

From: [REDACTED]
To: [REDACTED]
Cc: [REDACTED]
Subject: Re: Expert Panel - Draft ONR TAG 13 Annex 3 comments
Date: 16 March 2021 10:49:36

[REDACTED]

Many thanks for your comments and input to the ONR Expert Panel paper - much appreciated.

Enjoy the rest of your day

Best wishes

[REDACTED]

[REDACTED]

On 16 Mar 2021, at 10:45, [REDACTED] [@environment-agency.gov.uk](mailto:[REDACTED]@environment-agency.gov.uk)> wrote:

Hi [REDACTED] and [REDACTED]

Further to the recent discussion at the Expert Panel. Thanks for the opportunity to comment.

We have provided some general comments below, alongside some research we have recently published which could enhance the report (many thanks to [REDACTED]). We have specified the relevant part of the ONR report and then linked to the work we have undertaken. If the ONR colleagues or [REDACTED] would like to discuss any of the elements we have identified below, do let us know.

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General

- This is a well-written and comprehensive report, describing the main coastal hazards and proves an interesting read.
- It contains an overview of some fantastic science and really brings home the realities of future sea level rise and also the complexities involved in any assessment work.
- Environment Agency interests extend well beyond 2100 wrt radioactive waste disposal sites, present and future, so it is interesting to hear that further research is being carried out to develop new high end scenarios to replace the H++ scenarios (para 66).
- We will be following up with our Nuclear Waste Assessment Team colleagues to better understand the implications of this report for our assessment work/pre-app advice for the likes of LLWR and the GDF.
- In some places, the report references documents that have been subsequently updated. This shouldn't affect the report findings to a large extent, and may be due to the referencing approach taken by the authors (by citing the original report dates).
 - Coastal Flood Boundary datasets, updated in 2019;
 - Paragraph 3 – more recent statistics summarising coastal flood risk should be available (after 2009- Environment Agency (2009) Flooding in

England: A National Assessment of Flood Risk. Environment Agency report.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/292928/geho0609bqds-e-e.pdf. For example the National Flood Resilience Review (2016, <https://www.gov.uk/government/publications/national-flood-resilience-review>)).

- EurOtop (2016) – 2nd edition published in Dec 2018 www.overtopping-manual.com
- Whilst the high-level consideration of coastal flood hazards is sound and comprehensive, the following recent and ongoing research within the EA/Defra FCRM R&D Joint Programme may be of interest (and may provide opportunities for collaboration in the future). We've tried to link these to the respective sections of the ONR report where possible.

PUBLISHED

- The recently published *rapid evidence assessment of non-stationarity in sources of UK flooding* and associated *recommendations for future research and practice on non-stationarity in UK flooding* consider evidence for non-stationarity on the coast, as part of a wider project managed by the Environment Agency/Defra Joint FCRM R&D Programme and published in November 2020. Project ref: FRS18087 <https://www.gov.uk/government/publications/development-of-interim-national-guidance-on-non-stationary-fluvial-flood-frequency-estimation>. We're considering the research recommendations, which will help address our understanding of natural variability and to identify longer term trends (both inland and on the coast). Notably, this includes further consideration of the potential impact of climate change on astronomical tides – as highlighted in Section 2.5 of the ONR report, and in paragraph 69.
- Section 2 (Problematic invasions and biological attacks) of the ONR report looks at biological attacks and might be interested in some recent work the R&D Programme undertook which has been incorporated into the [ciria updated manual on groynes](#), but is of relevance where ONR have any timber infrastructure (Section 3.3, paragraphs 31 and 32) .
- Section 3 (Impact of climate change on coastal infrastructure) of the ONR report is complemented by the recent [Impact of climate change on asset deterioration](#) (SC120005) publication which looks at how climate change may alter FCRM assets vulnerability to deterioration. It includes assessments of deterioration processes for a variety of FCRM asset types in the context of specific climate change factors. These identify the most likely components and processes affected by climate change and the factors that create that change in their vulnerability.
- Section 4 of the ONR report could be complemented by the *Exploratory sea level projections for the UK to 2300* <https://www.gov.uk/government/publications/exploratory-sea-level-projections-for-the-uk-to-2300>, published in 2019. [nb. noted this is covered in para 70, although not attributed to the EA?]
- Section 6 of the ONR report could be complemented by the [Planning for the risk of widespread flooding](#) (SC140002) and [East Coast NRA assessment](#) (FD2676) publications which look at spatial coherence and use of statistical techniques with coastal flooding. The methodology on which this work builds is set out in further detail in [Spatial coherence -risk of widespread flooding](#)(project reference SC060088).

- Section 8 of the ONR report presents analysis methods for shoreline evolution. This could be complemented by the 2019 publication *Coastal morphological modelling for decision makers* <https://www.gov.uk/government/publications/coastal-morphological-modelling-for-decision-makers>. This provides guidance to coastal practitioners on coastal processes and morphological models, methods and tools that can be used to help understand coastal change.
- Section 8, para 72 refers to coastal squeeze and the impacts of shore steepening. The recent (Jan 2021) R&D publication *What is coastal squeeze?* presents a new, agreed definition of 'coastal squeeze' and assesses the best way of managing its past and future impacts. <https://www.gov.uk/government/publications/what-is-coastal-squeeze>

UNDERWAY

- A case study in the application of updated UKCP18 climate projections in the context of coastal change, is the *Shore and cliff sensitivity to accelerated sea-level rise* research project. The project has developed a simplified, consistent method (using the SCAPE model cited in Section 8, para 73) and accompanying dataset that can be applied to estimate future cliff recession around the coastline of England and Wales. The project is being managed by the Environment Agency/Defra Joint FCERM R&D Programme and due to complete later in 2021 – we'll be able to test and update the cited results from para 73 when those data are available. Project ref: SC120017, PM: [REDACTED].
- Section 6 of the ONR report introduces statistical methods. For info, the Defra/EA guidance on Joint Probability mentioned in para 55 is being reviewed and updated as part of a Defra/EA Joint Programme R&D project (FRS18199) – the project scope is being developed and the project will start in 2021/22.

UPCOMING

- Defra Floods Research have started (March 2021) a project to review and collate historical coastal change evidence, and create a methodology to document historical coastal change for the English and Welsh coastline. Consolidated and centralised historical coastal change evidence will better inform decisions on the level and type of policy and financial support the coastal communities, Risk Management Authorities and local businesses need to help them adapt to coastal change. Project ref: FD2724

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