Environment and Rural Affairs Monitoring & Modelling Programme (ERAMMP)

ERAMMP Report-29:

Reported Monitoring Activities in Designated Landscapes in Wales

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Abbreviations Used in this Report

BBNPA	Brecon Beacons National Park Authority
BIS	Biodiversity Information Service (one of four Local Environmental Record Centres in Wales)
DL	Designated Landscapes (the geographic area that's been designated)
DL Bodies	The managing authority tasked with managing that designated geographic area
DLMA	Designated Landscape Managing Authorities (see also 'DL Bodies')
DLMG	Designated Landscapes Monitoring Group
ERAMMP	Environment and Rural Affairs Monitoring & Modelling Programme
GMEP	Glastir Monitoring and Evaluation Programme
IACC	Isle of Anglesey County Council
NP	National Park
NPA	National Park Authority
NRW	Natural Resources Wales
PCNPA	Pembrokeshire Coast National Park Authority
SNPA	Snowdonia National Park Authority
SSSI	Site of Special Scientific Interest
UKCEH	UK Centre for Ecology & Hydrology

Abbreviations and some of the technical terms used in this report are expanded on in the programme glossaries: https://erammp.wales/en/glossary (English) and https://erammp.cymru/geirfa (Welsh)

CONTENTS

1 INTRODUCTION & BACKGROUND

1.1 Objective & Background

This review has been undertaken in order to document some of the evidence that is currently collected within Designated Landscapes (DL) in Wales. The objective is to identify areas of commonalities and of differences or gaps in monitoring, and to encourage a collaborative approach to ongoing and future monitoring by identifying data and modelling outputs of the Environment & Rural Affairs Monitoring and Modelling Programme[1] (ERAMMP) and of the Glastir Monitoring and Evaluation Programme[2] (GMEP) that are of greatest interest and impact to the Designated Landscape managing authorities ('DL Bodies'). It should be noted that the report does not provide a complete inventory of all monitoring activities but only those reported by the individuals nominated for interview by the DL Bodies at the time.

1.2 Structure and Method

The ERAMMP DLs Monitoring and Liaison Officer carried out structured interviews with the eight DL Bodies in 2019.

The purpose of these interviews were to identify various aspects of the data holdings and data collection including: what, why, how, when and who collected the data, who the data holder is, its availability and any known reporting.

Additionally, the DL Bodies were asked to fill in two additional tables.

- Priorities for potential future GMEP data extraction and analysis

- Priorities for ERAMMP modelling scenarios to inform potential future ERAMMP modelling work.

See Appendix 6.3 for the questionnaire *pro forma* that was used for all interviews and Appendices 6.4 and 6.7 for the DL Bodies' responses and a summary table of 'Why, What, When & How'. The responses from the eight DL Bodies summarises the current, self-reported, monitoring work ongoing within the DLs, followed by a mapping exercise to map current activities onto current DL management plans - thus identifying potential evidence gaps.

The review also summaries the priorities both individually and collectively for the DL Bodies for possible future collaborative work with respect to GMEP/ERAMMP monitoring and modelling outputs.

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[1] https://www.erammp.wales

[2] https://www.gmep.wales

2   MONITORING ACTIVITIES IN THE DLS

2.1 Overview of Monitoring

As a part of the structured interviews conducted with the DL Bodies, each was asked to give a brief summary of the number and type of monitoring programmes they were aware of that had taken place within their respective designations. Representatives were asked to give information even if they were unsure of the exact details, period, method or availability of any data collected. The purpose was to develop an overarching understanding of the types of monitoring activities that have taken place and what research has been focused on.

Note that this report only captures monitoring that was stated as part of the structured interviews conducted by the DL Monitoring and Liaison Officers with the DL Bodies; any monitoring activity that was not brought to the attention of the DLs Monitoring and Liaison Officers is not included in this report.

A wide range of monitoring indicators were reported, so these were categorised into 10 monitoring groups with further sub-categories to more easily visualise and interpret the results (see Appendix 7.1). The results of this data collection can be seen in Figure 2-1.
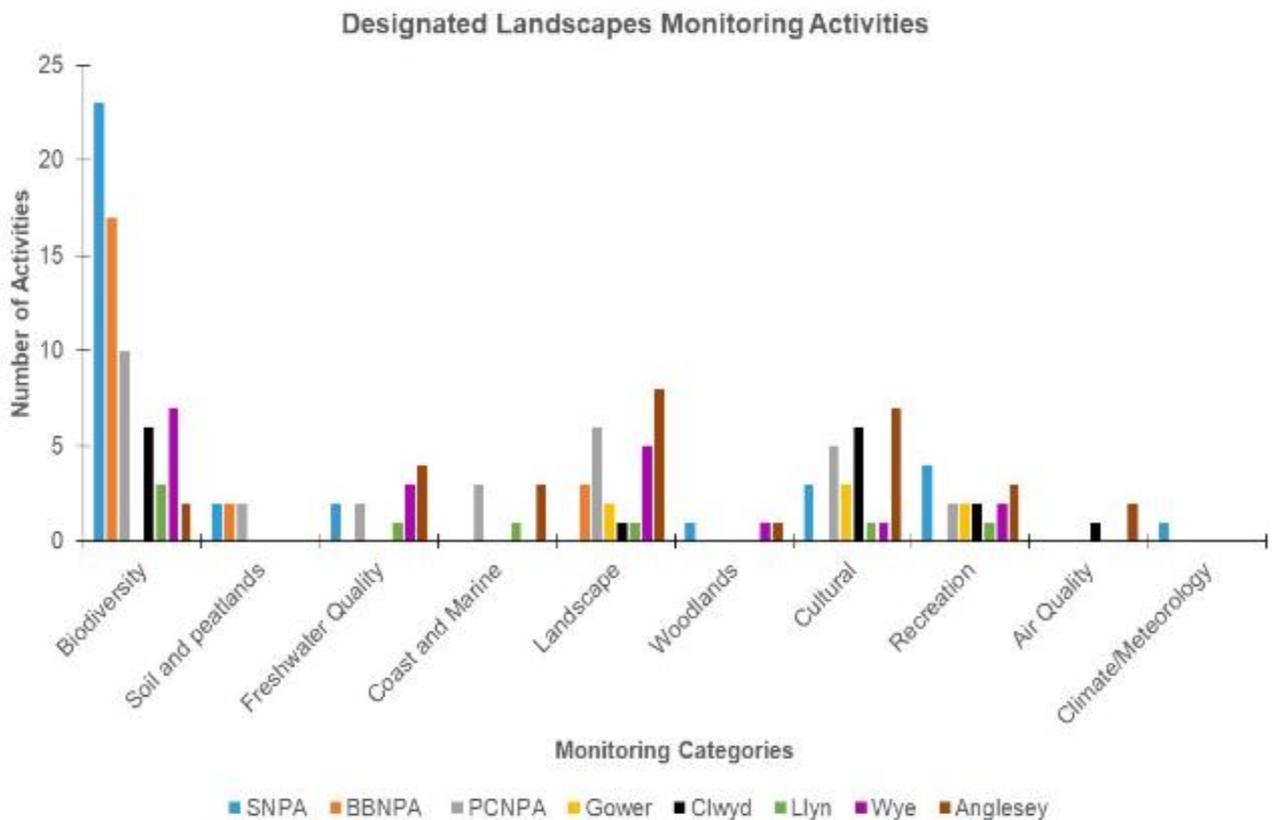

Figure 2-1: Number of monitoring activities by top level category reported by the DL Bodies.

2.2 Observed Trends

Initial observations highlight four main monitoring areas that are more prominent than others;

1. Biodiversity
2. Landscape
3. Cultural
4. Recreation

The majority of DL Bodies monitor each of these areas to some extent or are aware of monitoring by other organisations within their designations. See Figure 2-2 to 2-5. Each is examined in more detail below.

Appendix 7.2 shows a summary of data collectors, data holders, data reporters and date of data collection of the stated monitoring activities of the DL authorities.

2.2.1 Biodiversity

Figure 2-1 identifies biodiversity as the most frequent category of current and historical monitoring within the majority of the DL Bodies, particularly that of the National Parks (NPs). The majority of the biodiversity monitoring schemes are focused on mammal, vegetation, birds, pollinators and invasive species.

Biodiversity monitoring activity is generally higher within the NPs than the AONBs with mammal and vegetation monitoring occurring more often.

DL Bodies that have significant coastal zones i.e. PCNPA, Llŷn AONB and Anglesey AONB, have coastal and marine monitoring not present in inland designations.
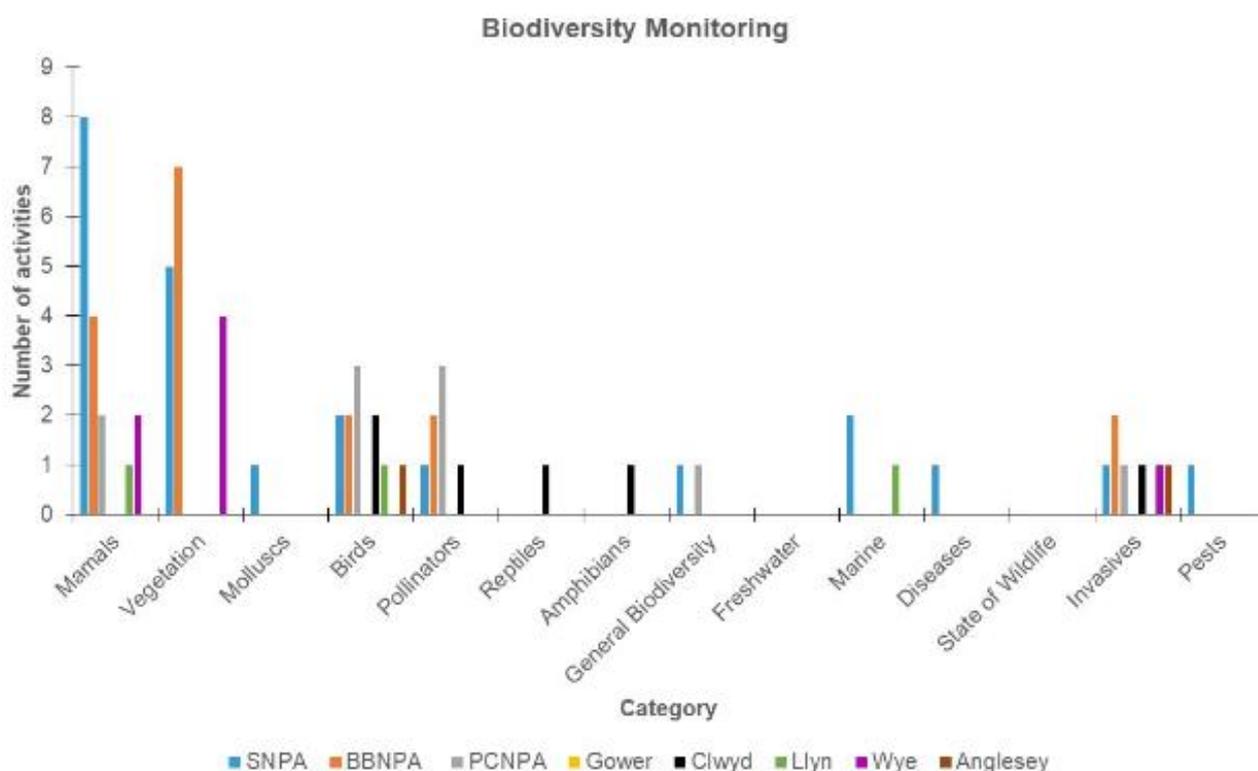
Figure 2-2: Number of biodiversity monitoring activities reported by the DL Bodies

2.2.2 Landscape

Monitoring of landscape feature monitoring is more prevalent within the AONBs compared to NPs in terms of number of categories. This is primarily focused on Site of Special Scientific Interest/ Special Areas of Conservation (SSSI/SAC) with 5 of the 8 DL Bodies having at least one monitoring scheme associated with this landscape type. Footpath condition assessment is also a frequently reported activity; with four monitoring schemes across the DLs. Monitoring of the overall state of the DL was reported for both Anglesey and Gower.
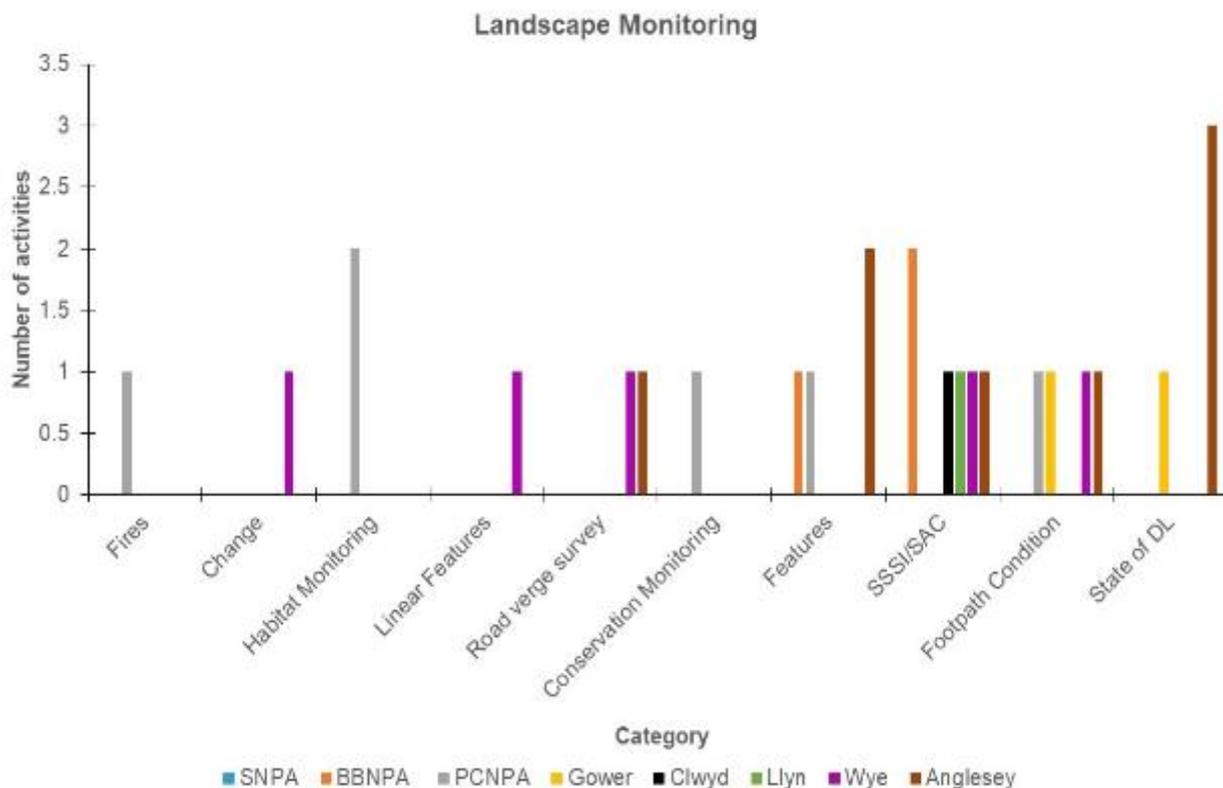
Figure 2-3: Number of landscape monitoring activities reported by the DL Bodies.

2.2.3 Cultural

Cultural monitoring can be seen as equally monitored within NPs and AONBs.

