

H-1 SPECIES-RICH GRASSLANDS AND FLOODPLAIN PASTURES

1. Introduction

Throughout lowland Britain most grassland has been agriculturally improved through ploughing and re-seeding, and treatment with artificial fertilisers. Damp grasslands have been drained and then similarly agriculturally improved. This has meant a huge loss in wild flowers, butterflies and other wildlife because improved grassland supports very few plants or animals. It is largely a monoculture of perennial rye-grass. Most improved grassland is cut early in the summer for silage and is therefore unsuitable for nesting birds such as skylarks and curlews because eggs and chicks of these birds will be destroyed by the early cutting of the crop. Generally, improved grassland of very low conservation interest occurs throughout much of Monmouthshire, notably on the Gwent Levels, in the Usk Valley and in the north of the county.

Despite the widespread conversion of old species-rich grassland to rye-grass fields or to arable crops, some small pockets of unimproved grassland do still remain, often on steep hillsides as in the Wye Valley. These are rich in wildlife especially plants and insects and are often of very high conservation value. Cattle or horses often graze the species-rich grasslands, though a lack of grazing in some cases is resulting in their encroachment by coarser grasses, bracken or scrub. Very few of the species-rich grasslands are still managed for a hay crop but some notable exceptions occur at Pentwyn Farm at Penallt and New Grove Farm near Trellech, two very important and wildlife-rich areas owned by the Gwent Wildlife Trust.

Nationally only about 15,000 ha of species-rich grassland remains with about 2,000 ha in Wales. The few remnant fields are now fragmented, small and vulnerable. Strips of species-rich grassland also occur along roadsides, paths and tracks and other pockets of grassland survive in churchyards. 4200 ha of unimproved and semi-improved lowland grassland was recorded in Gwent during the NCC/CCW Lowland Habitat Survey of Wales (1987-1997), 1100 hectares of this was in Monmouthshire. With sympathetic management, much of this could become species rich again.

This habitat statement covers four types of species-rich, unimproved grassland that occur in Monmouthshire, seasonally wet improved pastures along the coast or in river valleys and road verges.

1. Lowland neutral grassland
2. Lowland dry acidic grassland
3. Lowland calcareous grassland
4. Marshy grassland or Rhos pasture
5. Seasonally flooded pasture
6. Road Verges

Species-rich grasslands are priority habitats in the UK Biodiversity Action Plan because they support such a wide range of plants, insects and other wildlife and because they are now so scarce.

2. Grassland types - a description and their status

2.1. Lowland neutral grassland

2.1.1. Description

These grasslands occur on neutral soils - those that are neither acid nor calcareous, and are used for grazing (pastures) or for a hay crop (hay meadows).

Most species-rich grasslands and hay meadows in Monmouthshire are dominated by crested dog's tail grass and black knapweed but they support many scarce or rare species such as meadow saffron, dyer's greenweed, green-veined orchid, greater butterfly orchid and adder's tongue fern. In the spring, cowslips and wild daffodils are characteristic plants of many unimproved grasslands. In May and June pastures and hay meadows of this type can be very attractive, with sheets of ox-eye daisies, bird's foot trefoil, red clover, black knapweed and other colourful flowers. Many butterflies haunt such grassland - meadow browns, ringlets, common blues, grizzled, dingy, large and small skippers, small coppers and marbled whites, whilst a range of moths, including burnet moths and cinnabar moths, abound. There is also a wealth of other insects - grasshoppers, bees, hoverflies, flies and beetles including the scarce glow-worm, as well as other invertebrates such as spiders and snails, in species-rich grassland. Steeper pastures often have mounds or anthills made by the yellow meadow ant, a favoured food of the green woodpecker. The abundance of small invertebrates and seeds in species-rich grassland in turn provide a wealth of food for small mammals and for birds such as skylarks which nest on the ground, and for linnets and yellowhammers, which may nest in hedges at the edges of the fields. Adjacent hedgerows with good species diversity and plenty of hazel and brambles may also support dormice. Cattle-grazed old pastures are also a favoured hunting area for the rare greater horseshoe bat, which feeds on craneflies and other insects in these species-rich grasslands.

