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

# Second Report by the United Kingdom under Article 17

## on the implementation of the Directive from January 2001 to December 2006

## Conservation status assessment for :

# H3180: Turloughs

# H3180 Turloughs

*Audit trail compiled and edited by JNCC and the UK statutory nature conservation agencies Freshwater Lead Co-ordination Network.*

This paper and accompanying appendices contain background information and data used to complete the standard EC reporting form (Annex D), following the methodology outlined in the commission document "Assessment, monitoring and reporting under Article 17 of the Habitats Directive, Explanatory Notes and Guidelines, Final Draft 5; October 2006". The superscript numbers below cross-reference to the headings in the corresponding Annex D reporting form. This supporting information should be read in conjunction with the UK approach for habitats (see 'Assessing Conservation Status: UK Approach').

## 1. National-biogeographic level information

### 1.1 General description and correspondence with NVC and other habitat types

Table 1.1.1 provides a summary description of H3180 and its relations with UK classifications.

Turloughs are seasonally-flooded lakes in karstic limestone areas that are principally filled by subterranean waters via ephemeral springs or estavelles, and drain back into the groundwater table via swallets or estavelles – they have no natural surface outlet. Most examples flood in autumn and then drain between April and July leaving a dry floor (apart from residual pools). However, some may flood at any time of year after rainfall and drain again in a few days. Their maximum water depth is at least 0.5 m, up to several metres depth. The water is calcium-rich, and the nutrient status ranges from ultra-oligotrophic to eutrophic. Turloughs are typically larger than most seasonal ponds, ranging in size from <1 ha to over 650 ha, and because they receive no surface water inputs, they are less prone to siltation than other standing waters and can therefore be very ancient.

The vegetation of turloughs usually has a distinct zonation determined by water depth and frequency and duration of filling. In Ireland, the vegetation mainly belongs to the alliance Lolio – Potentillion anserinae, but also includes Caricion davallianae mires. Turlough organisms are well-adapted to environmental variation. Their survival strategies include aerial adult forms, production of resting stages, resistance to desiccation, or an amphibious lifestyle. Some turloughs are important feeding-grounds for wintering waterfowl.

Turloughs are vulnerable to drainage or changes to groundwater hydrology, resulting, for example from quarrying or excessive groundwater abstraction, while the groundwater itself is vulnerable to pollution from agriculture, urban areas or roads, and the vegetation is sensitive to overgrazing during dry periods.

**Table 1.1.1** Summary description of habitat H3180 and its relations with UK vegetation/habitat classifications.

| Classification | Correspondence with Annex I type | Comments |
|---|---|---|
| **Phase 1 Habitat Classification** | G1.3 Standing water (part), B5 Marshy grassland (part) and F2.2 Marginal/ inundation (part). | |
| **BAP** | Broad reporting category: Standing open water and canals. | |
| **BAP priority habitat** | Priority habitat type: Aquifer-fed naturally fluctuating water bodies. | |
| **EU Interpretation Manual** | PAL.CLASS.: 22.5<br>Description: Temporary lakes principally filled by subterranean waters and particular to karstic limestone areas. Most flood in the autumn and then dry up between April and July. However, some may flood at any time of the year after heavy rainfall and dry out again in a few days; others, close to the sea, may be affected by the tide in summer. These lakes fill and empty at particular places. The soils are quite variable, including limestone bedrock, marls, peat, clay and humus, while aquatic conditions range from ultra oligotrophic to eutrophic. The vegetation mainly belongs to the alliance *Lolio-Potentillion anserinae*, but also to the *Caricion davallianae.* | PAL.CLASS: Palaearctic codes from the classification of Palaearctic habitats, based upon the CORINE classification. |

