

Board Paper

Paper Title	Management of the NRW Estate to Enhance Pollinator Activity in Wales
Paper Reference:	NRW B B 58.14
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Purpose of Paper:	Information and decision
Recommendation:	To note the requirements of and options for potential management of the NRW estate for enhancement of pollinator activity.
Decision Required:	Approval of recommendations to enhance management of NRW estate for pollinators.

Impact: To note – all headings might not be applicable to the topic	Impact on the Environment: A healthy population of pollinators are a vital part of the ecology of the Welsh environment. NRW as managers of 7% of the Welsh land area has a significant role in this Impact on the Economy: Pollinators have a vital role in some areas of the Welsh economy, especially fruit growing and some other areas of agriculture. Impact on Community: Pollinators such as bumble bees and honey bees are an important cultural as well as economic and ecological resource Impact on Knowledge:
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Issues

1. This paper provides background as to the issues surrounding pollinators and the ecosystem services they provide as well as a description of how Natural Resources Wales in its role as land manager currently contributes towards the maintaining and enhancing pollinator populations in Wales on the land it manages directly or in partnership with others. In addition it provides discusses scope for enhancing the provision for pollinators on this land in future.
2. The Welsh Government Pollinator Action Plan has tasked Natural Resources Wales to: Ensure that management programmes within Welsh Government (WG) and Natural Resources Wales (NRW) take full account of pollinators as a key ecosystem service. The action plan requires: working with NRW to ensure action for pollinators on designated sites, and within the woodland estate.
3. NRW owns or manages 7% of the land area of Wales on behalf of Welsh Government. This is a very diverse estate including large areas of commercial coniferous plantation, and some of the iconic Natural Nature Reserves in the UK in covering a very wide range of habitats. NRW also manage flood storage areas and embankments in a number of areas as well as a significant portfolio of visitor centres, office and workshop locations.

Background

4. Welsh Government Action Plan for Pollinators is aims to reduce, and reverse, the decline in wild and managed pollinator populations. Pollinators include bees, some wasps, butterflies, moths and hoverflies, some beetles and flies.
5. The National Ecosystem Assessment carried out in 2011 showed that both managed pollinators (honey bees) and wild pollinators (such as bumblebees and butterflies) have been declining for 30 years. It is likely that this will continue if we don't act now. Pollinators are an essential part of our environment.
6. Honeybees are the main managed pollinator of crops and also provide a crop (honey) themselves.
7. Pollination is a very important ecosystem service. Twenty percent of the UK cropped area contains crops which are dependent on pollinators. A lot of wild flowering plants also rely on insect pollination for reproduction. The value of pollinators to UK agriculture is over £430 million per year.
8. Wild pollinators, which include bumblebees and butterflies, are important pollinators for crops including fruit, oil seed rape and clovers, which help to improve pastures for livestock grazing. They contribute to the diversity of plant species, habitats and

wildlife. This provides food, makes Wales a better place for people to live in, enjoy and visit as well as contributing to our economy.

9. Pollinators require countryside which supports plentiful nectar and pollen sources in a mosaic of flower-rich fields, hedgerows, woods and wet areas over an extended summer period to provide the necessary conditions for foraging, breeding and other aspects of their ecology. Resources need to be available at the right time of year, particularly early and late in the year when there is limited supply of nectar and pollen.
10. For important pollinator species such as bumblebees and solitary bees, an ideal landscape comprises large areas of flower-rich pastures lightly grazed by cattle or horses and flower-rich hay meadows, with swards supporting an abundance of the preferred forage plants, surrounded by hedgerows and low-maintenance field margins. Ideally, grazing from autumn to spring, rather than summer, will allow plants to flower in the summer months and will check the growth of rank vegetation. A proportion of the hay crops will be left uncut until September to provide a continuous supply of flowers. Hedges and field margins will provide nest sites and hibernation sites, as well as additional flowers.
11. Flower rich habitat does not need to be continuously connected. Providing 'stepping stones' of habitat in the correct density will provide refuges and floral resources for pollinators and other invertebrates.