Where such grasslands have been partly improved through the application of artificial fertilisers, they become less species-rich. Semi-improved grasslands can be identified by an abundance of perennial ryegrass, white clover and ribwort plantain. They are managed mainly as hay meadows. If no further application of slurry or fertiliser is made and if there is a reservoir of seed nearby in unimproved grassland, then semi-improved grassland may, over time, regain some of its former wildlife interest.

More rank grassland, dominated by false oat grass, often occurs along road verges. It may still be species-rich and it also provides good cover for small mammals. Damper grassland with the grass Yorkshire fog and soft rush may

occur between marshy grassland (purple moor grass and rush pasture) and drier grasslands.

2.1.2. Current status

During the Lowland Habitat Survey of Wales (1987-1997), 140 ha of neutral grassland in the NVC communities MG5a, MG5b and MG5c were recorded in Gwent, 120ha being in Monmouthshire.

Most remnant grasslands are concentrated in the east of the county on the Trellech Plateau and in the Wye Valley. In the intensively farmed areas of the Gwent Levels, Usk valley and northern Monmouthshire, only very occasional fragments of semi-improved grassland remain. Some Monmouthshire species-rich grasslands are protected through their SSSI status or through ownership by conservation bodies. The Gwent Wildlife Trust owns two of the best sites, Pentwyn Farm at Penallt and New Grove Meadows near Trellech. Other important sites include Plantation Farm and the Gethley, Lower Nex Meadows and Cobbler's Plain meadows near Devauden, Upper Maerdy near Usk, Dinham Meadows at Caerwent, Blaen Trothy between Pandy and Grosmont.

Neutral grasslands may lie adjacent to acid or calcareous grasslands, to marshy areas, to ancient or species-rich hedgerows and to scrub or woodland.

2.2 Lowland dry acidic grassland

2.2.1. Description

This occurs on more acid soils and generally supports fewer species than neutral or calcareous grasslands, but can still be of high significance for biodiversity. The commonest type of acid grassland is dominated by a low sward of grasses, notably sheep's fescue, common bent and sweet vernal-grass, as well as other plants such as field woodrush and heath bedstraw. This grassland is mainly used as rough grazing. Often these dry acid grasslands merge into neutral or even calcareous grasslands and then contain plants more typical of these habitats such as bird's-foot trefoil and black knapweed or quaking grass and wild thyme. Dog violets (associated with bracken) are frequent in unimproved acid grasslands and are the food plant of silver-washed fritillary butterflies. One good example of a heathy meadow is at Penrhos Farm near Raglan, one of the few sites in Monmouthshire where petty whin occurs.

Other types of acid grassland have abundant sheep's sorrel among the sheep's fescue and common bent grasses or are dominated by wavy hair grass.

All these dry acid grasslands have a rich insect fauna with many ground-dwelling and burrowing solitary bees and wasps. They also support birds such as skylarks that may nest on the ground in the grassland and feed on the insects there.

2.2.2. Current status

Some 30,000 ha occur in the UK. In Gwent 1700ha were found during the CCW Phase II Lowland Grassland Survey. The extent of the habitat is approximately 75ha in Monmouthshire (17% unimproved) and is largely limited to the Trellech Plateau. The best known examples occur at Buckholt and Wolvesnewton.

Dry acid grasslands are associated with neutral or calcareous grassland, marshy grassland and lowland heath

2.3. Lowland calcareous grassland

2.3.1. Description

This grassland occurs on shallow soils overlying limestone or lime-rich areas of Old Red Sandstone or on outcrops of limestone. It may be very rich in plants. Monmouthshire remnants support a range of plant species listed in the Rare Plants Register, including meadow clary, both lesser and greater butterfly orchids, pyramidal orchid, fragrant orchid, green-veined orchid, small scabious, sainfoin, large wild thyme, autumn ladies' tresses and the grasses chalk false-brome and crested hair grass. It is also very rich in insects. Butterflies such as common blues and marbled whites and many moths, including the scarce forester moth, live in calcareous grassland. The rare hornet robber fly, which is only known from 12 sites in Monmouthshire, favours these habitats provided there are plenty of cowpats for dung beetles on which the robberfly larvae feed. The great green bush cricket survives at Brockwells Meadow. Calcareous grasslands are also rich in other insects, molluscs (snails and slugs) and spiders.

