

MONA OFFSHORE WIND PROJECT

Environmental Statement

Volume 7, Annex 3.2: Extended Phase 1 habitat survey technical report

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Image of an offshore wind farm

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Mona Offshore Wind Ltd.

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Glossary

Term	Meaning
DAFOR Scale	Scale of abundance for habitats based on whether they are Dominant, Abundant, Frequent, Occasional, or Rare
Expert Working Group (EWG)	Expert working groups set up with relevant stakeholders as part of the Evidence Plan process
Phase 1 Habitat Survey	An industry standardised survey methodology for classifying and mapping large extents of habitats quickly and efficiently

Acronyms

Acronym	Description
DAFOR	Dominant Abundant Frequent Occasional Rare
EWG	Expert Working Group
GCN	Great Crested Newt
INNS	Invasive non-native species
MLWS	Mean Low Water Springs

Units

Unit	Description
cm	Centimetres
ha	Hectares
m	Metres
%	Percentage

1 Extended phase 1 habitat survey technical report

1.1 Introduction

- 1.1.1.1 This document forms Chapter 7, Annex 3.2: Extended phase 1 habitat survey technical report of the Environmental Statement for the Mona Offshore Wind Project.
- 1.1.1.2 The purpose of this technical report is to provide the methodology and results of the extended phase 1 habitat surveys undertaken between May 2022 and September 2023 to inform Volume 3, Chapter 3: Onshore ecology of the Environmental Statement.
- 1.1.1.3 Extended phase 1 habitat surveys were undertaken to identify habitats and potential for protected or notable species within and surrounding the Mona Onshore Development Area.
- 1.1.1.4 Two separate study areas have been defined for the purposes of this technical report. These include the 'study area', which describes the geographical extent subject to desk based research, and the 'survey area', which describes the area of land subject to site-specific surveys. The extent of the extended phase 1 habitat study area and the survey area were selected to ensure data was collected for the Mona Onshore Development Area and the surroundings that may support notable or protected habitats or species and may reasonably be affected by the Mona Offshore Wind Project. The extent of the extended phase 1 habitat study area and the survey area were discussed and agreed with the onshore ecology Expert Working Group (EWG).

1.2 Study area

- 1.2.1.1 The extended phase 1 habitat study area comprises the Mona Onshore Development Area, landward of Mean Low Water Springs (MLWS) and a 150 m buffer ('the extended phase 1 habitat study area').
- 1.2.1.2 For the purposes of this technical report and for ease of reference, the Mona Onshore Development Area has been separated into nine sections, the location and extent of which are shown in Figure 1.1. These sections were informed through discussions with the Applicant for ease of reference and have allowed the location of ecological features to be more accurately described and to facilitate the description of the baseline conditions and assessment. Therefore, the results of the extended phase 1 habitat surveys are presented in accordance with these nine sections.
- 1.2.1.3 The location and geographic extent of the extended phase 1 habitat study area is presented in Figure 1.2 of this technical report.

1.3 Survey area

- 1.3.1.1 Following the commencement of extended phase 1 habitat surveys, the Mona Onshore Development Area has been refined and now occupies a smaller geographical area. As such, the area of land subject to extended phase 1 surveys ('the extended phase 1 habitat survey area survey area') extends beyond the current iteration of the Mona Onshore Development Area. The results from surveys undertaken beyond the Mona Onshore Development Area (i.e. surveys undertaken based on an earlier design iterations) have been included in this technical report because they provide further context regarding the ecological sensitivity of the wider area and to inform Volume 3, Chapter 3: Onshore ecology of the Environmental Statement (where relevant). All the ecological data collected as part of the

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Environmental Statement for the Mona Offshore Wind Project has been made publicly available through the relevant data records centre.

- 1.3.1.2 Adopting a survey area that is greater in extent than the Mona Onshore Development Area is in accordance with the precautionary approach. It ensures that the Environmental Statement is accurately informed with data from within the Mona Onshore Development Area (i.e. that may be subject to direct impacts) and data from outside the Mona Onshore Development Area (i.e. that may be subject to indirect impacts).
- 1.3.1.3 The location and geographic extent of the extended phase 1 habitat survey area is presented in Figure 1.2 of this technical report.

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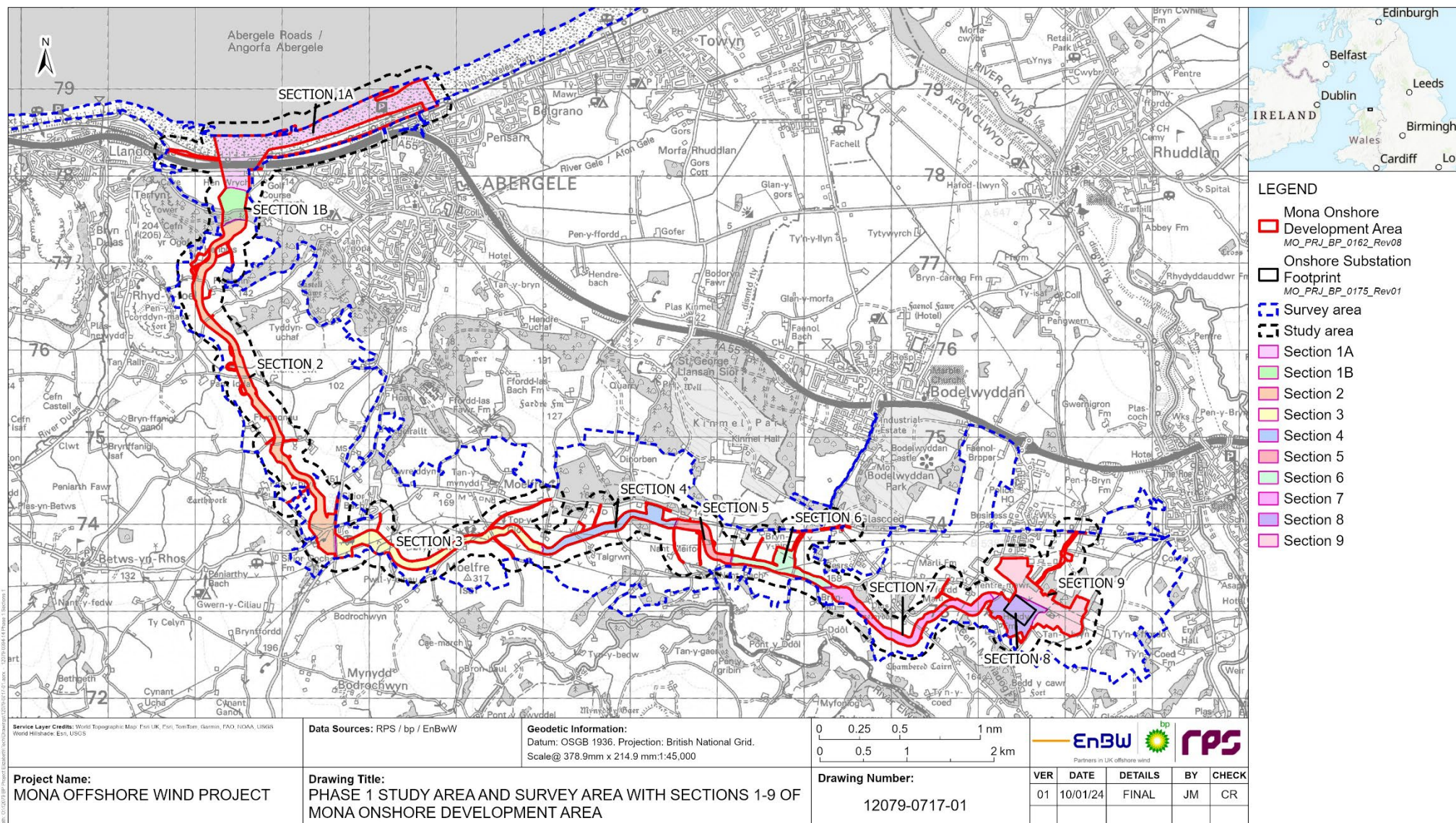


Figure 1.1: Extended phase 1 study area and survey area with sections 1 to 9 of Mona Onshore Development Area.

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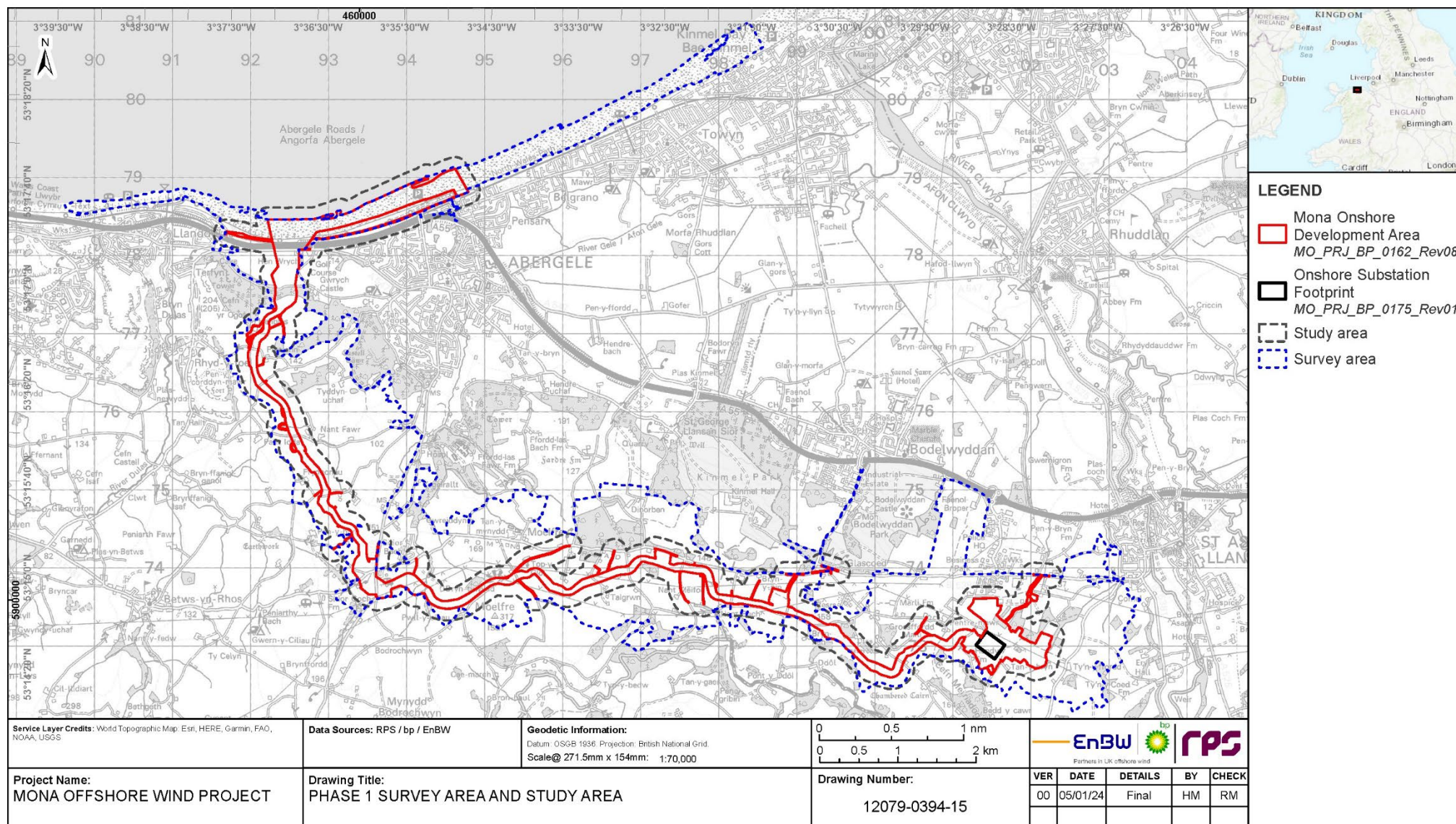


Figure 1.2: Extended phase 1 survey area and study area.

1.4 Consultation

- 1.4.1.1 The scope, methodology and findings of the extended phase 1 habitat surveys, including those undertaken beyond the Mona Onshore Development Area, were discussed and agreed with stakeholders via regular Onshore Ecology EWG meetings. Further detail regarding consultation undertaken with respect onshore ecology, including extended phase 1 habitat surveys can be found in Volume 3, Chapter 3: Onshore ecology of the Environmental Statement and the Consultation Report (document reference: E.3).

1.5 Methodology

1.5.1 Desktop study

- 1.5.1.1 Information on protected and notable habitats within the extended phase 1 habitat study area was collected from existing studies and datasets. These are summarised in Table 1.1.

Table 1.1: Summary of key desktop sources.

Title	Source	Year	Author
Historical biological records	Cofnod	2023	Cofnod
DataMapWales	Welsh Government	2023	Welsh Government
Multi-Agency Geographic Information for the Countryside (MAGIC)	Department for the Environment, Food & Rural Affairs (Defra)	2023	Defra
UK Protected Area Joint Nature Conservation Committee (JNCC)	JNCC website	2023	JNCC

1.5.2 Extended phase 1 habitat survey

- 1.5.2.1 The extended phase 1 habitat surveys were undertaken between May 2022 and September 2023 to map broad habitat types present and identify potential for protected or notable species within the extended phase 1 habitat survey area. The surveys were undertaken by ecologists suitably experienced in undertaking extended phase 1 habitat surveys and in accordance with the standard methodology set out in the Joint Nature Conservation Committee (JNCC) Handbook for Phase 1 Habitat Survey - a technique for environmental audit (JNCC, 2010). All broad habitat types recorded within the extended phase 1 habitat survey area were mapped using the JNCC Phase 1 Habitat Classification scheme, including phase 1 habitat types.

Identifying potential for protected or notable species

- 1.5.2.2 In addition to broad habitat types, the extended phase 1 habitat surveys also identified habitats of potential value to legally protected or notable species. Signs of legally

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protected or notable species, including sightings, tracks, droppings and burrows were recorded during the extended phase 1 habitat surveys.

1.5.2.3 Signs of legally protected or notable species were recorded in the form of target notes, which are included in Appendix A of this technical report. The location of the target notes within the extended phase 1 habitat survey area are presented in Figure 1.3 to Figure 1.13 of this technical report, where appropriate. Examples of the habitats and signs of protected or notable fauna recorded during the extended phase 1 habitat surveys include:

- Habitats: species-rich native hedgerows that may qualify as ecologically 'important' under The Hedgerow Regulations 1997
- Aquatic invertebrates: watercourses with potential to support white-clawed crayfish *Austropotamobius pallipes*
- Terrestrial invertebrates: terrestrial habitats with potential to support protected or otherwise notable invertebrate species including grayling butterfly *Hipparchia semele* and small heath butterfly *Coenonympha pamphilus*
- Amphibians: ponds with the potential to support breeding populations of protected or notable amphibians, including great crested newt (GCN) *Triturus cristatus*
- Reptiles: terrestrial habitat with potential to support protected or otherwise notable reptiles including common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, adder *Vipera berus*, and grass snake *Natrix helvetica*
- Roosting bats: mature trees and buildings with features suitable for roosting bats
- Foraging/commuting bats: hedgerows and woodland with potential to be used by foraging and commuting bats
- Fish and eel: watercourses with potential to support notable fish species, including European eel *Anguilla anguilla*
- Hazel dormice: hedgerows and woodland with the potential to support hazel dormice *Muscardinus avellanarius* habitat
- Badgers: habitat with the potential to support badger *Meles meles* foraging and/or sett building activity
- Other mammals: watercourses with potential to support water vole *Arvicola amphibius* and otter *Lutra lutra*.

1.5.3 Limitations

1.5.3.1 extended phase 1 habitat surveys were not used to determine the presence or likely absence of a protected or notable species within the extended phase 1 habitat survey area. The extended phase 1 habitat surveys were used to assess the potential for habitat within the extended phase 1 habitat study area to support protected or notable species. Where a species was seen during the extended phase 1 habitat survey, or if there was clear and recent evidence of a species, such as badger snuffle holes or bat urine staining below a potential bat roost feature, this was reported using an appropriate target note (see Appendix A of this technical report).

1.5.3.2 Due to access constraints, some areas within the extended phase 1 survey area were not subject to phase 1 habitat surveys. The precautionary approach has been used for all land that has not been surveyed and desk study data and data from surrounding

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areas used to inform the likely presence or absence of protected and notable habitats, and species. Where there was any doubt, presence has been assumed.

- 1.5.3.3 Some extended phase 1 habitat surveys were undertaken at a suboptimal time of year. In order to address this constraint, updated phase 1 habitat surveys were undertaken at an optimal time of year and/or NVC surveys were undertaken, the results of which were used to update the extended phase 1 habitat survey results.
- 1.5.3.4 To protect the welfare of badgers, all data regarding the location of active badger setts have been removed. Details are provided in the Volume 7, Annex 3.12: Badger technical report. The Volume 7, Annex 3.12: Badger technical report is a confidential document and available upon request to those with a legitimate need to view this information'.

1.6 Results

1.6.1 Desktop study

- 1.6.1.1 The onshore ecology desk study (see Volume 7, Annex 3.1: Onshore ecology desk study technical report of the Environmental Statement) confirmed the presence of lowland dry acid grassland priority habitat, woodpasture and parkland priority habitat and ancient woodland within Mona Onshore Development Area.
- 1.6.1.2 The onshore ecology desk study (see Volume 7, Annex 3.1: Onshore ecology desk study technical report of the Environmental Statement) confirmed the presence of protected species within the Mona Onshore Development Area. Species included English bluebell *Hyacinthoides non-scripta*, badger and terrestrial invertebrates including cinnabar moth *Tyria jacobaeae*, common darter dragonfly *Sympetrum striolatum*, and a weevil *Sitona macularius*.
- 1.6.1.3 Many protected species were recorded close to but outside the Mona Onshore Development Area, including: otter, water vole and at least nine species of bat including common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, pipistrelle species *Pipistrellus sp.*, brown long-eared bat *Plecotus auritus*, long-eared species *Plecotus sp.*, Natterer's bat *Myotis nattereri*, whiskered/Brandt's bat *Myotis mystacinus/brandtii*, Myotis species *Myotis sp.*, noctule *Nyctalus noctula*, serotine *Eptesicus serotinus*, lesser horseshoe bat *Rhinolophus hipposideros*, and greater horseshoe bat *Rhinolophus ferrumequinum*.

1.6.2 Extended phase 1 habitat survey

- 1.6.2.1 Broad habitat types recorded within the extended phase 1 habitat survey area and study area are presented in Table 1.2 below, including the phase 1 habitat code, broad habitat type, abundance (using the DAFOR scale of Dominant, Abundant, Frequent, Occasional and Rare) and a description of the habitat and its location within the extended phase 1 habitat survey area.
- 1.6.2.2 The area in hectares (ha) and length in metres (m) of each broad habitat type recorded within the extended phase 1 habitat survey area is provided in Table 1.3 and Table 1.4 below.
- 1.6.2.3 The location and geographic extent of broad habitat types located within the phase 1 habitat survey area is shown in Figure 1.3 to Figure 1.50 of this technical report. Watercourses have been numbered for the purposes of cross referencing with other annexes. Target notes taken during extended phase 1 habitat surveys are provided in Appendix A of this technical report.

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- 1.6.2.4 A summary of the protected or notable species or species groups scoped into or out of the requirement for further surveys is provided in Table 1.5 below. This information has also been provided for each land parcel subject to phase 1 habitat surveys in Appendix A of this technical report.

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Table 1.2: Broad habitat types identified within the Mona Onshore Development Area.

Habitat code	Broad habitat type	Relative abundance within the Mona Onshore Development Area and description
A1.1.1	Semi-natural broadleaved woodland – vegetation dominated by broadleaved trees more than 5 m high when mature, forming distinct canopy and must not have obviously been planted by humans.	Occasional – Occurs in isolated small extents throughout the Mona Onshore Development Area, except sections 5, 6 and 8. More frequent in areas outside the Mona Onshore Development Area, within the survey area.
A1.1.2	Plantation broadleaved woodland – vegetation dominated by broadleaved trees more than 5 m high when mature, forming distinct canopy and has obviously been planted by humans (evidenced by structured planting, use of guards etc).	Not present – Only present outside the Mona Onshore Development Area within the survey area.
A1.2.2	Plantation coniferous woodland – vegetation dominated by coniferous trees more than 5 m high when mature, forming distinct canopy and has obviously been planted by humans (evidenced by structured planting, use of guards etc).	Not present – Only present outside the Mona Onshore Development Area within the survey area .
A1.3.1	Semi-natural mixed woodland – vegetation dominated by a mix of broadleaved and coniferous trees (Neither can exceed 90 percent (%) dominance) more than 5 m high when mature, forming distinct canopy and must not have obviously been planted by humans.	Rare - Only occurs within section 9 of the Mona Onshore Development Area.
A1.3.2	Plantation mixed woodland – comprises vegetation dominated by a mix of broadleaved and coniferous trees (with neither exceeding 90% dominance) more than 5 m high when mature and has obviously been planted by humans (evidenced by structured planting, use of guards etc).	Rare - Only occurs within sections 8 and 9 of the Mona Onshore Development Area.
A2.1	Dense/continuous scrub – Dense seral or climax vegetation dominated by locally native shrubs, usually less than 5 m tall with few scattered trees.	Occasional – Occurs in isolated small extents within sections 1a, 2, 3, 7 and 9 of the Mona Onshore Development Area.
A2.2	Scattered scrub – Seral or climax vegetation dominated by locally native shrubs, usually less than 5 m tall with few scattered trees.	Rare – Occurs in isolated small extents within sections 1a, 7 and 9 of the Mona Onshore Development Area.
A3.1	Broadleaved parkland/scattered trees – Broadleaved tree cover of less than 30%.	Occasional – Occurs in isolated small extents within sections 1a, 2, 3, 4 and 7 of the Mona Onshore Development Area.
A3.2	Coniferous parkland/scattered trees – Coniferous tree cover of less than 30%.	Not present – Absent within the Mona Onshore Development Area but present within the survey area.

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Habitat code	Broad habitat type	Relative abundance within the Mona Onshore Development Area and description
A3.3	Mixed parkland/scattered trees – Mixed tree species, with cover of less than 30%.	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
A4.1	Broadleaved woodland recently felled – The only areas of felled trees which should be included in this category are those whose future land use is uncertain, for instance when it is not clear whether they are to be replanted or used for crops.	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
A4.3	Recently felled mixed woodland – The only areas of felled trees which should be included in this category are those whose future land use is uncertain, for instance when it is not clear whether they are to be replanted or used for crops.	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
B1.2	Semi-improved acid grassland – Semi-improved grassland that has been modified by artificial fertilisers, slurry, intensive grazing, herbicides or drainage, and consequently have a range of species which is less diverse and natural than unimproved grasslands. Grassland in this category is often unenclosed, as on hill-grazing land, and occurs on a range of acid soils (pH less than 5.5). It is generally species-poor, and often grades into wet or dry dwarf shrub heath, although it must always have less than 25% dwarf shrub cover. Pioneer annual-rich calcifuge communities on dry sandy soils are included in this category, as are wet acidic grasslands typified by species such as <i>Juncus squarrosus</i> .	Rare – Only present in section 3 of the Mona Onshore Development Area .
B2.1	Unimproved neutral grassland – Unimproved grasslands that may be rank and neglected, mown or grazed. They may have been treated with low levels of farmyard manure but should not have had sufficient applications of fertiliser or herbicide, or have been so intensively grazed or drained, as to alter the sward composition significantly. Species diversity is often high, with species characteristic of the area and the soils and with a very low percentage of agricultural species. Typically enclosed and usually more intensively managed than acid or calcareous grassland (except on roadside verges), this category encompasses a wide range of communities occurring on neutral soils (pH 5.5-7.0).	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
B2.2	Semi-improved neutral grassland – Semi-improved grassland that has been modified by artificial fertilisers, slurry, intensive grazing, herbicides or drainage, and consequently have a range of species which is less diverse and natural than unimproved grasslands. Species diversity is often high, with species characteristic of the area and the soils and with a very low percentage of agricultural species. Typically enclosed and usually more intensively managed	Dominant – Present within sections 2, 3, 4, 7, and 9 of the Mona Onshore Development Area.

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Habitat code	Broad habitat type	Relative abundance within the Mona Onshore Development Area and description
	than acid or calcareous grassland (except on roadside verges), this category encompasses a wide range of communities occurring on neutral soils (pH 5.5-7.0).	
B3.1	Unimproved calcareous grassland – Unimproved grasslands that may be rank and neglected, mown or grazed. They may have been treated with low levels of farmyard manure, but should not have had sufficient applications of fertiliser or herbicide, or have been so intensively grazed or drained, as to alter the sward composition significantly. Unimproved calcareous grasslands are often unenclosed, not managed intensively, and occur on calcareous soils (pH above 7.0). <i>Dryas octopetala</i> communities are included. Where the grass is tall, the dominant species is usually either <i>Brachypodium pinnatum</i> or <i>Bromus erectus</i> , whilst species indicative of short, close-grazed and species-rich calcareous turf are <i>Koeleria macrantha</i> , <i>Avenula pratensis</i> , <i>Sesleria albicans</i> , <i>Helianthemum nummularium</i> , <i>Sanguisorba minor</i> and <i>Thymus praecox</i> .	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
B3.2	Semi-improved calcareous grassland – Semi-improved grassland that has been modified by artificial fertilisers, slurry, intensive grazing, herbicides or drainage, and consequently have a range of species which is less diverse and natural than unimproved grasslands. Semi-improved calcareous grasslands are often unenclosed, not managed intensively, and occur on calcareous soils (pH above 7.0). <i>Dryas octopetala</i> communities are included. Where the grass is tall, the dominant species is usually either <i>Brachypodium pinnatum</i> or <i>Bromus erectus</i> , whilst species indicative of short, close-grazed and species-rich calcareous turf are <i>Koeleria macrantha</i> , <i>Avenula pratensis</i> , <i>Sesleria albicans</i> , <i>Helianthemum nummularium</i> , <i>Sanguisorba minor</i> and <i>Thymus praecox</i> .	Occasional – Occurs in one large extent in section 1a, and smaller extents in section 1b and section 2 of the Mona Onshore Development Area.
B4	Improved grassland – Grasslands heavily effected by grazing, drainage, herbicide application, inorganic fertilisers or heavy doses of manure or slurry. Very limited range of grass species and few common forbs, mainly those resistant to mowing or grazing such as <i>Taraxicum officinale</i> , <i>Trifolium repens</i> , <i>Rumex acetosa</i> , <i>Bellis perennis</i> , <i>Ranunculus acris</i> , <i>Lolium perenne</i> and <i>Ranunculus bulbosa</i> . Important indicators include: <ul style="list-style-type: none"> Bright green, lush and even sward, dominated by grasses Low diversity of forb species More than 50 % <i>Lolium perenne</i>, <i>Trifolium repens</i> and other agricultural species. 	Dominant – Occurs in large extents throughout all sections other than section 1a and section 1b of the Mona Onshore Development Area.

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Habitat code	Broad habitat type	Relative abundance within the Mona Onshore Development Area and description
B5	Marsh/marshy grassland – This is a diffuse category covering certain <i>Molinia</i> grasslands, grasslands with a high proportion of <i>Juncus</i> species, <i>Carex</i> species or <i>Filipendula ulmaria</i> and wet meadows and pastures supporting communities of species such as <i>Caltha palustris</i> or <i>Valeriana</i> species, where broadleaved herbs rather than grasses, predominate.	Occasional – Occurs in isolated small extents in sections 2 and 3 of the Mona Onshore Development Area.
B6	Poor semi-improved grassland – Similar to neutral semi-improved grassland but with less species diversity and likely to have less species indicative of the substrate conditions.	Dominant – Occurs in all sections other than section 1b, 8 and 9 of the Mona Onshore Development Area.
C1.1	Continuous bracken – Areas dominated by bracken <i>Pteridium aquilinum</i> .	Rare – Occurs in isolated small extents in section 3 of the Mona Onshore Development Area.
C1.2	Scattered bracken – Scattered patches of bracken.	Rare – Occurs in isolated small extents in section 3 of the Mona Onshore Development Area.
C3.1	Tall ruderal – Tall perennial or biennial dicotyledons, usually more than 25 centimetre (cm) high of species such as <i>Chamenon angustifolium</i> , <i>Urtica dioica</i> and <i>Reynoutria japonica</i> .	Frequent – Occurs in isolated small extents within sections 1a, 2, 3, 4, and 9 of the Mona Onshore Development Area.
D1.2	Basic dry dwarf shrub heath – Vegetation with greater than 25% cover of ericoids or small gorse species in relatively dry situations forms this category. <i>Calluna vulgaris</i> , <i>Vaccinium myrtillus</i> , <i>Erica cinerea</i> , <i>Ulex minor</i> and <i>Ulex gallii</i> are typical of lowland dry dwarf shrub heath, whilst <i>Empetrum nigrum</i> , <i>Empetrum hennaphroditum</i> , <i>Arctostaphylos uva-ursi</i> and <i>Vaccinium vitis-idaea</i> are found in upland heaths.	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
E3.1	Valley mire fen – Develops along the lower slopes and floor of a small valley and receives water from springs and seepages on the valley sides, feeding a central watercourse. Such a fen can be distinguished from a flush because the former is a complex, whereas a flush is a discrete single feature, usually of limited extent.	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
G1	Standing water – Includes lakes, reservoirs, pools, flooded gravel pits, ponds, water-filled ditches, canals and brackish lagoons.	Occasional – Occurs in isolated small extents within sections 1a, 2, 7 and 9 of the Mona Onshore Development Area.
H1.3	Intertidal boulders/rocks	Not present – Absent within the Mona Onshore Development Area but present within the survey area.

