

MS Cumulative Effects Framework

User Stories: BIRDS



WORKSHOP PLANNING

WORKSHOP	WHEN	WHO
A User Stories	August	Government, consultants, developers
B Database Content	September	Specialists
C Database QA	Late Oct/early Nov	Specialists
D Interface	End Nov/early Dec	End users

WORKSHOP A

AIM: Understand the functionality required from the project outputs.

Objectives:

- Refined user stories
- Improved understanding of functionality requirements
- Improved understanding of outputs required
- Future additions/refinements

USER STORIES

As a ----- (role)

I want to ----- (action)

So that ----- (benefit)

USER STORY 1.a

Seabird in-comb HRA

Role:

Consultant (MacArthur Green)

Action:

Undertaking in-combination seabird impact assessment (for HRA)

Benefit:

- Avoid debate about 'correct' values to use for wind farms A, B, etc.
- Potential to apply methodological updates retrospectively to older wind farms
- Potential to update wind farm parameters to reflect actual design rather than worst-case, assessed (consented) version.
- Preserve uncertainties in raw data (where available) through the stages of impact
- Combine uncertainties across project's in consistent, robust and transparent manner
- Simplify review of HRA by SNCBs etc.
- Rapidly update whole impact prediction based on requested changes.

USER STORY 1.a

Seabird in-comb HRA

Role:

Consultant (MacArthur Green)

Action:

Undertaking in-combination seabird impact assessment (for HRA)

Benefit:

- Avoid debate on which windfarms to include in cumulative assessment
- Compare windfarm options/optimize design.
- Transparency in assessment for existing windfarms
- Translates well to digital ES
- Potential to account for project timelines; construction, operation, decom etc.

SNCB USER STORIES

Action Update CEF and Re-run model if errors identified

Action User friendly tool can trust.

Action Advise on best data and approaches to CIA, comment on assessments.

Benefit

- Agreed inputs
- Consistency
- Process already QA'd
- See how conclusions arrived at
- Clarity for communication
- Outcomes less likely to be challenged
- Clarity in uncertainty

Action Digitisation of EIA.

Action Assess impacts at plan level

Action Assess different sequences of development

Action Extract cumulative impacts to feed into other assessments

Consistency on/off-shore **Action** Communicate marine CIA to onshore colleagues/combine marine and terrestrial processes/migratory species

CONSULTANT USER STORIES

Action Estimate numbers of collision victims under various scenarios

Action Re-run CEF when data/tools updated

Action Run CIA quickly/efficiently

Action Undertake consistent CIA across regions/countries

Action Undertake user-friendly and accurate CIA

Action Undertake multiple CIAs simultaneously (different inputs)
Benefit Allow for different advice from different stakeholders

OTHER USER STORIES

Action Re-run CEF when data/tools updated

Role Site manager

Action Understand impacts of multiple developments on site features

Benefit Understanding of methods means can collect appropriate site data

Role Regulator

Action Inform post-consent monitoring

- Benefit**
- Target at key species within region
 - Strategic monitoring approaches

Role Marine Planner

Action Explore cumulative impacts in area and consider future development scenarios

- Benefit**
- Robust marine planning policy
 - Link with other sectors
 - Can extract data from CEF for use within other sectors

FUNCTIONALITY: TOP THEMES

Transparency; of inputs, user choices. Clear audit

Consistency and trust; defaults settings that can be relied upon and that has agreement across stakeholders

Flexibility; some settings can be user defined.

- SPAs of concern
- tiers of projects/plans to include
- consented vs as-built

FUNCTIONALITY: OTHER THEMES

Uncertainty; carried through process, clearly presented

Scenarios; run several simultaneously. Include option with no 'user' project/plan addition (assess existing impacts within region/acting on SPA)

Outputs; may need 'layers'; summary statistics, graphical summaries, tables of effects (collision, displacement etc), tables of population impacts, tables of 'input data' that can be extracted and used in other ways outside the CEF? Questions around confidentiality and some data may be restricted.

ISSUES/CONCERNS

Flexibility: where focussed, how much? Risk of losing consensus and transparency?

Consistency: different stakeholders, and across UK.

