

# Historic Environment and Climate Change in Wales

## Sector Adaptation Plan Monitoring



## Interim Report of Activity: Year 4, 2023

Historic Environment Group  
Climate Change Subgroup

December 2024

The Historic Environment Group (HEG) is a high-level forum set up by the Welsh Ministers in 2004 to take a strategic overview of issues and opportunities in the historic environment and to promote common approaches. The group is made up of representatives from the major organisations in Wales with historic environment interests.

The HEG Climate Change Subgroup (HEGS) is charged with assessing and reporting to HEG on how the historic environment sector in Wales should address the challenge of climate change.



**Comisiwn Brenhinol  
Henebion Cymru**  
**Royal Commission on the Ancient  
and Historical Monuments of Wales**



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# 1. Introduction

In 2020, the Historic Environment Group (HEG) published *Historic Environment and Climate Change in Wales Sector Adaptation Plan* (SAP), building on the high-level strategic actions identified in the Welsh Government's adaptation plan *Prosperity for All: A Climate Conscious Wales*.

You can [download the Historic Environment and Climate Change in Wales Sector Adaptation Plan, published in 2020, from the Cadw website](#)

You can [download the Prosperity for All: A Climate Conscious Wales, published in 2019, from the Welsh Government website](#)

The SAP identifies the risks and opportunities of climate change for the historic environment of Wales and sets out the headline actions needed to adapt to the impact of these changes. The actions are arranged around the three overarching and linked objectives of increasing our knowledge, increasing our capacity, and building our resilience.

The *SAP Monitoring and Evaluation Framework* sets out the five-year timeline for evaluating progress against the published SAP actions and the Welsh Government indicators in *A Climate Conscious Wales*.

Year	Outcome	Timeline	Status
0	Historic Environment Group (HEG) published the Historic Environment and Climate Change in Wales Sector Adaptation Plan	2020	Complete
1	2020 Sector Adaptation Plan Actions and Activities #1 consultation survey	2020-21	Complete
1	2020 interim report of activity	2020-21	Published Summer 2022
2	2021 Sector Adaptation Plan Actions and Activities #2 consultation survey	2021-22	Complete
2	2021 Interim report of activity	2021-22	Published Summer 2022
3	2022 Sector Adaptation Plan Actions and Activities #3 consultation survey	2022-23	Complete
3	2022 Interim report of activity	2022-23	Published Summer 2023
4	2023 Sector Adaptation Plan Actions and Activities #4 consultation survey 2023 Interim report of activity (this report) Full monitoring and evaluation report	2023-24	Complete
5	Updated SAP	2024-25	

You can [download the SAP Monitoring and Evaluation Framework, published in 2021, from the Cadw website](#)

The HEG Climate Change Subgroup is charged with formally requesting and collating evidence of activity to help evaluate progress against the published actions, and to identify gaps and priority areas that require further attention.

This is the fourth interim report of activity covering the year 2023, as set out in the Monitoring and Evaluation Framework. It will help inform the formal monitoring and evaluation report that will be submitted to the Welsh Ministers in 2024-25.

This report describes the call for evidence and reviews it against the SAP action plan and A *Climate Conscious Wales* indicators (see section 2 for details of the indicators and actions).

You can [download the Sector Adaptation Plan Monitoring: Interim Report of Activity: Year 1, 2020, from the Cadw Website.](#)

You can [download the Sector Adaptation Plan Monitoring: Interim Report of Activity: Year 2, 2021, from the Cadw Website.](#)

You can [download the Sector Adaptation Plan Monitoring: Interim Report of Activity: Year 3, 2022, from the Cadw Website.](#)

You can [access an online case study resource showcasing adaptation activity from across the historic environment sector, from the Cadw website.](#)

## 2. Indicators and Actions

### Indicators in Prosperity for All: A Climate Conscious Wales

#### Caring for the historic environment

**HE1.** Knowledge: Complete and publish the Historic Environment and Climate Change Sector Adaptation Plan.

**HE2.** Knowledge: Improve understanding of the threats and opportunities for the historic environment from a changing climate.

**HE3.** Capacity: Develop the methodologies, tools and guidance needed to build adaptive capacity.

**HE4.** Resilience: Increase resilience of the historic environment by implementing actions to respond and adapt to the risks.

#### Protecting our coasts and seas

**MC1.** Resilience: Improve the resilience of habitats and heritage in Wales's coastal zones from the impacts of climate change.

**MC4.** Knowledge: Carry out research to better understand the impact of climate change on marine ecosystems, ecosystem services and marine heritage.

### Actions identified in the Historic Environment and Climate Change in Wales Sector Adaptation Plan

The headline actions in the SAP are grouped into seven themes under three overarching and linked objectives. Full details of the outputs and broad outcomes for each action are listed in the SAP table in section 4.

**Knowledge: Increase our knowledge and understanding of the threats and opportunities for the historic environment from a changing climate**

1. Knowledge exchange/collaboration
2. Mapping and monitoring the resource
3. Research priorities

**Capacity: Develop the methodologies, tools and guidance to work with others and build adaptive capacity**

4. Dissemination and promotion
5. Collaborative working
6. Training and guidance

**Resilience: Increase resilience of the historic environment by implementing actions to respond and adapt to the risks**

7. Taking action

### 3. Call for evidence

The HEG Climate Change Subgroup called for evidence for this report over a 4-week period between 12 January – 16 February 2024. This was an open invitation evidence gathering exercise, shared with a wide range of organisations including HEG and other delivery partners. Links to background information and the online survey was circulated via email and over social media. Background information, hosted on the Cadw website, included a PDF introducing the published SAP action table with examples of relevant activities captured in 2022, and instructions on how to submit new evidence. The online survey, hosted by Pembrokeshire Coast National Park Authority, was provided for the submission of evidence.

Analysis of the survey responses shows that:

- 25 individuals associated with 18 organisations, groups and projects working in Wales, and 1 member of the public responded.
- A mixture of public, private, third sector, community and society organisations submitted evidence. This included universities, national parks, government bodies, county and community councils and charitable trusts.
- Respondents included those from officer to more senior levels within an organisation.
- Respondents included those operating at a national, regional and local level.
- The responses provided evidence of activities across all 7 priority action areas as follows:
  - 1 Knowledge exchange/collaboration: 23 activities.
  - 2 Mapping and monitoring the resource: 17 activities.
  - 3 Research priorities: 17 activities.
  - 4 Dissemination and promotion: 3 activities.
  - 5 Collaborative working: 9 activities.
  - 6 Training and guidance: 27 activities.
  - 7 Taking action: 24 activities.
- Activities cover a broad spectrum of historic environment assets, landscapes and environments.

# 4. Progress against Sector Adaptation Plan actions

The table in the Annex sets out the SAP headline actions across the 7 priority areas. The activity column in this table captures the survey responses, outlining the individual activities undertaken in 2023.

Progress against each action is summarised below.

## Knowledge exchange and collaboration

**1.1:** Members of the HEG Climate Change Subgroup (HEGS) continue their collective and individual efforts to engage a wider audience and raise awareness of the SAP and the challenges posed by climate change to the historic environment.

Activities include talks to the general public and reports on the sub-group's work to the Historic Environment Group. Interim reports of activity against the SAP are published on Cadw's website, and the online case studies resource has been updated.

Both BBNPA and the RCAHMW have adopted the SAP within their operational plan documents, and the NT's publication "A Climate for Change / Hinsawydd ar Gyfer Newidd" calls for more dedicated climate adaptation resource to be made available in order to aid delivery against the SAP. A launch event for this report was held at the Senedd and gathered cross-party engagement, recognising the importance of collaboration and the report's recommendations. The development of NRW's internal Climate Change Adaptation Plan provides a synopsis of work, both in progress and planned, across the organisation, which can contribute to the historic environment's adaptation to current and future climate change.

There continues to be an active link between the sub-group and the Welsh Government's Climate Impacts Adaptation Group, which is working on the next iteration of the National Resilience Plan.

However, despite these actions there has been less progress than hoped in raising awareness and promoting engagement with the SAP due to staff capacity issues. The sub-group requested funding from HEG to support a Climate Change Adaptation Manager post but this was not agreed and there is still no identified single point of contact or role dedicated to progressing this work.

**1.2 and 1.3:** A successful workshop event allowed members of HEG to identify future research priorities, contributing to the WG Resilience Strategy and potentially also to a revised SAP. Liaison across the home nations continues, with sub-group members pooling research and expertise through the UK Heritage Adaptation Partnership, participating in the CHERISH project



concerned with climate change and coastal heritage, and taking part in start-up activities for an Interdisciplinary pan-Wales Network for Climate/Heritage. Further afield, NTC teams at Penrhyn Castle and the Llŷn peninsula have been twinned with the Zanzibar Stone Town Heritage Society, looking together at making appropriate adaptations to historic sites and passing heritage building skills onto the next generation.

The partnerships, working relationships and skills developed during the life of the SAP will be a part of its legacy, and the evaluation being undertaken in 2024 will look at potential ways to develop these further. Lessons from the evaluation process will be disseminated across the sector.

## Mapping and monitoring

**2.1 and 2.2:** Work to improve the baseline data sets was in line with previous activity reports and included the continuation of several work areas for example, the Cadw funded Shoreline Management Plan and Rivers projects undertaken by Heneb. Pro-active survey and record enhancement for sites in the inter-tidal and coastal zone was also continued by RCAHMW, resulting in better information on which to base planning and licensing advice, as well as more accurate monitoring of any changes occurring as a result of climate change. The CHERISH project also completed in 2023, with targeted study areas in the coastal zone having baseline data and records significantly enhanced through the use and trialling of established and new survey techniques. All the data from the project is being deposited in the NMRW, a substantial quantity of new, high quality survey information. A toolkit of techniques suitable for investigating, recording and monitoring sites is available online.

Away from the coastal zone, survey continued in the form of aerial reconnaissance during the dry period in May and June 2023. Met Office Soil Moisture Deficit indices (SMD), purchased in collaboration with Historic England and Historic Environment Scotland, allowed this programme of aerial reconnaissance to be tightly focused and targeted; yielding good results and the discovery of new sites.

The establishment and enhancement of baseline data has been embedded in the work of key partner organisations. National Trust Cymru have completed climate change impact assessments for properties at Plas Newydd and on Llyn, using this pilot project to combine data and lived experience and help property staff to understand the local effects of this global challenge. Within Cadw a new Climate Adaptation Pathways Fellowship, funded by UKRI, is testing the adaptation pathways approach at Cadw sites, developing guidance and training material for everyone in the historic environment sector.

