Broad Town White Horse: Heritage Protection & Sustainability through Community Action

Project Document

V6, 29/05/2025

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1 INTRODUCTION

The chalk downs of Oxfordshire and Wiltshire are the home to nine white horses cut into the chalk scarp slopes. Each figure has a special place in the heart of their nearby communities. The eight white horses in Wiltshire are linked by a long distance walking route – the White Horse Trail – which is well used by ramblers, tourists and by the local community for walks.

The Broad Town white horse is a well-known local icon and regional historical landmark.

The village of Broad Town is located in the county of Wiltshire, some 7 miles south-west of Swindon. The underlying geology comprises gault clays rising to grey (lower) chalk, the transition marked by a steep, meandering scarp immediately to the east of the village.

The Broad Town chalk horse was cut into the scarp overlooking the village, is centred on SU098782 (What3Words: wire.thanks.bumps), and stands c.190m above OD (Fig 1).

The hill-figure lies within the boundary of the North Wessex Downs National Landscape.

Figure 1: Location Map

Figure 2: Location Landscape

2 WHY WE NEED ACTION NOW

In recent times, the local community has cared for the horse by volunteers undertaking scouring and liming on a regular basis since 1992. This is a well-attended event open to all in the community run by the volunteers of the Broad Town White Horse Restoration Group. In 2024 the horse's scouring featured in the BBC Radio 4's Open Country programme which aired on 6/6/2024).

Figure 3: Volunteers from local community participating in scouring

However the Broad Town white horse is currently at risk. The chalk scarp slope on which it is situated has failed in several places. The exact reasons for the landslips is not entirely clear, although the frequency of landslips has recently increased dramatically.

In December 2023 a series of 3 large landslips occurred on the scarp slope several hundred metres south-west of the horse. They start at the top of the slope and extend part way down the slope. They were almost side by side. Over the course of a year they have nearly joined up.

Figure 4: December 2023 landslips to the south-west of the white horse

In September 2024 a significant landslip happened much closer and just below the Horse. The landslip actually flowed over the path, blocking it and obliterated the white horse information board. Monitoring has shown that the top of landslip has gradually broadened sideways over last 6 months.

Figure 5: Sept 24 landslip below the horse

Figure 6: Close Up of landslip below horse

The iconic white horse is important to our community. Concerned that the horse itself might be affected by a future landslip, members of the Broad Town White Horse Restoration Group attended a conference run by Wiltshire Museum '*White Horses, Badges, and Giants: Hill Figures of Southern England*' to consult with professional archaeologists, engineers and historians who had knowledge of other hill figures.

Following a site visit the expert advice is that before any further landslip damage occurs we should seek to:

- Create an accurate current baseline survey of the horse (Historic England standards) – see Task 1
- Record and evaluate potential risks to the monument (eg landslips) – see Task 2
- Chart the chronological and historic development of this little understood hill-figure - see Task 3
- Curate all datasets and result created within the project – see Task 4
- Disseminate the project's results Research and document the chronological changes to the horse – see Task 5

All works and advice to be provided by appropriate specialists, with direct involvement from the Broad Town White Horse Restoration Group across all stages of the project, and active engagement with and participation from the local community.

The local community has pride in the landscape and wishes to conserve the historic monument and to do so needs to combine the efforts of volunteers with those of professionals to undertake the Tasks above. The white horse contributes to the tourism of Wiltshire and enjoyment of the countryside. This project provides a unique opportunity to encourage volunteering and to disseminate the project results into the wider community through outreach.

3 LONG TERM AIMS

i) To create a base line (and topographical) survey of Broad Town white horse. The first detailed plan record of the hill figure which will inform its future management, its upkeep and assist in identifying threats;

ii) Then to create a Management Plan (including a management toolkit) which can be trailed at Broad Town as a flagship site and can then be offered as a management tool for all other hill figures;

iii) Increase and maintain public awareness, appreciation and engagement with the white horse.

This project will deliver on (i), set the baseline for (ii) and contribute to ongoing engagement in (iii).

