

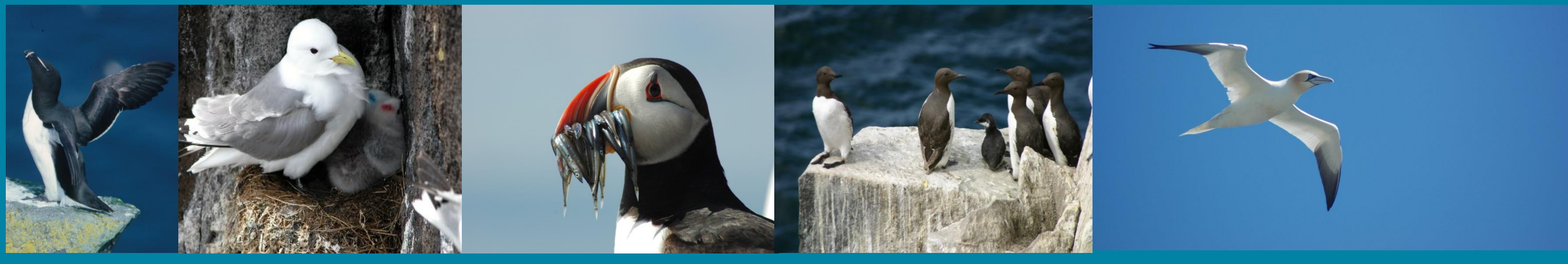


# MS Cumulative Effects Framework Workshop B - Aims



# 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?



# MS Cumulative Effects Framework Birds summary



# Missing parameters

- Wind farm buffers
  - For displacement need WF footprint + buffer
  - Evidence about buffers constantly changing e.g 4km usually advised but evidence from RTD suggest effect may occur over broader area

# Missing parameters

- Seasonal definitions
  - BDMPS, forthcoming SNH report, MERP
  - Scope for users to specify seasons to account for (e.g. Latitudinal gradients)
  - Need to think about how it relates to temporal scale of data used by tools

# Missing parameters

- Relationship between wind speed & rotor speed/pitch
- Can be incorporated in sCRM, but not widely used due to difficulty in accessing data

# Missing parameters

- Sabbatical rates & proportions of immatures
  - Feed into PVA etc
  - Some studies on sabbatical rates, but limited info
  - % immatures probably relies on survey data

# Density data

- Initial review & workshop discussions highlight issues
- Best available data
- Site-specific survey data, or revert to MERP



# Data quality & missing data

- Data presented in different ways
  - Non-standardised surveys
  - Boat vs aerial vs digital aerial
  - Availability bias
  - Monthly/seasonal data
  - Mean and/peak counts
  - With/without error/Cis
  - Density estimates
  - With/without distance correction

# Data quality & missing data

- Minimum requirements of tools
- Revert to MERP
- Noting issues relating to MERP, e.g. age of data
- Decision tree – when to use site-specific data/when to revert to MERP

# Wind farm specifications

- As assessed vs as consented vs as built
- General agreement about including as consented & as built
- Beyond scope of this project to provide advice as to whether as consented or as built data should be used
- Differences between Scotland &

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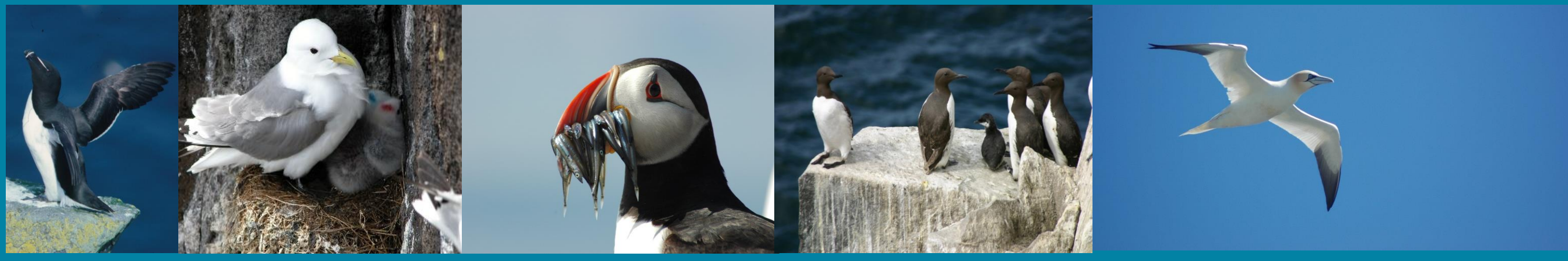
England