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Habitat code	Broad habitat type	Relative abundance within the Mona Onshore Development Area and description
Hardstanding	Hardstanding	Occasional – Occurs within sections 1a, 2, 3 and 8 and 9 of the Mona Onshore Development Area.
I1.2	Natural scree – An accumulation, usually at the foot of a cliff, of weathered rock fragments of all sizes, mostly angular in shape. This category includes large boulders (boulder scree) which should be mapped using enlarged red dots.	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
I2.1	Artificial quarry – Excavations such as gravel, sand or chalk pits and stone quarries.	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
I2.2	Artificial spoil – Includes abandoned industrial areas and tips of waste material such as coal mine spoil and slag.	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
I2.4	Refuse tip	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
J1.1	Arable – Arable cropland, horticultural land, freshly ploughed land and recently re-seeded grassland, potentially managed for silage.	Frequent – Occurs within sections 1a, 1b, 2, 4, and 5 of the Mona Onshore Development Area .
J1.2	Amenity grassland – This comprises intensively managed and regularly mown grasslands, typical of lawns, playing fields, golf course fairways and many urban 'savannah' parks, in which <i>Lolium perenne</i> , with or without <i>Trifolium repens</i> , often predominates. The sward composition will depend on the original seed mixture used and on the age of the community. Herbs such as <i>Bellis perennis</i> , <i>Plantago major</i> and <i>Taraxacum officinale</i> may be present.	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
J1.3	Ephemeral/short perennial – Short, patchy plant associations typical of derelict urban sites, quarries and railway ballast. The land must be freely draining, and usually has shallow stony soil. The vegetation typically lacks a clear dominant species but consists of a mixture of low-growing plants, often less than 25 cm high, such as <i>Plantago major</i> , <i>Ranunculus repens</i> , <i>Trifolium repens</i> , <i>Medicago lupulina</i> , <i>Tussilago farfara</i> , <i>Leucanthemum vulgare</i> and <i>Senecio species</i> , or of taller species such as <i>Sisymbrium</i> or <i>Melilotus species</i> .	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
J1.4	Introduced shrub – Vegetation dominated by shrub species that are not locally native, whether planted or self-sown.	Not present – Absent within the Mona Onshore Development Area but present within the survey area.

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Habitat code	Broad habitat type	Relative abundance within the Mona Onshore Development Area and description
J3.4	Caravan site	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
J3.6	Buildings	Not present – Absent within the Mona Onshore Development Area but present within the survey area.
J4	Bare ground	Dominant – Common throughout the Mona Onshore Development Area, in small areas in section 1a, 2, 3, 6, 7 and 9.

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Table 1.3: Area of broad habitat types identified within the extended phase 1 habitat survey area.

Habitat type	Area within survey area (ha)	Area within sections 1 to 9 of the Mona Onshore Development Area (ha)										Total in Mona Onshore Development Area
		Section 1A	Section 1B	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	
A1.1.1 Semi-natural broadleaved woodland	102.21	0.96	3.61	0.20	0.06	0.30	0.00	0.00	0.07	0.00	0.33	5.53
A1.1.2 Plantation broadleaved woodland	11.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A1.2.2 Plantation coniferous woodland	2.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A1.3.1 Semi-natural mixed woodland	5.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12	1.12
A1.3.2 Plantation mixed woodland	8.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11
A2.1 Dense/continuous scrub	8.32	0.10	0.00	0.23	0.07	0.00	0.00	0.00	0.12	0.00	0.06	0.59
A2.2 Scattered scrub	2.38	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.36
A3.1 Broadleaved parkland/scattered trees	4.57	0.13	0.00	0.07	0.09	0.02	0.00	0.00	0.12	0.00	0.00	0.44

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Habitat type	Area within survey area (ha)	Area within sections 1 to 9 of the Mona Onshore Development Area (ha)										Total in Mona Onshore Development Area
		Section 1A	Section 1B	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	
A3.2 Coniferous parkland/scattered trees	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A3.3 Mixed parkland/scattered trees	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A4.1 Recently felled broadleaved woodland	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A4.3 Recently felled mixed woodland	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1.2 Semi-improved acid grassland	18.76	0.00	0.00	0.00	2.17	0.00	0.00	0.00	0.00	0.00	0.00	2.17
B2.1 Unimproved neutral grassland	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B2.2 Semi-improved neutral grassland	63.84	0.00	0.00	2.91	1.41	0.41	0.00	0.00	1.07	0.00	0.00	5.79
B3.1 Unimproved calcareous grassland	1.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Habitat type	Area within survey area (ha)	Area within sections 1 to 9 of the Mona Onshore Development Area (ha)										Total in Mona Onshore Development Area
		Section 1A	Section 1B	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	
B3.2 Semi-improved calcareous grassland	29.91	5.15	2.21	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.55
B4 Improved grassland	876.59	0.00	0.00	30.81	18.51	15.22	2.33	15.09	17.09	17.11	27.99	144.15
B5 Marsh/marshy grassland	6.62	0.00	0.00	0.06	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.55
B6 Poor semi-improved grassland	125.00	0.19	0.00	4.62	1.75	0.35	1.63	0.44	5.61	0.00	0.00	14.60
C1.1 Continuous bracken	2.36	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02
C1.2 Scattered bracken	0.41	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.35
C3.1 Tall ruderal	12.30	0.56	0.00	0.26	0.23	0.07	0.00	0.00	0.00	0.00	0.10	1.21
D1.2 Basic dry dwarf shrub heath	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E3.1 Valley mire fen	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
G1 Standing water	4.16	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.10

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Habitat type	Area within survey area (ha)	Area within sections 1 to 9 of the Mona Onshore Development Area (ha)										Total in Mona Onshore Development Area
		Section 1A	Section 1B	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	
H1.3 Intertidal boulders/rocks	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hardstanding	4.68	1.15	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.09	0.45	2.47
I1.2 Natural scree	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I1.2.2 Natural basic scree	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2.1 Artificial quarry	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2.2 Artificial spoil	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2.4 Refuse tip	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J1.1 Arable	166.90	0.00	4.73	9.69	0.00	0.98	4.89	0.00	0.00	0.00	0.00	20.30
J1.2 Amenity grassland	4.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J1.3 Ephemeral/short perennial	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J1.4 Introduced shrub	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J3.4 Caravan site	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J3.6 Buildings	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J4 Bare ground	16.75	0.39	0.00	0.21	0.07	0.00	0.00	0.44	0.23	0.00	0.21	1.57

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Habitat type	Area within survey area (ha)	Area within sections 1 to 9 of the Mona Onshore Development Area (ha)										Total in Mona Onshore Development Area
		Section 1A	Section 1B	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	
J5 Other habitat	243.83	58.02	0.00	0.43	0.00	0.08	0.00	0.01	0.05	0.00	0.02	58.62
Grand Total	1733.65	66.98	10.55	50.48	25.23	17.43	8.85	15.99	24.42	17.20	30.48	267.60

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Table 1.4: Length of broad habitat types identified in the extended phase 1 habitat survey area.

Habitat	Length within survey area (km)	Length within Mona Onshore Development Area (km)										Total in Mona Onshore Development Area (km)
		Section 1A	Section 1B	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	
G2 Running water	10.35	0.00	0.00	0.22	0.55	0.00	0.00	0.00	0.00	0.00	0.49	1.27
G2.1 Eutrophic running water	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
G2.2 Mesotrophic running water	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07
G2.3 Oligotrophic running water	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I1.1.2 Natural basic inland cliff	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J2.1.1 Native species-rich intact hedgerow	46.65	0.14	0.00	1.41	1.27	1.46	0.03	0.68	1.57	0.86	0.98	8.40
J2.1.2 Species-poor intact hedgerow	56.39	0.00	0.00	2.14	0.24	1.20	0.43	0.76	0.88	0.74	1.28	7.68
J2.2 Defunct hedgerow	0.76	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44
J2.2.1 Native species-rich defunct hedgerow	4.34	0.00	0.00	0.00	0.36	0.27	0.00	0.00	0.09	0.00	0.03	0.75

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Habitat	Length within survey area (km)	Length within Mona Onshore Development Area (km)										Total in Mona Onshore Development Area (km)
		Section 1A	Section 1B	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	
J2.2.2 Species-poor defunct hedgerow	22.44	0.29	0.00	0.83	0.71	0.14	0.12	0.14	0.38	0.30	0.21	3.12
J2.3.1 Native species-rich hedgerow with trees	29.59	0.00	0.00	1.13	1.78	0.54	0.11	1.37	1.21	0.53	0.49	7.16
J2.3.2 Species-poor hedgerow with trees	30.05	0.16	0.00	0.96	1.08	0.00	0.42	0.49	0.15	0.47	2.64	6.38
J2.4 Fence	128.34	0.51	1.13	1.85	0.70	0.50	0.14	0.07	2.09	0.76	5.47	13.21
J2.5 Wall	9.71	0.67	0.00	0.31	0.08	0.00	0.00	0.00	0.00	0.00	0.00	1.07
J2.6 Dry ditch	10.67	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.20	0.00	0.59	0.83
J2.7 Boundary removed	1.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
J2.8 Earth bank	3.24	0.00	0.00	0.00	0.00	0.00	0.10	1.44	0.00	0.00	0.00	1.54
J3.5 Artificial sea wall	355.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grand total	22.44	1.77	1.13	9.32	6.78	4.12	1.35	4.95	6.58	3.67	12.26	51.92

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Table 1.5: Protected or notable species and species groups scoped in or out for further survey.

Species/species group	Section 1a	Section 1b	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9
Amphibian/GCN	Out	Out	In	In	Out	Out	Out	In	In	In
Aquatic invertebrates	In	Out	In	Out	Out	Out	Out	Out	Out	In
Badger	In	In	In	In	In	Out	In	In	In	In
Bats – bat activity	Out	Out	In	In	Out	Out	In	In	In	In
Bats – bat building	In	Out	In	In	Out	Out	Out	Out	Out	In
Bats – bat tree	In	In	In	In	In	In	In	In	In	In
Fish and eel	In	Out	In	Out	Out	Out	Out	Out	Out	In
Hazel dormouse	Out	Out	In	In	In	Out	In	In	In	In
Invasive Non-native Species (INNS)	In	Out	In	In	In	Out	Out	In	In	In
Otter	Out	Out	In	Out	Out	Out	Out	Out	Out	In
Hedgerow/National Vegetation Classification	In	In	In	In	In	In	In	In	In	In
Reptiles	In	Out	In	In	In	Out	In	In	In	In
Terrestrial invertebrates	In	Out	In	In	In	Out	In	Out	In	In
Water vole	Out	Out	In	Out	Out	Out	Out	Out	Out	In
White-clawed crayfish	Out	Out	In	Out	In	Out	Out	Out	Out	In

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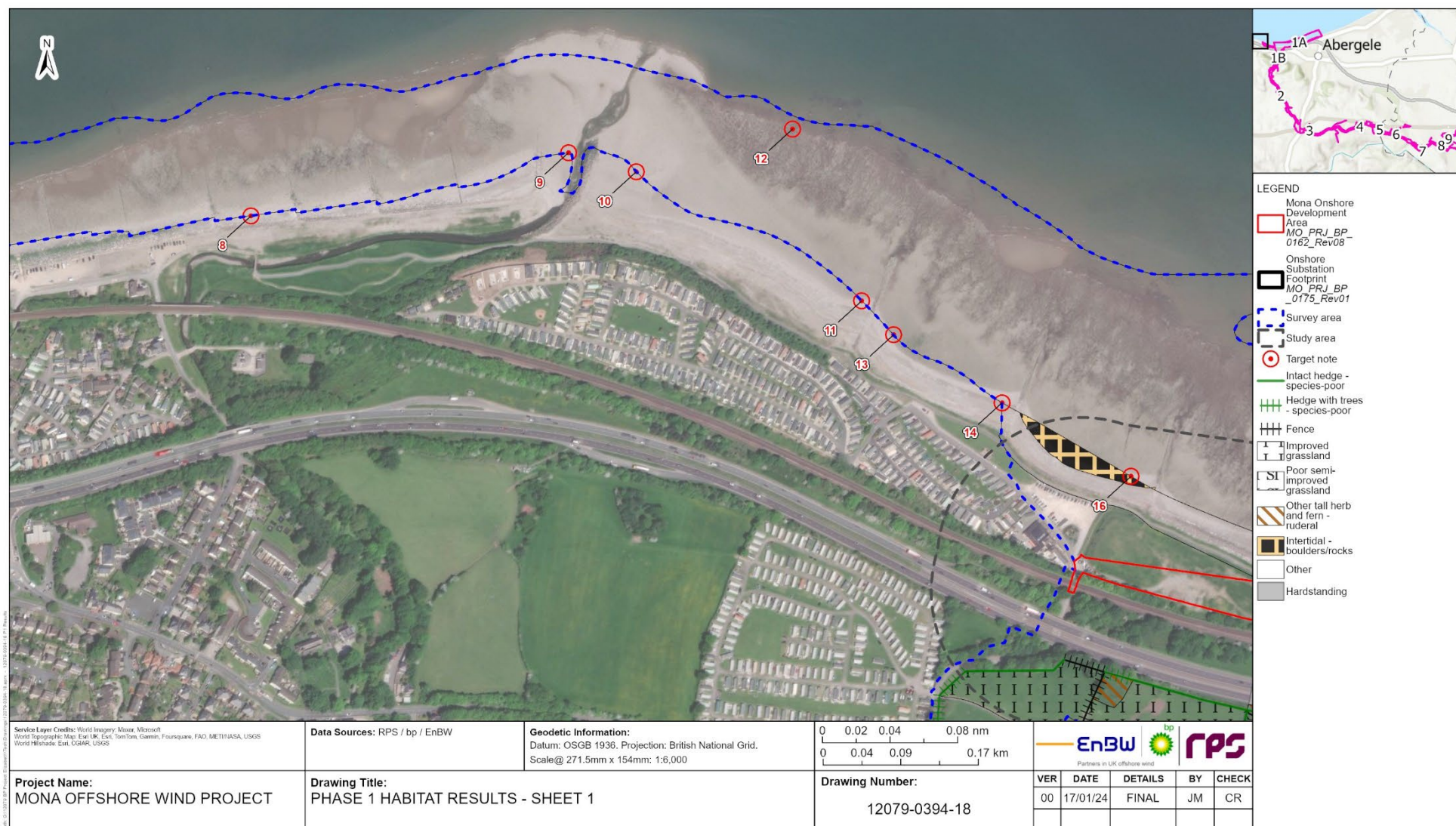


Figure 1.3: Extended phase 1 habitat results – Sheet 1.

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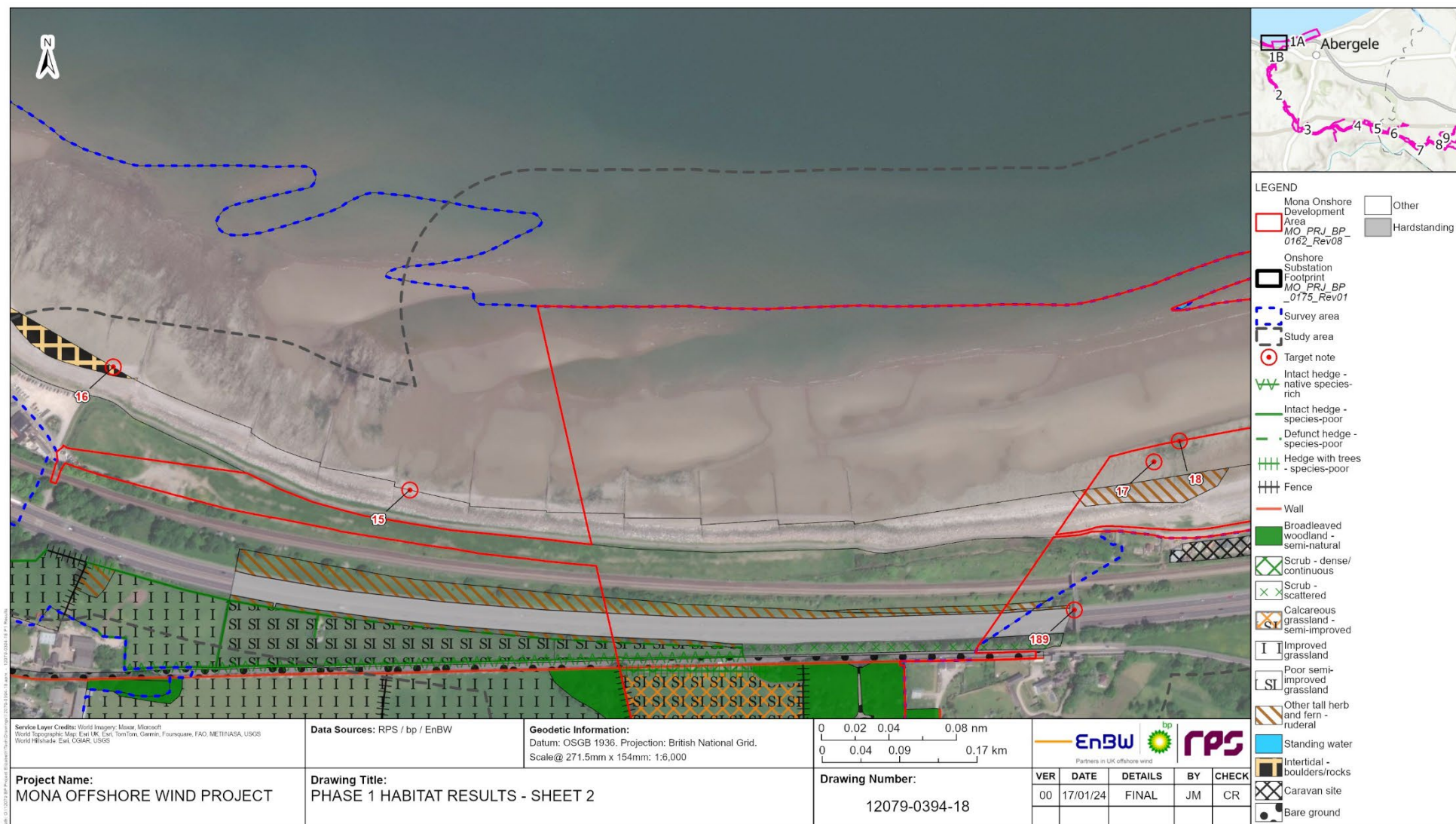


Figure 1.4: Extended phase 1 habitat results – Sheet 2.

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Figure 1.5: Extended phase 1 habitat results – Sheet 3.

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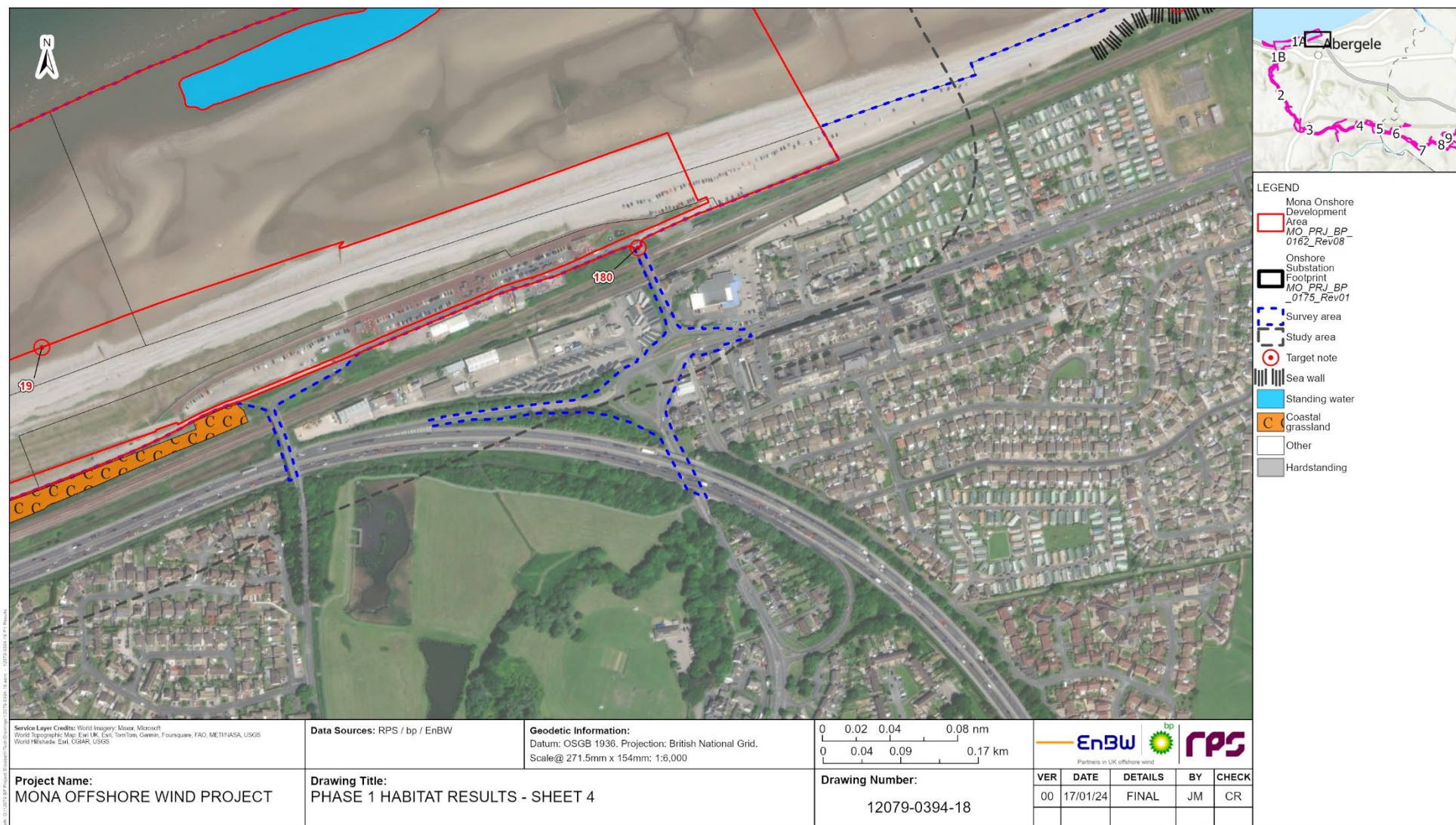


Figure 1.6: Extended phase 1 habitat results – Sheet 4.

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Figure 1.7: Extended phase 1 habitat results – Sheet 5.

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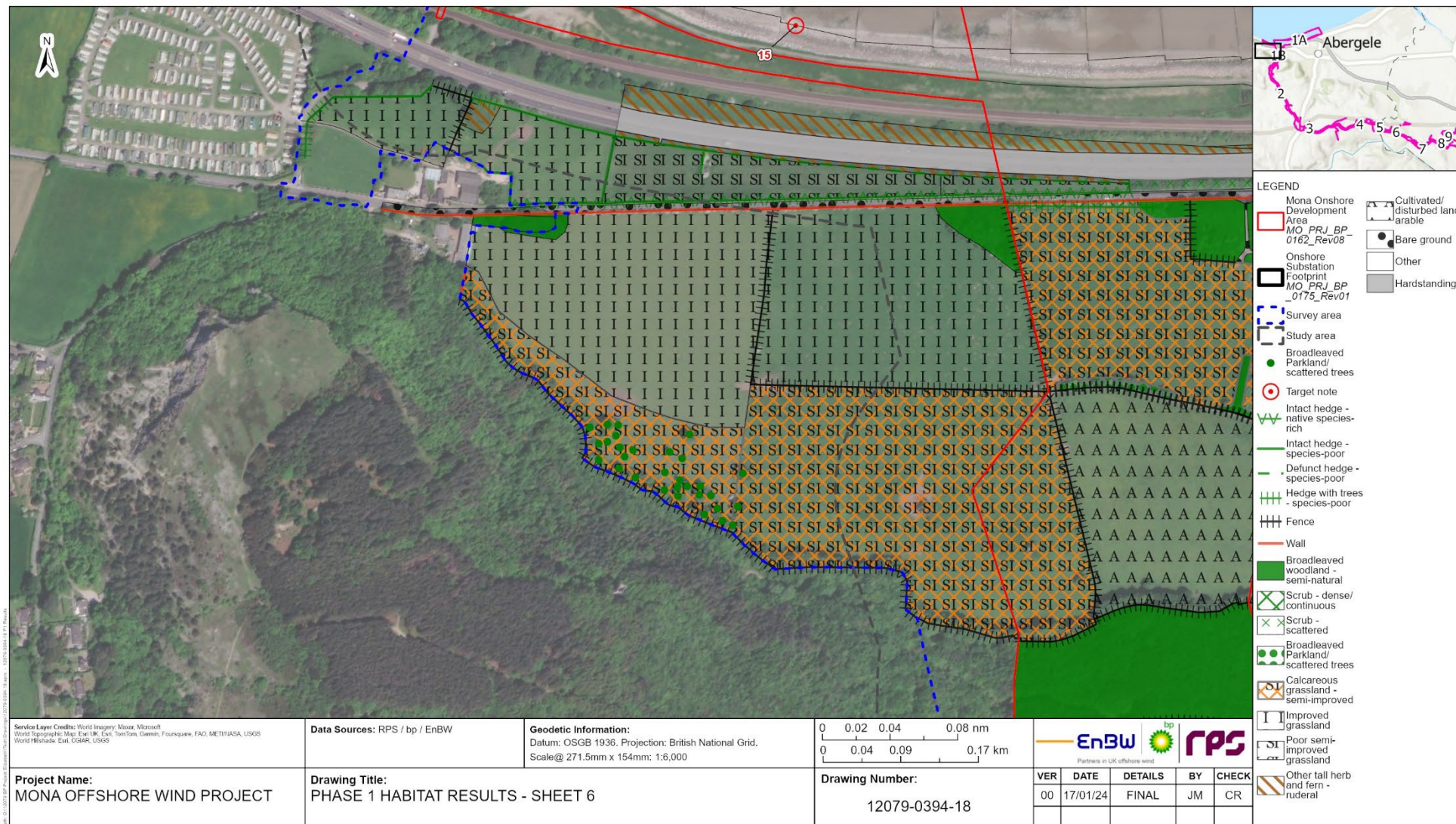


Figure 1.8: Extended phase 1 habitat results – Sheet 6.

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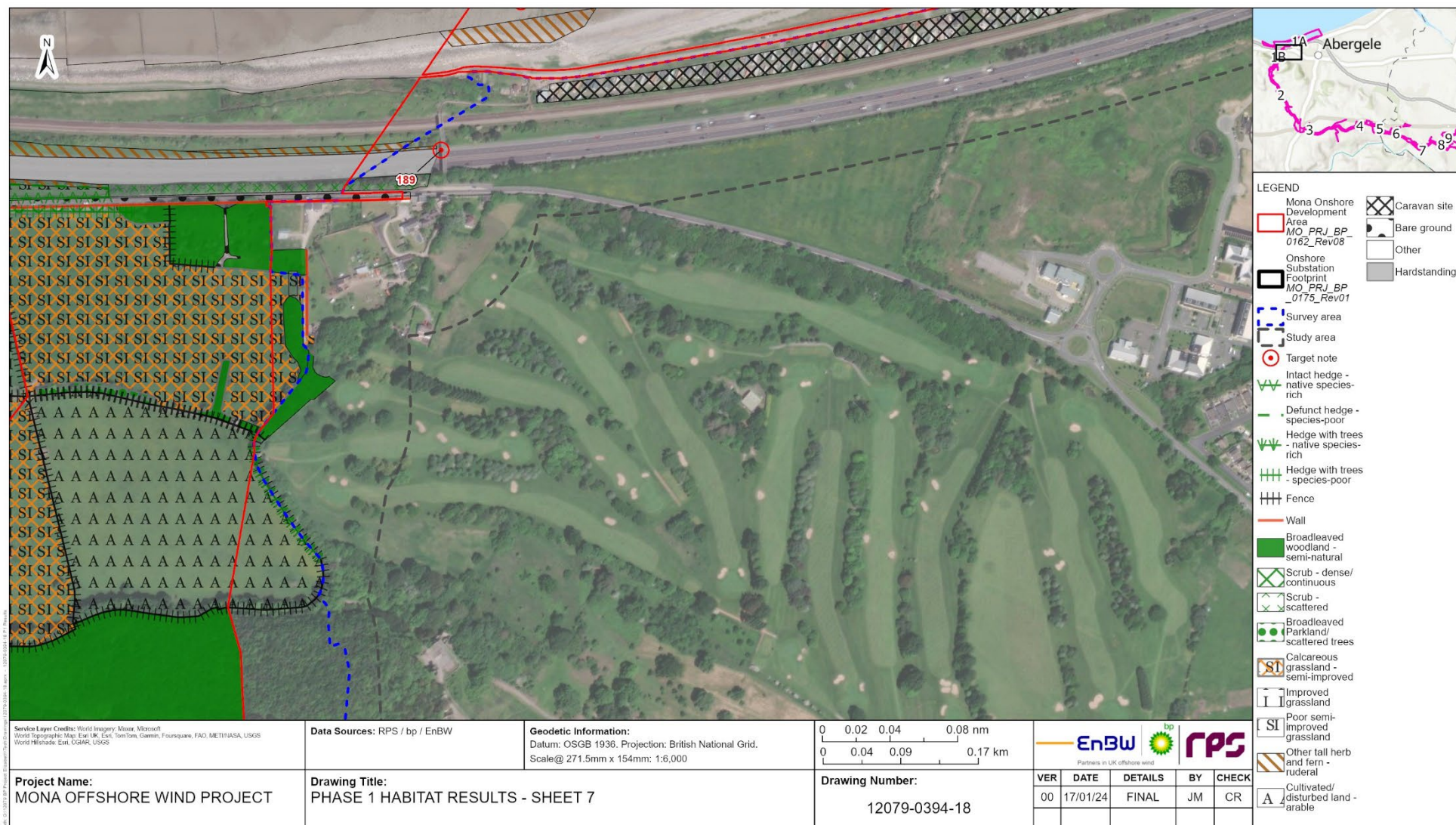


Figure 1.9: Extended phase 1 habitat results – Sheet 7.

