

Habitat Management and Monitoring Plan

Site Name:	Merryvale, Pig Shed Trust
Date:	02/02/2026
Version:	4.0

Author: AtkinsRéalis



Client: Portsmouth
Water



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Version Control

The version control is used for updates to the content. Record the initial version and further version control details in this table each time the management plan is altered throughout the management and monitoring period.

Version	Issue Status	Prepared by / Date	Approved by / Date
1.0	Draft issued to Portsmouth Water for comment	AtkinsRéalis / 13/06/25	Portsmouth Water 20/06/25
2.0	Comments from Portsmouth Water addressed	AtkinsRéalis / 04/07/25	Portsmouth Water 09/07/25
3.0	Comments from Pig Shed Trust addressed	AtkinsRéalis / 15/10/25	Portsmouth Water 10/25
4.0	S106 date updated	AtkinsRéalis / 02/02/26	Portsmouth Water 02/02/26

Document Details

Provide ownership, copyright and licensing information within this table.

Authorship Details

This document and its contents have been prepared for Portsmouth Water Limited to be used for offsite habitat creation and management of the ‘Merryvale’ land for Biodiversity Net Gain (BNG) proposals in relation to the Havant Thicket Reservoir scheme.

AtkinsRéalis assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

The information which AtkinsRéalis has provided has been prepared by an environmental specialist in accordance with the Code of Professional Conduct of the Chartered Institute of Ecology and Environmental Management (CIEEM). AtkinsRéalis confirms that the opinions expressed are our true and professional opinions.

This document does not purport to provide legal advice.

1. Project Background

Summarise the key aspects of your management plan in this section. Table PB-B01 can be extended to suit the specific needs of individual projects.

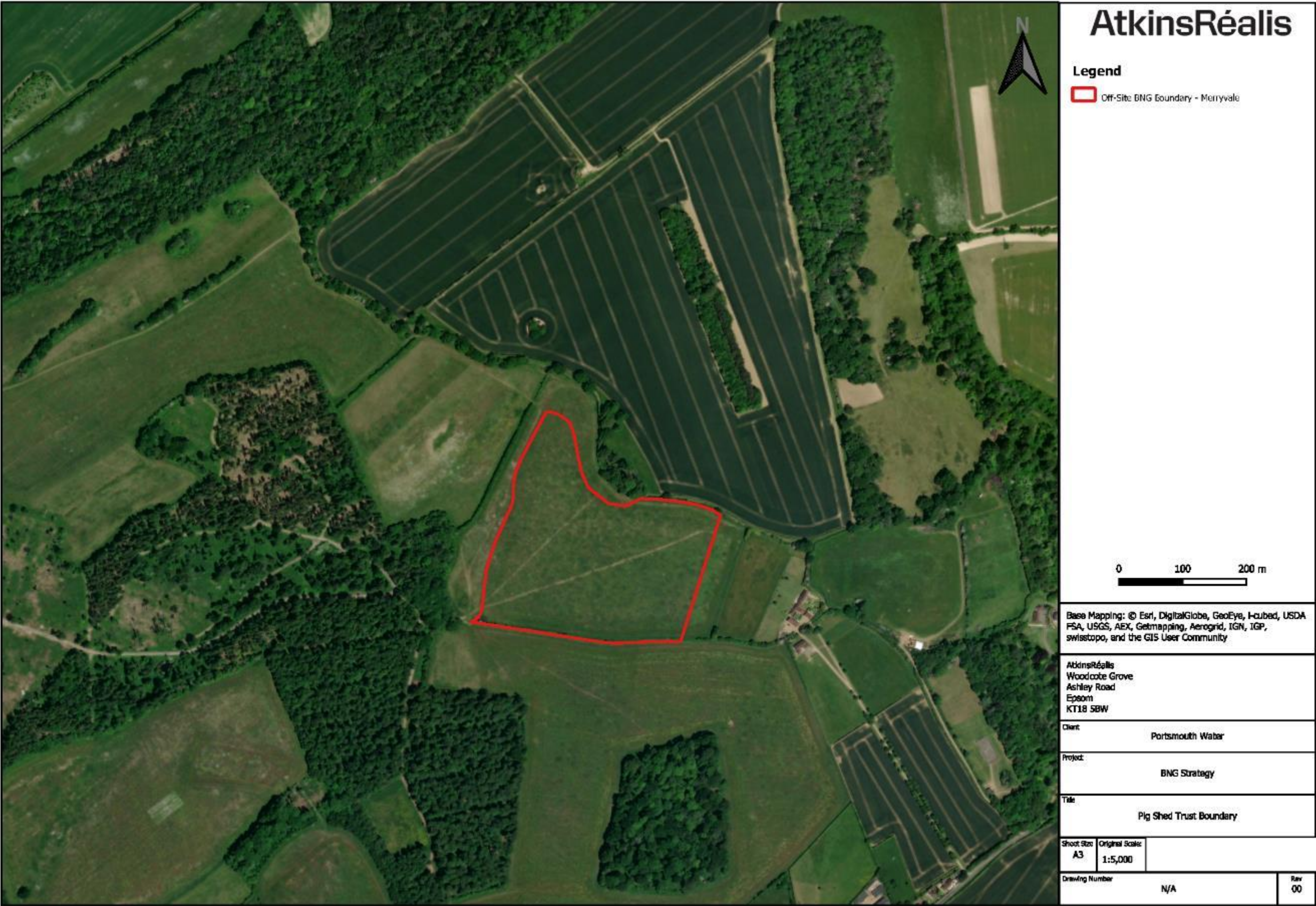
Site Overview PB-B01	
Project type	Offsite
Development Name and Address	Havant Thicket Reservoir
BNG Project Name and Address	N/A
Author Organisation	AtkinsRéalis
Landowner	Pig Shed Trust
Land Manager	Pig Shed Trust
Responsible person/organisation for creating or enhancing the habitat	Pig Shed Trust
Period covered by this management plan	Start date: February 2026, End date: February 2056
Planning authority	South Downs National Park Authority (SDNPA)
Planning reference (if applicable)	APP/24/00405
BNG register reference (if applicable)	To be updated when registered
Central OS grid reference	SU 76146 13693
Metric revision/title	HTR-ATK-PI-ZZ-RP-Y-0002
Are any Irreplaceable Habitats present onsite	Yes: ☐ No: ☒