Improving baseline data is fundamentally important in terms of understanding and predicting change, and therefore adapting to it. NRW's work on mapping pedestrian heat stress in three Welsh cities has implications for future town planning and landscaping, as well as retrofitting mitigation measures into existing townscapes. The NT's updated climate hazard mapping tool is publicly available; working on a "worst-case" scenario it allows people to investigate the potential

impacts of climate change near them, and their Weather Impact app captures the climate change impacts at NT properties, gathering evidence for future decision making and advocacy.

Alongside landscape-scale data gathering, site-specific monitoring regimes continue. Both BBNPA and PCNPA have volunteer-based condition monitoring programmes, involving people in understanding and recording the changing historic environment and landscapes around them. ENPA's Carneddau Landscape Partnership Scheme also continues, including volunteer and community work. Training and supporting volunteers to continue collecting reliable, robust data has immense value, both supporting the wellbeing and engagement of the volunteers, and providing information at a much larger scale than would otherwise be possible with limited sector resources. This collaborative approach – between different organisations, different disciplines and between volunteers and practitioners – has allowed greater baseline data to be captured.

## Research priorities

**3.1 and 3.2:** A partnership of universities have begun the “transforming homes” initiative – creating design proposals for re-modelling housing built by councils between 1920 and 1940 into Beyond Net Zero liveable homes. The work will include working with communities in Bristol and Swansea, as well as trialling greater use of bio-based products for retrofitting – products based on renewable resources such as crops, cork and wood rather than more widely used materials like plastics and foam insulation. The initiative concludes in 2025.

The CU: WSA project to monitor the hygrothermal performance of timber-frame replacement infill panels is due to complete in 2025, and will give five years of continuous monitoring data.

Other projects contributing to the identified research priorities continue – the volunteer-led monitoring projects, for example, allow a better understanding of how climate risk factors like changing land use or increased invasive species are impacting on historic environment sites. There is also academic research ongoing into the ways in which climate change may have shaped Welsh history, from the Iron Age to the Middle Ages. Within BBNPA, work has been commissioned to fill in gaps within the published paleo-environmental sequences and to better understand the development and nature of the Park's landscapes.

However, there are still gaps in the research priorities outlined in the SAP, and there is little evidence provided within the annual survey returns that these published priorities are influencing organisational decisions about research topics.

**3.3 and 3.4:** Within the reporting period no projects have been identified to address these research priorities; looking at the impact of the changing seasons on the historic environment, or the opportunities for the historic environment and the economy, however again it would be pertinent to question whether this is a reflection of the survey's reach, or if this is a genuine gap in research work which needs to be addressed.

## Dissemination and promotion

**4.1:** The HEG sub-group for climate change continued to meet, and provided both verbal and written reports to HEG. The interim report of activities for 2022 was completed and published, and survey data collected for 2023, as well as preparations being made to evaluate the overall impact of the SAP.

**4.2:** the HEG sub-group put forward a proposal for funding to support the creation of a dedicated Climate Change Manager post for the historic environment sector in Wales, whereby organisations represented on HEG would contribute jointly to the post. Unfortunately funding was not forthcoming, and this action has not been fulfilled.

## Collaborative working

**5.1:** The CHERISH project concluded in July 2023. The project worked cross-sector and with multiple partners and stake-holders. Their touring exhibition and final conference promoted wide stakeholder engagement and a variety of resources arising from the project are now available online.

A very positive workshop took place in December 2023, with HEG sub-group members identifying future research priorities to feed into the WG's resilience strategy, and into a possible SAP2. As this first iteration of the SAP comes to its end, evaluation of the programme will take place, including recommendations for how future work may take place. There is a real risk that, without a structure in place, and without a dedicated Climate Change Manager post, there will be little or no co-ordination in the actions and activities taking place across Wales in the future.

However, there are also positives – Cadw's embedded Climate Change Adaptation Pathways fellowship is a good example of partnership working to share and target resources, and the links made through the HEGs, as well as the reporting and data-gathering, gives a better understanding of ongoing work and could be used as the basis for future collaborations. Nonetheless, there remains more work to be done to improve partnership working and to encourage more stakeholder engagement within and across the sector.

**5.2:** Progress continues against this action. Cadw are the link between the HEGs and the Welsh Government's Climate Impacts Adaptation Group, working on the National Resilience Plan. Research undertaken during Cadw's Climate Resilience Fellowship is being incorporated into the new Welsh Housing Quality Standards, and factsheets available on the Welsh Government's website provide practical recommendations for risk-based adaptations. Actions relating to climate adaptation in the historic environment has been written into training materials, standards and qualifications wherever possible.

Within NRW, an internal Climate Change Adaptation Plan has collated information about actions currently taking place and those planned across the NRW estate in response to climate change impacts. However funding constraints may mean that works relating to the historic environment may not be able to take place.

As funding pressures continue and become more acute, there is a risk that the Historic Environment will not be comprehensively considered in local and national government plans and policies.

**5.3:** This action was delivered in 2022 with the launch of the [Adaptation Case Study Resource](#) by HEGS. The resource in Story Map format, is accessible through the Cadw website and draws together case studies from across the sector. The resource has been updated with new material.

The CHERISH project's free E-publication also includes a range of case-study examples.

## Training and guidance

**6.1:** Following the Climate Resilience Fellowship, Cadw are now hosting an 18 month Climate Adaptation Pathways Fellowship. This fellowship, funded by UKRI, will develop case studies, guidance and training materials after developing and testing the adaptation pathways approach on Cadw's own sites.

The CU:WSA MSc course in sustainable building conservation is now in its 10<sup>th</sup> year.

These actions enable historic environment practitioners to gain training in climate change and adaptation, contributing to a skilled workforce. However there is still a need to embed climate change into historic environment work more broadly, making it a natural part of the day job and work planning.

**6.2:** Progress against this action has taken a variety of forms; with 2023 seeing a welcome emphasis on creative responses to climate change impacts. Story-benches, creative residential opportunities, poetry and discussions gave valuable opportunities for a whole range of people to engage with, learn about, and express their feelings about climate change and the historic environment as well as producing engaging and thought-provoking experiences for visitors. Collaborations with a range of partners from the creative, historic environment and visitor services sectors have made these projects and opportunities possible and should be celebrated as a means of sharing key messages and inspiring people to take action against climate change.

Historic Environment practitioners also continue to provide expert advice on a variety of consultations – planning applications, for example - taking into consideration climate change concerns and necessary adaptations whilst also maintaining the significance of the historic environment assets affected. Continued heritage advice and input into consultations and project plans has also been critical in ensuring that integrated projects are delivered – for example, at the Lake Vyrnwy peat restoration project. The Ardudwy historic rural dwellings and farmsteads project and Carneddau Landscapes Partnership schemes have also been continuing, with community engagement and volunteer training in techniques like measured survey and photogrammetry as well as discussions about themes like marginality, settlement and changing land management.

**6.3:** Considerable progress has been made against this action, with a variety of guidance documents being made available and more in production. The conclusion of the CHERISH

project saw the publication of free guidance e-documents and toolkits, sharing best practise developed during the project. Cadw have produced factsheets, available on the Welsh Government's website, providing practical recommendations supporting the Welsh Housing Quality Standards – for example, dealing with summertime overheating in insulated homes, and summertime relative humidity in older properties. This is being followed up by the Climate Adaptation Pathways fellowship, which will produce a range of training materials and guidance documents for the owners and managers of historic assets, and professional heritage advisors.

In the more rural environment, NRW are producing guidance on managing Ash Dieback, addressing the risks of infected trees but maintaining ash as a native species in Wales and recognising its significance in woodlands and in the landscape. NRW's internal Climate Change Adaptation Plan collates climate change adaptation actions going on across NRW's estate, recognises current actions which impact on the historic environment and covers actions such as peatland restoration and woodland conservation which can contribute to the historic environment's adaptation to current and future climate change. Their Wales Natural Beauty Mapping project includes data on the historic environment, and the contribution it makes to natural beauty and the risks and benefits in relation to the project themes of nature recovery, resilience to climate change and wellbeing. The mapping tool is in development, but will provide an evidence base for informing landscape interventions in Wales.

Appropriate and timely advice is essential in ensuring that the historic environment is fully considered in any climate change adaptation actions. Consultations are regularly responded to within ENPA and BBNPA, and advice provided into schemes like peatland restoration, conifer removal, ditch-blocking and woodland creation, ensuring that all aspects of the work are considered and inadvertent negative impacts avoided.

In a different sector, the Arts Council for Wales are developing a plan for Climate Justice in the Arts. This will include actions to support the arts sector to develop climate adaptation plans.

It is, of course, exceedingly positive that these guidance documents and advisory mechanisms are being developed and utilised across Wales; and this summary is just that – a summary – and does not detail every document produced. However the aim for joint guidance documents and collaborative working is less clearly evidenced, and there is a risk of a; of duplication within a sector struggling with resources and b; that guidance documents are only used by the organisation which produced them. There is a need to ensure that guidance documents have wider currency and some form of central, searchable index or repository of information would be invaluable in allowing all land managers, asset owners and advisors to see what guidance and information exists, and to promote both best-practice and a joined-up approach to adaptation.

## **Taking action**

**7.1** 2023 saw limited reporting for this action, though adaptation and/or management plans have been reported across organisations including NRW and the NT. Work has also continued on flood risk management in the upper catchment of the River Severn, and the production of eight

detailed landowner site assessments (4 in Wales, 4 in Ireland) arising out of the detailed work undertaken as part of CHERISH.

The RCAHMW continues their priority recording and at-risk recording and photographic survey of sites affected by adaptation and decarbonisation actions – this year commencing a programme of identifying and recording significant historic school buildings, being closed as a result of new school building to contribute to decarbonisation targets.

It is clear that heritage management advice (including advice given in response to planning applications, marine licenses, felling licenses and other land-management schemes and projects) continues to take into account the adaptation needs of the historic environment.

The evaluation of the SAP should consider whether there is limited progress against this action due to lack of activity or to under-reporting.

**7.2** No new place-based character assessments were reported in 2023. NRW's Natural Beauty Mapping project includes the contribution from the historic environment, and they are also progressing with their Landscape and Nature Recovery in a Changing Climate Guide for South Central Wales – the Valleys.