Windfarm Timelines: how to incorporate variation

FURTHER DISCUSSION

Workshop B or TWG:

- **Where to allow flexibility/user choices vs set defaults?**
- **How to define defaults/who needs to agree?**
- **Option to use impacts directly from ES rather than re-calculate?**

Mammals – outcomes of breakout groups



Mammals – additional actions: primary user story – to inform EIA/HRA:

- To cumulatively assess the impacts of tidal stream developments, incorporating both mortality (collisions) and disturbance
- To assess the population consequences of permanent habitat loss (e.g. from tidal range projects)
- To cumulatively assess the impacts of multiple different activities/industries (piling, vessels, ADDs, seismic surveys, fisheries interactions)
- To be able to cumulatively assess a range of impacts across the whole project lifecycle (Geophys surveys, UXO clearance, ADDs, piling, vessels)
- To be able to cumulatively assess impacts from floating wind developments: e.g. barrier effects

Mammals – additional actions: primary user story – to inform EIA/HRA:

- Incorporating different impacts:
 - iPCoD developed specifically for pile driving displacement and auditory injury
 - Future replacement of expert elicitation element with an individual Dynamic Energy Budget model to determine the energetic effect of disturbance (in terms of lost energy or additional energetic cost) should allow incorporation of a wider range of impacts.
 - Linking spatial modelling tools and ‘risk’ maps might also be a future option

Mammals – additional actions: primary user story – to inform EIA/HRA:

– Incorporating different impacts:

- In design of framework need to consider ability to update the individual tools as developments progress in parallel
- For any additional impacts there is a lack of empirical data to inform modelling efforts and therefore assumptions may be required , also difficult to capture activity
- Counteracting impacts or responses to multiple stressors difficult to incorporate

Mammals – additional actions: primary user story – to inform EIA/HRA:

- To be able to assess for a wider range of species:
 - E.g. in Wales Risso's dolphins and common dolphins will need to be included in assessments for many projects.
 - In Scotland and NE England whitebeaked dolphins may be a concern
- To be able to explicitly incorporate animal movement and spatial elements of activities
 - E.g. seasonal movements of animals in relation to specific areas – IBM models intended for this – simulated individuals over time and space – can be used to estimate aggregate exposure to multiple activities

Mammals –primary user story – to inform EIA/HRA:

– Outputs:

- Audit trail of choices made and input parameters used is important
- General agreement that outputs suggested (counterfactuals, graphical representations of future popn trajectories) with associated uncertainty were suitable across most of the user stories
- Suggestion that it would also be good to be able to output the full matrix of population simulation data for those with the ability to generate their own outputs and summary statistics
- For the spatial models (e.g. Agent Seal) outputs that show altered spatio-temporal distributions of animals may be useful

Mammals – additional user stories: theme: sensitivity analyses

- To compare different construction envelopes and mitigation options to inform project design (developer)
- To explore different scenarios of construction of multiple envelopes and mitigation options to inform project design (developer/adviser/regulator)
- To understand which parameters have most influence on outcomes/uncertainty (researcher, decision maker, adviser)
- To explore combinations of activities that will allow impact to be kept under a threshold of ‘acceptable impact’
- these require the ability for the user to rerun multiple scenarios changing elements and a way to easily compare outputs

Mammals – some issues/concerns identified

- Can be difficult to define realistic piling schedules for a project at pre-consent stage
- It would be good to have a mechanism for updating piling schedules in the datastore as these are refined as projects go through the consenting process
- Sensitivity analyses could also help developers/consultants understand which features of the piling schedules impacts are most sensitive to, to ensure conservatism under uncertainty

Mammals – some issues/concerns identified

- What scale to assess at for some populations? Some cetacean MUs are whole UK
 - becomes impractical and unrealistic to include all projects and activities in the CEA – what scale to include projects within?
 - At larger scale, lack of knowledge about movement patterns will require large assumptions about vulnerable sub-populations
 - Useful note that IAMMWG are refining MU's – defined MUs will become default values in datastore

