# European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC)

## Fourth Report by the United Kingdom under Article 17

on the implementation of the Directive
from January 2013 to December 2018

Supporting documentation for the
conservation status assessment for the habitat:

**H4030 - European dry heaths**

WALES

## IMPORTANT NOTE - PLEASE READ

- The information in this document is a country-level contribution to the UK Report on the conservation status of this habitat, submitted to the European Commission as part of the 2019 UK Reporting under Article 17 of the EU Habitats Directive.
- The 2019 Article 17 UK Approach document provides details on how this supporting information was used to produce the UK Report.
- The UK Report on the conservation status of this habitat is provided in a separate document.
- The reporting fields and options used are aligned to those set out in the European Commission guidance.
- Explanatory notes (where provided) by the country are included at the end. These provide an audit trail of relevant supporting information.
- Some of the reporting fields have been left blank because either: (i) there was insufficient information to complete the field; (ii) completion of the field was not obligatory; and/or (iii) the field was only relevant at UK-level (sections 10 Future prospects and 11 Conclusions).
- For technical reasons, the country-level future trends for Range, Area covered by habitat and Structure and functions are only available in a separate spreadsheet that contains all the country-level supporting information.
- The country-level reporting information for all habitats and species is also available in spreadsheet format.

Visit the JNCC website, https://jncc.gov.uk/article17, for further information on UK Article 17 reporting.

# Report on the main results of the surveillance under Article 17 for Annex I habitat types (Annex D)

## NATIONAL LEVEL

## 1. General information

| | |
|---|---|
| 1.1 Member State | **UK (Wales information only)** |
| 1.2 Habitat code | **4030 - European dry heaths** |

## 2. Maps

| | |
|---|---|
| 2.1 Year or period | 1987-2017 |
| 2.3 Distribution map | Yes |
| 2.3 Distribution map Method used | Complete survey or a statistically robust estimate |
| 2.4 Additional maps | No |

## BIOGEOGRAPHICAL LEVEL

## 3. Biogeographical and marine regions

| | |
|---|---|
| 3.1 Biogeographical or marine region where the habitat occurs | **Atlantic (ATL)** |
| 3.2 Sources of information | APIS (Nitrogen Deposition: Dwarf-shrub Heath http://www.apis.ac.uk/node/974<br>Barker, C.G., Power, S.A., Bell, N.B. & Orme, C. D. (2004) Effects of habitat management on heathland response to atmospheric nitrogen deposition. Biological Conservation Volume 120, Issue 1, Pages 41-52<br>Blackstock T. H., Howe E. A., Stevens J. P., Burrows C. R. & Jones P. S. 2010. Habitats of Wales. A comprehensive field survey 1979-1997. University of Wales Press, Cardiff.<br>Bishop, J. & Jones, N. 2011. Review into the impacts of management on the heathland community and the potential for the control of Phytophthora. Food and Environment Research Agency (DEFRA research PH0601).<br>Bunch, N., Cheffings, C., & Robinson, A. 2016 Decision-making guidance for managing Phytophthora infections in Vaccinium myrtillus populations JNCC Report No: 578<br>Conyers, S., Somerwill, K., Ramwell, C., Hughes J., Laybourn, R., & Jones N. 2011. Review of the known and potential biodiversity impact of Phytophthora and the likely impacts on ecosystem services. Food and Environment Research Agency (DEFRA research PH0601)<br>Cwlwm Seriol Big Lottery Project https://cwlwmseriolbond.com<br>Defra 2014 Tree Health Management Plan<br>Fag00fandez, J. 2013. Heathlands confronting global change: drivers of biodiversity loss from past to future scenarios. Annals of Botany 111(2) 151-172<br>Gray, D.A., 2004. A National Vegetation Survey (NVC) of the Brecon Beacons SSSI. CCW Science Report 667<br>Gray, D.A., 2002. NVC Survey of proposed extensions to Eryri cSAC (Glydeirau and Y Wyddfa). CCW Contract Science Report 517.<br>Gray, D.A., 2003. NVC Survey of Mynydd Llangatwg and Mynydd Llangynidr. CCW Contract Science Report 605.<br>Gritten R. 2012. Conservation Assessment of Lowland Heathland in the Upland Fringes (Ffridd Zone) of Snowdonia National Park. CCW Science Report No.992.<br>Guest, D. 2012. Assessing N deposition as a pressure for Article 17 reporting on habitats. CCW internal document.<br>Hayes, M. J. and I.A. Spiridonova. 2009. Creation of Coastal Heathland from Agricultural Land CCW Science Report No. 868.<br>Jerram, R., 2005. Pumlumon SSSI. Survey of National Vegetation Communities |

