

Additional Information for National Assembly for Wales Roundtable Discussion on Biodiversity - 21 May 2014

Biodiversity baselines on Natural Resources Wales' estate and on protected sites

Following the National Assembly for Wales Biodiversity Round Table on Biodiversity, Natural Resources Wales offered to provide further information on biodiversity baseline on its estate and on designated sites. This paper fulfils this offer.

Two components of the above will benefit from further definition:

Baseline: A baseline is something against which it is possible to make an assessment of change and this has some methodological implications, in that methods have to be precise enough so that real change is not obscured by measurement error. For this reason, many surveys, unless designed to be precisely repeatable, do not provide baselines that are as good as monitoring programmes. Monitoring programmes are designed with repeatability in mind. Surveys can however be enormously valuable in developing such monitoring.

Natural Resources Wales' estate: This paper includes information for both the land that Natural Resources Wales owns e.g. some National Nature Reserves (NNRs) or much of the Welsh side of the Dee Estuary, and the land that we manage on behalf of others e.g. the Welsh Government Woodland Estate. It also provides information on available the baseline for other designated sites that are owned and managed by third parties.

Land that Natural Resources Wales owns

NNRs, whether owned by Natural Resources Wales or third parties, are, like any other areas of Wales, covered by several Wales-wide surveys, including:

- Phase 1 survey, published as the *Habitats of Wales* (1979 to 1997), which is a Wales-wide field-based habitat survey that mapped all land cover in Wales.
- Remote sensing - habitat information captured from remotely-sensed satellite imagery across Wales. This is still under development.
- Woodland on NNRs (and elsewhere) will be covered to some extent by the National Forest Inventory (NFI), which distinguishes between broad categories such as coniferous and broadleaved woodland.
- More detailed Phase 2 vegetation survey, using the National Vegetation Classification (NVC), for some key habitats such as lowland grassland, peatlands, heathlands and some uplands has been carried out on our estate and other targeted areas, based on the priority of those areas for that habitat.

60 of the 76 NNRs are wholly or partly nested within Natura 2000 sites (Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)), whose habitats and species features are subject to an ongoing programme of condition monitoring (see below). It may not, however, always be possible to disaggregate results from the SAC monitoring programme such that robust data can be derived specifically for NNRs.

Monitoring is carried out on NNRs in addition to the SAC monitoring. The focus of the NNR monitoring programmes is on the non SAC features of each reserve.

Land/water owned by third parties and managed directly by Natural Resources Wales

Evidence is available from the NFI and its predecessor survey NIWT (the National Inventory of Woodland and Trees) as well as from monitoring designed to support forest operations. The NFI records (amongst other things) the amount of woodland, broadleaved and coniferous, on a five year cycle and includes biodiversity information such as National Vegetation Classification communities in the field layer. Natural Resources Wales is currently working with Forestry Commission to develop a methodology to assess forest condition for biodiversity from the data collected. As the current cycle is in its final year, we will be able to assess the condition for the last 5-year period.

An updated Ancient Woodland Inventory has recently been published. This includes a digital map of all woodlands in Wales considered to be ancient, based on their presence on the earliest OS maps. This distinguishes between sites retaining semi-natural composition, and those replanted with conifers. Natural Resources Wales has completed an Ancient Woodlands Baseline Survey (AWBS) for all of the ancient woodland resource on the WGWE (including ancient semi natural woodland (ASNW) and plantations on ancient woodland sites (PAWS). This provides a baseline on 12 key attributes and associated factors within the woodlands structure against which we can monitor the progress that our management interventions are making and as such is designed to be repeatable. As a requirement by UK Woodlands Assurance Standard (UKWAS), the AWBS also provides an assessment for critical and threatened sites and allows prioritisation for targeted management.

A deadwood provision assessment for the whole of the WGWE (126,000ha) has been completed, enabling managers to incorporate deadwood interventions into coupe plans. Monitoring change in deadwood provision may be a part of annual auditing requirement for the UKWAS.

A baseline for riverine woodland is available for all forests in the South Wales forest districts; this records condition and issues such as invasive non-native species. This survey informs management requirements and the methodology is designed to be repeatable so that the impact on biodiversity of any intervention can be monitored. Both the riverine and AWBS are spatially captured within GIS which aids future evaluation and assessment of progress.

We hold a database of species present on the WGWE. While not a definitive record of the estate - it is not carried out systematically, rather where operations are planned and where projects or the public report records - there is a large amount of data available. Specific projects have been carrying out recording for long periods; examples are dormouse recording in Bontuchel and the work with Butterfly Conservation Wales which has identified woodland sites across Wales important for Lepidoptera priority species, and has planned and completed conservation work for them. The partnership with Butterfly Conservation carries out annual monitoring and has been operating for over 10 years.

Land owned by third parties where we work in partnership, share land management objectives or influence management through designation

The protected sites series includes areas designated under European legislation – SAC and SPA (from the Habitats and Birds Directives respectively) and UK legislation (Special Sites of Scientific Interest (SSSI)). In most cases, European designations are underpinned by SSSI designation (though not in the marine environment), and the designations themselves can overlap. Consequently, a single area of land can be designated as SSSI, SAC and SPA. Different ‘features of

interest' are associated with each designation type (and can relate in either simple or complex ways). It is these features that are the focus of monitoring.