# Wind farm specifications

- Discussion about the legal challenges that may be presented by back-calculating impacts
- Project will have the functionality to achieve this but, will not make recommendations over whether it should be done

# Wind farm specifications

- Need to incorporate assessed impacts in data store where available
- Need to consider situations, e.g. Robin Rigg, where turbines have been removed



# MS Cumulative Effects Framework

## Mammals summary



# iPCoD data

## Review Of Demographic Parameters And Sensitivity Analysis To Inform Inputs And Outputs Of Population Consequences Of Disturbance Assessments For Marine Mammals

Scottish Marine and Freshwater Science Vol 11 No 14  
R R Sinclair, C E Sparling and J Harwood



### Demographic data

- Harbour porpoise
- Bottlenose dolphin
- Minke whale
- Harbour seal
- Grey seal



### Missing info for:

- White-beaked dolphin
- Risso's dolphin
- Common dolphin
- (MM TWG 1)

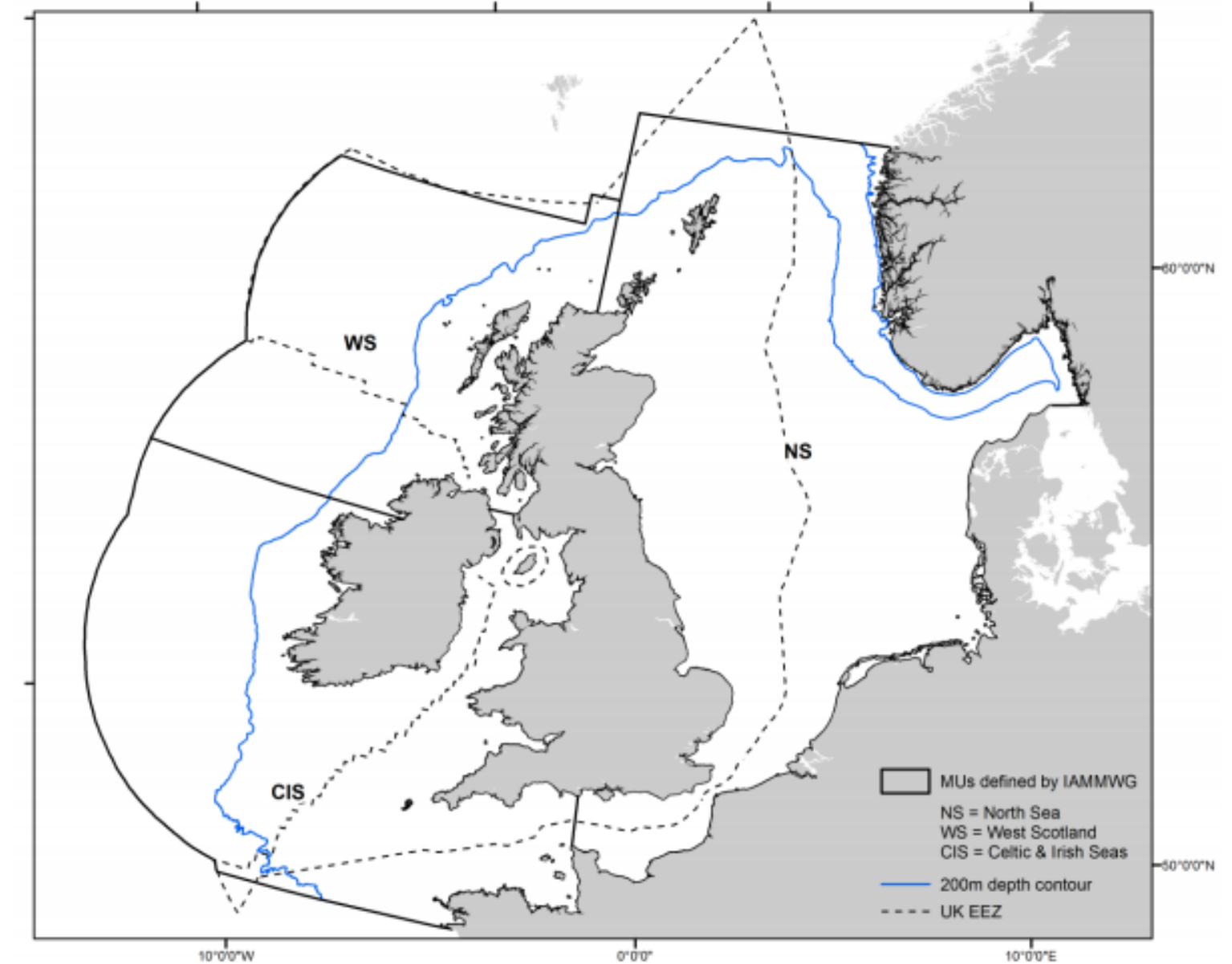
### Populated 'defaults' for defined MUs