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Natural England 2014. Site Improvement Cannock Chase. Internal document.
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NRW. 2015. Natura 2000 Thematic Action Plan Grazing and Livestock Management. Internal NRW Report.
NRW. 2017 Actions Database. Internal NRW database.
NRW 2017 European Dry Heath Life N2K data. Internal NRW dataset.
NRW. 20181. SAC and SPA Monitoring Programme Results 2013-2018. Internal Dataset.
NRW. 20182. South and East Region SSSI Monitoring Tracker. Internal NRW dataset.
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Stevens D. P., Smith S. L. N., Blackstock T. H., Bosanquet S. D. S. & Stevens J. P. 2010. Grasslands of Wales. A survey of lowland species-rich grasslands, 1987-2004. University of Wales Press, Cardiff.
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Wilkinson (2015) North West Pembrokeshire Commons SAC Monitoring Report European Dry Heath. Monitoring Round 2013 to 2018
Wilkinson, K. 2016. Draft Cernydd Carmel SAC Monitoring Report European Dry Heath Monitoring Round 2013 to 2018. NRW Internal Report

## 4. Range

| | | |
|---|---|---|
| 4.1 Surface area (in km²) | | |
| 4.2 Short-term trend Period | | |
| 4.3 Short-term trend Direction | Uncertain (u) | |
| 4.4 Short-term trend Magnitude | a) Minimum | b) Maximum |
| 4.5 Short-term trend Method used | | |
| 4.6 Long-term trend Period | | |
| 4.7 Long-term trend Direction | | |
| 4.8 Long-term trend Magnitude | a) Minimum | b) Maximum |
| 4.9 Long-term trend Method used | | |
| 4.10 Favourable reference range | a) Area (km²)<br>b) Operator | |

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| | | |
|---|---|---|
| | c) Unknown | No |
| | d) Method | |
| 4.11 Change and reason for change in surface area of range | No change | |
| | The change is mainly due to: | |
| 4.12 Additional information | | |

## 5. Area covered by habitat

| | | | |
|---|---|---|---|
| 5.1 Year or period | 1987-2017 | | |
| 5.2 Surface area (in km²) | a) Minimum | b) Maximum | c) Best single value 777.4 |
| 5.3 Type of estimate | Best estimate | | |
| 5.4 Surface area Method used | Complete survey or a statistically robust estimate | | |
| 5.5 Short-term trend Period | 2007-2017 | | |
| 5.6 Short-term trend Direction | Uncertain (u) | | |
| 5.7 Short-term trend Magnitude | a) Minimum | b) Maximum | c) Confidence interval |
| 5.8 Short-term trend Method used | Insufficient or no data available | | |
| 5.9 Long-term trend Period | 1987-2017 | | |
| 5.10 Long-term trend Direction | Decreasing (-) | | |
| 5.11 Long-term trend Magnitude | a) Minimum | b) Maximum | c) Confidence interval |
| 5.12 Long-term trend Method used | Based mainly on extrapolation from a limited amount of data | | |
| 5.13 Favourable reference area | a) Area (km²) | | |
| | b) Operator | | |
| | c) Unknown | No | |
| | d) Method | | |
| 5.14 Change and reason for change in surface area of range | No change | | |
| | The change is mainly due to: | | |
| 5.15 Additional information | | | |

## 6. Structure and functions

| | | | | |
|---|---|---|---|---|
| 6.1 Condition of habitat | a) Area in good condition (km²) | Minimum 23.7 | Maximum 23.7 | |
| | b) Area in not-good condition (km²) | Minimum 191.5 | Maximum 191.5 | |
| | c) Area where condition is not known (km²) | Minimum 562.2 | Maximum 562.2 | |
| 6.2 Condition of habitat Method used | Based mainly on extrapolation from a limited amount of data | | | |
| 6.3 Short-term trend of habitat area in good condition Period | 2003-2011 | | | |
| 6.4 Short-term trend of habitat area in good condition Direction | Stable (0) | | | |

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| | |
|---|---|
| 6.5 Short-term trend of habitat area in good condition Method used | Based mainly on extrapolation from a limited amount of data |
| 6.6 Typical species | Has the list of typical species changed in comparison to the previous reporting period? No |
| 6.7 Typical species Method used | |
| 6.8 Additional information | |