**7.3 and 7.4** At a site-based level, a wide range of activities were reported relating to historic assets at risk. Both site-survey and record enhancement works have taken place in the inter-tidal and coastal zones, providing much better baseline data for monitoring changes to sites in these vulnerable areas. Active conservation management of sites at risk include works to increase resilience as well as to combat the direct effects of climate change, and excavation of badly eroding sites to allow preservation by record. Practical adaptation examples include improving access to roof spaces at Dyffryn House, allowing for easier clearance of internal roof gutters and securing planning and funding for good quality composting facilities at the registered gardens of Llanerchaeron and Plas yn Rhiw in order to improve growing conditions for plants and make them less vulnerable to heat and stress.

Some of these site-based works are carried out successfully with volunteers – notably within the National Parks. In both PCNPA and BBNPA, volunteers continue their work to monitor the condition of historic monuments and, in Pembrokeshire, the changing coastline. ENPA's Carneddau Landscape Partnership Scheme engages volunteers in practical site works including scrub clearance, survey and photogrammetry as well as providing training in the use of techniques like LIDAR.

**7.5** Only one partner reported against this action in 2023. ENPA's Carneddau Landscape Partnership Scheme includes low density scattered tree planting along water corridors and amongst craggy and scrub covered slopes, both respecting historic tree presence/providing succession for existing mature trees whilst also aiming to slow water-flow rate and increase biodiversity.

**7.6** Reduced vehicle use, remote and hybrid working and decreasing paper consumption are now accepted as part of regular working life in a post-Covid world. The RCHAMW's internal Future Generations Group also continues its work. It is likely that there is under-reporting against this action, as many of the other returns reference plans or policies which may contain relevant information and procedures.

## 5. Conclusions

Progress against the SAP for 2023 is mixed, with notable strengths in some areas and weaknesses in others. A process of both internal and external evaluation will delve more deeply into how well the SAP has met its aims and make limited recommendations for future work. This process will be helped considerably by a successful workshop held in Dec 2023, which started to identify future research priorities and directions.

The 2023 call for SAP activity evidence drew responses from 18 organisations or individuals which contrasts with 17 in 2020, 17 in 2021 and 28 in 2022. The evaluation of the SAP should consider whether this represents a fair representation of activity from across the sector.

In 2022, the creation of a dedicated Climate Change Manager post (SAP action 4.2) was highlighted as the key priority for 2023. It is unfortunate that this did not happen; despite requests to HEG the funding was not made available, which called into question the level of commitment to the process within some of the partner organisations. Without a dedicated post or a funded communication plan, it was difficult for the sub-group to effectively promote, explain and encourage adoption of the SAP.

Lack of resources continues to be a serious, and growing, concern, particularly as the SAP comes to an end and discussions are needed as to how, and if, the historic environment sector responds collectively to the challenges of climate change and adaptation.

However there were also notable strengths, particularly around the production of useful and diverse guidance and advice, including housing factsheets, toolkits for investigating assets and guidance on managing ash dieback, as well as heritage management advice feeding into numerous consultations from a site-specific to a landscape scale. More guidance, training materials and case studies are in production across different organisations, and will become available in the short-mid term. A challenge for the future is keeping track of all available guidance, and ensuring that there is no duplication, and that asset owners, managers and advisors all know where to look to find the appropriate advice that they need.

Another strength showing in the 2023 returns was the welcome inclusion of more creative and artistic forms of adaptation; including poetry, artist-in-residence placements and site installations. These responses to the historic environment and the changing climate are a thought-provoking and interesting way to engage with a wider audience, promoting conversations and discussions and raising awareness of the issues. On a similar note, engaging people with active adaptation works continues to be a real strength – particularly within the National Parks, whose volunteers are actively involved in site management and monitoring; not just helping the sites but also contributing to their own skills development and wellbeing, as well as widening the conversation.

There has been progress made, also, in enhancing and verifying baseline data, for example through the Cadw-funded rivers project undertaken by Heneb, works along the coastal and intertidal zones by RCAHMW, and the conclusion of the CHERISH project which saw



information accessioned into the NMRW. The Carneddau Landscape Partnership project continues to deliver against a range of the SAP actions.

These big projects, funded externally through the EU and the lottery, are also testimony to the importance of partnerships and sharing resources. Without substantial external funding, there is little current resource for proactive research and survey, so it is crucial that collaborative projects are developed and funding sought to support them. Collaboration and partnership are also seen in the embedded fellowships within Cadw, and these links between the academic and policy sectors are invaluable.

It is clear from the breadth of examples seen in the returns against the SAP activity reporting requests that work is going on at a variety of different scales in all the different parts of Wales. Capturing the information provides valuable case studies and an improved and growing evidence base for work going forwards. If the evaluation considers that a new SAP is not required, or that the format should dramatically change, then consideration will need to be given as to how this information may be best captured and shared in the future.

## 6. Abbreviations

**ACW:** Arts Council Wales

**AU:** Aberystwyth University – Department of Geography and Earth Sciences

**BBNPA:** Bannau Brycheiniog National Park Authority

**BU:** Bangor University

**CU:** **WSA** Cardiff University: Welsh School of Architecture

**DAT:** Dyfed Archaeological Trust

**DP:** Discovery Programme, Ireland

**DfC NI:** Department for Communities (Northern Ireland)

**EA:** Environment Agency

**ENPA:** Eryri National Park Authority

**EH:** English Heritage

**EVT:** Elan Valley Trust

**GNSS:** Global Navigation Satellite System

**GSI:** Geological Survey Ireland

**HE:** Historic England

**HEG:** Historic Environment Group

**HEGS:** Historic Environment Group Climate Change Subgroup

**HES:** Historic Environment Scotland

**NRW:** Natural Resources Wales

**NT:** National Trust

**NTC:** National Trust Cymru

**NTS:** National Trust Scotland

**PCNPA:** Pembrokeshire Coast National Park Authority

**RCAHMW:** Royal Commission on the Ancient and Historical Monuments of Wales

**RSPB:** Royal Society for the Protection of Birds

**SAP:** Sector Adaptation Plan

**UAV:** Unmanned Aerial Vehicle

**WG:** Welsh Government

## 7. Links to Resources

Bannau Brycheiniog National Park – Historic Environment Action Plan

[https://bannau.wales/wp-content/uploads/HEAP2023ENG\\_FINAL.pdf](https://bannau.wales/wp-content/uploads/HEAP2023ENG_FINAL.pdf)

Cardiff University – Sustainable Building Conservation (MSc)

<https://www.cardiff.ac.uk/study/postgraduate/taught/courses/course/sustainable-building-conservation-msc>

Carneddau Landscape Partnership Scheme:

<https://www.snowdonia.gov.wales/looking-after/carneddau-partnership>

CHERISH Climate Change and Coastal Heritage project:

<http://www.cherishproject.eu/en/>

CHERISH Good Practice Guidance – Investigating Heritage and Climate Change in Coastal and Maritime Environments. A guide to the CHERISH Toolkit

<https://cherishproject.eu/en/sharing-our-practice/>

Climate Change Committee – Adapting to climate change. Progress in Wales. September 2023

<https://www.theccc.org.uk/wp-content/uploads/2023/08/Adapting-to-Climate-Change-Progress-in-Wales.pdf>

Fit for the Future Network:

<https://www.fff.org.uk/home>

GW4 Universities – Transforming Homes project

<https://www.cardiff.ac.uk/news/view/2737878-fit-for-the-future-remodelling-homes-to-push-beyond-net-zero>

Heritage Declares

<https://heritagedeclares.org/>

Historic Environment and Climate Change in Wales Sector Adaptation Plan:

<https://cadw.gov.wales/sites/default/files/2020-02/Adaptation%20Plan%20-%20FINAL%20WEB%20-%20English%20%281%29.pdf>

Historic Environment and Climate Change in Wales Sector Adaptation Plan Monitoring and Evaluation Framework:

<https://cadw.gov.wales/sites/default/files/2021-10/Historic%20Environment%20and%20Climate%20Change%20in%20Wales-Sector%20Adaptation%20Plan%20Monitoring%20and%20Evaluation%20Framework-June-2021.pdf>

Historic Environment and Climate Change in Wales Sector Adaptation Plan Monitoring. Interim Report of Activity: Year 1, 2020

<https://cadw.gov.wales/sites/default/files/2022-08/SAP%20Interim%20Report%201%202020%20FINAL%20ENGLISH.pdf>

Historic Environment and Climate Change in Wales Sector Adaptation Plan Monitoring. Interim Report of Activity: Year 2, 2021

<https://cadw.gov.wales/sites/default/files/2022-08/SAP%20Interim%20Report%202%202021%20FINAL%20ENGLISH.pdf>

Historic Environment and Climate Change in Wales Sector Adaptation Plan Monitoring. Interim Report of Activity: Year 2, 2022

[https://cadw.gov.wales/sites/default/files/2023-08/SAP%20Interim%20Report%203%202022%20%20ENGLISH%20FINAL\\_0.pdf](https://cadw.gov.wales/sites/default/files/2023-08/SAP%20Interim%20Report%203%202022%20%20ENGLISH%20FINAL_0.pdf)

Historic Environment and Climate Change in Wales – Case study Resource

<https://storymaps.arcgis.com/stories/b862abb4f5264a3f8693583770e4088b>

Jianxiang Huang, Xu Tang, Phil Jones, Tongping Hao, Reka Tundokova, Clive Walmsley, Simon Lannon, Peter Frost, Josie Jackson (2024), Mapping pedestrian heat stress in current and future heatwaves in Cardiff, Newport, and Wrexham in Wales, UK, *Building and Environment*, Volume 251

<https://doi.org/10.1016/j.buildenv.2024.111168> .