Forest Estate

12. NRW currently have 14 sites, across the public forest estate managed specifically for pollinators, listed in appendix 1. Some of these sites are managed in partnerships with the 3rd sector organisation Butterfly Conservation.
13. Other sites that can enhance Pollinator habitat through establishing native flowering plants and sympathetic management of grassy areas are within NRW visitor centres and car parks. These areas are well located to interpret and demonstrate NRW's commitment to fulfil these biodiversity provisions, contributing towards educating the population of Wales about the importance of pollination as an ecosystem service and pollinators as parts of our ecosystem. These form part of the list in appendix 2.
14. The wider forest estate is host to a wealth of suitable habitats with opportunities to develop and improve connectivity through enhancing road and ride edge habitat for pollinators.
15. The current network of roads (3,734km) and rides (1,514km) can provide interconnections with key riparian habitats (2,153Ha) and open areas which extends to a further 13,228Ha and which is currently managed for mosaic habitat features or specific key species. There are also deer glades within some forest blocks which if managed sympathetically will further enhance pollinator habitat.

16. Road verges are highly diverse habitat with a range of flowering plant species useful to pollinators. Upland areas are dominated by species such as heather and bilberry. In order to maintain a suitable range of species, vegetation would need to be cut periodically to prevent woody plants shading out shorter plants.
17. Developing a strategic approach to identify road verge and ride habitats where this would add to ecological connectivity and interlink key pollinator rich sites such as riverside and open habitats. Such programmes should be targeted to main forest blocks and will complement the Forest Resource Plan and ecosystems approach for pollinators. These must however also be measured against the balance of other importance species and legal requirements such as specific species protection.
18. Some of the replanting that will be undertaken by NRW as a result of Phytophthora ramorum infection, will allow development of forest structure which will be more favourable to wild pollinator populations than previously.

Flood Risk Management Infrastructure

19. Although NRW actually own a relatively small proportion of floodplain generally where we bought land to safeguard its use as a flood storage area, there is potential to integrate pollinator friendly maintenance into our asset management plans. The Organisation also own significant lengths of flood embankments in parts of Wales and although in general our maintenance requirements would make them less suitable, there are some that are cut less frequently that could also have significant value for pollinators.
20. NRW also own a number of registered reservoirs but statutory safety recommendations mean that vegetation needs to be kept to a certain length at these sites to allow ready inspection of the infrastructure. More detailed discussions will be required to ensure that such an approach does not compromise the flood risk management function of these areas and assets and that any increased maintenance costs are accounted for. The picture across Wales is that we have 45 sites over .45ha, a number of these are already subject to management agreements for nature conservation, but there is significant scope for further development.

National Nature Reserves (NNRs)

21. The 76 National Nature Reserves owned and/or managed by NRW are some of the most important places for wildlife in Wales, supporting a wide range of habitats and species, including high mountain summits, sweeping sand dunes, ancient oak woodlands, peat bogs, hay meadows and remote offshore islands. .
22. While the focus of management on the National Nature Reserves is the ecological interest for which they were declared, in doing so these important sites provide a haven for a diverse mix of invertebrates including a wide variety of, often rare or scarce, wild pollinators. Wherever possible traditional and sympathetic land management practices are used to maintain or restore these sites and this benefits pollinators.

