

**CYNGOR CEFN GWLAD CYRMU
COUNTRYSIDE COUNCIL FOR WALES**

SITE ISSUE BRIEFING

**NORTH WEST PEMBROKESHIRE COMMONS / COMINS GOGLEDD
ORLLEWIN SIR BENFRO CANDIDATE SPECIAL AREA OF CONSERVATION**

This is the Site Issue Briefing (SIB) for North West Pembrokeshire Commons / Comins Gogledd Orllewin Sir Benfro candidate Special Area of Conservation (cSAC). It provides the best available information on the likely conservation requirements of the features which qualify the site as a SAC. It does not cover those features which form part of the constituent Site of Special Scientific Interest(s) (SSSIs) but are not themselves SAC features, although much of the information will also be relevant. It includes a detailed breakdown of factors which may affect those features including some indication of targets and priorities where possible, an indication of the feature condition and a table of issues and actions. It does not include conservation objectives nor is any of the information contained 'definitive' unless otherwise stated. It should be used to inform the Review of Consents (RoC) process and the consultation process for new plans and projects which may affect the site. It is an iterative document and will be periodically reviewed and the information updated. Note this is interim guidance and should be used in conjunction with Conservation Objectives and Management Plans when available.

SITE COMPRISES OF: **TREFEIDDAN MOOR SSSI**
 ST DAVID'S AIRFIELD HEATHS SSSI
 WAUN FAWR, TYDDEWI SSSI
 DOWROG COMMON SSSI
 TRETIO COMMON SSSI

Habitats Directive Features

1. *Luronium natans* Floating Water Plantain
2. European Dry Heaths
3. Transition mires and quaking bogs
4. Northern Atlantic wet heaths with *Erica tetralix*
5. *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)

1. DESCRIPTION

The series of commons comprising this cSAC occupies poorly drained basins on the St David's Peninsula. The extensive areas of heath and *Molinia* meadow form an intimate mosaic with a range of associated habitats including transition mire and quaking bogs.

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The structure of the heath varies according to management pressures, soil type and hydrology. Neglect allows species such as Western Gorse *Ulex gallii* and Purple Moor-Grass *Molinia caerulea* to dominate and produce a species-poor sward of uniform structure. In contrast, combinations of cutting, grazing and burning reduce the dominance of sub-shrubs and create more species-rich *Molinia* vegetation of varied structure. Current conservation management aims to increase the proportion of shorter vegetation of this nature.

Many of the commons are owned or managed by conservation organisations (Pembrokeshire Coast National Park Authority, National Trust, Wildlife Trust West Wales). Management is supported in part by the Heritage Lottery Fund, through the Tomorrows Heathland Heritage Project.

(for further details refer to JNCC report 270 pages (www.jncc.gov.uk/idt/default.htm) and Reasons for Recommendation for the North West Pembrokeshire Commons cSAC.

1.1 Comments on the Selection of North West Pembrokeshire Commons

Floating water-plantain *Luronium natans* in Pembrokeshire is relatively isolated from its central and north Wales population centres and it occupies a distinctive – and now highly relict – habitat here, in heathland pools. The species was recorded at Dowrog Common in the early 19th century but it has only recently been rediscovered, following extensive remedial management. Here, in shallow rain-fed pools, it flowers and sets seed prolifically, almost certainly enabling colonisation of transient habitat elsewhere.

Transition mires and quaking bogs –

the area supports a significant presence (estimated to be 4% of the site area)

Very wet mires often identified by an unstable >quaking= surface. These are mires or fens which occur in waterlogged situations where they receive nutrients from the surrounding catchment as well as from rainfall. The vegetation is typically dominated by tall sedges *Carex* species and rushes *Juncus* species mixed with herbs, over a ground layer of bog-mosses *Sphagnum* species or feather-mosses such as *Calliergon* species.

European Dry Heaths

this is considered to be one of the best areas in the United Kingdom (estimated to be 21% of the site area)

This consists predominantly of humid H4 *Ulex gallii* – *Agrostis curtisii* heath but also smaller amounts of dry H8 *Calluna vulgaris* – *Ulex gallii* heath. The humid heath is an atypical form from that described in the NVC in that *Agrostis curtisii* is absent but in all other respects the heath conforms to the NVC description and is the westernmost example of this vegetation type in Wales. The heath forms part of a set of excellent transitions between dry and humid heath to wet heath, various forms of fen-meadow vegetation and other habitats. Notable species associated with the heath include Pale Dog

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Violet *Viola lactea* and Slender Yellow Centaury *Cicendia filiformis*. The heaths have traditionally been managed by a combination of burning and grazing with heavy stock.

***Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) - the area supports a significant presence (estimated to be 10% of the site area)**

Purple moor-grass meadows. These are wet meadows containing a species-rich mixture of grasses (especially purple moor-grass *Molinia caerulea*), sedges, herbs and mosses. These meadows are usually traditionally maintained by grazing.

Northern Atlantic wet heaths with *Erica tetralix* –

the area supports a significant presence (estimated to be 6% of the site area)

Wet heathland with cross-leaved heath. These are heathlands of cool oceanic regions on mainly acidic, nutrient-poor, shallow peat or sandy soils with impeded drainage. They are often dominated by mixtures of cross-leaved heath *Erica tetralix*, grasses, sedges and *Sphagnum* bog-mosses. These heathlands are found in both lowland and upland parts of the UK although they are more extensive in the wetter north and west. The UK hosts the majority of this habitat in the European Union.

2. SITE LEVEL CONSERVATION STATEMENT FOR NORTH WEST PEMBROKESHIRE COMMONS

CCW aim to see at least one healthy population of Floating Water Plantain on the site. The plant is currently found only in Dowrog pool on Dowrog Common, in clean water with other aquatic plants including the uncommon Pillwort. It was previously recorded from Trefeiddan Moor in the 1930's.

CCW aim to see all areas of *Molinia* meadow, dry heath, wet heath and transition mire and quaking bog kept or increased. Increases in these habitats should generally take place at the expense of less significant habitats such as semi-improved grassland or scrub. There is a complex inter-relationship between dry and wet heaths at this site. The significant areas of dry heath may possibly be derived from the frequent burning of what was formerly wet heath, increasing the dominance of *Molinia* and reducing the abundance of wet heath bryophytes such as bog moss *Sphagna*. It may be acceptable or desirable to allow increases in the extent of wet heath at the expense of dry heath, in an attempt to restore a more sensitive management regime aimed at promoting diversity in sward structure and composition.

European Dry Heath should cover at least 21% of the site and display a range of characteristic plant and insect species. Most of the dry heath should have a mixture of tussocks of purple moor-grass, western gorse *Ulex gallii* and heathers including ling *Calluna vulgaris*.

Wet heath should cover at least 6% of the site and display a range of characteristic plant and insect species. Most of the wet heath should have a mixture of tussocks of purple moor-grass, separated by closely grazed patches rich in bog mosses and heathers such as cross-leaved heath *Erica tetralix*. A proportion should also have a range of short sedges and flowering plants including rarities such as Slender Yellow Centaury *Cicendia filiformis*.

Transition mire and quaking bog should cover at least 3.5% of the site and display a range of plant species typical of the habitat such as Marsh Cinquefoil and *Sphagnum* mosses. Indicators of enrichment, such as Fool's Watercress, Great Reedmace and Hemlock Water Dropwort should only be present in limited amounts.

Molinia meadow should cover at least 10% of the site and display a range of plant and insect species typical of the habitat. It should generally have an abundance of purple moor-grass in an uneven, low sward with plenty of short sedges and flowering plants such as devil's bit scabious. This type of marshy grassland is of importance for the marsh fritillary butterfly on Dowrog Common.

The North-west Pembrokeshire Commons cSAC is underpinned by Dowrog Common, Trefeiddan Moor, St David's Airfield Heaths SSSI, Waun Fawr and Tretio Common Sites of Special Scientific Interest (SSSI). These SSSI includes a number of features, both species and habitats, that do not qualify the site under the Habitats Directive. However, they are an important and integral part of the site ecosystem and although they are not directly covered in this briefing they should be considered before carrying out any plan or project that may affect the site. Further details of the SSSI features can be obtained from Countryside Council for Wales (CCW) who can also advise on the possible impacts of plans and projects on these features.

3. CONSERVATION REQUIREMENTS OF THE FEATURES

(Note: These are *not Conservation Objectives* but a list of factors and activities that could:

- a) result in the deterioration of habitats or significant disturbance of species, or otherwise prevent the maintenance or attainment of favourable condition;
- b) help in the attainment and/or maintenance of favourable condition.