Dark/Night Skies quality appears as a priority for 6 of the 8 DL Bodies. International Dark-Sky Association, International Dark Sky Reserve accreditation has been achieved by BBNPA (in 2013) and SNPA (in 2015). Monitoring of historic environment features (HEFs) is in place for over half of the DL Bodies.
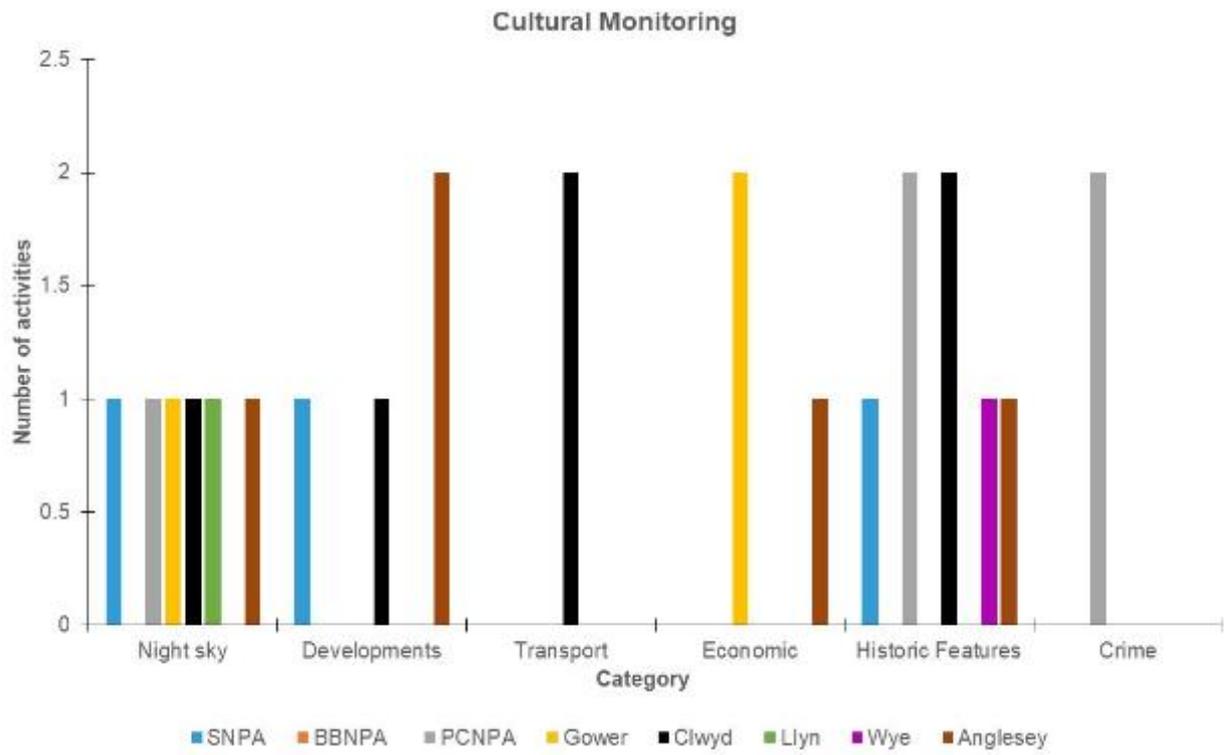
Figure 2-4: Number of cultural monitoring activities reported by the DL Bodies.

2.2.4 Recreation

Recreation monitoring is dominated by visitor number and path user records and is present in 7 of the 8 DLs. Monitoring of retail activities, visitor and resident surveys have also been undertaken by some DL Bodies.
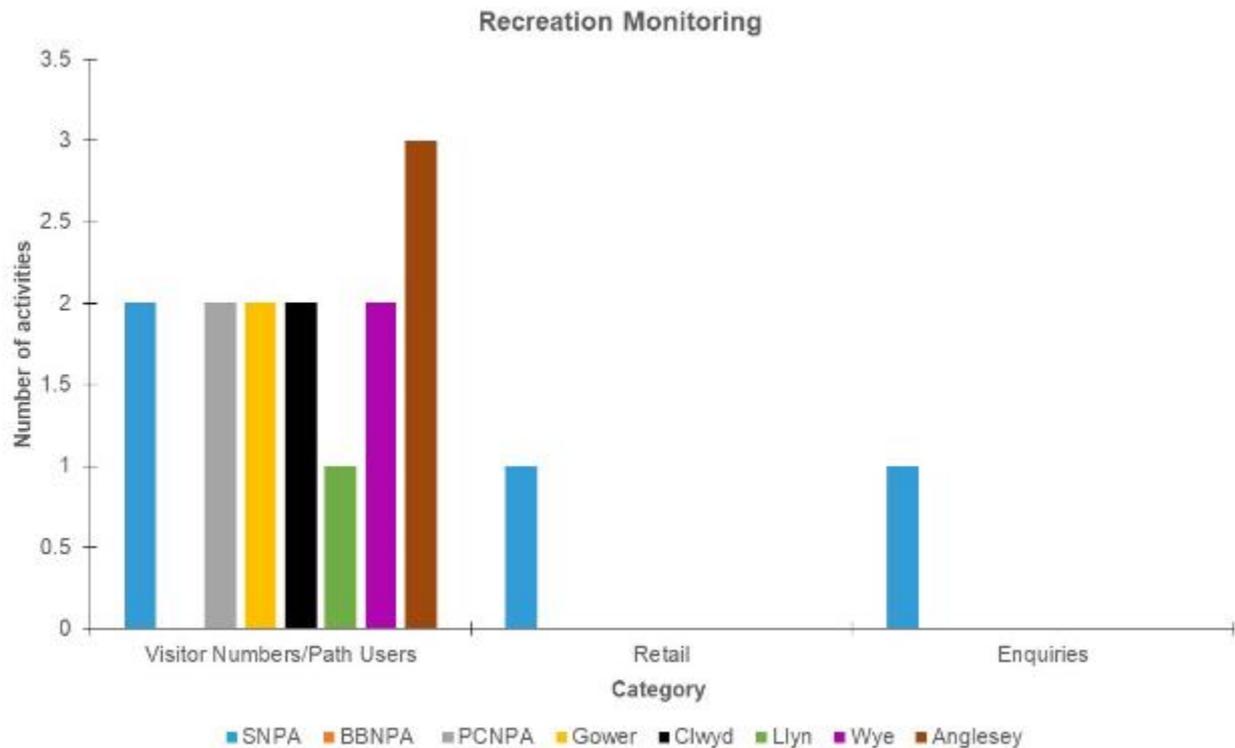
Figure 2-5: Number of recreation monitoring activities reported by the DL Bodies.

2.2.5 Other Monitoring Activities

Other monitoring programmes that were reported:

- **Soil and peatlands**: Only stated as taking place within the NPs.

- **Freshwater Quality:** Monitoring activity is relatively high in DL Bodies where it is being monitored but is restricted to only 5 DL Bodies overall.

- **Coast and marine:** Only evident in 3 DL Bodies with significant coastal zones.

- **Woodlands:** Monitoring is low with just 3 monitoring schemes stated across the 8 DL Bodies.

- **Air quality:** Low monitoring with just 3 schemes in 2 DL Bodies. Those reporting activity are embedded in national networks where the work is delivered by specialist organisations.

- **Climate/Meteorology:** One scheme within SNP that has a dedicated Meteorological Station.

Several reporters also noted that universities and NGO's are doing much monitoring within the DL areas. For example, freshwater quality, bird tagging, bat surveys and other annual surveys.

2.3 Key Observations

The key observations assessed by the ERAMMP DL Monitoring and Liaison Officers from the information provided in the interviews are:

KO1 - Biodiversity monitoring activity is the most common monitoring activity reported by DL Bodies. The most commonly monitored biodiversity indicators are vegetation, mammals (with birds most measured within this category), pollinators and invasive species.

KO2 - Beyond biodiversity monitoring activities, there is variable low level coverage reported for other monitoring categories across both NPs and AONBs.

KO3 - Reporting of monitoring of parameters which require more investment in instrument and analytical methodologies (e.g. air quality) are significantly lower than that requiring specialist taxonomic and survey skills only (e.g. biodiversity and landscape features).

3 STAGE 2 - GLASTIR OUTCOMES & GMEP DATA

3.1 Overview of GMEP Data

The second stage of the structured interviews was to gain insight into each of the DL body's data extraction and analysis preferences from the GMEP data archive and likely interest in ERAMMP survey data.

This was done to prioritise and disseminate data where appropriate. The GMEP data available for extraction and analysis (Table 3-1) relate to the primary outcomes of the Glastir sustainable land management scheme:

- Biodiversity
- Climate Change mitigation
- Soil and Water Management
- Landscape, Historic Environment and Access
- Woodland creation and management

Table 3-1: Mapping available GMEP data to Glastir outcome

Glastir Outcome	Data collected in GMEP
Biodiversity	Plant diversity
	Birds
	Pollinators
	Floral abundance
	Linear features condition
Climate Change mitigation	Soil carbon
Soil and Water Management	Headwater stream habitat quality (River Habitat Survey)
	Headwater stream macroinvertebrate community
	Pond quality
Landscape, Historic Environment and Access	Condition assessment of Historic Environment Features
	Visual Quality Index
	Presence and length of Public Rights of Way, including open access areas and beaches.
Woodland creation and management	Woodland ground flora biodiversity

It is noted that many of these outcomes have sub divisions based on the data archive. However, it was decided that a DL body with an interest in plant diversity (for example) would also be interested in data for biodiversity in its entirety as it is a sub division of the outcome.

This has regrettably caused some confusion during the allocation of preferences [during the interviews], with some DL body representatives basing decisions on the outcomes (as intended) and some basing decisions on the individually collected data. Even so, great care has been taken to fairly represent each DL body's preferences in this report. These have been compiled and are presented in Figure 3-2 and Figure 3-3.

3.2 Coverage of DLs by GMEP/ERAMMP Survey

Survey locations for both GMEP and ERAMMP were selected using an approach that ensured good coverage of all major land classes which are defined by characteristics such as climate, geology and topography. This approach ensured the survey captures a representative set of the major farm, woodland and land managed for habitat in Wales, as these land uses are closely linked to these fundamental landscape characteristics.

As part of the ERAMMP National Field Survey, a significant number of the original 300 GMEP 1km squares (Figure 3-1) will be re-surveyed, both within and outside of DLs, in 2021 and 2022.
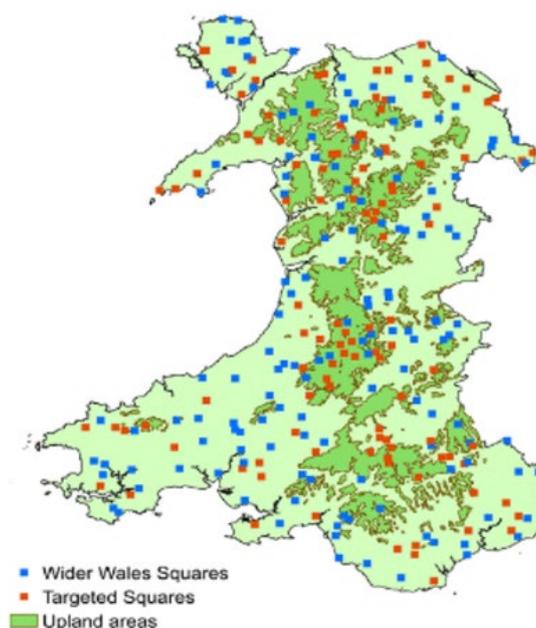
Figure 3-1: The approximate location of each GMEP Survey Square.

The number of squares and area in the original GMEP survey within each DL body can be seen in Table 3-1a. Approximately 38% of the squares in the GMEP survey are within DLs and 47% of the reduced ERAMMP survey planned as shown in Table 3-1b.

Table 3-2a: Number and area of the 300 GMEP Survey 1km squares within, or partially within, each Designated Landscape from 2013-2016 and the area and percentage of Designated Landscape in the GMEP survey.

Designated Landscape	DL type	No. of squares in DL	% of squares in DL	Area of DL in survey (ha)	% of DL in survey
Snowdonia	NP	57	19.00	5349	2.50
Brecon Beacons	NP	26	8.67	2411	1.79
Pembrokeshire Coast	NP	8	2.67	727	1.18
Ynys mon/Anglesey	AONB	11	3.67	851	4.51
Llŷn	AONB	6	2.00	411	2.67
Clwydian Range and Dee Valley	AONB	4	1.33	328	0.84
Gower	AONB	2	0.67	200	1.33
Wye valley	AONB	2	0.67	167	1.44

Table 3-3b: Number and area of the 130 ERAMMP Survey 1km squares planned for 2021-2022 within, or partially within, each Designated Landscape and the area and percentage of Designated Landscape in the ERAMMP survey.

Designated Landscape	DL type	No. of squares in DL	% of squares in DL	Area of DL in survey (ha)	% of DL in survey
Snowdonia	NP	34	26.15	3184	1.49
Brecon Beacons	NP	12	9.23	1127	0.84
Pembrokeshire Coast	NP	5	3.85	484	0.79
Ynys mon/Anglesey	AONB	6	4.62	411	2.67
Llŷn	AONB	4	3.08	328	0.84
Clwydian Range and Dee Valley	AONB	4	3.08	350	1.85
Gower	AONB	1	0.77	100	0.66
Wye valley	AONB	0	0	0	0.00

3.3 Method of Calculation – Collective Preference

The collective preference reported by all the DL Bodies was calculated using a weighting system in order to fairly represent each body's preferred five GMEP data categories. These weightings were allocated on a scale with 1st choice given a weighting of 50 declining to a weighting of 10 for 5th choice.

These weightings were tallied and the preference with the highest number was denoted the collective preference of the DL Bodies. An example of this can be seen in Appendix 6.5.
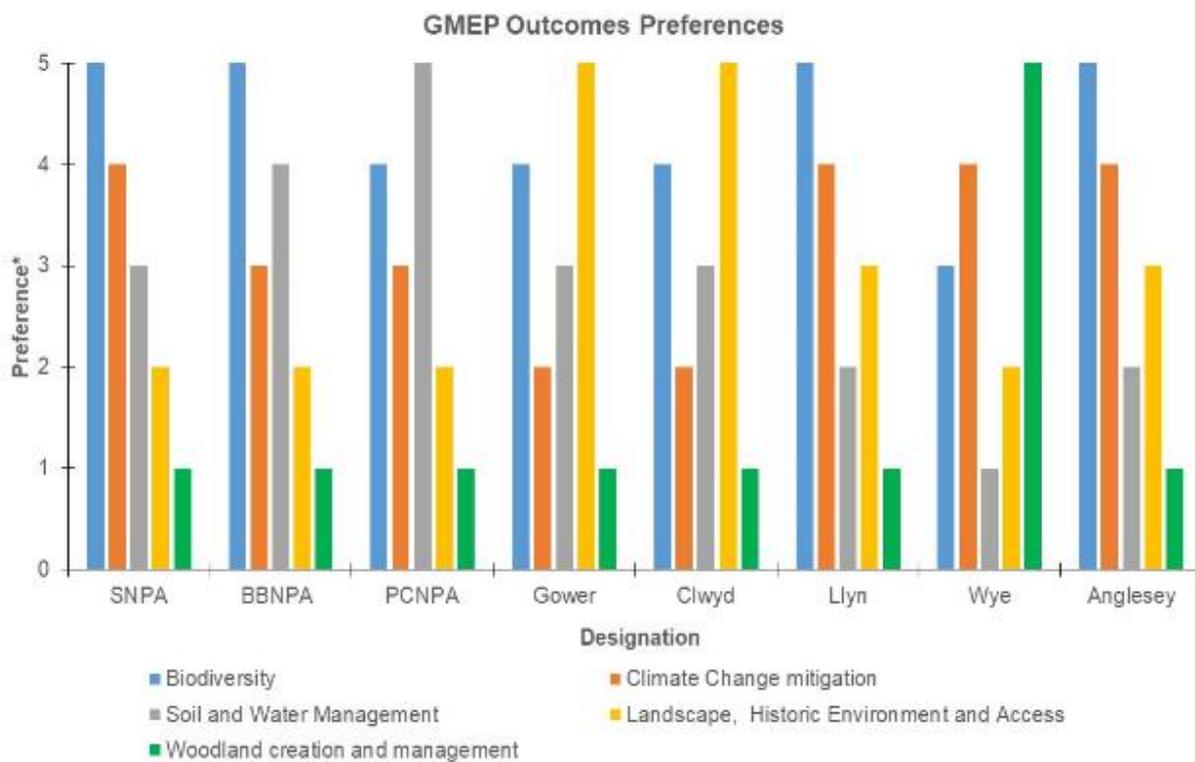
Figure 3-2: GMEP data category preferences reported by the 8 Designated landscape bodies.
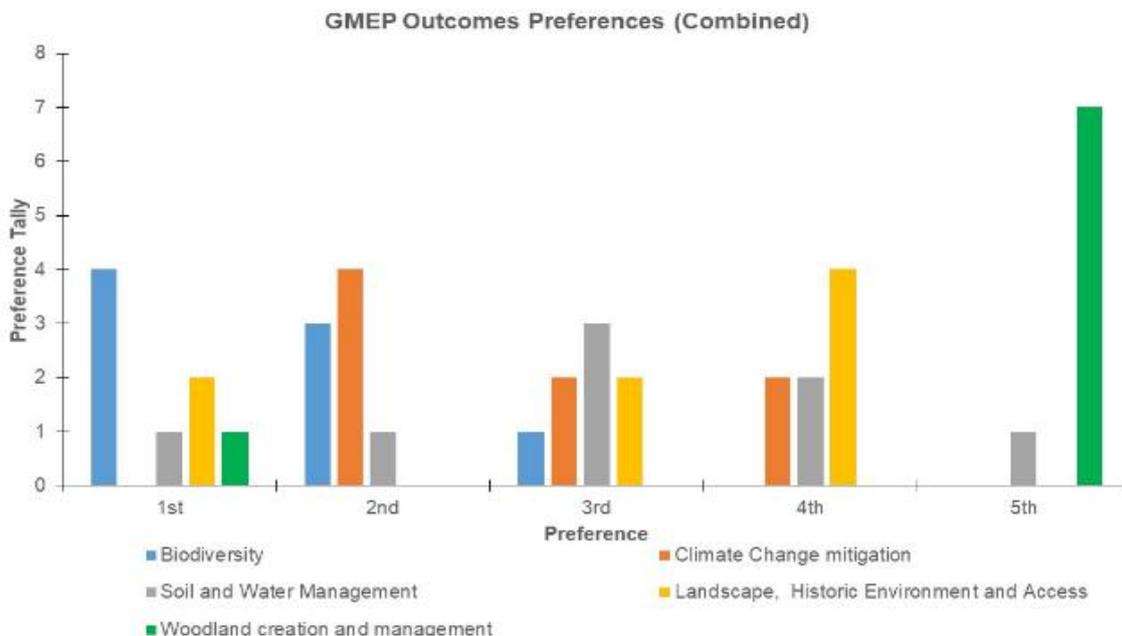
Figure 3-3: Weighted and combined GMEP data category preferences reported by the Designated landscape bodies.