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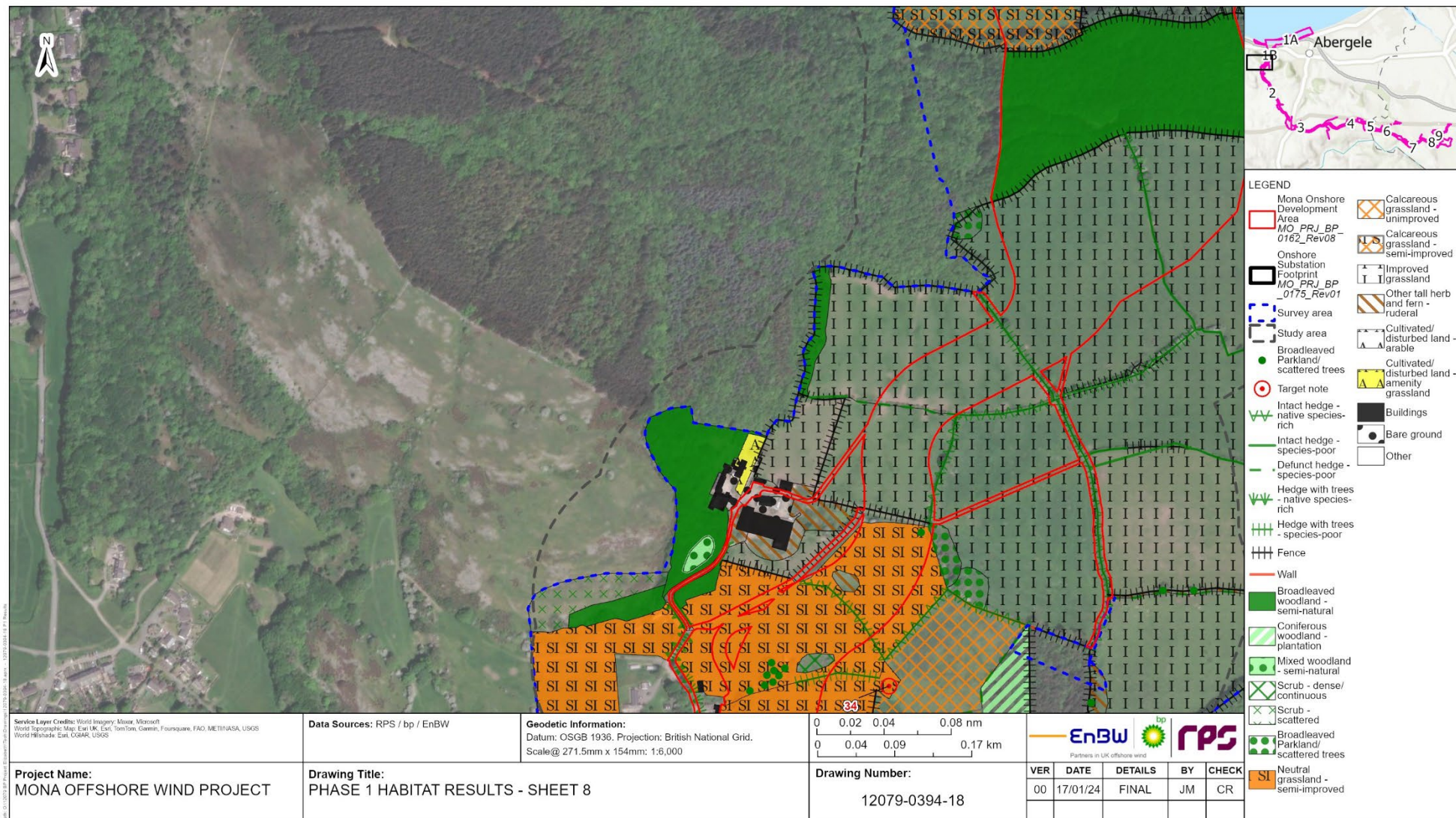


Figure 1.10: Extended phase 1 habitat results – Sheet 8.

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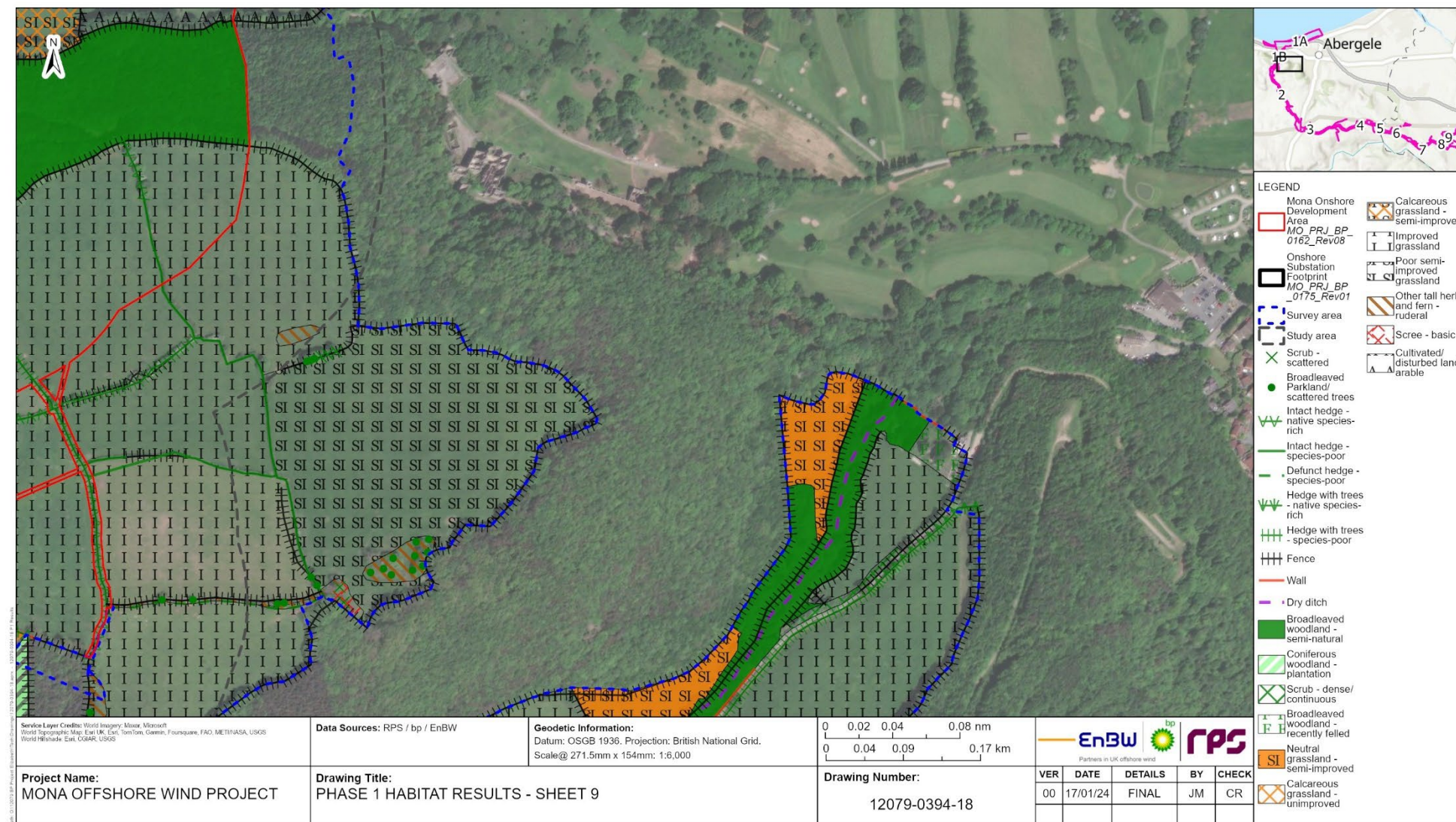


Figure 1.11: Extended phase 1 habitat results – Sheet 9.

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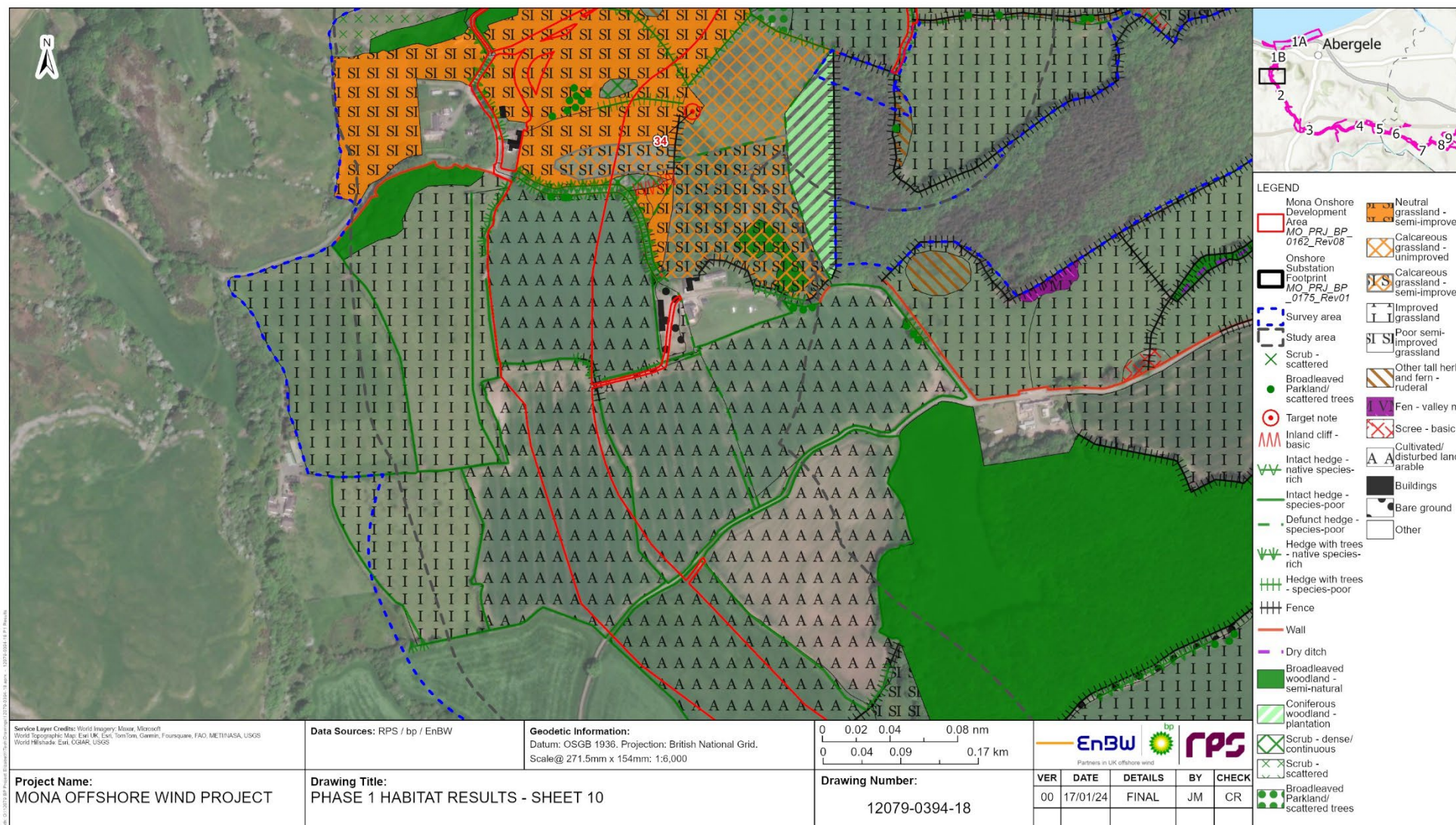


Figure 1.12: Extended phase 1 habitat results – Sheet 10.

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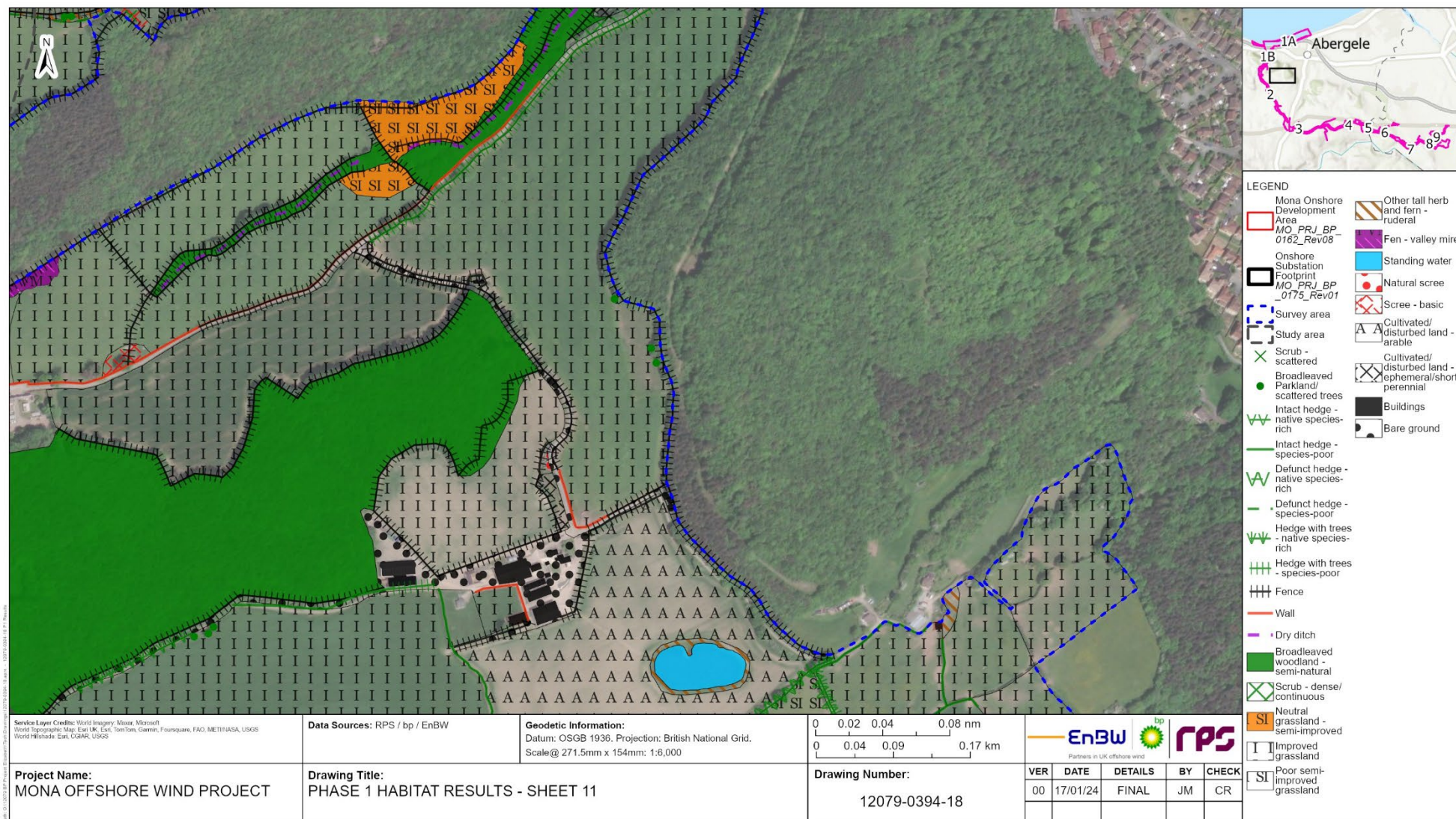


Figure 1.13: Extended phase 1 habitat results – Sheet 11.

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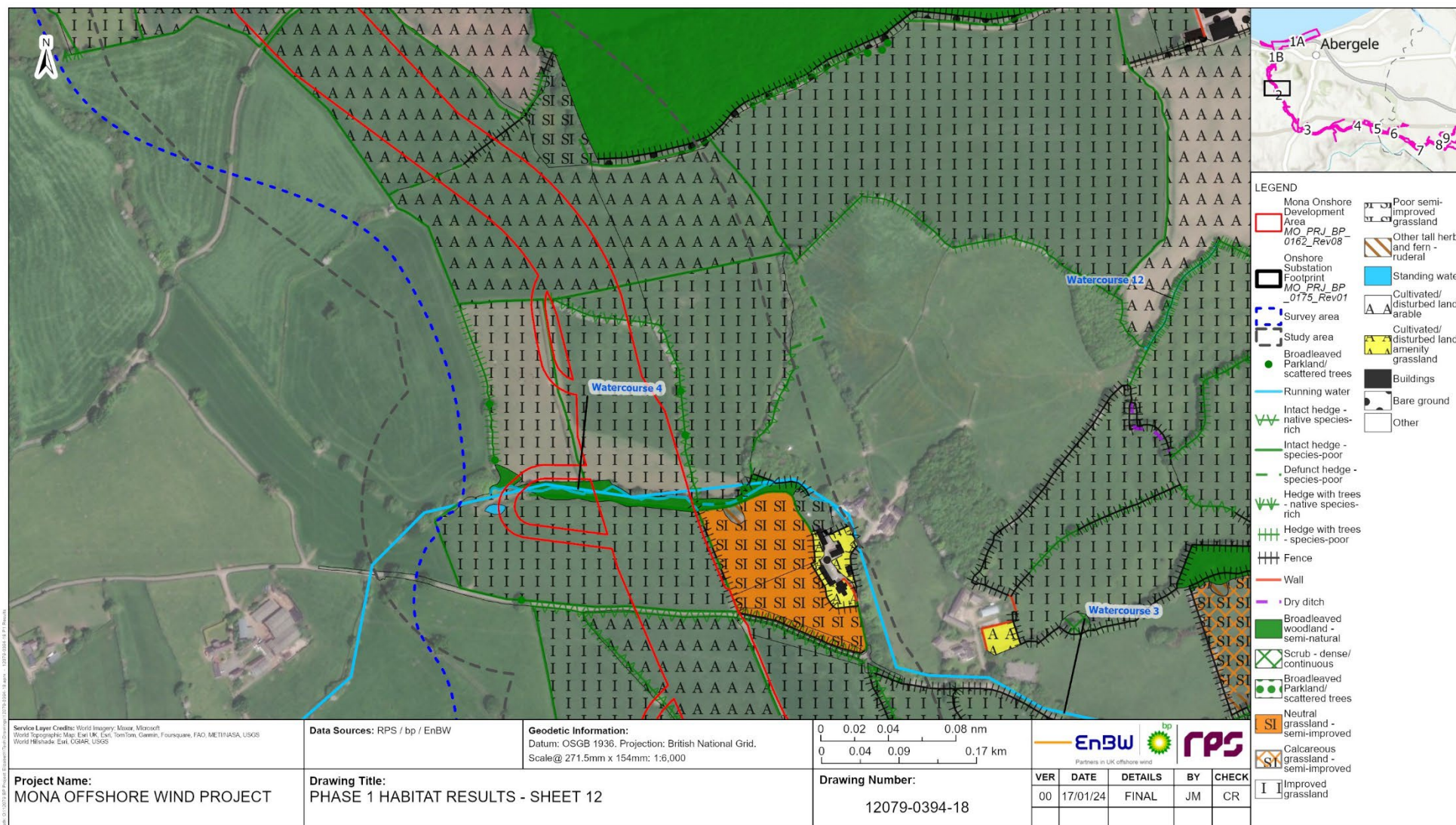


Figure 1.14: Extended phase 1 habitat results – Sheet 12.

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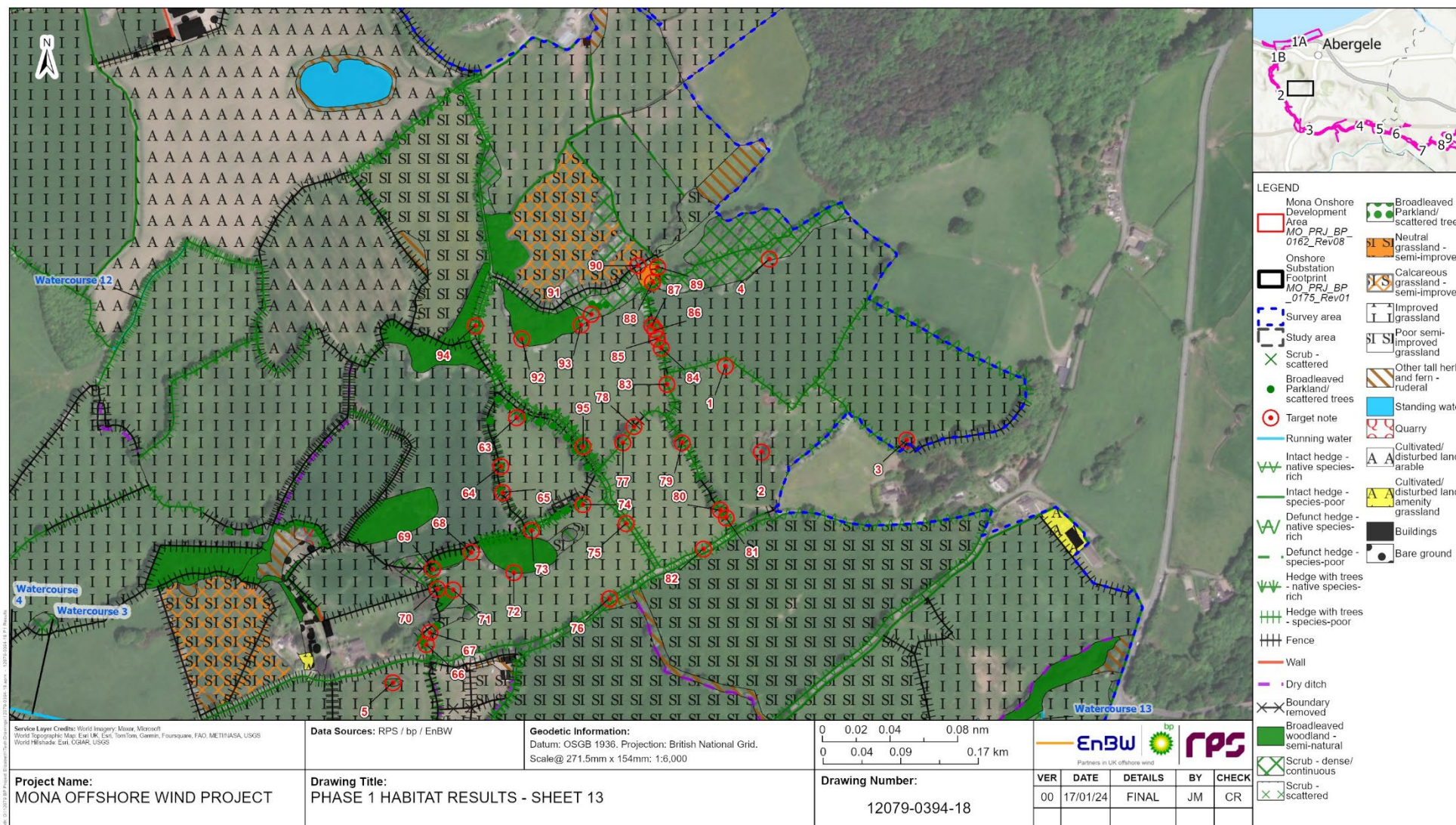


Figure 1.15: Extended phase 1 habitat results – Sheet 13.

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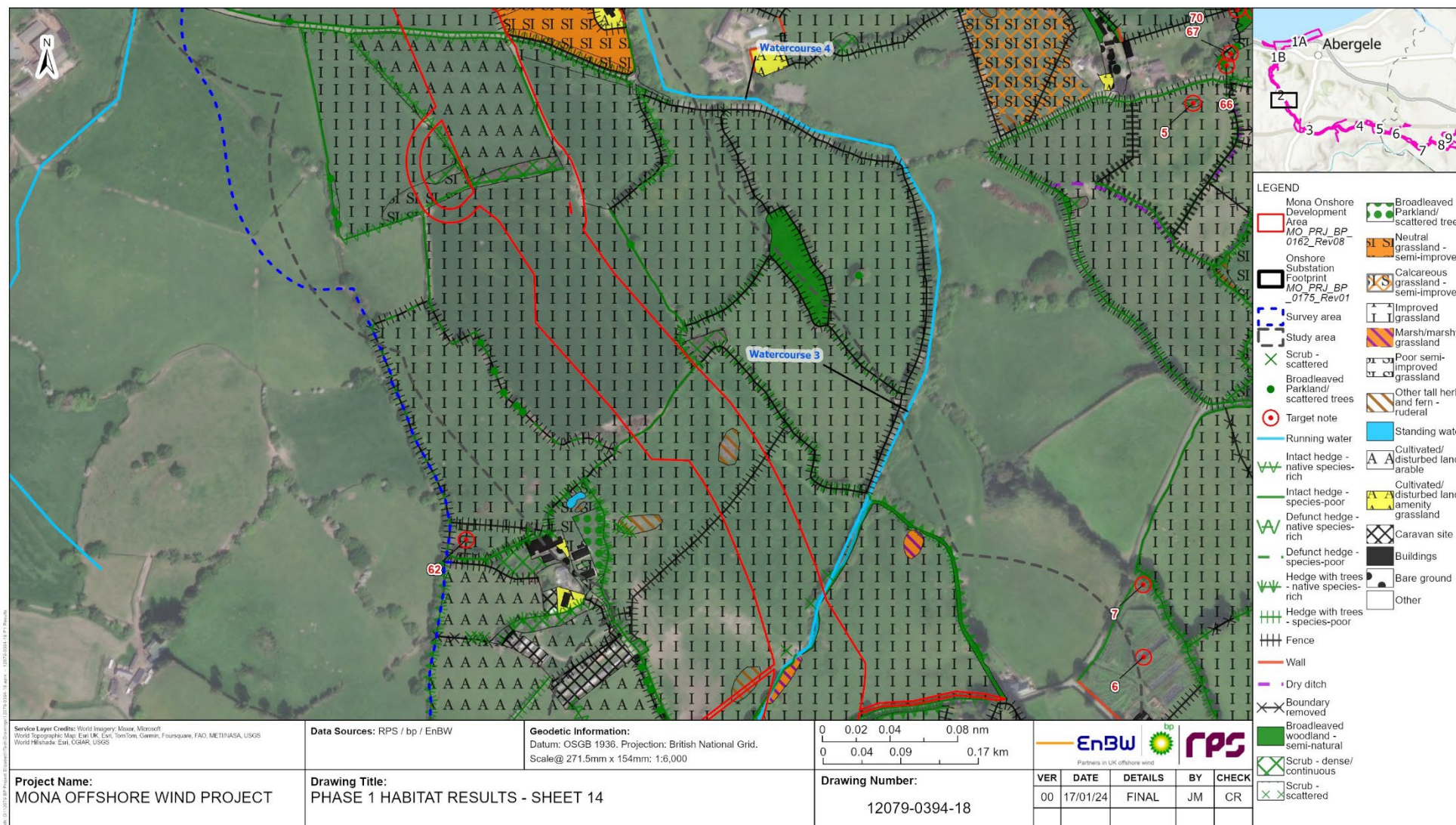


Figure 1.16: Extended phase 1 habitat results – Sheet 14.

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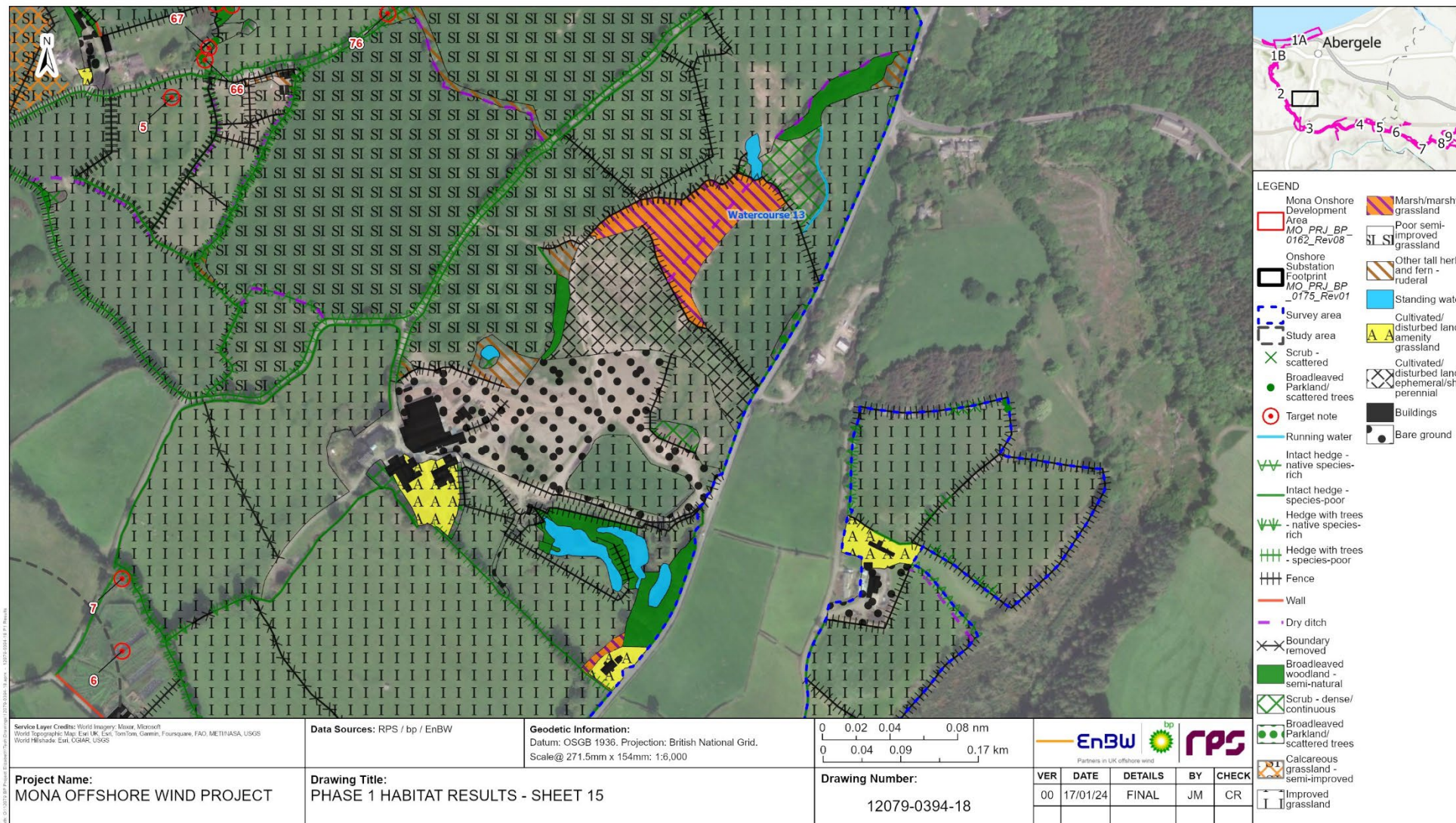


Figure 1.17: Phase 1 habitat results - Sheet 15.