- With flexibility for users to define their own

# iPCoD data

## Abundance - cetaceans

- Management units as defined in IAMMWG 2020 (due imminently)
- Desired flexibility to define different population units e.g. at a more local scale (but then user will need to define demographic rates for 'population' – could be added to datastore as added by users)
- Most cetacean MUs updated on a ~5-10 year cycle



**Figure 3.** Harbour porpoise Management Units (MUs), noting that this species is largely confined to the continental shelf (i.e. waters <200m depth).

The abundance of harbour porpoise in these MUs is as seen in Table 1.

**Table 1.** Estimates of abundance of harbour porpoise in the defined Management Units (MUs).

MU	Abundance of animals in MU (CV)	95% Confidence interval for MU	Abundance of animals in the UK portion of MU (CV)	95% Confidence interval for UK portion of MU	Source
NS	227,298 (0.13)	176,360-292,948	110,433 (0.16)	80,866-150,811	Hammond <i>et al</i> 2013
WS	21,462 (0.42)	9,740-47,289	19,291 (0.49)	7,771-47,888	Hammond <i>et al</i> 2013; Macleod <i>et al</i> 2009
CIS	104,695 (0.32)	56,774-193,065	47,229 (0.32)	25,611-87,094	Hammond <i>et al</i> 2013; Macleod <i>et al</i> 2009



JNCC Report No: 547

Management Units for cetaceans in UK waters (January 2015)