This method was chosen in order to equally represent the varying choices of the DL Bodies as a whole, for example it takes into consideration that while the first choice for all DL Bodies may vary, the second choice may be consistent throughout and therefore it is fairly represented in the final outcome.

3.4 Observed Trends

The DL Bodies' collective preference of data extraction and analysis relating to the GMEP data categories was calculated and is presented in Figure 3-3 and is as follows:

1st   Biodiversity

2nd   Climate Change Mitigation

3rd   Landscape, Historic Environment and Access

4th   Soil and Water Management

5th   Woodland Creation and Management

Biodiversity is consistently the highest preference data category with it being either the first or second highest priority for all but one of the DL Bodies (of which it was placed 3rd).
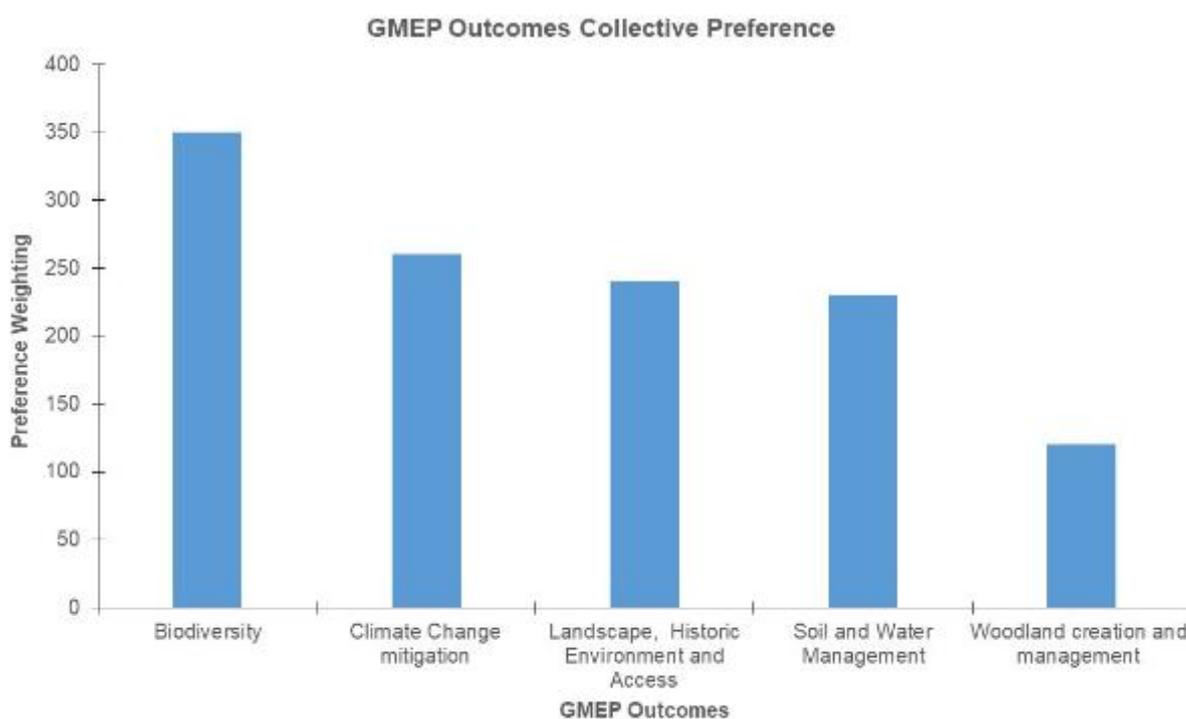
Figure 3-4: Collective preferences reported by the 8 Welsh Designated landscape bodies for data extraction and analysis in relation to the five GMEP data categories.

Even though Climate Change Mitigation, Landscape, Historic Environment and Access and Soil and Water Management are all close in terms of collective preference there was a definite preference for Climate Change Mitigation as it was placed as 2nd preference by half of the DL Bodies and in either 3rd or 4th by the remainder.

The spread of preference votes for Landscape, Historic Environment and Access and Soil and Water Management are more varied. Although Landscape, Historic Environment and Access was placed as 4th preference by half of the DL Bodies, its inclusion as 1st by two others means that collectively it is placed just ahead of Soil and Water Management.

It is clear that Woodland Creation and Management is collectively the lowest priority outcome as it was identified as the least preferred outcome by 7 of the 8 DL Bodies.

3.5 Key Observation

Priorities reported by the DL Bodies for data extraction and analysis from the GMEP archive are as follows:

KO4 - Data relating to the GMEP biodiversity data category is the collective favourite reported preference for targeted data extraction and analysis. Data relating to Woodland Creation and Management being collectively the least important priority for the DL Bodies reported.

The lower priority outcomes indicated by the DL Bodies were not reported as unimportant, but are what each designation sees as its lowest current data extraction and analysis priority.

4 STAGE 3 - MODELLING SCENARIOS

4.1 Overview of Modelling Scenarios

Quantifying the top four preferred scenarios from forthcoming modelling under ERAMMP was the final stage of the structured interviews. This was to inform the most sought after modelling information for the near future relating to:

- Options for future woodland planting and their impacts
- Management options for improving water quality
- Management options in the coastal zone
- New agricultural scheme testing

Details of the possible modelling scenarios as presented during the interviews are in Table 4-1.

Table 4-1: Possible future modelling scenarios as presented during the interviews

Modelling Scenario	Details
Woodland (different special options, benefits)	To explore which tree species would be best suited for the different soil types and climate conditions within the NPs and AONBs. The potential carbon and climate mitigation that could result can then be extracted and by linking to the GMEP Visual Quality Index such that the impact on landscape aesthetics could also be explored.
Water quality (Brexit modelling for water quality)	To better understand the potential outcomes of different Brexit deals and / or different management being considered for inclusion in the new Farm Sustainability Scheme with respect to water quality across the NPs and AONBs.
Coastal management (paths/biodiversity)	To explore the potential outcomes of either Brexit trade deals and / or different management interventions being considered for inclusion in the new Farm Sustainability Scheme on coastal systems including visual quality, recreation and land-sea transfers of contaminants e.g. nutrients and pathogens to bathing waters.
New agriculture scheme potential outcomes	To explore the potential outcomes of the management interventions being considered for inclusion in the new Farm Sustainability Scheme with respect to issues of interest e.g. water quality, climate mitigation, public health/air quality, recreation, bird diversity and abundance etc.

4.2 Method of Calculation – Collective Preference

The method used here is the same as that used for the calculation in Section 3.2 (p.15). The rationale is also consistent, however here weightings were on a scale from 1st choice which was given a weighting of 40 to a weighting of 10 for a 4th choice.

An example of this can be seen in Appendix 6.6.

4.3 Observed Trends
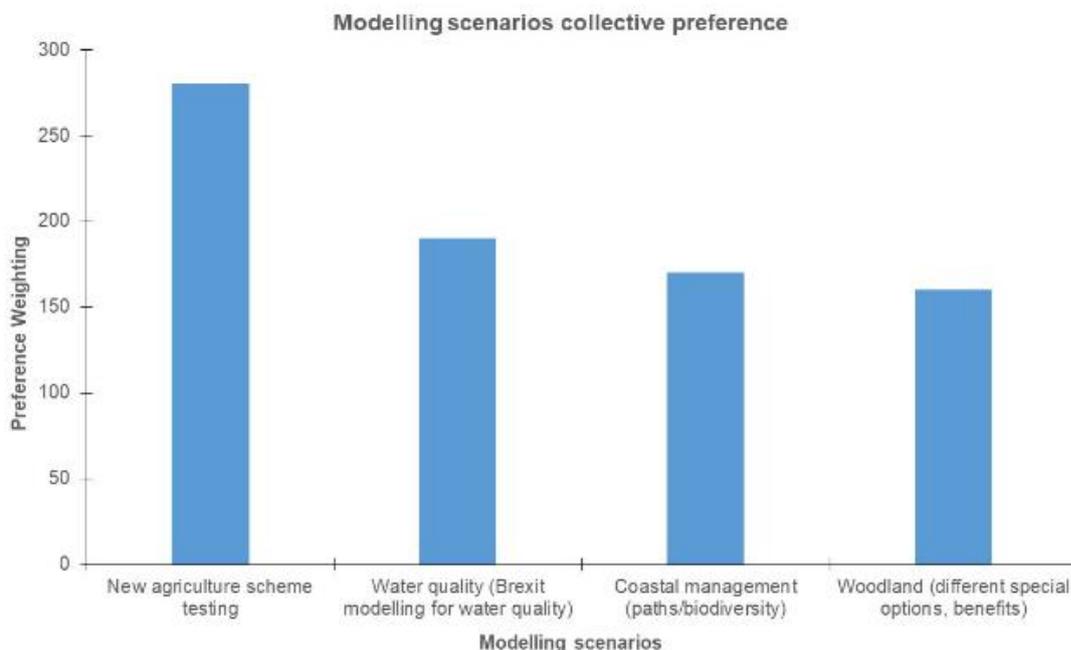
Figure 4-1: Collective Modelling Scenarios preferences reported by the 8 Welsh Designated landscape bodies.

The DL Bodies' collective reported preference of Future Modelling Scenarios was calculated and is presented in Figure 4-1.
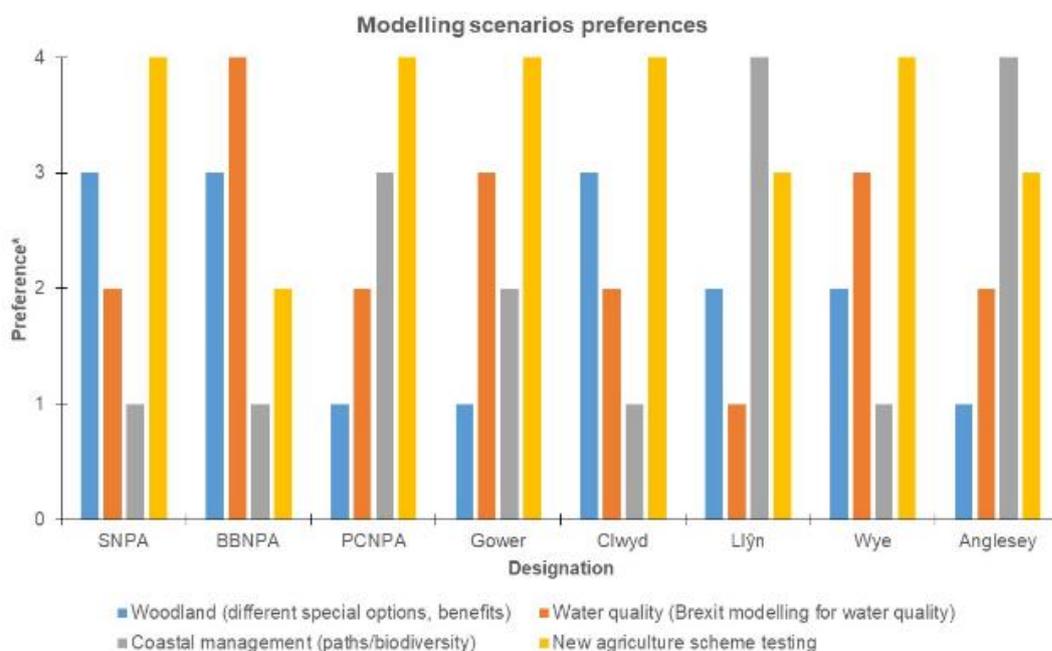
Figure 4-2: Modelling scenarios preferences reported by the 8 Welsh Designated landscape bodies. (4 being first choice, 1 being last choice).

A breakdown of each DL Body's reported individual modelling scenario preferences can be seen in Figure 4-2 and Figure 4-3.

GMEP Outcomes Preferences (Combined)
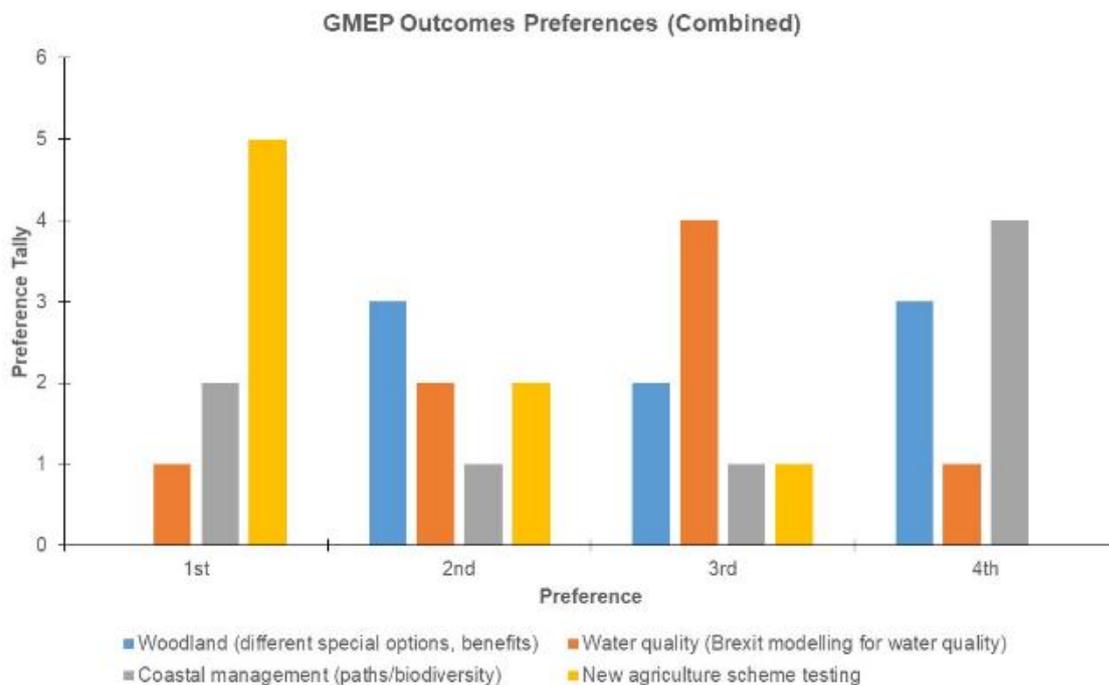
Figure 4-3: Modelling Scenarios preferences reported by the 8 Welsh Designated landscape bodies.

New agricultural scheme testing has emerged as the overwhelming favourite modelling scenario preference, receiving 5 1st choice votes, 2 2nd choices and 1 3rd choice.

Again, woodlands have been given the lowest priority. However, its position is only slightly lower than that of coastal management, but this is a feature that only 3 of the DL Bodies have cited as a key priority. Water quality enjoys a comfortable margin above the bottom two preference modelling scenarios although it is far behind 'agriculture scheme testing'.

4.4 Key Observations

The key observations of modelling scenario preferences of the Welsh DL Bodies are:

KO5 - Targeted modelling outputs supporting 'agriculture scheme testing' (i.e., potential outcomes/effects) is the collective preference, followed as 2nd preference by water quality impacts modelling. Woodlands and coastal issues are both lesser preferences.

5 SUMMARY

This report has identified that monitoring of numerous parameters have been and are ongoing within the eight Designated Landscapes in Wales.

Biodiversity monitoring activities are generally higher within the NPs than the AONBs with the spread of monitoring activities in other categories relatively equal between NPs and AONBs.

Monitoring of parameters which require more technical methodologies are significantly lower than that requiring no instrumentation or specialist analytical support.

