

# **Preliminary Ecological Appraisal Report for the Lindisfarne National Nature Reserve (NNR) Research Laboratory**

## **Report to Natural England**

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# PRELIMINARY ECOLOGICAL APPRAISAL OF THE LINDISFARNE RESEARCH LABORATORY

## Introduction

1. This report presents a Preliminary Ecological Appraisal for the construction of the Natural England Lindisfarne NNR Research Laboratory (the 'Project'), including a Phase 1 Habitat survey. The proposal has been prepared with reference to the CIEEM (2017) guidance on Preliminary Ecological Appraisal. The key objectives of the Preliminary Ecological Appraisal were as follows (CIEEM 2017):
  - identify the likely ecological constraints associated with the project;
  - identify any mitigation measures likely to be required, following the 'Mitigation Hierarchy';
  - identify any additional surveys that may be required to inform an Ecological Impact Assessment (EclA); and
  - identify the opportunities offered by a project to deliver ecological enhancement.
2. A desk study has been undertaken to collate the available ecological information on the site, and a field survey to determine the habitats present and likely ecological issues. The report also provides recommendations for any further surveys needed.
3. The surveys were undertaken by Dr Steve Percival, a highly experienced ecological surveyor.

## Study Area

4. The site is located at Beal in north Northumberland, adjacent to main east coast railway line. The field survey area was chosen to include all areas within the potential zone of ecological influence of the proposed research laboratory facility (and included a 100m buffer around the Project site). The survey area covered a total area of 41 ha. The extent of the site and the survey area are shown in Figure 1. The facility would be located immediately to the north of the Natural England reserve office.

## Desk Study Methods

5. A desk study was carried out to determine the protected nature conservation sites within a 2km search area, using the Natural England, JNCC and Magic Map web site to obtain statutory protected area site boundaries and citation details, protected species records and distribution of priority habitats.

## Ecology Field Survey: Extended Phase 1 Survey Methods

6. An extended Phase 1 survey (JNCC 2016) was carried out (consistent with the UKHAB habitat classification), including identification and mapping of the vegetation

communities present within the study area. This Extended Phase 1 survey was undertaken during a site visit on 8 November 2021.

7. The survey also included a habitat suitability assessment for protected species, including bats, badgers, water voles, otters, reptiles and amphibians (to inform the need for any further surveys).

## Desk Study Results

### Statutory Designations: International and Nationally Important Sites

8. There are three statutory designated internationally/nationally important nature conservation sites in the search area around the proposed wind farm extension (5 km for nationally important SSSIs, 20 km for internationally important European Protected SPAs, SACs and Ramsar Sites). Their locations within 2km of the Project site are shown in Figure 1.
  - **Lindisfarne SPA/Ramsar/SSSI** - 1.3km north-east from the Project site at its closest point - an internationally important site designated for its non-breeding waterbird and breeding seabird populations, including whooper swan, greylag goose, brent goose, shelduck, wigeon, eider, long-tailed duck, common scoter, red-breasted merganser, ringed plover, golden plover, grey plover, sanderling, dunlin, bar-tailed godwit, redshank, little tern and roseate tern. Given the distance from the Project site and the lack of any suitable habitat for these species within the potential impact zone of the development, any effect on the SPA/Ramsar/SSSI can be excluded (and there would be no Likely Significant Effect under the Habitats Regulations).
  - **North Northumberland Dunes SAC** - 1.3km north-east from the Project site at its closest point - an internationally important site designated for its dune habitats and flora. Given the distance from the Project site any effect on the SAC can be excluded (and there would be no Likely Significant Effect under the Habitats Regulations).
  - **Berwickshire and North Northumberland Coast SAC** - 1.3km north-east from the Project site at its closest point - an internationally important site designated for its intertidal mudflat and sub-tidal habitats. Given the distance from the Project site any effect on the SAC can be excluded (and there would be no Likely Significant Effect under the Habitats Regulations).

