Radnorshire Wildlife Trust is aiming to restore rhôs pasture habitat, a common component of the landscape of Mid Wales, though undervalued for its species richness and ecosystem services potential.

The Trust was successful in receiving two-years funding for the Rhôs Pasture Restoration Project from the Welsh Government’s ‘Sustainable Management Scheme’ (SMS), under sub-Measure 16.5 of the Welsh Government Rural Communities - Rural Development Programme 2014-2020.

The SMS aims to support collaborative landscape-scale projects delivering action that improves natural resources in a way that delivers socio-economic and environmental benefits to farm and rural businesses and communities.

The Trust is working in partnership with CARAD – Community Arts Rhayader And District, Rhayader by Nature | The local natural history group, local farmers, landowners and community organisations and in recognition of the importance of the cultural heritage of rhôs pastures commissioned Browne Consultancy Services to undertake an initial Historic Research Study.

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1.1 Project Summary

Rhôs pasture is marshy grassland with purple moor-grass and rushes as the dominant vegetation. Purple moor-grass and rush pastures are most frequent in the west of the UK, extending eastwards where wet soils are found.

In Wales, they are particularly characteristic of the south Wales coalfields, extending westwards to Pembrokeshire and northwards through Ceredigion to Snowdonia and the Llŷn Peninsula. These pastures occur mostly on gently sloping land, where there is lateral movement of water through the soil, but also on river and lake floodplains, where they may be periodically flooded during the winter and early spring.

Although the rhôs pasture can appear drab from a distance, on close inspection these wet grasslands are often full of wildlife, with up to 50 different plant species in a 2 x 2 metre square. The habitat may be small and isolated or form large tracts of rough grazing and are often mixed with other habitats, such as heaths, fens, drier grasslands and scrub or woodland.

Changes in agricultural practices have caused the loss of marshy grassland (it is estimated that less than 70,000 hectares remain in the UK across the 4 countries, CCW, 2004). However, those that do remain and are managed appropriately are havens for wildlife. In addition to the intrinsic value in the plant communities and wildlife they support, rhôs pastures are also culturally significant. They are part of the historical landscape and were used traditionally as areas of former rough grazing for cattle or horses, or as hay meadows.

Various names have been given to these pastures in different parts of the UK, ‘Culm grassland’ in Devon and Cornwall after the Culm Measures on which they are predominately found and ‘litter meadows’ in East Anglia because of the practice of cutting them for bedding. In Wales, rhôs’ is a frequent element in Welsh place names, suggesting that these habitats were much more common in the past.
This initial piece of research aimed to:

● develop an understanding of the historical extent of rhôs pasture across the project area and within the wider Radnorshire landscape

● detail when and why the habitat has reduced in size, i.e., farming policy changes, afforestation, abandonment, etc.

● find evidence as to how rhôs pasture was managed in the past, for example, by finding extracts of farmers’ diaries, photographs and records from the area.

1.2 Map of Project Area

1.3 Definition of Rhôs Pasture

The term rhôs pasture has been coined relatively recently (within the last decades of the 20th century) and was initially used to describe unimproved acid meadows or pastures that included some dwarf shrub heath. It has since come to be used more broadly to include a range of wet acid pastures, also including heath and peatland habitats; a sign of the
characteristically diverse nature of these grasslands (Pryse, 2003). The NVC (Rodwell 1991) has since provided a formal means of characterising the range of typical vegetation communities.

Lowland purple moor-grass and rush pasture is a UK Biodiversity Action Plan (BAP) priority habitat.

1.4 Methodology and Results

Rhôs pasture has cultural value. To understand its history, the examination of a broad range of archaeological, historical, ecological, land-use and folk sources was required.