4 PROJECT PLAN

Work Breakdown Structure

The aim of the project is to

- Create an accurate current baseline survey of the horse (to Historic England standards) – see Task 1
- Record and evaluate potential risks to the monument (eg landslips) – see Task 2
- Chart the chronological and historic development of this little understood hill-figure - see Task 3
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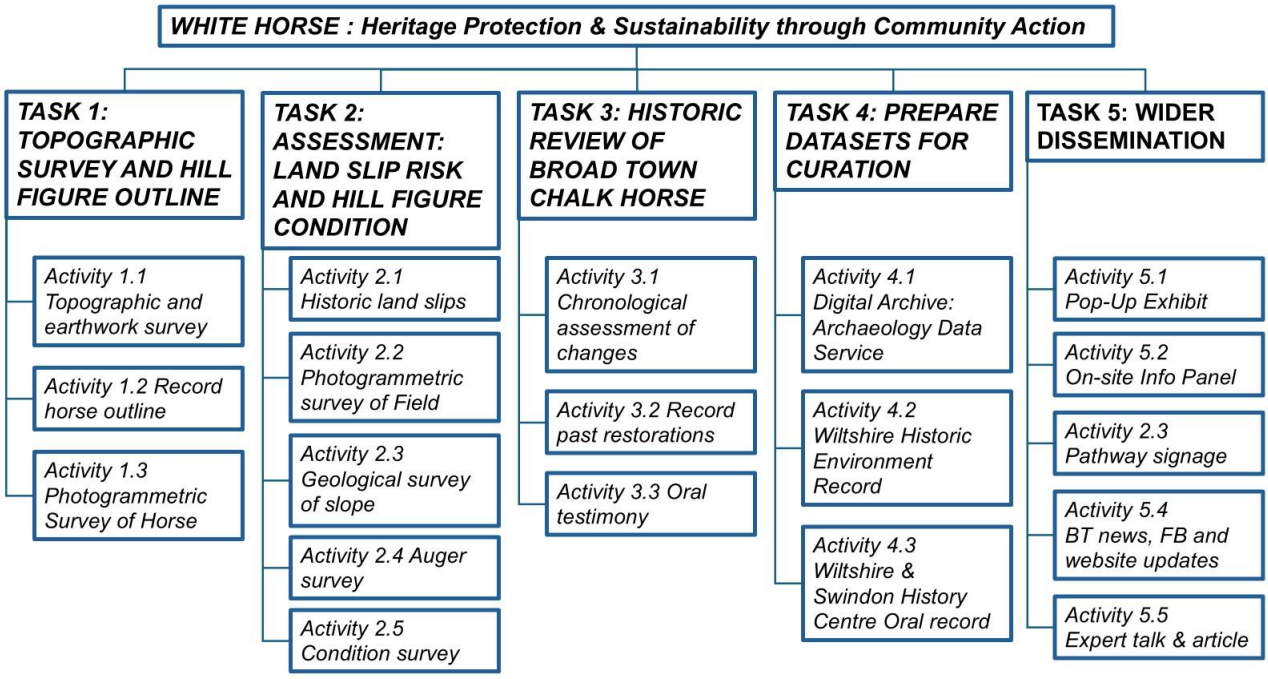
Our overall project is thus split into 5 major Tasks with a number of activities under each.



5 PROJECT PLAN DETAILS

TASK 1: TOPOGRAPHIC SURVEY AND HILL FIGURE OUTLINE

- *Activity 1.0 Prepare site by strimming around the horse prior to works*
  This is to be done ahead of the survey by volunteers. Two volunteers for half day.

- *Activity 1.1 Topographic and earthwork survey*

  Produce a topographic survey of the scarp on which the hill-figure is located and undertake a survey of small-scale earthworks that would be expected to capture the hill-figure's historic development. The surveys will utilise survey grade GPS via multiple GPS systems (GNSS; Leica GS18/GS16), with Real Time Kinetic rectification. One volunteer paired with the surveyor to assist in setting out survey grid and control points.