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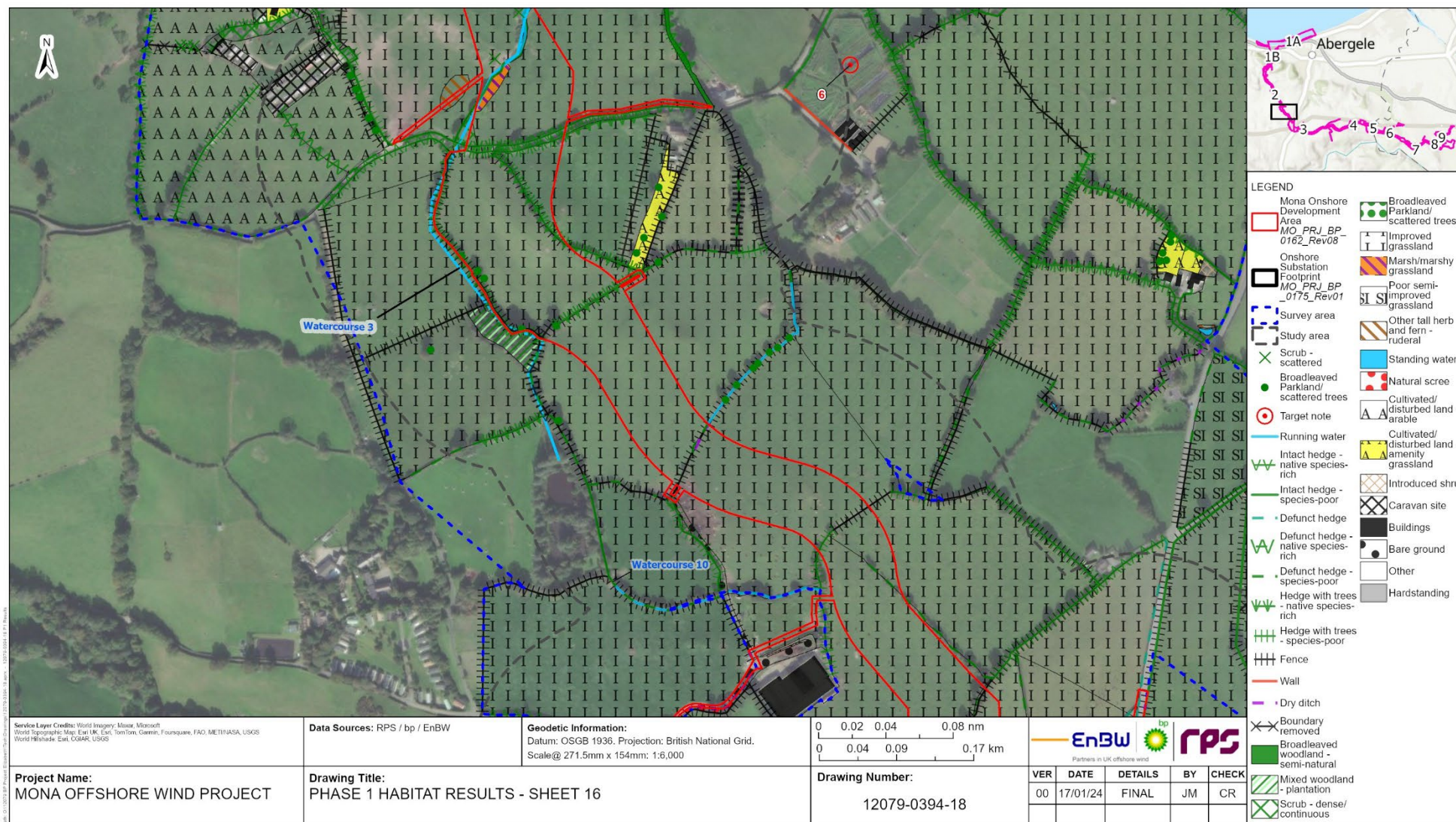


Figure 1.18: Extended phase 1 habitat results – Sheet 16.

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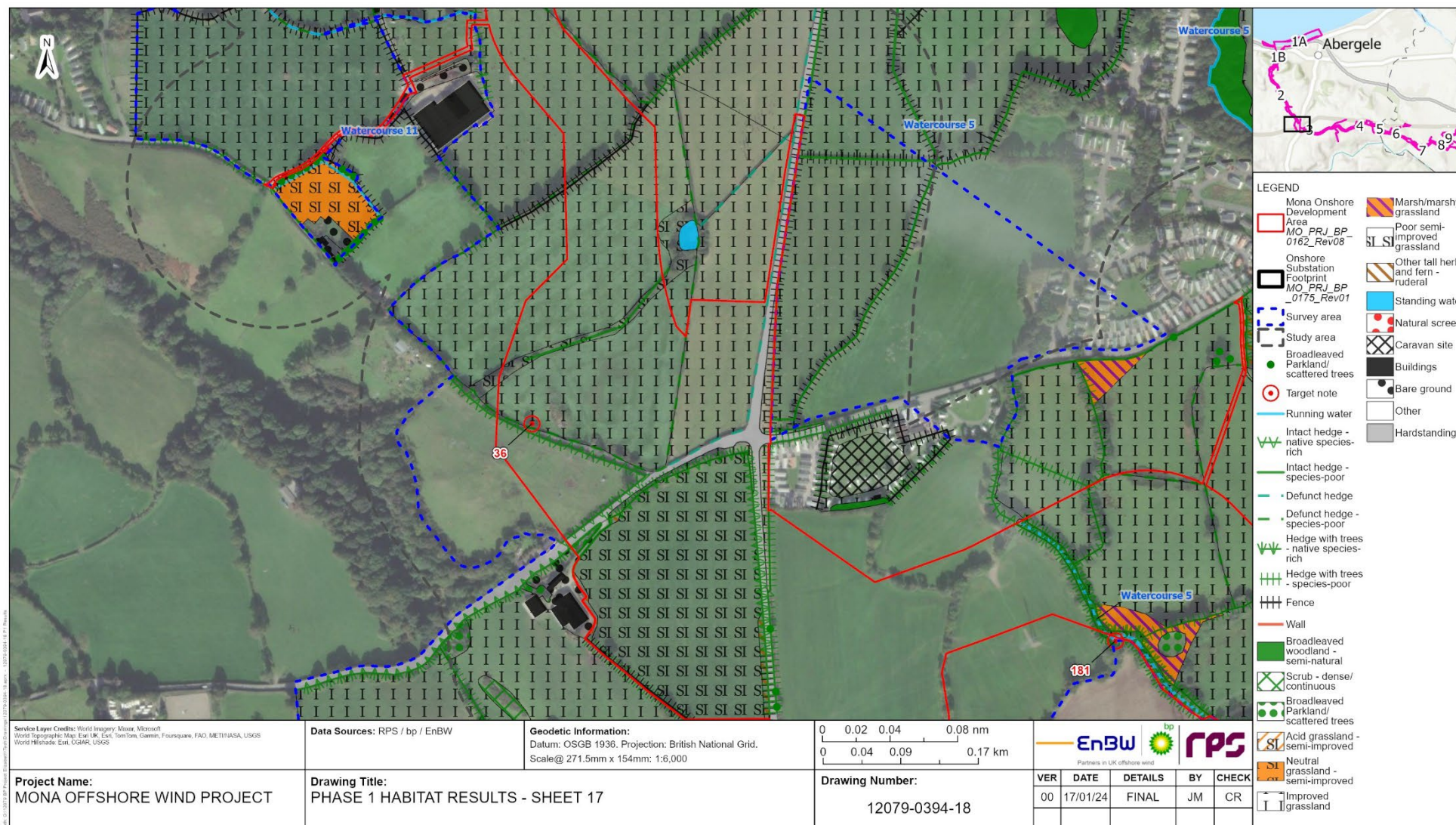


Figure 1.19: Extended phase 1 habitat results – Sheet 17.

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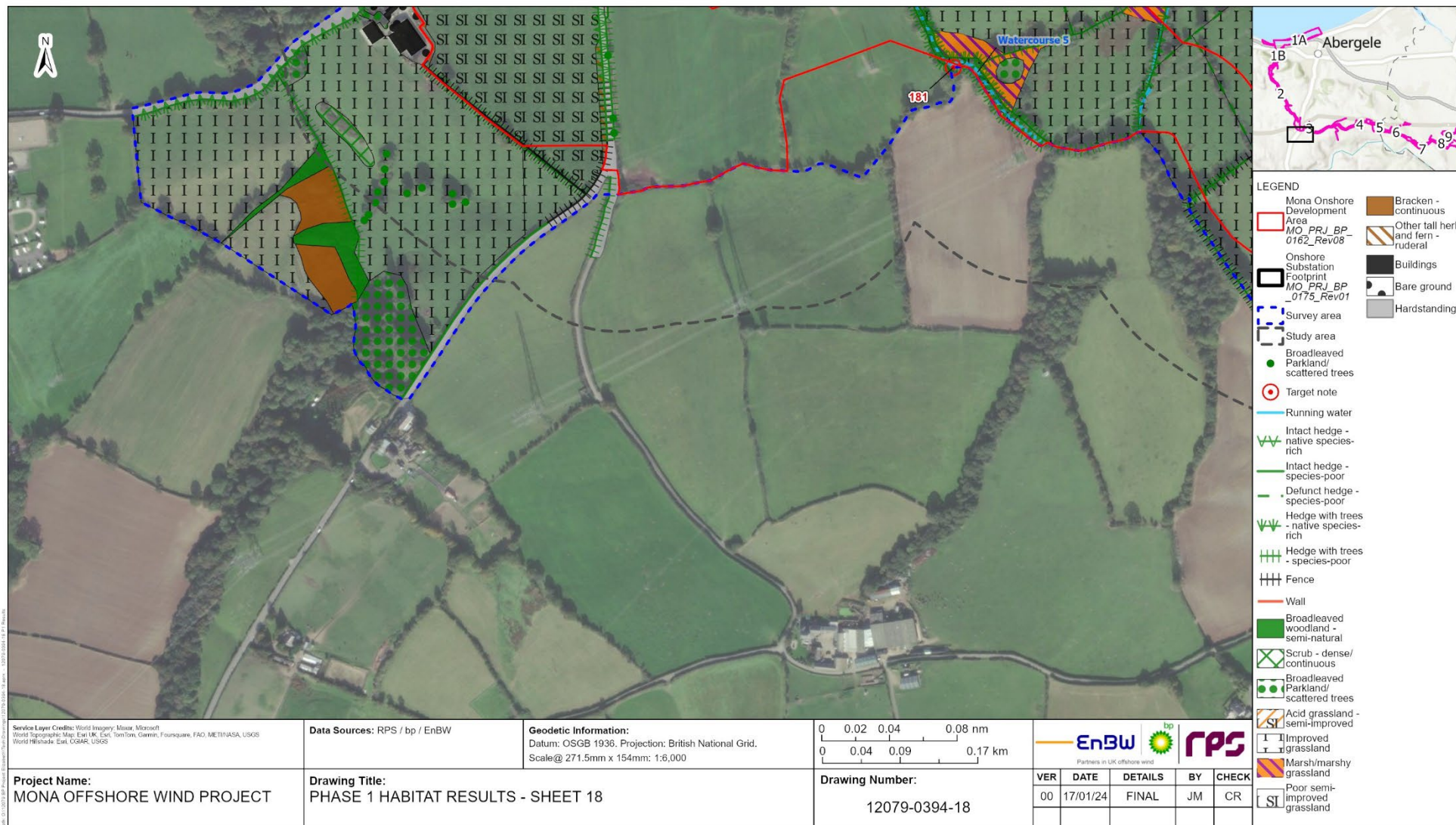


Figure 1.20: Extended phase 1 habitat results – Sheet 18.

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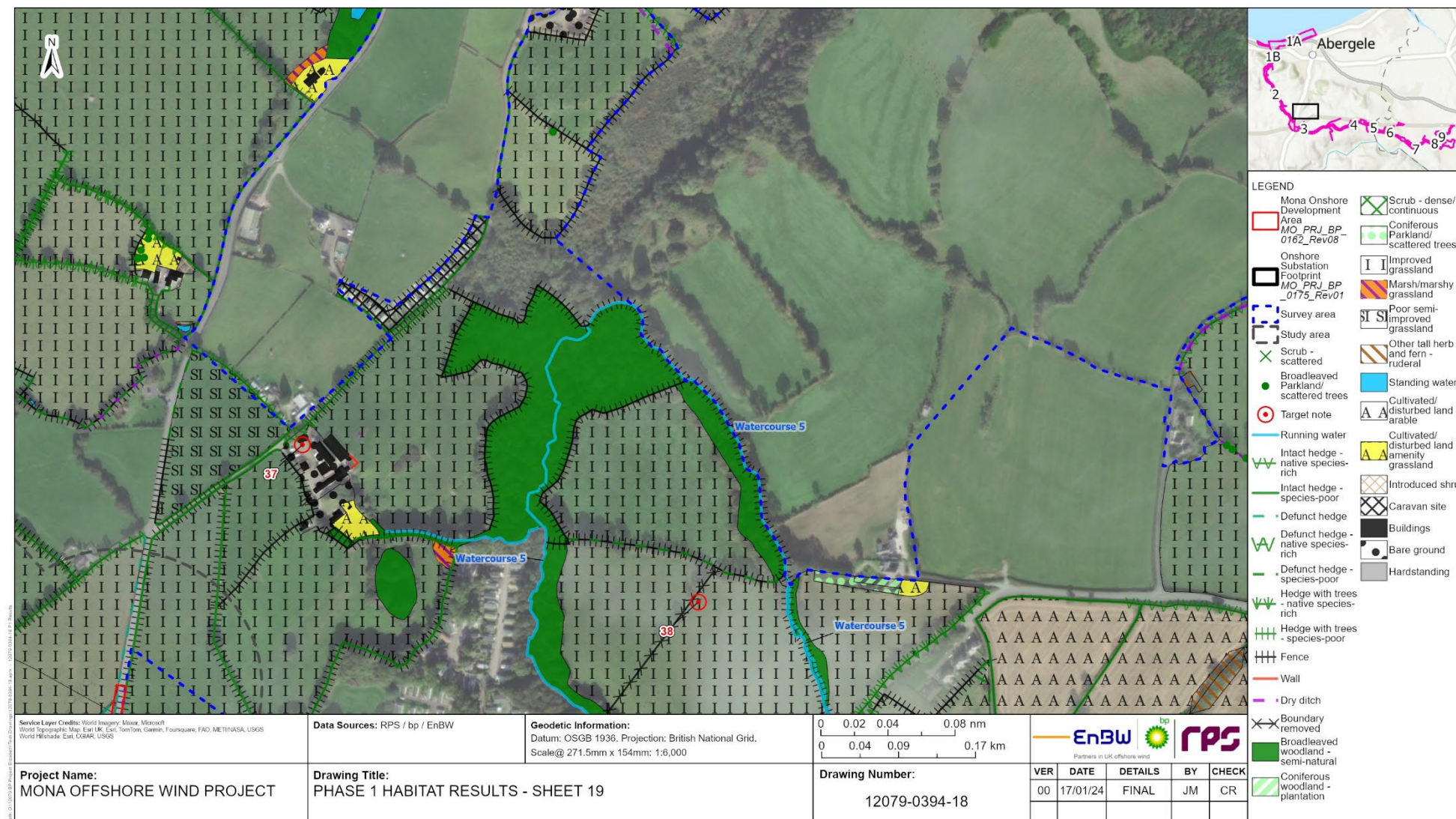


Figure 1.21: Extended phase 1 habitat results – Sheet 19.

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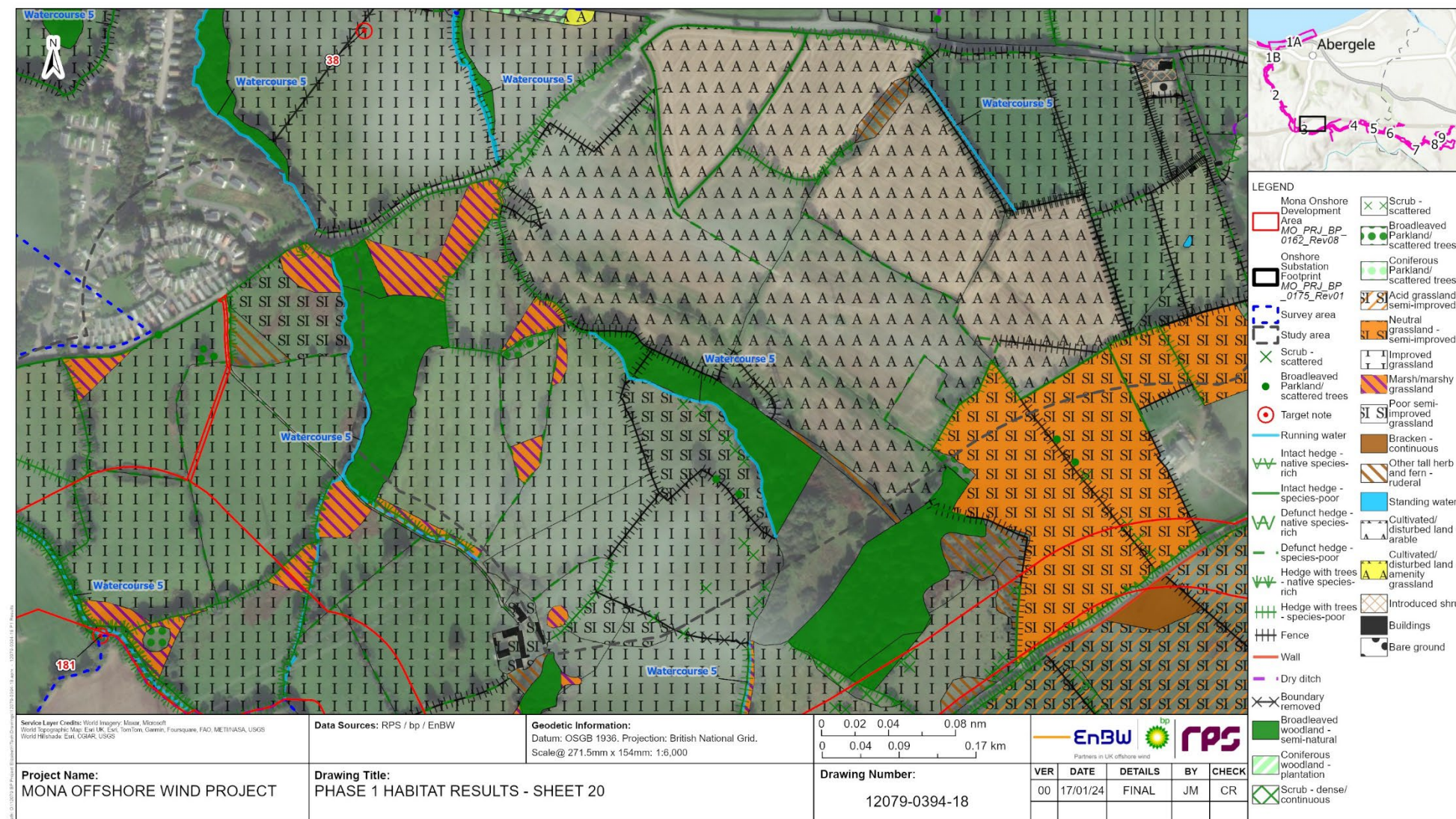


Figure 1.22: Extended phase 1 habitat results – Sheet 20.

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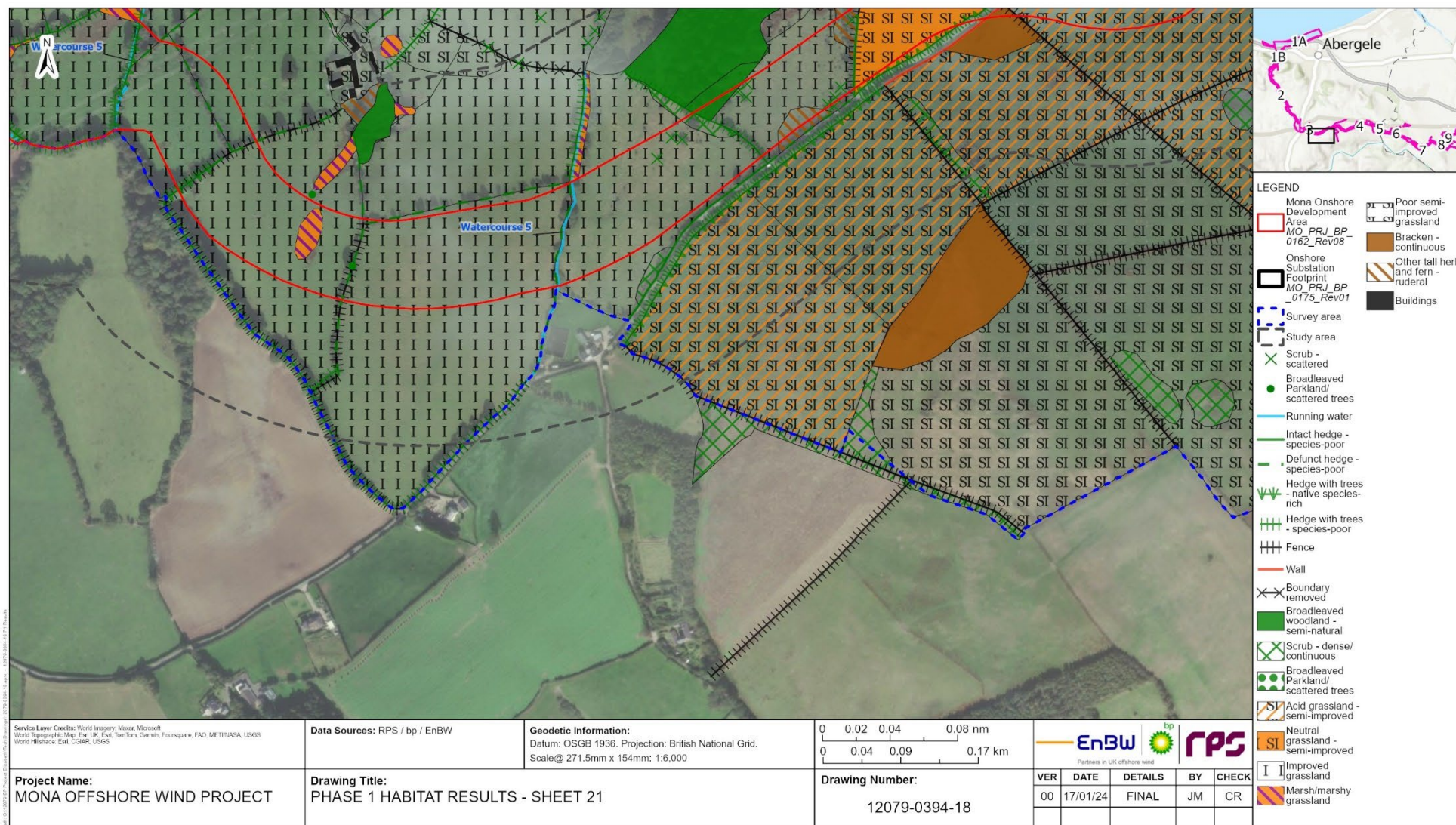


Figure 1.23: Extended phase 1 habitat results – Sheet 21.

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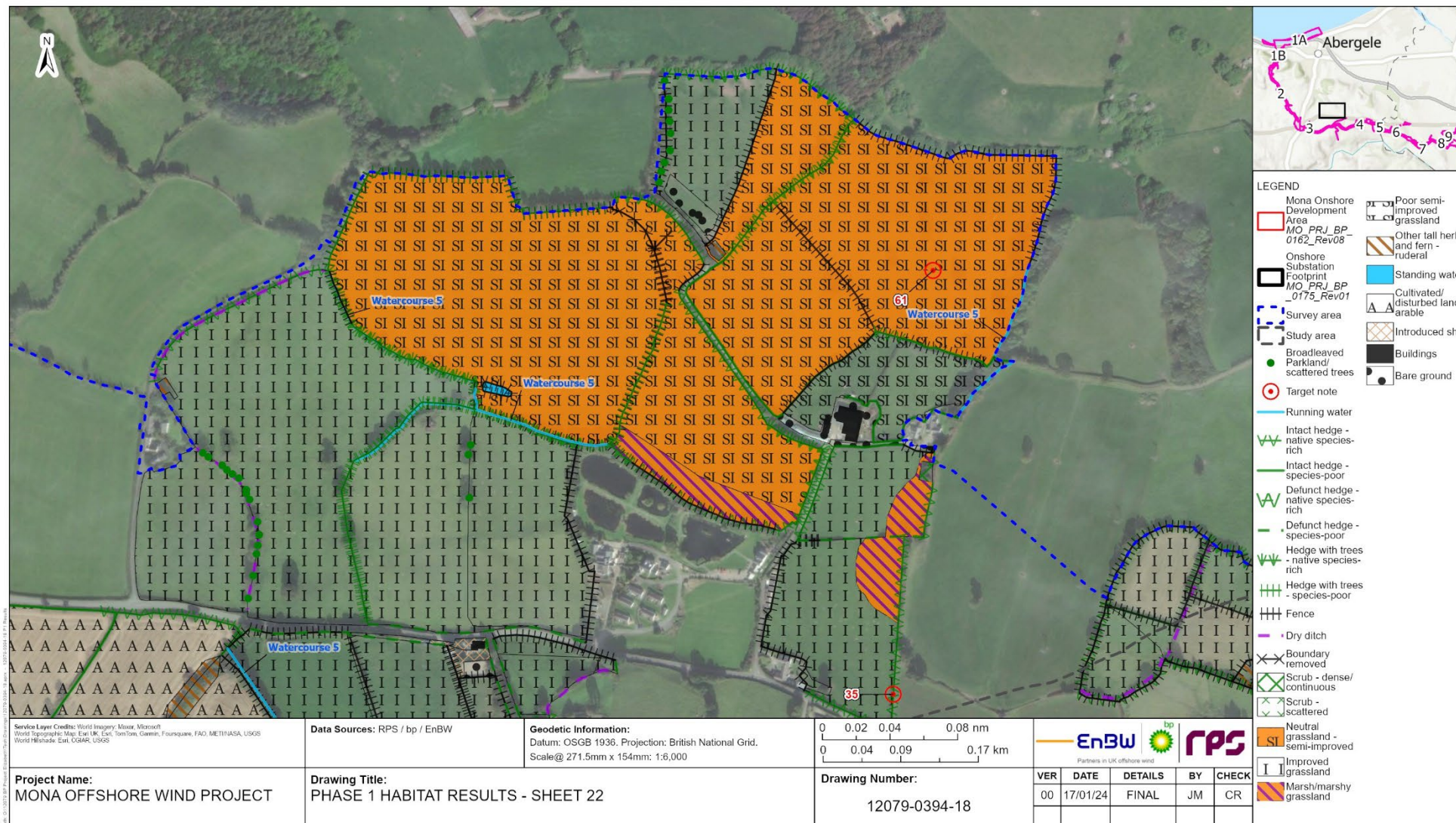


Figure 1.24: Extended phase 1 habitat results – Sheet 22.

