Developing a Habitat Loss Method for Assessing Displacement

(Concept Note 1 and JNCC Report No. 551)

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- The habitat loss approach
- An assessment framework
- The challenges of understanding a displacement effect
- Habitat loss as a one-off effect
- The ‘Displacement as Habitat Loss’ framework
- Practical application?

The habitat loss approach

The concept:

- Displacement from an area can be equated in its ecological consequences to permanent habitat loss

The assessment framework

The output that was sought was a framework that can be used in the assessment of OWFs.

The general principles sought were:

- A structured approach
- Transparency in assumptions and decisions
- Supported by evidence
- Applicable in UK decision making processes

The challenges of understanding displacement

The challenges include:

- Spatial extent of displacement
- Degree of displacement
- Consistency between seasons
- Consistency over the long term
- The ecological consequences – adult mortality or reduced productivity?

The earlier sessions in the workshop may or may not have resolved, or identified a way to resolve, these issues.

Habitat loss as a one-off effect

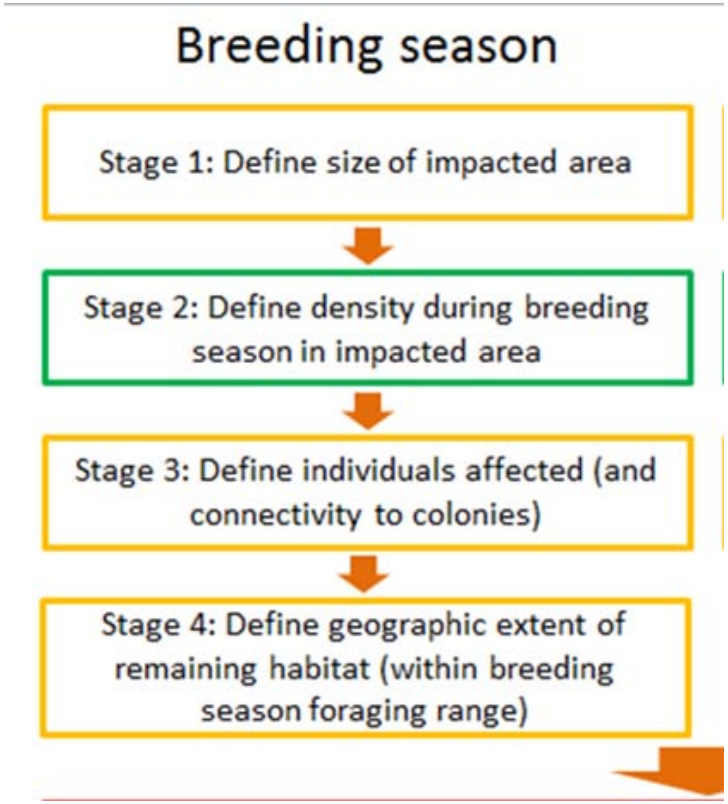
The alternative to considering displacement impacts as additive impacts that occur repeatedly each year for the life of the OWF.

The process is:

- Displacement impacts treated as a time restricted or 'one-off' habitat loss event with consequential loss of a feeding resource
- This results in a reduction in the size of the impacted population as it reaches equilibrium with the reduced habitat and resources available.
- Once this new population equilibrium is achieved, no additional annual mortality or reduced reproduction might reasonably be predicted to occur.

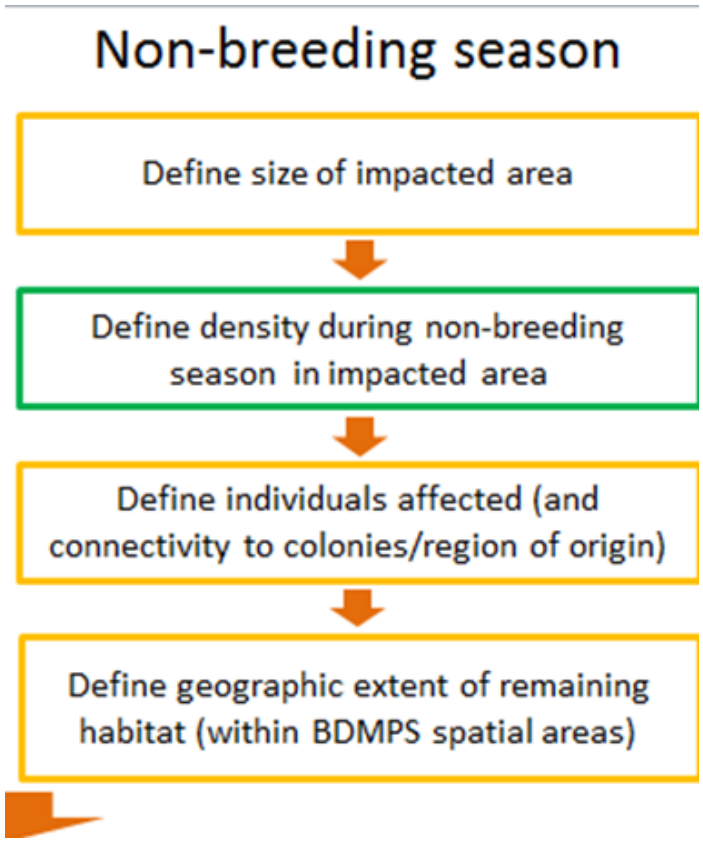
The ‘Displacement as Habitat Loss’ framework

Breeding season component of flow diagram:



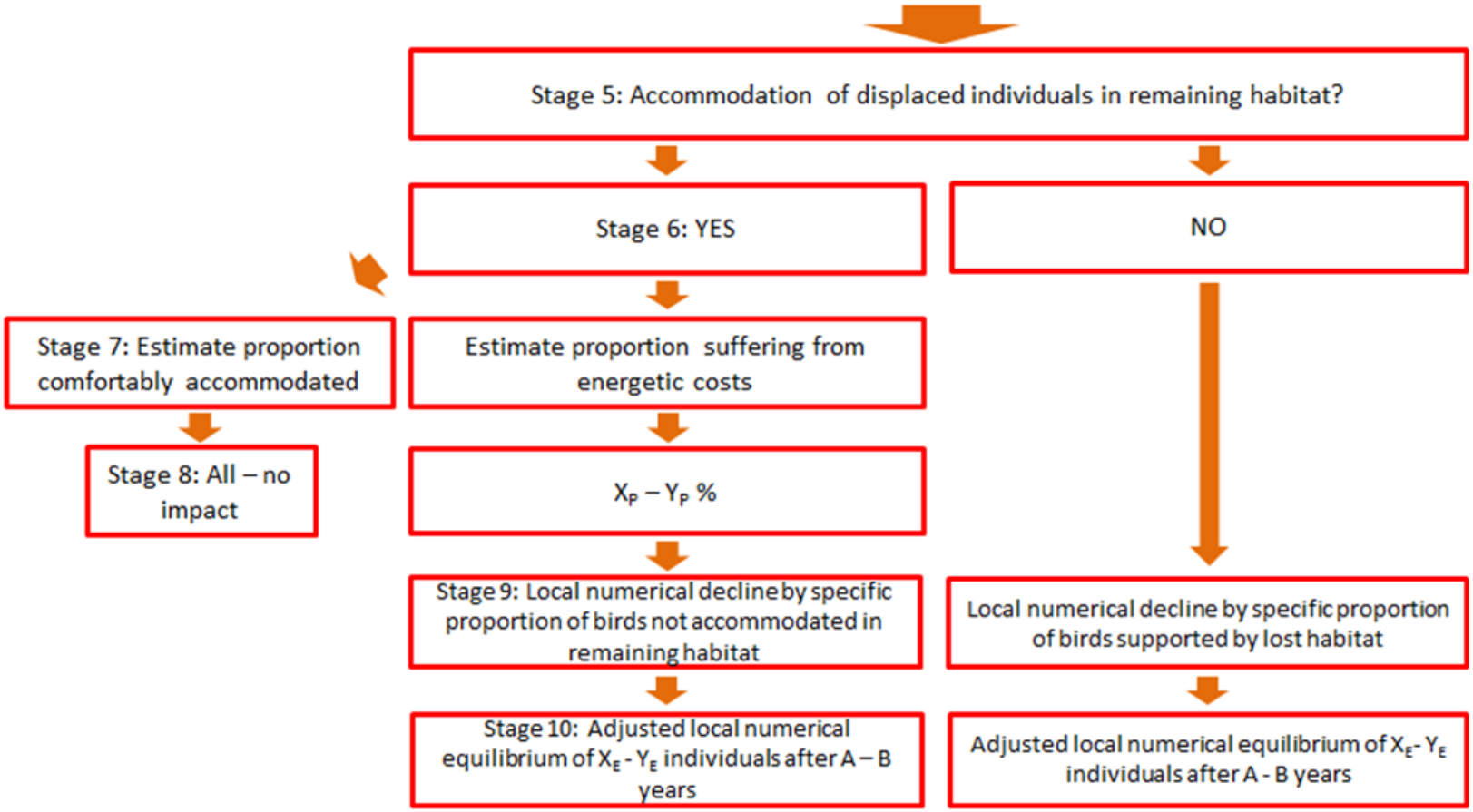
The ‘Displacement as Habitat Loss’ framework

Non-breeding season component of flow diagram:



The 'Displacement as Habitat Loss' framework

Common components of flow diagram:



The ‘Displacement as Habitat Loss’ framework

The underlying assumptions:

Stage	Underlying assumptions
1.	Sufficient knowledge on appropriate, species-specific buffers to define geographic extent of impacted area
2.	Survey methodology and assessment methods suitable to report densities at a precision allowing assigning changes to OWF operation
3.	Sufficient knowledge on % displacement
4.	Ability to define the extent of specific seasonal habitat available to a local population
5.	Sufficient knowledge about carrying capacity of respective population

Stage	Underlying assumptions
6.	
7.	Ability to define proportion of birds that could still be supported by remaining habitat/available resources considering habitat quality & density dependence
8.	Immediate impact
9.	Ability to define if affected pop. suffers from mortality or reduced reproduction; Pop. will adjust to new equilibrium; length of such adjustment process; no immigration into affected population causing ongoing effect;
10.	Ability to reliably predict time scales over which new equilibrium is achieved; consider potential habituation impacts

Practical application?

Application tested for two species:

- Red-throated diver in the non-breeding season
- Lesser black-backed gull in the breeding season

Conclusion:

- Most of the stages of the framework have uncertainties
- Some are so great as to limit application of the framework
- Cumulatively there is considered to be an unacceptable level of uncertainty

For discussion

- Is that conclusion any different to the outcome of a detailed examination of the ‘matrix’ approach?

Thank you for listening

There is more information in the report supplied as Concept Note 1

Questions and discussion