- *Activity 1.2 Record horse outline*

  Produce a metrically accurate survey dataset based on the OS National Grid coordinate system using survey grade GPS via multiple GPS systems (GNSS; Leica GS18/GS16), with Real Time Kinetic rectification.

- *Activity 1.3 Photogrammetric Survey*

  Photography and photogrammetric modelling of the hill-figure and slope undertaken by a UAV (DJI Mavic 3) flight over the hill-figure's location and its immediate slope on a pre-planned grid flight plan.

TASK 1: OUTPUT

- Output 1.1 (Informed by Activities 1.1, 1.2 and 1.3)

  Broad Town White Horse: Site Survey Results

  Donald Horne, Archaeological Geomatics Manager, Oxford Archaeology East

TASK 2: ASSESSMENT: LAND SLIP RISK AND HILL FIGURE CONDITION

- *Activity 2.1 Investigate historic land slip activity across the wider scarp*

  Geological overview of the vale and chalk uplands, historic review of slope failure on the lower chalk scarp, and note recent land slip activity in the vicinity of Broad Town. One volunteer to undertake investigations.

- *Activity 2.2 Photogrammetric survey*

  Photography and photogrammetric modelling of the slope undertaken by a UAV (DJI Mavic 3) flight over the slope either side of the hill-figure on a pre-planned grid flight plan.

- *Activity 2.3 Geological survey of slope and land slip activity*

  Site visit by specialist to assess land slip activity directly below the hill-figure and its immediate locale.

- *Activity 2.4 Auger survey*

  Auger the hill-figure at key points to determine depth of subsurface chalk layers deposited across the horse and thereby identify how deep the trench, comprising the hill-figure, was cut into the slope. Auger points located in OSGB36, with deposit model. Two volunteers will undergo training and assist in the auger survey.

- *Activity 2.5 Condition survey*

  Undertake a condition survey of the hill-figure and its immediate locale to identify current impact and potential risk of vegetation encroachment, burrowing activity, erosion and effects past restoration works. Two volunteers to assist in survey.

TASK 2: OUTPUTS

- Output 2.1 (Informed by Activities 2.1 and 2.2)

  Historic Assessment of Scarp and Landslips Local to the Broad Town White Horse: Report

  Donald Horne and Garry Gibbons

- Output 2.2 (Informed by Activity 2.3)

  Broad Town White Horse: Report: A Geotechnical Perspective

  Dr James Lawrence, Reader in Geological Engineering, Imperial College, London

- Output 2.3 (Informed by Activity 2.4)

  Broad Town White Horse: Auger Survey Results

  Introduction: Dr Mike Allen (TBC), Allen Environmental Archaeology

  3D Modelling: Donald Horne: Oxford Archaeology East

  Stratigraphy: Garry Gibbons

- Output 2.4 (Informed by Activity 2.5)

  Broad Town White Horse: Condition Survey Results and Recommendations

  Garry Gibbons

TASK 3: HISTORIC REVIEW OF BROAD TOWN CHALK HORSE

- *Activity 3.1 Chronological assessment of changes to the hill-figure*

  Utilising various visual sources (APs, photographs, postcards, published sources, etc) to identify design anomalies and changes to the shape and character of the hill-figure. Chart vegetation and land use changes on/near the scarp close by the hill figure. Two volunteers to undertake investigations.

- *Activity 3.2 Record past restorations*

  Investigate local council records, parish news sheets, and community 'photo archives to record when the horse was weeded/chalked/limed, note restoration techniques employed, and, where possible, list community members involved at each event. One volunteer to undertake investigations.

- *Activity 3.3 Oral testimony*

  Collect oral testimony of community members involved in managing and/or restoring the hill-figure. Two volunteers to undertake training and carry out interviews.