2.3.2. Current Status

In Greater Gwent only 12 ha of unimproved calcareous grassland was recorded during the Lowland Habitat Survey (NCC/CCW 1987-1997), 53% of which was unimproved. In Monmouthshire these calcareous grasslands are largely restricted to a few areas of Carboniferous limestone in the south east, notably at RAF Caerwent, around Chepstow, at Brockwells Farm near Caerwent and to quarries and a few fields in the Rogiet area. Some more upland calcareous grassland (only 3.1 ha) also occurs in the north, on the slopes of the Ysgyryd Fawr, where it is associated with scrub.

Although the most important sites in the southeast have protection through their SSSI status, other remnants as at Rogiet quarry and on the motorway embankment above the Neddern valley, are being lost through the development of scrub and woodland.

2.4 Marshy grassland or Rhos pasture (Purple Moor grass and rush pasture).

2.4.1. Description

Four distinct types of this grassland occur in Monmouthshire (see Appendix 1). They occur on wet acid to neutral, poorly drained and nutrient-poor soils and are very rich in plant and insect species. . Where devil's bit scabious survives it may

support the marsh fritillary butterfly (a UK BAP priority species), now very rare in the county. Marshy grasslands are also important habitats for birds. Ground-nesting birds such as lapwing, curlew, snipe and redshank favour marshy grasslands when they are breeding. The chicks can easily probe for insects and other invertebrates in the moist soil and find cover from predators among the often tall and tussocky vegetation.

These damp grasslands are associated with dry acid or neutral grasslands and flushes on hillsides, wet valley bottoms, lowland heath, swamp and woodland. Some may be very small but can still be rich in plant species as well as butterflies, other insects and amphibians, notably great crested newts

2.4.2. Current Status

Nationally there are about 56,000 ha of Rhos pasture with 31,000 ha being in Wales. However, species-rich marshy grassland is rare in Greater Gwent where only 490 ha were found during the CCW Lowland Grassland Survey. Most of this grassland is located in Caerphilly, Torfaen or Blaenau Gwent rather than in Monmouthshire but important, albeit tiny pockets are still found in the county (Approximately 79ha). The best examples are at Wern Melin nr Penrhos and at Magor Marsh where rich fen meadow survives on the Gwent Wildlife Trust reserve. Llwyn-y-celin Bog near Shirenewton is an excellent example of a calcareous mire, rich in plants and sedges (9 species of sedge recorded). Bogs such as Cleddon Bog near Trelleck and Whitelye Common near Catbrook are acid bogs or mires grading into heathland and acid grassland.

2.5. Seasonally flooded pasture

2.5.1. Description

Seasonally or permanently wet grasslands, usually agriculturally improved, are found in coastal areas and on floodplains and can be of value for their ground-nesting birds (lapwing, curlew, redshank and snipe) and for wintering waterfowl and waders. They have few plants or invertebrates of conservation importance because they have mainly been drained, re-seeded and planted with ryegrass, but wildlife in adjacent ditches may be of interest.

2.5.2. Current Status

Unfortunately, because of flood protection schemes as along the Usk Valley and along the coastal belt, and because of drainage schemes including pump drainage on the Caldicot Levels, very few fields in Monmouthshire now regularly flood for any length of time in the winter months. The Neddern valley, an area of 44 ha near Caldicot and the Olway valley near Usk are exceptions. Flooded grassland attracts flocks of lapwing, snipe, swans and ducks and if water lingers into the spring, the right conditions are available for nesting lapwing and snipe.

2.6. Verges

2.6.1 Description

Road verges or 'strip meadows' are often the remainder of habitats that existed prior to roads being built. For this reason road verges are varied in being species rich remnant grassland as well as woodland habitat, heath or marsh. In some cases verges are habitats wholly created when the road was constructed with only a few species, sown on creation. Some verges are species poor as the result of over management with mowing and spraying being the main problems. Verges can provide a valuable network, in the same way as hedgerows for the dispersal of animals and seeds and are often oases for wildlife in an agriculturally improved and developed landscape.

As well as the obvious association with roads, verges can be associated with hedgerows, ditches or both. These run parallel or perpendicular to roadside verges.

2.6.2 Current status

For over 10 years, a number of floristically rich verges identified by the Gwent Wildlife Trust and members of the public, have been subject to reduced cutting intensity and raking off of grass cuttings. As important verges are identified they are added to the Roadside Verge Wildlife Reserves list.