It is *indicative only* and may be supplemented as new information becomes available.)

WATER QUALITY

Fertilisers or trace elements should not be used anywhere on the site, as this would damage the vegetation by encouraging agricultural species. Other activities that could lead to enrichment problems, such as supplementary stock-feeding or storage of cut vegetation, should take place on adjoining land. The agriculturally improved fields surrounding the site are potentially a source of diffuse pollution as a result of fertilizer applications or other agricultural activities. Poor slurry management or domestic sewerage systems on adjoining farmyards and properties may cause point source pollution. Waun Fawr SSSI is subject to localised problems of this nature from the adjoining property Gwynfryn and has been investigated by EA. Waun Caerfachell (St David's Airfield Heaths SSSI) also suffers polluted run-off from winter stock-feeding on adjoining land belonging to Tresais (previous approaches to the owner by the National Trust have not met with success). St David's Landfill site directly abuts St David's Airfield Heaths SSSI and, although recently decommissioned, has the potential to impact on the adjoining wetland vegetation. A hard-standing with associated earthworks, possibly intended for agricultural storage purposes, has recently been developed adjoining Waun Llechell (St David's Airfield Heaths SSSI). The intended use of this facility should be investigated. Surface water run-off from adjoining roads alongside the site could potentially carry salt, oil or other contaminants. Groundwater feeding springs and seepages may be affected by water quality issues in the wider catchment.

Targets and Objectives

No specific targets have been set for water quality. Diffuse and point sources of pollution should be addressed according to best practice, or wherever site condition monitoring indicates possible water quality problems. Pembrokeshire College have been collecting information on water quality in the stream entering Dowrog Common, and have expressed an interest in expanding this work.

Suggested Priority Actions (see also matrix in section 5)

Investigate point source pollution and take enforcement action where necessary. Continue to influence management of adjoining land through agri-environment schemes and/or management agreements. Catchment management planning should seek to ensure that the quality of hydrological inputs is maintained or enhanced.

WATER QUANTITY

The wetland habitats and associated species are dependent on the maintenance of a natural or traditional drainage pattern. Most sites lie in shallow valleys or basins, underlain by poorly drained glacial deposits. There are a few springs and seepages feeding the commons, but water tables are generally kept high by a combination of topography, overland flows and stream / ditch inputs.

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Some sites are affected by past ditching work, designed to enhance the flow of water off site via central watercourses. Trefeiddan is dominated by a seasonal lake, and appears to be little affected by internal hydrological modifications. Construction of a leat on Trefeiddan to carry water from the pool to Upper Treginnis began in 1850, but was unfinished. A section of ditch was also dug during the second world war in an attempt to drain the site for agricultural purposes. These unfinished schemes are perhaps unlikely to have had significant impacts on the natural drainage pattern. Waun Fawr is traversed by a ditch which, although no longer maintained, may have an impact on the natural spring inputs. Tretio Common and Dowrog Common appear to be little affected by ditching, except around the boundaries. Water from St David's Airfield Heaths drains out to the south-west along a stream which forms the northern boundary of the SSSI. This has been deepened (and straightened?) to the north of Waun Llandruidion. There is a presumption against ditch management in the SSSI management plans, and attempts to restore or maintain natural hydrological processes are encouraged. Any maintenance of the existing drainage systems on or around the commons should be done carefully with guidance from CCW. Any open water creation or management should be done sensitively with similar guidance.

Abstractions for private domestic or agricultural use occur around the site. There are a number of reservoirs constructed to irrigate potato crops in the vicinity of all commons. One such reservoir has encroached on to the common land at Waun Treflodan (St David's Airfield Heaths SSSI). The impact of these on the hydrology of the site is likely to be significant.

Targets and Objectives

No specific targets have been set for water quantity. CCW wish to see hydrological integrity maintained or restored on all components of the site.

Suggested Priority Actions (see also matrix in section 5)

Research is required to determine the hydrological budget of the site. A Wetland Management Plan should be produced and implemented. Opportunities to restore the hydrological integrity of the site should be sought. Construction of any new irrigation reservoirs should be restricted, and the significance of existing impoundments should be investigated. Catchment planning should seek to ensure that the natural hydrological inputs to the site are maintained.