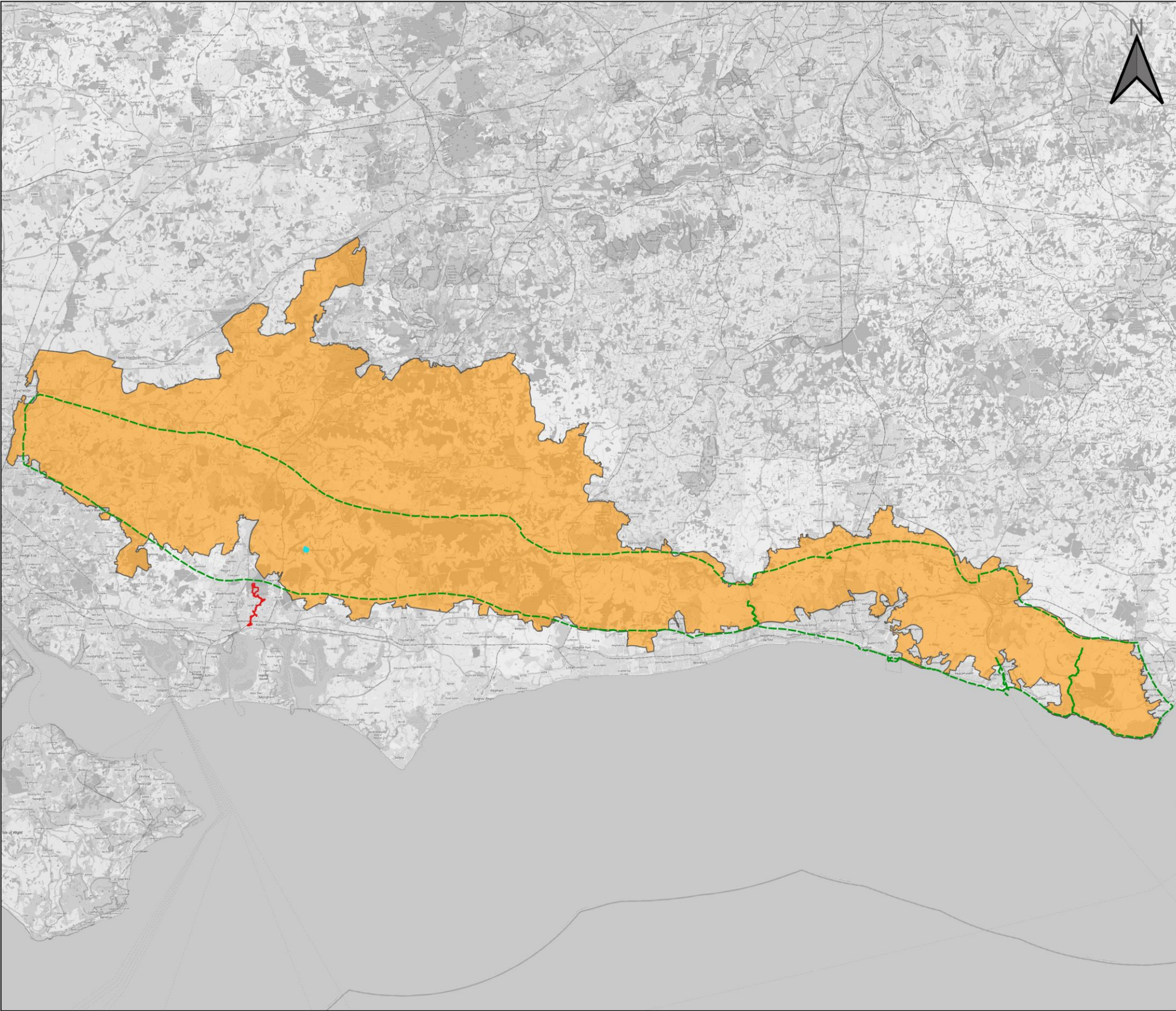
Summary of Management Plan

Habitats to be Retained, Created and Enhanced PB-B02
2.65 ha of ‘moderate’ condition lowland mixed deciduous woodland (LMDW) and 5.95 ha of ‘good’ condition mixed scrub will be created on former arable land using a ‘rewilding’ approach. Natural regeneration of shrub and tree species will occur via seed dispersal from adjacent areas of LMDW, with the emergence of a mosaic of habitats facilitated through grazing by cattle in a managed rotation.
Timescales for Actions PB-B03
Start date: February 2026, End date: February 2056
Monitoring Requirements PB-B04
<p>The monitoring of the site will be the responsibility of Pig Shed Trust, to ensure that the estimated area of each habitat and its target condition is going to be achieved. Ecologists will visit the site in years 1, 2 and 3 post-intervention and compare against the baseline, with Statutory Metric Condition Assessment forms used as the basis to assess the progression of LMDW and mixed scrub habitats. Then in years 5, 10, 20 and 30 for each habitat, the same approach of collecting condition assessment data to assess habitat progression to target condition will be followed. Throughout the monitoring timeline, Fixed Point Photography is to be utilised as a standardised way to monitor changes to the environment.</p> <p>An approach of reactive management will be followed hand in hand with the monitoring, as is embedded in the Pig Shed Trust’s rewilding approach. If it is assessed that habitats are not developing towards their target conditions, the management approach will be re-assessed accordingly, as is detailed in this HMMP.</p>
Required Consents and Licences PB-B05
None – confirmed with South Downs National Park Authority (SDNPA) via email exchange between Victoria Gilbey (AtkinsRéalis) and Kelly Porter (SDNPA) in May 2025.
Funding PB-B06
Portsmouth Water will fund all works detailed in the HMMP for the 30 year duration.
Legal Agreement PB-B07

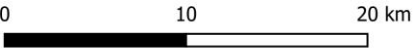
An allocation and collaboration agreement has been entered under which Portsmouth Water shall purchase, and Pig Shed Trust shall allocate to the Development, the Agreed Number of BNG Units.

A Section 106 agreement between Portsmouth Water and the SDNPA has been agreed. SDNPA are the enforcing authority for the obligations within the S106 agreement that will secure the Pig Trust’s land and the enhancements, monitoring, and management.





- Legend**
- Onsite Boundary
 - Offsite Boundary - Merryvale
 - South Downs National Character Area
 - South Downs National Park



Base Mapping: © Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

AtkinsRéalis
Woodcote Grove
Ashley Road
Epsom
KT18 5BW

Client
Portsmouth Water

Project
BNG Strategy

Title
Site Context Plan

Sheet Size A3	Original Scale: 1:350,400
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Drawing Number N/A	Rev 00
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Phasing strategy

Will the proposed work measures be delivered in phases? PB-B08

Yes: ☐ No: ☒

This HMMP covers a single 30 year phase to achieve the required BNG. The Pig Shed Trust has stated in their management plan (Environmental Compensation Plan)¹ that the rewilding project of South Holt land, of which Merryvale will be managed in the same way, will run for a minimum of 80 years. Therefore, following the 30 year BNG phase, further phases of management may be employed based on the outcomes of the rewilding approach.

Roles and Responsibilities

Provide details of the responsible persons and organisation(s) for delivering this management plan.

Ecologist or Other Professional Responsible for HMMP PB-B09

Name or Initials		WE/VG/NC		
Organisation		AtkinsRéalis		
Responsibility	Start Date:	February 2026	End Date:	February 2056

AtkinsRéalis ecologists have designed the habitat creation proposals and authored the HMMP but they will not be responsible for any of the implementation and/or monitoring.