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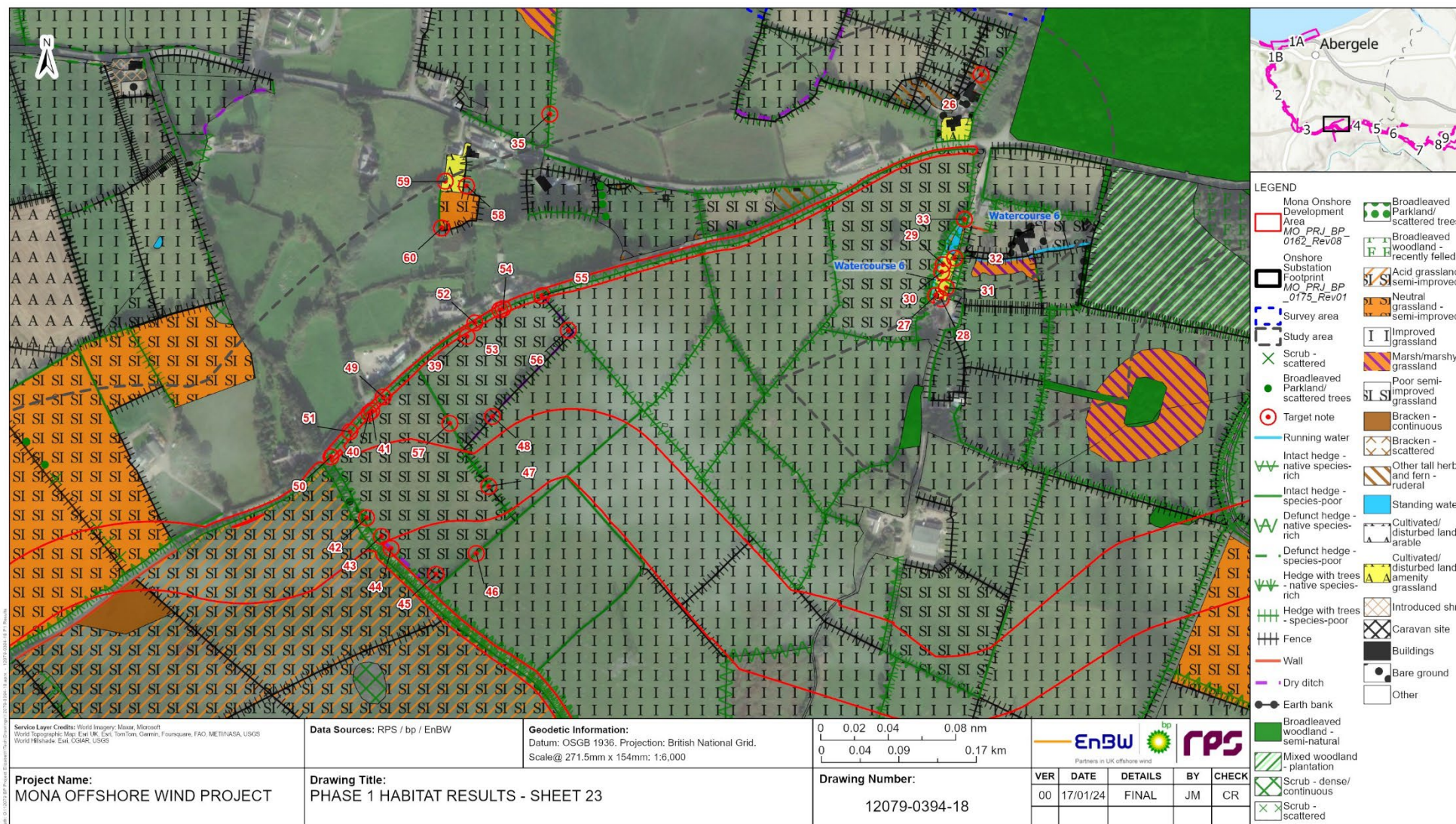


Figure 1.25: Extended phase 1 habitat results – Sheet 23.

MONA OFFSHORE WIND PROJECT

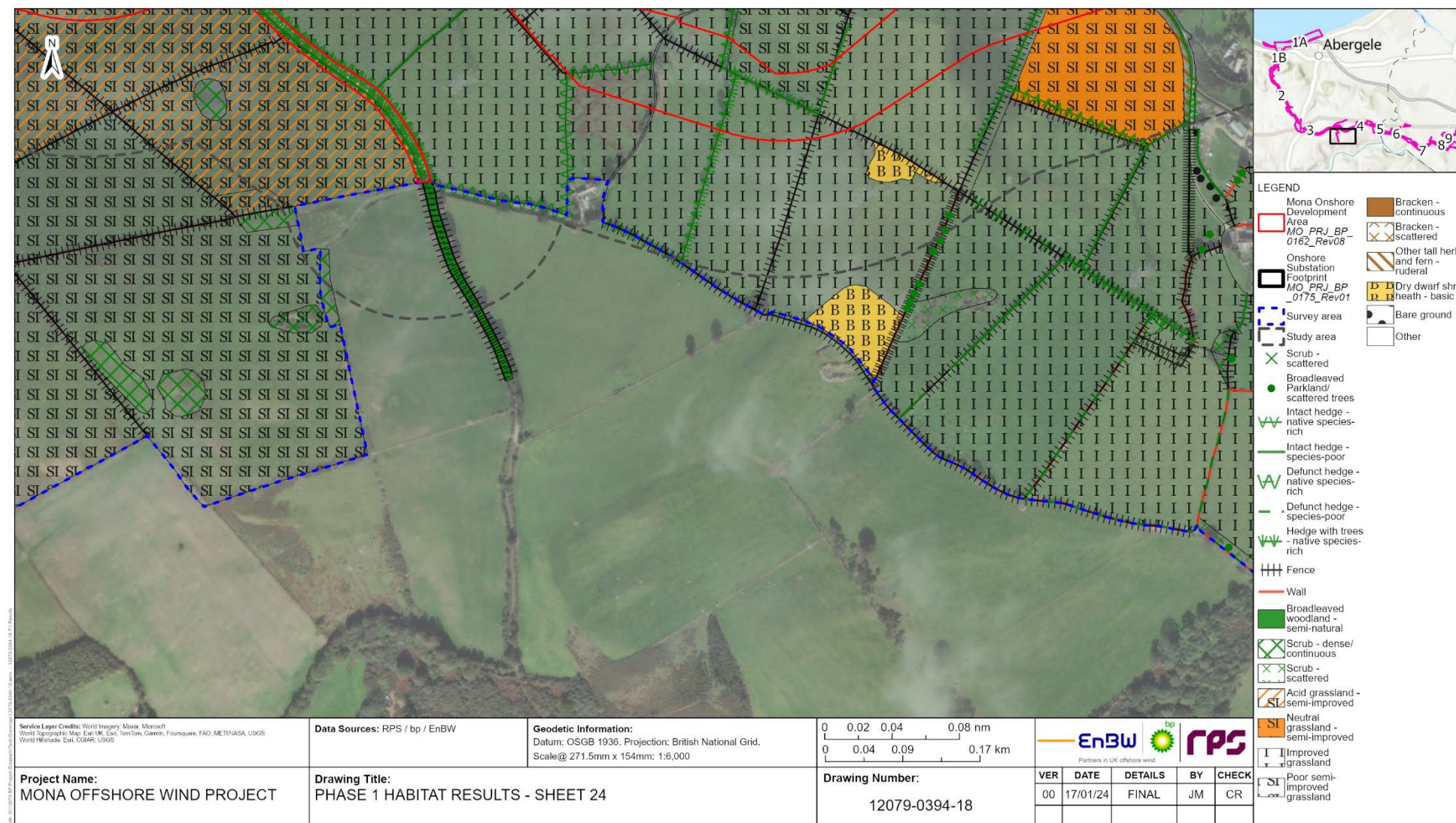


Figure 1.26: Extended phase 1 habitat results – Sheet 24.

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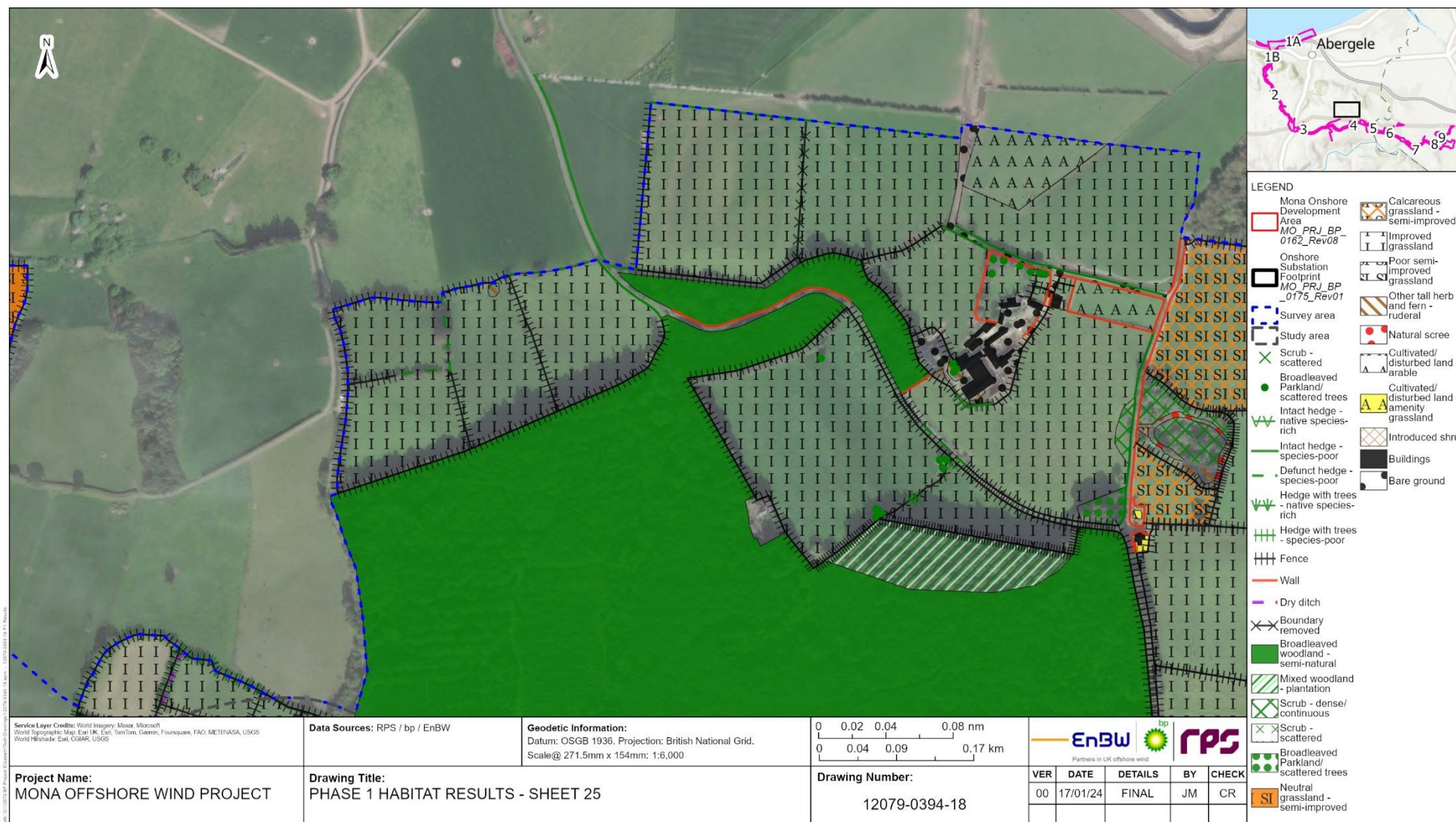


Figure 1.27: Extended phase 1 habitat results – Sheet 25.

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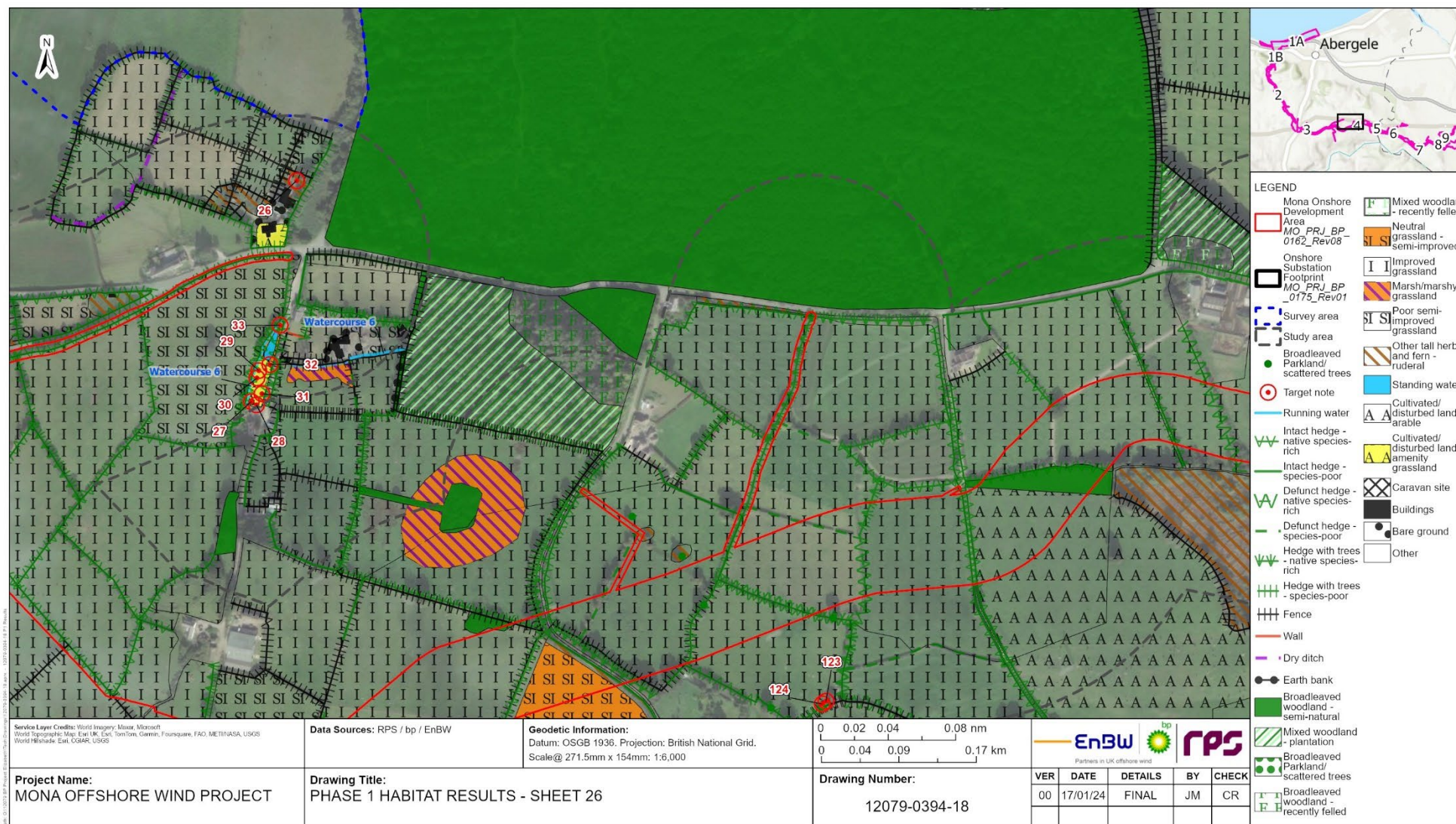


Figure 1.28: Extended phase 1 habitat results – Sheet 26.

MONA OFFSHORE WIND PROJECT

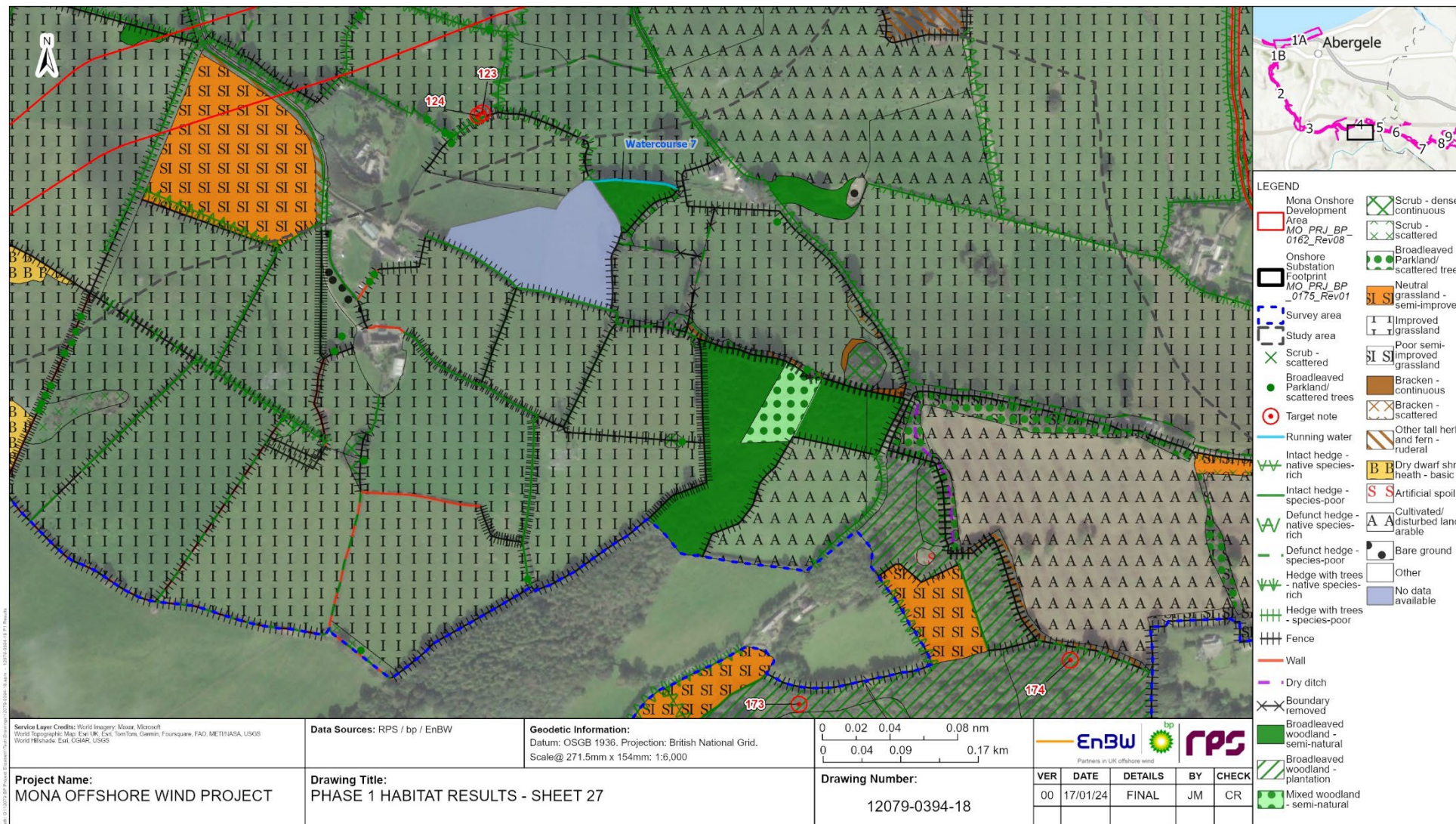


Figure 1.29: Extended phase 1 habitat results – Sheet 27.

MONA OFFSHORE WIND PROJECT

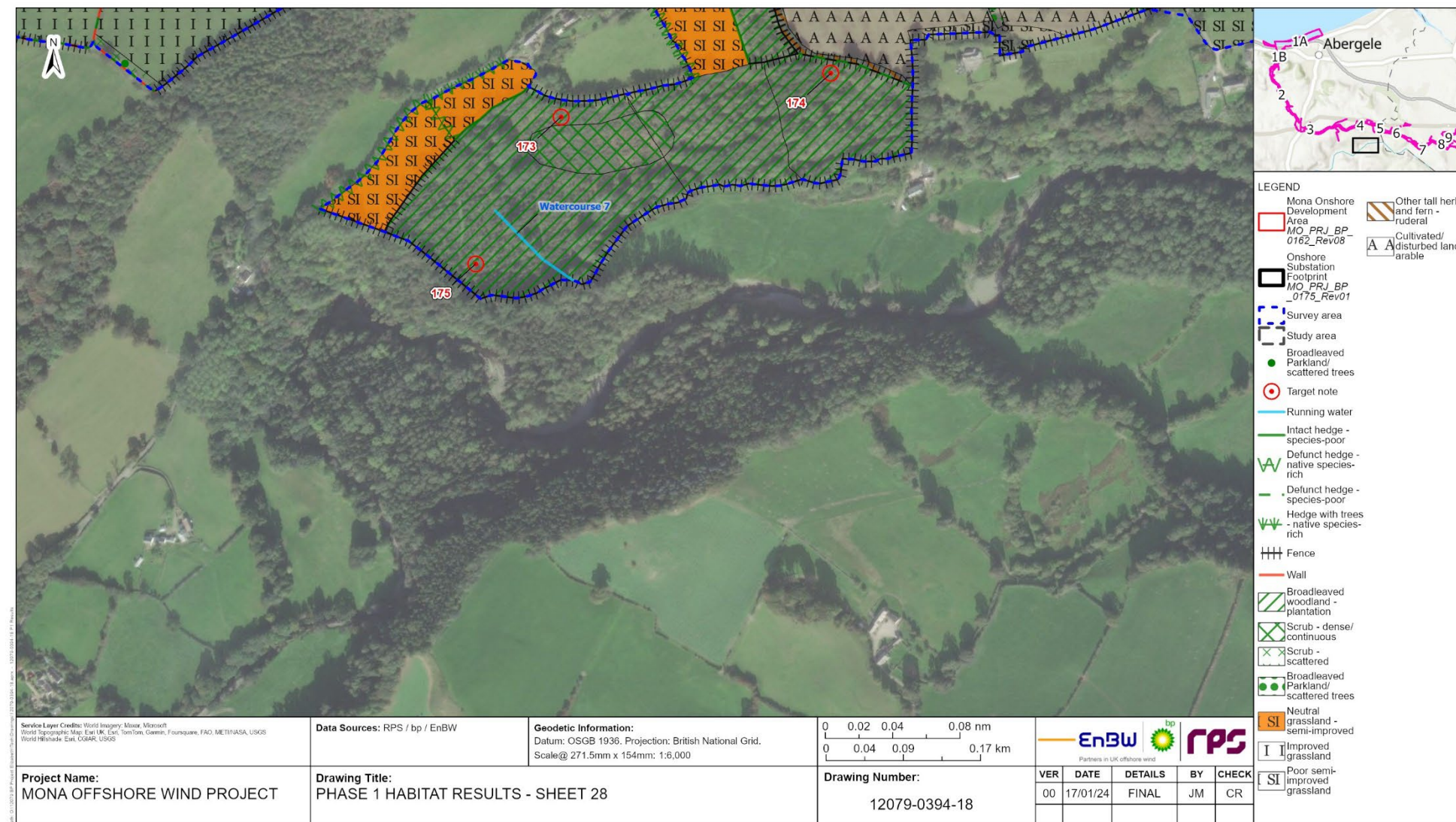


Figure 1.30: Extended phase 1 habitat results – Sheet 28.

MONA OFFSHORE WIND PROJECT

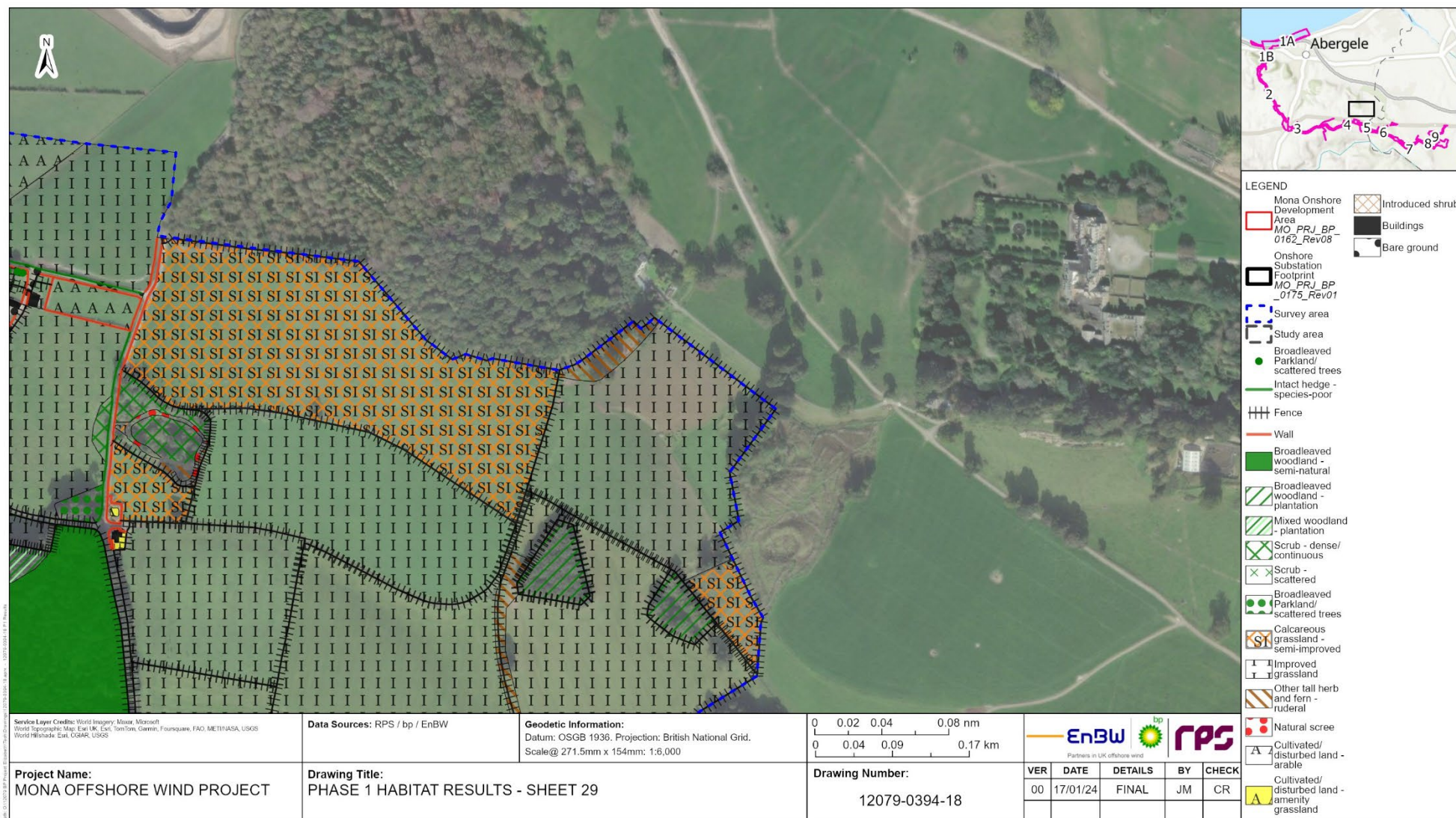


Figure 1.31: Extended phase 1 habitat results – Sheet 29.

MONA OFFSHORE WIND PROJECT

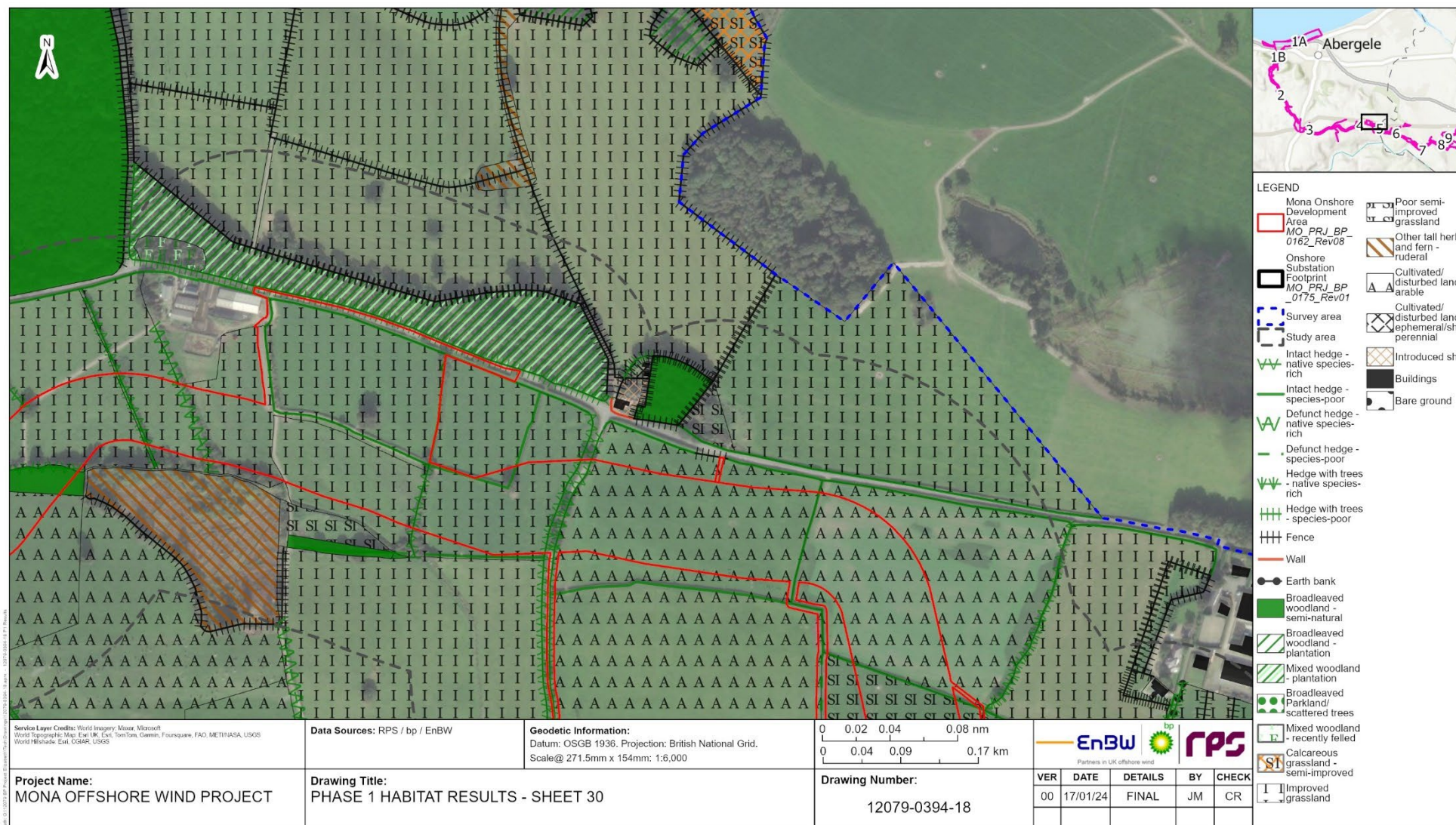


Figure 1.32: Extended phase 1 habitat results – Sheet 30.