With respect to GMEP data related to different environmental, landscape and cultural outcomes, access and reporting of Biodiversity data is the overwhelming first preference, with Woodland Creation and Management the least important priority of the DL Bodies collectively.

With respect to the ERAMMP Modelling Scenarios, preferences show that agriculture scheme options is the first choice preference. Woodlands and coastal issues are both low in terms of preference but indicate a specialisation within different DL Bodies.

Key observations are:

KO1 - Biodiversity monitoring activity is the most common monitoring activity reported by DL Bodies. The most commonly monitored biodiversity indicators are vegetation, mammals (with birds most measured within this category), pollinators and invasive species.

KO2 - Beyond biodiversity monitoring activities, there is variable low level coverage reported for other monitoring categories across both NPs and AONBs..

KO3 - Reporting of monitoring of parameters which require more investment in instrument and analytical methodologies (e.g. air quality) are significantly lower than that requiring specialist taxonomic and survey skills only (e.g. biodiversity and landscape features).

KO4 - Data relating to the GMEP biodiversity data category is the collective favourite reported preference for targeted data extraction and analysis. Data relating to Woodland Creation and Management being collectively the least important priority for the DL Bodies reported.

KO5 - Targeted modelling outputs supporting 'agriculture scheme testing' (i.e., potential outcomes/effects) is the collective preference, followed as 2nd preference by water quality impacts modelling. Woodlands and coastal issues are both lesser preferences.

6 APPENDICES

6.1 Monitoring Categories and Sub Categories

Monitoring Category	Sub Category
Biodiversity	Mammals Vegetation Molluscs Birds Pollinators Reptiles Amphibians General Biodiversity Freshwater Marine Diseases State of Wildlife Invasive Pests
Soil and Peatlands	Soil Peat Erosion
Freshwater Quality	Freshwater Quality
Coast and Marine	Coast and Marine
Landscape	Fires Change Habitat Monitoring Linear Features Road verge Survey Conservation Monitoring Features SSSI/SAC Footpath Condition State of the DL
Woodlands	Woodlands
Cultural	Night Sky Developments Transport Economic Historical Features Welsh Language Crime
Recreation	Visitor Numbers/Path users Retail Enquiries
Air Quality	Air Quality
Climate/Meteorology	Climate/Meteorology

6.2 Data Summaries

A summary of data collectors, data holders, data reporters and date of data collection activities of the monitoring activities reported by the DLs.

Data Reporter

Data Availability

Monitoring Activities by Year
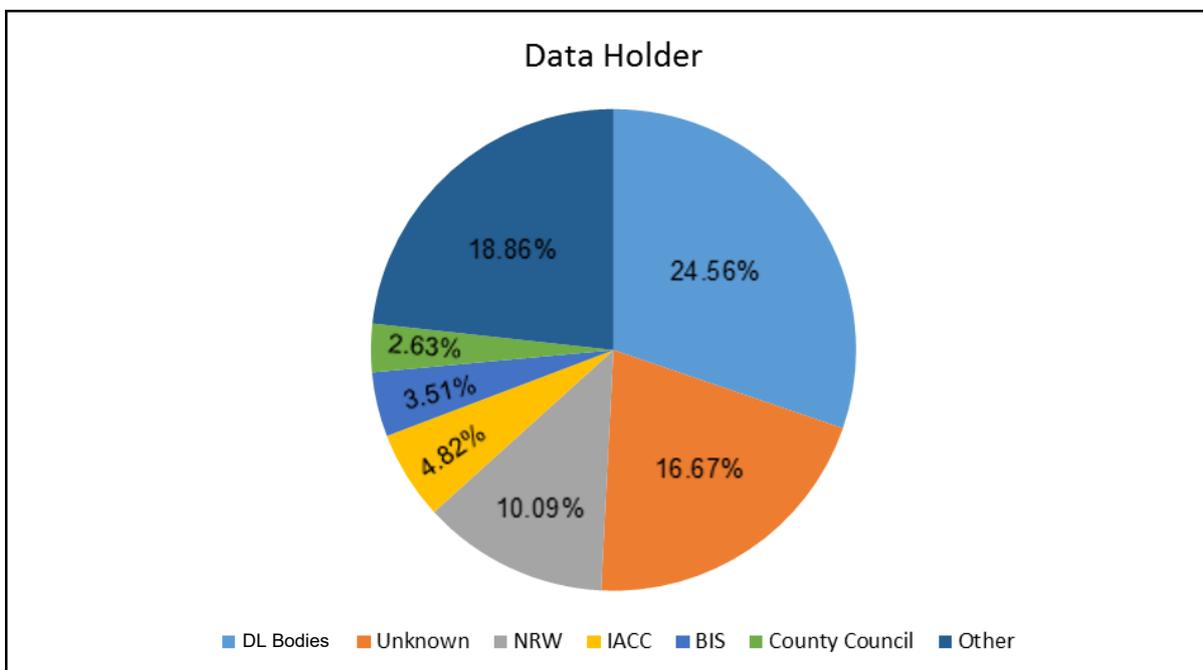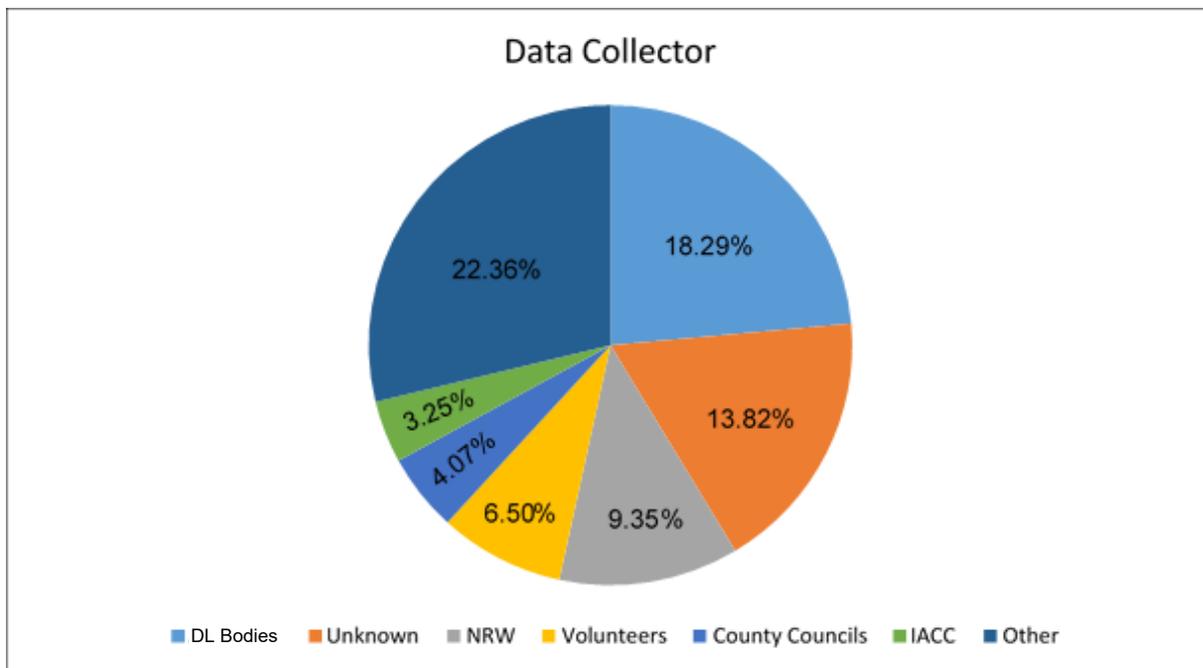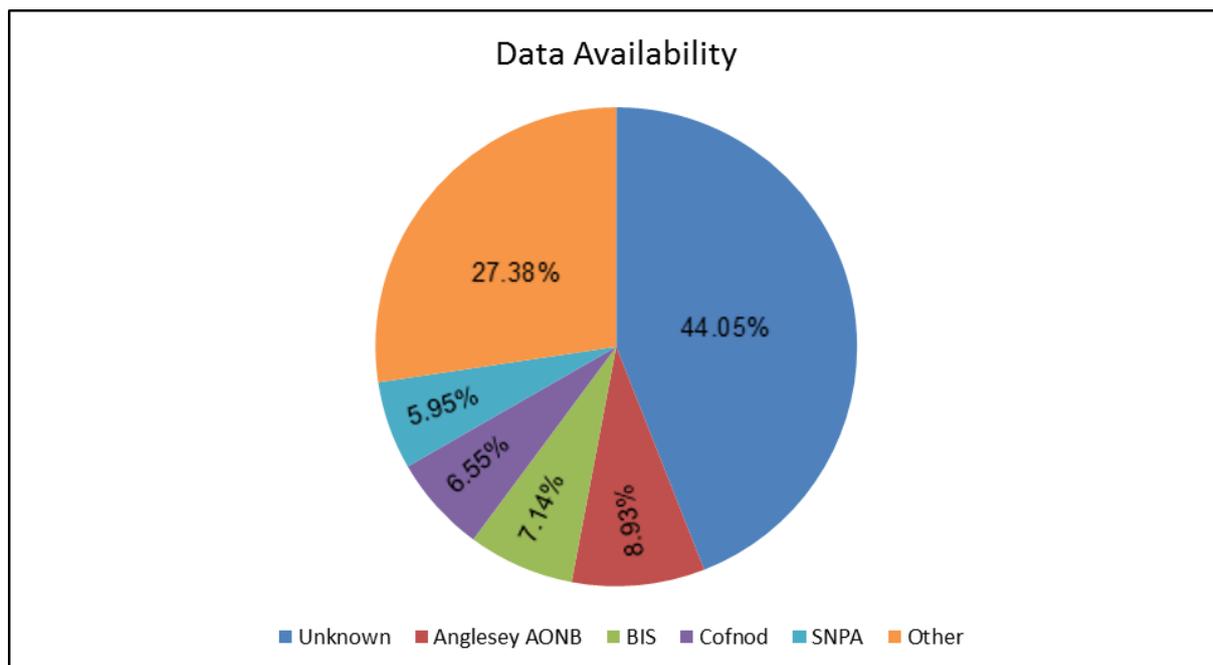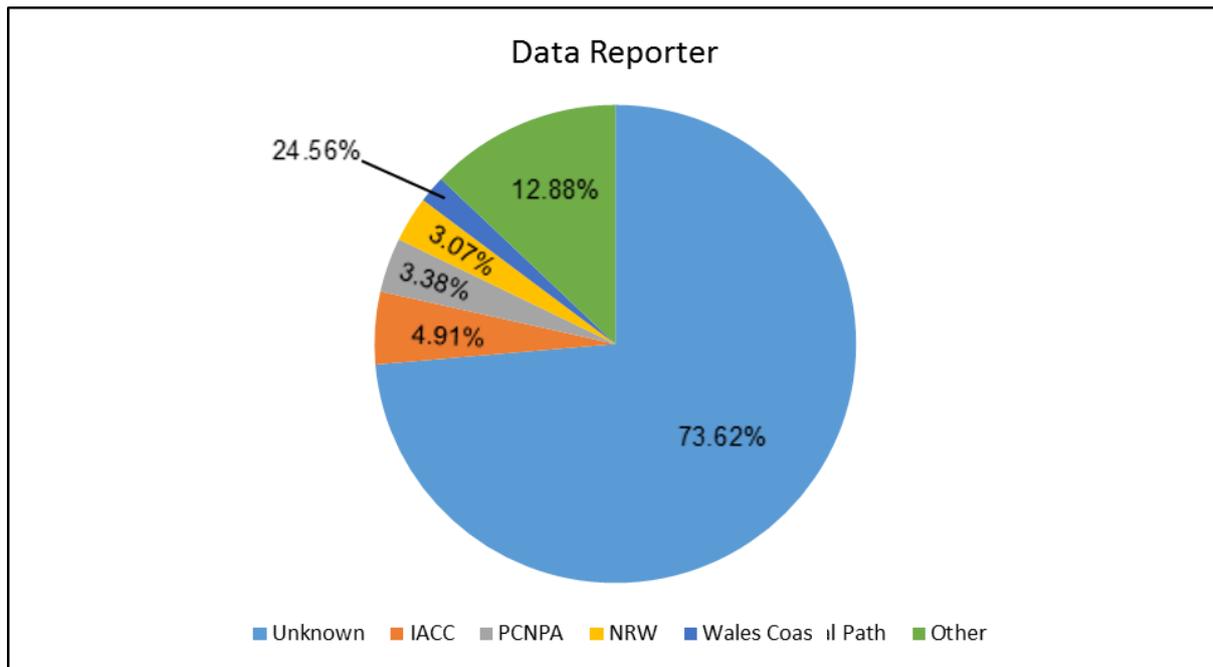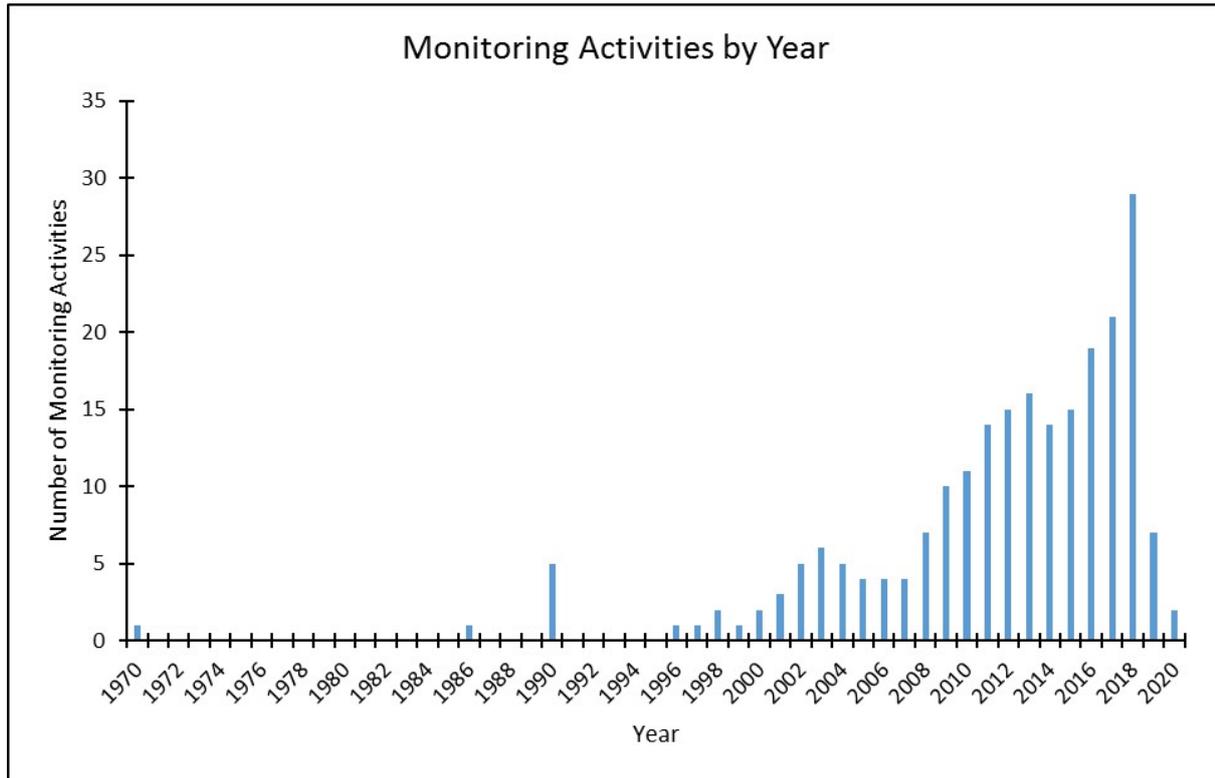
6.3 Questionnaire *Pro Forma* Blank

Areas of Outstanding Natural Beauty and National Parks of Wales Monitoring Review

Intro 1:

My name is _____ and I'm the ERAMMP Designated Landscape Monitoring and Liaison Officer, based at the Snowdonia National Park Authority. This roll aims to secure a coherent approach to monitoring and liaison with ERAMMP partners and landowners throughout the Welsh National Parks and Areas of Outstanding Natural Beauty.

Intro 2: Background

The objective of forming the DLMG is to explore possible collaborative working opportunities involving monitoring and modelling across the DLs (NP & AONBs) and has come as a request from the Minister for the Environment. The Minister has requested that this review is carried out in order to establish what evidence is collected within DLs in Wales, with relation to the ERAMMP programme, and if it's done in a collaborative and joined up manner.

These interviews demonstrates that the ERAMMP programme is invested in this review and is eager for this collaboration to be successful.