Statement of Competency

The information which AtkinsRéalis UK Limited has provided has been prepared by an environmental specialist in accordance with the Code of Professional Conduct of the Chartered Institute of Ecology and Environmental Management. AtkinsRéalis confirms that the opinions expressed are our true and professional opinions.

The HMMP has been developed by AtkinsRéalis ecologists who are experienced in habitat creation, enhancement and restoration practices and long-term management and monitoring methodologies. The HMMP has been developed in consultation with the Pig Shed Trust and has used evidence-based research findings on similar re-wilding schemes in the south of England to develop the management and monitoring targets within this HMMP.

AtkinsRéalis have authored the HMMP however they will not be responsible for implementation of the HMMP throughout the 30-year duration.

Landowner or Land Manager PB-B10

Name or Initials		Harvey Jones		
Organisation		Pig Shed Trust		
Responsibility	Start Date:	February 2026	End Date:	July 2056

The landowner will be responsible for the management and monitoring of the site and the implementation of this HMMP for the 30 year duration.

Responsibilities will include management of grazing cattle using ‘nofence’ technology, liaison with the relevant people regarding the intensity of the deer cull in the wider landscape, and the implementation of remediation measures to be taken if risks stated in this HMMP come true.

Monitoring will also be carried out by Pig Shed Trust and monitoring reports will be produced by them to support the HMMP.

Statement of Competency

The Pig Shed Trust has a “proven track-record of managing land solely for conservation benefit”¹. Since taking ownership of the nearby Biddenfield Estate in 2015, the Pig Shed Trust has successfully facilitated native woodland regeneration within a low-intensity cattle grazing system whilst creating species-rich grasslands, ponds and ephemeral stream-side habitats. Similar techniques to facilitate habitat creation will be employed on the Merryvale site.

Pig Shed Trust employ a local ecological consultancy (Arcadian Ecology) to carry out ecological monitoring of the wider South Holt site. It is anticipated that the same consultants, or consultants with at least the same level of competency i.e. members of CIEEM will be used to carry out monitoring surveys of Merryvale.

Management Organisation(s) Responsible for Implementing the HMMP PB-B11

Name or Initials		Harvey Jones		
Organisation		Pigs Shed Trust		
Responsibility	Start Date:	February 2026	End Date:	February 2056

As above

¹ Environmental Compensation Plan for Havant Thicket Reservoir at South Holt, Pig Shed Trust, Version 2.1

MERRYVALE HMMPAtkinsRéalis - Baseline / RéférencePAGE | 7BIODIVERSITY NET GAIN - HABITAT MANAGEMENT AND MONITORING PLAN

Contents

Project Background

Planned Management Activities

Monitoring Schedule

Statement of Competency				
As above				
LPA or Responsible Body for Reviewing HMMP PB-B12				
Name or Initials		Kelly Porter		
Organisation		South Downs National Park Authority (SDNPA)		
Responsibility	Start Date:	February 2026	End Date:	February 2056
<p>The draft HMMP has been reviewed by SDNPA.</p> <p>A copy of the HMMP is attached to the S106 legal agreement (dated February 2026).</p> <p>The HMMP will be reviewed and submitted to the SDNPA in Year 1, 2, 3, 5, 10, 20, and 30.</p>				

Land Use Summary

Overview of Baseline Site Use PB-B13
<p>Merryvale consists of 8.6 ha of arable land, which has been categorised as the ‘cereal crops’ habitat type in the Statutory Metric. Although the Site has not been recently planted or ploughed, discussions with the landowner and a review of historic aerial imagery has indicated that the field was regularly ploughed and planted with arable crops up until approximately 2022. A fallow arable plant community was observed during the UKHab survey (to inform the BNG assessment) undertaken in February 2025², and therefore it is considered appropriate to classify the habitat type as cereal crops. There are hedgerows adjacent to the Site however they are not included in the boundary of the Site. No watercourses are present within the Site.</p>
Overview of Proposed Site Use PB-B14
<p>The cereal crops habitat type will be lost to facilitate habitat creation of higher distinctiveness habitat types, with the site’s anticipated use being solely for the benefit of biodiversity. It is proposed that 5.95 ha of ‘good’ condition mixed scrub and 2.65 ha of ‘moderate’ condition lowland mixed deciduous woodland (LMDW) will be created onsite by natural colonisation.</p> <p>Suitable conditions for natural colonisation will be created through management using rotation-based grazing cattle, This will reduce the dominance of coarse grasses, thereby promoting growth of native woody species (trees and shrubs) to form scrub with a varied structure and age class, and disperse seeds of woody species to promote woodland and scrub dispersal across the Site. This is often referred to as a ‘rewilding’ approach.</p> <p>No soil testing of Merryvale has been carried out; however, the surrounding former arable fields have been tested³ and found to have high phosphorus levels of Defra Index 3, as indicated by the Defra Indix Scale for phosphorus⁴A rewilding approach utilising low-intensity grazing is anticipated to lead to a reduction in nutrient levels over time, thereby reducing the dominance of competitive species that thrive in high-nutrient conditions, to further promote suitable conditions for woodland and scrub regeneration.</p>

Site Context Photos PB-F03



Merryvale former arable land, photograph taken in February 2025

² Environmental Statement Volume 4 – Appendices. Appendix 9 Biodiversity, Appendix 9.21 Biodiversity Net Gain (BNG) Assessment (Update), AtkinsRealis, 2025

³ Baseline Monitoring Surveys 2024-25, Carmen Perry, Arcadian Ecology, February 2025
⁴ [Defra Index Scale for P, K and Mg \(mg/l\) Concentrations in Soil and Sludge – Technical Datasheet, 2017](#)