TASK 3: OUTPUTS

- Output 3.1 (Informed by Activity 3.1)

  Broad Town White Horse: Chronological Assessment of Design Anomalies and Changes to the Hill-figure's Outline, late 19C to the Present

  Garry Gibbons and Community Volunteers

- Output 3.2 (Informed by Activity 3.2)

  Broad Town White Horse: Community Engagement and Methods Employed in Restoring the Hill-figure, 20C to Present

  Garry Gibbons and Community Volunteer

- Output 3.3 (Informed by Activity 3.3)

  Broad Town White Horse: Digital Recordings of Community Memories Relating to the Hill-figure and its Maintenance

  Garry Gibbons and Community Volunteers

- Output 3.4 (Informed by Activity 3.3)

  Broad Town White Horse: Selected Transcripts of Oral Testimony

  Garry Gibbons and Community Volunteers

TASK 4: PREPARE DATASETS FOR CURATION

- *Activity 4.1 Digital Archive: Archaeology Data Service*

  Requirement or recommendation to archive project material with the ADS from most funding bodies. Project reports, publications and datasets are likely to be eligible to archive all of which will be freely available through the ADS website. Funding required to deposit material with the ADS. One volunteer to assist.

- *Activity 4.2 Wiltshire Historic Environment Record*

  The Wiltshire Archaeological Service maintains the Wiltshire Historic Environment Prepare selected reports for deposition. One volunteer to assist.

- *Activity 4.3 Wiltshire & Swindon History Centre*

  The Centre* has offered to archive audio files generated from Activity 3.3 Oral Testimony. Files will be available to the public. One volunteer to assist preparing audio files and transcript pdf files.

* *The Wiltshire & Swindon History Centre* have agreed to make digital recording equipment available for use by community volunteers and provide comprehensive guidelines (inc. advice on copyright, release forms, ethics, etc).

TASK 5: WIDER DISSEMINATION

This task is intended to foster a shared understanding of the hill-figure and to co-construct interpretations designed both for, and by, the community, utilising data generated by the *Broad Town Chalk Horse Hill-figure Project*.

Subject to funding

Activity	*Outcome Description*	*Contributor(s)*
5.1	Pop-up Touring Exhibition: local venues	Volunteer(s)
5.2	On-site Information: replacement panel	Volunteer(s)
5.3	White Horse Trail; improved pathway signage	Volunteer(s)

Not subject to funding

Activity	*Outcome Description*	*Contributor(s)*
5.4	Local Communications	
	Broad Town FB page: project updates	Volunteer(s)
	Broad Town Parish Newsletter: project updates	Volunteer(s)
	Broad Town Website: summary results	Volunteer(s)
	Local Press: project report	Volunteer(s)
5.5	Expert Talks and articles	
	Talk at local societies/clubs/etc	G Gibbons
	Wilts Archaeological Magazine: journal paper	G Gibbons
	Current Archaeology: magazine article	Volunteer(s)/G Gibbons/M Allen

6 KEY PERSONNEL BIOGRAPHIES

Garry Gibbons, BA (Hons) Archaeology, University of Southampton

Prior to graduating, Garry worked extensively in the design, photography and publishing sector. Since when he has constructed and taught accredited courses on the prehistory of southern England (Conted, Oxford University) and contributed modules to post-grad courses (Brookes University). Working with Prof. Stephanie Moser, Garry co-directed a four-year English Heritage funded research project, Visualisation in Archaeology, bringing together international academics and practitioners, culminating in a series of workshops and a 2-day conference. Before setting up a heritage graphics company (3's Company Ltd), Garry managed Oxford Archaeology's drawing office. Garry has researched Wiltshire's equine hill-figures over many years, undertaking research projects to survey and delineate current and lost chalk horses. He continues to investigate these undervalued and little understood landscape monuments and to publish the results, revealing a more nuanced and complex story to the history of each horse. Garry contributed a chapter on chalk figures in the publication *A Date with the Two Cerne Giants*. Outside of the heritage sphere, Garry's current research focus is the extraordinary life-long relationship between Sir John Betjeman and his teddy bear, Archibald Ormsby-Gore, so far resulting in various papers (Betjemanian Journal) and several exhibitions (inc Oxfordshire Museum, Woodstock).