Intro 3: Interview content

This interview will take approximately 2 hours to complete and will involve 3 sections;

Monitoring activities: Why, what, when, how table

Prioritising GMEP data extraction for AONB and National Parks

Prioritise Modelling Scenarios for AONB and National Parks

Intro 4: Outputs

The responses from the 8 DLs will feed into a report reviewing monitoring across the designations. The review will be used to recognise evidence gaps within DLs and to prioritise possible future collaborative work. This review will be presented to Welsh Government.

Questionnaire

Question 1: What is the Name of your designation?

Question 2: What is your role and responsibilities?

Question 3: Fill in why, what, when, how table with questioner.

Question 4: In the table of GMEP outcomes and collected data, prioritise your preferred data extraction for DLs in the third column.

GMEP Outcome	Data collected	Priority Score
Biodiversity	Plant diversity	
Biodiversity	Birds	
Biodiversity	Pollinators	
Biodiversity	Habitat areas, linear features and point features; diversity and stock	
Biodiversity	Soil biodiversity	
Climate Change mitigation	Change in soil carbon	
Soil and Water Management	Soil status as indicated by soil physical and chemical properties	
Soil and Water Management	Soil status as indicated by biological measurements	
Soil and Water Management	Stream water and pond water quality as indicated by conductivity and pH, alkalinity, soluble reactive phosphorus and total oxidisable nitrogen	
Soil and Water Management	River Habitat Survey- assessing habitat character and quality of rivers based on physical characteristics	
Soil and Water Management	Pond quality assessment as indicated by water quality, pond characteristics, macroinvertebrate community, macrophyte cover and abundance	
Landscape, Historic Environment and Access	Condition assessment of Historic Environment Features	
Landscape, Historic Environment and Access	Range of habitat and structural data built in to detailed 3D viewsheds for 1km sites and surrounding 3 x 3km	
Landscape, Historic Environment and Access	Presence and length of Public Rights of Way (PROW), including open access areas and beaches.	
Woodland creation and management	Woodland mapping	
Woodland creation and management	Woodland ground flora	

Question 5: Prioritise your top four modelling scenarios for AONB and National Parks

Modelling Scenario	Details	Designation Priority Score
Woodland (different special options, benefits)	To explore which tree species would be best suited for the different soil types and climate conditions within the NPs and AONBs. The potential carbon and climate mitigation that could result can then be extracted and by linking to the GMEP Visual Quality Index such that the impact on landscape aesthetics could also be explored.	
Water quality (Brexit modelling for water quality)	To better understand the potential outcomes of different Brexit deals and / or different management being considered for inclusion in the new Farm Sustainability Scheme with respect to water quality across the NPs and AONBs.	
Coastal management (paths/biodiversity)	To explore the potential outcomes of either Brexit trade deals and / or different management interventions being considered for inclusion in the new Farm Sustainability Scheme on coastal systems including visual quality, recreation and land-sea transfers of contaminants e.g. nutrients and pathogens to bathing waters.	
New agriculture scheme testing	To explore the potential outcomes of the management interventions being considered for inclusion in the new Farm Sustainability Scheme with respect to issues of interest e.g. water quality, climate mitigation, public health/air quality, recreation, bird diversity and abundance etc.	

Question 6: Is there anything else you would like to add?

6.4 The What, Why, How, When, Who Table

Number	Designation	What?	Why?	How?	When?	Who?	Data Holder	Data Availability	Reporting	Notes
1	Snowdonia National NPA	Number of footpath users	Unknown	People counters	Unknown	SNPA staff	SNPA	Unknown	Unknown	Unknown
2	Snowdonia National NPA	Dark sky quality	Reporting requirement of the IDA Dark Skies Reserve designation	Dark skies measurements taken in survey locations across the Park	2017, 2018, 2019	Dark Skies Officer and SNPA staff	SNPA	SNPA	Unknown	SNPA has an in-house Dark Skies Officer
3	Snowdonia National NPA	Enquiries to Information Centres (Aberdyfi, Beddgelert, Betws y Coed)	STEAM reports (Gwynedd & Conwy) and for monitoring patterns for forward planning	People counter on entrances, daily log of enquiries by post, e-mail, phone calls	Collected Daily - Weekly figures back to 2001	Information Centre Staff - Collated by Engagement Department Admin	SNPA	Yes	Unknown	Historically data was kept for Visit Wales TIC Network. This has now disbanded but data still collected.
4	Snowdonia National NPA	Peat depth	National soil carbon stocks; National unified peat map	Actual peat depth measurements (Welsh Peatlands standardised monitoring protocol)	Spring/Summer 2018, 2019, 2020	Welsh Peatlands Sustainable Management Scheme Project Officer (North Wales) & partners	SNPA	Data management plan in development	Welsh Peatlands portal in development	Part of Welsh Peatlands Sustainable Management Scheme (Wales-wide partnership project led by SNPA)
5	Snowdonia National NPA	Peatland condition	To enable national reporting of state of Welsh peatlands; UK emissions inventory	Welsh Peatlands standardised monitoring protocol	Spring/Summer 2018, 2019, 2020	Welsh Peatlands Sustainable Management Scheme Project Officer (North Wales) & partners	SNPA	Data management plan in development	Welsh Peatlands portal in development	Part of Welsh Peatlands Sustainable Management Scheme (Wales-wide partnership project led by SNPA)
6	Snowdonia National NPA	Water quality	Unknown	Unknown	Unknown	SNPA	SNPA	Cofnod	Unknown	Historical data on water quality of lakes done in-house
7	Snowdonia National NPA	At minute time-scales, meteorological conditions,	Freshwaters are extremely vulnerable to a wide range of stressors including climate	Buoy at Llyn Tegid taking measurements	Unknown	UKLEON	UKLEON	ECN data are available in two main forms: summary	Unknown	Unknown
8	Snowdonia National NPA	Glutinous snail	SSSI monitoring	Standardise methodology	Unknown	NRW	NRW	Unknown	Unknown	Unknown
9	Snowdonia National NPA	Butterflies	National schemes	Standardise methodology	Unknown	Butterfly Conservation	Butterfly	Unknown	Unknown	Unknown
10	Snowdonia National NPA	Water Vole	National Water Vole Monitoring Programme	Standardise methodology	Unknown	SNPA staff and volunteers	Peoples Trust for Endangered Spices	Unknown	Unknown	Done at the Mignaint
11	Snowdonia National NPA	Goats counts	Monitor impact on vegetation and to control measures	Unknown	1980s, 1990s, 2000s, 2010s	SNPA staff and volunteers	Grwp Geifr	Cofnod	Unknown	Started in the 1980s in an ad-hock manner and became more recent in the 1990s.
12	Snowdonia National NPA	Ticks	Tick surveillance scheme. To monitor how many of the species carry the bacteria that causes Lyme disease	Species collected and sent to Public Health England	2012	SNPA staff	SNPA	https://nbnatlas.org/	Unknown	PHE national TRS and TSS data which dates from 2005 to 2015. Biological Records Centre (BRC) tick distribution data which dates from early 1890's to
13	Snowdonia National NPA	Invasive species: Rhododendron, Japanese knotweed, Himalayan balsam, giant hogweed. Targeted	Habitat management – via current SNPA LIFE project	Sites surveys	1986	SNPA staff	SNPA	Cofnod	Unknown	Historic data
14	Snowdonia National NPA	Woodland and woody linear	Monitor capital works	Sites surveys	Unknown	SNPA staff	SNPA	SNPA	Unknown	Unknown
15	Snowdonia National NPA	Retail Report	Unknown	Unknown	2016	SNPA staff	SNPA	SNPA	http://www.snowdonia.gov.wales/__data/assets/pdf_file/0005/975479/Retail-Background-Paper-2017-	This review was done in conjunction with the SNPA Local Development Plan and focused on the towns of Harlech, Betws y Coed, Dolgellau, Y Bala ag Aberdyfi.
16	Snowdonia National NPA	Condition of traditional buildings	Unknown	Unknown	Unknown	Unknown	SNPA	SNPA	Unknown	Unknown
17	Snowdonia National NPA	Birds	National schemes	Scarab surveys	Unknown	SNPA staff and volunteers	Unknown	Cofnod	Unknown	The SNPA ecologists contributes towards
18	Snowdonia National NPA	River quality	Unknown	Unknown	2013	SNPA staff and volunteers	SNPA	Unknown	Unknown	River Prysor
19	Snowdonia National NPA	Planning Developments Monitoring Report	To monitor how many renewable energy (hydro, solar, wind) developments occurred in the NP	Unknown	2011	SNPA staff	SNPA	Available	Unknown	Unknown
20	Snowdonia National NPA	Ancient and veteran trees	Unknown	Unknown	Unknown	Unknown	Woodland Trust	Unknown	Unknown	Unknown
21	Snowdonia National NPA	Semi-natural vegetation and other wildlife habitats	Unknown	Phase 1 and 2 survey	Unknown	NRW	NRW	Unknown	Unknown	Unknown
22	Snowdonia National NPA	American Mink	To monitor and control numbers	Unknown	2008,	Unknown	Unknown	Unknown	Unknown	This was done annually but unaware of when it
23	Snowdonia National NPA	Junipers	Rare species	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
24	Snowdonia National NPA	Bats	Protects spices	Standardised counts	1900s	SNPA staff and volunteers	Bat Conservation	Unknown	Unknown	Unknown
25	Snowdonia National NPA	Vegetation	Unknown	Unknown	Unknown	National Trust staff	National Trust	Unknown	Unknown	Extensive monitoring done at Cwm Eidda
26	Snowdonia National NPA	Bats	To comply with planning conditions	Unknown	Every 3 yrs. after planning permission granted	Unknown	Unknown	Unknown	Unknown	There is a planning condition on relevant applications that a bat monitoring survey should
27	Snowdonia National NPA	Biodiversity, sulphur	Environment Change Network	Unknown	Unknown	NRW	NRW	Unknown	Unknown	Unknown
28	Snowdonia National NPA	Plant health	Unknown	Unknown	Unknown	FERAC	FERAC	Unknown	Unknown	Unknown
29	Snowdonia National NPA	TB	Roadside badger corpse surveys	Unknown	2015	Welsh Government	Welsh	Unknown	Unknown	Unknown
30	Snowdonia National NPA	Otters	National survey	Unknown	1970s	Unknown	Unknown	Unknown	Unknown	Unknown
31	Snowdonia National NPA	Red squirrels	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Briach Melyn is a monitoring sites which sits in
32	Snowdonia National NPA	Predatory Bird	National scheme	Unknown	Unknown	Unknown	Welsh	Unknown	Unknown	Unknown
33	Snowdonia National NPA	Carneddau Ponies numbers	Unknown	Unknown	Unknown	NRW	NRW	Unknown	Unknown	Unknown
34	Snowdonia National NPA	Aurelia aurita	Unknown	Unknown	Unknown	Swansea University	Swansea	Unknown	Unknown	Unknown

Number	Designation	What?	Why?	How?	When?	Who?	Data Holder	Data Availability	Reporting	Notes
35	Snowdonia National NPA	Dermochelys coriacea	National scheme	Public recordings	Unknown	Cetacean Standings Investigation Programme	Unknown	Unknown	Unknown	NRW supports the Cetacean Standings Investigation Programme in Wales by recording turtle sightings and strandings on the Welsh
36	Snowdonia National NPA	Number of people engaged with projects	To report back on individual projects within the NP	People counts	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Number	Designation	What?	Why?	How?	When?	Who?	Data Holder	Data Availability	Reporting	Notes
1	Brecon Beacons NPA	Red grouse counts	Indicator of SSSI condition	Walk up counts	2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018	Volunteers with BBNPA ecologist (Bradley Welch)	BBNPA and Biodiversity Information Services (BIS)	Data will be available from BIS	Unknown	Done annually on two sites (Hetterral Hill and Mynydd Isaf) usually in September. There are historical data sets prior to 2008 which were surveyed using a different methodology (birds shot counts). BBNPA are aware that there are others (e.g. NT) doing similar surveys, but don't hold any more information.
2	Brecon Beacons NPA	Vegetation survey	Condition monitoring, designation reporting	Phase 1 survey	1998	BBNPA and NRW	NRW	Data presumably available from NRW	Unknown	BBNPA aim to survey every 20 years. The data will eventually go to BIS (in the proses of doing it
3	Brecon Beacons NPA	Peatland assessment	Done in conjunction with the all Wales peatland assessment	ICN peatlands survey	(some data collected but more to come)	BBNPA	SNPA	Partners of the project have an agreement to share data for the purposes of the project.	Unknown	This work is ongoing and involves assessing if a site can be accredited for the peatlands code. BBNPA may also use this methodology on other sites on the Park.
4	Brecon Beacons NPA	Dwarf shrub condition	Indicator or SSSI condition	Common standard method	2003, 2013	BBNPA	BBNPA and BIS	Data available from BIS	Unknown	The first done on the whole of Mynyddoedd
5	Brecon Beacons NPA	Mammal trapping	Education purposes. School groups	Common mammal traps	Several times a year, 20+	(with school groups). Educational officer	BBNPA and BIS	Data available from BIS	Unknown	This is done at Dan y Wenallt visitor centre
6	Brecon Beacons NPA	Butterfly Monitoring Scheme	Indicator or SSSI condition	Common butterfly monitoring survey	May - September (at least 10 years)	Volunteer	BIS and the Butterfly Conservation	Data available from BIS	Unknown	The volunteer is the vice county bird recorder. This is one example of one survey done by an individual. There are probably others that the BBNPA are unaware of. Going to all the Local
7	Brecon Beacons NPA	Bees	National monitoring	Bumble bee conservation standard survey method	Unknown	Bumble Bee Conservation Trust	Bumble Bee Conservation	Unknown	Unknown	Unknown
8	Brecon Beacons NPA	Plants	National plant monitoring scheme	Unknown	Unknown	Plant Life	Plant Life	Unknown	Unknown	Unknown
9	Brecon Beacons NPA	Bracken treatment efficacy	To evaluate a bracken management project funded by the SMS partnership project.	Using transect plant survey within the treated sites	2018	BBNPA Senior Ecologist	BBNPA and BIS	(will be available through BIS)	Unknown	Should continue annually for at least 5 years, maybe more. Mynyddoedd Duon.
10	Brecon Beacons NPA	Peatland restoration efficacy	Evaluate a peatlands management project funded through the SMS partnership project.	Site specific plant surveys	2018	BBNPA Senior Ecologist	BBNPA and BIS	(will be available through BIS)	Unknown	Should continue annually for at least 5 years, maybe more. Mynyddoedd Duon.
11	Brecon Beacons NPA	Condition assessments	Grassland condition assessment for SSSI reporting	Common standard methodology	2015	BBNPA and NRW	Unknown	Some data available from BIS	Unknown	BBNPA is leading on this with NRW joining up in the past. BBNPA aim to survey Llangasty and
12	Brecon Beacons NPA	Bird monitoring	Understand trends	Constant effort monitoring scheme	...annually but dates unknown	The Llangors ringing group	The Llangors	BTO	Unknown	Data might go to BIS but not sure
13	Brecon Beacons NPA	Bats	Protected species	Standardise count	Unknown	Bat Conservation	Bat Conservation	BBNPA	Unknown	Not sure if BIS have the data.
14	Brecon Beacons NPA	Bats	Protected species and SSSI and SAC feature	Standardise Count	1980s, 1900s	Vincent Wildlife Trust (VWT)	Vincent Wildlife Trust (VWT)	(will be available through BIS)	Unknown	Done at Buckland Coach House (mainly lesser horseshoe bat, maternity roost).
15	Brecon Beacons NPA	Water vole	SAC protected species	Standard Field Signs Survey	Unknown	BBNPA and NRW	BBNPA and NRW	BBNPA and NRW	Unknown	Monitoring has taken place in an ad-hock manner since the reintroduction in 2005. Led by NRW and
16	Brecon Beacons NPA	3 aquatic invasive species: Japanese knotweed, Himalayan balsam, giant hogweed. Targeted	Habitat management – via current BBNPA INNS project	Sites surveys	Started 2018 as a 2 year project, and using existing data in BIS	Bev Louise (INNS officer for the BBNPA)	BBNPA and BIS	Data available from BIS	Unknown	Wysg & Tawe catchments
17	Brecon Beacons NPA	Crassula helmsii	Habitat/species management	Sites surveys	2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015,	Internal staff: wardens, ecologist	BBNPA	Data available from BIS	Unknown	Mynydd Illtyd
18	Brecon Beacons NPA	Lower Plants	SAC monitoring	Common standard	2017?	Contractor	BBNPA and BIS	Data available from BIS	Unknown	This has been done at least twice but dates
19	Brecon Beacons NPA	Colchicum & bracken	SSSI condition monitoring	Common standard	Unknown	Conservation officer	NRW	Unknown	Unknown	This is done annually but date of initial survey's
20	Brecon Beacons NPA	Biodiversity audits of key settlements	Planning requirements for planning policy Wales	Phase 1 survey	2012 (original)	Commissioned under the previous planning grant	BBPA and BIS	Data available from BIS	Unknown	Phase 1 with some aspects of phase 2 (trees). This led to the supplementary planning guidance
21	Brecon Beacons NPA	Landscape Character Assessment	Assessing Landscape features	Standard LCA methodology	2012	Was done externally	BBNPA	BBNPA	https://www.beacons-npa.gov.uk/planning/draft-strategy-and-	Unknown
22	Brecon Beacons NPA									In planning, we don't actually monitor any environmental change directly. We have access to a large number of 'ecological survey information' provided by applicants for planning permission on individual sites, from which I don't think we undertaken any meta-analysis e.g. on INNS / protected species.