## 7. Main pressures and threats

7.1 Characterisation of pressures/threats

| Pressure | Ranking |
|---|---|
| Extensive grazing or undergrazing by livestock (A10) | H |
| Intensive grazing or overgrazing by livestock (A09) | H |
| Mixed source air pollution, air-borne pollutants (J03) | H |
| Other invasive alien species (other then species of Union concern) (I02) | H |
| Burning for agriculture (A11) | M |
| Mowing or cutting of grasslands (A08) | M |
| Problematic native species (I04) | M |
| Sports, tourism and leisure activities (F07) | M |

| Threat | Ranking |
|---|---|
| Extensive grazing or undergrazing by livestock (A10) | H |
| Intensive grazing or overgrazing by livestock (A09) | H |
| Mixed source air pollution, air-borne pollutants (J03) | H |
| Other invasive alien species (other then species of Union concern) (I02) | H |
| Burning for agriculture (A11) | H |
| Mowing or cutting of grasslands (A08) | M |
| Problematic native species (I04) | M |
| Sports, tourism and leisure activities (F07) | M |
| Interspecific relations (competition, predation, parasitism, pathogens) (L06) | M |
| Conversion to forest from other land uses, or afforestation (excluding drainage) (B01) | M |

7.2 Sources of information

7.3 Additional information

## 8. Conservation measures

| | | |
|---|---|---|
| 8.1 Status of measures | a) Are measures needed? | Yes |
| | b) Indicate the status of measures | Measures identified and taken |
| 8.2 Main purpose of the measures taken | Maintain the current range, population and/or habitat for the species | |
| 8.3 Location of the measures taken | Both inside and outside Natura 2000 | |

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| | |
|---|---|
| 8.4 Response to the measures | Medium-term results (within the next two reporting periods, 2019-2030) |
| 8.5 List of main conservation measures | |

Adapt mowing, grazing and other equivalent agricultural activities (CA05)

Reinstate appropriate agricultural practices to address abandonment, including mowing, grazing, burning or equivalent measures (CA04)

Recreate Annex I agricultural habitats (CA07)

DO NOT USE Management, control or eradication of other alien species (CI04)

Management of problematic native species (CI05)

Reduce/eliminate air pollution from agricultural activities (CA12)

Manage/reduce/eliminate air pollution from transport (CE03)

Prevent conversion of (semi-) natural habitats into forests and of (semi-)natural forests into intensive forest plantation (CB01)

Implement climate change adaptation measures (CN02)

Reduce impact of outdoor sports, leisure and recreational activities (CF03)

8.6 Additional information

## 9. Future prospects

| | |
|---|---|
| 9.1 Future prospects of parameters | a) Range<br>b) Area<br>c) Structure and functions |
| 9.2 Additional information | |

## 10. Conclusions

| | |
|---|---|
| 10.1. Range | |
| 10.2. Area | |
| 10.3. Specific structure and functions (incl. typical species) | |
| 10.4. Future prospects | |
| 10.5 Overall assessment of Conservation Status | |
| 10.6 Overall trend in Conservation Status | |
| 10.7 Change and reasons for change in conservation status and conservation status trend | a) Overall assessment of conservation status<br>No change<br>The change is mainly due to:<br>b) Overall trend in conservation status<br>No change<br>The change is mainly due to: |
| 10.8 Additional information | |

## 11. Natura 2000 (pSCIs, SCIs, SACs) coverage for Annex I habitat types

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| | | |
|---|---|---|
| 11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network (in km² in biogeographical/ marine region) | a) Minimum<br>b) Maximum<br>c) Best single value | 215.16 |
| 11.2 Type of estimate | Best estimate | |
| 11.3 Surface area of the habitat type inside the network Method used | Complete survey or a statistically robust estimate | |
| 11.4 Short-term trend of habitat area in good condition within the network Direction | Stable (0) | |
| 11.5 Short-term trend of habitat area in good condition within network Method used | Complete survey or a statistically robust estimate | |
| 11.6 Additional information | | |

## 12. Complementary information

| | |
|---|---|
| 12.1 Justification of % thresholds for trends | |
| 12.2 Other relevant information | |