National Trust – A Climate for Change: Adaptation and the National Trust

<https://nt.global.ssl.fastly.net/binaries/content/assets/website/national/pdf/a-climate-for-change-adaptation-and-the-national-trust-report-full.pdf>

National Trust – Climate change adaptation guidance

<https://www.into.org/new-national-trust-climate-change-adaptation-guidance/>

National Trust – Hazard Mapping Tool

<https://national-trust.maps.arcgis.com/apps/webappviewer/index.html?id=a44672bb34c4491a909034d0eed76583>

National Trust – Withstanding Change project

<https://www.nationaltrust.org.uk/services/media/how-3-locations-5000-miles-apart-are-working-together-to-tackle-climate-change-in-north-wales-and-zanzibar>

National Trust Cymru – Story bench at Cwm Idwal

<https://www.nationaltrust.org.uk/services/media/special-bench-marks-the-story-of-connection-and-change-at-cwm-idwal-eryri-snowdonia>

National Trust Cymru and Literature Wales – Youth Climate Action Day (October 2022)

<https://www.nationaltrust.org.uk/services/media/350-children-across-wales-come-together-to-mark-youth-climate-action-day-through-nature-and-poetry>

National Trust Cymru - Fun Places Y Prosiect Hinsawdd (The Climate Project)

<https://www.youtube.com/watch?v=Kpue7cvR6L8&t=145s>

Pembrokeshire Coast National Park Changing Coasts project:

<https://www.pembrokeshirecoast.wales/get-involved/changing-coasts/>

Eryri National Park Authority – Carneddau Landscape Partnership

<https://snowdonia.gov.wales/protect/conservation-work/carneddau-landscape-partnership/>

Welsh Government climate change adaptation plan - Prosperity for all: A climate conscious Wales

<https://gov.wales/prosperity-all-climate-conscious-wales>

Welsh Government – How resilient are buildings in the UK and Wales to the challenges associated with a changing climate. Practical recommendations for risk-based adaptation

<https://www.gov.wales/sites/default/files/publications/2023-10/resilience-of-buildings-to-challenges-associated-with-climate-change.pdf>

# Annex: Headline action table and evidence of activity for 2023

Details of any abbreviations and links to resources in the text can be found in Sections 6 and 7.

Knowledge: Increase our knowledge and understanding of the threats and opportunities for the historic environment from a changing climate					
	Description of the action	Output(s) from the action	Broad outcome/impact	Activity 2023	CCW Indicator
<b>I. Knowledge exchange/collaboration</b>					
1.1	<p>Dissemination, promotion and stakeholder engagement of the Historic Environment and Climate Change Sector Adaptation Plan.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Communication Strategy.</li> <li>• Stakeholder engagement with politicians and senior decision-makers.</li> <li>• Monitor and evaluate strategy.</li> </ul>	<ul style="list-style-type: none"> <li>• Publication of the Historic Environment and Climate Change Sector Adaptation Plan.</li> <li>• Secured resources and practical actions to deliver the plan.</li> </ul>	<ul style="list-style-type: none"> <li>• Raised awareness of the challenges posed by climate change on the historic environment.</li> <li>• Direct action to improve our knowledge, build capacity and increase the resilience of the historic environment to climate change.</li> <li>• Provision of a strategic framework to take forward adaptation actions.</li> </ul>	<ul style="list-style-type: none"> <li>• HEGS – Group continued work and activities with representation from Cadw, NRW, RCAHMW, Heneb, NT, PCNPA, ENPA, AC-NMW.</li> <li>• HEGS – SAP Action Plan activity survey covering 2022 initiated and closed February 2023.</li> <li>• HEGS – Interim Report of Activity against the SAP action plan covering <a href="#">2022 published</a>. (4.1)</li> <li>• HEGS – Talk around Climate Change and the Historic Environment and the SAP given at the Brecon Beacons National Park Heritage Day on 14 October 2023.</li> <li>• HEGS – Update on work of group and monitoring of strategy provided to Steering Group at HEG meetings. (5.1)</li> <li>• Cadw – Continues to be a member of the WG Climate Impacts Adaptation Group which has begun work on the next iteration of the National Resilience Plan. It acts as a link between the subgroup and the WG Climate Adaptation team. This includes providing WG colleagues with annual reports and other updates on progress (5.2)</li> <li>• NRW – Development of internal Climate Change Adaptation Plan for Natural Resources Wales to provide a synopsis of climate adaptation action ongoing and planned across Natural Resources Wales, and to act as a catalyst for further adaptation action. This includes recognition of ongoing historic environment actions and collaborative work, delivery of the National Peatland Action Programme and further peatland restoration work, conservation of ancient woodlands, and other actions currently ongoing and planned that can contribute to adaptation of the historic environment to current and future climate change. (5.2, 6.3, 7.1, 7.3)</li> <li>• BBNPA – Inclusion of SAP within adopted <a href="#">Historic Environment Action Plan</a>.</li> <li>• NT – Publication of '<a href="#">A Climate for Change / Hinsawdd ar gyfer Newid</a>' report – the report reveals how climate change is impacting the many and varied places the National Trust looks after on behalf of the nation, how the conservation charity is adapting its approach to protect them for future generations, and the further action it believes needs to be taken by governments. The report included several Wales case studies and specific asks of Welsh Government, including calling for more dedicated climate adaptation resource within Cadw to aid delivery of the sector's adaptation plan, and to support the sector and heritage asset owners in taking climate-informed decisions</li> <li>• NTC – Linked to the publication of 'A Climate for Change / Hinsawdd ar gyfer Newid' report NT hosted launch event at the Senedd and welcomed cross-party engagement, including speeches from Welsh Government and climate spokespeople from Plaid Cymru and Welsh Conservatives acknowledging the importance of collaboration and the report's recommendations.</li> <li>• RCAHMW, AU, DP, GSI – <a href="#">CHERISH project</a> Contribution to delivery of the SAP incorporated into project initiatives and workplan (since 2020).</li> <li>• RCAHMW – Contribution to delivery of the SAP incorporated into Operation Plan and reported against (since 2020).</li> </ul>	<ul style="list-style-type: none"> <li>• HE1</li> </ul>
1.2	<p>Establish a knowledge exchange group(s) for researchers and practitioners to share ideas, information and good practice, and to help identify future research and funding opportunities in Wales.</p> <p>For example:</p>	<ul style="list-style-type: none"> <li>• Knowledge exchange group(s) established and active.</li> <li>• Identification of future research priorities for Wales.</li> </ul>	<ul style="list-style-type: none"> <li>• A coordinated approach, maximising knowledge and resources, leading to capacity building and more successful adaptation.</li> </ul>	<ul style="list-style-type: none"> <li>• HEGS – Organised a workshop event December 2023 with HEG members to identify future research priorities for developing WG Resilience Strategy and a possible SAP 2. (5.1)</li> <li>• HEGS, Heneb, Cadw – Exchange group meetings held to discuss Cadw funded Heneb projects.</li> <li>• HEGS – Took part in an interview and evidence provided for the <a href="#">Climate Change Committee Wales Climate Change Adaptation Assessment</a>, published September 2023.</li> <li>• Cadw - Continues to work with partners from across the home nations HES, HE, EH, NT, NTS and Dfc NI to pool research and expertise through the UK Heritage Adaptation Partnership. (1.3, 3.1, 6.1, 6.3)</li> </ul>	<ul style="list-style-type: none"> <li>• HE2</li> <li>• MC4</li> </ul>

	<ul style="list-style-type: none"> <li>Establish a climate and heritage management group.</li> <li>Establish a spatial mapping group.</li> </ul>			<ul style="list-style-type: none"> <li>BU and Partners – Establishment of an Interdisciplinary pan-Wales Network for Climate/Heritage, with initial funding through the Learned Society for Wales. Preliminary and startup meetings/workshop held.</li> <li>CU: WSA – <a href="#">MSc Sustainable Building Conservation</a>, now in its 10th year. (6.1)</li> <li>NTC – 3 locations, 5,000 miles apart are working together to tackle climate change in North Wales and Zanzibar - As part of INTO's <a href="#">'Withstanding Change'</a> project, NTC places have been twinned with international project partners, to exchange best practice in climate adaptation. Teams at Penrhyn Castle and the Llŷn Peninsula are learning together with Zanzibar Stone Town Heritage Society (ZSTHS) about making appropriate adaptations while also respecting the unique architectural and historical significance of the buildings in their care, and passing heritage building skills on to the next generation. The 3 coastal sites involved are experiencing impacts on buildings and landscapes associated with sea level rise and increased storm activity: flooding, water ingress, salt corrosion and increased relative humidity are all issues.</li> </ul>	
1.3	<p>Participation from Wales in established UK and wider climate heritage groups and networks.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>Fit for the Future network. <ul style="list-style-type: none"> <li>Historic Environment Adaptation working group.</li> <li>Climate Heritage Network.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Welsh attendance at climate heritage groups and networks.</li> </ul>	<ul style="list-style-type: none"> <li>Collaborative working maximising knowledge and resources, leading to capacity building and more successful adaptation.</li> </ul>	<ul style="list-style-type: none"> <li>Cadw - Continues to work with partners from across the home nations HES, HE, EH, NT, NTS and Dfc NI to pool research and expertise through the UK Heritage Adaptation Partnership. (1.2, 3.1, 6.1, 6.3)</li> <li>Heritage Declares – <a href="#">Non-affiliated group</a> of UK heritage practitioners established 2019. In 2023 involved in the SAVE's successful Public Inquiry against the demolition of the Oxford Street M&amp;S.</li> <li>RCAHMW, AU, DP, GSI – <a href="#">CHERISH project</a> Participate and liaise with other networks and bodies in relation to climate change and coastal heritage. The work of CHERISH formed part of The British-Irish Council Climate Change Adaptation Subgroup work sector visit to Caernarfon in September 2023.</li> <li>RCAHMW – continue as members of the Fit for the Future, Climate Heritage Network and from 2022 Climate Cymru</li> </ul>	<ul style="list-style-type: none"> <li>HE2</li> <li>MC4</li> </ul>