Number	Designation	What?	Why?	How?	When?	Who?	Data Holder	Data Availability	Reporting	Notes
1	Pembrokeshire Coats NPA	Habitat condition monitoring	Measure conservation land management program	Professional judgment	2012, 2013, 2014, 2015, 2016, 2017, 2018,	PCNPA staff	PCNPA	Available	http://www.pembrokeshire.gov.uk/ObjView.asp?Object_ID=13028&language=	Unknown

Number	Designation	What?	Why?	How?	When?	Who?	Data Holder	Data Availability	Reporting	Notes
2	Pembrokeshire Coats NPA	Habitat and species condition monitoring of owned estate	Measure conservation land management program	Professional judgment	2012, 2013, 2014, 2015, 2016, 2017, 2018,	PCNPA staff	PCNPA	Available	http://www.pembrokeshire.gov.uk/ObjView.asp?Object_ID=130	Bats monitored at Cherry Castle and skylarks monitored at st David's air field
3	Pembrokeshire Coats NPA	Chough	Key species	Scarab	1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011,	PCNPA staff and volunteers	PCNPA	Available on requests	Presented annually in the land management report	There is historical data that dates back to the 1970s. PCNPA are hoping to allays this historical data an compare it with recent data.
4	Pembrokeshire Coats NPA	Marsh Fritillary	Unknown	Site visits	Unknown	Unknown	Unknown	Unknown	Unknown	PCNPA is aware that it's happening but haven't
5	Pembrokeshire Coats NPA	Barn Owl Box	Monitor scheme compliance	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	From initially monitoring compliance to scheme, it is hoped that this will be developed to monitor
6	Pembrokeshire Coats NPA	State of Wildlife In Pembrokeshire	To support the nature recovery plan	Various	2011, 2016	Pembrokeshire nature partnership co-ordinate it but has multiple contributes	Local Nature partn PCC county council		http://www.pembrokeshire.gov.uk/ObjView.asp?Object_ID=130	Methodologies varies e.g. bird monitoring is done following the BTO methodologies, while other surveys don't follow a standardise methodology
7	Pembrokeshire Coats NPA	3 aquatic invasive species: Japanese knotweed, Himalayan balsam, giant hogweed. Targeted	Habitat management – via current BBNPA INNS project	Sites surveys	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
8	Pembrokeshire Coats NPA	Listed buildings at risk	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Building conservation officer
9	Pembrokeshire Coats NPA	Conservation area monitoring	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
10	Pembrokeshire Coats NPA	Scheduled ancient	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
11	Pembrokeshire Coats NPA	Wales coast path	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
12	Pembrokeshire Coats NPA	Wales coast path users	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
13	Pembrokeshire Coats NPA	Inland path users	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
14	Pembrokeshire Coats NPA	Wildlife crime	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
15	Pembrokeshire Coats NPA	Foreshore coastal	Unknown	Unknown	Unknown	Unknown	MC	Unknown	Unknown	Unknown
16	Pembrokeshire Coats NPA	Landscape characterisation	To forms supplementary guidance for planning purposes	Landscape visual index handbook	2011	Commissioned out	PCNP	Available on website	recoast.wales/default.asp?PID=249	Cosied with the local development plan
17	Pembrokeshire Coats NPA	Coast erosion	To monitor change in key coastal sites and to encourage and public engagement	Citizen Science	Ongoing	Public	PCNPA	Available	https://www.pembrokeshirecoast.wales/default.asp?	Changing coast project
18	Pembrokeshire Coats NPA	Dark sky quality	To test if area would qualify as a dark sky designation	Sky quality meter	2015	Consultancy	PCNP	Available	Unknown	Unknown
19	Pembrokeshire Coats NPA	Bats	Unknown	Unknown	Unknown	Bat Conservation Trust	Unknown	Unknown	Unknown	Unknown
20	Pembrokeshire Coats NPA	Bees	National monitoring	Bumble bee conservation standard survey method	Unknown	Bumble Bee Conservation Trust	Bumble Bee Conservation	Unknown	Unknown	Unknown
21	Pembrokeshire Coats NPA	Butterfly	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
22	Pembrokeshire Coats NPA	Wild fires	Unknown	Unknown	Unknown	West Wales Fire Service	Unknown	Unknown	Unknown	Unknown
23	Pembrokeshire Coats NPA	Heritage crime	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
24	Pembrokeshire Coats NPA	MCA – Marine incidents	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
25	Pembrokeshire Coats NPA	Rivers	Unknown	Unknown	Unknown	West Wales Rivers trust	Unknown	Unknown	Unknown	Unknown
26	Pembrokeshire Coats NPA	Designated sites, water quality, nitrogen deposition	Unknown	Unknown	Unknown	NRW	Unknown	Unknown	Unknown	Unknown
27	Pembrokeshire Coats NPA	Seabirds	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Other long standing datasets collected by third	Unknown
28	Pembrokeshire Coats NPA	Seals	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Other long standing datasets collected by third	Unknown

Number	Designation	What?	Why?	How?	When?	Who?	Data Holder	Data Availability	Reporting	Notes
1	Gower AONB	State of the AONB	Relying on external monitoring to be carried out	Unknown	Unknown	Unknown	Unknown	Unknown	https://www.swansea.gov.uk/gowermanagement	The plan is heavily dependent on external monitoring, sum of witch is not monitored at present e.g. Natura 2000 sites monitoring by NRW
2	Gower AONB	Dark sky quality	To support application to the IDA to become a Dark Sky Community	42 locations measured with SQM s	Dec 2017, Feb 2019	AONB staff and volunteers	AONB	Available	Unknown	This will be getting done annually as a condition of the Dark Skies Community designation.
3	Gower AONB	Condition of paths	PI survey	10% of Swansea county paths monitored using CAMs.	Annually	Highway authority	Swansea County C	Available	Unknown	As most of Swansea paths are in the Gower AONB, this is easily extracted for the designation.
4	Gower AONB	Path users	To monitor number of users on paths	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
5	Gower AONB	The Economic Impact of Coastal Walking in Wales	Unknown	Unknown	2014	NRW	NRW	Available	https://walescoastpathcdn-01.azureedge.net/media/1322/wcp-visitor-survey-2014-2015-final-report-for-	Unknown
6	Gower AONB	The benefits to business of the Wales Coast Path	Unknown	Unknown	2013	NRW	NRW	Available	https://walescoastpathcdn-01.azureedge.net/media/1325/evaluating-the-benefits-to-business-of-the	Unknown
7	Gower AONB	Visitor Profile	Unknown	Visitor interviews	2015	NRW	NRW	Available	https://walescoastpathcdn-01.azureedge.net/media/1322/wcp-visitor-survey-2014-2015-final-report-for-	Unknown

Number	Designation	What?	Why?	How?	When?	Who?	Data Holder	Data Availability	Reporting	Notes
1	Clwydian Range and Dee Valley AONB	Black Grouse	Indicator of SSSI and heathland quality and species in decline	Walk up counts and counts with dogs	2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014,2015, 2016, 2017,	AONB	AONB	Available through Cofnod	Unknown	Unknown
2	Clwydian Range and Dee Valley AONB	Great crested newts	Internationally scares species	Field counts	2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012,	AONB	AONB	Available through Cofnod	Unknown	Unknown
3	Clwydian Range and Dee Valley AONB	Curlew	Species in decline	walk up counts, public consultation survey, citi	2018,	AONB	AONB	Available through Cofnod	Unknown	Unknown
4	Clwydian Range and Dee Valley AONB	Himalayan	In order to direct management of INNS and to target activity	River walks and boat survey	2014	AONB and volunteers	AONB	Available through Cofnod	Unknown	Dee and the Alyn
5	Clwydian Range and Dee Valley AONB	Dark sky quality	To support application for a dark sky community designation	SQM	2016, 2017, 2018	AONB	AONB	Available	Unknown	Unknown
6	Clwydian Range and Dee Valley AONB	Planning Applications	To monitor alinement of AONB planning comments with granted/non-granted developments	Keep records of applications and records of response and analyse the date end of year	2009, 2010, 2011, 2012, 2013, 2014,2015, 2016, 2017, 2018	AONB	AONB	Available on requests	Reported to the AONB's joint committee	Unknown
7	Clwydian Range and Dee Valley AONB	Butterflies	Indicator of grassland quality	Field survey	2016, 2017, 2018	Volunteers	AONB	Available through Cofnod	Unknown	Unknown
8	Clwydian Range and Dee Valley AONB	Adder	Species in decline	Field survey	2009, 2010, 2011, 2012, 2013, 2014,2015, 2016, 2017,	County recorder, and staff	AONB	Available through Cofnod	Unknown	Unknown
9	Clwydian Range and Dee Valley AONB	Buildings at risk and conservation a	Features of the AONB	Field survey	2011	Flintshire, Denbighshire and Wrexham county councils	Flintshire, Denbighshire and	Available on requests	Unknown	Unknown
10	Clwydian Range and Dee Valley AONB	Monitor world heritage site	To comply with the designation of the sites	Field survey	2009, 2013, 2018	Partnership between Denbighshire and Wrexham county councils	Denbighshire and Wrexham county councils	World heritage management plan available publicly.	Unknown	Unknown
11	Clwydian Range and Dee Valley AONB	Visitor numbers at key sites	Monitor visitor profile and numbers	People counters	Constant	AONB	AONB	Available on requests	Unknown	Unknown
12	Clwydian Range and Dee Valley AONB	SSSI and SAC monitoring	Unknown	Unknown	Unknown	NRW	NRW	Available	Unknown	Unknown
13	Clwydian Range and Dee Valley AONB	Public transport numbers	Unknown	Unkown	Unknown	Transport Wales	Transport Wales	Unknown	Unknown	Unknown
14	Clwydian Range and Dee Valley AONB	Transport Counts	Unknown	Unkown	Unknown	Flintshire, Denbighshire and Wrexham county Councils	Flintshire, Denbighshire and	Unknown	Unknown	Unknown
15	Clwydian Range and Dee Valley AONB	Air quality	Unknown	Unkown	Unknown	Denbighshire county council	Unknown	Unknown	Unknown	Unknown
16	Clwydian Range and Dee Valley AONB	STEEM visitor numbers	Unknown	Unknown	Annually	Unknown	Unknown	Unknown	Unknown	Unknown

Number	Designation	What?	Why?	How?	When?	Who?	Data Holder	Data Availability	Reporting	Notes
1	Llŷn AONB	Birds	To contribute towards various national birds surveys	Standardised methodology	Unknown	Gwynedd Council biodiversity team, volunteers, RSPB	BTO, RSPB	Unknown	Rhys Jones, the biodiversity Officer from Gwynedd Council does various bird counts solely and with v	Unknown
2	Llŷn AONB	Path users	To monitor user numbers on the Wales Coast Path	People Counters	2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018	Gwynedd Council country side and access department staff	Gwynedd Council	Available	Unknown	Unknown
3	Llŷn AONB	Dark sky quality	As part of a collaborative project between Llŷn AONB, SNPA and Anglesey Clwydian Range and Dee Valley AONB.	SQM	2018	SNPA Dark Skies Officer	SNPA, AONB	Available	Unknown	Unknown
4	Llŷn AONB	Marine Code Compliance	To monitor code complience in the Pen Llŷn a'r Sarnau SAC	Dolphin Watch methodology	2016	Ceredigion and Gwynedd Council (PLAS SAC) staff and volunteers	Ceredigion and Gwynedd Council (PLAS SAC)	Available	Gwynedd Council adopted Ceredigio's barine code of conduce for boats users in the county, and expanded into Anglesey and Gwynedd. Ceredigion and Gwynedd (in the Llŷn AONB) carry out	Unknown
5	Llŷn AONB	River quality	To monitor river quality as part of the Llŷn Land and Sea SMS project focusing on agriculture run offs.	River walks	2018	NRW staff	NRW	Unknown	Unknown	Unknown
6	Llŷn AONB	SSSI condition	To monitor condition of designations	Standardise methodology	Unknown	NRW staff	NRW	Unknown	Unknown	Unknown

Number	Designation	What?	Why?	How?	When?	Who?	Data Holder	Data Availability	Reporting	Notes
7	Llŷn AONB	Cetaceans	Collate, analyse and report data for all cetacean standings around the coast of the UK. Determine the causes of death in stranded cetaceans, including by-catch and physical trauma. Undertake surveillance on the incidence of disease in stranded cetaceans in order to identify any substantial new threats to their conservation status. Maintain a national cetacean tissue archive.	Public Reporting	1990	Citizen Science	UK Cetaceans Stranding Programme	http://ukstrandings.org/csip-publications/	Unknown	Unknown

Number	Designation	What?	Why?	How?	When?	Who?	Data Holder	Data Availability	Reporting	Notes
1	Wye Valley AONB	Landscape change	Monitor landscape change/no change over time	41 random fixed point sites photographed	2018	AONB	AONB	Available	Unknown	The sites were across the whole of the AOHB. This is not reported yet but will contribute towards the state of the AONB report.
2	Wye Valley AONB	Vegetation survey	Establish baseline data and to assess trends. This was done as comparison to the all Wales phase 1 survey done by CCW in the 1990s (?).	Phase 1 survey	(1990s?), 2009 – 2017	AONB and local Wild Life Trusts	AONB	Data will be available for the Welsh section of the AONB (north side of the AONB will have landowner consensual issues).	Not reported, might have been passed to the record centre)	Finding of the survey were that a high proportion of is was not comparable. The whole of the AONB in Monmouthshire and Gloucestershire is complete, although Herefordshire is incomplete. Millennium map in England more recent than.
3	Wye Valley AONB	Veteran tree survey	Feature of the AONB therefor to assess the condition of the resource.	Standardise methodology	2005	AONB and volunteers	AONB	Available	Not reported	Not repeated as such, but if veteran trees were picked up in the phase 1 survey (mentioned
4	Wye Valley AONB	Path users	Monitor user numbers on the Wye Valley walk	People counters	Annual	AONB	AONB	Available	Reported to partners and st	England and Wales. Annually.
5	Wye Valley AONB	Condition of features on Offa's Dyke National Trail	To assess condition of trail	Walkover survey?	Unknown	Powys County Counsel Officer for Offa's Dyke	Offa's Dyke Path o	Unknown	Unknown	Officer's name is Rob Dingle, Powys County Counsel.
6	Wye Valley AONB	Path users on Offa's Dyke National Trail	To establish user numbers	People counters	Unknown	Powys County Counsel Officer for Offa's Dyke	Offa's Dyke Path o	Unknown	Unknown	Officer's name is Rob Dingle, Powys County Counsel.
7	Wye Valley AONB	The Offa's Dyke monument	Assess condition, threats and recommendations for management	walkover and assessment	2017 - 19	Cadw / Offa's Dyke Association	Cadw / Offa's Dyke	Unknown	Unknown	All of the monument it's self is located in England.
8	Wye Valley AONB	Japanese Knotweed	To establish location in preparation for treatment as part of a specific SDF project.	River walk survey	Aug/Sep 2018	AONB	AONB	Available	Unknown	The project was reported to the SDF, but not the actual survey. Knotweed was treated so no plans
9	Wye Valley AONB	Trunk road verge survey	Funding opportunity for road side management. This was done to gather baseline data and to establish suitable sites for restoration.	Walk over surveys	2017	AONB	AOND	Available in non digital format	Unknown	All in the English section of the AONB. A49 and A40 road.
10	Wye Valley AONB	Plants	National plant monitoring scheme	Unknown	Unknown	Plantlife / volunteers	Plantlife	Unknown	Unknown	Unknown
11	Wye Valley AONB	Dry stone wall condition survey	Assess the condition of the resource	Sample survey	2002-04	AONB / Volunteers	AONB	Available	Unknown	Unknown
12	Wye Valley AONB	Dear population	Monitor dear numbers	Infrared surveys from aeroplane and camera traps. Site specific surveys looking for damage	Unknown / recent	Dear Initiative	Dear Initiative	Unknown	Unknown	Unknown
13	Wye Valley AONB	Deer population	monitor deer numbers	visual counts	annual 2002 - 14	AONB	AONB	Available	Unknown	Unknown
14	Wye Valley AONB	River users	To monitor usage across the navigable length of the Wye River	visual counts	annual	Wye Navigation Authority/Environment Agency	Wye Navigation Authority/Environment Agency	Unknown	Unknown	Annually?
15	Wye Valley AONB	Water quality	Quality monitored for drinking water quality and habitat	Abstraction points?	unknown / regularly	Natural Recourses Wales, Environment Agency, Welsh Water	Natural Recourses Wales, Environment	Unknown	Unknown	
16	Wye Valley AONB	Water level monitoring on the River Wye	As am indictor of flood monitoring. Droit monitoring. Habitat condition	Automated Gauges	Continuous	NRW and Environment Agency	NRW and Environment	NRW and Environment Agency	es.wales/ViewDetails?station=4028	NRW and Environment Agency
17	Wye Valley AONB	SAC AND SSSI condition	Reporting requirement	Unknown	unknown	Natural England / NRW	Natural England /	Unknown	Unknown	England for SSSI condition cut to the AONB.
18	Wye Valley AONB	Species Rich Grasslands / Meadows groups	Record of group members	meadow group members / numbers.	Continuous	Monmouthshire Meadows	Monmouthshire M	Unknown	Not reported	meadows groops in the AONB. They will each know who their members are - this would show us the level of interst in meadow management.