IAMMWG

March 2015



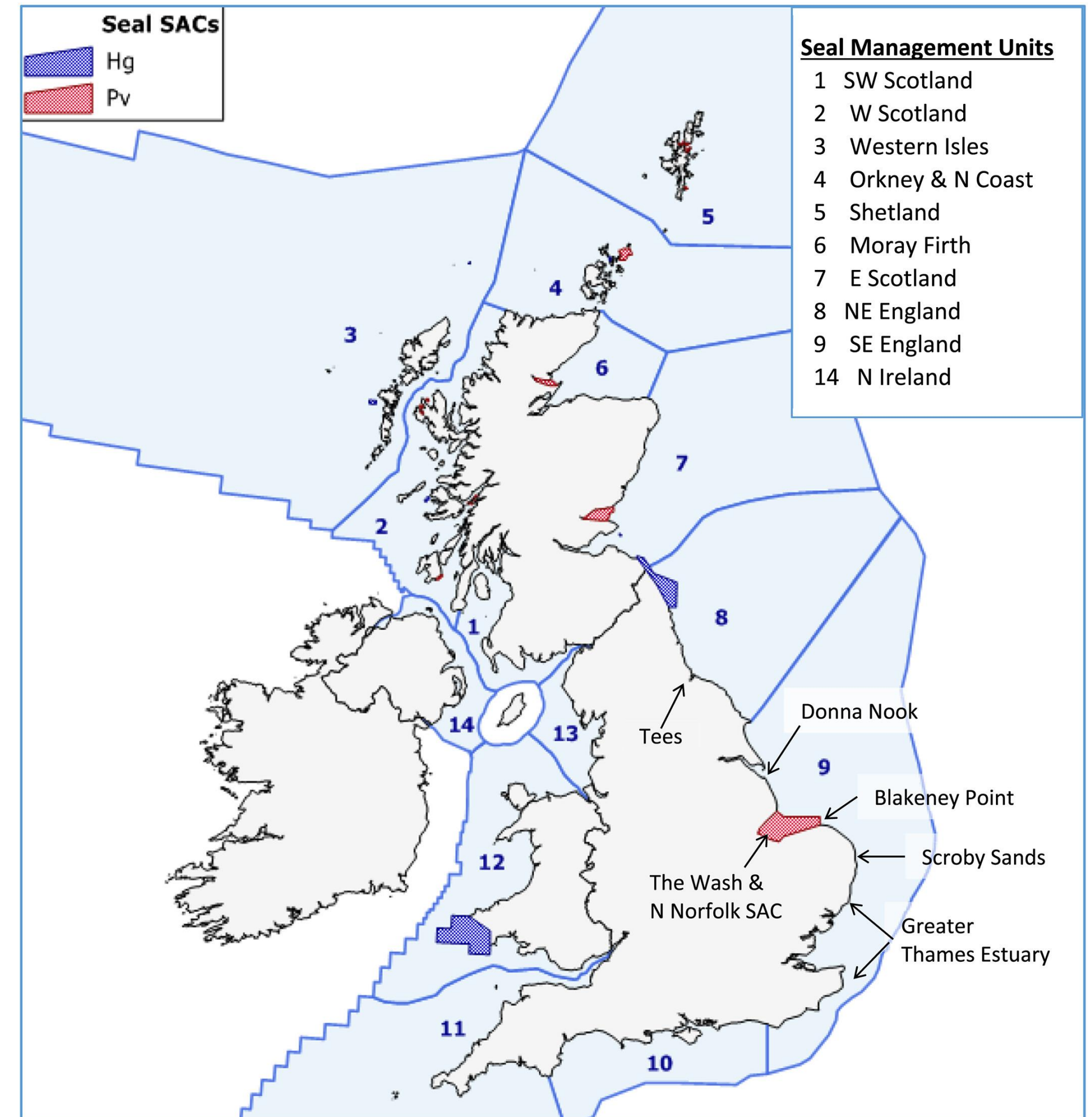
# iPCoD data

## Abundance data - seals

- SCOS Seal Management Units as default (updated regularly – annually in some cases)
- Concern raised that in Wales SCOS MUs don't extend beyond UK waters but seal movements occur beyond UK waters
- Flexibility for users to define their own (will need to define demographic parameters)

