OSW developments have the potential to adversely affect aerofauna through collision mortality, habitat-mediated changes, and behavioural responses including avoidance, displacement, and attraction (Williams et al. 2024). Behavioural effects are direct responses to offshore wind energy structures or activities. Attraction behaviour may be maladaptive such that it increases the risk of collisions. Lighted offshore oil and gas platforms are known to attract nocturnally migrating birds and bats, which can increase energy expenditures and potentially lead to starvation or collision-related mortality (Hope Jones, 1980; Russell, 2005; Hüppop et al., 2006). Species that may be vulnerable to lighting-related effects include nocturnally active seabirds (Montevecchi 2006) and nocturnal aerofauna migrants (Hüppop et al., 2006; Van Doren et al., 2017). Other factors such as cloud cover, moon phase, as well as lighting characteristics can influence vulnerability to lighting-related effects (Kerlinger et al., 2010; Ronconi et al., 2015; Gehring et al., 2009; Cook et al., 2011)."
>
> ECCC recommends that the Committee considers adopting Figure 2 from the following: https://tethys.pnnl.gov/sites/default/files/publications/powering-healthy-seas-report_rspb_august-2022.pdf

Comment 27: Page 113 also states, “while mortality, occurring when flying birds and bats collide with wind turbines on land, is well documented, there is little evidence of mortality being caused at OSW farms in the North Sea. Collision is more likely if seabirds fail to avoid wind farms, which in the marine environment can happen because of fog, extreme winds etc.”

Mortality evidence is difficult to collect in the offshore environment. It is difficult to adequately detect and survey for mortalities from collisions offshore. This statement implies that collision is not a concern.

> **Recommendation:** ECCC recommends modifying this statement to capture that limited evidence does not mean no impact. Refer to Williams et al. 2024 for more detailed information on the major effects on birds and bats from offshore wind.

Comment 28: MOTUS data can provide important insight into the migration movement of smaller aerofauna species, including shorebirds, landbirds, and bats.

> **Recommendation:** ECCC recommends adding reference to the "MOTUS as a Tool" document on the registry with a summary of the utility of this technology. Examples of this product could include fall and spring migration maps of Ipswich (Savannah) Sparrows to and from Sable Island, previously provided by ECCC and now published via peer-review.
>
> 159393E.pdf;
> https://cdnsciencepub.com/doi/10.1139/cjz-2023-0201;
> https://movementecologyjournal.biomedcentral.com/articles/10.1186/s40462-016-0067-8

Comment 29: On page 113, the first paragraph states, “the breeding and migratory bird pattern mapping (above) was created by ECCC and presents movement models based on tracking data collected from birds moving through the offshore region of Atlantic Canada. Methods and bird species used to produce this mapping, as well as interpretation, limitations and assumptions can be accessed via the Registry.”

The maps presented in figures 4.8 and 4.9 were not developed from the movement models. They are simply the movement routes of tracked birds with an applied buffer corresponding to the average error of all track locations for each individual. All buffered tracks for a given migration period and species were then summed into a single map.

Additional details from the Avian Movement Models document would provide useful context for the various models developed and the applications of the technology.

> **Recommended text:** “Movement and migration routes are critical due to the potential exposure of migrating wildlife to offshore wind energy development. To identify movement corridors, ECCC conducted an extensive review of tracking efforts in the Atlantic Canada offshore for species that migrate into and out of the region or move through the region on route to breeding areas beyond Atlantic Canada. Tracking data were collected using devices deployed on animals that record locations over time, providing information on where and when aerofauna are using offshore areas.
>
> Movement models were created to identify patterns of space use for species across each season with available data. Migration routes of tracked birds were mapped with an applied buffer. All buffered tracks for a given migration period and species were then summed into a single map for spring (Figure 4.8) and fall (Figure 4.9).

ECCC provided the Committee with maps showing fine-scale space use and movement for 17 species. Those maps are available on the Registry here: https://iaac-aeic.gc.ca/050/documents/p83514/159391E.pdf.

4.4 Conservation Initiatives

Comment 30: This section should be modified to clearly identify the types of protected and important areas.

ECCC has prepared a recommended revision for the section "4.4 Conservation Initiatives." Please see the attached stand-alone submission with recommended re-wording. This document is recommended as a replacement for the entire section 4.4 (pages 115 - 132). Please note that ECCC has not modified any areas outside of their mandate (i.e., Marine Protected Areas and Marine Refuges and Fisheries Closure Areas). These sections of unedited text are identified in purple text.

Recommend this section include "Regionally Important Shorebird Sites" and that the registry include the following product: https://iaac-aeic.gc.ca/050/documents/p84343/159088E.pdf

4.4.1 Key Biodiversity Areas (KBAs)

Comment 31: The species that moves the furthest offshore to feed, Leach's storm-petrel, is not included as an example in the following "..marine-foraging species such as several gulls, roseate tern, northern gannet, great cormorant and razorbill..." (page 117).

Recommendation: ECCC suggests adding Leach's storm-petrel as an example.

Note that this addition has been made to the stand-alone submission on Protected and Special Areas.

Comment 32: In table 4.5, for Big Glace Bay Lake it is stated "supports approximately 1.3% of the estimated population of Canada geese from the Newfoundland and Labrador breeding population." This population is called the "North Atlantic Population". Please replace "Newfoundland and Labrador breeding population" with "North Atlantic Population".

Note that this addition has been made to the stand-alone submission on Protected and Special Areas.

Table 4.7. National Wildlife Areas within the RA Study Area

Comment 33: The list of National Wildlife Areas (NWAs) is consistently updated, and there are currently two locations in the process of becoming NWAs that have implications for Offshore Wind Energy Development in Nova Scotia and expected to become official NWAs January 1, 2025.

Recommendation: ECCC recommends including a mention of both Country Island and St. Paul's Island as NWAs, as these both have recently undergone public consultation and are anticipated to be accepted in January 2025.

ECCC recommends proponents to check for updated lists of NWAs and Migratory Bird Sanctuaries at multiple stages.

Note that this addition has been made to the stand-alone submission on Protected and Special Areas.

4.4.3 Marine Bird Colonies

Comment 34: On page 123, the second paragraph states "these areas provide important habitat for many seabirds, shorebirds and waterfowl and are crucial for evaluating risks to birds transiting between nesting and feeding grounds."

This section should make more explicit reference to the importance of the waters around colonies for foraging. The two foraging datasets previously provided would be helpful to bolster this connection.

> **Recommendation:** This section could make reference to both the Theoretical Foraging Radii work (ECCC) and Predictive Foraging work (Ronconi et al., 2022).
>
> ECCC recommends citing or including the mean maximum foraging range table (ECCC) for colonial species in Nova Scotia - possibly as an appendix.
>
> Tracking studies (e.g., Ronconi et al., 2022) can provide colony and species-specific foraging patterns based on habitat features. This type of work would be beneficial for project-specific assessments to understand foraging bird behaviour around nearby colonies.

Please see the stand-alone submission on Protected and Special Areas for recommended wording.