The National Assembly for Wales is surveying 16 Miles of the A4042 Trunk Road south from Abergavenny to Pontypool for current biodiversity interest. During the pre-survey consultation the MCS requested the survey be expanded to identify possible locations for enhancement and development of biodiversity interest.

3. Current factors affecting the grasslands

Species-rich grasslands and once seasonally flooded pastures are continually being lost or degraded. The most damaging causes are:

- 3.1 Conversion to improved grassland through drainage, ploughing and reseeded with ryegrass or conversion to arable fields.
- 3.2 Enrichment through the spreading of artificial fertilisers or slurry, leading to reduction in plant diversity. If only farmyard manure is applied the diversity can be retained, but applications of slurry or nitrogen-rich artificial fertilisers will ensure good grass growth but other plants will be squeezed out by the resulting competition.
- 3.3 Pesticide and herbicide drift from neighbouring fields affects grassland and road verges. Road verges often become enriched through fertiliser washing or leaching off adjacent fields and the verges then become dominated by nettles and tall grasses; the former rich variety of plants disappears.

- 3.4 Enrichment of road verges and woodland rides can also occur through leaving cut material along the verges or rides instead of removing it.
- 3.5 Dumping of garden waste and spoil on verges enriches the soil and decreases the biological value.
- 3.6 Cutting or grazing at the wrong time of year can also lead to a reduction in plant diversity. If hay is cut before plants have set seed then this limits future germination and dispersal. This is also a major threat to road verges where grass is regularly cut for aesthetic reasons.
- 3.7 Lack of management or cessation of grazing leads to invasion by scrub or bracken and consequent loss of diversity. Old quarries quickly revert to scrub and then woodland.
- 3.8 Overstocking can also cause a reduction in plant diversity.
- 3.9 Supplementary feeding for stock can lead to enrichment and ground poaching, both of which may reduce plant diversity and encourage species such as docks and creeping thistles.
- 3.10 Changes in grazing regimes, such as using horses and ponies instead of cattle, can alter species composition
- 3.11 Invasion by non-native species such as Indian/Himalayan balsam or Japanese knotweed, winter heliotrope, and giant hogweed especially on road verges, can occur following importation of contaminated topsoil for quite minor civil engineering works. These alien plants form dense stands and out-compete native plants.
- 3.12 Land drainage schemes and/or water abstraction may lead to lower water tables and hence adversely affect wet meadow species.
- 3.13 Encroachment and loss from industrial and housing development particularly around existing towns and in the south of the county.
- 3.14 Encroachment and loss from road schemes particularly in the south of the county.
- 3.15 Planting of trees on species-rich grassland will change the grassland species composition.
- 3.16 Increased fragmentation and disturbance of remaining habitats.
- 3.17 Grazing by livestock that have been treated with chemicals, such as Avermectin, to control parasites. These chemicals can be passed out onto the pastures in dung and they may kill dung beetles and other insects, and eliminate the rare hornet robberfly. This also lowers the value of the grassland for feeding bats particularly the rare greater horseshoe bat.

4. Current Action

- 4.1 There are 10 meadow SSSIs in Monmouthshire with several other having grassland as a component of the habitat.
- 4.2 Gwent Wildlife Trust has 30 Nature reserves, a third of these have some grassland habitat and occur within Monmouthshire.
- 4.3 As a result of recent surveying to designate Sites of Importance for Nature Conservation (SINCs) many grassland candidate SINCs have been found.

- 4.4 The Monmouthshire Meadow Group (MMG) operates predominantly in the Wye Valley and Trelleck Plateau area. This group of landowners with small pockets of meadowland help to ensure the correct management for small meadows in the County. MMG carries out botanical surveys of meadows and pastures and trains its members to identify key species. The group meets to pool resources including mowing machinery and livestock in order to conserve the meadows. Grants that they have received have paid for member training in grassland management and hedge laying and enabled the purchase of alpine hay cutting machinery. Recent funds will be used to make and display interpretation boards. These will be used by the group to raise awareness for the appropriate management of meadows in Monmouthshire. One board has been erected at the MCC site, The Old Station, Tintern. The Monmouthshire Meadow Group is closely associated with the Parish Grasslands Project operating east of the river Wye. A bracken rolling machine owned by MCC has been loaned to the Monmouthshire Meadow Group.
- 4.5 As part of MCC's annual programme of work (grant aided by CCW), meadow restoration projects have been undertaken in 2001/2 and 2003/4.
- 4.6 Local agenda 21 money is available for meadow management. In the future this money will be targeted for use on SINCs.
- 4.7 Tir Gofal encourages the restoration and conversion of improved to semi-improved grassland. The whole farm scheme offers money for enclosed unimproved grassland and encourages appropriate livestock levels. In Monmouthshire such agri-environment schemes are promoted by CCW's Tir Gofal officers and the South Wales FWAG officer.
- 4.8 In 1992, the former Gwent County Council initiated the designation of Roadside Verge Wildlife Reserves. There are now 38 in Monmouthshire with new additions annually. These are managed more sympathetically than other verges with a single late cut and removal of cut material.