## General point (covering all data inputs)

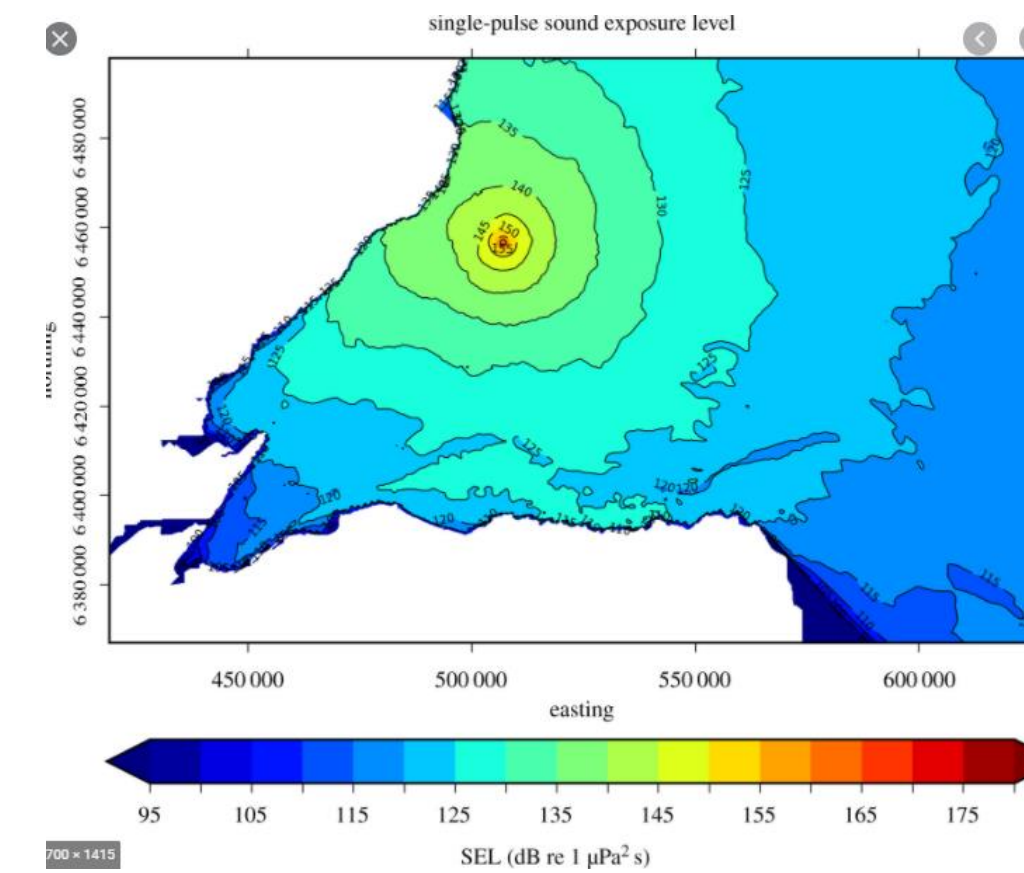
- Users will have to justify selection of input values (defaults vs defining own)
- Use of scoping opinions to provide advice on how populations could be specified in individual assessments?



