Environment and Climate Change Canada | Environnement et Changement climatique Canada

Framework for Assessing the Cumulative Effects of Offshore Wind Energy Development and Other Pressures on Aerofauna in Atlantic Canada

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Nova Scotia Offshore Wind R&D Forum
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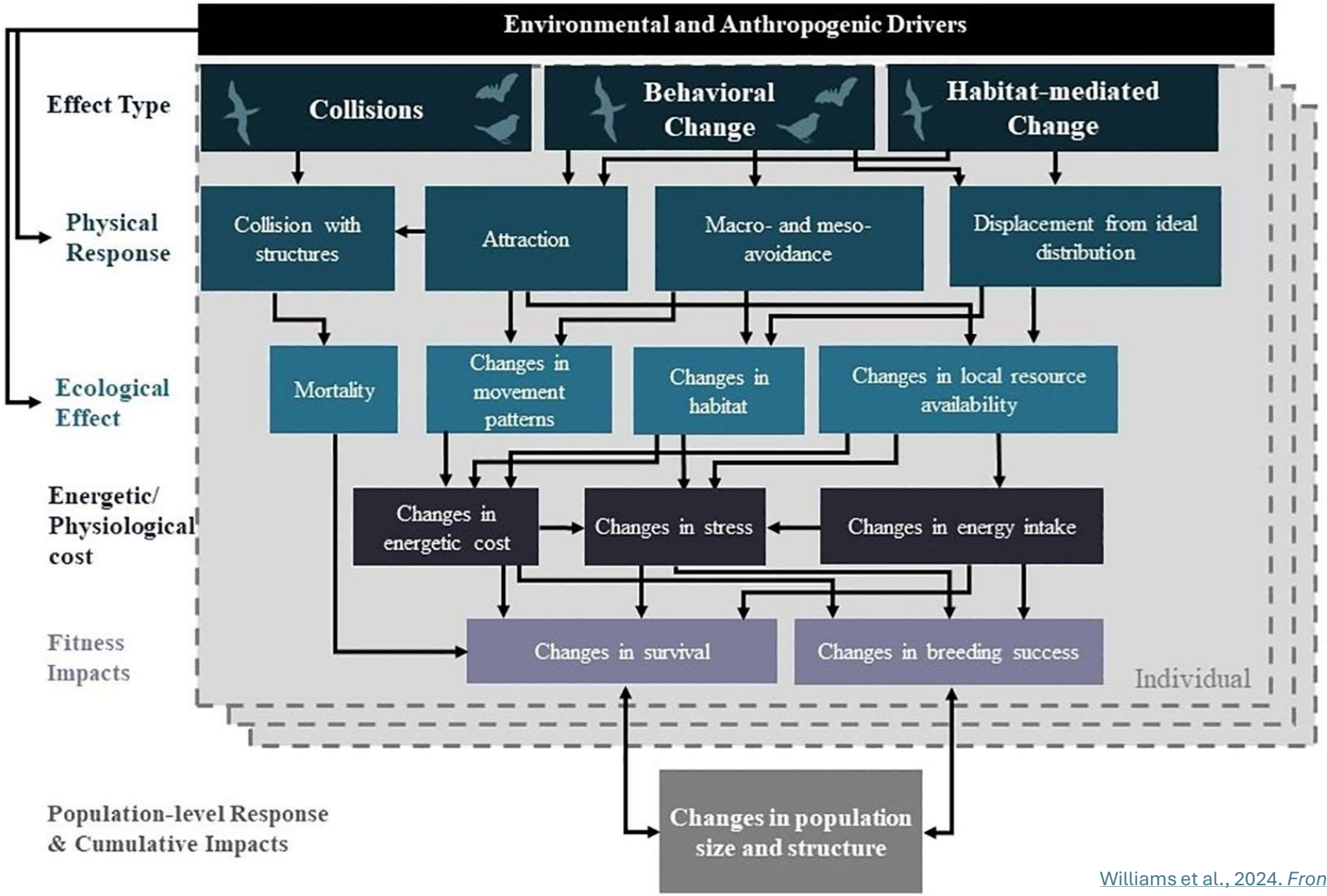
Impacts of Offshore Wind Energy Developments