4.4.4 Sea Duck Key Habitat Sites

Comment 35: The Sea Duck Key Habitat Sites is a distinct dataset accessed through the Sea Duck Joint Venture. It is separate from the coastal block surveys and triennial common eider surveys that were provided by ECCC as estimates of abundance and density respectively.

> **Recommendation:** ECCC recommends changing this section to a general "Waterfowl" heading with paragraphs for the following:
>
> a) Sea Duck Key Habitat Sites - referencing site #62 (Eastern Shore), #63 (Prospect), # 64 (South Shore) specifically.
> b) Waterfowl Surveys - here make mention of the various surveys and results. ECCC recommends including detailed summaries of the triennial survey results (ECCC), and the habitat suitability models (Lamb et al., 2020).

Recommend referencing/including these documents in the report as well as the Registry:
https://iaac-aeic.gc.ca/050/documents/p84343/159088E.pdf
https://iaac-aeic.gc.ca/050/documents/p84343/159090E.pdf

Note that the stand-alone submission on Protected and Special Areas includes recommended wording related to this comment.

4.4.2 Migratory Bird Sanctuaries

Comment 36: ECCC suggests providing map(s) showing location of Migratory Bird Sanctuaries and National Wildlife Areas.

5.5.9 Movement of Turbine Blades

Comment 37: Page 175 states "Feathering blades during high bat activity periods is therefore being adopted..."

> **Recommendation:** Please clarify what feathering is.
>
> Feathering is a curtailment measure that involves adjusting the turbine blade angle so that they no longer produce force that spins the rotor. This measure is being adopted increasingly to mitigate impacts on bats.

5.6.3 Aerofauna

Comment 38: Page 184 states, "the operations and maintenance phase of OSW development pose the greatest potential threat to aerofauna (birds, bats and insects) including collision with moving turbine blades and displacement due to avoidance of turbines. The presence of infrastructure and activity can also attract birds and bats to roost on structures and vessels. Attraction to new foraging habitats created by underwater structures may also lead to displacement from flight/migratory corridors and foraging areas while artificial lighting can cause disorientation at night or attraction to turbines during inclement weather events."

ECCC in partnership with the Biodiversity Research Institute developed a review and assessment of the available (or proposed) mitigations for aerofauna. This assessment inventoried the available knowledge on mitigations that are proposed only, field-implemented, specifically tested for effectiveness, and had any evidence of being effective. This work has been captured in Gulka et al. 2024: https://www.biorxiv.org/content/10.1101/2024.08.20.608845v1. The NS Draft Report summary of mitigations for aerofauna can be expanded upon using this publication.

> **Recommendation:** Incorporate the assessments and review of impacts and mitigations to birds and bats from the Gulka et al. 2024 document.

Comment 39: In regards to table 5.5 Aerofauna – Effects, Mitigation, and Monitoring Measures (page 185), ECCC provided guidance on the monitoring that would be required, and included specific guidance on how to monitor for displacement impacts on aerofauna, using Motus towers, etc. This is an example of the standards in places in various jurisdictions. Some synthesis of these documents would be useful.

> **Recommendation:** Incorporate monitoring considerations in the guidance documents submitted to the committee.
>
> https://iaac-aeic.gc.ca/050/documents/p83514/159392E.pdf

Tables 6.3 - 6.8 PDA Suitability Summary Tables

Comment 40: It would be helpful for readers if there was a hyperlink for the ECCC Feedback sections, similar to the DFO Feedback.

> **Recommendation:** ECCC recommends including a hyperlink to the PDA Overlap document provided by ECCC that is housed on the registry. ECCC recommends including the link in each PDA table.
>
> https://iaac-aeic.gc.ca/050/documents/p83514/159390E.pdf

Comment 41: ECCC has re-analyzed the updated PDAs for overlap with aerofauna products previously submitted. Any updates or newly identified overlap is captured in the following PDA summary table recommendations.

Table 6.3. Sydney Bight PDA Suitability Summary Table

Comment 42: Additional information is available for Sydney Bight PDA.

> **Recommendation:**
>
> **Update:** Ring-billed Gull also forage at disproportionately high densities compared to the rest of the NS Study Area.
>
> **New overlap** (for consideration): Tracking data indicates Northern Gannets may migrate through this area in both Fall and Spring; Great Shearwater high use areas overlap with Sydney Bight in the fall.

Table 6.4. Middle Bank PDA Suitability Summary Table

Comment 43: Additional information is available for Middle Bank PDA.

> **Recommendation:**
>
> **Update:** Northern Gannet do not forage at high densities during the summer in Middle Bank. There is high Collision Vulnerability in the Fall, and moderate-high Collision and Displacement vulernability in the spring, fall, and summer.
>
> **New overlap** (for consideration): Northern Gannet tracks may migrate through Middle Bank at moderate levels in both Spring and Fall. There may be overlap with landbird migratory routes from Sable Island, e.g., Savannah/Ipswich Sparrows, that requires additional followup. Opportunity for MOTUS tagging studies.

Table 6.5. French Bank PDA Suitability Summary Table

Comment 44: Additional information is available for the French Bank PDA.

> **Recommendation:**
> **Update:** Arctic Terns also forage at disproportionately high densities compared to the rest of the NS Study Area. Additionally, there is moderate-high Displacement Vulnerability for

the French Bank PDA in the fall.

New overlap (for consideration): Northern Gannets migrate through French Bank in both the Fall and Spring. French Bank overlaps with high use areas of tracked Herring Gulls in spring and summer, and Northern Gannets in fall. There may be overlap with landbird migratory routes from Sable Island, e.g., Savannah/Ipswich Sparrows, that requires additional follow up. Opportunity for MOTUS tagging studies.

Table 6.6. Sable Island Bank PDA Suitability Summary Table

Comment 45: Additional information is available for Sable Island PDA.

Recommendation:
Update: None

New overlap (for consideration): Sable Island Bank overlaps with high use areas from tracked Great Shearwater in the Fall

Table 6.7. Western/Emerald Bank PDA Suitability Summary Table

Comment 46: Additional information is available for the Western/Emerald Bank PDA.

Recommendation:

Update: There is high displacement vulnerability for the Western/Emerald Bank PDA in the Winter. Moderate to Moderate-high collision and displacement vulnerability occurs across all seasons.

New overlap (for consideration): Tracking data indicates Great Shearwaters migrate through Emerald Bank in Fall, and possibly similar trends for Sooty Shearwater. This PDA overlaps with high use areas from tracked Great Shearwater in Fall and Northern Gannet in Winter

Table 6.8. Canso Bank PDA Suitability Summary Table

Comment 47: Additional information is available for Canso Bank PDA.

Recommendation:

Update: There is moderate-high Collision and Displacement Vulnerability in Spring, Summer, and Fall for the Canso Bank PDA.

New overlap (for consideration): There is overlap with high use areas of tracked Northern Gannets in Fall

6.6.7 LaHave Basin

Comment 48: Additional information is available for LaHave Basin PDA.

Recommended text: “There is a high density of Gulls, including Great Black-backed Gull, and Herrring Gull, as well as Northern Gannet in the Summer. There is high density of Common Murres, Dovekies, and Murres in the winter. Herring Gulls forage at disproportionately high densities in the LaHave Basin PDA compared to the rest of the NS Study Area.