Merryvale former arable land, photograph taken in February 2025



Woodland adjacent to Merryvale, photograph taken in February 2025

Baseline and Environmental Information	Check box if included	Document Reference or Reason if not included
Statutory / Non-statutory Designated Sites	☐	There are no statutory designated sites within 1 km of the site (MAGIC). A wider desk study has not been included, since the proposals only have potential to lead to indirect beneficial effects on surrounding land. The site is within the South Downs National Park.
Protected and Notable Species	☐	A wider desk study has not been included, since the proposals only have potential to lead to direct and indirect beneficial effects on protected and priority species.
Invasive Non-Native Species (INNS)		No INNS are present on the site ⁵ The wider South Holt site is subject to regular ecological monitoring and no INNS have been recorded on the wider site either ³ .
Biological Records Plan - Sites and Species	☐	A total of 30 protected and/or priority bird species have been recorded on surrounding land ³ . The rewilding approach will provide additional food sources, nesting areas and sheltering opportunities for birds. Jays have been recorded on surrounding land during recent monitoring surveys, meaning opportunities for acorn dispersal to aid oak regeneration on the site. On a butterfly survey of the wider South Holt land, small heath (a UK BAP priority species and Section 41 species) was the second most abundant butterfly; the low intensity grazing regime leading to a more diverse wildflower assemblage is an opportunity to benefit butterflies as well as moth species which have also been recorded on the wider land ³ .
Baseline Habitats Survey	☐	Environmental Statement Volume 4 – Appendices – Appendix 9 Biodiversity – Appendix 9.21 Biodiversity Net Gain (BNG) Assessment (Update), AtkinsRealis, May 2025 ⁵ .
Public Access	☐	Two public rights of way run along the perimeter of the site, but these have not influenced management prescriptions.
Climate	☐	Climate change is likely to influence the development of habitats and the component species that colonise the site, however, Forest Research modelling has provided confidence that many native tree species will likely continue to thrive under different climate change scenarios ¹ .
Geology and Topography	☐	Not considered relevant to the project.
Agricultural Land Status	☐	Due to the recent arable land-use, the proposals may be affected by high nutrient soil conditions, to be mediated by low intensity rotational grazing.
Soils and Substrates	☐	The proposals may be affected by high nutrient soil conditions, to be mediated by low intensity rotational grazing which will gradually help reduce nutrient levels through grazing of competitive species.

⁵ [Environmental Statement Volume 4 – Appendices – Appendix 9 Biodiversity – Appendix 9.21 Biodiversity Net Gain \(BNG\) Assessment \(Update\), AtkinsRealis, May 2025](#)

Contaminated Land	☐	No contaminated land has been identified.
Hydrology and Drainage	☐	There are no watercourses on site.
Flood Risk Zones	☐	The site is not within a flood risk zone.
Landscape Character and Designations	☐	The wider South Holt land, including adjacent to Merryvale, includes areas of ancient woodland, replanted ancient woodland, and priority deciduous woodland, providing ample opportunity for tree seed fall and dispersal onto the site to encourage natural tree regeneration.
Historic Land Use	☐	The recent, long term arable land-use means there is opportunity to substantially improve biodiversity. However, the proposals may also be constrained by this land-use, in terms of potentially high soil nutrient conditions that may lead to the dominance of unfavourable species; - management proposed (low intensity grazing) should be sufficient to reduce the risk of this and allow a scrub and woodland mosaic to be created.
Historic Environment and Earth Heritage	☐	No historic designations.

Baseline and Environmental Information

2. Planned Management Activities

Provide the site-wide aims and objectives. These should consider the Project Background information section outlined above as well as the outcomes of the Metric.

Management Plan Aims and Objectives PM-B01

The aim of the HMMP is to create a mosaic of scrub and woodland habitats that are typical of the locality and which will provide biodiversity benefits. The broad plan of how to achieve this is to facilitate the natural regeneration of good condition mixed scrub and moderate condition LMDW through a rotation-based low intensity cattle grazing regime over the 30 year period. The delineation of habitats shown on the HMMP plan are only to show the proposed area sizes of the habitats; however, the rewilding approach necessitates maintaining a fluidity of habitat boundaries.

The objectives of the HMMP are as follows:

- Create a mosaic of habitats including mixed scrub and lowland mixed deciduous woodland, under a low-intensity cattle grazing regime.
- Outline management prescriptions to achieve the desired habitat condition score of each proposed habitat in line with the completed Statutory Metric
- Outline risks to creating the habitats (in the target condition) alongside any required remedial measures to mitigate the risks

Provide a monitoring schedule and methodology to ensure all created habitats are monitored to ensure progress, risks, and success are recorded and actioned accordingly .In practice, the mixed scrub area will be a mosaic of scrub and grassland, but the proposed habitat is defined as mixed scrub because ‘Other Neutral Grassland’ is of the same distinctiveness as mixed scrub and has the same predicted time to target condition and difficulty multiplier; showing the habitat as an estimated mixture of both mixed scrub and other neutral grassland would not alter the number of units gained. It also makes sense to consider the proposed habitat as mixed scrub rather than split into two habitat types, because under a non-prescriptive rewilding approach where natural processes take the lead, no target proportions should be set in the balance between scrub and grassland that develops.

Principles Informed by Design Stage

The project's BNG target(s) should be set and documented early in the design process. Outline how background and baseline information influenced key design principles for the project from an early stage. This can provide useful context for the proposed retention, creation and enhancement measures.

Design Principles Informed by Baseline Information PM-B02

The site feature is arable ‘cereal crops’ – a ‘low’ distinctiveness habitat type.

We have assigned a medium strategic significance to the baseline habitats (and post-works habitats).

This is based on the South Down National Park Authority guidance.

The Pig Shed Trust acquired the wider South Holt land in 2021 with the intention of managing the land for wildlife through a rewilding approach that over time will allow natural processes to form a dynamic mosaic ecosystem of woodland, scrub, and grassland. The significance of the location within the South Downs, the ‘low’ distinctiveness former use of the land, and the rewilding objectives of the Pig Shed Trust, all provided the influence for Merryvale to be proposed as an area of land that can provide meaningful off-site habitat creation and gains for biodiversity.

Habitat and Condition Targets PM-T01

This table presents a summary record of what you have agreed to deliver based on the biodiversity metric. These habitat condition targets form the basis of what the management plan is setting out to achieve. Include the relevant ‘Area’, ‘Hedgerow’, and ‘Watercourse’ types to be implemented and managed throughout the period of 30 years or more.

Baseline Habitat Type	Target Habitat Type	Parcel / Feature Refs	Baseline Condition	Targeted Condition	Years to Targeted Condition	Condition Assessment Targets	Comments
Cereal crops	Mixed scrub	N/A	N/A	Good	10	Good condition will be targeted by achieving a pass in all the condition assessment criteria, considered possible to achieve over 10 years through the rewilding approach.	
Cereal crops	Lowland mixed deciduous woodland	N/A	N/A	Moderate	30	Moderate condition will be targeted by achieving a score of between 26 and 32. After 30 years, it would be possible to achieve a ‘moderate’ (2 points) score in Criterion A and ‘good’ (3 points) scores in Criteria B, C, D, E, F, G, H, and M, which would achieve moderate condition overall. It will not be possible to score particularly highly against a number of indicators such as vertical structure (J), veteran trees (K) or deadwood (L) within the 30 year period.	

Habitat and Condition Targets Further Comments
N/A

Habitat Retention

Provide a concise description of the habitats that are to be retained in their baseline condition. Habitats being retained may still require ongoing measures to maintain their baseline condition.