### *Ancient Woodland*

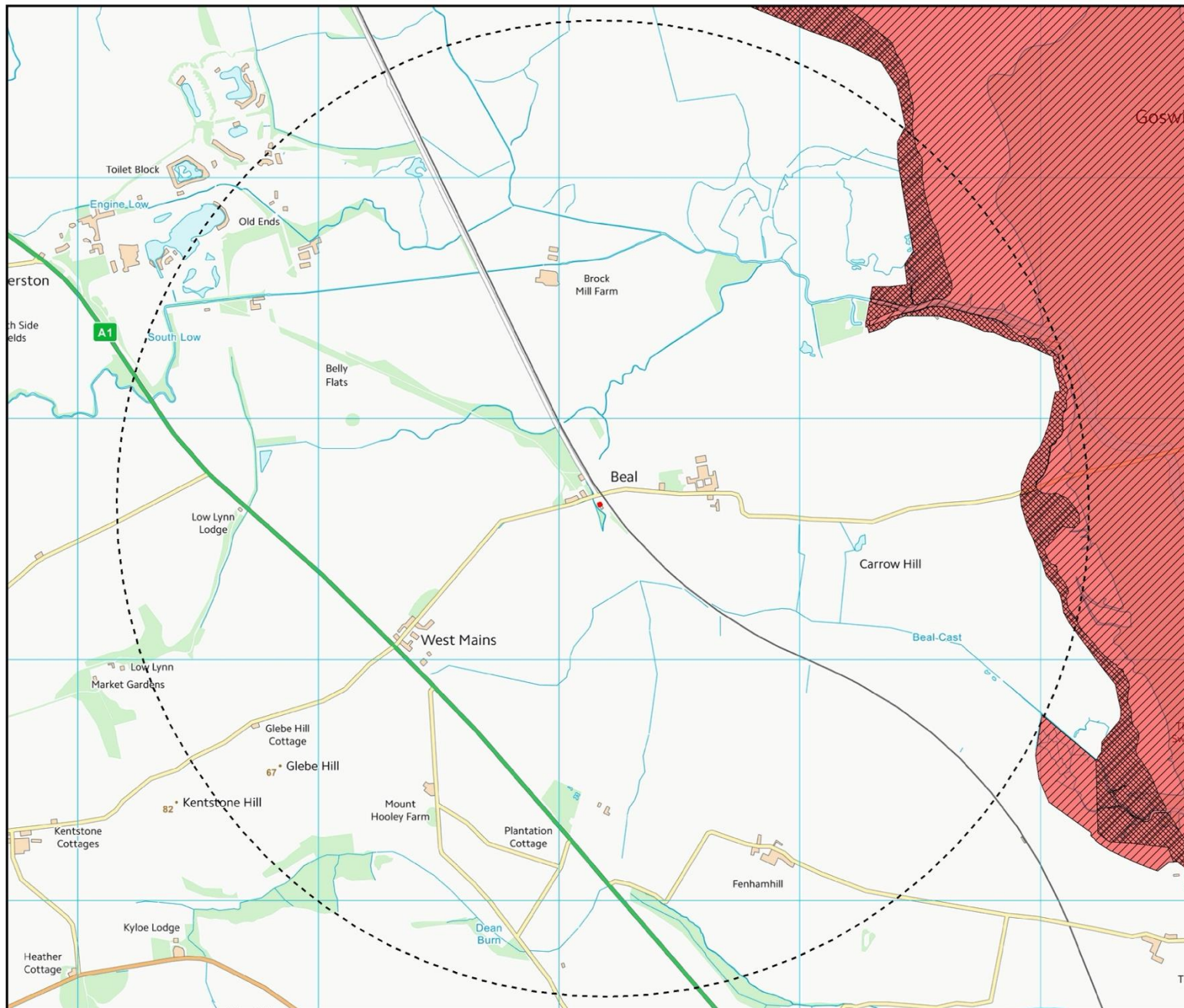
9. There are no sites on the Ancient Woodland Register within 2km of the site, so none would be affected by the proposed development.

### *Other Priority Habitats*

10. The locations of the priority habitat within 2km of the Project site are shown in Figure 2.
11. **Deciduous woodland** - scattered patches over the wider area in the 2km zone around the Project site, with the closest 80m north from the Option 1 site and 60m north

from the Option 2 site, across the main Holy Island road. This lies outside the likely zone of ecological influence of the Project, so would therefore not be affected by it.

12. **Coastal and floodplain grazing marsh** - closest lies 1km from the Project site, and outside its zone of ecological influence, so would be unaffected by it.
13. **Coastal sand dunes** - closest lies 1.3km from the Project site, and outside its zone of ecological influence, so would be unaffected by it.
14. **Coastal saltmarsh** - closest lies 1.4km from the Project site, and outside its zone of ecological influence, so would be unaffected by it.
15. **Mudflats** - closest lies 1.4km from the Project site, and outside its zone of ecological influence, so would be unaffected by it.