23. Grassland pastures and grazing marshes are managed through light levels of grazing, often for shorter periods and preferably with cattle or ponies, which tend not to eat flowers selectively and create structural diversity by trampling and poaching creating a mosaic of niches suitable for a wider variety of wild pollinators. Where possible grazing is rotated to ensure some areas remain un-grazed throughout the season. For example the Newborough Warren NNR sand dune system is lightly grazed year round by ponies creating a flower-rich dune grassland, while summer grazing by cattle has been reintroduced on the Corsydd Mon and Corsydd Llyn NNRs creating greater structure and diversity and reducing leaf litter.
24. Use of fertilisers is limited and restricted to traditional methods such as farm-yard-manure. This allows much more diverse species-rich swards to develop, offering a wider range of nectar sources which are available throughout the season. So far as possible the use of pesticides and herbicides is avoided as these will reduce the diversity of these habitats and the associated wild pollinators.
25. Some NNRs, for example Carmel and Allt Rhyd y Groes NNRs, are managed as hay meadows in a traditional manner with a single late cut, so allowing the rich range of plants to flower and set seed. Where possible these sites are mown on a staggered rotational pattern and wide margins are left at the periphery of fields. This ensures that some uncut sward remains available for wild pollinators until at least late autumn and ranker areas which provide nest sites and hibernation sites for pollinators are retained.
26. Upland heaths are again managed through lighter grazing and an absence of winter stock as this allows the extent of dwarf shrubs such as heather and bilberry to increase in cover, as well as allowing more grasses and flowering plants to actually flower and set seed.
27. Areas of scrub are maintained as these provide important nectar sources when they blossom. Willow scrub, although wind pollinated, is an important early food source for bumble and other bees.
28. NRW manages hedgerow species, and particularly early-flowering species such as blackthorn, willow, hawthorn and elder, to maximise blossom. So far as possible they are cut on rotation to ensure that some blossoming growth is available.
29. Wherever possible we will avoid cutting vegetation in and on car parks, access tracks, footpath and bridleways these throughout the summer, though for health and safety reasons this isn't always possible.
30. Work is also underway to restore and recreate a range of habitats on the NNRs which will benefit wild pollinators. For example the fields surrounding the Cors Fochno NNR have been restored through re-wetting the peat and light summer grazing with Welsh mountain ponies and Welsh cattle. This has transformed what was a monoculture of purple moor grass with very few flowering plants, to one with a wide range of bog and fen grassland species including lesser butterfly and marsh orchids, and important pollinator species such as lousewort, devils bit scabious, greater birds foot trefoil, hemp agrimony and purple loosestrife.

31. Other examples include the hay meadow restoration project at Coedydd Aber NNR, which will lead to an increase in flowering plants and species diversity, and the innovative management at Fenns and Whixhall Mosses NNR to restore the raised bog which is benefitting a whole range of invertebrate pollinators once thought to have disappeared from the site.
32. NNRs also act as important sites to demonstrate best practice land management techniques that are both productive and good for wildlife, including wild pollinators. They are also ideal places in many cases to interpret this work for visitors at all levels. For example the innovative work taking place on Rhos Llawr Cwrt NNR to recreate the now scarce traditional Rhos Pastures, a species-rich habitat that is home to a wide range of wild pollinators.
33. There is likely also to be opportunities to work with beekeepers on some NNR with regard to placing of hives. This however must be balanced against disease transmission risk to wild pollinator populations and potential for out competing native insect species for nectar and other resources.

NRW Office, Depot and Visitor Centre Premises

34. There are some very significant opportunities to develop the way we manage the land around our premises to not only enhance them pollinators and in some cases act as exemplars of what can be done with sensitive management. The contract specification in Appendix 3 for the Maes y Ffynnon location in Bangor has delivered very impressive results in improving communities of flowering plants and should be commended as a model to follow.
35. It would also be an opportunity for the NRW education team or partner organisations to promote the importance of pollinators through conducting specific education activities to establish these grassland communities and their management. The list in appendix 3 is areas that have ready potential to be enhanced.
36. There is also likely to be opportunities for NRW to work with local bee keepers on some of our visitor centre locations to explore opportunities for educational work on the role of bees as pollinators. In addition there may be some opportunity for commercial activities around sale of honey and beeswax products produced from NRW managed land.

Next Steps

37. The Heads of Operations Services in the two Operations Directorates to coordinate a prioritised and costed programme for implementation of the land management measures discussed above and specified in the appendix 2

38. Specialist staff should use the example of the successful contract specification in appendix 3 to explore potential for more wildlife and specifically pollinator friendly management of our own premises and their surroundings.
39. NRW should incorporate messaging on the ecosystem services provided by pollinators into our interpretative material at visitor centres and other locations we manage. This should also be included in any educational work we undertake on these sites and in the wider community where appropriate.