# Distribution Map

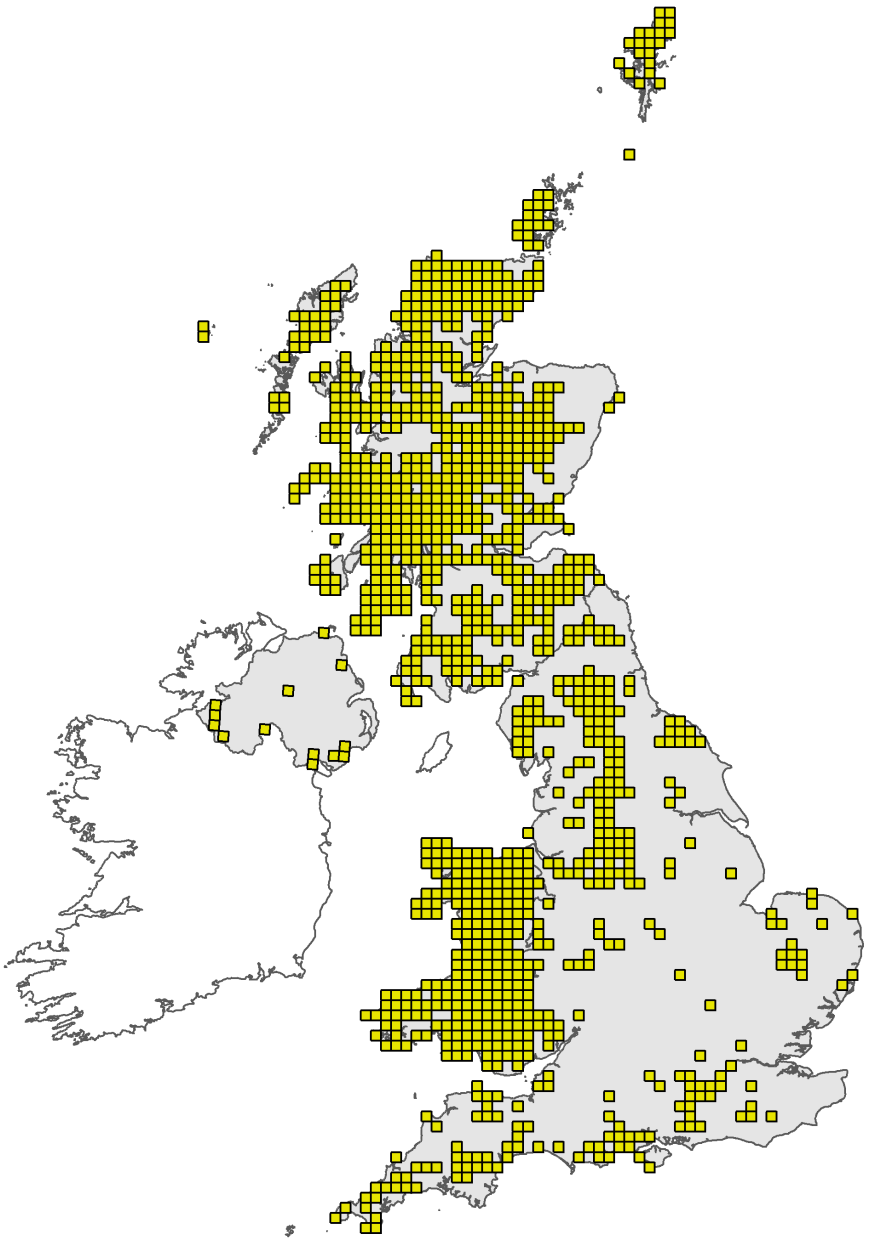

Figure 1: UK distribution map for H4030 - European dry heaths. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The 10km grid square distribution map is based on available habitat records which are considered to be representative of the distribution within the current reporting period. For further details see the 2019 Article17 UK Approach document.