Direct Impacts:
1. Bird collision with offshore turbines
2. Displacement from preferred foraging areas
3. Barrier to important flight pathway

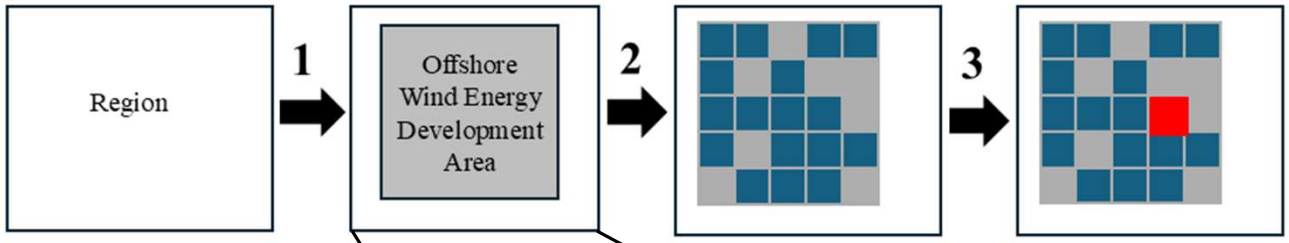
Habitat loss and modification of seabed:
4a. Construction of turbines
4b. Laying and burying of cabling and rock armoring
4c. Coastal habitat loss with construction of substation

Disturbance from:
5. Increased boat traffic/human activity
6. Light pollution

Modified from RSPB, 2022. *Powering Healthy Seas.*

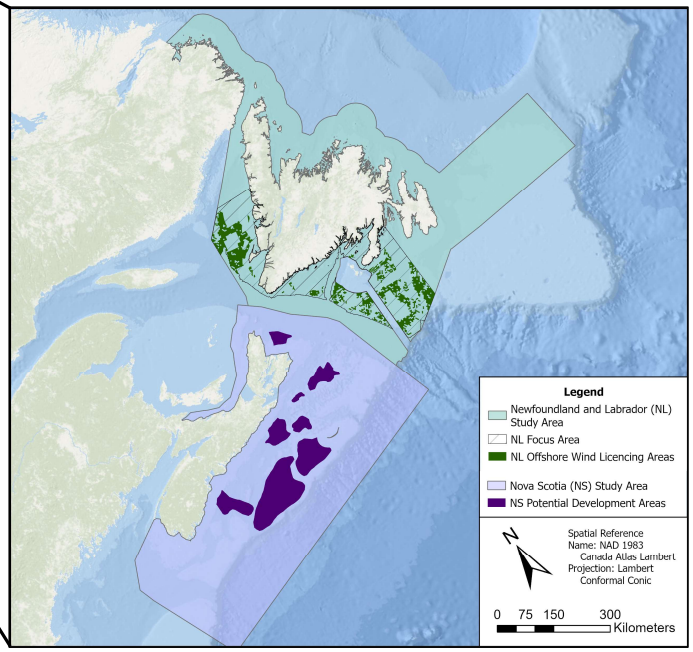


Williams et al., 2024. *Front. Mar. Sci.* 11, 1274052.



Phases of Offshore Wind Energy Development

1) Regional Assessment and Offshore Wind Energy Development Area delineation
2) Site Selection
3) Site Evaluation



Ferguson *et al.*, 2024. *bioRxiv* 10.1101/2024.08.20.608171

CUMULATIVE EFFECTS
Assessment and Environmental Management
Eastern Canada

Cumulative Effects in Regional Assessments

Brent Parker
Director General Review Panels and Regional and Strategic Assessment, Impact Assessment Agency
Government of Canada

CI ACI C5

Conclusion

RAs offer important benefits for assessing and managing cumulative effects

- Identify mitigation that can reduce contribution of future projects to CEs in the region;
- Recommend other effects-management approaches for managing at a regional scale;
- Highlight locations where current /potential accumulation of activities/effects may be of concerns for CEs.
- Allows future projects and their effects to be placed in a regional context.