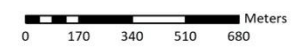
**Lindisfarne NNR  
Research Laboratory**

**FIGURE 1**

**Protected Sites**

**KEY:**

-  Research Lab
-  Research Lab Buffer 2km
-  Lindisfarne SPA/Ramsar/SSSI
- SAC**
-  Berwickshire and North Northumberland Coast
-  North Northumberland Dunes



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PROJECT DATE	N/A	PROJECT NO.	N/A
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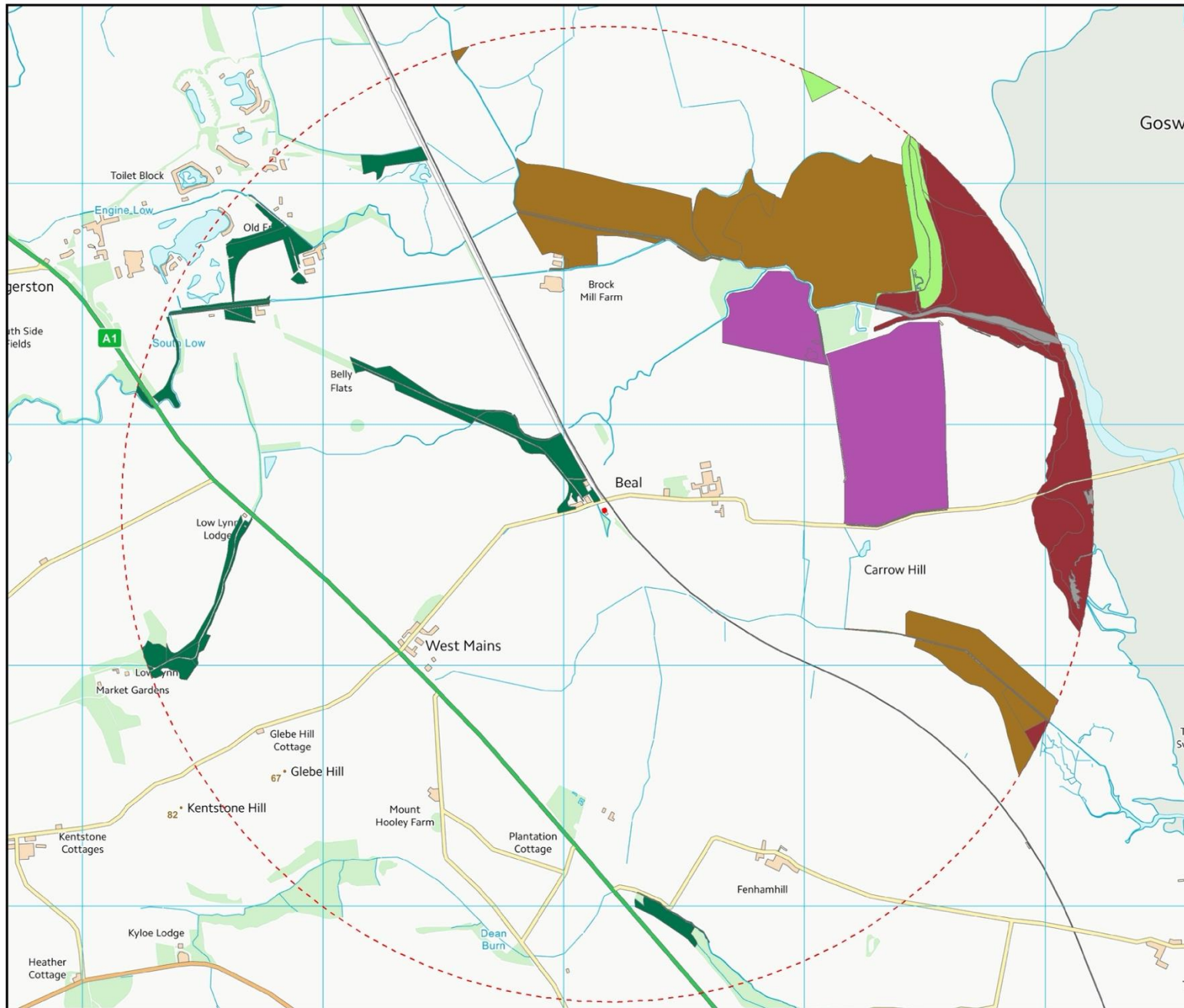
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**FIGURE 2**