# Range Map

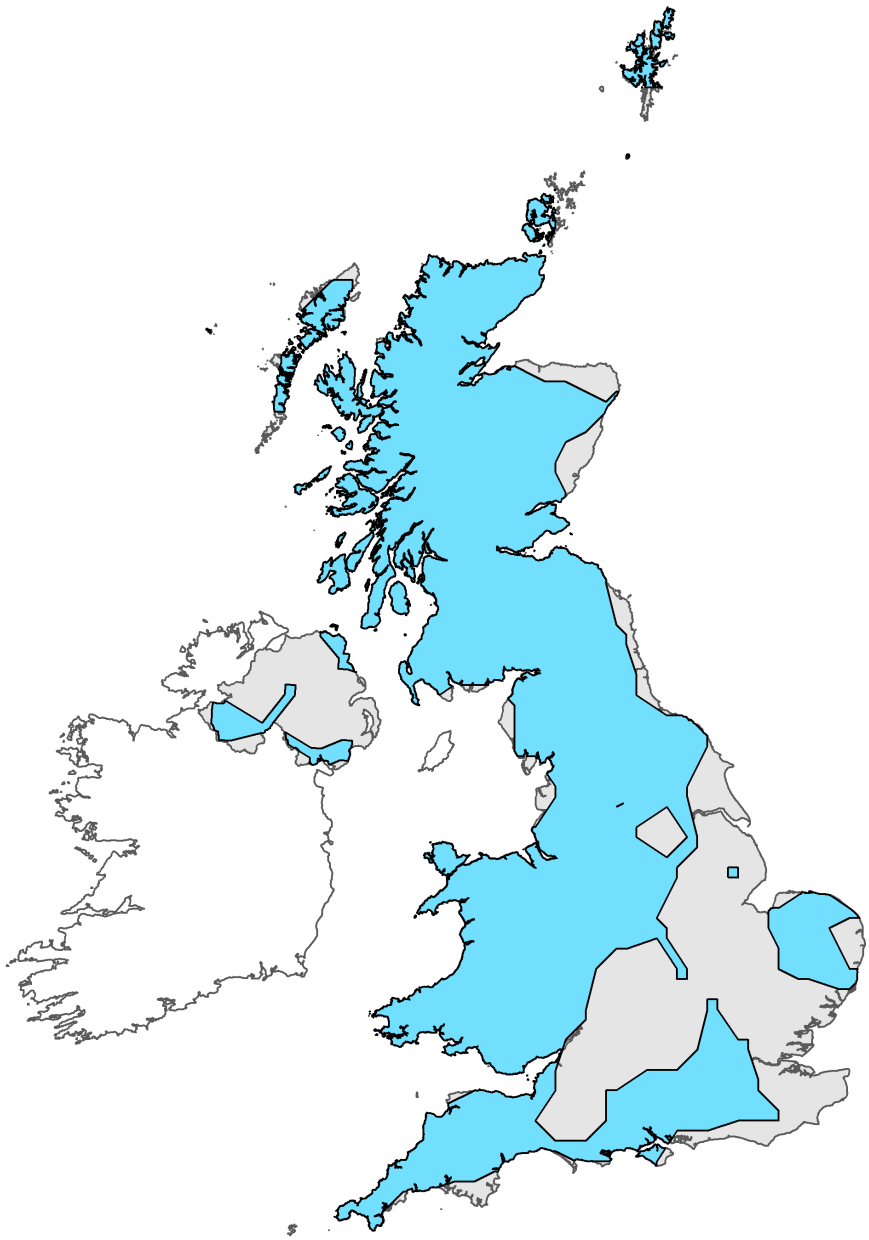

Figure 2: UK range map for H4030 - European dry heaths. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The range map has been produced by applying a bespoke range mapping tool for Article 17 reporting (produced by JNCC) to the 10km grid square distribution map presented in Figure 1. The alpha value for this habitat was 25km. For further details see the 2019 Article 17 UK Approach document.

# Explanatory Notes

**Habitat code: 4030**

| Field label | Note |
|---|---|
| 2.3 Distribution map; Method used | The distribution (and extent) of H4030 has been calculated using three main data sources plus additional surveys and research reports. A polygon-based GIS inventory was produced in 2012 (Stevens and Sherry 2012) and reviewed in 2018. There is likely to be additional data which could be added to the map based on a review of NVC data but currently this has not been processed and therefore no changes have been made to the map. Data source 1 (MAIN DATA SOURCE): 'Phase 1' Habitat Survey of Wales (HSW; Blackstock et al. 2010). This was a comprehensive field-by-field survey of the region; distribution data for this habitat come entirely from the upland component of the survey, conducted between 1979 and 1989. This is a relatively old dataset and has not been updated with more recent changes in habitat extent. Data source 2 (MAIN DATA SOURCE): Lowland Heathland Survey of Wales (LHSW various authors summarised in Sherry 2007). This was a targeted NVC (Rodwell (ed.) 1992) survey focussing on heathlands of high conservation interest in the Welsh lowlands. Survey work was conducted between 1993 and 2002. Data source 3: (MAIN DATA SOURCE): Heathland data collected as part of the Lowland Grassland Survey of Wales (LGSW; Stevens et al. 2010). Survey work was conducted between 1987 and 2004. Data source 4: Various upland NVC Surveys (various authors) undertaken between 1996 and 2008. Data source 5: A sample survey of 48 1km squares in the Snowdonia National Park between 2009 and 2011 (Gritten 2012). Data source 6: Heathland records from 2 studies of coal spoil vegetation in south Wales in 2007. |