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Offshore Wind Regional Assessment NL and NS: Cumulative Effects Considerations

Provide information, knowledge, and analysis related to environmental, health, social, and economic conditions and potential cumulative effects generated.	Provide an understanding of the regional context to evaluate the potential cumulative effects of future development activities.
Consider the relationship between wind development and other existing /future physical activities, including examining the potential for resulting cumulative effects.	Identify and recommend mitigation and follow-up measures for addressing potential project-specific and cumulative effects; inform planning and licensing processes.

CI ACI C5

https://www.iaac-aeic.gc.ca/050/documents/p84343/157137E.pdf

Goal: Develop and demonstrate a flexible approach for assessing the cumulative effects of future OWEDs and other pressures on aerofauna

2023-2024

Literature review of regional approaches to CEAs

2024-2025

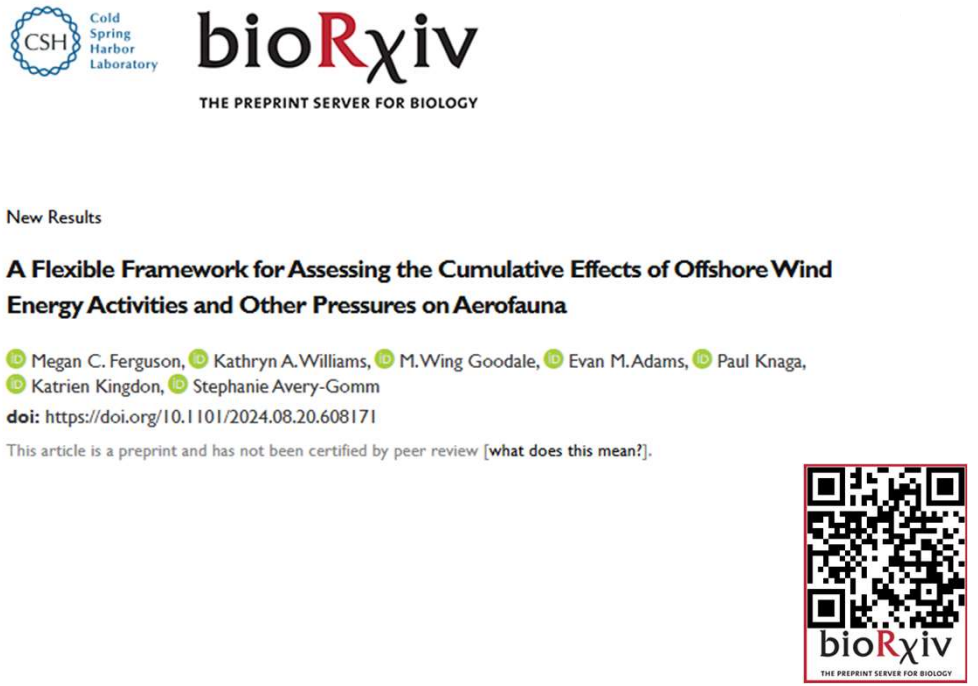
Develop flexible framework for regional CEAs*

2024-2027

Case study demonstrating approach*

A Flexible Framework for Assessing the Cumulative Effects of Offshore Wind Energy Activities and Other Pressures on Aerofauna