The results of this initial historical study are presented in the table below.
<table>
<thead>
<tr>
<th>Source Name</th>
<th>Contact / Resource</th>
<th>Organisation</th>
<th>Value to Project</th>
<th>Limitations</th>
<th>Digital (Y/N)</th>
<th>Usefulness within this study</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Archaeological</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Historic Environment Record (HER)</td>
<td>Gary Ducker</td>
<td>Clwyd-Powys Archaeological Trust, Welshpool</td>
<td>Contains information on historic and archaeological sites and archaeological</td>
<td>Rhôs pasture itself is not an HER site type and is not therefore easily searchable.</td>
<td>Y</td>
<td>Limited. No rhôs pasture sites were directly identified. Two areas of “turbary” or peat digging were found showing evidence of associated land use. Several deserted upland rural settlement sites were identified giving social context and a record of land-use change.</td>
</tr>
<tr>
<td>Data</td>
<td></td>
<td></td>
<td>investigations within the project area.</td>
<td>GIS capable. Can be imported as CSV, shp file and other formats.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Monuments Record (NMR)</td>
<td>Royal Commission on Ancient and Historic Monuments, Aberystwyth</td>
<td>Contains information on historic and archaeological sites and archaeological</td>
<td>Rhôs pasture itself is not an NMR site type and is not therefore easily</td>
<td>GIS capable. Can be imported as CSV, shp and other formats.</td>
<td></td>
<td>Not consulted as part of this pilot study. Thought to be limited.</td>
</tr>
<tr>
<td>data</td>
<td></td>
<td>investigations within the project area.</td>
<td>searchable.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cartographic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ordnance Survey Drawings (2 inches to a mile)</td>
<td>Ordnance Survey Maps - National Library of Scotland (nls.uk)</td>
<td>A collection of preparatory drawings for the Ordnance Survey Old Series maps (early 1800s)</td>
<td>Can be used to map broad trends in woodland cover, rural settlement and</td>
<td>The maps do not provide detailed land-use data and therefore no direct evidence of rhôs pasture.</td>
<td>R</td>
<td>Some use. Can be used to track broad trends in land-use change across the study areas. The map provides a benchmark within an early phase of agricultural improvement when the encroachment of fields onto the common enabled land to be farmed more intensively and brought into rotational grazing.</td>
</tr>
<tr>
<td>Tithe map</td>
<td><a href="https://places.library.wales">https://places.library.wales</a></td>
<td>Powys Archives</td>
<td>Field names listed within the apportionment can indicate rhôs pasture</td>
<td>Accessibility of resource is inconsistent. Lanwrthwl tithe map has been</td>
<td>Yes for Lanwrthwl but digitised data is under private ownership; Nantmel has not digitised.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>where place names such as</td>
<td>digitised by a volunteer. Maps are otherwise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enclosure Maps</td>
<td>Powys Archives; National Library of Wales</td>
<td>Record the enclosure of former open land</td>
<td>No land-use data.</td>
<td>Not digitised.</td>
<td>Enclosure maps do not exist for the study area. The awards that are present within the Powys Archives have no associated mapping. e.g., Nantmel had around 3000 acres enclosed because of the Parliamentary Act in the 1860s but the precise areas that were subject to this change are not recorded.</td>
<td></td>
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<td>------------------</td>
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<td>--------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Estate maps</td>
<td>Powys Archives</td>
<td>Can contain field names that are useful for documenting historic land use.</td>
<td>The amount of detail depends on the surveyor.</td>
<td>Not digitised.</td>
<td>No estate maps with field names listed were present within the study area. Penlanole Estate Papers 1910 were located but are of limited use, giving little land-use information and there was no accompanying field name data. Land tenure in Radnorshire has typically been dominated by small to medium-sized owner-occupied farms with proportionally fewer large estates than other counties. This could explain why estate map coverage is generally poor for Radnorshire (R Silvester (former director of Clwyd Powys Archaeological Trust pers. Comm.)</td>
<td></td>
</tr>
<tr>
<td>Radnorshire Woman’s Institute, Field Names Survey</td>
<td>Radnorshire Powys-Archives</td>
<td>Field-name surveys were carried out in the ?1960s or 70s (Amanada Jones, Powys-Archives pers comm)</td>
<td>No date was found for the survey.</td>
<td>Not digitised but readily searchable by parish.</td>
<td>A useful resource to help document the decline of rhôs pasture.</td>
<td></td>
</tr>
<tr>
<td>Welsh Government Historic Aerial Photography</td>
<td><a href="https://lle.gov.wales/home">https://lle.gov.wales/home</a></td>
<td>Welsh Government</td>
<td>Aerial photography covering different areas of Wales</td>
<td>Searchable online.</td>
<td>Very useful resource adding to the picture of change. These are useful in documenting afforestation, land drainage and improvement and field boundary changes.</td>
<td></td>
</tr>
</tbody>
</table>