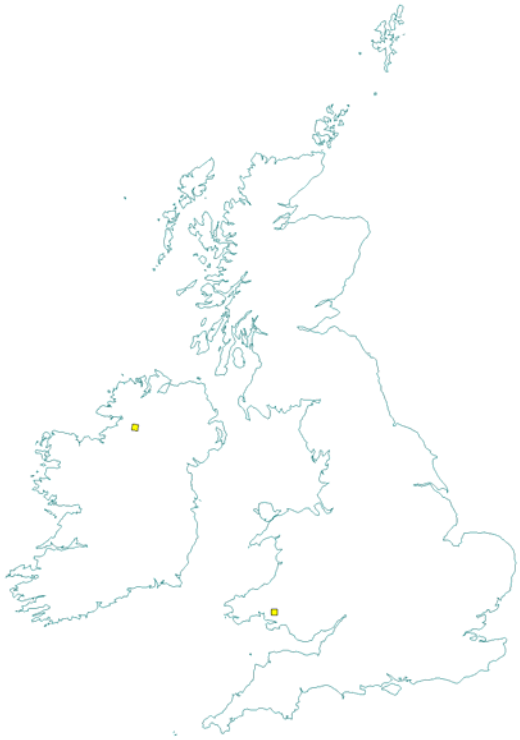
# 2. Range [2.3]

## 2.1 Current range

**Range surface area [2.3.1]: 201 km²**
**Date calculated [2.3.2]: May 2007**
**Quality of data [2.3.3]: Good**

The surface area estimate was calculated within alpha hull software, using extent of occurrence as a proxy measure for range (see Map 2.1.1). The value of alpha was set at 25 km; the alpha was clipped to include inland areas only.

Maps 2.1.1 and 2.1.2 show the range and distribution of H3180 in the UK. Turloughs are restricted to karstic limestone areas in Ireland and the UK. However, UK examples are rare, and the habitat is much more extensively-developed in the Republic of Ireland, where 90 examples larger than 10 ha in extent have been recorded, mainly in the western lowlands. However, a survey of all 90 larger Irish turloughs in the early 1980s found only 60 to be still hydrologically active (Coxon 1987).

| **Map 2.1.1** Habitat range map [1.1] for H3180 | **Map 2.1.2** Habitat distribution map [1.2] for H3180 |
|---|---|
|  |  |
| Range envelope shown in blue/grey shade in above map is a minimum convex polygon constructed using JNCC Alpha Shapes tool (see Technical note I for details of methodology). | Each yellow square represents a 10x10km square of the National Grid and shows the known and/or predicted occurrence of this habitat<br>10-km square count: 2 |

See Section 7.1 for map data sources

## 2.2 Trend in range since c.1994

**Trend in range[2.3.4]:** **Stable**
**Trend magnitude[2.3.5]:** **Not applicable**
**Trend period[2.3.6]:** **1994-2006**
**Reasons for reported trend[2.3.7]:** **Not applicable**

The trend in range is considered stable as there is no evidence of any site loss within the range.

## 2.3 Favourable reference range

**Favourable reference range[2.5.1]:** **201 km$^2$**

Section 3.2.1.3 of 'Assessing Conservation Status: UK Approach' sets out how favourable reference range estimates for habitats have been determined in the UK. Based on this approach, the current surface area, 201 km$^2$, has been set as the favourable reference area. Reasons for this are discussed below.

Turloughs only occur in depressions within karstified limestone setting. They are recharged principally by springs (risings) and empty by way of swallow holes (sinks). Certain sites are associated with estavelles, single features that can act as springs or sinks depending on water pressure. Flooding occurs when inflow rates exceed the sinks capacity and typically occurs through the winter although some turloughs hold some water throughout the year and may flood at any time after heavy rainfall.

It appears that all potential sites are functioning as turloughs (this statement is valid for Northern Ireland only – there is no information on whether historical sites have been lost elsewhere in the UK) such that potential range is equal to the favourable reference range. Although the range is very restricted and consists of two distinct entities, one in Wales and one in Northern Ireland, it is thought to be naturally scarce and sufficient to assure the future of the habitat.

## 2.4 Conclusions on range

**Conclusion[2.6.i]: Favourable**

Extent of natural occurrence of turloughs in the UK is well understood. There is no evidence in the UK range (Northern Ireland and Wales) of any site loss therefore the potential natural range is fully occupied. All apparently suitable turlough sites are occupied by functioning systems. It is therefore likely that the current range is equivalent to the Favourable Reference Range.