AIR QUALITY

Acidification and the deposition of nitrogen compounds present a major conservation threat to wildlife in many parts of the UK. The Joint Nature Conservation Committee (JNCC) advocates the reduction of acid deposition to levels that will sustain national and

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internationally designated habitats. The reduction of pollution to below critical loads and levels are also the government's stated objectives. The Statutory Nature Conservation Agencies and others have demonstrated that even when all currently proposed cuts in acidifying and eutrophying emissions are put in place a large number of internationally important habitats will still be receiving harmful levels of pollution in excess of their critical loads. A detailed evaluation of air pollution impacts to the North West Pembrokeshire Commons SAC will be required before the potential risks to the habitats and species can be properly assessed.

Targets and Objectives

The following table has been taken from existing guidance and published research

	Critical Load (kg N ha⁻¹ yr⁻¹)	Indication of exceedance
Lowland wet heaths	17-22 #	Transition of heather to grass
Species-rich wet heaths	10-15 #	Decline of sensitive species
Neutral-acid grasslands	20-30 #	Increased tall graminoids, change in diversity

KEY: ##=Reliable; # quite reliable; (#) expert judgement

The Precautionary principle should be applied and no potential increases in atmospheric pollution should be tolerated.

Suggested Priority Actions (see also matrix in section 5)

None identified.

GRAZING MANAGEMENT

Extensive grazing in spring and summer is ideal. Grazing should aim to keep scrub and coarse plants such as purple moor-grass in check, and maintain an uneven patchwork of short and long vegetation. Vegetation across much of the site should vary from around ankle height to around knee height. Hardier breeds of beef cattle or ponies are ideal grazers, but sheep are not as they reduce floral and structural diversity.

Targets and Objectives

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Appropriate grazing regimes will be facilitated by CCW and partner organisations. All significant areas of feature habitats should be grazed.

Suggested Priority Actions (see also matrix in section 5)

Maintenance or introduction of appropriate grazing regimes across the whole site.

BURNING

Winter burning has been used as a traditional method of keeping moor-grass and gorse in check. The use of burning as a tool for restoration management will be kept under review as mechanical methods of vegetation clearance may prove to be more effective. Tussocks of purple moor-grass are fire-resistant, and can grow back more vigorously after a burn. CCW do not advocate burning as a tool for maintenance management of wet heath communities, as it can have damaging effects on invertebrates and lower plants. The impact of continued burning on the 'humid' dry heaths of this site also needs reviewing. The role of burning in the conservation of certain rare species, most notably the lichen *Cladonia pezziziformis*, will be addressed on a site-specific basis. Accidental summer burns are also damaging, and efforts should be made to prevent these from occurring.

Targets and Objectives

No burning to take place on or directly adjoining the site without CCW consent.

Suggested Priority Actions (see also matrix in section 5)

Ensure that burning is employed as a management tool in specific instances only. Investigate requirement for firebreak provision to limit spread of accidental or wilful burning.

MOWING

Mowing can be a good way of restoring neglected habitats. Areas of rank gorse and tall purple moor-grass tussocks with a build up of dead leaf-litter should be targeted. The moor-grass will re-grow from the cut base, and smaller wetland plants will have a chance to grow in between the tussocks. Cuttings should be collected and removed to avoid smothering this re-growth and enriching the soil. Only a proportion of a management unit should be cut in any one year, and the aim should be to create a varied pattern of cut and uncut areas. Mowing is not an ideal way of keeping the vegetation down in the long term, as this sudden removal is more damaging to insects than the gradual impact of extensive grazing.

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Targets and Objectives

No specific targets set. CCW used a flail mower with collection facility on several sections of the site in autumn 2001. Swathes were cut into rank purple-moor grass and rank humid heath. Mowing will continue to be used where appropriate to facilitate grazing management.

Suggested Priority Actions (see also matrix in section 5)

Maintain and enhance firebreak network.

SCRUB CUTTING

Some cutting of gorse and willow scrub is required in parts of the site, to allow the habitats of special interest to expand. Cutting should be carried out between October and February, with cuttings removed from the site. Treatment of the stumps with an appropriate herbicide may be necessary to prevent re-growth.

Targets and Objectives

Limits set on scrub extent in individual site management plans.