- **Step-by-step guidance** for practitioners and stakeholders.
- **Species-based approach** adaptable to diverse wildlife, beyond aerofauna.
- **Regional-scale** cumulative effects assessment for offshore wind and other activities.
- Flexible data integration to **accommodate varied types of species and pressure** information
- Structurally similar **cumulative effects metrics** expand the range of species and pressures that can be explicitly evaluated in each assessment
- Can be used to **identify areas where OWED developments will minimize cumulative effects** on receptor species



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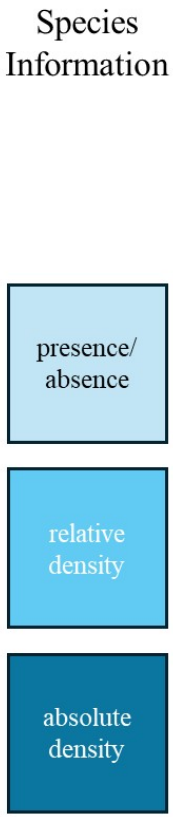

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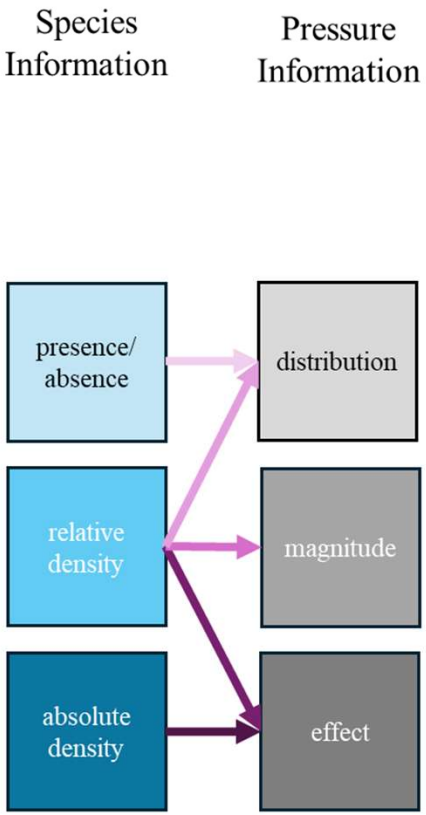

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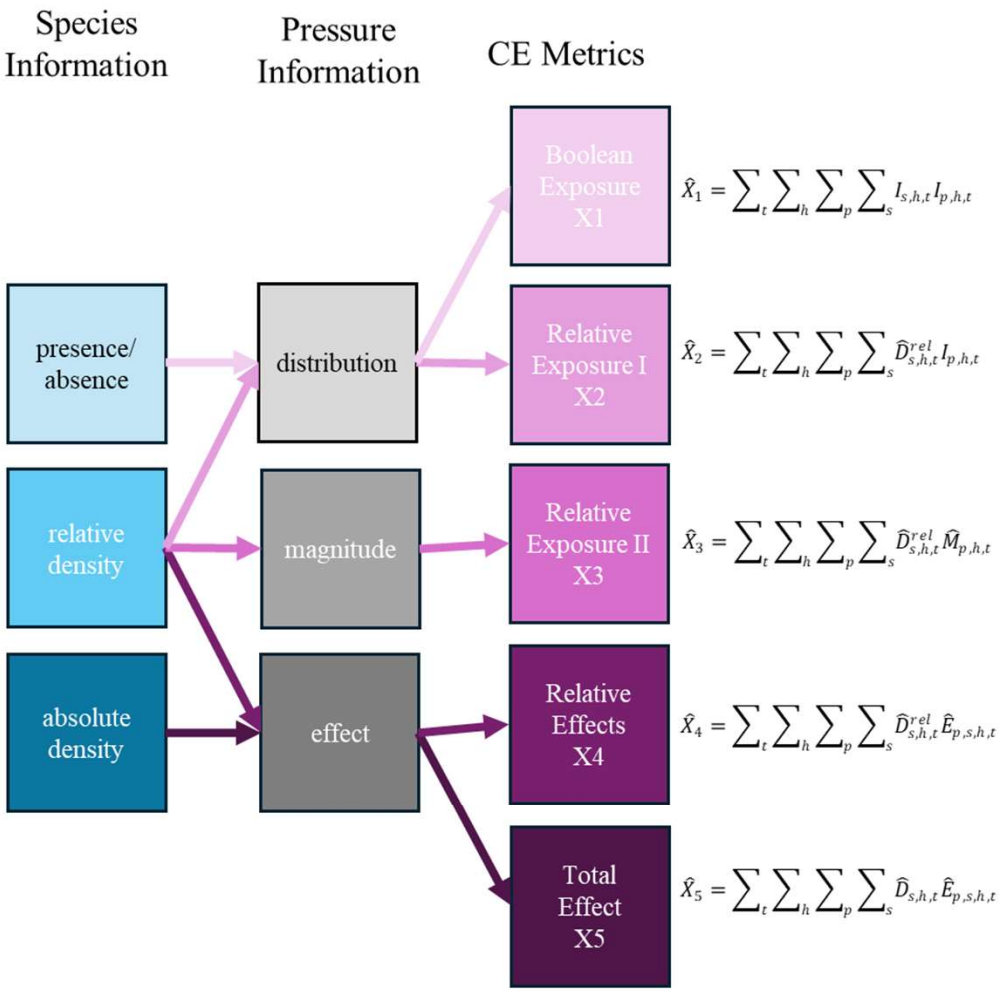