Measures to be Implemented to Protect Retained Habitats PM-03

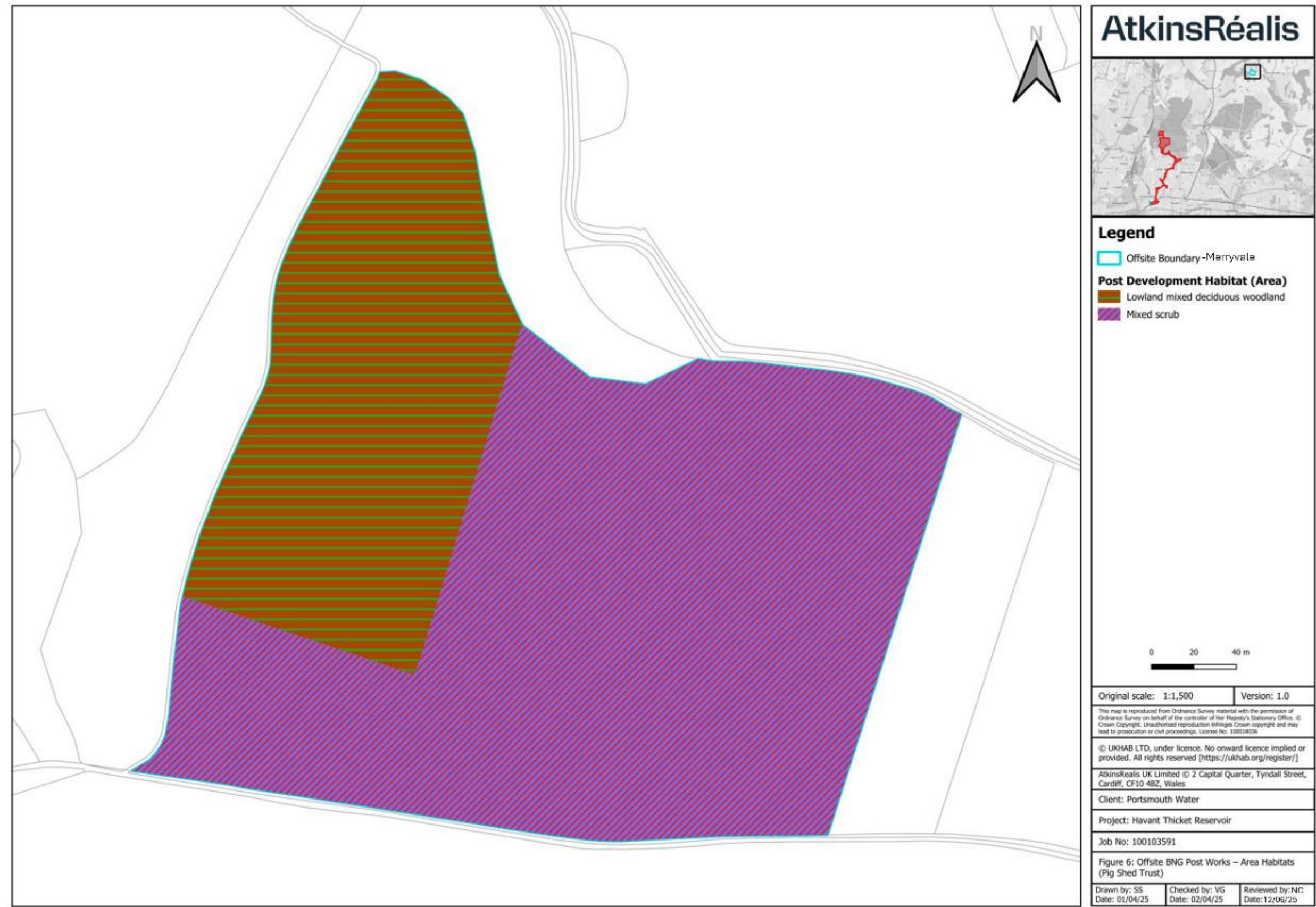
None of the existing ‘cereal crops’ baseline habitat will be retained by the project, since the land is coming out of arable production.

Specification of Protective Measures to be Used PM-04

N/A

Habitat Retention Plan PM-F01

Provide a plan with the locations of habitats to be retained (including whether to be protected and, or, enhanced) and those to be created under this HMMP. Include parcel references if needed. Tick box if any additional plans are provided in the Appendices ☐ . Reference: [Click or tap here to enter text.](#)



Woodland

Creation, Enhancement and Management Summary (WO-T01)

Target Habitat:						
Condition Assessment Criteria			Target Score	Relevant Parcels	Creation Approach	Management Approach
A	Age distribution of trees	Three age classes present (good – 3 points)	2	Whole site	Low-intensity rotation-based cattle grazing tailored to promote favourable conditions for germination of tree seeds, primarily by inhibiting the dominance of grass species and providing patches of bare soil into which tree species can seed. The cattle herd will be 15 animals grazing across the wider 80 ha South Holt site of which Merryvale is a part, meaning grazing intensity will be 0.19 animals per ha. No tree planting is proposed as part of the creation approach.	As the intermediate age class becomes present (after 20-30 years), maintain a very low intensity of grazing to allow regeneration within the woodland. Monitor level of deer cull if browsing is inhibiting regeneration.
		Two age classes present (moderate - 2 points)				
		One age class present (poor- 1 point)				
B	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland (3)	3	Whole site	Closely monitor browsing impact on areas of strong tree regeneration, maintain and if necessary increase deer cull. Deer culling is managed on site as part of the Natural England Sussex Woods pilot scheme, which provides a joined up approach to deer culling in the region.	Closely monitor browsing impact in areas of woodland, maintain and if necessary increase deer cull. Deer culling is managed on site as part of the Natural England Sussex Woods pilot scheme, which provides a joined up approach to deer culling in the region.
		Evidence of significant browsing pressure is present in 40% or less of whole woodland (2)				
		Evidence of significant browsing pressure is present in 40% or more of whole woodland (1)				
C	Invasive plant species	No invasive species present in woodland (3)	3	Whole site	Annual botanical monitoring will assess the presence of invasive species. If invasive species found on site then plans will be prepared for their removal.	Annual botanical monitoring will assess the presence of invasive species. If invasive species found on site then plans will be prepared for their removal.
		Rhododendron <i>Rhododendrion ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species <10% cover (2)				
		Rhododendron or laurel present, or other invasive species) 10% cover (1)				
D		Five or more native tree or shrub species found across woodland parcel (3)	3	Whole site	Same as Criterion A	Annual monitoring of tree species assemblage and if continually