rhôs, waun or cors are used. available in paper form or online but not in a format that can be imported to GIS. Both are viewable online in the interactive map viewer.
<table>
<thead>
<tr>
<th>Ecological/ Land-use Data</th>
<th>1945 to the present.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R.G. Stapledon (1936) The Grasslands of Wales</td>
<td>Published literature</td>
</tr>
<tr>
<td>James, A. Taylor (1961 – 65) The land-use study of Wales.</td>
<td>National Library of Wales</td>
</tr>
<tr>
<td>Source</td>
<td>Welsh Government</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Phase 1 mapping (2016)</td>
<td><a href="https://lle.gov.wales/home">https://lle.gov.wales/home</a></td>
</tr>
<tr>
<td>Individual species and plant data</td>
<td>Biological recording centre, Brecon.</td>
</tr>
<tr>
<td>Unified peat map of Wales</td>
<td><a href="https://lle.gov.wales/home">https://lle.gov.wales/home</a></td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td><strong>Key Literature</strong></td>
<td></td>
</tr>
<tr>
<td>Moore-Colyer (2011) Farming in Wales 1936 - 2011</td>
<td>Published literature</td>
</tr>
<tr>
<td>Transactions of the Radnorshire Antiquarian Society</td>
<td>Powys-Archives; CPAT HER</td>
</tr>
<tr>
<td><strong>Folk Sources</strong></td>
<td></td>
</tr>
<tr>
<td>Interviews with farmers - Llanwrthwl</td>
<td>Henry Thomas, Talwr Maenog, 6th generation farmer.</td>
</tr>
<tr>
<td>Commoners Association</td>
<td>Julian Ravest</td>
</tr>
</tbody>
</table>
1.5 Conclusions

A detailed assessment of land-use change within the study area was beyond the scope of this report. However, some broad findings have been identified as summarised below:

- Historic land-use data is hard to come by and consists of a few disparate sources in many different repositories, not all of these are digitised.

- Despite the above limitations there is good scope to record a narrative of change using a combination of cartographic data, land-use data and species data (as rhôs pasture has some specific key butterfly, flora and possibly also bird species).

- Landowner accounts indicate that some of the rhôs pasture within the study area was managed by grazing with cattle, whilst some of the drier areas were used for hay cutting.

- The tithe map for Llanwrthwl corroborates the above land uses 150 years previously, with areas of rhôs and waun identified as both pasture and meadow.

- In common with other areas of purple moor-grass and rush pasture, e.g., Culm in Devon and Cornwall or the South Wales coalfield, these areas may have been burned periodically if the summer growth of purple moor-grass had not been adequately removed by grazing. However, this practice has not yet been recorded within the study area.

- Afforestation has resulted in localised significant land-use change in parts of the project area: large plantations being present NW of Gwastedyn.

- The policy, political and social framework against which the reduction in rhôs pasture has occurred is well documented (Stapledon, R. G 1936; Moore-Colyer 2011; Deakin, R.M. 2005). This is an important structural framework from which to analyse the land-use change and will help target questions to farmers.

- Understanding farmers’ attitudes to rhôs pasture is a key question that is fundamental to understanding the land-use change. Engaging the Llanwrthwl...
Commoners Association for example would be important in the success of any future study or project.

- The map evidence, policy framework and local accounts indicate several successive land-use change events, which have resulted in the loss of rhôs pasture. An early example of agriculture improvements is the enclosure of Nantmel in the 1860s when land was enclosed and able to be rotationally grazed. The incentives for change accelerate from the 1930s, although the substantial change did not occur until the second World War, and through successive acts in the post-War years.