Suggested Priority Actions (see also matrix in section 5)

Monitor scrub encroachment. Clear scrub as required by restoration management.

CONTROL OF NON-NATIVE / INVASIVE SPECIES

Invasive alien plant species, such as Japanese Knotweed and Australian Swamp Stonecrop (*Crassula helmsii*) pose a potential threat to the integrity of the site. Where present, they have the potential to spread rapidly and adversely affect the features of interest. Japanese knotweed is present on and around the edges of Waun Fawr SSSI and Waun Treflodan (St David's Airfield Heaths SSSI). Australian Swamp Stonecrop is present in one roadside pond on Waun Caerfachell, where it smothers a population of the uncommon Pillwort. The orange flowered Montbretia (*Crocsmia x crocosmiiflora*) is a less invasive species but its presence on Waun Caerfachell requires surveillance. Most of the site is too wet for Ragwort or Bracken to pose a significant threat, although the latter has invaded drier sections of Tretio and should be controlled through cutting and/or increased grazing pressure.

Targets and Objectives

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No invasive alien plant species should be present on the site.

Suggested Priority Actions (see also matrix in section 5)

Japanese Knotweed adjoining Waun Fawr (SM759261), Waun Llandruidion (St David's Landfill site) and Waun Treflodan (SM797261), together with any further stands identified should be eradicated. The stand of Australian Swamp Stonecrop on Waun Caerfachell should be eradicated, if possible whilst retaining the Pillwort population. This may involve infilling and re-excavation of a new pond nearby. Ponds on private land around the site (eg. Tresais SM795264) should be investigated for further populations. Any other stands of invasive alien plant species identified should be eradicated.

4. FEATURE STATUS

(Note: These are provisional indications only. They do not give a definitive indication of specific feature condition. Feature condition cannot be determined until monitorable feature attributes have been identified and a programme of monitoring established. Where this is the case, it is clearly indicated in the text. The terminology used is identical to that used in 'Common Standards Monitoring' to avoid confusion but the assessment is based on best available knowledge unless otherwise stated.)

1. Floating Water Plantain *Luronium natans*

Current status is **unknown**, probably unfavourable. There is currently only one population on the site, although the plant was formerly recorded from Trefeiddan Moor SSSI. **Therefore, the provisional status of this feature is UNFAVOURABLE (November 2001)**

2. Transition mires and quaking bogs

Current status is **unknown**, probably favourable maintained. This habitat occurs in small pockets across basin mires, old clay pits and low-lying areas. It generally requires only light grazing, but is highly dependent on water quality. Most areas are species-rich, and structurally varied. As stands succeed to other habitats, it may be necessary to create new examples through excavation of open water areas. **Therefore, the provisional status of this feature is FAVOURABLE (November 2001)**

3. European Dry Heaths

Current status is **unknown**, probably unfavourable. This habitat is widespread across the site, but current grazing pressure is generally not adequate to maintain the requisite structural diversity. Attributes relating to frequency of forbs, grasses and patches of bare

ground are generally unlikely to be met. Therefore, the provisional status of this feature is UNFAVOURABLE (November 2001)

4. *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinia caeruleae*)

Current status is **unknown**, probably unfavourable. This habitat is fragmentarily distributed around the site. It is dependent on the maintenance of base-rich soil or groundwater inputs, together with at least moderate grazing pressure or cutting. Areas associated with firebreaks are generally in favourable condition, but on the majority of stands, current grazing pressure is not currently adequate to maintain the requisite structural diversity and array of forbs, short sedges and bryophytes characteristic of the habitat. Therefore, the provisional status of this feature is UNFAVOURABLE (November 2001)

5. Northern Atlantic wet heaths with *Erica tetralix*

Current status is **unknown**, probably unfavourable (the habitat may have suffered historical losses in extent through burning or neglect-induced succession to humid heath). This habitat is distributed over shallow peat and mineral soils across the site, with concentrations on Dowrog and the south side of Trefeiddan Moor. Current grazing pressure is generally not adequate to maintain the requisite structural diversity. Attributes relating to frequency of forbs, grasses and patches of bare ground are generally unlikely to be met. Therefore, the provisional status of this feature is UNFAVOURABLE (November 2001)

5. THREATS/ISSUES/ACTIONS MATRIX

see attached table