# iPCoD data

## Project level effects

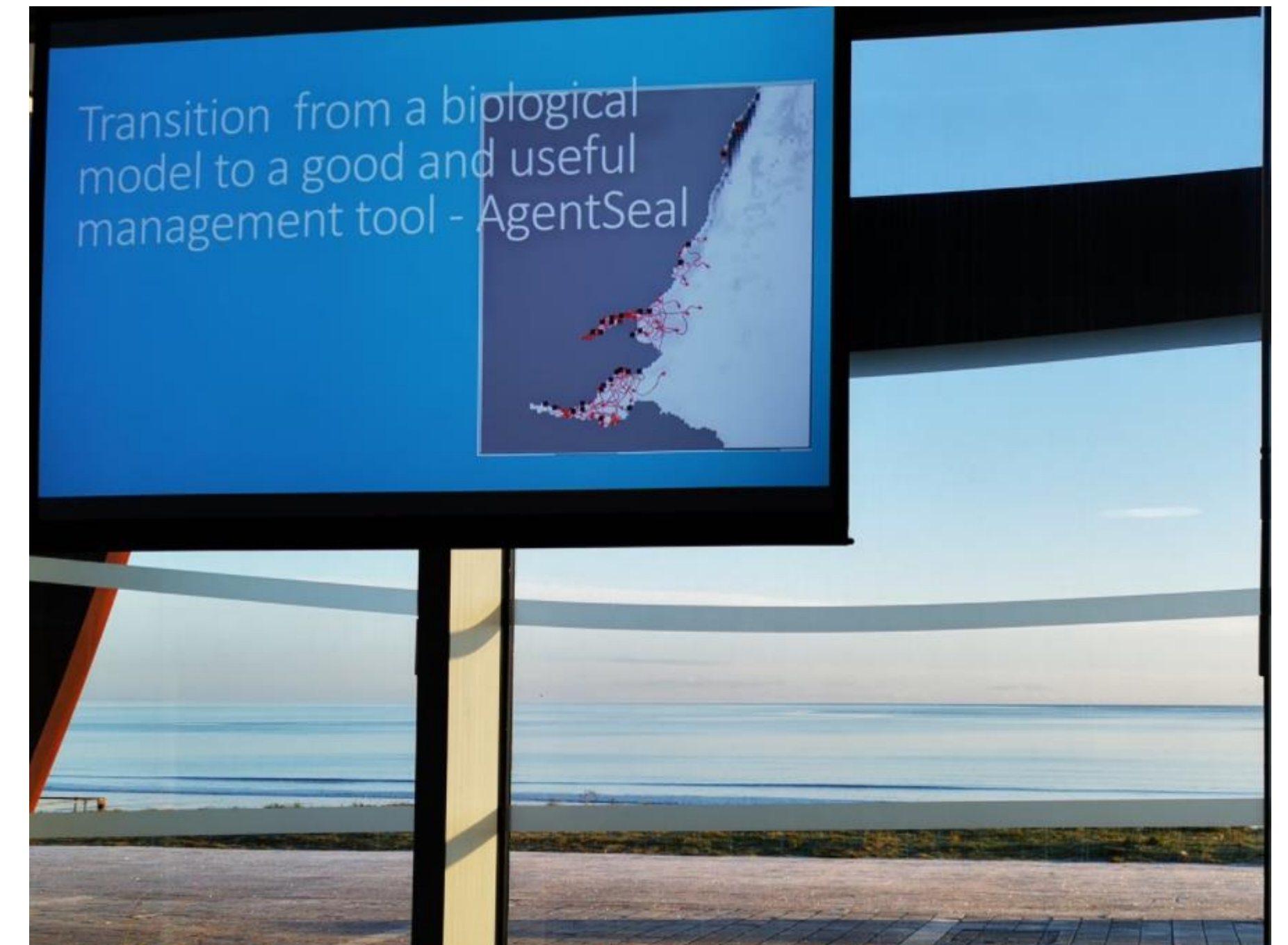
- User inputs values for OWF project(s):
  - Number disturbed by a given piling scenario
  - Number at risk of PTS from a given piling scenario
  - Metadata describing methods used to calculate impact (MM TWG 1 to discuss and agree fields)
  - Piling calendar for a given piling scenario
- User selects which other projects to include in CEA envelope - data store pre-populated with existing projects based on info in ESs
- Additional direct mortalities can be added by user (collisions or additional bycatch)
- Opportunity to update 'as-built' project piling calendars from a number of sources: Marine Noise Registry, Piling logs and Piling compliance reports but no clear mechanism for update of impact numbers with changes in piling parameters (unless detailed in post-consent reports – Piling Strategy/EPs assessments)
- Choice for users to share their added project info to be available for other users or to mark as confidential (but would encourage sharing to ensure consistent info across different CEAs)