	Description of the action	Output(s) from the action	Broad outcome/impact	Activity 2023	CCW Indicator
<b>2. Mapping and monitoring of the resource</b>					
2.1	<p>Improving baseline data. Develop standardised methodologies and assessment tools to both identify historic assets and prioritise those at risk. For example:</p> <ul style="list-style-type: none"> <li>Wales spatial mapping work including environment/asset specific mapping and analysis.</li> <li>Data enhancement programmes.</li> <li>Use of soil moisture indexes to target aerial reconnaissance during dry periods.</li> </ul>	<ul style="list-style-type: none"> <li>Improved baseline data sets.</li> <li>Improved consistency and comparability of data.</li> <li>Publicly available and regularly updated central repository of spatial mapping datasets.</li> </ul>	<ul style="list-style-type: none"> <li>Improved understanding of the threats and opportunities for the historic environment from a changing climate.</li> <li>Improved evidence base for monitoring, statutory protection, decision-making and adaptation strategies.</li> </ul>	<ul style="list-style-type: none"> <li>NRW - Wales Integrated Natural Beauty Mapping project includes data on the historic environment and how it contributes to natural beauty and the risks and benefits in relation to the project themes of nature recovery, resilience to climate change and wellbeing. The mapping tool is under development and will provide an evidence base for informing positive landscape interventions across Wales. (6.3, 7.2)</li> <li>RCAHMW - Continuation of work to enhance records of historic assets located in the inter-tidal and coastal zone. Achieved through proactive survey and to assimilate up to date records from other organisations (e.g. UKHO) for the offshore sites.. This survey work will provide much improved baseline information for planning and future assessment of any impact from climate change, as well as providing a much enhanced record of the historic asset (7.3)</li> <li>Cadw; Heneb – continuation of Coast &amp; Shoreline / Shoreline Management Plans project. These refreshed plans include 928 actions detailing how the shoreline will be managed in the short term, medium term, and long term. The historic environment is a consideration of shoreline management, however, HER data which informs SMPs is not current, with the condition of most historic environment assets not updated since the Trust's coastal surveys of the mid-1990s. Cadw is funding Heneb – The Trust for Welsh Archaeology to update data on historic assets in the areas covered by the action plans. (5.2, 6.3)</li> <li>Cadw; Heneb – continuation of Rivers project. Climate change and efforts to mitigate its impact have the potential to impact significantly on the historic environment, especially in areas where assets are poorly recorded or understood. Work in 2020- 21 by DAT, followed in 2021-22 by pan-Wales project, identified rivers and riparian environments as being particularly vulnerable. Cadw is funding three projects with Heneb (Glamorgan-Gwent, Dyfed and Clwyd-Powys) that will continue to identify and record good quality baseline data, resulting in the enhancement of the HER for future land management and development control.</li> <li>Cadw – Climate Adaptation Pathways Fellowship - the 18 month fellowship, which is funded by UKRI, commenced in Oct 2023. The aim of the project is to use Cadw sites to develop and test the adaptation pathways approach, and to develop case studies, guidance and training material for asset owners, managers and their professional advisors. The methodology will have wide application both within the historic environment sector and beyond. (6.1-3)</li> <li>NRW &amp; Partners – <a href="#">Publication</a> and <a href="#">Webinar</a>: Mapping pedestrian heat stress in current and future heatwaves in Cardiff, Newport, and Wrexham in Wales, UK. (3.1, 6.3)</li> <li>NT – <a href="#">Climate Hazard Maps</a> updated (publicly available except flooding).</li> </ul>	<ul style="list-style-type: none"> <li>HE2</li> <li>MC4</li> </ul>



				<ul style="list-style-type: none"> <li>• NTC – Full pilot of climate change impact assessment completed for NT Plas Newydd and Llyn portfolio. Using climate change data and lived experience the pilot tested the process and identified features at risk across the portfolio. Working with a neurologist from UCL to help property staff understand this global challenge at a local level.</li> <li>• RCAHMMW, AU, DP, GSI – <a href="#">CHERISH project</a> continues. Targeting specific study areas in coast zone (includes seabed, intertidal, island and coast edge environments) to improve baseline data through technologies such as lidar, UAVs, GNSS, terrestrial laser scanning, marine survey for baseline and condition/change monitoring of coast zone. Includes data enhancement and archiving of freely available data and event reporting of project work to NMRW as central repository of data. Continuation from 2020 onwards. Project finished July 2023. (2.2, 3.1-2, 6.3, 7.3-4)</li> <li>• RCAHMMW – Met Office Soil Moisture Deficit (SMD) indices purchased annually for targeted aerial reconnaissance programme in a consortium with Historic England and Historic Environment Scotland. For 2023 in Wales, NRW recorded the driest May and June (two-month period) since 1975, which yielded a number of new archaeological cropmark sites from targeted aerial reconnaissance.</li> <li>• ENPA – <a href="#">Carneddau Landscape Partnership Scheme</a> continues. Community and volunteer work included lidar project training days.</li> </ul>	
2.2	<p>Establish and implement targeted monitoring regimes on identified historic assets.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Develop and publish case studies to outline different monitoring approaches to ensure consistency of data and approach.</li> <li>• Establish online/mobile application to record incidents/impacts e.g. of pests and disease.</li> <li>• Establish a link to scheduled monuments and listed buildings at risk monitoring work.</li> </ul>	<ul style="list-style-type: none"> <li>• Targeted monitoring programme and condition data.</li> <li>• Best-practice guidance document/technical notes for monitoring assets at risk drawing on case studies.</li> </ul>	<ul style="list-style-type: none"> <li>• Improved understanding of the threats for the historic environment from a changing climate.</li> <li>• Provision of data for historic assets to assist the development of management strategies and prioritisation.</li> </ul>	<ul style="list-style-type: none"> <li>• PCNPA – Continues to monitor the condition of scheduled monuments within the National Park using volunteers (system set up in 2020). (3.1-2, 7.4)</li> <li>• PCNPA – Continuation of <a href="#">Changing Coasts project</a> using fixed point photography. Communities/public submit photographs at specific coastal path points to monitor change and erosion (3.1-2, 7.3-4).</li> <li>• BBNPA – Continuation of Adopt a monument, volunteer condition monitoring programme (see 3.1-2, 7.4)</li> <li>• NT – Weather impact app, based on ArcGis Field Maps developed to capture climate change impacts at NT properties. Outputs include: generating evidence for decision making, highlighting comms and advocacy opportunities, enabling National reporting.</li> <li>• RCAHMMW, AU, DP, GSI – <a href="#">CHERISH project</a> continues. Targeting specific study areas in coast zone (includes seabed, intertidal, island and coast edge environments) to improve baseline data through technologies such as lidar, UAVs, GNSS, terrestrial laser scanning, marine survey for baseline and condition/change monitoring of coast zone. Includes data enhancement and archiving of freely available data and event reporting of project work to NMRW as central repository of data. Continuation from 2020 onwards. Project finished July 2023. (2.1, 3.1-2, 6.3, 7.3-4).</li> <li>• RCAHMMW, AU, DP, GSI – <a href="#">CHERISH project</a> Repeat monitoring at a number of case-study sites, installation of permanent survey markers at 9 heritage sites for future monitoring (aligned and working with WCMC). Change detection report produced for <a href="#">Dinas Dinlle hillfort</a> Continuation from 2020 onwards. Project finished July 2023. (3.2).</li> </ul>	<ul style="list-style-type: none"> <li>• HE2</li> <li>• MC4</li> </ul>

	Description of the action	Output(s) from the action	Broad outcome/impact	Activity 2023	CCW Indicator
<b>3. Research priorities</b>					
3.1	<p>Improve understanding of the interacting and cascading relationships, and cumulative impacts of climate risk factors. For example:</p> <ul style="list-style-type: none"> <li>• Building condition, location and socio-economic factors.</li> <li>• Changing land use and redundancy of agricultural buildings resulting in a cumulative loss of historic landscape features and changed settings.</li> <li>• Increases in invasive species that may impact on historic assets.</li> <li>• Acidification of seawater and increase in marine species which pose potential threats to</li> </ul>	<ul style="list-style-type: none"> <li>• Reports and recommendations.</li> </ul>	<ul style="list-style-type: none"> <li>• Adaptive actions take inter-relationships and cumulative impacts into account, thereby minimising the potential for maladaptation, leading to improved management of historic assets and the creation of best-practice guidance.</li> </ul>	<ul style="list-style-type: none"> <li>• CU: WSA – Hygrothermal Monitoring of Timber-Frame Replacement Infill Panels Part 2. Part 1 covered as Case Study 1 in SAP Interim Report 1 2020. Further funding will provide 5 years of continuous monitoring, in addition to material characterisation enabling improved simulation. Due for completion Jan 2025. (3.2)</li> <li>• GW4 Universities – <a href="#">“Transforming Homes”</a>. AHRC funded project transforming interwar social housing to create beyond net-zero homes through regenerative design. (3.2)</li> <li>• PCNPA – Monitoring the condition of scheduled monuments within the National Park using volunteers (system set up in 2020). (2.2, 3.2, 7.4)</li> <li>• PCNPA – Continuation of <a href="#">Changing Coasts project</a> using fixed point photography. Communities/public submit photographs at specific coastal path points to monitor change and erosion (2.2, 3.2, 7.3-4).</li> <li>• PCNPA – Observing more maintenance issues with drains and gutters on historic buildings due to increased stormy and wetter weather. More evidence is being seen of problems caused by blocked downpipes/gutters, notably ground saturation and longer-term settlement around failed gullies (typically corners of buildings).</li> <li>• NRW &amp; Partners – <a href="#">Publication</a> and <a href="#">Webinar</a>: Mapping pedestrian heat stress in current and future heatwaves in Cardiff, Newport, and Wrexham in Wales, UK. (2.1, 6.3)</li> <li>• BBNPA – Continuation of Adopt a Monument, volunteer condition monitoring programme (2.2, 3.2, 7.4).</li> </ul>	<ul style="list-style-type: none"> <li>• HE2</li> <li>• MC4</li> </ul>