Donald Horne, BSc Archaeology, University of York

Donald is a regional Geomatics Project Manager at Oxford Archaeology (2023-present), and prior to this the senior Geomatics Project Officer at the Cambridge Archaeological Unit (2005-2023). In both roles, Donald is responsible for the setup and management of the Geomatics elements of each of Oxford Archaeology, Cambridge's (and formerly the Cambridge Archaeological Unit) projects across the East of England and East Midlands. He is also engaged with implementing the post-excavation GIS analysis, LiDAR processing and analysis and photogrammetry deliverables from these projects, as well as management of his Geomatics team and their training. Donald has a strong history of cooperation with clients, contractors, volunteers and other shareholders, delivering projects on schedule and within budget while retaining a high standard level of data capture and analysis.

Mike Allen, PhD Archaeology, University of Southampton

Mike Allen is a geoarchaeologist and environmental archaeologist known especially for his work on the archaeology and land-use development of the chalk downlands of southern England, including the landscape of Stonehenge, Avebury, Cranborne Chase and Dorchester. He has a BSc (Hons) from the Institute of Archaeology (London) and PhD, from Southampton,

and has been a member (MCiFA) since 1986. He was elected as an FLS in 2001 and was awarded an FSA in 2002.

He set up and managed the environmental department of Wessex Archaeology and for 20 years worked on research and commercial projects, management, analysis and reporting. Subsequently he has run his own consultancy (Allen Environmental Archaeology) since 2007, working on the environmental archaeology aspects of 100s of sites including Stonehenge, Avebury, Cranborne Chase, Kits Coty, Maltese temples and on sites from Cornwall to Kent and Isle of White to Herefordshire and Cambridgeshire. He has published widely including numerous articles and papers, with papers in peer reviewed journal such as *Proceedings of the Prehistoric Society, Antiquaries Journal, Sussex Archaeological Collections, British Wildlife* etc., and contributed to numerous monographs, leading, editing and authoring abut 20, and edited, written, co-edited and co-written several books. Recently he has edited and authored the text book, *Molluscs in Archaeology* (2017), and more relevantly, following fieldwork by the National Trust in 2020, he led and wrote the post excavation reporting on behalf of the National Trusts, editing, compiling and writing *A Date with the Two Cerne Giants*, with many significant contributors, including Garry Gibbons, Brian Edwards, Prof. Martin Bell and David Miles, all of whom have undertaken excavations or research on hill figures.

Andrew Law, BSc Engineering, Shrivenham

Andrew Law is retired having completed a career of 37 years in the British Army, achieving the rank of Lieutenant Colonel. During his service he achieved an honours degree in Civil Engineering and a Masters in Guided Weapon Systems. As a member of the Royal Logistics Corps his employment was mainly in the area of supply with a specialist qualification in ammunition. After his retirement, Andrew Law settled in Broad Town in 2003 and has been involved in many of the liming activities since that date. Since 2016 he has acted as Secretary of the Broad Town White Horse Restoration Group and since 2022 has led the Group.

Derek Greer, PhD Engineering & Applied Science, University of Southampton

Dr. Derek Greer is a Chartered Engineer and Fellow of the Royal Aeronautical Society. Since moving to Broad Town in 2018, he has participated in local community events including the annual white horse scouring and in 2024 he volunteered to take over the administration of the Broad Town White Horse Restoration Group. On a professional basis, Derek currently runs his own part-time consultancy “Flexible Executive Insights” through which he provides strategic advice to small technology and STEM education startups. Previously Derek was Vice President and Chief Operating Officer of Capgemini’s Hybrid Intelligence unit working on scientific R&D with many well-known blue chip companies across ten countries. Derek spent over 25 years working in engineering and science in the Space industry, participating in many European Space Agency missions especially those with an earth observation or climate monitoring focus. Derek had a number of technical and then leadership roles culminating in Chief Operating Officer of Telespazio VEGA UK. Derek obtained his doctorate in Engineering and Applied Science at the University of Southampton.

7 PROJECT COSTS

The total cost of the project is £15,950.

This is comprised of £8,810 in chargeable costs and £7,140 of in-kind volunteer contribution.