There is high Collision and Displacement Vulnerability in Summer, and high Displacement Vulnerability in Winter.

Tracking data indicates Northern Gannet migrates through this PDA at high proportions in Fall and Spring, similarly with Great Shearwater in Fall. This corresponds to overlap with high use areas for Northern Gannet in the Fall and Winter.”

6.6.8 Misaine Bank

Comment 49: Additional information is available for Misaine Bank PDA.

Recommended text: “There is high density of Atlantic Puffin, Black-legged Kittiwake, and Dovekie in the Fall; Black-legged Kittiwake, Common Murre, Gulls, Herring Gull, Murres, Northern Gannet, and Razorbill in the Spring; Black-legged Kittiwake and Murres in the Winter. Northern Gannet forages at disproportionately high densities within the Misaine Bank PDA compared to the rest of the NS Study Area.

There is high Displacement vulnerability across all seasons, and high Collision Vulnerability, particularly in Spring and Summer, with moderate-high to high CV in the Winter.

There is overlap with high use areas of tracked Great Shearwater in Fall and Northern Gannet in Spring.”

7.0 Cumulative Effects

Comment 50: This chapter would benefit from the inclusion of additional technical content including the following:

- Differences between project-level cumulative effects assessments (CEAs) and regional CEAs.
- The role of regional CEAs in offshore wind (OSW) industry development.
- Guidance on Regional CEAs (e.g., limited federal guidance, examples from other jurisdictions, basic steps and considerations, and links to useful resources).
- Importance of regional CEAs in supporting OSW, including mitigation through license area selection.
- Challenges associated with regional CEAs.
- Cumulative effects on valued components.

> **Recommendation:** ECCC recommends revision to this chapter and suggests reviewing the structure and content of the NL Regional Assessment Draft Final Report chapter on Cumulative Effects, as well as ECCC's associated input, which includes extensive edits and suggested text.

Comment 51: This chapter focusses on project-level CEAs and does not synthesize what has been learned about regional-level CEAs. Additionally, the report inaccurately references Ferguson et al., 2024 (Link), which was provided by ECCC in summer 2024. This report outlines important guidance on regional CEAs, but it is not adequately incorporated or correctly cited.

> **Recommendation**: ECCC recommends that the Committee reconsider the content in Ferguson et al., 2024, which provides a detailed and comprehensive framework for conducting species-based regional CEAs. This framework is applicable to various wildlife species, not just aerofauna, and serves as a practical guidance resource. It outlines critical steps for regional CEAs, including setting baselines, scenario development, and the integration of expert knowledge. The first four sections of the report are designed to be accessible and useful for practitioners, managers, and stakeholders, promoting consistent and transparent decision-making. Including or referencing this framework in the chapter would enrich the discussion of regional CEAs and provide a more balanced perspective.

7.1.1 Definitions

Comment 52: ECCC recommends adding a definition or explanation of regional CEAs. This information is essential for providing context and enabling later sections to discuss how regional CEAs can benefit the early phases of OSW planning, including addressing approaches, challenges, and uncertainty. (Link)

> **Recommended text:** "Regional CEAs are studies conducted in areas of existing projects or anticipated development to inform the planning and management of cumulative effects at a broader scale than individual project-level impact assessments. The results of regional CEAs can identify areas where future activities or natural processes may lead to an accumulation of effects that could be problematic for valued components. These assessments can also inform future project impact assessments by placing them in a

regional context. When conducted at the regional scale, CEAs can address many of the limitations of project-level cumulative effects assessments."

7.1.2 Operating Principles

Comment 53: Page 265 states “as indicated in section 1.5, the Committee has undertaken the RA through the lens afforded by specific frameworks: the precautionary principle, Etuaptmumk or Two-Eyed Seeing which incorporates the principle of Netukulimk and highlights the importance of embracing different cultural approaches to environmental decision making, and adaptive management.”

Despite "Etuaptmumk or Two-Eyed Seeing " being an operating principle, and the availability of resources that provide guidance on how to conduct an inclusive regional CEA that aligns with this principle, the chapter does not include any specific examples of how they were guided by this principle in their consideration of CE.

> **Recommendation**: In section 7.1.2 and elsewhere in this chapter, how this operating principle guided the consideration of CE for the valued components in this Regional Assessment could be clarified with examples.

Comment 54: The chapter does not explain how the Etuaptmumk or "Two-Eyed Seeing" principle can be applied to regional and project-level CEAs, despite being a stated operating principle. This is a key gap, particularly in terms of demonstrating its relevance to assessing CE and offering guidance on its implementation. Recognizing that ECCC did not provide this information as part of our initial submission to the committee, we would like to provide it now as an opportunity for you to include best available information.

> **Recommendation:** In section 7.1.2 and elsewhere in this chapter—both under sections describing challenges and recommendations to overcome challenges—ECCC suggests an explanation of how future project-level or regional-level CEAs could be guided by the "Etuaptmumk or Two-Eyed Seeing" operating principle. The principle should be integrated throughout the chapter, not just in a stand-alone section, to demonstrate a commitment to its consideration in the CEA process as is demonstrated below in text that outlines some key challenges for regional CEAs but incorporates the Etuaptmumk or "Two-Eyed Seeing" operating principle.
>
> **Recommended text:** Here is suggested text to include (also provided to the NL RA Committee to support their finalization of the Draft Report):
>
> **“Challenges to Regional Cumulative Effects Analysis**
>
> **Complexity of Cumulative Interactions Across Space, Time, and Knowledge Systems**
>
> One of the primary challenges in conducting a CEA at a regional scale is accounting for the complex interactions between various stressors that accumulate over vast geographic areas and extended timeframes to impact valued ecosystem components. Regional assessments must consider not only the direct impacts of individual projects, like offshore wind energy developments, but also how these impacts interact with other human activities (e.g., shipping, fisheries) and natural processes (e.g., climate change, interannual or

decadal cycles). These combined effects can lead to outcomes that are greater than the sum of their parts, making it difficult to predict and assess long-term ecological, social, and economic consequences.

Additionally, the spatial scale often includes multiple ecosystems, jurisdictions, and diverse ways of knowing, such as Indigenous knowledge and local community insights. Respecting and incorporating Indigenous and local knowledge into the assessment can provide valuable context and historical perspectives, but integrating these systems with Western scientific approaches remains challenging (but see Tulloch et al., 2024).

Data Gaps, Limited Baseline Information, and Knowledge Sharing

A significant hurdle for regional CEAs is the lack of comprehensive, high-quality data across the entire region being assessed. In many cases, baseline information about the condition of ecological and socio-economic systems is incomplete or outdated, making it hard to measure changes over time or identify cumulative impacts accurately. However, federal government initiatives relevant to cumulative effects are underway to address this challenge (e.g., NRCan Offshore Wind Predevelopment Program; Table 8.3.2)

In addition, there may be gaps in knowledge-sharing processes that hinder the inclusion of Indigenous Knowledge and other community-based insights. Ensuring that all available knowledge systems—whether based in western science, Indigenous ways of knowing, or local community insights—are accessible and used meaningfully can be a key challenge in filling these gaps.