# 3. Area [2.4]

## 3.1 Current area

**Total UK extent [2.4.1]: 0.07km$^2$**
**Date of estimation [2.4.2]: May 2007**
**Method [2.4.3]: 3 = ground based survey**
**Quality of data [2.4.4]: Good**

Table 3.1.1. provides information on the area of H3180 in the UK. The figure for Wales is the approximate area calculated from the measured length and breadth of the turlough. For Northern Ireland the area figure has been calculated from Ordnance Survey maps.

**Table 3.1.1** Area of H3180 in the UK.

| | Area (ha) | Method [2.4.3] | Quality of data [2.4.4] |
|---|---|---|---|
| **England** | Not present | - | - |
| **Scotland** | Not present | - | - |
| **Wales** | 1 | 3 | Good |
| **Northern Ireland** | 6 | 3 | Good |
| **Total UK extent [2.4.1.]** | 7 | 3 | Good |

Method used to estimate the habitat surface area: 1 = only or mostly based on expert opinion; 2 = based on remote sensing data; 3 = ground based survey. Only the most relevant class is given if more than one applies.
Quality of habitat surface area data: 'Good' e.g. based on extensive surveys; 'Moderate' e.g. based on partial data with some extrapolation; 'Poor' e.g. based on very incomplete data or on expert judgement.

## 3.2 Trend in area since c.1994

**Trend in area[2.4.5]: Increasing**
**Trend magnitude[2.4.6]: Unknown**
**Trend period[2.4.7]: 2002-2006**
**Reasons for reported trend[2.4.8]: 3 – Direct human influence**

There is no evidence of significant loss of extent within individual turloughs through infilling either by natural sediment input (but this is somewhat limited by the nature of the hydrological system but will occur at extremely low levels) or by landowner action. There is no evidence of total loss of a complete turlough system – clearly difficult to ascertain but highly unlikely.

There is some evidence that changes in individual hydrological regimes may have limited the extent of flooding – this is the case at Fardrum but situation is to be restored through management agreement. The loss of the inundation zone may be of the order of 0.1 ha.

**Table 3.2.1** Trend information for the Priority Habitat 'Aquifer fed naturally fluctuating water bodies' (from BAP 2005 reporting)

| Country | Trend | Accuracy | Data Source/Comments |
|---|---|---|---|
| **England** | - | - | - |
| **Scotland** | - | - | - |
| **Wales** | Increasing | Partial survey | Improved condition of the turlough since 2002, due to removal of willows from within the turlough, reduced road drainage into the groundwater catchment, reduced agricultural pollution through negotiation with farmers and the use of agri-environment payments. |
| **Northern Ireland** | Increasing | Sample or full survey | Implementation of management plan resulting in scrub clearance and reintroduction of grazing has resulted in a partial improvement in condition of the resource. Further management plans are anticipated in the near future. |
| **UK** | Fluctuating - probably increasing | Sample or full survey. | |

## 3.3. Favourable reference area

**Favourable reference area[2.5.2]: 0.07 km$^2$**

The potential area will principally be determined by the nature of the basin in which the turlough occurs (defining maximum potential extent of flooding), and the flooding regime (actual extent together with frequency and duration of flooding). The habitat type and quality will be determined by a greater range of issues including those noted above together with water quality, basin floor topography, sediment type and extent and of course management especially grazing and fertilizer regimes.

The area is very restricted but the habitat is considered to be naturally scarce, due to geomorphological and hydrological limitations. It is considered that the current area is all that could be occupied by turloughs and thus is taken to equate to the favourable reference area. There is however a concern that individual turloughs could be vulnerable to catastrophic events.

## 3.4 Conclusions on area covered by habitat

**Conclusion[2.6.ii]: Favourable**

While there may be the potential to improve the area occupied by appropriate habitat at individual sites, at a regional scale, the niche for turloughs is fully occupied. There is no evidence of a decline in the historic area, particularly in recent decades and current management is leading to an increase of functional turlough area. It is therefore considered that H3170 occupies most of its favourable reference area.