	<p>wrecks/timber structures in marine conditions.</p> <ul style="list-style-type: none"> <li>Measures to address chronic and acute pollution from historic mining.</li> <li>Risks to building fabric from increased humidity, moisture, wind and driving rain, and the knock-on impact on indoor air quality and the health of building occupants.</li> <li>Cumulative impact of successive extreme weather events on historic assets.</li> <li>The frequency, range and potential regional variations of extreme weather events and their impact on the historic environment.</li> </ul>			<ul style="list-style-type: none"> <li>RCAHMW, AU, DP, GSI – <a href="#">CHERISH project</a> continues. Targeting specific study areas in coast zone (includes seabed, intertidal, island and coast edge environments) to improve baseline data through technologies such as lidar, UAVs, GNSS, terrestrial laser scanning, marine survey for baseline and condition/change monitoring of coast zone. Includes data enhancement and archiving of freely available data and event reporting of project work to NMRW as central repository of data. Continuation from 2020 on. Project finished July 2023. (2.1, 2.2, 3.2, 6.3, 7.3-4).</li> </ul>	
3.2	<p>Research to improve knowledge of past and present climate change impacts on historic assets e.g. decay/erosion/accretion.</p>	<ul style="list-style-type: none"> <li>Research results, case studies and recommendations.</li> </ul>	<ul style="list-style-type: none"> <li>Increased understanding of stages, timescales and outcomes leading to improved management and adaptation interventions to build resilience.</li> </ul>	<ul style="list-style-type: none"> <li>CU: WSA – Hygrothermal Monitoring of Timber-Frame Replacement Infill Panels Part 2. Part 1 covered as Case Study 1 in SAP Interim Report 1 2020. Further funding will provide 5 years of continuous monitoring, in addition to material characterisation enabling improved simulation. Due for completion Jan 2025. (3.1)</li> <li>GW4 Universities – <a href="#">“Transforming Homes”</a>. AHRC funded project transforming interwar social housing to create beyond net-zero homes through regenerative design. (3.1)</li> <li>PCNPA – Monitoring the condition of scheduled monuments within the National Park using volunteers (system set up in 2020). (2.2, 7.4, 3.1).</li> <li>PCNPA – Continuation of <a href="#">Changing Coasts project</a> using fixed point photography. Communities/public submit photographs at specific coastal path points to monitor change and erosion (2.2, 3.1, 7.3-4).</li> <li>BBNPA – Continuation of Adopt a Monument, volunteer condition monitoring programme ongoing (2.2, 3.1, 7.4).</li> <li>BBNPA – Paleoenvironmental assessment commissioned to improve understanding of evidence baselines and gaps of the published environmental record pertaining to the park landscapes.</li> <li>Member of Public – Research continues looking at Welsh history and the way that climate change may have shaped this in the past, focussing on the Iron age to the Middle Ages.</li> <li>RCAHMW, AU, DP, GSI – <a href="#">CHERISH project</a> continues. Targeting specific study areas in coast zone (includes seabed, intertidal, island and coast edge environments) to improve baseline data through technologies such as lidar, UAVs, GNSS, terrestrial laser scanning, marine survey for baseline and condition/change monitoring of coast zone. Includes data enhancement and archiving of freely available data and event reporting of project work to NMRW as central repository of data. Continuation from 2020 on. Project finished July 2023. (2.1, 2.2, 3.1, 6.3, 7.3-4).</li> <li>RCAHMW, AU, DP, GSI – <a href="#">CHERISH project</a> Repeat monitoring at a number of case-study sites, installation of permanent survey markers at 9 heritage sites for future monitoring (aligned and working with WCMC). Change detection report produced for <a href="#">Dinas Dinlle hillfort</a> Continuation from 2020 on. Project finished July 2023. (2.2).</li> </ul>	<ul style="list-style-type: none"> <li>HE2</li> <li>MC4</li> </ul>
3.3	<p>Improve understanding of the positive and negative effects of a longer growing season on the maintenance and management of the historic environment.</p>	<ul style="list-style-type: none"> <li>Report and recommendations.</li> </ul>	<ul style="list-style-type: none"> <li>Improved long-term adaptation and maintenance programmes.</li> </ul>		<ul style="list-style-type: none"> <li>HE2</li> <li>MC4</li> </ul>
3.4	<p>Work with UKCP18 projections to identify opportunities for the historic environment and the economy e.g. planting of woodland and forestry; establishment of new industries relating to adaptation; changing leisure</p>	<ul style="list-style-type: none"> <li>Identification of opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>A combined beneficial response to adaptation will encourage uptake and identification of new opportunities, including tourism investment.</li> </ul>		<ul style="list-style-type: none"> <li>HE2</li> </ul>

	opportunities; increased use of UK coastal resorts.				
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Capacity: Develop the methodologies, tools and guidance to work with others and build adaptive capacity					
CCW Indicator					
	Description of the action	Output(s) from the action	Broad outcome/impact	Activity 2023	CCW Indicator
<b>4 Dissemination and promotion</b>					
4.1	Creation of a steering group to oversee the delivery of the HEG SAP and to monitor and review progress. The steering group will establish and coordinate working/subgroups as necessary.	<ul style="list-style-type: none"> <li>Steering group formed from representatives within Wales.</li> </ul>	<ul style="list-style-type: none"> <li>The provision of a strategic framework through which the action plan is delivered.</li> </ul>	<ul style="list-style-type: none"> <li>HEGS – Interim Report of Activity against the SAP action plan covering <a href="#">2022 published</a>. (4.1)</li> <li>HEGS – regular meetings to review SAP progress and coordinate promotion of the SAP. Also reporting back to HEG.</li> </ul>	<ul style="list-style-type: none"> <li>HE3</li> </ul>
4.2	Creation of a dedicated (full-time equivalent) Climate Change Manager post for the historic environment sector in Wales.	<ul style="list-style-type: none"> <li>Climate Change Manager in post.</li> </ul>	<ul style="list-style-type: none"> <li>Direct action to help steer and guide the delivery of the HEG SAP and to play a central role in raising the profile of the climate change work across the historic environment sector in Wales.</li> </ul>	<ul style="list-style-type: none"> <li>HEGS – Discussions held with Cadw and HEG. No funding forthcoming.</li> </ul>	<ul style="list-style-type: none"> <li>HE3</li> </ul>

	Description of the action	Output(s) from the action	Broad outcome/impact	Activity 2023	CCW Indicator
<b>5. Collaborative working</b>					
5.1	The steering group to coordinate and encourage stakeholder engagement and promote partnership working to ensure efficient use of resources across sectors.	<ul style="list-style-type: none"> <li>Cross-sector partnerships and coordinated working will ensure resources are targeted effectively and efficiently.</li> </ul>	<ul style="list-style-type: none"> <li>Effective delivery of the HEG SAP actions.</li> <li>Raised awareness of the historic environment across the wider sector which will help prevent secondary damage and maladaptation to the historic environment.</li> <li>Improved cross-sector working.</li> </ul>	<ul style="list-style-type: none"> <li>HEGS– Update on work of group and monitoring of strategy provided to Steering Group at HEG meetings (1.1).</li> <li>HEGS – Organised a workshop event December 2023 with HEG members to identify future research priorities for developing WG Resilience Strategy and a possible SAP 2. (2.1)</li> <li>RCAHMW, AU, DP, GSI – <a href="#">CHERISH project</a> CHERISH project works cross-sector and with a variety of stakeholders and partners. The CHERISH touring exhibition promoted stakeholder engagement and the Project organised final conference held in <a href="#">Dublin March 2023</a>. Project finished July 2023.</li> </ul>	<ul style="list-style-type: none"> <li>HE3</li> </ul>
5.2	The steering group/working group to work with officials across Wales to embed the HEG SAP in national and local government policy statements, plans and codes	<ul style="list-style-type: none"> <li>The historic environment will feature in the Welsh Government Climate Change Adaptation Plan for Wales.</li> <li>The HEG SAP considerations will be linked and noted in, for example: <ul style="list-style-type: none"> <li>– Shoreline Management Plans.</li> <li>– Relevant Planning Policy Wales supplements.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Help prevent secondary damage and maladaptation to the historic environment.</li> </ul>	<ul style="list-style-type: none"> <li>Cadw – Continuation of Coast &amp; Shoreline / Shoreline Management Plans project. These refreshed plans include 928 actions detailing how the shoreline will be managed in the short term, medium term, and long term. The historic environment is a consideration of shoreline management, however, HER data which informs SMPs is not current, with the condition of most historic environment assets not updated since the Trust's coastal surveys of the mid-1990s. Cadw is funding Heneb – The Trust for Welsh Archaeology to update data on historic assets in the areas covered by the action plans. (2.1, 6.3)</li> <li>Cadw – Climate Resilience Fellowship - Actions are still being taken to implement the recommendations in the final <a href="#">report</a> including: <ol style="list-style-type: none"> <li>the research is highlighted in the new Welsh Housing Quality Standard. Factsheets have also been published on the Welsh Government website to support the WHQS and provide practical recommendations for risk-based adaptation. They cover summertime overheating in highly insulated homes; summertime overheating in post-1985 homes (including older buildings converted into flats; summertime relative humidity in older properties, and repair, maintenance and adaptation priorities for older properties.</li> <li>content relating to climate adaptation has been written into standards, qualifications and training resources whenever opportunities have arisen. This includes PAS2035 and the L3 Award in Energy Efficiency Measures for Older and Traditional Buildings. (6.2-3)</li> </ol> </li> <li>Cadw – Continues to be a member of the WG Climate Impacts Adaptation Group which has begun work on the next iteration of the National Resilience Plan. It acts as a link between the subgroup and the WG Climate Adaptation team. This includes providing WG colleagues with annual reports and other updates on progress (1.1)</li> <li>NRW – Development of internal Climate Change Adaptation Plan for Natural Resources Wales to provide a synopsis of climate adaptation action ongoing and planned across Natural Resources Wales, and to act as a</li> </ul>	<ul style="list-style-type: none"> <li>HE3</li> </ul>

				catalyst for further adaptation action. This includes; recognition of ongoing historic environment actions and collaborative work, delivery of the National Peatland Action Programme and further peatland restoration work, conservation of ancient woodlands, and other actions currently ongoing and planned that can contribute to adaptation of the historic environment to current and future climate change. (1.1, 6.3, 7.1, 7.3)	
5.3	Provide, promote and maintain a publicly available case study resource to illustrate climate change risks and impacts affecting the historic environment and examples of adaptation. All should be able to contribute to this resource.	<ul style="list-style-type: none"> <li>Case study resource.</li> </ul>	<ul style="list-style-type: none"> <li>Raised awareness of the challenges posed by climate change and adaptation on the historic environment.</li> <li>Demonstration of a range of practices and evidence of direct action.</li> </ul>	<ul style="list-style-type: none"> <li>HEGS – <a href="#">Adaptation Case Study Resource</a> updated to reflect case studies from 2022 Activity Report.</li> <li>RCAHMW, AU, DP, GSI – <a href="#">CHERISH project</a>. CHERISH: Sharing our Practice <a href="#">free E-publication</a> launched in March 2023 to provide guidance with a full range of case study examples.</li> </ul>	<ul style="list-style-type: none"> <li>HE3</li> </ul>