**Habitat code: 4030 Region code: ATL**

| Field label | Note |
|---|---|
| 4.3 Short term trend; Direction | Significant changes to the 10km square distribution and linked range of H4030 in Wales over the last 12 years are relatively unlikely to have occurred. The habitat has been recorded from the majority of hectads and in most it occurs in multiple locations. As a result there is limited scope for increases in range and decreases would typically require the total loss of habitat from multiple localities. However, NRW has no system in place for monitoring or recording such changes and losses of heath, for example to agricultural improvement, habitat succession or development, or gains notably through positive conservation management or as a result of relaxation of grazing pressure are not uncommon at individual locations. The short-term trend in range is therefore considered to be uncertain. |
| 4.11 Change and reason for change in surface area of range | The distribution data submitted in 2013 has not been updated. Changes in surface area or range may actually have occurred since the last reporting period, but NRW has no system in place for monitoring or recording such changes. |
| 5.4 Surface area; Method used | See 2.3 |
| 5.6 Short term trend; Direction | Both losses and gains are known to be occurring (individual site records and anecdotal evidence) but there is insufficient information to determine how these are balanced. |

| | |
|---|---|
| 5.8 Short term trend; Method used | Changes in the extent of H4030 have been recorded at a number of individual sites since 2007: In Ceredigion, a small area of dry heath has been lost to coastal and neutral grassland (Sherry 2016); SAC monitoring at Cernydd Carmel showed a 2.03 ha loss of habitat equating to 11% of the European Dry Heath feature on the site (Wilkinson 2016); SSSI monitoring at Mynydd Ty-Isaf, Rhondda(SSSI) has shown an increase in dry heath (NRW 2018). In the lowlands losses are primarily due to lack of grazing and abandonment leading to successional change (scrub and woodland development) with smaller losses to grassland. In the uplands, grazing still supresses heathland regeneration across large areas but losses are also attributable to bracken encroachment, but extent of loss is not recorded. (NRW Actions Database 2017). Gains are primarily from decreased upland grazing as a result of Glastir and other Management Agreements or small-scale habitat re-creation schemes in the lowlands e.g. Pembrokeshire 30 ha European Dry Heath re-created (Hayes and Spiridonova 2009). However, the area of habitat lost and gained is not sufficiently well recorded or monitored. Successional changes are particularly poorly recorded. |
| 5.12 Long term trend; Method used | No change from the last reporting round as there is little information available to track losses and gains. There is no evidence to suggest that losses reported in 2012 have been re-gained (JNCC Archive 2017, Gritten 2012). Losses still continue as a result of both abandonment and intensification, although these are unlikely to be as large-scale as those recorded pre-2012 reporting round. A number of long-term, but relatively small-scale projects have restored or re-created heath from forestry or agricultural land. Tir Gofal and Glastir have resulted in reduced grazing in the uplands which has favoured heathland expansion. Agreements to exclude grazing at Cwm Idwal and Pumlumon have allowed heathland to expand, including this habitat. |
| 5.14 Change and reason for change in surface area | Whilst change may have occurred during the reporting period there is insufficient data to recalculate the surface area figure |
| 6.2 Condition of habitat; Method used | Derived from most recent SAC monitoring data. European Dry Heath condition has been assessed using Common Standards Monitoring on 21 sites, only one of which is recorded as favourable (NRW 20181). The extent data in 6.1 are based on the assumption that condition judgements for SAC sites apply to the whole resource of H4030 in that site. Additional condition data from a very small selection of SSSIs have also been utilised (NRW 20182) |
| 6.3 Short term trend of habitat area in good condition; Period | Two monitoring rounds in 2003 and 2011 showed the single site (Rhinog SAC) to be favourable maintained. |