# 4. Specific structures and functions **(including typical species)**

## 4.1 Main pressures [2.4.10]

These are known to result from a range of operating factors including grazing regime and both direct and indirect enrichment. While there are a variety of factors resulting in the Unfavourable status of the resource, certain management interventions can and are leading to an improvement, notably addressing scrub encroachment. The main pressures affecting H3180 are listed below. The related EC codes are shown in brackets.

- Fertilizer input (**120 Fertilisation**)

Nutrient enrichment, changes in hydrology and natural succession all pose potential threats to the site. Reseeding and associated fertiliser applications, together with intensive sheep and cattle grazing, have altered much of the land adjoining Fardrum and Roosky Loughs, resulting in some loss of adjoining semi-

natural habitat. Fertiliser inputs in the catchment could affect water quality and hence the turlough vegetation.

- Grazing (**140 Grazing**)

While some poaching by livestock helps keep the inundation zone open and hence more diverse, higher stock densities can result in deterioration of the habitat.

- Water quality (**890 Other human induced changes in hydraulic conditions**)

In Pant-y-Llyn (Wales), the main concern is aquifer water quantity and quality. Nearby limestone quarrying may affect groundwater supply to the turlough.

- Air pollution (**702 Air pollution**)

Based on an assessment of relevant literature, this habitat is potentially sensitive to air pollution, but it has not been possible to undertake an assessment of potential impact based on critical loads because of the poor equivalence between this habitat and those for which critical loads are set (see Technical note III).

## 4.2 Current condition

### 4.2.1 Common Standards Monitoring condition assessments

Condition assessments based on Common Standards Monitoring (see http://www.jncc.gov.uk/page-2199) provide a means to assess the structure and functioning of H3180 in the UK. The following attributes were examined for all CSM assessments relevant to the habitat:

- Extent
- Composition of macrophyte community
- Macrophyte community structure
- Water quality
- Hydrology
- Substrate
- Sediment load
- Indicators of local distinctiveness

**SAC condition assessments**

Table 4.2.1 and Map 4.2.1 summarise the Common Standards Monitoring condition assessments for UK SACs supporting habitat H3180. These data were collated in January 2007. The maps give an impression of the overall spread of where Unfavourable and Favourable sites exist (summary statistics for the map are given in Section 7.2). The combined assessments show that of the SACs assessed:

- 100% of the area and 10% of the number of assessments was Unfavourable;
- 100% of the total UK habitat area was in Unfavourable condition.

**Table 4.2.1** Common Standards Monitoring condition assessment results for UK SACs supporting H3180. See notes below table for details. Information on the coverage of these results is given in Section 7.2.

| Condition | Condition sub-categories | Area (ha) | Number of site features |
|---|---|---|---|
| **Unfavourable** | Declining | | |
| | No change | | |
| | Unclassified | 07 | 2 |
| | Recovering | | |
| | Total | 07 | 2 |
| | ***% of all assessments*** | ***100%*** | ***100%*** |
| | ***% of total UK resource*** | ***100%*** | ***unknown*** |
| **Favourable** | Maintained | | |
| | Recovered | | |
| | Unclassified | | |
| | Total | | 0 |
| | ***% of all assessments*** | ***0%*** | ***0%*** |
| | ***% of total UK resource*** | ***0%*** | ***unknown*** |