**Priority Habitats**

- KEY:
- Priority Habitat**
- Coastal and floodplain grazing marsh
  - Coastal saltmarsh
  - Coastal sand dunes
  - Deciduous woodland
  - Mudflats
  - Other
  - Research Lab Buffer 2km
  - Research Lab



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## Phase 1 Survey Results

### Extended Phase 1 Survey

16. The Extended Phase 1 survey map is shown in Figure 3. Each of the Phase 1 habitats that were recorded at the site during the site visit are described in Table 1.

**Table 1. Phase 1 habitats recorded in the Lindisfarne NNR Research Laboratory area (site plus 100m buffer).**

Phase 1 Habitat	Area (ha.)	% survey area	Notes
A1.1.1 - Broad-leaved woodland	0.60	13%	Ash most abundant tree species with frequent sycamore and hazel. Partly NERC priority habitat.
A2.1 – Dense scrub	0.06	1%	Ivy dominant in most areas of this habitat within the site, with abundant bramble. Hawthorn dominant in other areas.
B2.1 - Neutral grassland	0.84	19%	Range of grasses including cocksfoot, creeping bent, false oat-grass, perennial ryegrass, and Yorkshire fog, plus typical ephemeral herbs including nettle, spear thistle, hogweed, knapweed, dandelion, broad-leaved dock and creeping buttercup.
B4 – Improved grassland	0.16	3%	Perennial ryegrass dominant, species-poor.
C3.1 - Tall ruderal	0.06	1%	Nettle, meadow thistle, bramble, hogweed and mugwort frequent
J1.1 - Arable	1.38	31%	Cereal crops
J1.2 - Amenity grassland	0.66	15%	
J3.6 - Building	0.13	3%	
J4 - Bare ground	0.60	13%	Gravel yard, sealed tarmac surfaces and railway.

17. The deciduous woodland is a NERC Act (Section 41) priority habitat. This habitat is, though, only found in the buffer zone around the site and would be unaffected by the development.
18. The habitat losses that would arise are summarised in Table 2. The main habitat lost would be bramble-dominated scrub, and would also require the removal of several young trees (ash, sycamore, hazel and hawthorn).



**Table 2. Lindisfarne NNR Research Laboratory area predicted habitat losses.**

Phase 1 Habitat	Area lost (m <sup>2</sup> )
A2.1 – Dense scrub	55
B2.1 - Neutral grassland	0
J1.2 - Amenity grassland	52
J3.6 - Building	0
J4 - Bare ground	0