MONA OFFSHORE WIND PROJECT

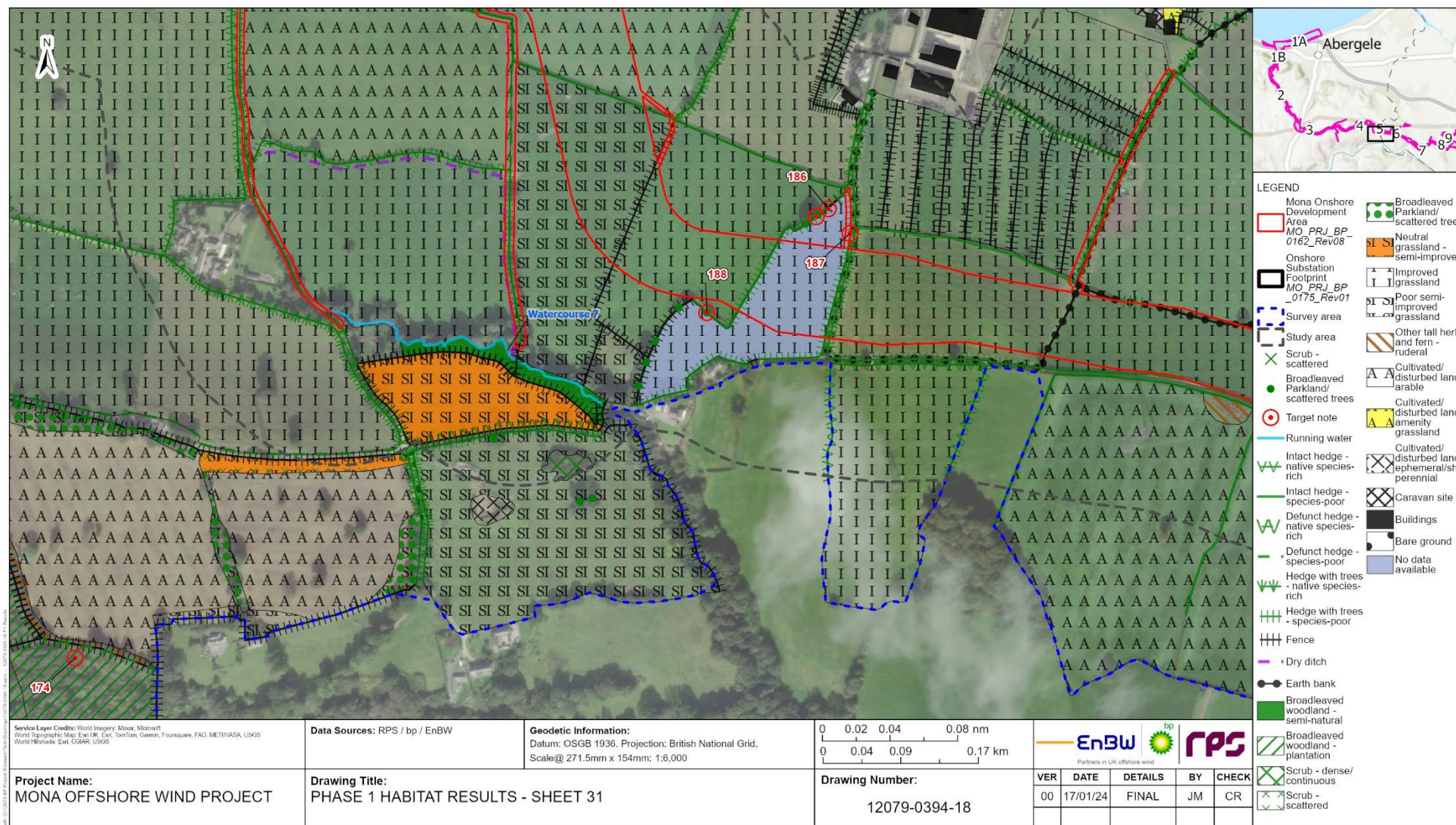


Figure 1.33: Extended phase 1 habitat results – Sheet 31.

MONA OFFSHORE WIND PROJECT

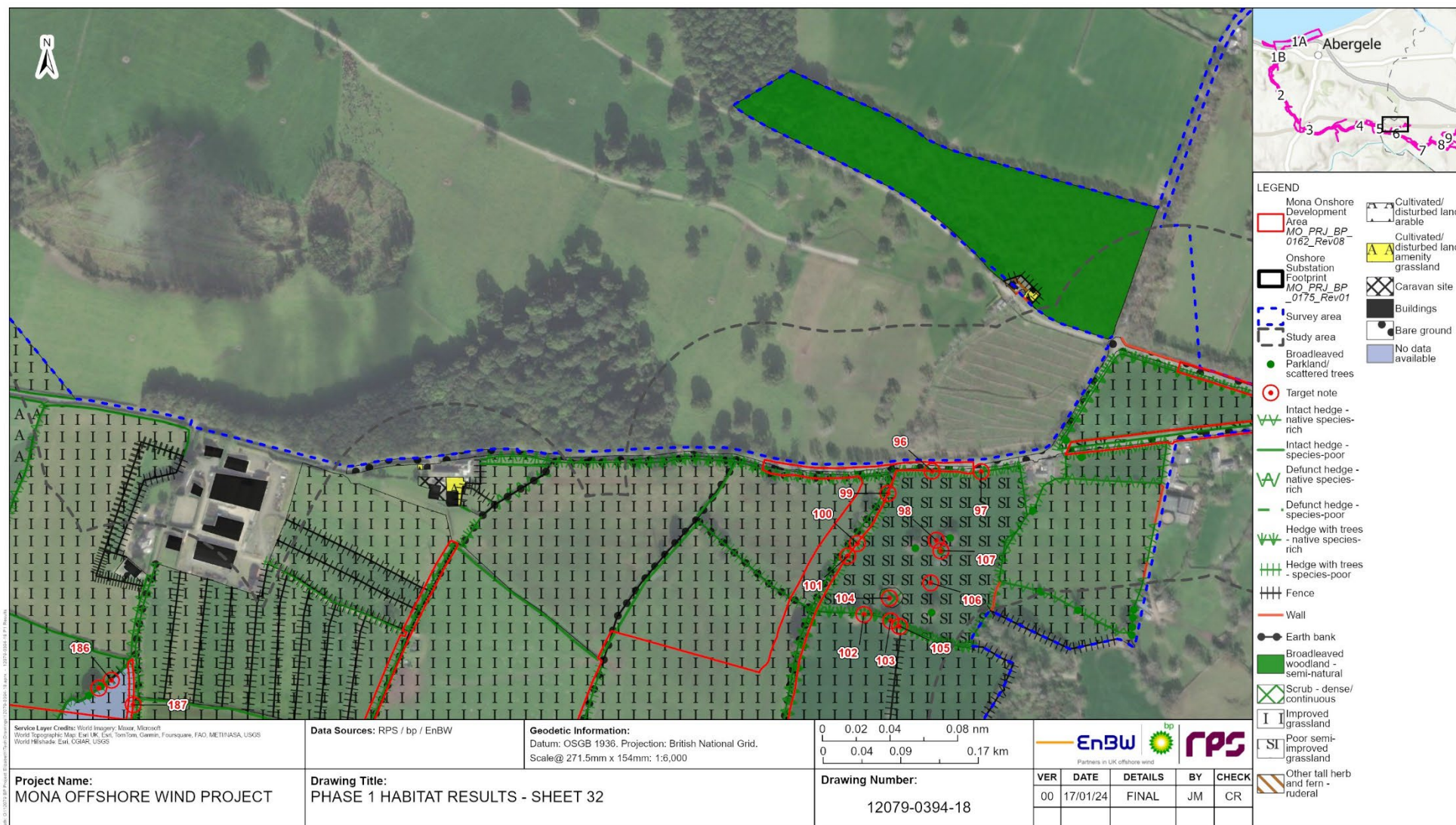


Figure 1.34: Extended phase 1 habitat results – Sheet 32.

MONA OFFSHORE WIND PROJECT

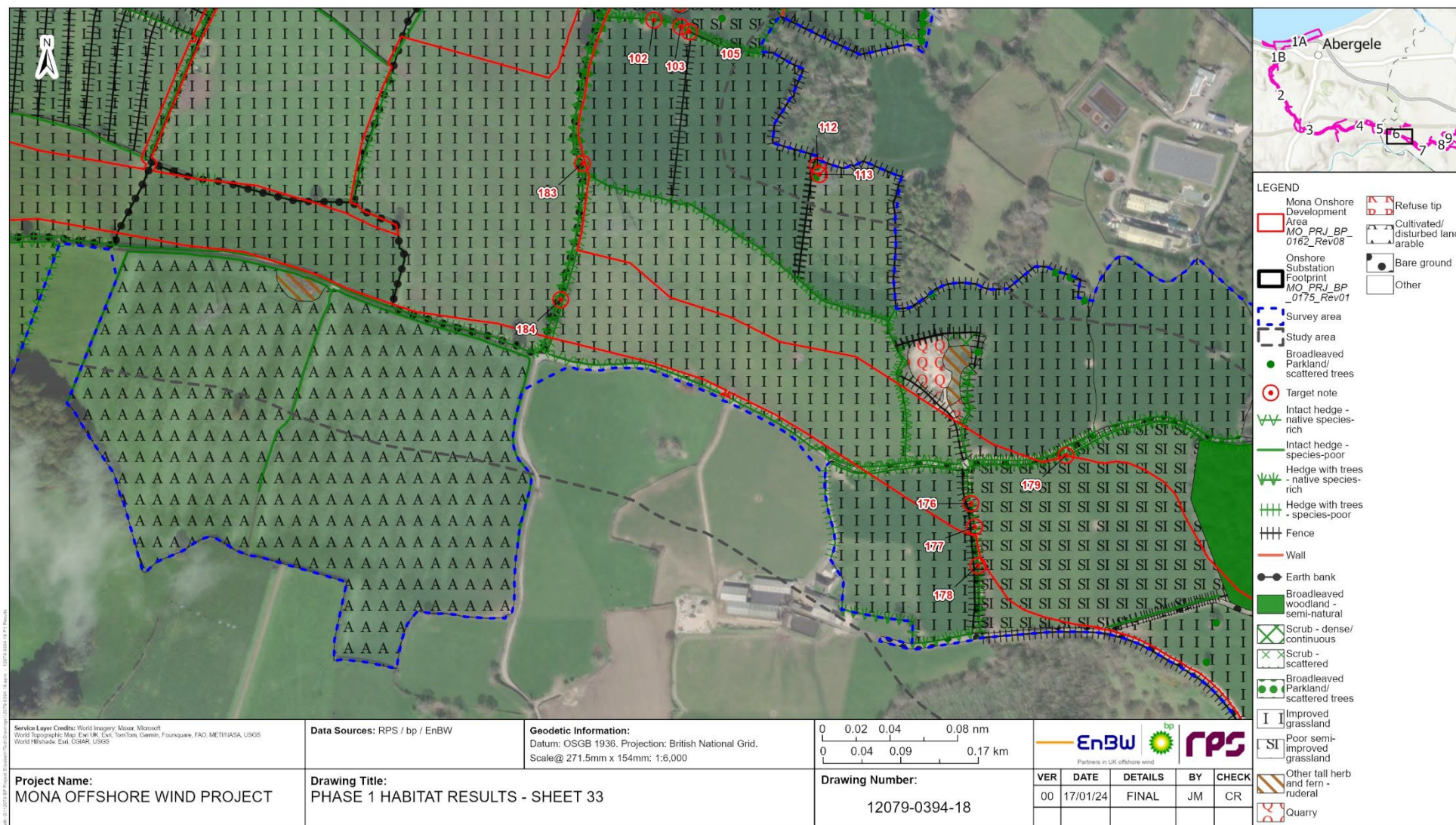


Figure 1.35: Extended phase 1 habitat results – Sheet 33.

MONA OFFSHORE WIND PROJECT

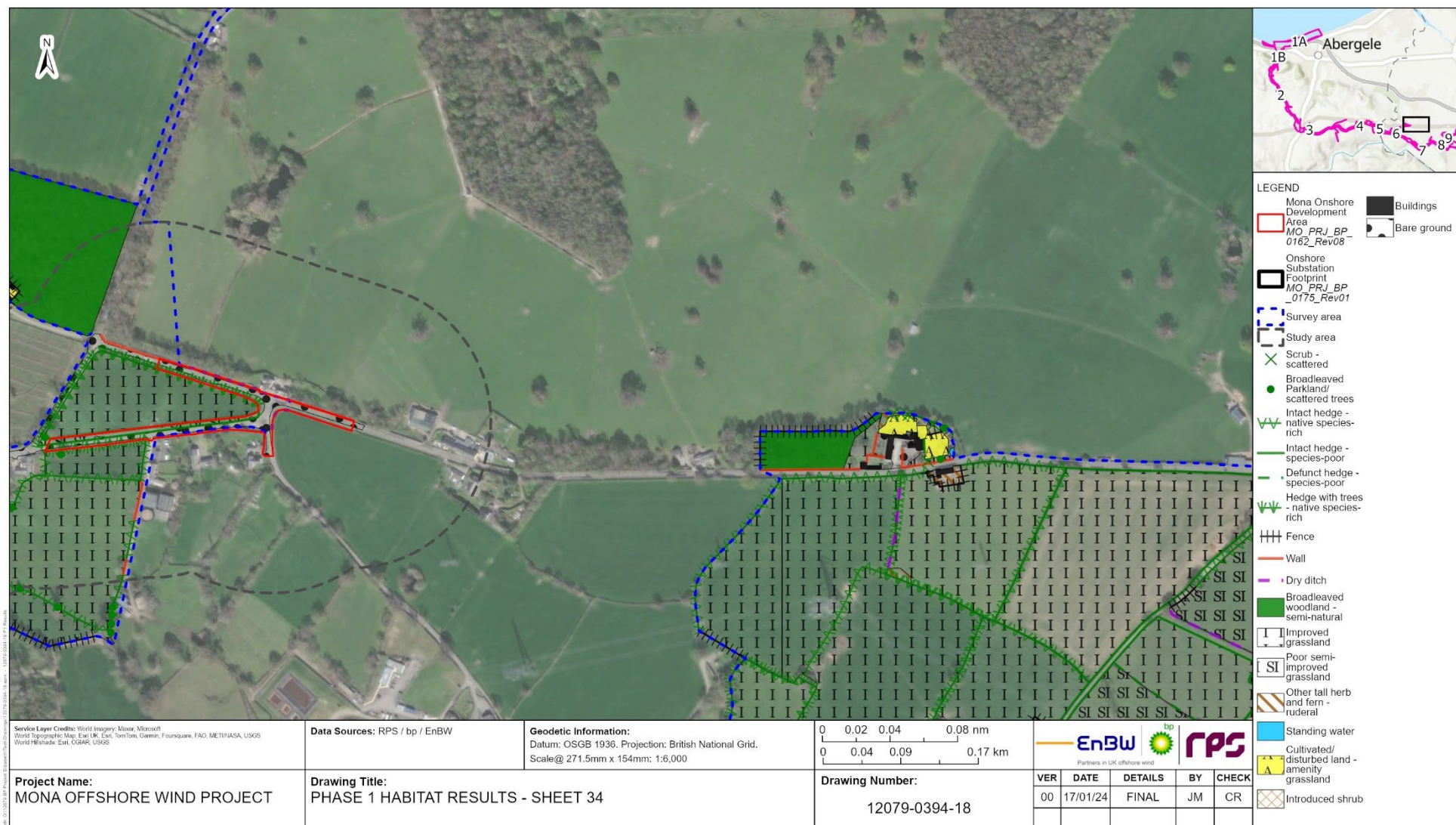


Figure 1.36: Extended phase 1 habitat results – Sheet 34.

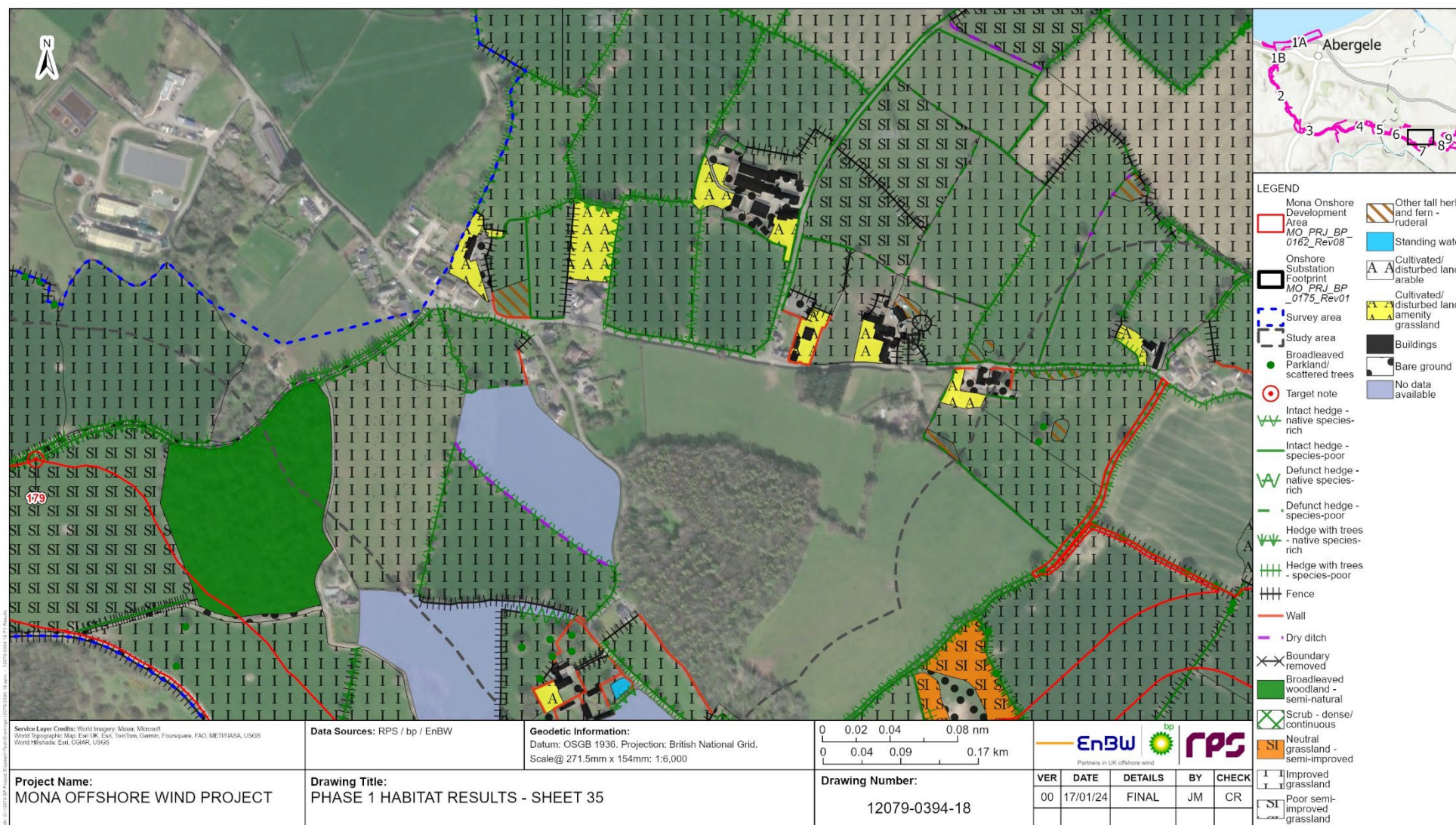


Figure 1.37: Extended phase 1 habitat results – Sheet 35.

MONA OFFSHORE WIND PROJECT

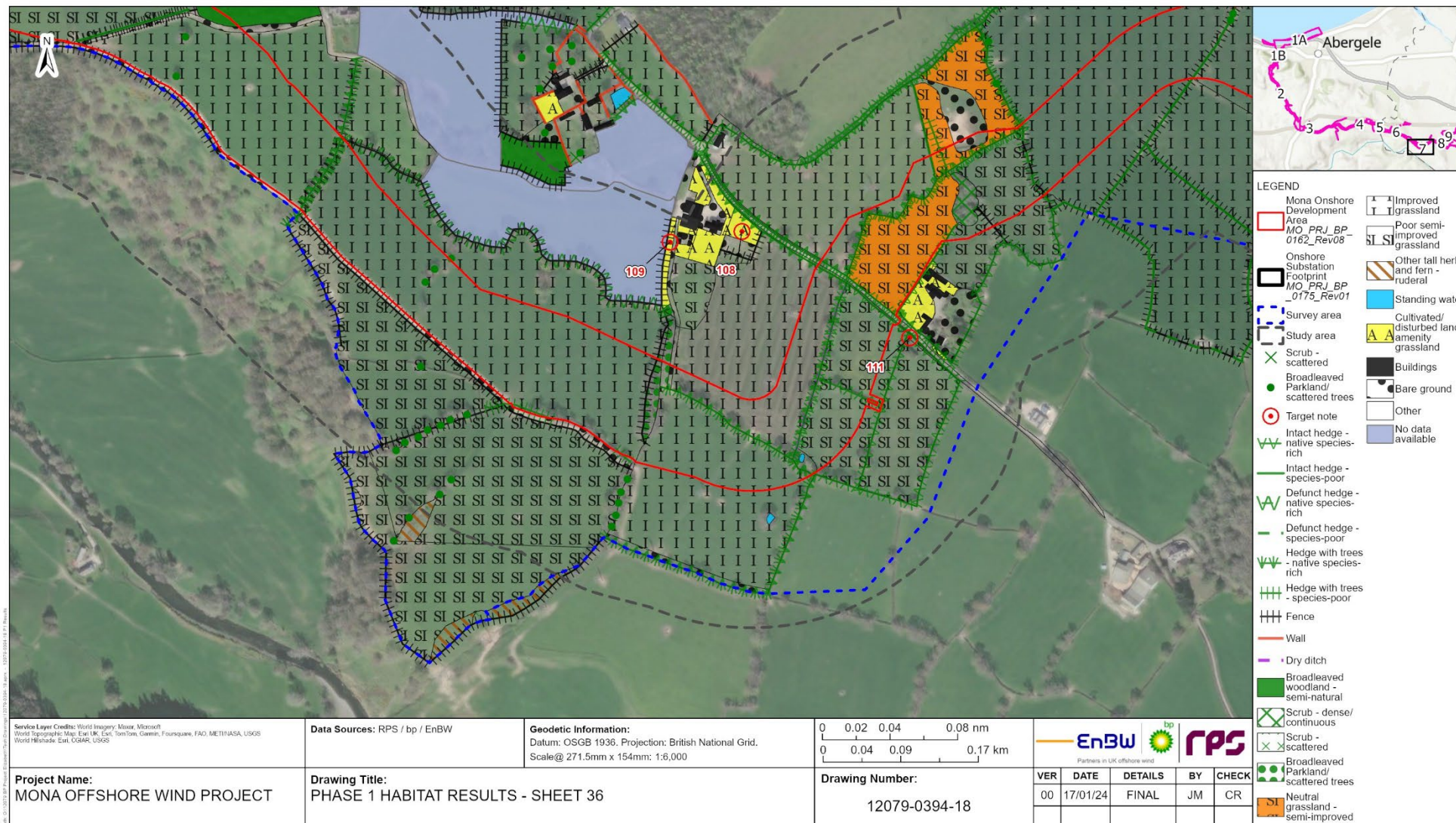


Figure 1.38: Extended phase 1 habitat results – Sheet 36.

MONA OFFSHORE WIND PROJECT

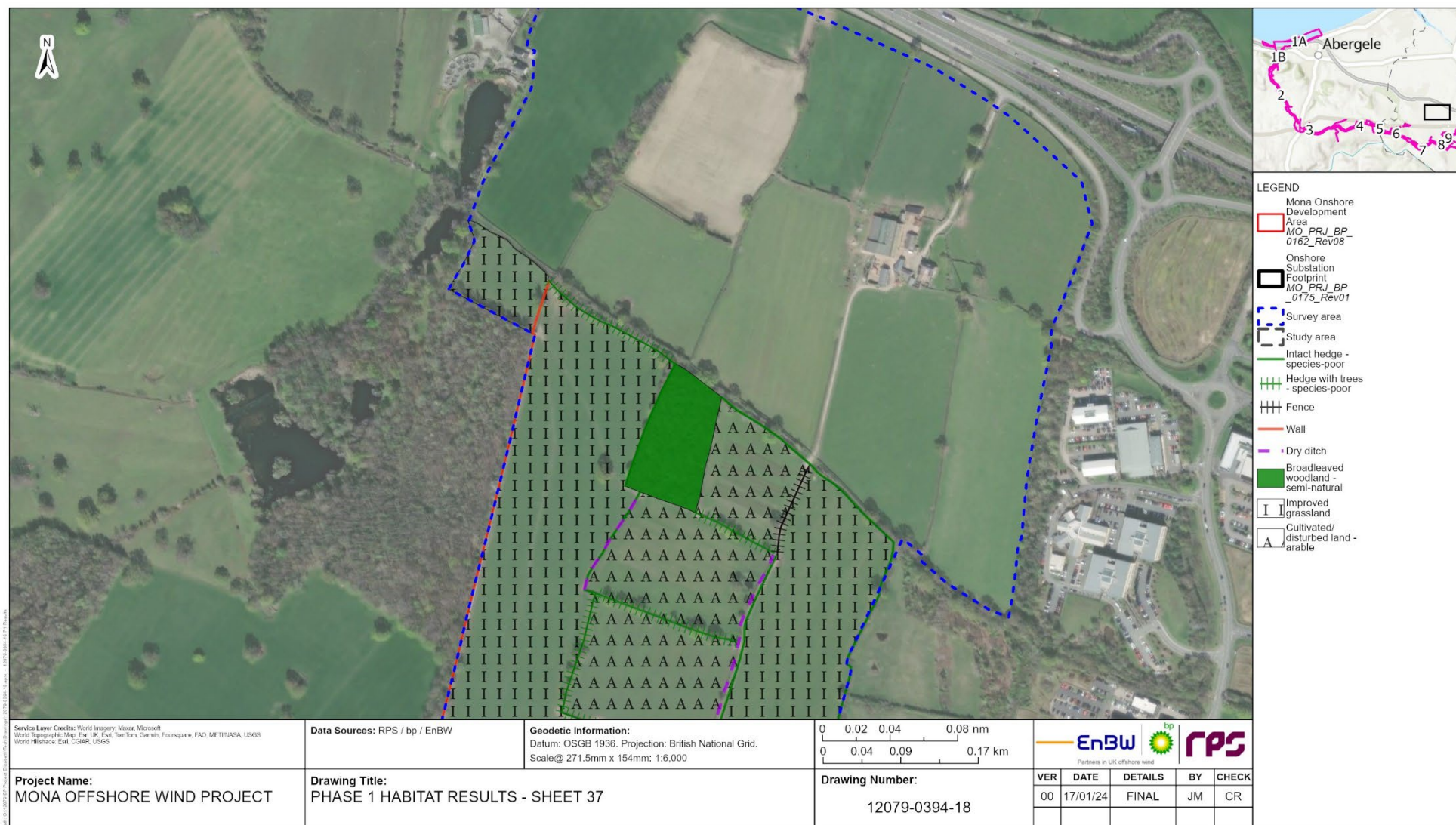


Figure 1.39: Extended phase 1 habitat results – Sheet 37.