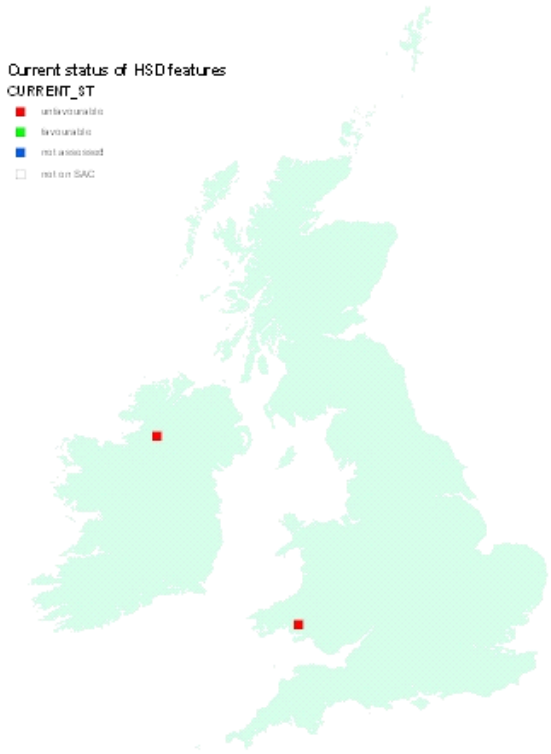
Notes

1. Data on features that have been partly-destroyed have been excluded from this table because they are not relevant to the consideration of present condition.
2. The data included are from CSM assessments carried out between April 1998 and December 2006. NB: these include additional and some up-date data from those used in the six year report produced by JNCC. (Williams, J.M., ed. 2006. *Common Standards Monitoring for Designated Sites: First Six Year Report*. Peterborough, JNCC).
3. Only assessments made for qualifying interest features on SAC have been included in this analysis.
4. Area figures for CSM assessments have been calculated using the data presented on the standard Natura 2000 data forms submitted to the EU.

### SSSI/ASSI condition assessments

SSSI/ASSIs Common Standards Monitoring condition assessments are not relevant as most or all the resource is on SACs.

**Current Condition of H3180 based on Common Standard Monitoring condition assessments**
(See Sections 4.2 and 7.2 for further information)

| **Map 4.2.1** SAC assessments | **Map 4.2.2** Assessments strongly indicative of the condition on SSSI/ASSIs | **Map 4.2.3** Assessments weakly indicative of the condition on SSSI/ASSIs |
|---|---|---|
|  | Not applicable | Not applicable |
| Key<br>Red = Unfavourable, i.e. the square contains at least one SAC where this feature is present and has been judged to be Unfavourable<br>Green = Favourable, i.e. the square contains at least one SAC where this habitat feature is present and has been assessed as Favourable but there are no unfavourable SAC features<br>Blue = SAC not assessed, i.e. the square contains at least one SAC supporting this habitat feature but no assessment has been reported<br>Transparent = SAC feature not present, i.e. the square does not contain any SAC features of this habitat type | Key*<br>Green – 80 – 100% of assessed features on 10-km square are Favourable<br>Yellow - 50 – 80% of assessed features on 10-km square are Favourable<br>Orange - 20 – 50% of assessed features on 10-km square are Favourable<br>Red - 0 – 20% of assessed features on 10-km square are Favourable<br>*This is the same key as was used for JNCC CSM Report 2006 | |

## 4.3 Typical species

**Typical species[2.5.3]: None used**

**Typical species assessment[2.5.4]: Not applicable**

As all of the resource of H3180 lies within SACs, the UK trends do not assist with this parameter.

The characteristic plants (typical species) listed in the EU Interpretation Manual are: *Cinclidotus fontinaloides* and *Fontinalis antipyretica* (Bryophyta). However, these plants should not be regarded as characteristic in the strictest sense; both flora and fauna of turloughs are characteristic of intermittently flooded zones.

## 4.4 Conclusions on specific structures and functions (including typical species)

**Conclusion[2.6.iii]: Unfavourable – Bad and deteriorating**

The EC Guidance states that where the specific structures and functions of a habitat are intermediate between "good with no significant pressures" and "bad with more than 25% of the area of the habitat area unfavourable as regards its specific structures and functions", the conclusion should be Unfavourable – Inadequate. In the UK, this was generally taken to mean that 5-25% of the habitat area was in Unfavourable condition.

Common Standards Monitoring assessments of SACs (covering all of the UK's habitat resource) indicate that 100% of the habitat is in Unfavourable condition, that the necessary structures and functions for the habitat are not in place, and that significant deteriorations and pressures exist. A large part, (70%) of the turloughs in Northern Ireland, is not managed in a sympathetic way and is under pressure from non-favourable grazing.

# 5. Future prospects

## 5.1. Main factors affecting the habitat

### 5.1.1. Conservation measures

- Protection within designated sites

All the resource of H2110 lies within SACs with management measures specifically aimed at maintaining and enhancing the features for which they are designated, and to address some of the pressures listed within section 4.1 and the future threats listed in section 5.1.2. A significant proportion of the resource of this habitat also lies within the SSSI/ASSI series where similar management measures are in place.