Data Collection Challenges, Mitigation Testing, and Knowledge Sharing

Given the comparatively harsh and inaccessible nature of offshore environments, it is both challenging and expensive to collect data and test mitigation strategies. Even in regions with established industry, the effectiveness of mitigation measures from those industries may remain untested, particularly as most studies focus on individual projects rather than adopting a regional approach. This issue has been raised by stakeholders in the EU, where a lack of comprehensive data on impacts and mitigation measures makes it difficult to assess cumulative effects (Caine, 2022; Declerck et al., 2023; Gill and Hein, 2022; Rezaei et al., 2023; Gulka et al., 2024; Regional Synthesis Workgroup of the Environmental Technical Working Group, 2023). Without coordinated efforts in data collection and sharing, identifying trends and making informed decisions becomes more challenging, hindering the ability to accurately assess cumulative impacts at a regional scale.

Time Constraints, Resource Limitations, and Inclusive Engagement

Resource limitations—such as time, funding, technical expertise, and administrative capacity—can significantly undermine efforts to complete a comprehensive CEA. CEAs at the regional scale are resource-intensive and time-consuming endeavors, requiring collaboration between various stakeholders, including government agencies, industry, Indigenous governments, and local communities. The Regional Assessment for Offshore Oil and Gas Exploratory Drilling East of Newfoundland and Labrador —the first and only

regional assessment completed to date— offers a particularly relevant example, as a comprehensive CEA could not be completed within that RA's timeline.

Additionally, meaningful engagement with Indigenous and local communities requires time to build trust, co-develop management objectives, and ensure the shared knowledge is treated with respect and integrated effectively (Adams et al., 2023). Without sufficient time and resources for inclusive and participatory engagement, assessments risk being incomplete or skewed, ultimately undermining the effectiveness of the CEA process and outcome.

The Project Envelope Approach and the Challenge of Assessing Future Scenarios

The Project Envelope Approach, commonly used in offshore wind development, presents a unique challenge for conducting CEAs. This approach allows developers to describe their projects using broad parameters to accommodate rapid technological advancements, including various technology options (e.g., different foundation types such as fixed versus floating or monopile versus gravity-based). While this flexibility is essential for adapting to evolving engineering and design needs, it complicates the CEA process, as each project assessment must consider the potential impacts of a range of design options. Modeling the "worst-case scenario" for each project can be effective at the project level but may result in overly pessimistic predictions when multiple developers are proposing projects within the same region. These overly negative predictions could ultimately hinder sector growth by overestimating cumulative environmental impacts.

A way to address this challenge is by developing and exploring cumulative effects under alternative foreseeable development scenarios. By analyzing multiple potential development trajectories, it becomes possible to better understand how different combinations of technologies and project designs will impact the environment at a regional scale. This scenario-based approach helps balance the need for flexibility in project design with a more accurate and forward-looking assessment of cumulative impacts, offering a clearer pathway for sustainable sector growth. Through scenario planning, CEAs can provide decision-makers with insights into the trade-offs between different development futures, enabling more proactive avoidance of and adaptive management of cumulative effects. This can help to support the sustainability of the industry and ensure that worst-case predictions do not unnecessarily constrain the overall growth of the sector (Caine, 2022)."

References:

Adams, M.S., Tulloch, V.J.D., Hemphill, J., Penn, B., Anderson, L.T., Davis, K., Avery-Gomm, S., Harris, A., Martin, T.G., 2023. Inclusive approaches for cumulative effects assessments. People and Nature 5, 431–445. https://doi.org/10.1002/pan3.10447

Tulloch, V.J.D., Adams, M., Finn, R., Bourbonnais, M., Avery-Gomm, S., Penn, B., Martin, T.G., 2024. Predicting regional cumulative effects of future development on coastal ecosystems to support Indigenous governance. Journal of Applied Ecology 61, 1728–1742. https://doi.org/10.1111/1365-2664.14659

Comment 55: On page 266 it is stated, "attempting to understand and effectively consider the cumulative effects of a new industry is particularly pertinent. As the scale of OSW development increases, so will the associated risk of significant cumulative effects (Guşatu et al., 2021; Willsteed et al., 2018). It is therefore not only an important part of assessing the effects of OSW development, but also a critical factor in planning for OSW. Put simply, it is important to determine what is possible and where responsibility for action resides, a consideration that is addressed below."

> **Recommendation:** The last sentence could be revised to add more detail to improve reader comprehension. Expanding on the key actions mentioned would provide a clearer explanation of what those responsibilities and possibilities entail, such as site selection, risk evaluation, mitigation measures, and monitoring.
>
> **Recommended text:**
>
> "Attempting to understand and effectively consider the cumulative effects of a new industry is particularly pertinent. As the scale of OSW development increases, so will the associated risk of significant cumulative effects (Guşatu et al., 2021; Willsteed et al., 2018). It is therefore not only an important part of assessing the effects of OSW development, but also a critical factor in planning for OSW. Put simply, it is essential to understand what is possible and where responsibility for action resides. This includes:
>
> Site selection: Identifying appropriate locations for OSW farms that minimize potential environmental and social impacts.
>
> Risk evaluation: Assessing the potential cumulative effects from OSW activities in combination with other human and natural pressures.
>
> Mitigation measures: Developing and implementing strategies to reduce or offset any adverse impacts identified in the assessment process.
>
> Environmental monitoring: Continuously monitoring the effects of OSW development to assess actual impacts on ecosystems and wildlife.
>
> Regulatory guidelines: Establishing clear policies and regulations for OSW development to ensure that projects are managed effectively and sustainably.
>
> These actions ensure that all stakeholders, including developers, regulators, and the broader community, understand their roles in minimizing cumulative effects and fostering responsible development."

Comment 56: Page 266 states "attempting to understand and effectively consider the cumulative effects of a new industry is particularly pertinent. As the scale of OSW development increases, so will the associated risk of significant cumulative effects (Guşatu et al., 2021; Willsteed et al., 2018). It is therefore not only an important part of assessing the effects of OSW development, but also a critical factor in planning for OSW."

This small paragraph about the importance of effectively considering CEA of a new industry is important and deserves to be expanded into its own section, rather than being placed in between a description of the three operating principles.