MONA OFFSHORE WIND PROJECT

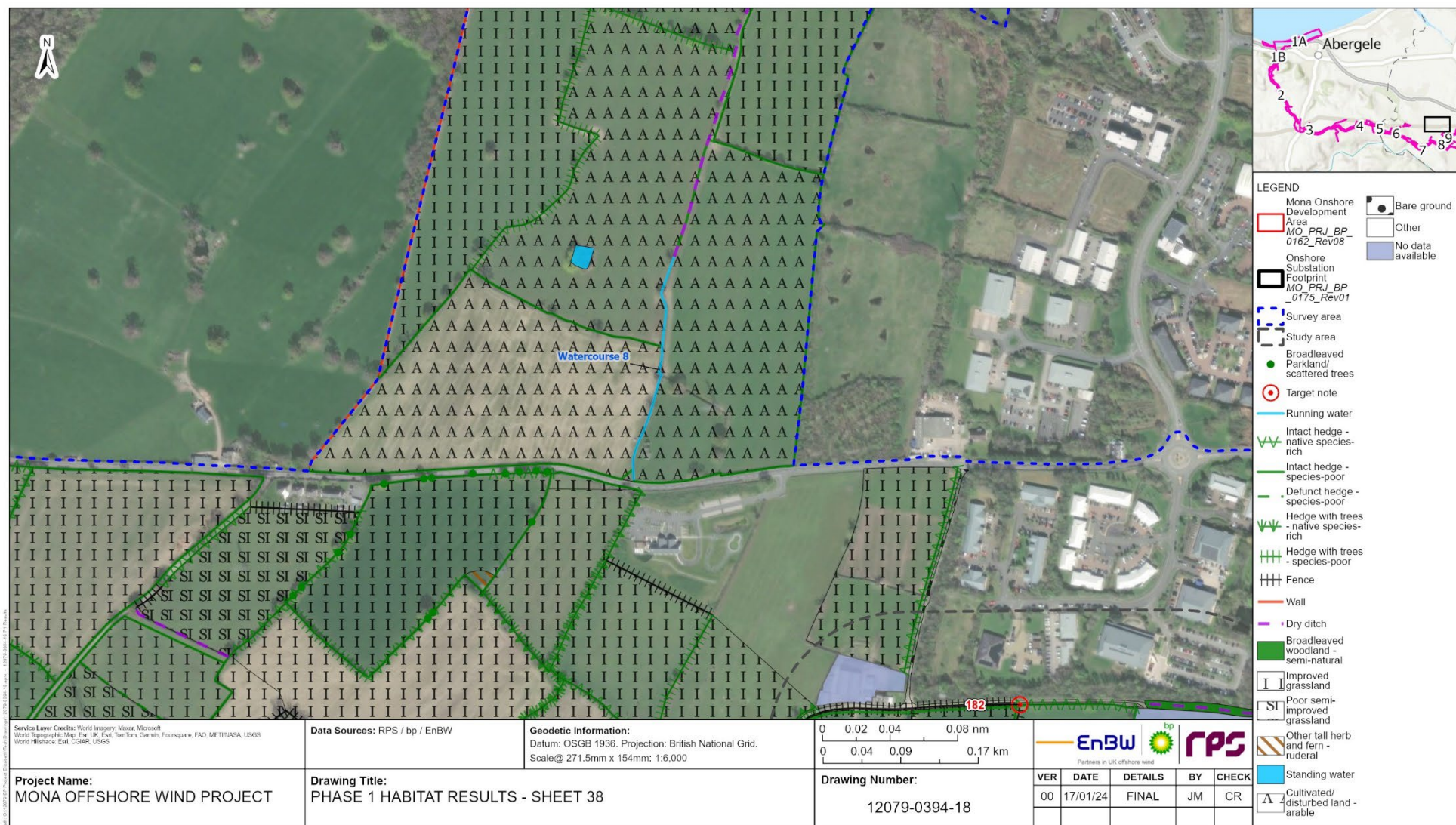


Figure 1.40: Extended phase 1 habitat results – Sheet 38.

MONA OFFSHORE WIND PROJECT

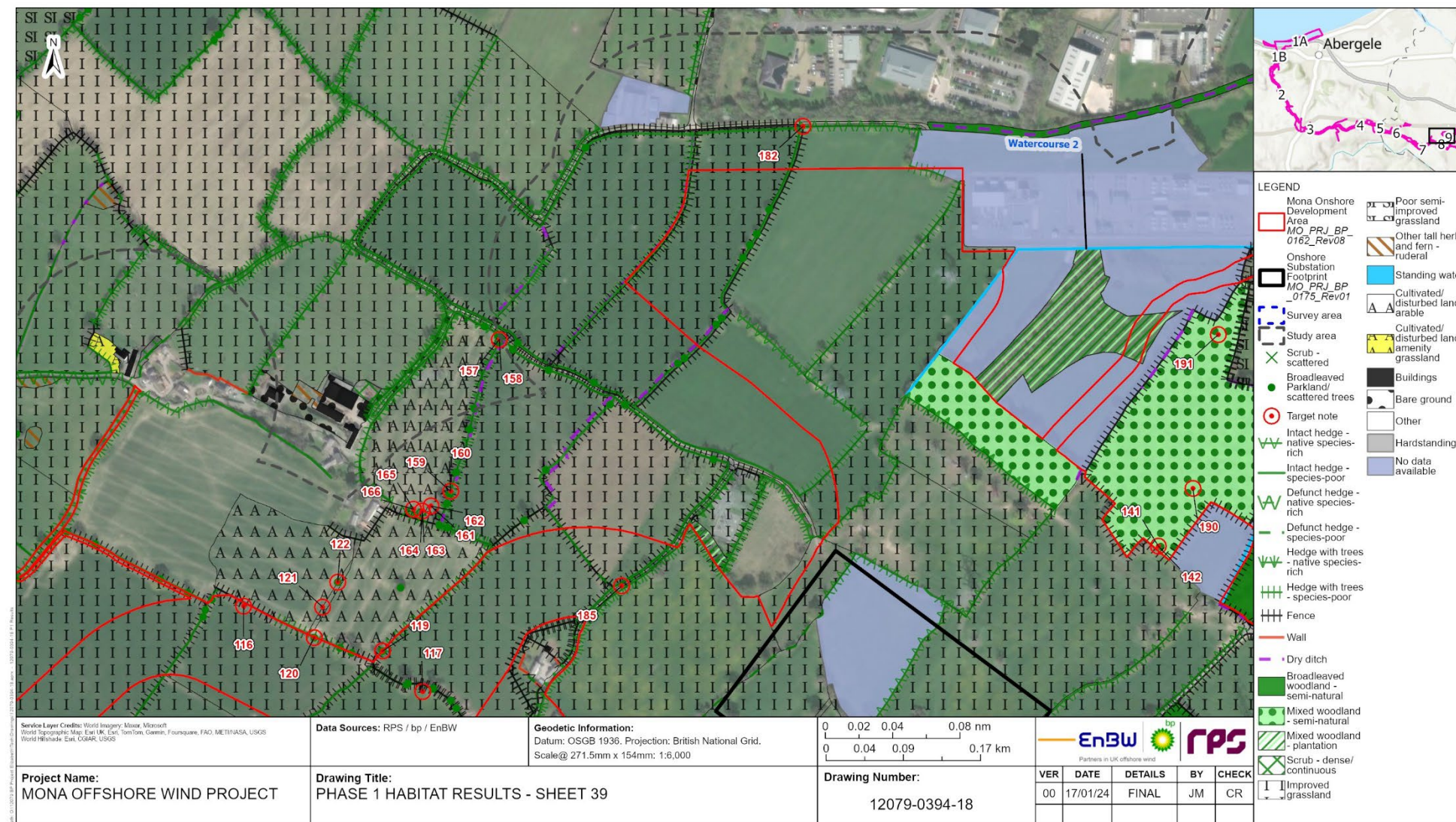


Figure 1.41: Extended phase 1 habitat results – Sheet 39.

MONA OFFSHORE WIND PROJECT

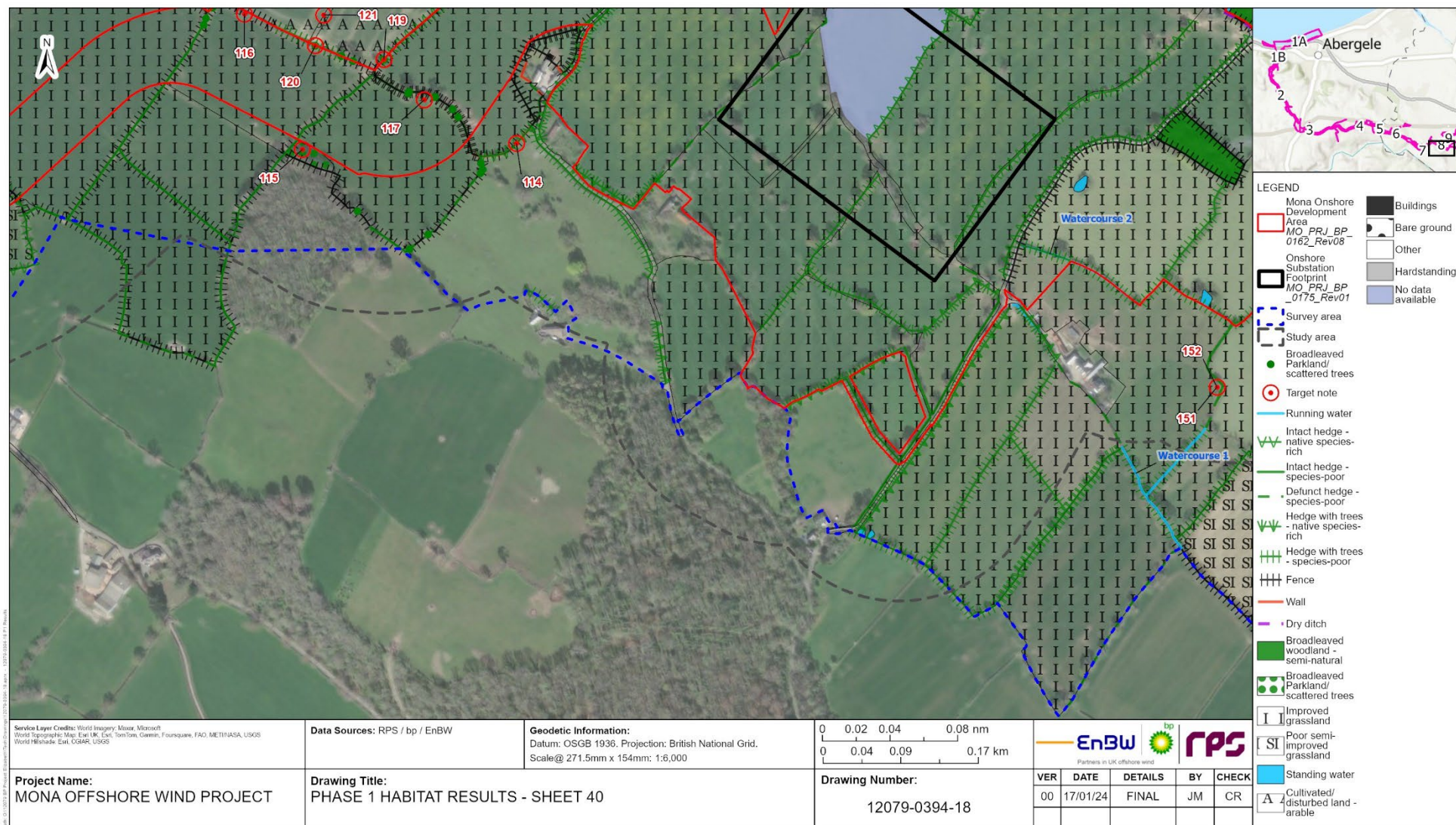


Figure 1.42: Extended phase 1 habitat results – Sheet 40.

MONA OFFSHORE WIND PROJECT

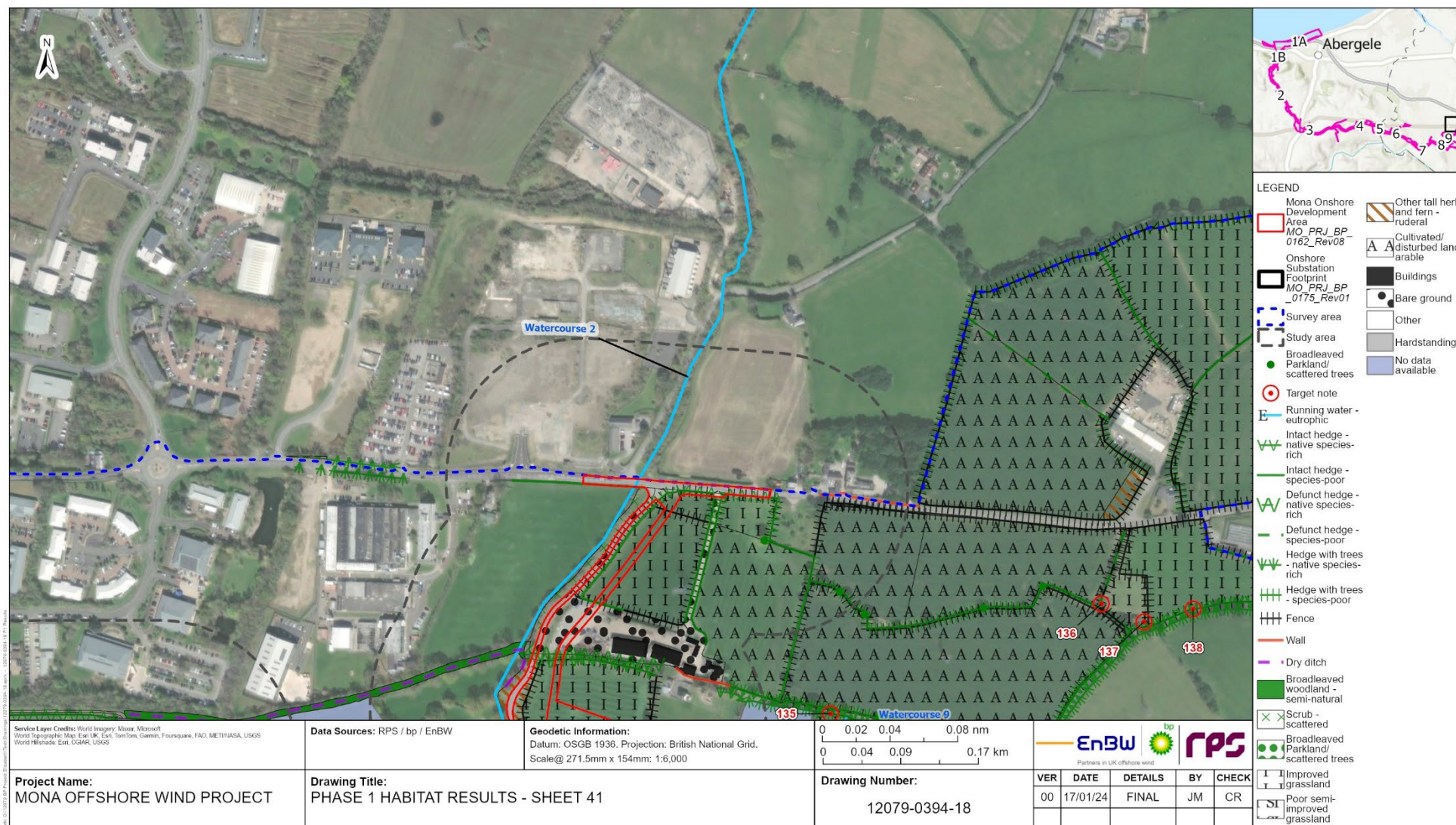


Figure 1.43: Extended phase 1 habitat results – Sheet 41.

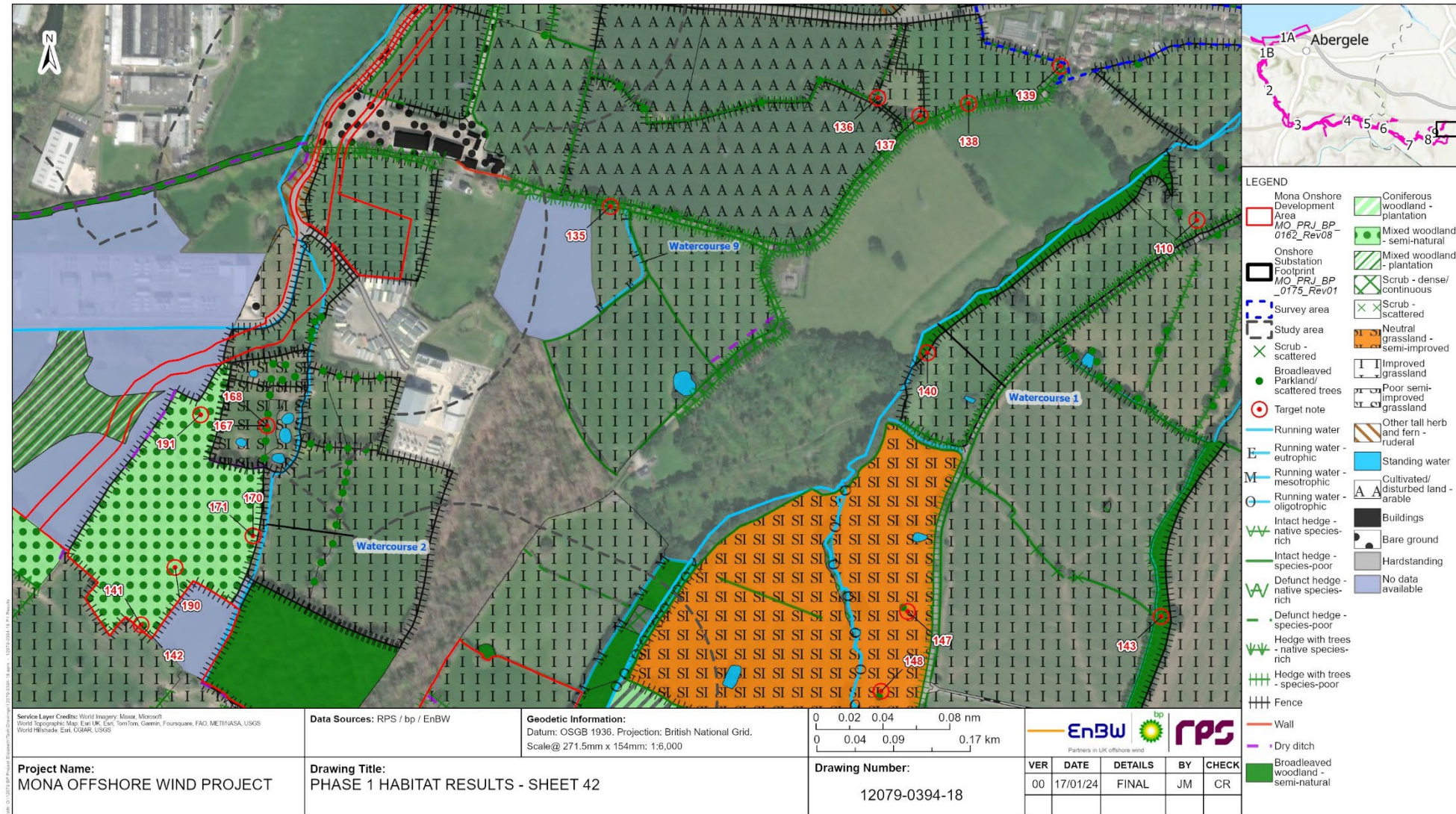


Figure 1.44: Extended phase 1 habitat results – Sheet 42.

MONA OFFSHORE WIND PROJECT

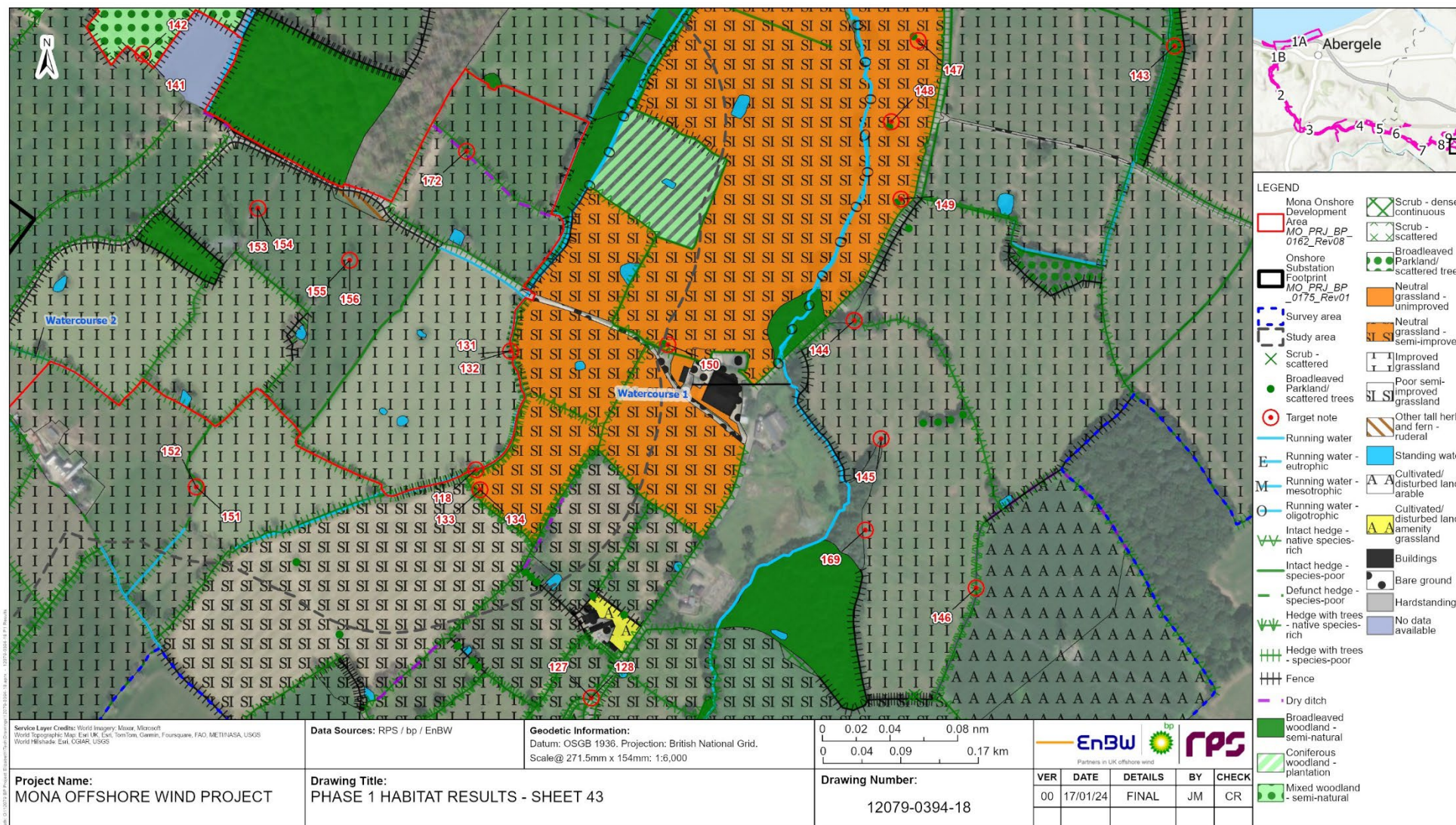


Figure 1.45: Extended phase 1 habitat results – Sheet 43.

MONA OFFSHORE WIND PROJECT

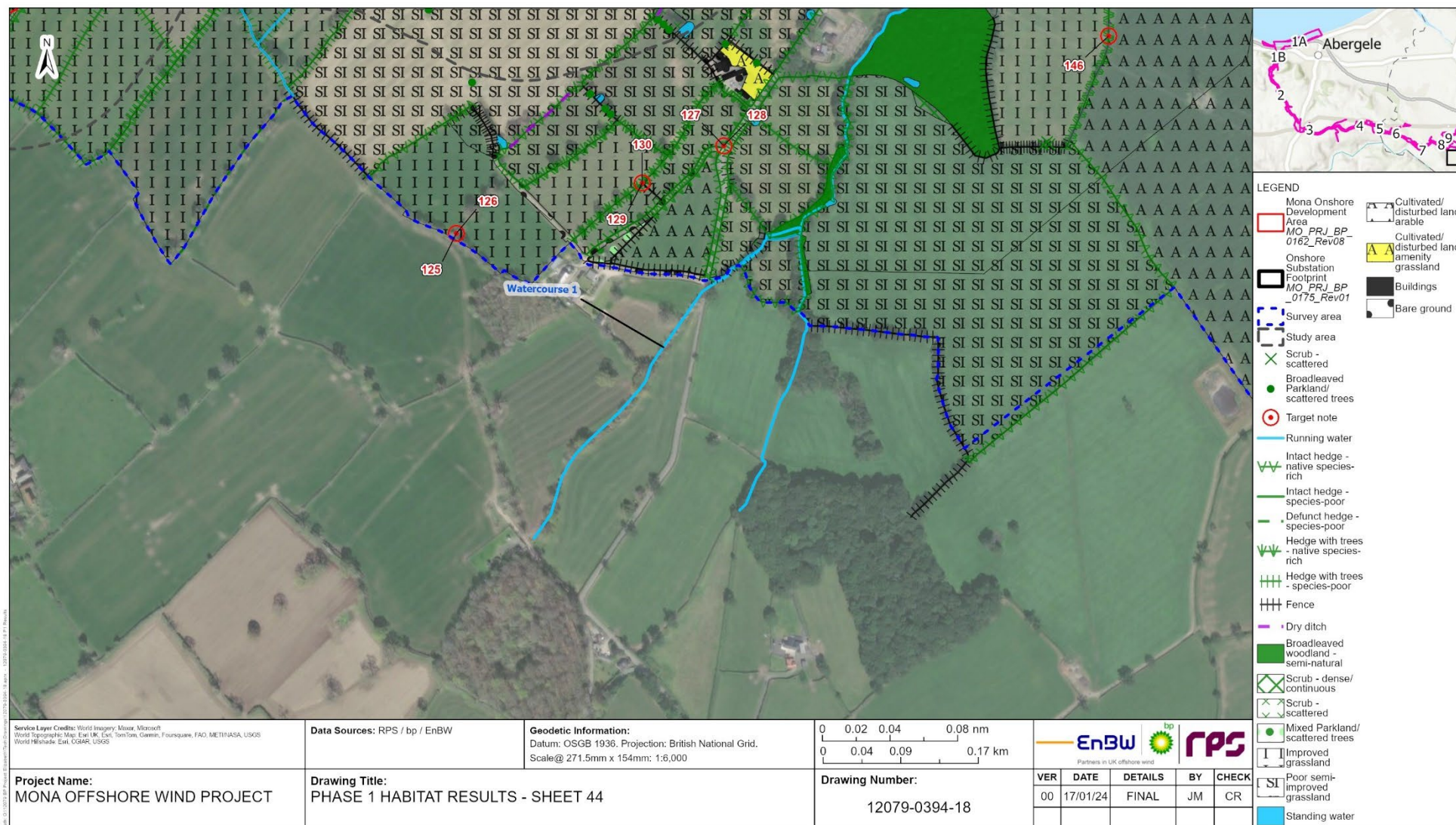


Figure 1.46: Extended phase 1 habitat results – Sheet 44.

MONA OFFSHORE WIND PROJECT

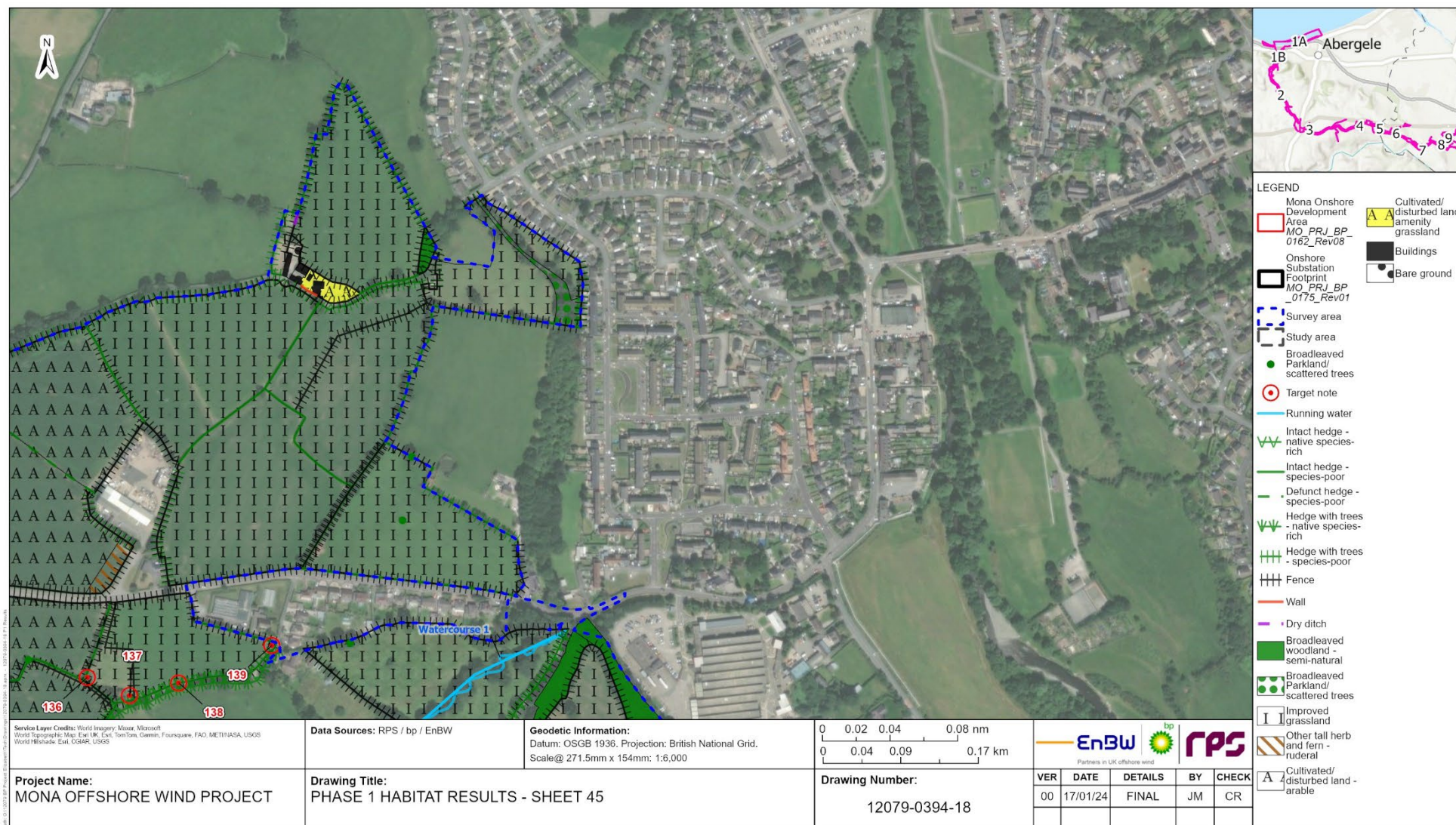


Figure 1.47: Extended phase 1 habitat results – Sheet 45.