- Water Framework Directive

In addition to the drive for improvement generated by the SAC and SSSI network, the Water Framework Directive (WFD) is adding considerable impetus for widespread action on issues affecting the resource of this habitat such as abstraction licences and pollution.

- UK BAP

The habitat is covered by the Aquifer fed naturally fluctuating water bodies action plan under the UK Biodiversity Action Plan (see http://www.ukbap.org.uk), as well as under country and local biodiversity action plans and strategies, with targets to maintain, improve, restore and expand the resource.

- Management

In Wales, the general condition of the turlough has improved since 2002 due to the removal of willows from within the turlough, reduced road drainage into the groundwater catchment, reduced agricultural pollution through negotiation with farmers and the use of agri-environment payments. In Northern Ireland, the implementation of a management plan advocating scrub clearance and reintroduction of

grazing has resulted in a partial improvement in condition of the resource. Further management plans are anticipated in the near future.

### 5.1.2 Main future threats[2.4.11]

The most obvious major future threats to H3180 are listed below, several of which are referred to in Section 4.1. The related EC codes are shown in brackets.
All are being addressed by management interventions.

- Fertilizer input (**120 Fertilisation**)
- Grazing (**140 Grazing**)
- Water quality (**890 Other human induced changes in hydraulic conditions**)

- Air pollution (**702 Air pollution**)

Based on an assessment of relevant literature, this habitat is potentially sensitive to air pollution, but it has not been possible to undertake an assessment of potential impact based on critical loads because of the poor equivalence between this habitat and those for which critical loads are set (see Technical note III).

- Climate change (**920 Drying up, 950 Biocenotic evolution**)

Based on the literature review (Technical note IV) climate change is considered a major threat to the future condition of this habitat especially in the long term. However, there is a high degree of uncertainty in defining future climate threats on habitats and species due to uncertainty in: future greenhouse gas emissions; the consequential changes in climatic features (for instance temperature, precipitation $CO_2$ concentrations); the responses of habitats and species to these changes (for instance location, phenology, community structure) and the role of other socio-economic drivers of environmental change. The scale of change in habitats and species as a result of climate change will vary across ecosystems. Small changes in the climate are more likely to have a substantial impact on habitats and species which exist within a narrow range of environmental conditions. The future impacts of climate change on UK biodiversity will be exacerbated when coupled with other drivers of environmental change.

## 5.2 Future condition **(as regards range, area covered and specific structures and functions)**

### 5.2.1 Common Standards Monitoring condition assessments

The Common Standards Monitoring condition assessments reported in Sections 4.2.1-2 provide a basis to predict the potential future condition of H3180 in the UK. This involved treating all assessments currently identified as either Favourable or unfavourable recovering as future-favourable: remaining categories were treated as future-unfavourable – see Table 5.2.1.1. There are a number of caveats to this approach, which are set out beneath this table.

**SAC condition assessments**

Table 5.2.1 and Map 5.2.1 summarise the predicted potential future condition of H3180 on UK SACs. This is based on the approach described above. The maps give an impression of the overall spread of where future-unfavourable and future-favourable sites are predicted to occur (summary statistics for the map are given in Section 7.2). The combined assessments show that of the SACs assessed:

- 0% of the area and 0% of the number of assessments fall within the future-favourable category;
- 0% of the total UK habitat area falls within the future-favourable category.

**Table 5.2.1** Predicted future condition of UK SACs supporting H3180 based on current Common Standards Monitoring condition assessments. See notes below table for details. Information on the coverage of these results is given in Section 7.2.

| Future condition | Present condition | Area (ha) | Number of site features |
|---|---|---|---|
| **Future-unfavourable** | Unfavourable declining | | |
| | Unfavourable no change | | |
| | Unfavourable unclassified | 07 | 2 |
| | Total | ***07*** | ***2*** |
| | ***% of assessments*** | ***100%*** | ***100%*** |
| | ***% of total UK extent*** | ***100%*** | ***Unknown*** |
| **Future-favourable** | Favourable maintained | | |
| | Favourable recovered | | |
| | Unfavourable recovering | | |
| | Favourable unclassified | | |
| | Total | | |
| | ***% of assessments*** | ***0%*** | ***0%*** |
| | ***% of total extent*** | ***0%*** | ***Unknown*** |

Note that the scenario presented above is based on the same information as used to construct the Table 4.2.1. It is based on the following premises:

(i) the unfavourable-recovering condition assessments will at some point in the future become Favourable.