> **Recommendation:** ECCC recommends adding a dedicated section or subsection to explain the value of regional-scale CEAs in supporting the development of a new OSW industry. This section can draw from Ferguson et al., 2024, to strengthen the discussion.
>
> **Recommended text:**
>
> **"Importance of Regional Cumulative Effects Assessments in Offshore Wind Development**
>
> Attempting to understand and effectively consider the cumulative effects of a new industry is particularly pertinent. As the scale of OSW development increases, so will the associated risk of significant cumulative effects (Guşatu et al., 2021; Willsteed et al., 2018). It is therefore not only an important part of assessing the effects of OSW development, but also a critical factor in planning for OSW (Ferguson et al., 2024). Put simply, it is important to determine what is possible and where responsibility for action resides, a consideration that is addressed below. This includes determining suitable locations for OSW farms to minimize environmental and social impacts, evaluating risks associated with different development scenarios, identifying and implementing measures to reduce or offset adverse cumulative effects, conducting ongoing environmental monitoring to assess actual impacts, establishing clear guidelines and policies for OSW development and monitoring, and defining the responsibilities of developers, regulators, and stakeholders.
>
> Without assessing the cumulative effects of offshore wind projects alongside existing human activities and natural processes, there is a risk of overlooking potential adverse outcomes on marine habitats and wildlife. This lack of foresight could result in complications during the development phase, necessitating further assessments and modifications to projects that could have been proactively addressed.
>
> Conversely, implementing a comprehensive CEA at the regional scale can enhance decision-making by providing a clearer understanding of how offshore wind projects interact with existing ecological and socioeconomic conditions, including onshore wind projects. By identifying potential cumulative impacts early on, stakeholders can better inform site selection within the recommended licensing areas, ensuring that developments are strategically planned to minimize cumulative effects on valued components through avoidance. Furthermore, a thorough assessment can promote collaborative approaches among various stakeholders, facilitating informed discussions about resource management and enabling the development of more effective mitigation strategies."

Comment 57: While reiterating that the principles may be useful, the subsection 7.1.2 Operating Principles does not explain how they relate to identifying, understanding, assessing, mitigating, managing, or compensating for cumulative effects on environmental, social, or economic valued components.

Recommendation: ECCC recommends revising the section to focus more on practical applications and concrete examples, and reduce the background context provided elsewhere.

Recommended addition: Consider framing the identification of Submerged Land Licenses (SLLs) as an adaptive process, where area delineation for successive bids is revised based on the best available information on cumulative effects for valued components.

7.1.3 Work Undertaken

Comment 58: On page 267, the last paragraph states, “it is suggested that given the scope of the TOR and the approach adopted, the latter, including accessing several significant regional data bases and modelling exercises (see section 2), identifying PDAs and making a recommendation on the establishment of a coastal buffer to mitigate impacts to VCs, this RA is responsive to the principles of CEA analysis and the Committee’s mandate.”

The current section/chapter does not adequately frame the importance of conducting a regional cumulative effects assessment (CEA) to support the development of a new industry (or the risks of not completing one), especially considering that "the Committee has had neither the time nor the resources to develop a sophisticated approach to the challenge posed by the TOR with respect to cumulative effects." This chapter could be strengthened by addressing these issues more directly.

Recommendation: ECCC recommends adding text to emphasize the importance of conducting a regional CEA and the risks of not completing one.

Recommended text:

“Importance of Regional Cumulative Effects Assessments to support the emerging Offshore Wind Industry

Without assessing the cumulative effects of offshore wind projects alongside existing human activities and natural processes, there is a risk of overlooking potential adverse outcomes on marine habitats and wildlife. This limitation could result in complications during the development phase, necessitating further assessments and modifications to projects that could have been proactively addressed.

Conversely, implementing a comprehensive CEA at the regional scale can enhance decision-making by providing a clearer understanding of how offshore wind projects interact with existing ecological and socioeconomic conditions, including onshore wind projects. By identifying potential cumulative impacts early on, stakeholders can better inform site selection within the recommended licensing areas, ensuring that developments are strategically planned to minimize cumulative effects on valued components through avoidance. Furthermore, a thorough assessment can promote collaborative approaches among various stakeholders, facilitating informed discussions about resource management and enabling the development of more effective mitigation strategies.”

7.2.2 Federal Approaches to Cumulative Effects Assessment

Comment 59: On page 271, the last paragraph states, “several federal government departments have established approaches to cumulative effects assessment to address responsibilities pursuant to specific legislative requirements. The Fisheries Act, for example, sets the parameters as to how DFO approaches cumulative effects assessment and ensures that their work is aligned with specific departmental priorities. Section 34.1(1)(d) of the act states that there is a requirement to consider cumulative effects of a proposed project, in combination with past or ongoing projects, prior to making a decision under the fish and habitat protection provisions of the Act (prior to a Fisheries Act authorization decision).”

The opening sentence creates an expectation of multiple government department initiatives related to project-level CEAs, but only one (DFO) is addressed. The subsequent paragraphs ("DFO, is however," "ECCC have developed," and "Transport Canada") focus on regional-scale approaches to CE assessment, which would be better grouped under a separate heading. Additionally, the omission of federal guidance for project-level CEAs is a notable gap.

> **Recommendation:** Revise the paragraph to focus solely on project-level CEAs and include a reference to the federal guidance document on project-level CEAs to enhance its utility (Link). Separate the regional-scale approaches to CE assessment into a distinct section, ensuring alignment and clarity in content organization. This approach will improve the readability and relevance of the section for its intended purpose.

Comment 60: The CEAs procedural steps outlined in page 271 lack clarity regarding their intended scope—regional CEAs or project-level CEAs. The inclusion of "Identification of residual effects" suggests a focus on project-level CEAs, which seems inconsistent with the regional scope of the Regional Assessment. Furthermore, the list provided is not specific to OSW and is incomplete, reducing its utility—particularly since Section 7.5.2 already covers project-level cumulative assessments.

> **Recommendation:** Rather than presenting an incomplete list, we recommend referring readers to the federal guidance document for project-level CEAs and progressing to the subsequent sections. If removing this section is not preferred, we suggest revising it to include missing foundational steps that are universally applicable to CEAs (species-based, sector-based, or stressor-based), such as:
>
> - Explicitly defining the objectives of the CEA (Stelzenmüller et al., 2018; Willsteed et al., 2018).
> - Defining a set of scenarios with reasonably foreseeable changes in OSW pressures, other anthropogenic pressures, or natural processes, informed by input from diverse stakeholders (e.g., energy and environmental regulators, developers, scientists, Indigenous peoples, and stakeholders; Duinker and Greig, 2007; 2021).
>
> Additionally, ECCC recommends the Committee review prior ECCC input, including the steps outlined in Ferguson et al., 2024 (Section 3.4, Basic Steps for a Species-based CEA). The operating principles proposed by the Committee could also be directly integrated into this list to enhance its comprehensiveness and alignment with broader CEA objectives.

Comment 61: On page 272, the second paragraph states, “ECCC have developed an approach for assessing the cumulative effects of OSW development and other pressures on aerofauna within the RA Study Area. This framework presents a cohesive and flexible tool for assessing cumulative effects from OSW development, other human activities and natural processes that are specific to areofauna VCs. Again, this tool will be of immense relevance to developers both in the design of their turbine layouts and in executing project assessments. However, models are most valuable when the data upon which they rely are reliable and up to date. As discussed in section 4, much of the aerofauna data are based upon little more than seasonal surveys and observations in some limited areas where and when vessels with observers are available. This weakness should become less as modern tracking technology becomes more widely used and well-coordinated with other ocean data (see section 10).”

This paragraph inaccurately represents the approach ECCC developed and inaccurately represents the quality of aerofauna data.