MONA OFFSHORE WIND PROJECT

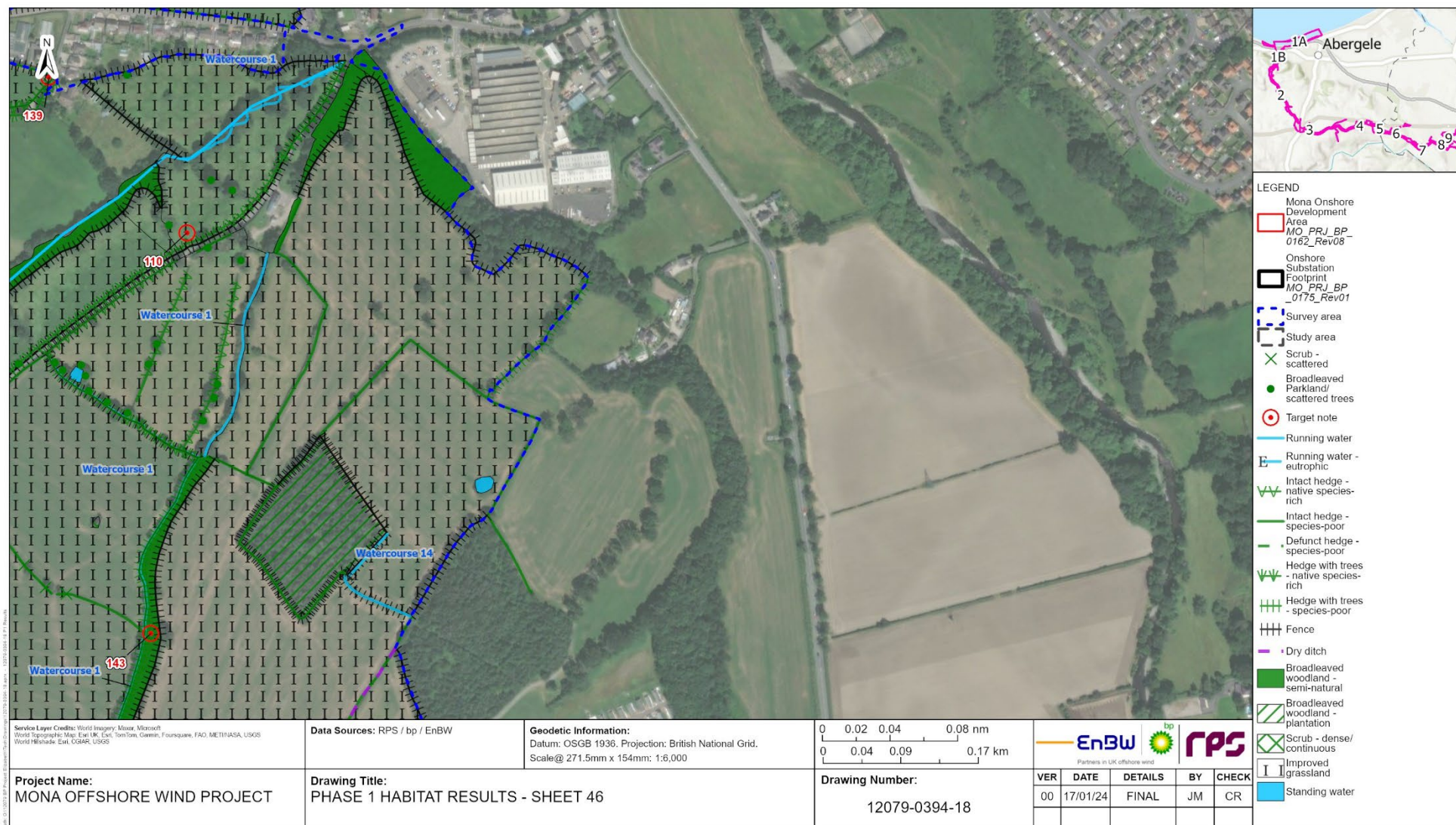


Figure 1.48: Extended phase 1 habitat results – Sheet 46.

MONA OFFSHORE WIND PROJECT

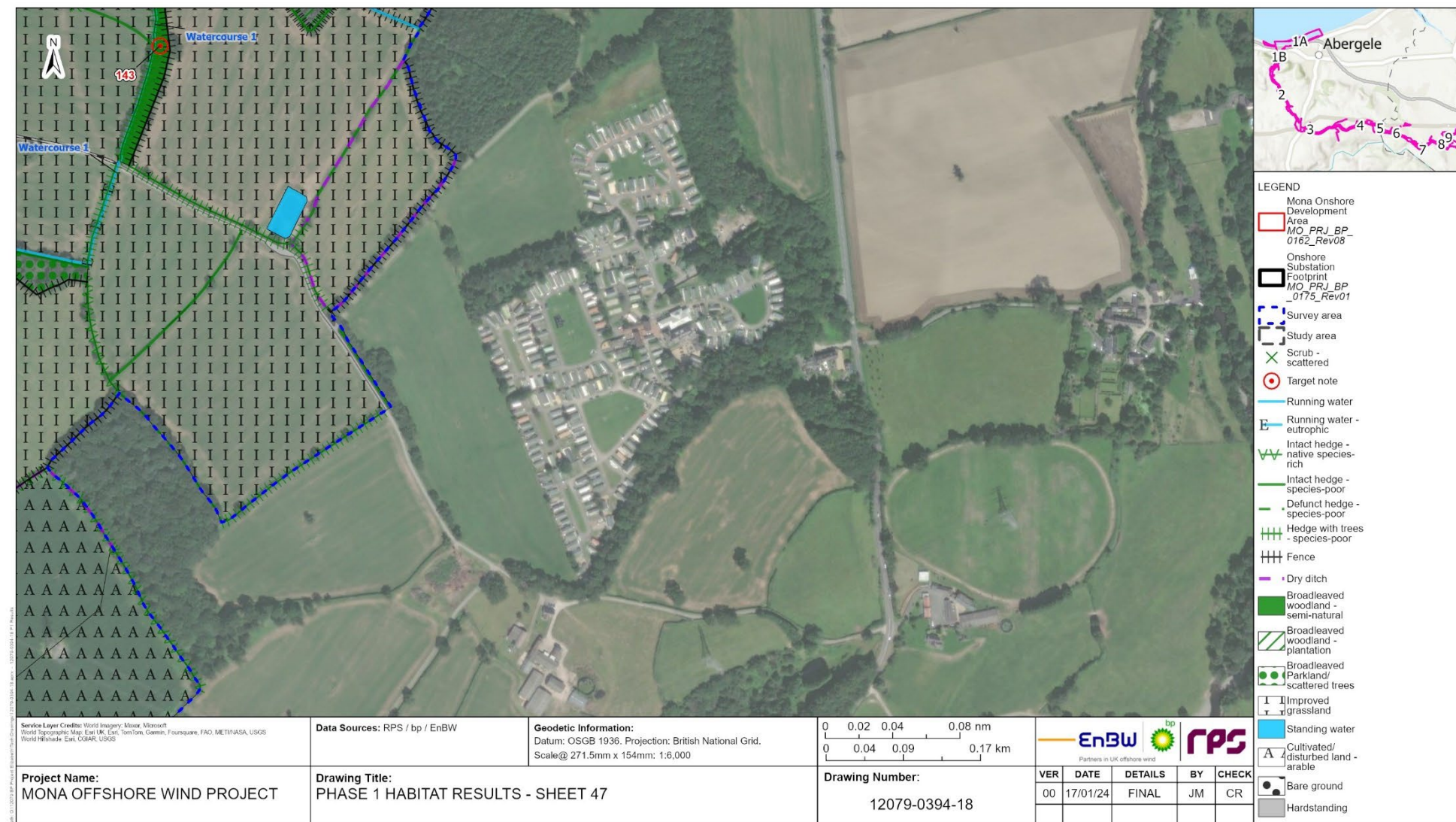


Figure 1.49: Extended phase 1 habitat results – Sheet 47.

MONA OFFSHORE WIND PROJECT

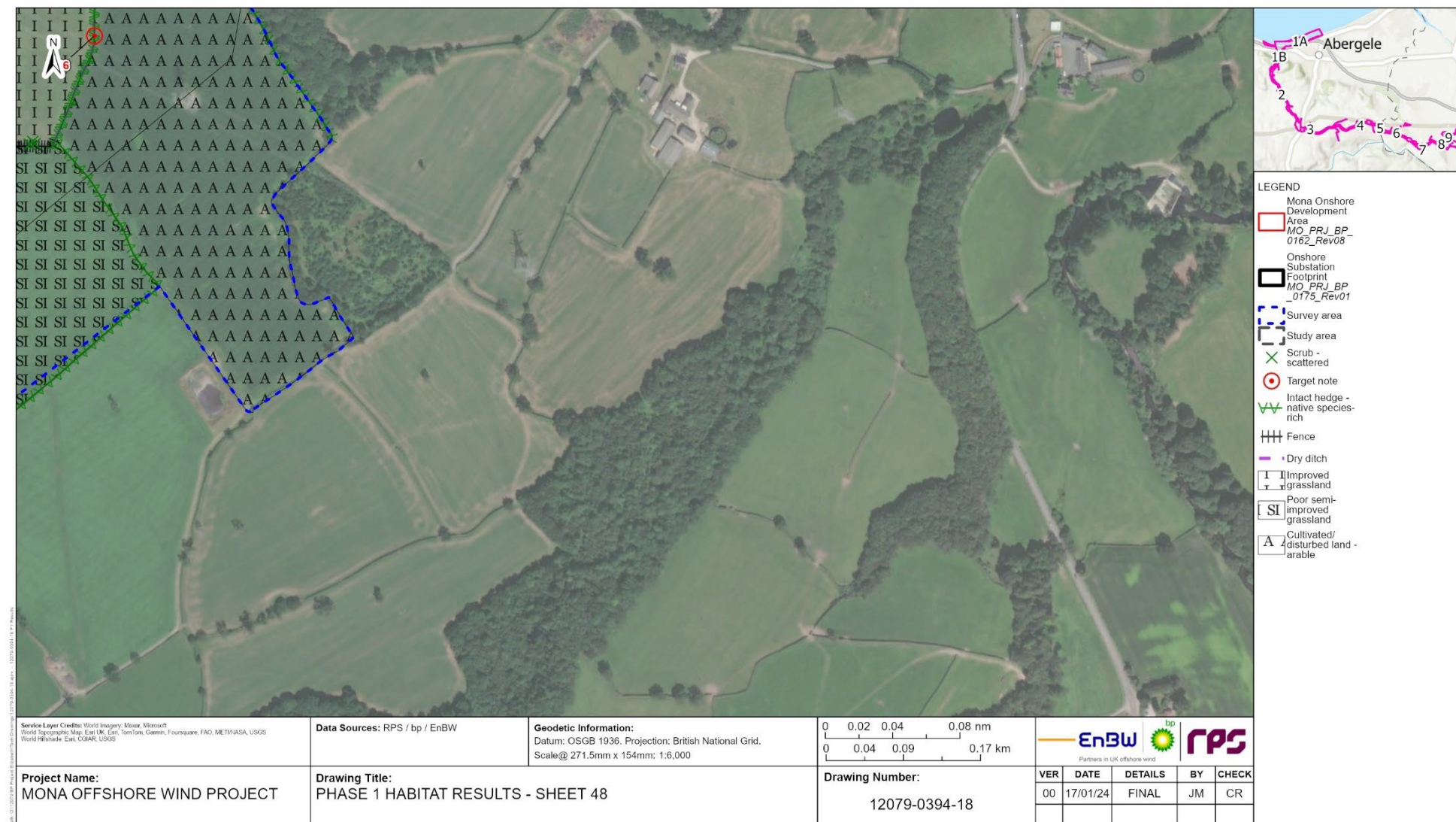


Figure 1.50: Extended phase 1 habitat results – Sheet 48.

1.7 Summary

- 1.7.1.1 This technical report presents the results of the extended phase 1 surveys undertaken to inform Volume 3: Chapter 3: Onshore ecology of the Environmental Statement.
- 1.7.1.2 The desk study identified the presence of protected habitats including lowland dry acid grassland priority habitat, woodpasture and parkland priority habitat and ancient woodland within the Mona Onshore Development Area, and five protected species including English bluebell, badger, cinnabar moth, common darter dragonfly, and a weevil.
- 1.7.1.3 Extended phase 1 habitat surveys were undertaken between April 2022 and September 2023 to map broad habitat types present and identify potential for protected or notable species within the extended phase 1 habitat study area. All broad habitat types recorded within the extended phase 1 habitat survey area were mapped using the JNCC Phase 1 Habitat Classification Scheme, including phase 1 habitat types (JNCC, 2010).
- 1.7.1.4 The extended phase 1 habitat study area of the Mona Onshore Development Area comprised 267.6 ha. The habitat with the largest extent was improved grassland (comprising 53.9 % of the Mona Onshore Development Area and 50.6 % of the total area surveyed). Other habitats of note and that were greater than 15 ha in extent include 'other' which made up the habitats associated with the shoreline (58.62 ha or 21.9 % of beach, intertidal zones and the sea) and arable (comprising 20.3 ha or 7.6 % of the Mona Onshore Development Area). Together these habitats comprised 83.0 % of the Mona Onshore Development Area.
- 1.7.1.5 Comparatively smaller areas of other broad habitat types, including habitats of importance, such as semi-natural broadleaved woodland and waterbodies made up the remainder of the habitats.
- 1.7.1.6 The linear habitats within the Mona Onshore Development Area totalled 51.92 km, of which the longest comprised hedgerows (made up of numerous different types of hedgerow) and fences. All the hedgerow types together measured 33.93 km, which is 65 % of the linear habitats within the Mona Onshore Development Area. The longest hedgerow types comprised native species-rich defunct hedgerow (8.40 km), species poor intact hedgerow (7.68 km), native species-rich hedgerow with trees (7.16 km) and species-poor hedgerow with trees (6.38 km). Fences made 13.21 km, which is 25 % of the linear habitats within the Mona Onshore Development Area.
- 1.7.1.7 Habitats of Principal Importance were identified within the Mona Onshore Development Area including lowland calcareous grassland (phase 1 code B3.2), lowland mixed deciduous woodland (phase 1 codes A1.1.1 and A1.3.1), woodpasture and parkland (phase 1 code A3.1) and hedgerows (phase 1 codes J2.1.1, J2.2.1 and J2.3.1).
- 1.7.1.8 Habitats identified within both the extended phase 1 habitat study area and survey area have the potential to support a range of protected or notable species, including badger, bats, fish and eel, GCN, hazel dormice, invertebrates, otter, reptile, water vole, white-clawed crayfish, and Invasive non-native species.

1.8 References

JNCC (2010) Handbook for Phase 1 Habitat survey - a technique for environmental audit. Available at: <https://jncc.gov.uk/>. Accessed: January 2023.

Appendix A: Target notes

Table A. 1: Target notes.

Target note	Description
2	Derelict building.
5	Small dense cluster of scrub with scattered trees i.e. hawthorn <i>Crataegus monogyna</i> , elder <i>Sambucus nigra</i> , ash <i>Fraxinus excelsior</i> .
6	Three acre orchard with vegetable lots.
7	Uncultivated field margins - bracken, knapweed, buttercup, chickweed.
8	Area of vegetated shingle outside of land parcel. Not assessed.
9	River Dulas enters sea here. Length present in land parcel is subject to tide incursion twice a day. Not vegetated.
10	Area of vegetated shingle outside of land parcel. Not assessed. Seaward edge may just be in land parcel sometimes. Japanese rose <i>Rosa rugosa</i> (INNS) recorded at SH9123778669 +/- 3 m (several small stands each 1-2 m wide on top of beach), also scattered elsewhere on vegetated land.
11	Area of vegetated shingle outside of land parcel. Not assessed. Seaward edge may just be in land parcel sometimes. Japanese rose (INNS) recorded at SH9123778669 +/- 3 m (several small stands each 1-2 m wide on top of beach) – also scattered elsewhere on vegetated land.
12	Llanddulas honeycomb worm reef (identified from an information board).
13	Small area of disturbed strandline vegetation (H5) at top of beach, possibly outside of land parcel. Not assessed in detail but includes sea fern-grass <i>Catapodium maritimum</i> , sea-kale <i>Crambe maritima</i> and sea radish <i>Raphanus maritimus</i> .
14	Small area of disturbed strandline vegetation at top of beach, possibly outside of land parcel. Not assessed in detail but includes sea fern-grass, sea-kale and sea radish.
15	Single stand (approximately 3 x 5 m) of Japanese knotweed <i>Fallopia japonica</i> (an INNS) in this vegetation at SH9209478242 +/- 3 m; assumed to be outside land parcel.
16	Approximate extent of large sea defence boulders at top of beach. As otters could pass along the beach these rocks provide potential resting places, however this area appears generally very disturbed by people/dogs.
17	Approximate extent of large sea defence boulders at top of beach. As otters could pass along the beach these rocks provide potential resting places, however this area appears generally very disturbed by people/dogs.
18	The shoreward boundary of the land parcel is unclear on the ground. Mean high water taken to be crest of largest shingle ridge. Sometimes this is vegetated with a scattered/broken line of strandline vegetation (H5)/the very edge of the adjacent vegetated land.
19	The shoreward boundary of the land parcel is unclear on the ground. Mean high water taken to be crest of largest shingle ridge. Sometimes this is vegetated with a scattered/broken line of strandline vegetation (H5)/the very edge of the adjacent vegetated land.
20	Approximate extent of large sea defence boulders at top of beach. As otters could pass along the beach these rocks provide potential resting places, however this area appears generally very disturbed by people/dogs.
21	Approximate extent of large sea defence boulders at top of beach. As otters could pass along the beach these rocks provide potential resting places, however this area appears generally very disturbed by people/dogs.
22	An area of disturbed dune grassland outside of land parcel. At least one pair of nesting ringed plover <i>Charadrius hiaticula</i> seen here.

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Target note	Description
23	A small area of disturbed vegetation at the top of a shingle beach/adjacent to a sea wall. Classified as vegetated shingle (H3) (as opposed to dune vegetation), although very small areas of sand are present.
24	A small area of disturbed vegetation at the top of a shingle beach/adjacent to a sea wall. Classified as vegetated shingle (H3) (as opposed to dune vegetation), although very small areas of sand are present.
25	Scattered plants in cracks on mortared stone slope at top of beach (below sea wall). Very occasional plants extend on to edge of adjacent shingle beach 'strandline'. For example, <i>Daucus carota ssp. gummifer</i> , <i>Ononis repens</i> , <i>Cochlearia danica</i> .
26	Muck heap.
27	Green shed.
28	Boundary open to residential properties.
29	Scots pine <i>Pinus sylvestris</i> .
30	Scots pine.
31	Scots pine.
32	Cluster of four holm oak <i>Quercus ilex</i> .
33	Mature trees.
34	Boundary changed and now includes sycamore <i>Acer pseudoplatanus</i> tree on east.
35	Ditch with low flow.
36	Small pond.
37	Bare ground and short perennial for access to farm.
38	Boundary removed and line of standard oaks remain.
39	A roadside hedge, fenced on field side. Species-rich woody component including blackthorn <i>Prunus spinosa</i> , hawthorn, dog-rose <i>Rosa canina</i> , holly <i>Ilex aquifolium</i> , hazel <i>Corylus avellana</i> and gooseberry <i>Ribes sp.</i> . Line of semi-mature trees associated with the hedge, largely ash or sycamore.
40	A roadside hedge. Species-rich woody component including hawthorn, blackthorn, rowan <i>Sorbus aucuparia</i> , holly, beech <i>Fagus sylvatica</i> and dog-rose. Can be 3+ m wide where extends down roadside bank.
42	A trackside hedge/fenced on field side. On a slight bank significantly cut occasionally to near ground level. Species-rich woody component including ash, dog-rose, sycamore, rowan, hawthorn and blackthorn. Several 'woodland species' present in ground.
44	Scattered Himalayan balsam <i>Impatiens glandulifera</i> (INNS) seedlings along fenced dry ditch and into adjacent hedge. Example at SH9545073848 +/- 3 m.
45	A fenced off corner of a field with a static caravan (domestic use). Not accessed.
46	Fairly recently planted double fenced hawthorn hedge, with occasional blackthorn and gorse <i>Ulex europaeus</i> only.
47	A line of young scrub within a double fence line. Gorse, holly, blackthorn.
48	Dry/fenced ditch corridor with locally abundant young gorse on banks.
49	A longish split in a leaning willow <i>Salix sp.</i> branch to approximately 0.25 m diameter. Approximately 6 m high. Limited bat roost potential.

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Target note	Description
50	A single <i>Cotoneaster</i> sp. shrub at side of gate. Unconfirmed if INNS species. SH9538573945 +/- 3 m.
51	Line of semi-mature trees/mature scrub associated with the hedgerow, largely sycamore.
52	A small clump of <i>Crocsmia</i> sp. near a gateway. Unconfirmed if montbretia <i>Crocsmia x crocosmiiflora</i> (INNS) as not in flower. SH9556774114 +/- 3 m.
53	Line of semi-mature trees associated with the hedge, largely ash or sycamore/holly.
54	Two large clumps of <i>Crocsmia</i> sp. in a roadside verge. Unconfirmed if montbretia (INNS) as not in flower. One is at SH9558174119 +/- 3 m.
55	A rhododendron <i>Rhododendron ponticum</i> (INNS) bush in a roadside verge. SH9561374133 +/- 3 m.
57	Fairly recently planted double fenced hawthorn hedge, with frequent hazel only. Plastic guards present.
58	Newly planted intact species rich hedge.
59	Small pond full of duckweed.
60	Owner info, owls potentially roosting in trees in other land parcel.
61	Stone walls from old building.
62	Appears to be a sheep feeding pen.
63	Line of mature pedunculate oak <i>Quercus robur</i> trees along fence line with associated mature hawthorn/blackthorn shrubs. No particular potential roosting features seen but trees larger than 0.6 m diameter at breast height.
64	A mature pedunculate oak, no particular potential roosting features seen.
67	A small stand of mature scrub, comprising hazel, hawthorn, blackthorn, dog-rose. Accessed by sheep and is open in structure. Bluebell in field layer. There were three trees including a mature hybrid oak <i>Quercus</i> sp. coppice/re-growth.
68	Broad-leaved semi-natural woodland on a slope. Canopy mostly comprises oak re-growth from past coppice/felling, trunks are largely less than 0.3 m diameter at breast height. Fairly open structure with hawthorn, holly, blackthorn, and hazel occasionally throughout.
70	A dry/bare pond. May hold water in winter.
71	A small stand of broadleaved semi-natural woodland on a small mound. Main canopy tree is oak with associated holly, hazel, hawthorn and elder. Accessed by sheep and is open in structure. Bluebell in field layer.
72	Broadleaved semi-natural woodland on a slope. No particular potential roosting features, trees fairly uniform at largely less than 0.3 m diameter at breast height.
73	Line of unmanaged mature scrub along fence line to 6+ m tall. Includes hazel (including some very old stools), blackthorn, dog-rose, hawthorn and elder. Approximately five mature trees, including an ash with good potential roosting features including an active woodpecker.
74	Ash with good potential roosting features including an active woodpecker.
75	A field hedge. Mapped as species-rich with woody component including hawthorn, dog-rose, holly, hazel, pedunculate oak, and ash.
76	A roadside hedge, fenced on field side. Species-rich woody component including blackthorn, hawthorn, dog-rose, holly.
77	A field hedge. Mapped as species-rich with woody component including hawthorn, dog-rose, holly, hazel, pedunculate oak, and ash.

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Target note	Description
79	Scattered mature scrub along a boundary fence with occasional mature trees, one pedunculate oak, one ash. Some potential roosting features seen.
80	Boundary is more of a hedge, albeit species-poor.
81	A mature oak is outside the land parcel but a large split with staining is visible from the boundary.
82	A roadside hedge, fenced from the field. Species-rich woody component including blackthorn, hawthorn, dog-rose, holly, hazel and ash. Several 'woodland species' (as per Hedgerow Regulations 1997) present in ground flora.
84	Two largely dead oak trees, largely only trunks remain. Some potential roosting features seen.
85	A short length of species-poor gappy hedge.
86	A dry pond. Vegetated with largely creeping bent <i>Agrostis stolonifera</i> and silverweed <i>Potentilla anserina</i> only. May hold water in winter.
87	A mature oak tree approximately 1 m diameter at breast height. Rot cavity entrance at the base which may extend up the trunk.
88	A small corner of sloping semi-improved neutral grassland. Some areas may be poor semi-improved but too small to map. Likewise, some small areas may be unimproved (for example around small exposed limestone rocks).
89	Outside/immediately adjacent to land parcel. Unmanaged grassland habitat with scrub. Early purple orchid <i>Orchis mascula</i> present.
90	Outside/immediately adjacent to land parcel. Species-rich unimproved neutral grassland field.
91	Mature scrub on a steep slope. Hawthorn (dominant), bramble <i>Rubus fruticosus</i> , blackthorn, hazel and elder. Occasional small sections of limestone outcrop towards the top. There are three mature ash trees in this scrub.
92	Broad-leaved semi-natural woodland on a steep slope with occasional limestone outcrops/cliffs. The canopy largely comprises mature ash including some apparently very old pollards. The shrub layer is variable with hawthorn dominating.
94	A sunken lane with mature trees/scrub on edges. Trees largely comprise mature ash. Ground flora at northern end in particular with some characteristic woodland species such as pignut <i>Conopodium majus</i> , and bluebell.
95	Southern end of sunken lane with line of frequent mature (largely oak, occasional ash) trees, including some with diameter at breast heights of 2 m. Significant trees.
96	Hawthorn hedge with ivy <i>Hedera helix</i> , brambles, nettles <i>Urtica dioica</i> , hazel, 2m height.
97	Dead tree 12 m tall with ivy, loose bark, cracked branches.
98	Improved grassland, see sketch for more detail.
99	Mature oak, with ivy, trunk cavity, 2m diameter.
100	Hedge with trees - holly, oak.
101	Ash with cavity.
102	Sycamore, 2 m, trunk cavity.
103	Line of trees 4-12 m high, hawthorn, willow, ash, sycamore. Wire fence.
104	Dense scrub in hollow, gorse, brambles, holly, dogrose, willow, hawthorn.
105	Possible sett, clawmarked hole, mammal trail, latrine.
107	Mature oak next to pylon with two low down cavities, hibernation potential.

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Target note	Description
108	Small orchard.
109	Log pile.
110	Big stump – deadwood.
111	Small area of Leyland cypress <i>Cupressus × leylandii</i> hedge.
112	Mature ash, several branch and stem cavities.
113	Open top trunk/stem and trunk cavity. Mature sycamore.
114	Reptile habitat.
115	Log pile.
118	Wet ditch filled in.
119	Mature oak, low bat roost potential, rotting branch, low trunk cavity.
120	Mature oak, moderate bat roost potential. Flaking bark, dead branches, trunk cavity.
122	Mature oak, moderate bat roost potential, low trunk cavity.
123	Piled rubble from dry wall and brick and slate. Minor potential for reptiles and hibernating amphibians.
124	Pitiful pond 5 m ² . Rocky banks 5 cm depth.
125	Not a pond, potentially wet in winter.
126	Not a pond, potentially wet in winter.
127	Track/road with hedges either side dividing land parcel into smaller fields.
128	Track/road with hedges either side dividing land parcel into smaller fields.
129	Electric fence dividing field in two, horses in south section and north section left to grow long.
130	Electric fence dividing field in two, horses in south section and north section left to grow long.
131	Trees/scrubs by stream - outside boundary.
132	Trees/scrubs by stream - outside boundary.
135	Oak in boundary hedge with branch at 12 m height. Breeding birds in hedgerow. Callus wound etc.
136	Shed and brash pile.
137	Bee hives.
138	Mammal path.
139	Compost.
140	Habitat pit.
141	Dead sparrowhawk.
142	Dead sparrowhawk.
144	Log pile.
145	Log pile.
146	Mammal path.
147	Boundary oak with multiple limb wounds with bat roost potential.

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Target note	Description
148	Boundary oak with multiple potential bat roost features.
149	Boundary oak with callus wound on – moderate bat roost potential.
150	Oak with trunk with moderate bat roost potential. Nesting bird potential in hedge and trees.
151	Filled in pond.
152	Filled in pond.
153	Hedge removed.
154	Hedge removed.
155	Mature oak with high bat roost potential.
156	Mature oak with high bat roost potential.
157	Pond will spill into field in heavy rain.
158	Pond will spill into field in heavy rain.
159	Dead oak, loose bark, cavities, high bat roost potential.
160	Dead oak, loose bark, cavities, high bat roost potential.
161	Mature ash with trunk hole. Moderate bat roost potential.
162	Mature ash with trunk hole. Moderate bat roost potential.
163	Mature ash, low bat roost potential, flaking bark.
164	Mature ash, low bat roost potential, flaking bark.
165	Mature ash, large hole, moderate bat roost potential.
166	Mature ash, large hole, moderate bat roost potential.
167	Mammal path – fox <i>Vulpes vulpes</i> seen.
168	Mammal path – fox seen.
169	Mammal path.
170	Dead tree, old woodpecker holes, cavities, high.
171	Dead tree, old woodpecker holes, cavities, high.
172	Tree with bat roost potential.
173	Woodland ride.
174	Bluebell glade – open woodland.
176	Mammal path north-south.
179	Latrine, snuffle hole, and path.
180	Stone bridge over railway at Abergate and Pars.
182	Bare ground (J4) tracks along grass track.
183	Bare ground (J4) tracks throughout grassland.
184	Fly tipped material – potential for reptiles.
185	Some areas of grass down the middle of the road.
188	Investigate for bat roost potential.

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Target note	Description
189	Foot bridge.
190	Dry pond.
191	Dry pond.