	Number of native trees species	Three to four native tree or shrub species found across woodland parcel (2)				below five consider planting or seeding of native species.
		Two or less native tree or shrub species present across woodland parcel (1)				
E	Cover of native tree and shrub species	>80% of canopy trees and >80% of understorey shrubs are native (3)	3	Whole site	Same as Criterion A	Annual monitoring of tree species assemblage. If non-native species occur then consider early intervention for their removal.
		50 – 80% of canopy trees and 50-80% of understorey shrubs are native (2)				
		<50% of canopy trees and <50% understorey shrubs are native (1)				
F	Open space within woodland	10-20% of woodland has areas of temporary open space. (3)	3	Whole site	Woodland will be <10ha, therefore 0-20% temporary open space achievable through grazing regime that encourages regeneration.	Grazing will be managed to promote open space within woodland area.
		Unless woodland <10ha in which case 0-20% temporary open space is permitted.				
		21-40% of woodland has areas of temporary open space (2)				
		<10% or >40% of woodland has areas of temporary open space. (1)				
		But if woodland <10ha has <10% temporary open space, please see Good category.				
G	Woodland regeneration	All three classes present in woodland; trees 4-7cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth (3)	3	Whole site	Natural regeneration promoted through low intensive grazing is expected to result in all three age classes in woodland within the 30 years period.	Same as Criterion A
		One or two classes only present in woodland (2)				
		No classes or coppice regrowth present in woodland (1)				
H	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback (3)	3	Whole site	During woodland regeneration no significant tree mortality is expected.	Once woodland has developed, any signs of tree pests or disease to be monitored with appropriate action taken.
		11% to 25% mortality and/or crown dieback or low risk pest or disease present (2)				
		Greater than 25% tree mortality and or any high risk pest or disease present (1)				
I		Recognisable NVC plant community at ground layer present, strongly characterised by ancient woodland flora specialists. (3)	2	Whole site	NVC communities are present in the adjacent woodland, therefore it is likely that a recognisable NVC	Long-term botanical monitoring will guide whether management alterations are required to

	Vegetation and ground flora	Recognisable NVC plant community at ground layer present (2)			plant community will develop once the woodland canopy closes.	promote development of a recognisable NVC ground flora.
		No recognisable NVC plant community at ground layer present. (1)				
J	Woodland vertical structure	Three or more storeys across all survey plots or a complex woodland. (3)	2	Whole site	Same as Criterion A	Same as Criterion A
		Two storeys across all survey plots (2)				
		One of less storey across all survey plots (1)				
K	Veteran trees	Two of more veteran per hectare (3)	1	Whole site	No veteran trees present.	N/A
		One veteran tree per hectare (2)				
		No veteran trees present in woodland (1)				
L	Amount of deadwood	50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems and stumps, or an abundance of small cavities. (3)	1	Whole site	Dead wood resources are unlikely to develop naturally within a 30 year period.	N/A
		Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or steams, stubs and stumps, or an abundance of small cavities. (2)				
		Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or steams, stubs and stumps, or an abundance of small cavities. (1)				
M	Woodland disturbance	No nutrient enrichment or damaged ground evident (3)	3	Whole site	Low-intensity cattle grazing has the aim of reducing soil nutrient levels over time.	Regenerating woodland will not be near any sources of nutrient enrichment. Grazing levels to be monitored to avoid damaged ground.
		Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground (2)				
		More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground (1)				

Additional Management Prescriptions (WO-B01)

N/A

Woodland

Creation, Enhancement and Management Detailed Methods (WO-T02)

Action	Relevant Parcels	Timing	Prescriptions
Introduction of grazing cattle	Whole site	Year-round	A small herd of cattle (15 animals) are used across wider South Holt land, they graze the land in rotation, managed through the use of ‘nofence’ collars and a site-based team of land managers with a proven track record in successful woodland creation through rewilding principles. Reactive management is used throughout the site. The 8.6 ha Merryvale site would therefore be grazed alongside the wider landscape, at a low intensity of 0.19 animals per ha, to promote conditions favourable to tree germination. A tailored decision support system for promoting tree regeneration can be found in the South Holt Management Plan ¹ , where nofence collars are to be used if required as an added tool based on monitoring results of how the habitats are developing on the site.
Deer management	Whole site	Annually	<p>Use of regular nocturnal thermal imaging drone surveys to quantify existing deer populations (census) across the wider South Holt land, as well as regular vegetation monitoring of browsing pressure (partly guided by creation of 12 small deer ‘exclosure’ plots), to inform level of culling pressure required to reduce deer numbers to a level that is not a threat to woodland regeneration.</p> <p>Deer Impact Assessment methodology (as developed by the Deer Initiative and adopted by the Forestry Commission) will set cull requirements for each season¹.</p>

Woodland Species Lists (WO-T03)

Common Name	Scientific Name	Abundance / %	Comments
Pedunculate oak	<i>Quercus robur</i>	N/A	All species listed are known to be present in adjacent/surrounding habitats ¹
Beech	<i>Fagus sylvatica</i>	N/A	
Crab apple	<i>Malus sylvestris</i>	N/A	
Ash	<i>Fraxinus excelsior</i>	N/A	
Field maple	<i>Acer campestre</i>	N/A	
Birch	<i>Betula pendula</i>	N/A	
Hazel	<i>Corylus avellana</i>	N/A	
Hawthorn	<i>Crataegus monogyna</i>	N/A	

Other Supporting Information

Supporting Information (WO-B02)			
MERRYVALE HMMP	AtkinsRéalís - Baseline / Référence	PAGE 22	BIODIVERSITY NET GAIN - HABITAT MANAGEMENT AND MONITORING PLAN

In this HMMP we are able to predict the broad habitats that will develop and the likely tree species that will colonise based on those present in the surrounding woodlands, however, as no tree planting is proposed in the creation of the habitats, providing a woodland species list target is not considered practicable for a rewilding approach which is precautionary in terms of predicting the species that will take hold on the site. The aim of the management is to encourage natural process to drive the development of a diverse woodland canopy, shrub and ground flora of native species.

What Does Success Look Like? (WO-F01)





Examples of young lowland mixed deciduous woodland. Photographs taken by AtkinsRéalis ecologists from a site in Kent.

Scrub

Creation, Enhancement and Management Summary (SC-T01)

Conditions from Statutory Biodiversity Metric habitat condition assessment sheets – Sheet 19. Scrub.

Target Habitat:					
Condition Assessment Criteria		Targeted	Relevant Parcels	Creation approach	Management Approach
A	<p>The parcel represents a good example of its habitat type – the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range).</p> <ul style="list-style-type: none">- At least 80% of scrub is native,- There are at least three native woody species,- No single species comprising more than 75% of the cover (except hazel <i>Corylus avellana</i>, common juniper <i>Juniperus communis</i>, sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i>, which can be up to 100% cover).	Yes	Whole site	Low-intensity rotation-based cattle grazing tailored to promote favourable conditions for germination of shrub/tree seeds, primarily by inhibiting the dominance of grass species and providing patches of bare soil into which shrub/tree species can seed.	<p>Surveys will assess the species diversity of the scrub and ensure that no non-native species are taking hold.</p> <p>It may be natural for a single species to initially comprise at least 75%, but as the scrub develops, an increased diversity is likely to take hold.</p>
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	Yes	Whole site	Same as Criterion A.	Low-intensity cattle grazing approach will have delivered a dynamic system of more mature scrub patches that may eventually develop into woodland, alongside younger scrub patches where it may have taken more time for seedlings to germinate.
C	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.	Yes	Whole site	No invasive non-native species or species indicative of suboptimal condition have been recorded on the site.	<p>Surveys will assess presence of invasive non-native species. If any are found they will be removed by a specialist contractor.</p> <p>If species indicative of suboptimal condition are found, the management plan will be re-assessed to aid their control/removal</p>
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	Yes	Whole site	Same as Criterion A.	Surveys will assess whether well-developed edges between scrub and grassland are developing, and intensity and areas of cattle grazing will be re-assessed accordingly.