> **Recommendation:** The Committee's efforts to address a complex and multifaceted mandate within a constrained timeline are commendable. However, certain aspects of ECCC’s responses to the Committee's request for science advice may not have been fully incorporated. We encourage careful review of our comments to ensure alignment and to strengthen the outcomes of the Regional Assessment.
>
> **Recommended text:** “ECCC has developed a cohesive and flexible framework for assessing the CE from OSW activities, other human activities, and natural processes on wildlife. This framework synthesizes the best available knowledge on approaches to assessing the cumulative impacts of OSW energy on aerofauna from the USA and Europe. The first four sections of the framework serve as a practical guidance resource, laying out the fundamental steps of a regional CEA in a clear and accessible way. These steps address many critical considerations, such as setting baselines, scenario development, uncertainty and the integration of expert knowledge.
>
> The framework is designed primarily to support decision-making during the initial OSW planning phases (e.g., informing selection of licence areas). However, the results of the regional CEAs conducted using this framework at the scale of PDAs can support developers both in the design of their turbine layouts and in executing project assessments. The framework uses a species-based approach, applicable to various aerofauna and other wildlife, and adapts to available information on ecology, socioeconomics, and pressures. This flexibility ensures that the framework accommodates a wide variety of data types and levels of detail.
>
> The analytical strategy employs a CE metric to indicate the presence or magnitude of effects from all pressures on receptors. Spatially explicit optimization methods are used to identify OSW site configurations that minimize a CE metric. The framework also accommodates alternative pressure scenarios that include foreseeable future human activities and natural processes, enabling exploration of sensitivity to uncertain parameters.”

7.4 Cumulative Environmental Effects

Comment 62: On page 281, the first paragraph states, “PDAs have been identified to minimize conflict with other marine users and valued ecological areas, significant cumulative environmental effects are not predicted.”

There are two major issues with this sentence. First, "significant cumulative environmental effects are not predicted" is an unsubstantiated statement given "the Committee has had neither the time nor the resources to develop a sophisticated approach to the challenge posed by the TOR with respect to cumulative effects (page 267)" . The claim that significance is not expected is premature and presupposes the outcomes of any regional or project level assessment. Second, the identification of PDAs within the RA Study Area was directly informed by several studies conducted in recent years (detailed in section 2.2). Among these studies, only one incorporated aerofauna data (Nagel et al., 2024) meaning the influence of aerofauna considerations on PDA locations was limited. In addition, the study that included aerofauna data highlighted several limitations. ECCC’s prior comments about the studies referenced, and the limitations of those studies (comment 4) could be integrated here to temper this statement.

> **Recommendation:** ECCC recommends revising the text to remove the unsupported statement.
>
> **Recommended text:** “PDAs have been identified to minimize conflict with other marine users and most valued ecological areas. In doing so, the Committee has aimed to avoid significant cumulative environmental effects from OSW on most valued components (not including Aerofauna, see Section 2.3 Identified Data Gaps and Limitations). However, without conducting a regional CEA assessment, there will be challenges and limitations to predict whether the cumulative effects of future OSW developments on valued components are likely to be significant.”

Comment 63: On page 281, the first paragraph states, “the RA Study Area is large, i.e., 300,000 km^2, but the identified PDAs cover an area of 31,200 km^2.”

This sentence is structured to infer that the area of the PDAs is small, but 10% of an offshore area is considerable.

> **Recommendation:** The revised text should reflect both proportional and absolute context for better clarity.
>
> **Recommended text:** "The RA Study Area encompasses a vast offshore region of approximately 300,000 km^2. The identified Priority Development Areas (PDAs) span a significant 31,200 km^2, representing 10% of the RA Study Area."

Comment 64: The subheader for this section (page 281), as “Cumulative Environmental Effects” does not match the content, as the focus appears on the effects of OSW developments on fisheries and describes socioeconomic consequences.

> **Recommendation:** To enhance clarity and alignment with the content:
>
> (1) Revise the header to reflect the primary focus of the section on the effects of OSW development on fisheries and socioeconomic consequences.

(2) Add subheadings for each valued component listed in Section 5.6 to improve organization and ensure that all components are adequately addressed. For example:

- Fisheries and Socioeconomic Consequences
- Aerofauna
- Marine Mammals
- Benthic Habitat

Comment 65: The cumulative effects of a mature OSW industry within the RA Study Area on Aerofauna within this chapter is incomplete and inadequately detailed.

Recommendation: Suggest adding a section with "Overview of Cumulative Effects for Valued Components", and subsections for each valued component, including Aerofauna. For Aerofauna, highlight the following recommended text.

Recommended text:

"Overview of Cumulative Effects for Valued Components

This section presents an overview of the cumulative effects of offshore wind energy (OSW) development on various valued components (VCs). For each VC, the report highlights the key stressors and challenges associated with OSW development, as well as the interactions between these stressors and other environmental pressures.

Cumulative Effects on Aerofauna

Aerofauna, encompassing migratory birds, bats, and Species at Risk (e.g., Monarch butterflies), are subjected to a broad range of stressors that can significantly impact their populations. These stressors include historical factors such as persecution and pollution (e.g., DDT), as well as contemporary threats such as oil spills, mercury contamination, plastics, bycatch, disease (e.g., white-nose syndrome in bats, Highly Pathogenic Avian Influenza), habitat destruction, and climate change. Given this suite of stressors, it is crucial to consider the cumulative effects of OSW development alongside these existing pressures to understand their full impact on Aerofauna.

Direct impacts of OSW development on Aerofauna are significant. These impacts include:

- Collision mortality: Birds and bats may collide with offshore wind turbines, leading to direct fatalities.
- Displacement: OSW projects may displace Aerofauna from preferred foraging areas, reducing access to critical resources.
- Barriers to flight pathways: Offshore wind farms can obstruct migratory flight paths, potentially disrupting migratory routes and leading to greater energetic costs or higher mortality.
- Coastal habitat loss: The construction of substations and other infrastructure related to OSW development may result in the loss of important coastal habitats.

Indirect impacts include:

- Disturbance from boat traffic and human activity: Increased industrial activity associated with OSW development can disturb Aerofauna, particularly during the construction phase and ongoing maintenance activities.
- Light pollution: The introduction of artificial lighting may alter natural behaviors, such as foraging and migration, particularly for nocturnal species.
- Changes to prey availability and distribution: OSW developments may alter marine ecosystems, affecting the availability and distribution of prey species for birds and bats.

The impacts of OSW development across various stages (e.g., construction, electricity generation, maintenance, accidents, and decommissioning) are not fully understood, especially regarding how they interact with other stressors such as climate change, pollution, and habitat destruction. Cumulative effects from OSW and other anthropogenic pressures (e.g., fisheries, shipping, oil and gas activities) or natural factors (e.g., weather patterns) may be additive, synergistic, or compensatory. These combined effects could result in significant, long-term impacts for Aerofauna species, especially during critical periods such as migration or when species are using the marine environment.

Despite the potential for significant cumulative effects, evidence of the effectiveness of mitigation measures for OSW impacts on Aerofauna remains limited. As noted in Gulka et al., 2024, there has been insufficient field-testing to assess the effectiveness of most recommended mitigation strategies. Consequently, the best available option for reducing cumulative effects is avoiding high-risk areas for Aerofauna through careful siting of OSW developments.