Number	Designation	What?	Why?	How?	When?	Who?	Data Holder	Data Availability	Reporting	Notes
1	Anglesey AONB	Coastal Path Users	Usage, Frequency	Electronic Counters	Quarterly / Annually	IACC	IACC	Available	IACC	
2	Anglesey AONB	Himalayan Balsam	Invasive.	Mapping	Seasonal	AONB, RSPB, NRW, KWT, NWWT	AONB	Available	Himalayan Balsam Partnership	
3	Anglesey AONB	Dark Skies	Support application for IDA status	SQM	2016, 2017, 2018	Dark Sky Wales	AONB	Available	Joint Advisory Committee	
4	Anglesey AONB	SAC, SPAs, NNRs, SSSI	Condition. Management requirements	Unknown	Unknown	NRW	NRW	Unknown	Unknown	
5	Anglesey AONB	Visitor Numbers	As part of WG settlement to IACC	STEAM	Annually	Tourism Officer - IACC	Officer - IACCC	Available	IACC / WG	
6	Anglesey AONB	Blue Flag Beaches	Water quality, engvironmental standards, services	Visits. Reports	Annually	KWT	KWT / IACC	Available	KWT	
7	Anglesey AONB	Coastal Path	Condition, accessibilty, maintenance	Visual surveys. Reporting / Mapping	Annual	IACC - Highways	IACC - Highwa	Available		

#		Feature	Category	Methodology	Frequency/Year	Org	Org	Availability	Org	Notes
8	Anglesey AONB	LANDMAP	Landscape Quality	Standardised methodology	Unknown	NRW	NRW	Available	NRW	
9	Anglesey AONB	Birds	Key Species	Standardised methodology	Unknown	RSPB / BTO	RSPB / BTO	Unknown	RSPB / BTO	
10	Anglesey AONB	Rivers	Condition survey	Visual. Reports	2018	North Wales Rivers Trust	Rivers Trust. AONB	Available		
11	Anglesey AONB	Planning Applications	Planning Policy	IT System	To be set up	IACC - Planning	IACC - Planning	Available	IACC - Planning	Requires setting up to disaggregate to within AONB bopundary
12	Anglesey AONB	Welsh Language	Legislation. Special quality of AONB	Welsh Language Strategy	2016/2021. Annual rep	Anglesey Welsh Language Strategic Forum	IACC	Available	IACC	
13	Anglesey AONB	Soil, air and water quality	Special quality of AONB	Air and Water Quality Assessments	Annual	IACC / NRW	IACC / NRW	Available	Unknown	
14	Anglesey AONB	Expansive views / seascape	Special quality of AONB	LANDMAP. Seascape Assessment	Unknown	Unknown	Unknown	Unknown	Unknown	
15	Anglesey AONB	Peace and tranquillity	Special quality of AONB	Tranquillity Maps	Unknown	NRW?	NRW?	Available	Unknown	
16	Anglesey AONB	Islands around Anglesey	Special quality of AONB	Unknown	Unknown	NRW?	NRW?	Unknown	Unknown	
17	Anglesey AONB	Broadleaved woodlands	Special quality of AONB	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	
18	Anglesey AONB	Lowland Coastal Heath	Special quality of AONB	Unknown	Unknown	Unknown	NRW? Cofnod?	NRW? Cofnod?	NRW?	
19	Anglesey AONB	Species Rich Roadside Verges	Special quality of AONB	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	
20	Anglesey AONB	Ecologically important coastal and wetland habitats	Special quality of AONB	Unknown	Unknown	NRW and relevant partners	NRW and relevant	Unknown	Unknown	
21	Anglesey AONB	Built Environment including Conservation Areas and	Special quality of AONB	Sporadic	Sporadic	Cadw / IACC	Cadw / IACC	Parially available	IACC	
22	Anglesey AONB	Archaeoology and Ancient Monuments / Historic Landscpaes, Parks and	Special quality of AONB	Unknown	Unknown	Cadw, GAT	Cadw / IACC	Parially available	Cadw, GAT	
23	Anglesey AONB	Rural Agricultural / Coastal Communities	Special quality of AONB	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	
24	Anglesey AONB	Welsh Language	Special quality of AONB. Legislation	Welsh Language Strategy	2016/2021. Annual	Anglesey Welsh Language Strategic Forum	IACC	Available	Annual	
25	Anglesey AONB	Soil, Air and Water Quality	Special quality of AONB	Sampling - Air and Water	Unknown	IACC, NRW	IACC, NRW	IACC, NRW	IACC, NRW	
25	Anglesey AONB	PROW network	Special quality of AONB	Surveys. Reporting / Mapping	Annual	IACC - Highways	IACC - Highways	IACC - Highways	IACC - Highways	
26	Anglesey AONB	Accessible Land and Water.	Special quality of AONB	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	

6.5 Glastir Outcomes Collective Preference Calculations

	Individual Preferences Reported							
Glastir Outcome	SNPA	BBNPA	PCNPA	Gower	Clwyd/Dee	Llŷn	Wye	Anglesey
Biodiversity	1	1	2	2	2	1	3	1
Climate Change mitigation	2	3	3	4	4	2	2	2
Soil and Water Management	3	2	1	3	3	4	5	4
Landscape, Historic Environment and Access	4	4	4	1	1	3	4	3
Woodland creation and management	5	5	5	5	5	5	1	5

	Collective Preference Reported				
Glastir Outcome	1st	2nd	3rd	4th	5th
Biodiversity	4	3	1	0	0
Climate Change mitigation	0	4	2	2	0
Soil and Water Management	1	1	3	2	1
Landscape, Historic Environment and Access	2	0	2	4	0
Woodland creation and management	1	0	0	0	7

Glastir Outcome	Collective Preference Calculated
Biodiversity	350
Climate Change mitigation	260
Landscape, Historic Environment and Access	240
Soil and Water Management	230
Woodland creation and management	120

6.6 Modelling Scenario Collective Preference Calculation

Modelling Scenario	Individual Preferences Reported							
	SNPA	BBNPA	PCNPA	Gower	Clwyd/Dee	Llŷn	Wye	Anglesey
Woodland (different special options, benefits)	2	2	4	4	2	3	3	4
Water quality (Brexit modelling for water quality)	3	1	3	2	3	4	2	3
Coastal management (paths/biodiversity)	4	4	2	3	4	1	4	1
New agriculture scheme testing	1	3	1	1	1	2	1	2

Modelling Scenario	Collective Preference Reported			
	1st	2nd	3rd	4th
Woodland (different special options, benefits)	0	3	2	3
Water quality (Brexit modelling for water quality)	1	2	4	1
Coastal management (paths/biodiversity)	2	1	1	4
New agriculture scheme testing	5	2	1	0

Modelling Scenario	Collective Preference tally
New agriculture scheme testing	280
Water quality (Brexit modelling for water quality)	190
Coastal management (paths/biodiversity)	170
Woodland (different special options, benefits)	160

6.7 Interview Records

Areas of Outstanding Natural Beauty and National Parks of Wales Monitoring Review Questionnaire

Question 1:

Brecon Beacons National Park Authority

Question 2:

What is your role and responsibilities?

Paul Sinnadurai
Natural Resources Manager for the Brecon Beacons National Park Authority. He line manages the leads for Rights of Way, Countryside Access, Ecology and Biodiversity, and Warden Service.

Bradley Welch
Senior Ecologist and Climate Adaptation Officer

Rebecca Price
Ecologist and leading on developing a Nature Recovery Action Plan for the BBNPA.

Bridget Schofield
BBNPA Planning Officer

Question 3:

Fill in why, what, when, how table with questioner.

Question 4:

In the table of GMEP outcomes and collected data, prioritise your **top five** preferred data extraction for designated landscapes in the fourth column.

Ref	GMEP Outcome	Data collected	Designation Prior Score
1	Biodiversity	Plant diversity	1
2	Biodiversity	Birds	
3	Biodiversity	Pollinators	
4	Biodiversity	Floral abundance	
4	Biodiversity	Linear features condition	2
5	Climate Change mitigation	Soil carbon	4
6	Soil and Water Management	Headwater stream habitat quality (River Hab Survey)	3
6	Soil and Water Management	Headwater stream macroinvertebrate community	
7	Soil and Water Management	Pond quality	
8	Landscape, Historic Environment and Access	Condition assessment of Historic Environment Features	
9	Landscape, Historic Environment and Access	Visual Quality Index	5
10	Landscape, Historic Environment and Access	Presence and length of Public Rights of Way, including open access areas and beaches.	
12	Woodland creation and management	Woodland ground flora biodiversity	

Question 5: Prioritise your **top four** modelling scenarios for AONB and National Parks

Modelling Scenario	Details	Designation Priority Score
Woodland (different special options, benefits)	To explore which tree species would be best suited for the different soil types and climate conditions within the NPs and AONBs. The potential carbon and climate mitigation that could result can then be extracted and by linking to the GMEP Visual Quality Index such that the impact on landscape aesthetics could also be explored.	2
Water quality (Brexit modelling for water quality)	To better understand the potential outcomes of different Brexit deals and / or different management being considered for inclusion in the new Farm Sustainability Scheme with respect to water quality across the NPs and AONBs.	1
Coastal management (paths/biodiversity)	To explore the potential outcomes of either Brexit trade deals and / or different management interventions being considered for inclusion in the new Farm Sustainability Scheme on coastal systems including visual quality, recreation and land-sea transfers of contaminants e.g. nutrients and pathogens to bathing waters.	4
New agriculture scheme testing	To explore the potential outcomes of the management interventions being considered for inclusion in the new Farm Sustainability Scheme with respect to issues of interest e.g. water quality, climate mitigation, public health/air quality, recreation, bird diversity and abundance etc.	3

Question 6: Is there anything else you would like to add?

Monitoring in DLs

- There is a lot happening but BBNPA are not in a position to know where all this information is. Saying that, a **new Evidence Officer** will be appointed in May which could contribute towards this work. The new officer will be leading on the: NP Management Plan, Sate of the Park Report, Sustainability Assessment, Strategic Evidence Assessment and the HR Assessment.
- It might be worth liaising with Professor Mike Bruford FLSW (Co-director Sustainable Places Research Institute, Cardiff University's School of Biosciences) on the work of the **Wales Biodiversity Partnership**, as they have carried out similar work.
- It would be valuable to initially liaise with all **vice county record centres** (Cofnod, BIS) to establish all the evidence they hold for DLs. BBNPA gives all data to BIS.

GMEP data extraction

- BBNPA would be interested in all GMEP for the Park. They found it challenging to prioritise without knowing the extent of the information available.
- Even though it wasn't on the list given, BBNPA would be very much interested in soil indicated by biological measurements.

Modelling

- BBNPA would be very interested in modelling looking at accessible green spaces for people within National Parks compared to other areas in Wales (e.g. urban)

Areas of Outstanding Natural Beauty and National Parks of Wales Monitoring Review Questionnaire

Question 1:

Clwydian Range and Dee Valley AONB

Question 2:

Howard Sutcliff
AONB Officer

David Shiel
Assistant AONB Officer

Question 3:

Fill in why, what, when, how table with questioner.

Question 4:

In the table of GMEP outcomes and collected data, prioritise your **top five** preferred data extraction for designated landscapes in the fourth column.

Ref	GMEP Outcome	Data collected	Designation Priority Score
1	Biodiversity	Plant diversity	2
2	Biodiversity	Birds	
3	Biodiversity	Pollinators	
4	Biodiversity	Floral abundance	
4	Biodiversity	Linear features condition	5
5	Climate Change mitigation	Soil carbon	3
6	Soil and Water Management	Headwater stream habitat quality (River Habitat Survey)	4
6	Soil and Water Management	Headwater stream macroinvertebrate community	
7	Soil and Water Management	Pond quality	
8	Landscape, Historic Environment and Access	Condition assessment of Historic Environment Features	5*
9	Landscape, Historic Environment and Access	Visual Quality Index	1
10	Landscape, Historic Environment and Access	Presence and length of Public Rights of Way, including open access areas and beaches.	
12	Woodland creation and management	Woodland ground flora biodiversity	

Would be interested if no data was available for linear features in square

Question 5: Prioritise your **top four** modelling scenarios for AONB and National Parks

Modelling Scenario	Details	Designation Priority Score
Woodland (different special options, benefits)	To explore which tree species would be best suited for the different soil types and climate conditions within the NPs and AONBs. The potential carbon and climate mitigation that could result can then be extracted and by linking to the GMEP Visual Quality Index such that the impact on landscape aesthetics could also be explored.	2
Water quality (Brexit modelling for water quality)	To better understand the potential outcomes of different Brexit deals and / or different management being considered for inclusion in the new Farm Sustainability Scheme with respect to water quality across the NPs and AONBs.	3
Coastal management (paths/biodiversity)	To explore the potential outcomes of either Brexit trade deals and / or different management interventions being considered for inclusion in the new Farm Sustainability Scheme on coastal systems including visual quality, recreation and land-sea transfers of contaminants e.g. nutrients and pathogens to bathing waters.	4
New agriculture scheme testing	To explore the potential outcomes of the management interventions being considered for inclusion in the new Farm Sustainability Scheme with respect to issues of interest e.g. water quality, climate mitigation, public health/air quality, recreation, bird diversity and abundance etc.	1

Question 6: Is there anything else you would like to add?

What will happen to agriculture post Brexit regarding designated landscapes. Public goods should be targeted to special qualities of designation.

What we would like:

- Data cut for AONB
- Fixed points photography along Offa's Dyke National Trail
- Noise pollution/tranquillity data
- Visual intrusion

<u>Areas of Outstanding Natural Beauty and National Parks of Wales Monitoring Review Questionnaire</u>

Question 1:

Snowdonia National Park Authority

Question 2:

Rhys Owen
Head of Conservation, Woodlands & Agriculture

Dafydd Roberts
Senior Ecologist

Marian Pye
Welsh Peatlands Sustainable Management Scheme Project Manager

Gethin Davies
LIFE Celtic Rainforests Senior Project Manager

Geraint Williams
LIFE Celtic Rainforests Project Officer

Elen Hughes
Research/Planning Assistant (Policy)

Dani Robertson
Dark Skies Project Officer

Question 3:

Fill in why, what, when, how table with questioner.

Question 4:

In the table of GMEP outcomes and collected data, prioritise your **top five** preferred data extraction for designated landscapes in the fourth column.

Ref	GMEP Outcome	Data collected	Designation Priority Score
1	Biodiversity	Plant diversity	1
2	Biodiversity	Birds	
3	Biodiversity	Pollinators	2
4	Biodiversity	Floral abundance	
4	Biodiversity	Linear features condition	
5	Climate Change mitigation	Soil carbon	3
6	Soil and Water Management	Headwater stream habitat quality (River Hab Survey)	4*
6	Soil and Water Management	Headwater stream macroinvertebrate community	4*
7	Soil and Water Management	Pond quality	

8	Landscape, Historic Environment and Access	Condition assessment of Historic Environment Features	
9	Landscape, Historic Environment and Access	Visual Quality Index	5
10	Landscape, Historic Environment and Access	Presence and length of Public Rights of Way, including open access areas and beaches.	
12	Woodland creation and management	Woodland ground flora biodiversity	

4* - Would it be possible to combine the two under one vote, as they're combined in the explanation table?