Mammals – some issues/concerns identified

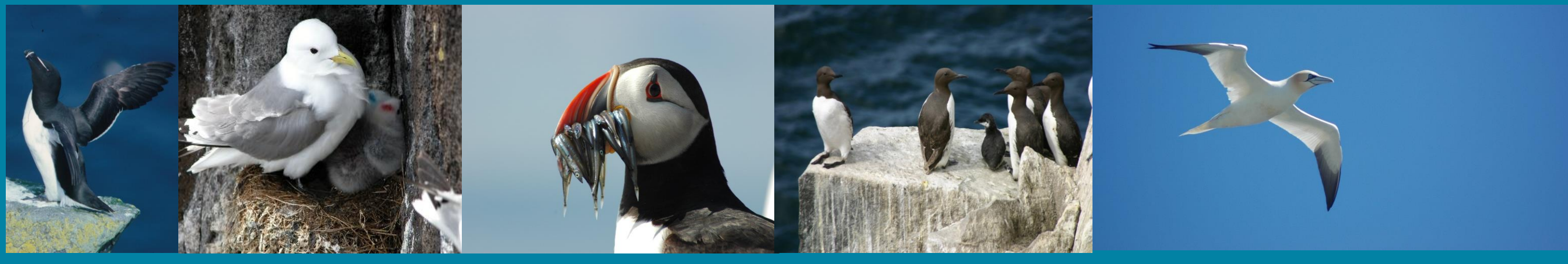
- When relying on inputs from EIAs there are concerns about comparability of data and combining ‘apples and pears’ in the CEA, guidance for assessments could help improve consistency but work to be done and outside of scope
- IBMs linked into iPCoD may improve how this is done for new projects but assumptions required about other projects/activities noise levels and only covers limited species and over limited scales/locations (harbour porpoise and seals)

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Mammals – looking forward

Can address in CEF over next 18 months	Potential to be addressed in parallel over same time frame	Future strategic priority?
<ul style="list-style-type: none"> • Allow repeatable, transparent CEA for key populations of interest • Ability to scenario/sensitivity test • Ability to update with as-built piling schedules • Linking iPCoD with IBMs to improve estimates of aggregate exposure taking into account movement and spatial scale 	<ul style="list-style-type: none"> • Development of dynamic energy budget approach to incorporate some additional stressors • Defining appropriate demographic rates and management units for species not currently included • Guidance for improving consistency in project level impact assessment 	<ul style="list-style-type: none"> • Understanding of the effects of multiple stressors (additive, synergistic?) • Developing understanding of movement patterns of cetacean species



MS Cumulative Effects Framework

NEXT STEPS



Workshop A: User stories

- REFLECT
- Pull together user stories
- Pull together functionality and output needs
- Feed into project next steps, workshop B, C and D and TWG planning

SPECIES LIST

Email additions to us

By 28th August

Next steps: CEF and Workshop B

- Workshop B to cover data requirements feeding into data store and knowledge base
- Engagement with participants:
 - Have we identified the right parameters?
 - What data are out there that we should be using?
 - How can we access this data?

Workshop C – Data Sign-off

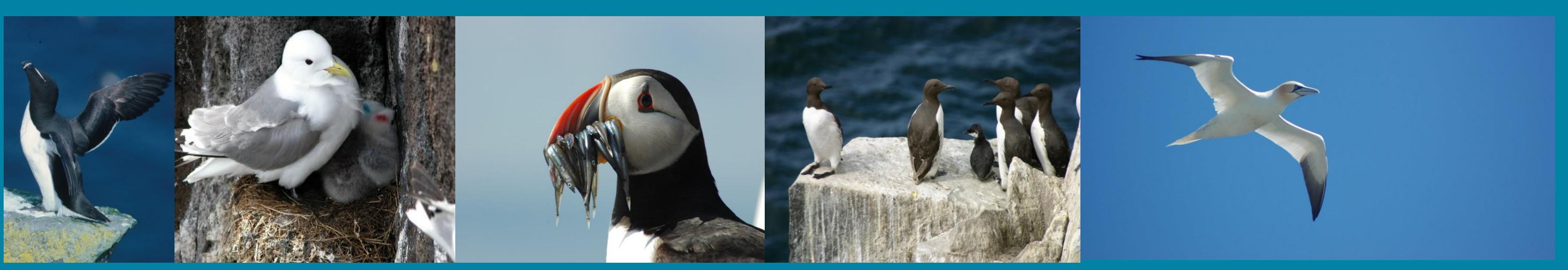
- Workshop C to run c. mid-November
- Purpose:
 - Presentation of data store and knowledge base
 - Stakeholder sign-off on contents

Technical Working Groups (TWGs)

- Series of c. four Technical Working Groups (TWGs) for ornithology
- Will run in between Workshop B (Data Requirements) and Workshop C (Data Sign-off)
- Will run mid-Sept to mid-Nov
- Small group of key users
- Advising on technical details:
 - Density data and spatial layers
 - OWF project specifications
 - Consensus defaults

Workshop D – Demonstrator version

- Workshop D to run c. mid-December
- Purpose:
 - Presentation of “demonstrator” version of the CEF
 - Final discussion of structure of the CEF, and how tools will be used within it
 - Final sign-off on the agreed methodology for the project will follow shortly after Workshop D



THANK-YOU FOR YOUR TIME