For **SACs**, there is an ongoing, comprehensive programme of monitoring, undertaken by, or commissioned by, Natural Resources Wales staff. At any particular site, only those habitats and species for which a site was designated are monitored. Monitoring takes place on a 6-year cycle, with each listed habitat or species feature monitored at least once in each 6-year period. The first more-or-less complete set of assessments covers the period 2001-2006, with a repeat set completed (mostly) during 2007-2012.

For **SPAs**, Natural Resources Wales has worked with RSPB to collate and regularly update data on counts of listed bird species. This draws heavily on a range of surveys and monitoring programmes undertaken by partner organisations, often involving collection of data through citizen science schemes, such as the Wetland Bird Survey (WeBS) coordinated by the British Trust for Ornithology (BTO). This approach is vulnerable to gaps in data arising if underlying surveys cease or take place on a less frequent basis.

Data from SAC and SPA monitoring have been used to compile an indicator of protected site condition, published (until 2012) in Welsh Government's State of the Environment report; and these same data are also supplied for background use in the equivalent UK indicator (published annually in the UK Biodiversity Indicators in Your Pocket report).

For **SSSIs**, there is no comprehensive programme of monitoring across all feature types. Some are monitored regularly (e.g. geological features, intertidal features, some freshwater features), others more intermittently, and some probably not at all.

In addition to monitoring datasets, we also have National Vegetation Classification data for the majority of sites, collected through strategic national surveys for habitat groups such as lowland grasslands, woodlands, peatlands and heathlands; an example of this is the *Grasslands of Wales* book, published in 2010. Equivalent comprehensive surveys of intertidal habitats around Wales have been completed.

As mentioned in relation to NNRs, a varied set of broader surveys (such as Phase 1 survey) will also provide evidence relating to these protected areas, even if these do not provide strong baselines against which to measure change.

For some sites, there are detailed time series of data for a wider range of species and other environmental parameters (e.g. from the Environmental Change Network site on Snowdon and the Skomer Marine Nature Reserve).

For other priority habitats and species (i.e. where not identified as features of interest), available information is variable and patchy, with the scope for identifying trends often very limited. Generally, this is true for both 'our estate' and for the wider countryside. Examples of available data include the Botanical Society of Britain and Ireland (BSBI) vascular plant atlas and the annual monitoring carried out by Butterfly Conservation which will include transects on the Natural Resources Wales estate

General point for biodiversity information for any site or location

Natural Resources Wales also has access to third party species and habitats records occurring on our estate through our partnership work with Local Records Centres (LRCs), the National Biodiversity Network (NBN), Marine Environmental Data and Information Network (MEDIN) and national schemes and societies. Through our

partnership support for LRCs we receive bespoke GIS layers of priority and protected species locations and LRCs can provide a report of all records for any location. The NBN gateway has a map of the boundaries for designated sites and can provide an automated report of species records for that site. The main challenge that we face is creating a single view that effectively pulls these records together into one place. We work with national schemes and societies to develop targeted monitoring schemes to help gather records suitable for status and trend reporting and with the Centre for Ecology and Hydrology to investigate modelling techniques that enhance the use of ad hoc and citizen science data for robust monitoring.

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Information on progress with the development of the Information Hub

Welsh Government (WG) arranged two early meetings with Natural Resources Wales (NRW) on the scope of the Information Hub. Since then a draft proposal was presented to the WG Natural Resources Policy Board and WG staff have been consulting with policy branches within government to scope their requirements .

The focus so far has been working with the WG GIS teams on creating the right infrastructure and underlying architecture, with relevant data content or links to relevant data. Stakeholders have a number of different requirements and expectations of 'a hub'. Providing the initial infrastructure with content is seen as a useful and practical deliverable for the first phase. This can then be used to scope requirements for 'views' on the content.

WG met recently with NRW staff to update. It is proposed that WG use their Lle site as the first phase of developing the hub.

Lle is the WG publishing mechanism, currently set up for spatial datasets

(<http://lle.wales.gov.uk/>)

It also intended to publish the map views through Google's new public maps gallery

<https://maps.google.com/gallery/>

Example search for maps in Wales

<https://maps.google.com/gallery/search?hl=en&q=wales>

Example search for WG maps

<https://maps.google.com/gallery/search?hl=en&q=welsh+government>

WG also aim to create a landing page that point users to this content ready for the July Royal Welsh.

NRW is working with WG to co-ordinate the submission of NRW open data sets for publishing through the WG portal. The timetable is tight but we will publish as many open datasets as we can. In the short term we will need to maintain manual uploads to the WG portal as an overhead, but we will be looking at automating this in the medium/long term. We are assessing the frequency of update as part of our publishing plans in order to understand the administration overhead.

NRW is also working with WG on drafting a MoU/MoA to document the data exchange and service commitments of the partnership.

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