It has been beyond the resources of this initial scoping study to gain a detailed understanding of where these changes happened in the project area but there are anecdotal accounts that add detail to the overall picture (e.g., agriculture improvements leading to mechanisation, local knowledge of fossilised WW2 potato ridges persisting on Llanwrthwl Common, and discussion of later grant incentivise drainage and hedgerow removal.

- The Radnorshire Society is a thriving county antiquarian group who are actively engaged in historical study within the project area. The society has been helpful and willing to engage in this pilot study. There is scope for drone photography to illustrate some of the themes from one of the volunteers who is very keen to help (e.g., Wartime potato ridges on unenclosed land, arterial drainage).

- Historic accounts for the study area relating to agricultural history are hard to come by. The Radnorshire Society has in its custodianship a stack of farmers’ diaries, but these relate to Pen-ithon outside the study area. To study these accounts for relevant information would be a massive undertaking and only achievable fortuitously. Future funding for resources would be required to support the interrogation of the diaries and to coordinate and engage with local volunteers (see recommendations below).
1.6 Recommendations for further study

Our recommendations for further study are suggested below:

- Assess extent for a digital map layer with the following sources
  - Tithe map fields with rhôs, waun or cors
  - OS 1st edition, 2nd edition 25" map
  - 2nd land-use study of Wales (1961-5)
  - NVC data from 2016
  - Species (Lerc) data
  - Peat map of Wales
  - 1946 RAF maps and later Google Earth maps

- Decide on a definition of rhôs pasture and agree on what categories are consistent with rhôs in the Phase 1 habitat data classifications.

- Further work on the limitations of the different sources listed above will need to be undertaken but they do collectively provide a workable route forward for understanding landscape change and the reasons for the decline in rhôs pasture.

- Create a questionnaire on this subject to discuss this with farmers in a structured way. Key questions to explore include knowledge and attitudes/value toward rhôs pasture.

- Draw up an agricultural timeline to lead questions on different themes and include a section on machinery and infrastructure grants which may further engage farmers (e.g., some tractors purchased during the War may exist in sheds and field corners). Key to this will be engaging with the Commoners Association.

- Engage further with local specialists.

- Other sources to be consulted that were beyond the scope of this initial study, include BTO Atlas data, and information held within the Aberystwyth University farm business survey, which specifically relates to Radnorshire, other antiquarian
accounts of the agricultural situation within the county held in NLW. For example, Clarke’s general view of agriculture in Radnorshire

- Consider engaging with volunteers in a formal way to help progress the project (e.g., communicating the project to the Radnorshire society. Further funding may support outputs such as farmer interviews, development of a questionnaire framework, engaging local volunteers to analyse farm diaries, or fund specialist skills to bring on board such as drone photography and evaluation.

- Map opportunities for linking with small cottage industries that may be related to rhôs and engage the knowledge of the project with stakeholders and cultural heritage partners, i.e., https://carad.org.uk/.

- Continue to use the Llanwrthwl area and consider other areas in future study. One approach could be to use source material in Welsh Historic Gardens Register (Cadw 1998) to identify areas with good estate map coverage, which could also fill in some of the gaps on land-use change.

An extract from the Llanwrthwl parish tithe map
1.7 References


Deakin, R.M. 2005 Agriculture in Radnor in WW2 and after Transactions of the Radnorshire Society

Moore-Colyer, R 2011 Farming in Wales 1936 – 2011 Aberystwyth University; Y Lolfa

Moore-Colyer, R. 1996 Agriculture in Wales before the 2nd millennium BC Archeologica Cambrensis

Morgan, R A Study of Radnorshire Place-Names Welsh Heritage Series Gwasg Carreg Gwalch (not seen)

Stapledon, R.G 1936 The Grasslands of Wales. Faber & Faber, London

Thompson, T 1999 Agriculture and change in a 19th century Radnorshire Valley Transactions of the Radnorshire Society