	PROJECT A	PROJECT B	PROJECT C
01			
02			
03			
04			

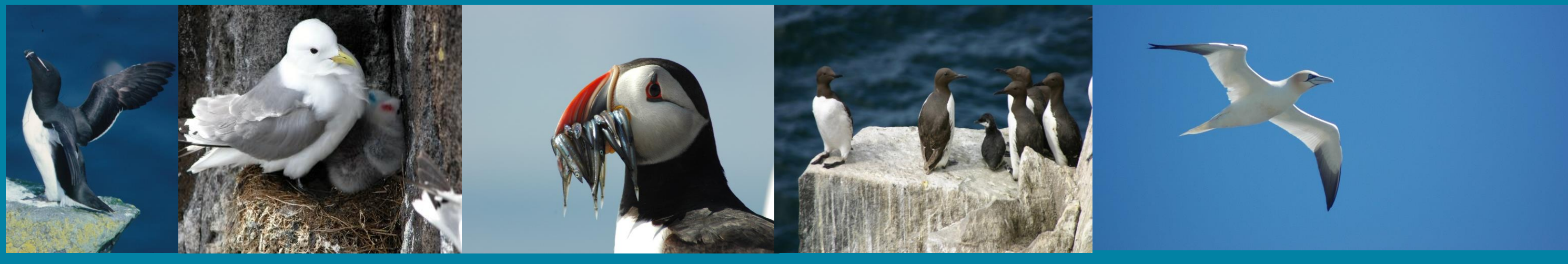
# Agent Seal data

- Defaults and ability for (some) user selected inputs
- Habitat preference for each MU – modelled based on usage data or prey distribution or calorific maps
- Seal abundance/haul out locations – by MU
- Energetics and diet parameters likely to be defaults
- Grey seals? Movement on a much larger scale, harder to model



# Issues raised

- 1) Limited number of activities/impact pathways that can be included in current tools
- 2) Backdrop of continual improvement/development of models
- 3) Uncertainty about when past projects are considered part of the baseline and when they should be included in CEA envelopes
- 4) How does iPCoD incorporate uncertainty around point estimates?
- 5) Grey seal version of Agent Seal?



# MS Cumulative Effects Framework

# Data: Over-arching Points



# Data Store

- Holds data to facilitate ‘reasonable’ CEA analysis.
- But user must engage
- Best available data at time; can be updated
- Site-specific where available/suitable, generic options

# Wider questions

- Consented vs as-built windfarm data
- Re-calculating effects for existing consents/windfarms vs 'as consented' (or 'as assessed'?) effects
- Re-calculating effects; back to first principles

# Birds vs Mammals

BIRDS: recalculate effects; collision, displacement

- Density data
- Effects model parameters
- This then feeds into population impact analysis

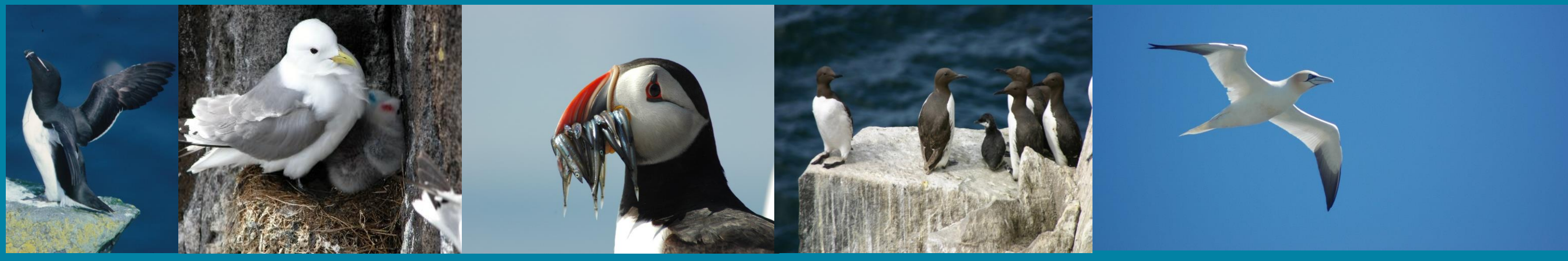
MAMMALS: not recalculating noise effects

- Estimated project effects (number disturbed etc) from ES
- Then feeds into population impact analysis

BIRDS and MAMMALS

- Consented (project specs or piling schedule) vs as-built (project specs or piling schedule)
- Recalculates impacts to provide comparability and consistency





# MS Cumulative Effects Framework

## Next Steps



# Workshop C

- Mid-November
- Populate data store between now & then
- Aim for sign off on contents of data store

# Technical working groups

- Series of c. 4 TWGs for ornithology & 1-2 for Mammals
- Will run 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
  - Consensus defaults
  - Cumulative effects/integrating displacement and collision
  - Uncertainty

# Workshop D

- **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