Question 5: Prioritise your **top four** modelling scenarios for AONB and National Parks

Modelling Scenario	Details	Designation Priority Score
Woodland (different special options, benefits)	To explore which tree species would be best suited for the different soil types and climate conditions within the NPs and AONBs. The potential carbon and climate mitigation that could result can then be extracted and by linking to the GMEP Visual Quality Index such that the impact on landscape aesthetics could also be explored.	2
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New agriculture scheme testing	To explore the potential outcomes of the management interventions being considered for inclusion in the new Farm Sustainability Scheme with respect to issues of interest e.g. water quality, climate mitigation, public health/air quality, recreation, bird diversity and abundance etc.	1

Questions 6: Is there anything else you would like to add?

<u>Filling in the table</u>

Other organisations carrying out monitoring work within the NP:
- Mammals in a Sustainable Environment
- Welsh Raised Bogs – NRW
- North Wales Mammal Group
- Environment Change Network
- Fishing Clubs

- Snowdonia Society
- Whale and Dolphin Conservation

Other data sources within the NP – Officers not present at meeting:
- Cynllun Eryri – Helen Pye
- Thomas Jones - Cultural Heritage Project Officer
- Bethan Jones – Snowdon Warden
- John Roberts – Carneddau Partnership Officer
- Recreation and Access

<u>Modelling</u>

Would be interested in modelling work involving:

- INNS
- Soil and land-use emissions under Brexit scenarios
- Groundwater sustainability under Brexit and climate change scenarios
- Human effects on erosion linked with land use such as woodland, dairy farming

Areas of Outstanding Natural Beauty and National Parks of Wales Monitoring Review Questionnaire

Question 1:

Gower Area of Outstanding Natural Beauty

Question 2:

Chris Lindley
AONB Team Leader

Question 3:

Fill in why, what, when, how table with questioner.

Question 4:

In the table of GMEP outcomes and collected data, prioritise your **top five** preferred data extraction for designated landscapes in the fourth column.

Ref	GMEP Outcome	Data collected	Designation Prior Score
1	Biodiversity	Plant diversity	
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3	Biodiversity	Pollinators	
4	Biodiversity	Floral abundance	
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6	Soil and Water Management	Headwater stream habitat quality (River Hab Survey)	3
6	Soil and Water Management	Headwater stream macroinvertebrate community	5
7	Soil and Water Management	Pond quality	4
8	Landscape, Historic Environment and Access	Condition assessment of Historic Environmen Features	1
9	Landscape, Historic Environment and Access	Visual Quality Index	
10	Landscape, Historic Environment and Access	Presence and length of Public Rights of Way, including open access areas and beaches.	
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Question 5: Prioritise your **top four** modelling scenarios for AONB and National Parks

Modelling Scenario	Details	Designation Priority Score
Woodland (different special options, benefits)	To explore which tree species would be best suited for the different soil types and climate conditions within the NPs and AONBs. The potential carbon and climate mitigation that could result can then be extracted and by linking to the GMEP Visual Quality Index such that the impact on landscape aesthetics could also be explored.	4
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New agriculture scheme testing	To explore the potential outcomes of the management interventions being considered for inclusion in the new Farm Sustainability Scheme with respect to issues of interest e.g. water quality, climate mitigation, public health/air quality, recreation, bird diversity and abundance etc.	1

Question 6: Is there anything else you would like to add?

GMEP data extraction

Gower AONB ruled out **Presence and length of Public Rights of Way** and **Woodland ground flora biodiversity.** The AONB has access to data on length and condition of paths through the Swansea highway authority. As the Gower isn't very woody, the amount of woodland is highly designated and they have access to the data.

Number 1 priority is Condition of HEFs as there isn't any data available on these in the AONB. No work of its kind has been done in the Gower before. Definitely have an interest in hedgerows as all the hedgerows are mapped in the Gower as they are a feature of the AONB, therefor having information on the condition would be of interest.

Modelling

From Bridget's modelling presentation on Brexit scenarios, an increase in dairy in places like Pembrokeshire would have potential impact on water quality on the Gower Peninsula, therefor new agriculture scheme testing and water quality are Gower AONB's modelling priorities.

Woodland again was lower in priority.

Areas of Outstanding Natural Beauty and National Parks of Wales Monitoring Review Questionnaire

Question 1:

Llŷn Area of Outstanding Natural Beauty

Question 2:

Bleddyn Jones
AONB Manager

Elin Wyn Hughes
Project Officer

Question 3:

Fill in why, what, when, how table with questioner.

Question 4:

In the table of GMEP outcomes and collected data, prioritise your **top five** preferred data extraction for designated landscapes in the fourth column.

Ref	GMEP Outcome	Data collected	Designation Prior Score
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2	Biodiversity	Birds	
3	Biodiversity	Pollinators	
4	Biodiversity	Floral abundance	
4	Biodiversity	Linear features condition	1
5	Climate Change mitigation	Soil carbon	3
6	Soil and Water Management	Headwater stream habitat quality (River Hab Survey)	
6	Soil and Water Management	Headwater stream macroinvertebrate community	5
7	Soil and Water Management	Pond quality	
8	Landscape, Historic Environment and Access	Condition assessment of Historic Environmen Features	
9	Landscape, Historic Environment and Access	Visual Quality Index	4
10	Landscape, Historic Environment and Access	Presence and length of Public Rights of Way, including open access areas and beaches.	
12	Woodland creation and management	Woodland ground flora biodiversity	

Question 5: Prioritise your **top four** modelling scenarios for AONB and National Parks

Modelling Scenario	Details	Designation Priority Score
Woodland (different special options, benefits)	To explore which tree species would be best suited for the different soil types and climate conditions within the NPs and AONBs. The potential carbon and climate mitigation that could result can then be extracted and by linking to the GMEP Visual Quality Index such that the impact on landscape aesthetics could also be explored.	3
Water quality (Brexit modelling for water quality)	To better understand the potential outcomes of different Brexit deals and / or different management being considered for inclusion in the new Farm Sustainability Scheme with respect to water quality across the NPs and AONBs.	4
Coastal management (paths/biodiversity)	To explore the potential outcomes of either Brexit trade deals and / or different management interventions being considered for inclusion in the new Farm Sustainability Scheme on coastal systems including visual quality, recreation and land-sea transfers of contaminants e.g. nutrients and pathogens to bathing waters.	1
New agriculture scheme testing	To explore the potential outcomes of the management interventions being considered for inclusion in the new Farm Sustainability Scheme with respect to issues of interest e.g. water quality, climate mitigation, public health/air quality, recreation, bird diversity and abundance etc.	2

Question 6: Is there anything else you would like to add?

Areas of Outstanding Natural Beauty and National Parks of Wales Monitoring Review Questionnaire

Question 1:

Pembrokeshire Coats National Park Authority

Question 2:

Sarah Mellor
Biodiversity Officer

Mair Thomas
Performance and Compliance Coordinator

Phill Barlow
Research and Sustainability Appraisal Officer

Michel Regelous
Conservation and Policy Officer

Geraint Jones
Farm Conservation Officer

Question 3:

Fill in why, what, when, how table with questioner.

Question 4:

In the table of GMEP outcomes and collected data, prioritise your **top five** preferred data extraction for designated landscapes in the fourth column.

Ref	GMEP Outcome	Data collected	Designation Prior Score
1	Biodiversity	Plant diversity	4
2	Biodiversity	Birds	
3	Biodiversity	Pollinators	5
4	Biodiversity	Floral abundance	
4	Biodiversity	Linear features condition	2
5	Climate Change mitigation	Soil carbon	
6	Soil and Water Management	Headwater stream habitat quality (River Hab Survey)	3
6	Soil and Water Management	Headwater stream macroinvertebrate community	1
7	Soil and Water Management	Pond quality	
8	Landscape, Historic Environment and Access	Condition assessment of Historic Environmen Features	
9	Landscape, Historic Environment and Access	Visual Quality Index	
10	Landscape, Historic Environment and Access	Presence and length of Public Rights of Way, including open access areas and beaches.	
12	Woodland creation and management	Woodland ground flora biodiversity	

Question 5: Prioritise your **top four** modelling scenarios for AONB and National Parks

Modelling Scenario	Details	Designation Priority Score
Woodland (different special options, benefits)	To explore which tree species would be best suited for the different soil types and climate conditions within the NPs and AONBs. The potential carbon and climate mitigation that could result can then be extracted and by linking to the GMEP Visual Quality Index such that the impact on landscape aesthetics could also be explored.	4
Water quality (Brexit modelling for water quality)	To better understand the potential outcomes of different Brexit deals and / or different management being considered for inclusion in the new Farm Sustainability Scheme with respect to water quality across the NPs and AONBs.	3
Coastal management (paths/biodiversity)	To explore the potential outcomes of either Brexit trade deals and / or different management interventions being considered for inclusion in the new Farm Sustainability Scheme on coastal systems including visual quality, recreation and land-sea transfers of contaminants e.g. nutrients and pathogens to bathing waters.	2
New agriculture scheme testing	To explore the potential outcomes of the management interventions being considered for inclusion in the new Farm Sustainability Scheme with respect to issues of interest e.g. water quality, climate mitigation, public health/air quality, recreation, bird diversity and abundance etc.	1

Question 6: Is there anything else you would like to add?

Monitoring

Unclear as to how valuable the cookie cutting will be. PCNPA would be interested in getting all the available data for the Park as prioritising without knowing full extent of data for designation proves to be challenging.

Finds the Glastir Outcome and the resilient figures on the GMEP at a glance document really interesting and effective and would be very interested in getting the same figures for the NP if possible. Would also be interested in finding ways to improve our state of the park and make it more robust.

Modelling

Getting the landchange data done by farm returns from Welsh Government wold be extremely valuable for PCNPA as there is 2/3's of data in NP inaccessible.

Areas of Outstanding Natural Beauty and National Parks of Wales Monitoring Review Questionnaire

Question 1:

Anglesey AONB

A fully completed questionnaire was not recorded for this DL Body – the entries in the What/Why/Who table (Appendix 6.4) were recorded and are shown in that table. Preferences were recorded (below).

Question 2:

Question 3:

Fill in why, what, when, how table with questioner.

Question 4:

In the table of GMEP outcomes and collected data, prioritise your **top five** preferred data extraction for designated landscapes in the fourth column.

Ref	GMEP Outcome	Data collected	Designation Priority Score
1	Biodiversity	Plant diversity	
2	Biodiversity	Birds	1
3	Biodiversity	Pollinators	2
4	Biodiversity	Floral abundance	
4	Biodiversity	Linear features condition	
5	Climate Change mitigation	Soil carbon	3
6	Soil and Water Management	Headwater stream habitat quality (River Habitat Survey)	
6	Soil and Water Management	Headwater stream macroinvertebrate community	
7	Soil and Water Management	Pond quality	
8	Landscape, Historic Environment and Access	Condition assessment of Historic Environment Features	
9	Landscape, Historic Environment and Access	Visual Quality Index	5
10	Landscape, Historic Environment and Access	Presence and length of Public Rights of Way, including open access areas and beaches.	4
12	Woodland creation and management	Woodland ground flora biodiversity	

Question 5: Prioritise your **top four** modelling scenarios for AONB and National Parks

Modelling Scenario	Details	Designation Priority Score
Woodland (different special options, benefits)	To explore which tree species would be best suited for the different soil types and climate conditions within the NPs and AONBs. The potential carbon and climate mitigation that could result can then be extracted and by linking to the GMEP Visual Quality Index such that the impact on landscape aesthetics could also be explored.	4
Water quality (Brexit modelling for water quality)	To better understand the potential outcomes of different Brexit deals and / or different management being considered for inclusion in the new Farm Sustainability Scheme with respect to water quality across the NPs and AONBs.	3
Coastal management (paths/biodiversity)	To explore the potential outcomes of either Brexit trade deals and / or different management interventions being considered for inclusion in the new Farm Sustainability Scheme on coastal systems including visual quality, recreation and land-sea transfers of contaminants e.g. nutrients and pathogens to bathing waters.	1
New agriculture scheme testing	To explore the potential outcomes of the management interventions being considered for inclusion in the new Farm Sustainability Scheme with respect to issues of interest e.g. water quality, climate mitigation, public health/air quality, recreation, bird diversity and abundance etc.	2

Question 6: Is there anything else you would like to add?

Areas of Outstanding Natural Beauty and National Parks of Wales Monitoring Review Questionnaire

Question 1:

Wye Valley AONB

Question 2:

Nick Critchley – AONB Development Officer

(A prior meeting had taken place between Nick Critchley and the AONB Manager, Andrew Blake)

Question 3:

Fill in why, what, when, how table with questioner.

Question 4:

In the table of GMEP outcomes and collected data, prioritise your **top five** preferred data extraction for designated landscapes in the fourth column.

Ref	GMEP Outcome	Data collected	Designation Priority Score
1	Biodiversity	Plant diversity	
2	Biodiversity	Birds	5
3	Biodiversity	Pollinators	3
4	Biodiversity	Floral abundance	
4	Biodiversity	Linear features condition	
5	Climate Change mitigation	Soil carbon	2
6	Soil and Water Management	Headwater stream habitat quality (River Hab Survey)	
6	Soil and Water Management	Headwater stream macroinvertebrate community	5*
7	Soil and Water Management	Pond quality	
8	Landscape, Historic Environment and Access	Condition assessment of Historic Environmen Features	4
9	Landscape, Historic Environment and Access	Visual Quality Index	
10	Landscape, Historic Environment and Access	Presence and length of Public Rights of Way, including open access areas and beaches.	
12	Woodland creation and management	Woodland ground flora biodiversity	1

5 - Headwater stream would be more of an interest than birds, if there was a square in the AONB with headwater stream data.*

Question 5: Prioritise your **top four** modelling scenarios for AONB and National Parks

Modelling Scenario	Details	Designation Priority Score
Woodland (different special options, benefits)	To explore which tree species would be best suited for the different soil types and climate conditions within the NPs and AONBs. The potential carbon and climate mitigation that could result can then be extracted and by linking to the GMEP Visual Quality Index such that the impact on landscape aesthetics could also be explored.	3
Water quality (Brexit modelling for water quality)	To better understand the potential outcomes of different Brexit deals and / or different management being considered for inclusion in the new Farm Sustainability Scheme with respect to water quality across the NPs and AONBs.	2
Coastal management (paths/biodiversity)	To explore the potential outcomes of either Brexit trade deals and / or different management interventions being considered for inclusion in the new Farm Sustainability Scheme on coastal systems including visual quality, recreation and land-sea transfers of contaminants e.g. nutrients and pathogens to bathing waters.	4
New agriculture scheme testing	To explore the potential outcomes of the management interventions being considered for inclusion in the new Farm Sustainability Scheme with respect to issues of interest e.g. water quality, climate mitigation, public health/air quality, recreation, bird diversity and abundance etc.	1

Question 6: Is there anything else you would like to add?

Monitoring in the AONB

Monitoring by the AONB is very much project driven and done either to report back on individual project or to gather evidence to demonstrate the need for a specific project e.g. the river walk monitoring Japanese knotweed; carried out for practical purposes. Monitoring is therefore done in short term manner, as and when it's required.

The AONB is aware of other monitoring taken place but not in the position to know details. Cross county and national border also proves to be challenging in getting comparable data, and data for the designation as a whole.

Recording bodies for the Wye AONB:

- South East Wales Biodiversity Record Centre
- Gloucestershire Wild Life Trust Centre for Environment Records
- Hereford Biological Record Centre

There are groups which would have information about volunteer numbers such as the Monmouth Meadows volunteer group. They would hold information on who are actively managing meadows and engaged and interested, which could be an indicator of where the meadows are. Other groups are Hereford Meadows Network Group and Parish Grasslands Gloucestershire.

The AONB (together with all English AONB and NP) is provided with a Monitoring Environmental Outcomes in Protected Landscapes (MEOPL) Framework statistics from Natural England annually. Data included SSSI condition, agriculture scheme, priority habitats, and historical environmental features.

Prioritised data extraction

The AONB would be interested in whatever ERAMMP has for the designation. Prioritising proved to be difficult without knowing the extent of the available data. The AONB would be flexible with priorities depending on data available.

Modelling

Coastal modelling is not a priority for obvious reasons, neither is woodland as the designation is so heavily wooded already.

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