#### *Bat Roost Assessment*

19. No potentially suitable bat roosts were identified that would be directly affected by the Project.

#### *Other Protected Species Habitat Suitability Assessment*

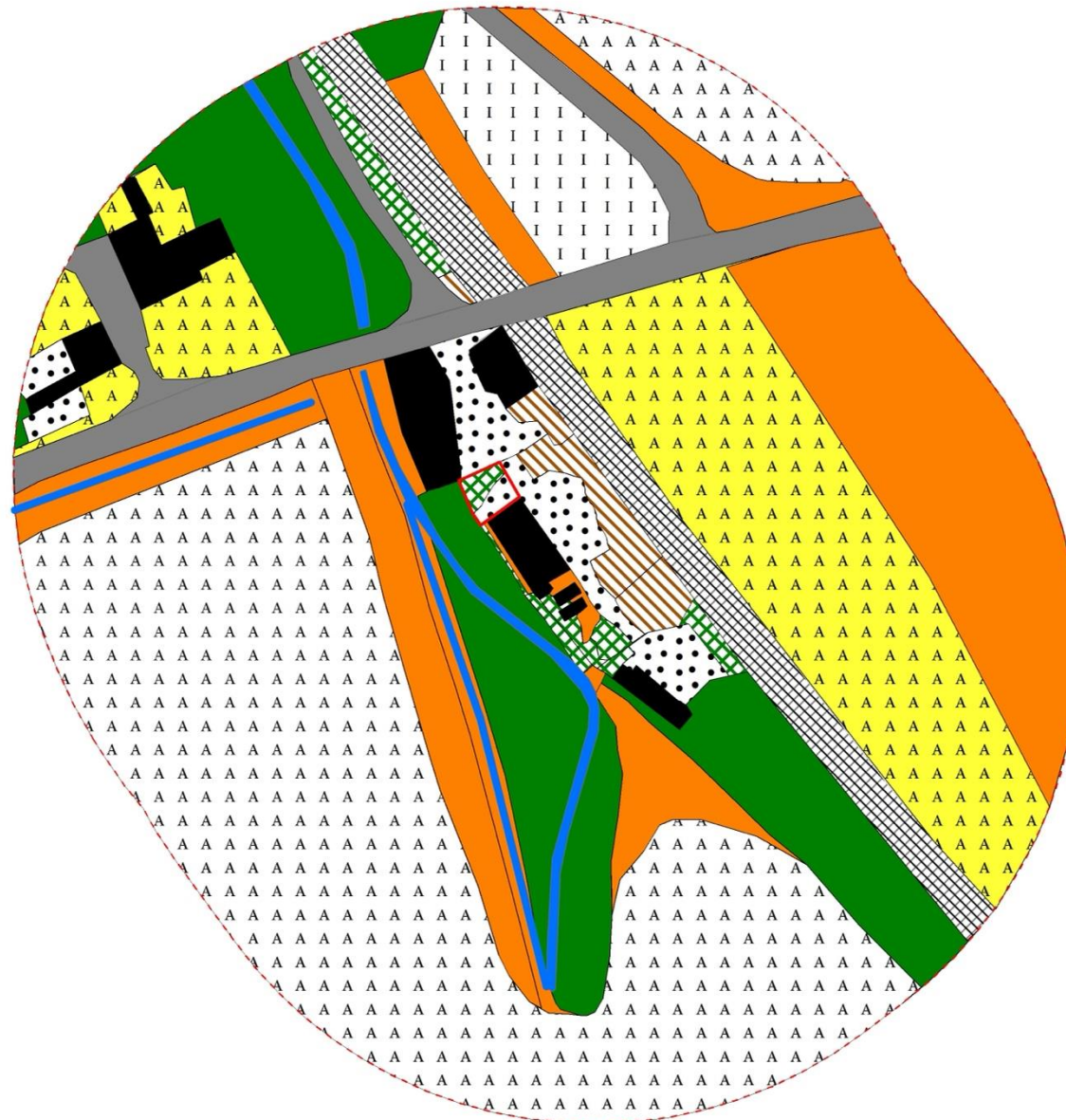
20. **Otter and Water Vole:** there is a stream running just beyond the western edge of the Project site, but it is not likely to be important for these species given its size and habitat present, and both these species will not be affected by the Project.
21. **Badger:** there is potentially suitable habitat for this species in the woodland adjacent to the Project site, but no evidence was found of any activity within the site during the survey visit. It is not likely to be affected by the Project but a further check ahead of any ground clearance should be carried out to ensure compliance with the Badgers Act.
22. **Great Crested Newt:** there are no ponds within the Project site or within 500m, so it would be unaffected by the Project.
23. **Breeding birds:** it is possible that the scrub within the site (which is predominantly ivy) could be used by nesting birds, so to avoid the possibility of destroying active birds' nests, any vegetation clearance for the Project should be undertaken outside the March-August bird breeding season.



Lindisfarne NNR  
Research Laboratory

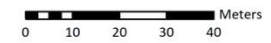
FIGURE 3

Phase 1 Habitats



KEY:

- Surface water
- Phase 1 survey area (site +100m buffer)
- Research Lab
- Phase 1 Habitat**
- A1.1.1 - Brd-lvd wood
- A2.1 - Scrub (dense)
- B2.1 - Neutral grass
- B4 - Improved grass
- C3.1 - Tall ruderal
- J1.1 - Arable
- J1.2 - Amenity grass
- J3.6 - Buildings
- J4 - Bare ground
- J4.1 - Road
- J4.2 - Railway