The Committee acknowledges that the current siting of Priority Development Areas (PDAs) may not adequately address the cumulative effects on Aerofauna. Two primary challenges hinder this determination:

- Limited incorporation of Aerofauna data: The identification of PDAs was informed by several studies conducted in recent years (detailed in Section 2.2). However, only one of these studies integrated significant Aerofauna data (Nagel et al., 2024), meaning that Aerofauna considerations had a limited influence on the siting of PDAs.
- Data gaps: The study that included Aerofauna data highlighted several important limitations:
- The study did not consider all marine or Aerofauna species present within the study area, leaving gaps in understanding of the full scope of potential impacts.
- Migration corridors and flight paths were not included, limiting the ability to assess potential disruption to migratory species and the efficacy of siting decisions.
- Areas used by Species at Risk (SAR) such as the Leach's Storm Petrel were not incorporated in the study. These species are particularly vulnerable to impacts from OSW development, including collision and displacement.
- Collision and displacement vulnerability data for seabird species were unavailable at the time of the study, although such data is now accessible and should be incorporated in future assessments."

Reference:

ECCC Pathway of Effects (https://iaac-aeic.gc.ca/050/documents/p83514/159032E.pdf) and Context (https://iaac-aeic.gc.ca/050/documents/p83514/159033E.pdf); Gulka et al., 2024 (http://biorxiv.org/lookup/doi/10.1101/2024.08.20.608845); Williams et al, 2024 (https://www.frontiersin.org/articles/10.3389/fmars.2024.1274052); Nagel et al., 2024 (https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/41252408.pdf)

Comment 66: On page 281, the second paragraph states, "that there will be physical, ecological and socio-economic consequences from the development of a single turbine, or of numerous turbines in a wind farm, is not in dispute. If such development occurs in accordance with all regulatory requirements and best practices, the impacts are likely to be mitigable and minimal."

Given that the Committee's approach to identifying PDAs relies on studies that do not incorporate significant aerofauna data (or migration connectivity data), and that mitigation measures have not been proven effective, it is unsubstantiated to claim that cumulative "impacts are likely to be mitigable and minimal."

Please note that the conclusion regarding the lack of field-testing for the effectiveness of mitigation measures—and the lack of effectiveness for most measures where testing has occurred—was reported in Gulka et al., 2024. This report resulted from an extensive review of the scientific and gray literature conducted in response to the Committee's request for science advice. The report concludes that "Avoidance of cumulative effects through siting developments away from high-risk areas for aerofauna was found to be the most effective approach." This review was shared with the Committee and is now published online as a preprint while the manuscript undergoes peer review.

> **Recommendation:** ECCC recommends that the committee revise the Cumulative Effects section to remove any statements suggesting that project-level assessments and mitigation measures alone are adequate to address cumulative effects. In light of the evidence presented in Gulka et al., 2024, it is critical to acknowledge that mitigation measures have not been proven effective through field-testing. Additionally, the Committee should emphasize that the most effective approach to mitigating cumulative effects is avoiding high-risk areas for aerofauna, especially in the context of offshore wind energy development.
>
> Furthermore, the limitations of the constraints analysis used to define the PDAs must be clearly acknowledged in the report. The Committee should avoid understating these limitations and ensure that any uncertainties regarding aerofauna data and migration connectivity are transparently addressed in all relevant sections (e.g., 2.2.4, 2.3, 5, 7, 9.1.4, 10.1). Acknowledging these limitations will provide a more accurate and robust foundation for future decision-making.

Comment 67: On page 281, the second paragraph contains a small but important error. The presence of two or more OSW projects may have cumulative impacts on valued components even if they are not within a single PDA.

> **Recommendation:** ECCC recommends the following revision.
>
> "The scale of a single project, or the presence of two or more OSW projects ~~in a single PDA~~ might trigger more concern for a cumulative impact and the need for more rigorous

consideration of the physical, ecological and socio-economic cumulative consequences." (page 281)

Comment 68: Page 281 states, "spatially, for example, such circumstances could include, in addition to the greater displacement of commercial fishing activities, greater:

- sensory disturbance to fish, marine mammals, sea turtles, birds and bats;
- the displacement, disturbance, or loss of habitat for marine mammals and sea turtles;
- **the displacement, disturbance or loss of foraging area for birds and bats;**
- cumulative disturbance to sediments/sea states; and
- cumulative disturbance to benthic regimes."

The description of the potential cumulative impacts from multiple OSW developments on aerofauna (birds, bats, and Species at Risk) is inaccurate and incomplete.

Recommendation: As mentioned elsewhere, this chapter could be significantly improved by adding subsections for each Valued Component, including Aerofauna. If that suggestion is not accepted, at minimum, revise the bullet on birds and bats to address the gaps. This would provide a more accurate and comprehensive overview of potential cumulative impacts on aerofauna.

Recommended text:

- **"Both direct impacts, such as collision mortality, and indirect impacts, such as displacement from, or loss of, preferred foraging habitats, migratory pathways, and disturbance."**

7.5.1 Tiered and Shared Responsibilities

Comment 69: Page 282, the second paragraph states, "given the geographic and temporal scale of such changes, there must be reliance on the predictive modelling and research efforts of international agencies such as NOAA and the IPCC to inform consequences for the RA Study Area and the implications for OSW development. NRCan, DFO, ECCC, TC and other federal and provincial departments will continue to frame and execute research and modelling to meet their respective mandates and to address the federal and provincial objectives with respect to attaining net zero. This work must become better coordinated and must more fully engage with academia and the users of the waters in the RA Study Area including fishers and Indigenous interests."

The focus of paragraphs within this section are unclear and include both a need for predictive modelling to assess and manage the Cumulative Effects of Climate Change on OSW Development, and the need for predictive modelling to assess Cumulative Effects of OSW on Valued Components.

Recommendation: ECCC recommends ensuring that each paragraph (or subsection) makes a complete and distinct point to avoid confusion.

Comment 70: On page 282, the last paragraph states, "preparing an effective CEA framework ahead of PDA development will help to ensure that all stakeholders including Indigenous peoples,

fishers and local municipalities know what the consequences of OSW development may be and are informed as to how those consequences will be addressed."

To support this goal, it would be helpful if the Committee revised this Chapter to summarize the available guidance, or at least pointed readers to the guidance that is available. This could go in this section, or in 7.2.2 Approaches to CEA.

ECCC did prepare and provide the Committee with a report that was a synthesis of best practices, informed by a comprehensive review of CEA approaches in regions with advanced offshore wind industries (ECCC, 2024b; Ferguson et al., 2024). The report distills the complex process of conducting a CEA into a coherent, detailed, and comprehensive framework. It not only synthesizes the fundamental steps but also provides a practical roadmap that can be understood by practitioners, managers, and stakeholders, making it accessible and applicable across diverse contexts and regions.