(ii) all unfavourable-unclassified sites will remain Unfavourable, which is probably overly pessimistic;

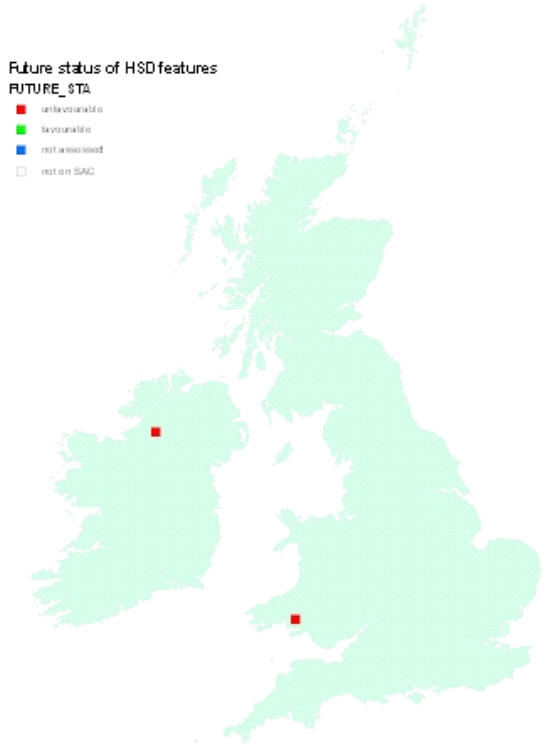
(iii) sympathetic management will be sustained on sites already classified as Favourable and these will not be seriously damaged by any unforeseen events.

**IMPORTANT NOTE:** we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'Favourable' condition being attained.

**SSSI/ASSI condition assessments**

SSSI/ASSIs Common Standards Monitoring condition assessments are not relevant as most or all the resource is on SACs.

**Predicted Future Condition of H3180 based on Common Standard Monitoring condition assessments** (See Sections 5.2 and 7.2 for further information on these maps)

| **Map 5.2.1** SAC assessments | **Map 5.2.2** Assessments strongly indicative of the condition on SSSI/ASSIs | **Map 5.2.3** Assessments weakly indicative of the condition on SSSI/ASSIs |
|---|---|---|
|  | Not applicable | Not applicable |
| Key<br>Red = future-unfavourable, i.e. the square contains one or more SACs where this habitat feature is present and has been predicted to be future-unfavourable<br>Green = future-favourable, i.e. the square contains at least one SAC where this habitat feature is present and has been predicted to be future-favourable<br>Blue = SAC not assessed, i.e. the square contains at least one SAC supporting this habitat feature but no assessment has been reported<br>Transparent = SAC feature not present, i.e. the square does not contain any SAC features of this habitat type | Key*<br>Green – 80 – 100% of assessed features on 10-km square are Favourable<br>Yellow - 50 – 80% of assessed features on 10-km square are Favourable<br>Orange - 20 – 50% of assessed features on 10-km square are Favourable<br>Red - 0 – 20% of assessed features on 10-km square are Favourable<br>*This is the same key as was used for JNCC CSM Report 2006 | |

## 5.3 Conclusions on future prospects (as regards range, area covered and specific structures and functions)

**Conclusion[2.6.iv]: Unfavourable – Bad and deteriorating**

The EC Guidance states that where "habitat prospects are bad, with severe impacts from threats expected and long-term viability not assured", the judgement should be Unfavourable – Bad. In the UK, this was generally taken to mean that habitat range and/or area are in decline, and/or less than 75% of the habitat area is likely to be in Favourable condition in 12-15 years.