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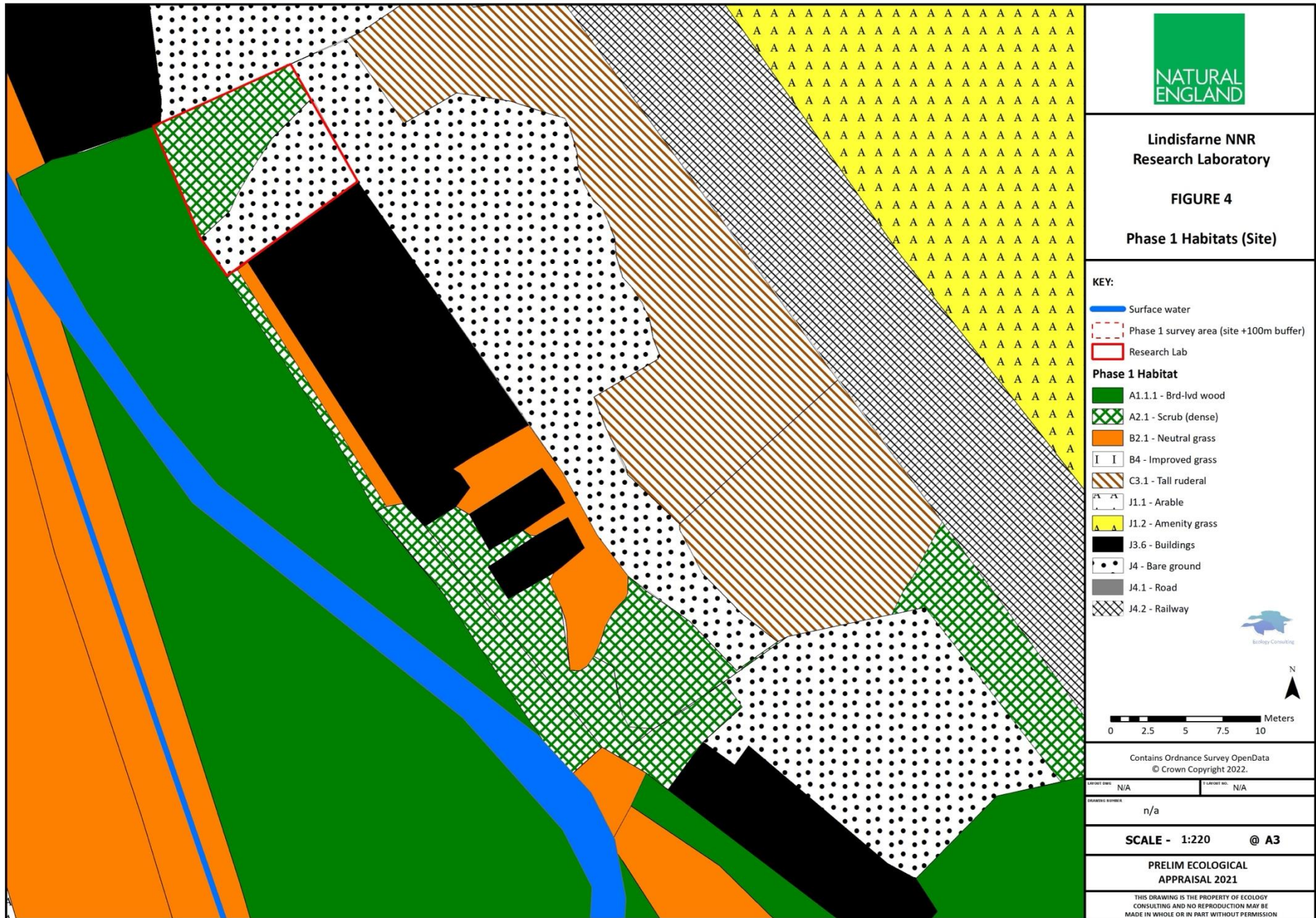
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## Conclusions

24. Given the findings of the PEA, no additional ecological surveys should be required for the Project.
25. No significant ecological effects of the construction of the Project are predicted, but mitigation measures will be required in order to comply with the nature conservation legislation:
  - A further check for badgers should be undertaken ahead of any ground clearance to ensure compliance with the Badgers Act.
  - Vegetation clearance works should be scheduled outside the main bird breeding season (March-August) in order to avoid the possibility of destroying active birds' nests.
26. Overall, the Project would not be predicted to have any significant ecological impacts.

## References

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

JNCC (2016). Handbook for Phase 1 habitat survey: a technique for environmental audit. JNCC report.