	Description of the action	Output(s) from the action	Broad outcome/impact	Activity 2023	CCW Indicator
<b>6. Training and guidance</b>					
6.1	Identify and support the training of historic environment practitioners specialising in the impacts of climate change and adaptation of the historic environment.	<ul style="list-style-type: none"> <li>Trained climate change historic environment practitioners.</li> </ul>	<ul style="list-style-type: none"> <li>Raising standards to embed climate change considerations in the historic environment.</li> </ul>	<ul style="list-style-type: none"> <li>CU: WSA – <a href="#">MSc Sustainable Building Conservation</a>, now in its 10th year. (1.2)</li> <li>Cadw – Cadw Climate Adaptation Pathways Fellowship - the 18 month fellowship, which is funded by UKRI, commenced in Oct 2023. The aim of the project is to use Cadw sites to develop and test the adaptation pathways approach, and to develop case studies, guidance and training material for asset owners, managers and their professional advisors. The methodology will have wide application both within the historic environment sector and beyond. (2.1, 6.2-3)</li> </ul>	<ul style="list-style-type: none"> <li>HE3</li> </ul>
6.2	Climate change historic environment practitioners to provide training and support within and across sectors in the impacts of climate change and adaptation of the historic environment. For example: <ul style="list-style-type: none"> <li>Produce an e-learning module on the historic environment and climate change.</li> <li>Organise slots at meetings, training events and workshops with other sectors.</li> </ul>	<ul style="list-style-type: none"> <li>Planners and developers can advise authoritatively through pre-application advice e.g. on the design and implementation of adaptation proposals.</li> <li>Grant officers can ensure changes and adaptation actions are sensitive to the historic environment.</li> <li>Owners can identify and implement management and adaptation opportunities.</li> <li>Community groups established to develop programmes to identify, monitor and record historic assets at risk.</li> </ul>	<ul style="list-style-type: none"> <li>Raised standards to embed climate change considerations in the historic environment.</li> <li>Improved cross-sector working, knowledge and understanding, decision-making and the quality of adaptation actions.</li> </ul>	<ul style="list-style-type: none"> <li>Cadw – Climate Resilience Fellowship - Actions are still being taken to implement the recommendations in the final <a href="#">report</a> including: <ol style="list-style-type: none"> <li>the research is highlighted in the new Welsh Housing Quality Standard. Factsheets have also been published on the Welsh Government website to support the WHQS and provide practical recommendations for risk-based adaptation. They cover summertime overheating in highly insulated homes; summertime overheating in post-1985 homes (including older buildings converted into flats; summertime relative humidity in older properties, and repair, maintenance and adaptation priorities for older properties.</li> <li>content relating to climate adaptation has been written into standards, qualifications and training resources whenever opportunities have arisen. This includes PAS2035 and the L3 Award in Energy Efficiency Measures for Older and Traditional Buildings. (5.2, 6.3)</li> </ol> </li> <li>Cadw – Cadw Climate Adaptation Pathways Fellowship - the 18 month fellowship, which is funded by UKRI, commenced in Oct 2023. The aim of the project is to use Cadw sites to develop and test the adaptation pathways approach, and to develop case studies, guidance and training material for asset owners, managers and their professional advisors. The methodology will have wide application both within the historic environment sector and beyond. (2.1, 6.1, 6.3)</li> <li>PCNPA – planning applications involving adaptation to historic/listed buildings such as retrofitting, solar panels, double glazing timber windows etc. accommodated as much as possible.</li> <li>RSPB - Continued heritage advice and monitoring at Lake Vyrnwy peat restoration.</li> <li>BBNPA – Response and input to consultations for developing land management strategies, woodland creation, riparian improvements, peatland restoration (6.3).</li> <li>NTC – <a href="#">Story bench at Cwm Idwal</a> – three pairs of strangers with a special connection to Cwm Idwal came together to express their hopes and fears for the area in a changing climate. The themes from their conversations inspiring a specially carved bench for visitors to enjoy, located along the path to the lake.</li> </ul>	<ul style="list-style-type: none"> <li>HE3</li> </ul>

				<ul style="list-style-type: none"> <li>• NTC, Literature Wales – <a href="#">Collaborative project</a> to inspire young people across Wales to take action against climate change by connecting to <a href="#">nature, the outdoors and poetry</a>.</li> <li>• NTC, Meteriaeth Maldwyn/Fun Palaces – <a href="#">Partnership project</a> included the climate project to engage young people with climate related discussions and activities.</li> <li>• ACW; NRW; NT; EVT – Future Wales Fellowship. A16 month creative research opportunity for 8 artists on the theme of connection to nature. The artists have the opportunity to engage critically with historic environment sites, through residential at National Trust site Stackpole, Pembrokeshire and the Elan Valley.</li> <li>• ENPA – <a href="#">Carneddau Landscape Partnership Scheme</a> Community and volunteer work included scrub vegetation control at several scheduled monuments and lidar project training days. Volunteers and a group of MA and PhD students from the University of Sheffield undertook and measured survey, UAV and photogrammetry of historic environment features (7.4)</li> <li>• ENPA – Ardudwy historic rural dwellings and farmsteads project (Cartrefu) focussing on derelict and ruinous dwellings and farm buildings in the upland margins of Ardudwy continues. Working with local volunteers this includes messaging relating to marginality, settlement, climate change and land management in its engagement with local people..</li> </ul>	
6.3	Work collaboratively across sectors to develop and disseminate joint guidance/ advisory notes that increase the knowledge, understanding and resilience of the historic environment to climate change.	<ul style="list-style-type: none"> <li>• Guidance/advisory notes produced and promoted.</li> <li>• Inclusion of climate change adaptation into all aspects of heritage management.</li> <li>• Heritage management and business plans with climate change adaptation embedded.</li> <li>• Management practices undertaken that showcase climate change adaptation.</li> </ul>	<ul style="list-style-type: none"> <li>• Improved cross-sector working, knowledge and understanding, decision-making and the quality of adaptation actions.</li> <li>• Prevention of secondary damage and maladaptation to the historic environment.</li> <li>• Improved management of the historic environment.</li> <li>• A well-managed and appropriate programme of adaptation measures.</li> </ul>	<ul style="list-style-type: none"> <li>• Cadw – Continuation of Coast &amp; Shoreline / Shoreline Management Plans project. These refreshed plans include 928 actions detailing how the shoreline will be managed in the short term, medium term, and long term. The historic environment is a consideration of shoreline management, however, HER data which informs SMPs is not current, with the condition of most historic environment assets not updated since the Trust's coastal surveys of the mid-1990s. Cadw is funding Heneb – The Trust for Welsh Archaeology to update data on historic assets in the areas covered by the action plans. (2.1, 5.2)</li> <li>• Cadw – Climate Resilience Fellowship - Actions are still being taken to implement the recommendations in the final <a href="#">report</a> including: <ul style="list-style-type: none"> <li>a. the research is highlighted in the new Welsh Housing Quality Standard. Factsheets have also been published on the Welsh Government website to support the WHQS and provide practical recommendations for risk-based adaptation. They cover summertime overheating in highly insulated homes; summertime overheating in post-1985 homes (including older buildings converted into flats; summertime relative humidity in older properties, and repair, maintenance and adaptation priorities for older properties.</li> <li>b. content relating to climate adaptation has been written into standards, qualifications and training resources whenever opportunities have arisen. This includes PAS2035 and the L3 Award in Energy Efficiency Measures for Older and Traditional Buildings. (5.2, 6.2)</li> </ul> </li> <li>• Cadw – Cadw Climate Adaptation Pathways Fellowship - the 18 month fellowship, which is funded by UKRI, commenced in Oct 2023. The aim of the project is to use Cadw sites to develop and test the adaptation pathways approach, and to develop case studies, guidance and training material for asset owners, managers and their professional advisors. The methodology will have wide application both within the historic environment sector and beyond. (2.1, 6.1-2)</li> <li>• NRW – Development of internal Climate Change Adaptation Plan for Natural Resources Wales to provide a synopsis of climate adaptation action ongoing and planned across Natural Resources Wales, and to act as a catalyst for further adaptation action. This includes; recognition of ongoing historic environment actions and collaborative work, delivery of the National Peatland Action Programme and further peatland restoration work, conservation of ancient woodlands, and other actions currently ongoing and planned that can contribute to adaptation of the historic environment to current and future climate change. (1.1, 5.2, 7.1, 7.3)</li> <li>• NRW - Wales Integrated Natural Beauty Mapping project includes data on the historic environment and how it contributes to natural beauty and the risks and benefits in relation to the project themes of nature recovery, resilience to climate change and wellbeing. The mapping tool is under development and will provide an evidence base for informing positive landscape interventions across Wales. (2.1, 7.2)</li> <li>• NRW – Landscape and Nature Recovery in a Changing Climate Guide - South Central Wales - The Valleys (work in progress) (7.2)</li> <li>• NRW – Development of guidance on Ash Dieback for land managers of ash trees, in woodlands, in the wider countryside and in urban areas. The guidance (to be published in 2024) advises managers on the addressing the risks of infected trees whilst keeping ash as a species in Wales through retaining potentially</li> </ul>	<ul style="list-style-type: none"> <li>• HE3</li> </ul>