E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	Yes	Whole site	Same as Criterion A.	Surveys will assess whether glades, rides and sheltered edges are developing, and the intensity and areas of cattle grazing will be re-assessed accordingly.
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Additional Management Prescriptions (SC-B01)

N/A

Scrub

Creation, Enhancement and Management Detailed Methods (SC-T02)

Action	Relevant parcels	Timing	Prescriptions
Introduction of grazing cattle	Whole site	Year-round	A small herd of cattle (15 animals) are used across wider South Holt land, they graze the land in rotation, managed through the use of ‘nofence’ collars and a site-based team of land managers with a proven track record in successful woodland creation through rewilding principles. Reactive management is used throughout the site. The 8.6 ha Merryvale site would therefore be grazed alongside the wider landscape, at a low intensity of 0.19 animals per ha, to promote conditions favourable to tree germination. A tailored decision support system for promoting tree regeneration can be found in the South Holt Management Plan ¹ , where nofence collars are to be used if required as an added tool based on monitoring results of how the habitats are developing on the site.
Deer management	Whole site	Annually	Use of regular nocturnal thermal imaging drone surveys to quantify existing deer populations (census) across the wider South Holt land, as well as regular vegetation monitoring of browsing pressure (partly guided by creation of 12 small deer ‘exclosure’ plots), to inform level of culling pressure required to reduce deer numbers to a level that is not a threat to scrub development. Deer Impact Assessment methodology (as developed by the Deer Initiative and adopted by the Forestry Commission) will set cull requirements for each season ¹ .

Scrub Species Lists (SC-T03)

Provide a detailed species list for the habitat to be created.

Common Name	Scientific Name	Abundance / %	Comments
Blackthorn	<i>Prunus spinosa</i>	N/A	All species listed are known to be present in adjacent/surrounding habitats ¹
Hawthorn	<i>Crataegus monogyna</i>	N/A	
Spindle	<i>Euonymus europaeus</i>	N/A	
Dogwood	<i>Cornus sanguinea</i>	N/A	
Wayfaring tree	<i>Viburnum lantana</i>	N/A	
Goat/grey willow	<i>Salix caprea/cinerea</i>	N/A	
Hazel	<i>Corylus avellana</i>	N/A	

Other Supporting Information

Supporting Information (SC-B02)

In this HMMP we are able to predict the broad habitats that will develop and the likely woody species that will colonise based on those present in the surrounding scrub, hedgerow and woodland habitats, however, as no tree or shrub planting is proposed in the creation of the habitats, providing a mixed scrub species list target is not considered practicable for a rewilding approach which is precautionary in terms of predicting the species that will take hold on the site. The aim of the management is to encourage natural process to drive the development of a diverse mixed scrub flora of native species.

What Does Success Look Like? (SC-F01)



Ecotone of grassland into bramble and mature blackthorn scrub into young woodland. Photograph taken by AtkinsRéalis ecologists from a site in Kent.



Example photograph of mosaic of oak scrub and tall forb/grassland habitat. Photograph taken by an AtkinsRéalis ecologist from a site in Kent.



Example photograph of an ecotone of grassland into a mixed scrub woodland edge habitat into woodland. Photograph taken by an AtkinsRéalis ecologist from a site in Kent

Habitat Creation and Management – Risk Register and Remedial Measures PM-T02

Risk Identification Date	Habitat Type	Risk Factor	Trigger for Action	Remedial Measure
13/06/2025	Lowland mixed deciduous woodland	Tree regeneration absent	<p>Absence of tree regeneration in 20% of Merryvale by Year 10.</p> <p>If tree regeneration is not forthcoming, or if there is a lack of tree species diversity required to meet the target score of '3' in the woodland condition assessment criteria for number of native tree species, tree planting would be considered. A judgement on whether to carry out tree planting will only be made once sufficient time has passed for natural regeneration – this is considered to be at a minimum after year 10.</p>	<p>Follow the Vegetation Dynamics decision tree¹. Re-assess grazing regime in years 1 and 2. It may be that an increased grazing intensity by cattle would be needed to reduce sward of competing vegetation, providing the mosaic of bare soil into which tree species can seed.</p> <p>If still no signs of tree regeneration by year 10 after an alteration of the grazing regime has been tried, then consider use of a temporary pig enclosure as suggested in the South Holt management plan¹ to create areas of bare ground to encourage seedling germination, or a tree planting programme.</p>
13/06/2025	Lowland mixed deciduous woodland	Deer browsing hindering woodland development	<p>At any point over the 30 year programme, there is significant browsing damage hindering either; the ability for tree seedlings to survive and grow in open ground, or, the ability for tree seedlings to grow beneath the canopy of a more developed woodland to create the structural diversity required to achieve the 'moderate' target condition.</p> <p>The trigger for this action is that >20% of vegetation within a given survey plot shows damage from browsing pressure. <20% browsing damage is required to achieve 'good' condition in Criterion B.</p>	<p>Follow the Vegetation Dynamics decision tree¹. Recommend an increase in the deer cull if following regular surveys and comparisons with deer 'exclosures' there is significant browsing damage hindering woodland development.</p>
13/06/2025	Lowland mixed deciduous woodland	A lack of tree species diversity required to meet the target score of '3' in the woodland condition assessment Criterion D	<p>Trigger in Year 5, 10, 20, 30 – in years 1-5 it is expected the tree population will still be developing</p> <p>Less than five native tree or shrub species within the woodland</p> <p>OR</p> <p>Less than 80% native species coverage</p>	<p>If following monitoring visits there are fewer than five native tree or shrub species, or non-native species are greater than 20% within woodland areas, then a tree planting programme may be necessary to increase the number of native species to become a 'moderate' condition woodland.</p> <p>A judgement on whether to carry out tree planting will only be made once sufficient time has passed to allow for natural regeneration.</p>
13/06/2025	All habitats	Thorny scrub development absent – initial colonisation of species like bramble and	No signs of thorny species present in the site.	<p>Follow the Vegetation Dynamics decision tree. Re-assess grazing regime in years 1 and 2. It</p>