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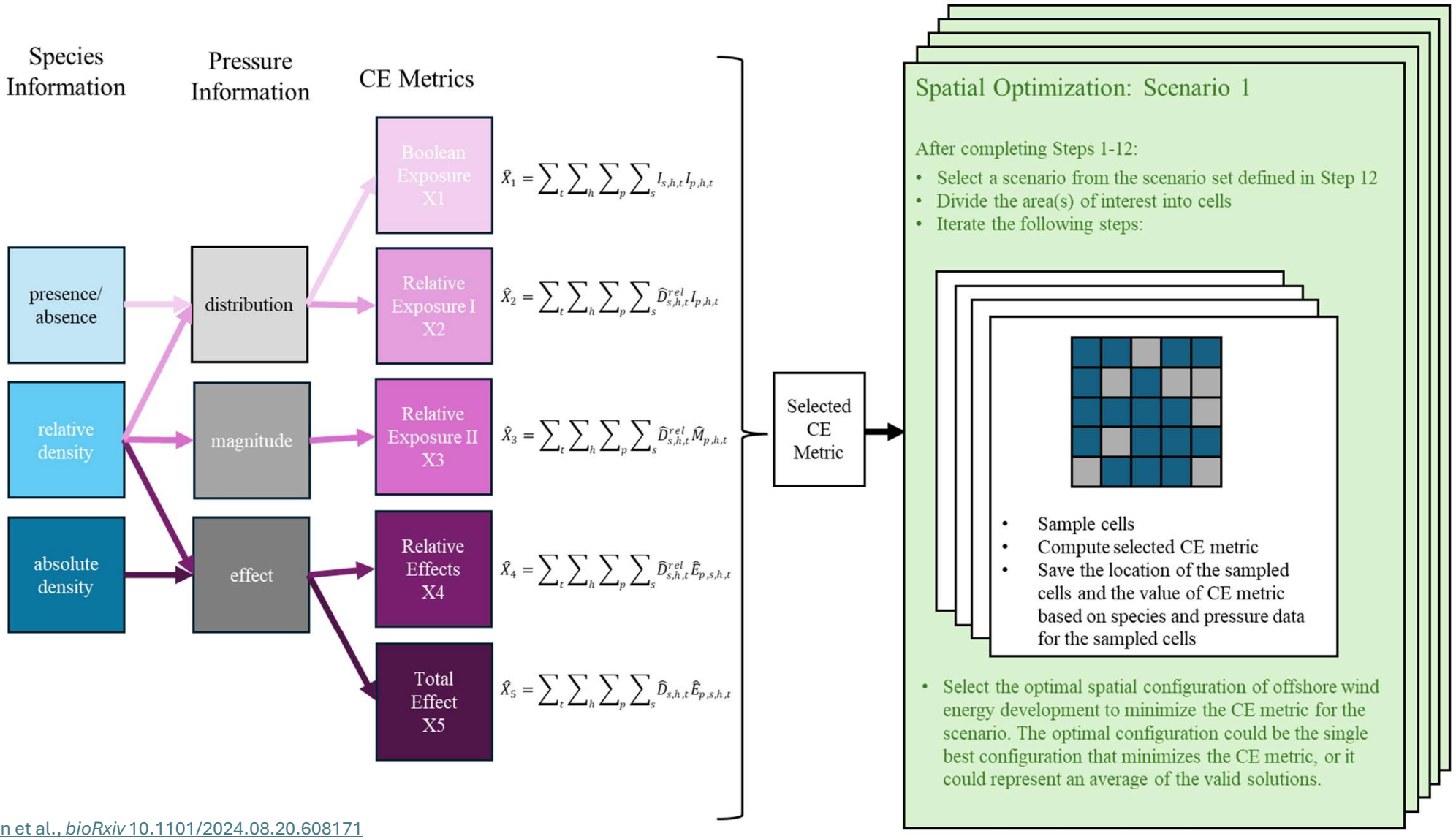