				<p>disease-tolerant individuals. Ash trees are a significant component in Wales' woodlands and across the landscape. It is a native species and found in many ancient woodlands.</p> <ul style="list-style-type: none"> <li>• NRW &amp; Partners – <a href="#">Publication</a> and <a href="#">Webinar</a>: Mapping pedestrian heat stress in current and future heatwaves in Cardiff, Newport, and Wrexham in Wales, UK. (2.1, 3.1)</li> <li>• BBNPA – Response and input to consultations for developing land management strategies, woodland creation, riparian improvements, peatland restoration (6.2).</li> <li>• NT – <a href="#">Climate Change Adaptation Guidance</a> published October 2022. New documents added.</li> <li>• ACW – developing a Plan for Climate Justice in the Arts which includes actions to support the arts sector to develop Climate Adaptation Plans.</li> <li>• RCAHMW, AU, DP, GSI – <a href="#">CHERISH project</a> free guidance e-document Cherish: Sharing Our Practice: Investigating Heritage and Climate Change in Coastal and Maritime Environments. A Guide to the CHERISH Toolkit. <a href="#">Published</a> in English and Welsh and launched at CHERISH conference March 21 2023.</li> <li>• ENPA – Conservation, forestry and agricultural department. Peatland restoration projects via the National Peatland Action Programme. Conifer removal (former commercial plantation on peatland or invasive escapees onto adjacent peat) and ditch/grip blocking. Consultation and monitoring has been undertaken to ensure against unintended adverse impact on historic environment features. (7.2)</li> </ul>	
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Resilience: Increase resilience of the historic environment by implementing actions to respond and adapt to the risks					
	Description of the action	Output(s) from the action	Broad outcome/impact	Activity 2023	CCW Indicator
<b>7. Taking action</b>					
7.1	Prepare and implement emergency/adaptation plans (utilising the principles and methods developed for conservation management plans) for vulnerable areas or sites as identified in 2.1 and 2.2. Plans to include multiple work streams if several agencies have identified the need for adaptation measures.	<ul style="list-style-type: none"> <li>• Identification of significance, threat, vulnerability and adaptive action.</li> <li>• Partnership working with all agencies.</li> </ul>	<ul style="list-style-type: none"> <li>• The prioritisation and effective management of resources.</li> </ul>	<ul style="list-style-type: none"> <li>• NRW – Development of internal Climate Change Adaptation Plan for Natural Resources Wales to provide a synopsis of climate adaptation action ongoing and planned across Natural Resources Wales, and to act as a catalyst for further adaptation action. This includes; recognition of ongoing historic environment actions and collaborative work, delivery of the National Peatland Action Programme and further peatland restoration work, conservation of ancient woodlands, and other actions currently ongoing and planned that can contribute to adaptation of the historic environment to current and future climate change. (1.1, 5.2, 6.3, 7.3)</li> <li>• EA – Mott MacDonald working in Wales considering the Upper River Severn Catchment's flood risk management through adaptation planning (continuing work from 2022).</li> <li>• RCAHMW, AU, DP, GSI – <a href="#">CHERISH project</a> produced 8 (4 Wales 4 Ireland) Landowner Site Assessments detailing work undertaken by CHERISH together with an assessment and matrix of Climate Risk Factors alongside recommendations for action. Project finished July 2023.</li> <li>• RCAHMW – Continuation of priority recording and at-risk recording programme/strategy to respond to emergency. New thematic project 20th Century Wales. A Topography of Schools to deal with closure and demolition of this 'at-risk' building type, the result of new school building to meet WG decarb targets. Work includes enhancement of NMRW and recording of sites marked for demolition and those of architectural, historical and local significance. (7.3).</li> </ul>	<ul style="list-style-type: none"> <li>• HE4</li> </ul>
7.2	Undertake programme of landscape and urban characterisation to inform management of change in both rural and urban areas.	<ul style="list-style-type: none"> <li>• Produce characterisation reports for areas at risk, and feed results into conservation management plans</li> </ul>	<ul style="list-style-type: none"> <li>• Improved conservation and management of change.</li> </ul>	<ul style="list-style-type: none"> <li>• NRW - Wales Integrated Natural Beauty Mapping project includes data on the historic environment and how it contributes to natural beauty and the risks and benefits in relation to the project themes of nature recovery, resilience to climate change and wellbeing. The mapping tool is under development and will provide an evidence base for informing positive landscape interventions across Wales. (2.1, 6.3)</li> <li>• NRW – Landscape and Nature Recovery in a Changing Climate Guide - South Central Wales - The Valleys (work in progress) (6.3)</li> </ul>	<ul style="list-style-type: none"> <li>• HE4</li> </ul>
7.3	Prioritised work programmes relating to historic assets at risk such as those identified through 7.1, spatial mapping work (2.1), baseline monitoring (2.2) and through other local and national adaptation plans e.g. shoreline management plans. Where possible to be preceded by a management plan. Direct actions could range from survey,	<ul style="list-style-type: none"> <li>• Work programmes underway.</li> <li>• Improved protection and preservation of historic assets.</li> <li>• Improved management of historic assets.</li> </ul>	<ul style="list-style-type: none"> <li>• Mitigation and improved resilience of the historic environment.</li> <li>• Acceptance of inevitable change.</li> <li>• Partnership working and cross sector coordinated response.</li> </ul>	<ul style="list-style-type: none"> <li>• RCAHMW - Continuation of work to enhance records of historic assets located in the inter-tidal and coastal zone. Achieved through proactive survey and to assimilate up to date records from other organisations (e.g. UKHO) for the offshore sites. This survey work will provide much improved baseline information for planning and future assessment of any impact from climate change, as well as providing a much enhanced record of the historic asset (2.1)</li> <li>• RCAHMW – Continuation of priority recording and at-risk recording programme/strategy to respond to emergency. New thematic project 20th Century Wales. A Topography of Schools to deal with closure and demolition of this 'at-risk' building type, the result of new school building to meet WG decarb targets. Work</li> </ul>	<ul style="list-style-type: none"> <li>• HE4</li> <li>• MC1</li> </ul>

	record and monitoring through to maintenance and conservation measures, erosion control or moving significant vulnerable assets to a place of safety.			<p>includes enhancement of NMRW and recording of sites marked for demolition and those of architectural, historical and local significance. (7.3).</p> <ul style="list-style-type: none"> <li>• Heneb: Dyfed – reporting on excavation at Porth y Rhaw, a promontory fort suffering coastal erosion.</li> <li>• PCNPA – Continued carrying out maintenance work at sites at risk from climate change, including scrub clearance at scheduled promontory forts.</li> <li>• NRW – Development of internal Climate Change Adaptation Plan for Natural Resources Wales to provide a synopsis of climate adaptation action ongoing and planned across Natural Resources Wales, and to act as a catalyst for further adaptation action. This includes recognition of ongoing historic environment actions and collaborative work, delivery of the National Peatland Action Programme and further peatland restoration work, conservation of ancient woodlands, and other actions currently ongoing and planned that can contribute to adaptation of the historic environment to current and future climate change. (1.1, 5.2, 6.3, 7.1)</li> <li>• BBNPA - Peatlands programme: 2023- 2024 of works ongoing.</li> <li>• BBNPA – Continuing active conservation management at a number of sites to improve resilience and promote condition including Garn Goch, Clydach Ironworks, Pontneddfechan Gunpowder Works, Bryn Oer tramroad.</li> <li>• NTC – planning and funds secured for good quality composting facilities at Llanaecaeron and Plas yn Rhiw Registered Gardens. To improve growing conditions for plants so that they are more resilient to heat and stress.</li> <li>• NTC – Dyffryn House, improved access to roof spaces created to allow for clearance of internal gutters.</li> <li>• RCAHMW, AU, DP, GSI – <a href="#">CHERISH project</a> continues. Targeting specific study areas in coast zone (includes seabed, intertidal, island and coast edge environments) to improve baseline data through technologies such as lidar, UAVs, GNSS, terrestrial laser scanning, marine survey for baseline and condition/change monitoring of coast zone. Includes data enhancement and archiving of freely available data and event reporting of project work to NMRW as central repository of data. Continuation from 2020 on. Project finished July 2023. (2.1, 2.2, 3.1-2, 7.4).</li> </ul>	
7.4	Establish stakeholder/community groups able to monitor assets and respond to significant events such as wild fires and storms to maximise the potential for the discovery of new historic assets and the recording and monitoring of them.	<ul style="list-style-type: none"> <li>• Stakeholder/community groups established.</li> <li>• Monitoring regimes in place.</li> </ul>	<ul style="list-style-type: none"> <li>• Improved knowledge, management and resilience of the historic environment.</li> <li>• Raised awareness and appreciation of the historic environment.</li> </ul>	<ul style="list-style-type: none"> <li>• PCNPA – Monitoring the condition of scheduled monuments within the National Park using volunteers (system set up in 2020) (2.2, 3.1-2).</li> <li>• PCNPA – Continuation of <a href="#">Changing Coasts project</a> using fixed point photography. Communities/public submit photographs at specific coastal path points to monitor change and erosion (2.2, 3.1-2, 7.3).</li> <li>• BBNPA – Continuation of Adopt a Monument, volunteer condition monitoring programme ongoing (2.2, 3.1-2).</li> <li>• RCAHMW, AU, DP, GSI – <a href="#">CHERISH project</a> continues. Targeting specific study areas in coast zone (includes seabed, intertidal, island and coast edge environments) to improve baseline data through technologies such as lidar, UAVs, GNSS, terrestrial laser scanning, marine survey for baseline and condition/change monitoring of coast zone. Includes data enhancement and archiving of freely available data and event reporting of project work to NMRW as central repository of data. Continuation from 2020 on. Project finished July 2023. (2.1, 2.2, 3.1-2, 7.3).</li> <li>• ENPA – <a href="#">Carneddau Landscape Partnership Scheme</a> continues. Community and volunteer work included scrub vegetation control at several scheduled monuments and lidar project training days. Volunteers and a group of MA and PhD students from the University of Sheffield undertook and measured survey, UAV and photogrammetry of historic environment features. (6.2)</li> </ul>	<ul style="list-style-type: none"> <li>• HE4</li> <li>• MC1</li> </ul>
7.5	Encourage and implement new planting regimes where trees and hedgerows form a key component of the historic environment to reduce the impact of the spread of disease and increased storminess.	<ul style="list-style-type: none"> <li>• New planting regimes that are responsive to plant health trends and are of suitable provenance.</li> <li>• The preservation of traditional field boundaries.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced impact of the spread of diseases and storms.</li> <li>• Improved management and resilience of trees in the historic environment.</li> <li>• Retention and survival of historic character and integrity.</li> </ul>	<ul style="list-style-type: none"> <li>• ENPA – <a href="#">Carneddau Landscape Partnership Scheme</a> continues. Land management and conservation work included low density scattered tree-planting along water corridors and amongst craggy and scrub covered slopes, respecting historic tree presence/providing succession for existing mature trees and aiming to help increase biodiversity and slow water-flow rate.</li> </ul>	<ul style="list-style-type: none"> <li>• HE4</li> </ul>
7.6	Build a resilient recovery from the COVID-19 pandemic.	<ul style="list-style-type: none"> <li>• Organisational climate and sustainability plans, policies and actions.</li> </ul>	<ul style="list-style-type: none"> <li>• New ways of working that reduce emissions and prepare for climate change.</li> </ul>	<ul style="list-style-type: none"> <li>• BBNPA - Changed working patterns, reduced vehicle use, remote working, reduced paper usage (continuing).</li> <li>• RCAHMW – continues its Future Generations Group.</li> </ul>	<ul style="list-style-type: none"> <li>• HE4</li> </ul>