The range is unlikely to deteriorate as it is determined principally by hydrological and geomorphological factors. The area is unlikely to deteriorate although it may fluctuate within a given site. Common Standards Monitoring assessments of SACs (covering all of the UK's habitat resource) indicate that 100% of the habitat is predicted to remain in Unfavourable condition. As indicated in section 4.3, a large part (70%) of the turloughs in Northern Ireland are privately owned and currently managed in a non-favourable way. All efforts to enter into a management agreement have failed and it is expected that the situation is unlikely to improve in the next 10 to 15 years.

# 6. Overall conclusions and judgements on conservation status

**Conclusion[2.6]: Unfavourable – Bad and deteriorating**

On the basis of the Structure and Function and Future Prospects assessments, the overall conclusion for this habitat feature is Unfavourable – Bad.

**Table 6.1** Summary of overall conclusions and judgements

| Parameter | Judgement | Grounds for Judgement | Confidence in judgement* |
|---|---|---|---|
| **Range** | Favourable | Current range is stable and not less than the favourable reference range. | 1 |
| **Area covered by habitat type within range** | Favourable | Current extent is stable and not less than the favourable reference area. | 1 |
| **Specific structures and functions (including typical species)** | Unfavourable – Bad and deteriorating | More than 25% of the habitat area is considered to be Unfavourable as regards its specific structures and functions. Significantly more of the resource in Unfavourable condition is declining than improving. | 1 |
| **Future prospects (as regards range, area covered and specific structures and functions)** | Unfavourable – Bad and deteriorating | Habitat prospects over next 12-15 years considered to be bad, with severe impact from threats expected and long term viability not assured. Further measures are required to address threats to structure and function for the overall UK resource. | 2 |
| **Overall assessment of conservation status** | Unfavourable – Bad and deteriorating | Two individual judgements are Unfavourable – Bad and deteriorating, while the remaining two are Favourable. | 2 |

Key to confidence in judgement: 1 = High; 2 = Medium; 3 = Low

# 7. Annexed material (including information sources used 2.2)

## 7.1 References

BLACKSTOCK, T.H., DUIGAN, C.A., STEVENS, D.P. & YEO, M.J.M. 1993. Vegetation zonation and invertebrate fauna in Pant-y-llyn, an unusual seasonal lake in south Wales, UK. *Aquatic Conservation*: *Marine and Freshwater Ecosystems*, **3**, 253-268.

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**Map data sources**

JNCC International Designations Database. Joint Nature Conservation Committee.

## 7.2 Further information on Common Standards Monitoring data as presented in Sections 4.2 and 5.2

**Table 7.2.1** Summary of the coverage of the data shown in Tables 4.2.1 and 5.2.1

| Data | Value |
|---|---|
| Number of SACs supporting feature (a) | 2 |
| Number of SACs with CSM assessments (b) | 2 |
| % of SACs assessed (b/a) | 100 |
| Extent of feature in the UK – hectares (c) | 7 |
| Extent of feature on SACs – hectares (d) | 7 |
| Extent of features assessed – hectares (e) | 7 |
| % of total UK hectarage on SACs (d/c) | 100 |
| % of SAC total hectarage that has been assessed (e/d) | 100 |
| % of total UK hectarage that has been assessed (e/c) | 100 |

Notes

1. Extent of features on SACs (d) includes only those features that have been submitted on the official Natura 2000 data form as qualifying features. This figure is based on the habitat extent figures presented on standard Natura 2000 data forms.
2. The data included are from CSM assessments carried out between April 1998 and December 2006. NB: these include additional and some up-date data from those used in the six year report produced by JNCC (Williams, J.M., ed. 2006. *Common Standards Monitoring for Designated Sites: First Six Year Report*. Peterborough, JNCC).

**Table 7.2.2.** Summary of grid square map data shown in Maps 4.2.1-3. and 5.2.1-3.

| Status | Number of squares | Proportion of all squares |
|---|---|---|
| Current – Unfavourable (red) | 2 | 100% |
| Current – Favourable (green) | 0 | 0% |
| On SAC but not assessed (blue) | 0 | 0% |
| Not on SAC (transparent) | 0 | 0% |
| Total Number of 10km squares (any colour) | 2 | 100% |
| Future – Unfavourable (red) | 2 | 100% |
| Future – Favourable (green) | 0 | 0% |