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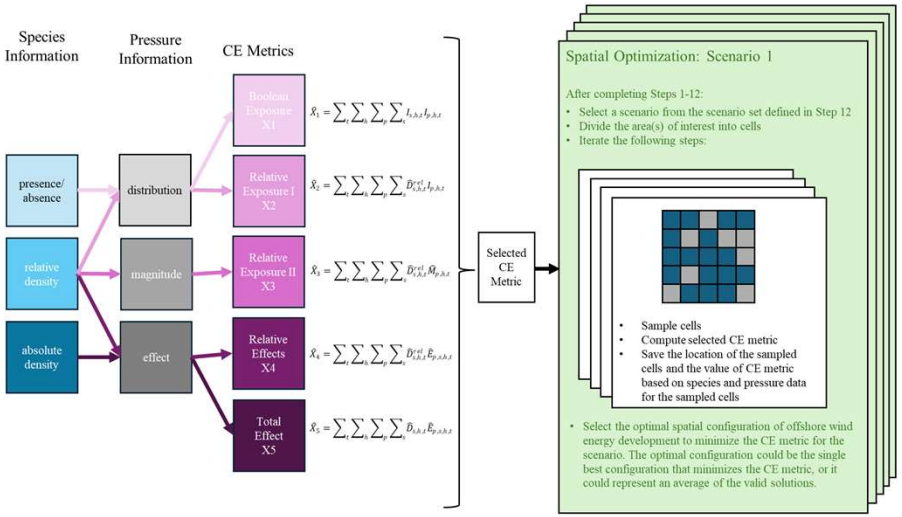

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Case Studies

Assess the CE of future OWED and other pressures on receptor(s)to identify where OWEDs could be placed to minimize CE to receptor(s) to support site selection and cumulative effects management.

Potential Scope:

- **Receptors**: Northern Gannet, TBD.
- **Spatial Scope**: OWED scenarios restricted to OWED Areas. Scope for non-OWED pressures TBD.
- **Pressure Scope**: Electricity generation during operational phase. Non-OWED TBD (e.g., bycatch, pollution, disease)
- **Temporal Scope**: ~40 years
- **Scenarios**: Baseline scenario + TBD. Likely a range of buildout goals (1 GW, 5GW, 10GW), turbine technologies (10 MW, 15 MW and 20 MW fixed foundation reference turbines) and turbine spacing (1km, 1.85km).

Questions?

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