

Hazards Paper general comments

RC1: '[Comment on wes-2024-157](#)', Anonymous Referee #1, 31 Dec 2024

Comments and suggested edits can be found in the attached pdf file. General comments and suggestions hereafter:

1) The paper refers to a GIS project where all the info discussed are collected and georeferenced, however the paper does not include any mapped output. It is suggested to include and refer throughout maps of the main layers discussed (e.g. outcropping geological formations, UXO, shipwrecks, etc.). Mapped information would greatly enhance the quality of the paper, which in its current form is overly-notional and lacks specificity.

[Author comment- Great suggestions, fixed within paper.](#)

2) Some concepts and information are repeated several times within the paper. In particular Sections 6 seem to repeat many of the information reported in Sections 4 and 5. Consider revising the structure of the paper.

[Author comment- reduced repetitiveness, thank you.](#)

3) There seem to be some confusion between the concepts of 'paleo' channel (relic feature) and 'active' channel. Please revise

[Author comment- Descriptions of the two changed.](#)

4) There seem to be some confusion between the concepts of seabed variability (variation of seabed level over time, irrespective of the presence of the foundations) and scouring (localised erosion due to the interaction between the foundation and the local hydrodynamic regime). Please revise

[Author comment- We believe the two would be intertwined?](#)

Citation: <https://doi.org/10.5194/wes-2024-157-RC1>

RC2: '[Comment on wes-2024-157](#)', Anonymous Referee #2, 12 May 2025

The language of the paper is good but the contents largely replicate what would be done in a standard desk study and therefore although it would be of interest to those unfamiliar with that process and geohazard assessment in general it is challenging to see how this presents a unique perspective or insights. I do have concerns about how the overview and description of geotechnical design is presented in this paper and would strongly suggest that sections that focus on this aspect are rewritten. My comments below largely focus on these areas.

I have concerns about Section 5.1 and suggest that during revisions this section is completely rewritten or removed as it does not present a good overview of the geotechnical conditions that can influence foundation design (and in places is incorrect e.g. a confusing description of plasticity index is presented) - there are some great reference books available - offshore geotechnical engineering by Susan Gouvenec and Mark Randolph would be a good place to start.

Author comment-5.1 rewritten with reviewer 1's feedback.

There is also mention of seismic profiles in this section and whilst I do agree that seismic profiles are a great tool for ground modelling and targeting geotechnical exploration points and there are limitations in distinguishing between some sediment types which are critical to geotechnical design meaning that they are not necessarily a cost saving tool as stated.

Author comment-elaborated on how it is helpful in distinguishing such and currently working on that exact issue in dissertation.

It's also worth considering that there are currently requirements on the minimum amount of geotechnical information that should be gathered on US projects to meet BOEM/BSEE requirements.

Author comment- Thank you for your comment. I reviewed BOEM/BSEE geotechnical data requirements during the development of this study. While current guidelines establish minimum standards for site characterization, earlier projects often operated under less rigorous or evolving frameworks. Additionally, a key aim of this work is to identify areas of subsurface variability that may warrant more detailed investigation *before* a developer becomes involved. Since most developer-led site investigations remain proprietary and are not publicly accessible, this research helps establish a baseline geologic understanding in advance of formal leasing and private investment.

Later in this section there is a statement around glauconite 'behaving like quicksand' have not been demonstrated/evidenced and is misleading so I would strongly suggest this is removed.

Author comment- removed, thank you.

In text reviewer asked to use organisms over organics- but organisms implies that the organism is present rather than the materials from the organism (organics).

Section 5.2 - only considers sediment movement with regards sediment addition at foundation locations which is surprising given that sediment scour around foundations is often the key concern.

Author Comment- thank you, great point.

Section 5.2.1 It would also be beneficial to refer to ISO/API maps of seismic hazard maps

of the region which appears to be missing from this discussion and do provide guidance on how best to address the regional seismic risks as some of these statements are alarming e.g. 'Minor seismic activity could destabilize sediments...'. .

Author comment- Not much seismic activity in area, closest fault line is in NJ, and they havent completed a continental shelf risk report for this fault.

Section 6.2 - I would suggest the first two paragraphs are removed/entirely re-written as they are not correct in some places. and are oversimplistic in others e.g.' clays over non-carbonate sands provide a stable base for the construction of monopile foundations.... challenges in regions where sand overlies clay'

Author comment- Rewritten with suggestions from reviewer 1.

Section 6.6 - It is not clear what point is being made in the last two sentences BOEM/BSEE do currently require consideration of foundation and cable installation risk in the COP together with consideration for UXO - this may need reframing as a section to make the discussion point clearer

Author Comment- Rewrote section to be clearer.

Citation: <https://doi.org/10.5194/wes-2024-157-RC2>