7.1 Characterisation of pressures/ threats

Pressures: 1. Data held in NRW's Special Sites Database (NRW 2017), which provides information on issues needing action, was used to quantify pressures and threats relating to the habitat. Most issues relate to agricultural and land management with grazing the most significant pressure. Insufficient grazing (A10) impacts on 168 units, overgrazing (A09) impacts on 158 units, and incorrect grazing type or timing impacts on 328 units. Insufficient cutting is identified as an issue on 76 units (A08). Bracken and/or gorse invasion (I04) are an issue on 121 units and scrub invasion on 114 units, these vegetational changes are linked to inappropriate grazing management on these units (both insufficient and/or type and timing). Burning is an issue on only 71 units but uncontrolled burning has an impact on significant areas on these units (A11). Access and recreation are a pressure on 53 units this includes footpath erosion, damage by vehicles and bikes, and dog issues such as fouling and livestock disturbance (F07). Invasive non-native species (I02) are impacting on 91 units and include large areas of rhododendron and non-native conifer regeneration in the uplands and Cotoneaster, Japanese Knotweed and Himalayan balsam in more lowland situations. 2. The NRW Life N2K dataset shows that 69% of issue risks identified for European Dry Heath are of high priority and 54% are of high urgency. Of the high priority and high urgency risk 67% and 74% respectively relate to risks from agricultural and land management issues. 3. SAC Monitoring Data show that insufficient grazing (Harrison 20171, Harrison 20172, Wilkinson 2015, and Wilkinson 2016) is a key reason for feature failure on lowland European Dry Heath (A10). 4. Monitoring information from a small number of SSSIs in South and East Wales shows a similar picture with grazing and lack of management being identified as the key pressures (NRW 2018) (A10). 5. Air pollution (N deposition) (J03) is assessed separately using a defined approach (Guest, 2012, using updated deposition data). Using a data overlay method in ARC GIS, 96% of the habitat by area (polygon data) was recorded at or above the relevant lower Critical Load limit (10kg/ha/yr.). 6. The LIFE Natura 2000 Programme a data shows that inappropriate grazing and livestock management is an issue or risk on 78 out of 112 Natura 2000 sites across Wales (70%). The Thematic Action Plan Grazing and Livestock management recorded 354 instances of heathland features being impacted by grazing issues, more than on any other habitat. Monitoring data show that securing the correct grazing stock (actions database) and maintaining an appropriate grazing regime remain a significant issue. 7. Tree planting (B01) on areas of European Dry Heath has been a significant issue in the past, and despite controls on this activity through the EIA Forestry Regulations there continue to be some example of habitat loss to this activity. Threats: 1. The Actions database was used to determine the issues and actions which had not yet been addressed i.e. those which were not complete. 2. Changes to agricultural management and in particular grazing, as a result of policy or economic change, remains the greatest threat to European Dry Heath. The future of agri-environment post-Brexit is of considerable significance to the management of this habitat (RSPB 2017 and WEL 2017). 3. The vast majority of heathland is open access and pressures are likely to grow in response to various initiatives to meet Welsh Governments goal of improving the opportunities to access the outdoors for responsible recreation (Welsh Government 2015). Increasing public use on small lowland heathland sites has been shown to cause direct damage such as creation of new paths on desire lines, accidental and deliberate fire and the localised enrichment of vegetation by dog faeces and urine (Underhill 2005) (F07). 4. There is a considerable amount of research literature on the long-term impacts of both nitrogen deposition (Southon et al. 2012, 2013) and climate change on heathlands (Fag00fandez 2013). The response to these drivers of change can be slow and therefore remains a long-term threat, evidence has been collected on potential management measures to mitigate these impacts (Natural England 2013), (Barker et al. 2004) (N05, N02, J03). Climate change effects N02 and N05 were initially ranked as MEDIUM threats but were subsequently downgraded to LOW in order to meet the upper limit of 10 HIGH and MEDIUM ranked threats allowed for reporting. This downgrade in ranking reflects the longer timescales over which ecologically significant