		blackthorn is important for the succession of more mature scrub and eventually woodland		<p>may be that an increased grazing intensity by cattle would be needed to reduce sward of competing vegetation, providing the mosaic of bare soil into which thorny species can seed.</p> <p>If still no signs of tree regeneration by year 3 after an alteration of the grazing regime has been tried, then consider a temporary pig enclosure, or a tree planting programme.</p>
13/06/2025	Mixed scrub	Deer browsing hindering mature scrub development	At any point over the 10 years to target condition, there is significant browsing damage hindering either; the ability for shrub/tree seedlings to survive and grow in open ground, or, the ability for shrub/tree species to grow beyond the thorny pioneer species to create the structural and species diversity required to achieve 'good' condition.	Follow the Vegetation Dynamics decision tree ¹ . Recommend an increase in the deer cull if following regular surveys and comparisons with scrub in deer 'exclosures' there is significant evidence of browsing damage hindering mature scrub development.
13/06/2025	Mixed scrub	Cover of species indicative of sub-optimal condition	Cover of undesirable species is greater than 5%. Species this includes may colonise the site such as tree-of-heaven <i>Ailanthus altissima</i> , turkey oak, cherry laurel, snowberry, buddleia, <i>Cotoneaster sp.</i> , and Spanish bluebell.	If undesirable species are found to cover an area greater than 5%, then hand pulling or manual removal will take place. Any species on Schedule 9 of the Wildlife & Countryside Act will be removed by an invasive species specialist.
13/06/2025	Mixed scrub	A lack of woody species diversity required to pass the scrub condition assessment Criterion A	<p>Trigger in Year 5, 10, 20, 30 – in years 1-5 it is expected the scrub will still be developing.</p> <p>Less than 80% native species coverage</p> <p>OR</p> <p>Less than three native woody species</p> <p>OR</p> <p>A single species comprises >75% cover (except if the species is hazel, juniper, sea buckthorn or box)</p>	If following monitoring visits there are fewer than three native tree or shrub species comprising the scrub, non-native species are greater than 20%, or a single species e.g. blackthorn still dominates >75% of the scrub, then a shrub planting programme may be necessary to increase the number of native species to become 'good' condition mixed scrub.
13/06/2025	All habitats	Colonisation of invasive non-native species (INNS)	If INNS (such as rhododendron, Japanese knotweed, variegated yellow archangel, etc.) are found to be present within any of the habitats.	<p>If INNS are identified, the plants and a 5 m buffer will be signposted and cordoned off immediately to ensure they are avoided by grazing animals who may cause their further spread. INNS will be removed by an invasive species specialist.</p> <p>Monitoring surveys will continue to provide surveillance for INNS throughout the 30 year period.</p>

3. Monitoring Schedule

To deliver BNG, a robust strategy is critical to monitor successes and challenges. Routine monitoring informs progress and facilitates the required management plan updates at set intervals.

Monitoring Strategy

Provide details of the monitoring strategy to encourage successful implementation of the management plan (MS-B01)

Proposed habitats will require monitoring and oversight by qualified ecologists to ensure that the estimated area of each habitat and its target condition is going to be achieved. Ecologists will be employed by Pig Shed Trust to carry out this monitoring in Year 1,2,3 5, 10, 20, 30 and compare against the baseline, with botanical surveys being undertaken in spring months to assess the presence of any woodland indicator species. In both LMDW and mixed scrub habitats, the methodology will comprise a structured walk with ten stops evenly spaced and notes made at each stop using the BNG Habitat Condition Assessment forms from the Statutory Metric as a basis.

Throughout the monitoring timeline, Fixed Point Photography⁶ is to be utilised to allow repeat photographs to be taken of habitat features from the exact same viewpoint, as a standardised way to monitor changes to the environment. Photographs should be taken twice per year (once in summer, once in winter) in each of the monitoring years.

Monitoring Methods and Intervals MS-T01

Provide details of the methods you will use to adequately monitor the progress towards the targets stated in the management plan and as agreed with the Local Planning Authority.

Habitat Type	Monitoring Methods	Monitoring Interval and Timing
All habitats	Complete the relevant Statutory Metric Habitat Condition Assessments	Year 1, 2, 3, 5, 10, 20, 30
All habitats	Undertake quadrat sampling to identify the habitat type that is establishing, by employing a structured walk of ten stops and BNG condition assessments undertaken at each stop. Undertake a species list for each habitat. Monitoring to take place between the months of April and June. Across each habitat overall, estimate percentage of bare ground, sub-optimal species, presence of INNS, and precautionarily predict the proportions of the emerging habitats to assess against the original BNG metric of 5.95 ha mixed scrub and 2.65 ha LMDW.	Year 1, 2, 3, 5, 10, 20, 30
All habitats	Fixed point photography	Year 1, 2, 3, 5, 10, 20, 30 once in summer and once in winter

⁶ Catchment Science – Field Scale Monitoring Handbook, Atkins

Monitoring Reports

Following completion of habitat creation and initial enhancement works, prepare for your monitoring report for the Local Planning Authority or Responsible Body. You should monitor each habitat type comprising the BNG project. Provide sufficient detail for the reviewing authority to assess the progress. The ‘Monitoring Report Template’ can help you do this. The requirements and regularity with which the monitoring reports are required are at the discretion of the LPA or Responsible Body. Prepare the monitoring requirements below.

Monitoring Report Schedule MS-T02

Provide details of the person or organisation that will be responsible for submitting the monitoring reports. Also state the responsible organisation for receiving and reviewing the reports.

Organisation Responsible for Submitting the Monitoring Reports	Organisation Receiving and Responsible for Reviewing Reports
Pig Shed Trust	South Downs National Park Authority

Provide details of when the monitoring surveys and reports will be undertaken and submitted. You can extend the table and adjust according to your required schedule.

Project Year	Month Report to be Submitted	Month Management Plan to be reviewed	Comments
Y1	September	September or October	Report on results of initial grassland and scrub creation measures.
Y1	September	September or October	Assessment on results of initial mixed scrub and woodland creation measures, whether the site is moving towards reaching the predicted habitats and their target conditions. Report will update management prescriptions and any required remedial measures that need to take place.
Y2	September	September or October	Same as Y1

Y3	September	September or October	Same as Y1
Y5	September	September or October	Same as Y1
Y10	September	September or October	Assessment on whether the mixed scrub has reached the target condition, and results of initial woodland creation measures. Report will update management prescriptions and any required remedial measures that need to take place.
Y20	September	September or October	Assessment on whether the mixed scrub has maintained the target condition, and results of initial woodland creation measures. Report will update management prescriptions and any required remedial measures that need to take place.
Y30	September	September or October	Assessment on whether the mixed scrub has maintained the target condition, and whether the woodland has reached its target condition. Report will update management prescriptions and any required remedial measures that need to take place, and set out the next phase of the rewilding project.

Adaptive Management

Summary of Adaptive Management Approaches (MS-B02)

The Pig Shed Trust implement reactive management and this is embedded in their rewilding approach. The successful implementation of this HMMP is based on an approach of reactive management, where the land managers and ecologists will work together to determine ongoing management prescriptions according to the results of monitoring methods that have been detailed in this HMMP.

Portsmouth Water and SDNPA are engaged with this HMMP and will review monitoring reports, and if necessary, these two bodies can agree changes to management approaches and changes to habitat/condition targets.

This HMMP will be updated by the Pig Shed Trust when required.