> **Recommended text:**
>
> **"Guidance on regional Cumulative Effects Assessments**
>
> Although there is currently no formal guidance from the IAAC on assessing cumulative effects under Regional Assessments, there are several relevant documents that can provide guidance and examples to support the assessment of cumulative effects at a regional scale (Curren et al. 2022, Griffiths et al. 2020, Judd et al. 2015, Murray et al. 2014, 2020). Although the diversity of approaches may seem overwhelming, they reflect the diversity of management objectives that may underpin any given CEA. For example, a sector-based CEA will address different management objectives than a species-based CEA (Murray et al., 2020). Where a species-based approach is desirable, Ferguson et al., (2024) have distilled the complex process of conducting a CEA into a coherent, detailed, and comprehensive framework that accommodates different types of information about species and pressures. Supported by a comprehensive review of CEA approaches in regions with advanced offshore wind industries, this document synthesizes the fundamental steps for implementing a CEA, providing a practical roadmap. Two-Eyed Seeing (Etuaptmumk) principles can be supported by adopting inclusive, collaborative and accessible approaches to regional CEAs (e.g., Adams et al., 2023)."
>
> References:
>
> Ferguson et al., 2024 (https://www.biorxiv.org/content/10.1101/2024.08.20.608171v).
>
> For other references, see NL RA Final Draft Report (https://iaac-aeic.gc.ca/050/documents/p84343/159206E.pdf).

Comment 71: On page 282, the last paragraph states, "the Committee has, based on the work undertaken and within the limitations of the available data, identified PDAs that appear to avoid many potential marine conflicts."

> **Recommendation:** The PDAs avoid many conflicts but given the limitations we suggested to be added to section 2.3 Identified Data Gaps and Limitations, we suggest clarification be provided to cite the exceptions.

Recommended edits: "The Committee has, based on the work undertaken and within the limitations of the available data, identified PDAs that appear to avoid many potential marine conflicts **for most valued components (not including Aerofauna)".**

Comment 72: Page 282 states “preparing an effective CEA framework ahead of PDA development will help to ensure that all stakeholders including Indigenous peoples, fishers and local municipalities know what the consequences of OSW development may be and are informed as to how those consequences will be addressed. The preparation of this RA is one of many required steps. The Committee has, based on the work undertaken and within the limitations of the available data, identified PDAs that appear to avoid many potential marine conflicts. Project proponents are required by the IAA to include a discussion in their environmental assessment a section that addresses cumulative effects.”

The text may create an expectation that the Committee may recommend an additional intermediate step to support the OSW industry: a regional CEA. However, the paragraph instead describes a need to develop an effective CEA framework, points to the RA as a first step, and then jumps to project-level CEAs.

ECCC previously provided relevant technical advice, including Ferguson et al. (2024), which distills the CEA process into a clear and comprehensive framework, with the first four chapters being particularly relevant.

Recommendation: ECCC recommends including additional text to clarify the potential for intermediate steps, such as a regional CEA for valued components, as outlined in the NL RA Draft Final Report.

7.5 Going Forward

Comment 73: This section is currently focused on project-level CEAs and does not propose how the unmet aspects of the TOR (regarding cumulative effects) may be addressed. The statement that "the Committee has had neither the time nor the resources to develop a sophisticated approach to the challenge posed by the TOR with respect to cumulative effects" (page 267) highlights a gap. This chapter could emphasize the importance of conducting a regional CEA or outline the risks of not completing one. Linking back to other sections in the chapter that provide guidance (or reference to guidance) could also strengthen this section.

Recommendation: ECCC recommends adding the below recommended text to highlight the importance of a regional CEA and the associated risks of omission. Please consider the following suggested text.

Recommended text:

“Importance of Regional Cumulative Effects Assessments to support the emerging Offshore Wind Industry

Without assessing the cumulative effects of offshore wind projects alongside existing human activities and natural processes, there is a risk of overlooking potential adverse outcomes on marine habitats and wildlife. This lack of foresight could result in

complications during the development phase, necessitating further assessments and modifications to projects that could have been proactively addressed.

Conversely, implementing a comprehensive CEA at the regional scale can enhance decision-making by providing a clearer understanding of how offshore wind projects interact with existing ecological and socioeconomic conditions, including onshore wind projects. By identifying potential cumulative impacts early on, stakeholders can better inform site selection within the recommended licensing areas, ensuring that developments are strategically planned to minimize cumulative effects on valued components through avoidance. Furthermore, a thorough assessment can promote collaborative approaches among various stakeholders, facilitating informed discussions about resource management and enabling the development of more effective mitigation strategies."

7.5.2 Project Related Cumulative Assessment

Comment 74: Section 7.5.2 (page 283) provides a summary of primary responsibilities of an OSW developer in project related CEAs. Providing a comprehensive resource to guide developers in conducting project-level CEAs is beyond the terms of reference, and this section could be removed. If retained, it would be helpful for this section to prominently mention the availability of federal guidance on project-level CEAs (Link), and to ensure that all sections address all aspects that are included in that guidance (as well as those other the Committee feels important).

Recommendation: Please consider either:

(1) Removing the Section: If providing such guidance exceeds the scope of the Committee's mandate.

(2) Revising the Section: If retained, prominently mention the availability of federal guidance on project-level CEAs. Ensure the section addresses all aspects included in the federal guidance, along with any additional elements the Committee considers important.

10.1 Theme 1: Existing Knowledge, Gaps and Necessary Research

Comment 75: On Page 317, the draft report recommends to "develop a Scotian Shelf Collaborative Research Initiative (SSCRI)".

Recommendation: We have some suggestions the Committee can consider.

- More than 5 years may be required to establish the SSCRI, support research, and have that research inform the regulatory approval process to guide and support OSW development.
- Any regional CEA work that considers valued components that move across provincial boundaries (fish, mammals, turtles, aerofauna) may want to consider beyond the Scotian Shelf.

10.5 Theme 5: Cumulative Effects

Comment 76: On page 339, recommendation T5-2 states the following:

"T5-2 Prepare guidelines and data sources for developers

A project proponent is required pursuant to the Impact Assessment Act (IAA) to undertake a CEA. It is imperative that guidelines and direction to the proponent outline the proponent's responsibilities in regard to the effects of the specific project. An integral part of the requisite guidance will be to provide information on the spectrum of support that can contribute to the project CEA from other agencies such as DFO, ECCC and TC. To reemphasize, the Committee is of the opinion that cumulative effects assessment should be perceived as a tiered and shared responsibility."

The recommendation appropriately highlights the need for clear guidelines and access to data sources to support developers in meeting their CEA obligations. This focus ensures project-level CEAs can be completed with adequate support. However, the recommendation does not address how data generated by developers will contribute to broader regional planning efforts or adaptive cumulative effects management. Additionally, it lacks specificity on how guidelines will address the integration of project-level CEAs into the larger context of regional and tiered assessments.

The recommendation could be strengthened by including expectations for developer-generated data to be shared and leveraged for adaptive offshore wind (OSW) planning and regional cumulative effects (CE) management. This could involve requiring developers to submit standardized data to a central repository that supports regional monitoring and planning efforts. Additionally, the guidelines should detail how developer data will inform iterative decision-making processes, ensuring alignment with long-term sustainability goals.

The Open Science and Data Platform (OSDP) is an existing tool that could be useful. In particular, it would be helpful if proponent data sources could be shared on the OSDP.