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| | impacts are expected to take effect rather than expected scale and severity of those impacts. 5. The impacts of the pathogens Phytophthora ramorum, P. kernoviae (and to a lesser extent P. pseudosyringae) (LA06) on heathland have been well researched (Bishop and Jones 2011 and Conyers et al. 2011. In heathland infection of Vaccinium is the primary concern (JNCC 2010). P. Kernoviae and P. ramorum have been recorded on heath in Wales but their impact on heathland has been limited, however these pathogens remain a threat with extensive outbreaks relatively close by on Cannock Chase (Natural England 2014) and Stiperstones (Natural England 2015). Pathogens can be moved to on clothes, footwear, vehicles and pets (Defra 2014) and there is a potential threat from increased movement between recreational areas In England and Wales. This threat was initially ranked as HIGH but was subsequently downgraded to MEDIUM for reporting purposes to meet the limit of no more than five HIGH ranked pressures. The pressure itself is probably better coded against the recently introduced 'IO5 Plant and animal diseases, pathogens and pests category', however this is not currently available for internal UK reporting. 6. Plans to increase the extent of woodland in Wales may mean that afforestation represents an enhanced threat to existing areas of H4030 in Wales in the future and may restrict the opportunities for restoring the habitat in areas previously lost to forestry. |
| 8.5 List of main conservation measures | 1. NRW Actions Database details what conservation actions have been identified to address issues; conservation actions have been identified on units containing European Dry Heath on 95 SSSIs, 25 SACs, 7 SPAs and 2 Ramsar sites. 25% of units with European Dry Heath are considered to be in appropriate conservation management. The database shows that conservation measures are implemented through a range of mechanisms including Glastir (commons, entry level and advanced) (CA05, CA04, C104, C105), NRW Management Agreements (CA05, CA04, C104, C105), direct action by landowners and tenants (CA05, CA04, C104, C105, CF03), direct NRW management, enforcement, partnership working (CF03, C104, C105) etc. 2. 12% of the habitat is currently covered by NRW Management Agreements. Glastir Agreements cover 47% of the habitat with 7046.56ha under Glastir Advanced prescriptions, 9302.45ha under Glastir Entry prescriptions and 19819.29ha under Glastir Entry Commons (CA05, CA04, C104, C105). 3. A number of landscape-scale projects which include survey management and monitoring of European Dry Heath as part of their programme of work are underway. These include the Healthy Hillsides project in South Wales, Upper Conwy Catchment Project in North East Wales and Cwlwm Seriol Project on Anglesey. Other site-based initiatives to improve management is undertaken by the NGO community on their own land (CA05, CA04, C104, C105, CF03). 4. Measures should be in place to prevent afforestation of European Dry Heath through EIA Forestry Regulations (NRW), work is required to control non-native tree invasion outside forestry (CB01). 5. National regulations are in place but have been insufficient to prevent continued high levels of N deposition nationally and locally increasing ammonia pollution from expansion of poultry units (CE12, CE03). 6. One large-scale heathland re-creation project on agricultural land has been in progress since 2004 (Hayes and Spiridonova 2009), other smaller projects are underway but not documented (CA07). 7. A decision-making framework has been developed to guide management response to Phytophthora outbreaks on heathland (Bunch et al. 2016) (CI04). |

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| 9.1 Future prospects of parameters | Significant changes to the 10km square distribution and linked range of H4030 in Wales are considered unlikely over the next 12 years. The habitat is very widespread in Wales and there is limited scope for range expansion, conversely most hectads support multiple examples and making loss of all localities within a given square unlikely. Evidence suggests that currently there are both losses and gains in extent. Potentially there will be large gains in the uplands with reducing grazing as a result of changing agricultural policy and practice. 1. On designated sites, actions identified to address the issues are only partly implemented or underway. For example, of the actions identified to address agricultural and land management issues 41% are complete and a further 4% are underway and 7 % are planned. The remaining actions are identified, agreed in principle or not agreed. There is a similar picture for other issues, for example 41% of actions to manage native and non-native invasive species are complete, 8% are underway and 7% are planned. Additionally, individual units are not in appropriate conservation management until all issues are under control and actions complete, at present this has been achieved on 25 % of units. (NRW Actions Database 2017). 2. Only 41 % of the habitat resource lies within the protected site network. Implementation of management to address issues outside the SSSI series is not well documented but Gritten (2012) suggests that agricultural and land management issues will continue to result in the loss of structure and function outside the designated sites. 3. SAC Monitoring data show that of the 21 SACs with the European Dry Heath Feature, one is partially destroyed four are unfavourable declining or showing no change, two are unfavourable recovering, nine are unfavourable unclassified and only one is favourable maintained. 4. It is projected that the combined impacts of a number of pressures will intensify in future, for example wildfire on heathland is predicted to increase as a result of climate change and this could be exacerbated by nitrogen deposition and decreasing grazing and vegetation management (Southon 2012, 2013). |
| 11.3 Surface area of the habitat type inside the network; Method used | The area was calculated from the polygon data in 2012 and reviewed in 2018. |
| 11.4 Short term trend of habitat area in good condition within the network; Direction | European Dry Heath Feature on Rhinog SAC recorded as favourable maintained in 2003 and 2011. |