5. Objectives and proposed targets

5.1.UK and Greater Gwent objectives and targets

No single UK BAP has been written for grasslands but Plans exist for individual grassland types. The same is true for the Greater Gwent area.

5.2. Monmouthshire objectives and targets

- 1 Find the full extent and nature conservation value of the resource
- 2 Prevent further loss and maintain and enhance existing species-rich grasslands
- 3 Extend the resource by re-creation of species-rich grassland on land adjacent to existing sites
- 4 Make landowners/managers, planners and the public aware of the value of species-rich grasslands and of appropriate management practices

6. Proposed actions and key partners for species rich grassland and floodplain pastures

Action	Key Partners		Timescales	Meets Target
	Lead	Partners		
1. Policy and legislation				
1.1 Ensure policies and strategies do not adversely affect existing habitats.	MCC	CCW, MCS	Ongoing	2
1.2 Seek to designate the best sites as SSSIs, LNRs or SINCS	CCW, MCC, GWT	LBAP Partnership	Ongoing	2 3
2. Site safeguard and protection				
2.1 The best sites should be protected by SSSI management agreement.	CCW	MCS, GWT, Plantlife, Butterfly Conservation	Ongoing	2 3
2.2 All sites of importance for nature conservation (SINCS) should be documented and advice given to owners on the value of their grasslands and on appropriate management plans to maintain grasslands.	GWT, MMG	LBAP Partnership	Ongoing	2 3 4
2.3 Grant aid and incentive schemes such as Tir Gofal and MCC Biodiversity Grants should be used to encourage owners to manage suitable habitats sensitively.	NAWAD, CCW	MCC and LBAP Partnership	Ongoing	2 3 4
2.4 Continue to support positive management of Species Rich Grasslands especially those of	CCW MCC	GWT MMG	Ongoing	2 3

SINC quality				
2.5 Ensure species rich grasslands and floodplain pastures are fully considered when assessing any development, which may impact upon the habitat paying particular attention to protected sites.	MCC	CCW, MCS, GWT Dev Plans, Dev control	Ongoing	2 3
2.6 Ensure opportunities for appropriate mitigation during development are used when avoidance is not an option.	MCC	MCS, GWT, Dev Plans, Dev control	Ongoing	2 3
2.7 Ensure opportunities for enhancing species rich grassland and floodplain pastures during the planning process.	MCC	MCS, GWT Dev Plans, Dev Control	Ongoing	2 3 4
2.8 Continue to identify additional grassland verges of interest.	GWT, MCC	MCS, Members of the public	Ongoing	1 2
3. Site Management				
3.1. Eliminate where possible alien vegetation e.g. Japanese knotweed, Himalayan balsam, giant hogweed, winter heliotrope.	Invasive species partnerships	AONB, EA, CCW, MCC, Landowners, GWT	Ongoing	2 3
4. Advisory				
4.1 Monmouthshire Meadow Group to use interpretation boards to promote the group and meadow management.	MMG	MCC, NAW	2 boards by the end of 2005	4
5. Research and monitoring				
5.1 Compile an accurate inventory of the locations and extent (ha) of each remnant of species rich grassland.	CCW	CCW, GWT, MMG	Ongoing	1
5.2 Determine the importance of each remnant by surveying to find species diversity.	CCW	CCW, GWT, MMG	Ongoing	1
5.3 Annual monitoring of grassland sites to determine the retention of wildlife value.	CCW	CCW, GWT, MMG	Ongoing	1

7. Links with other plans

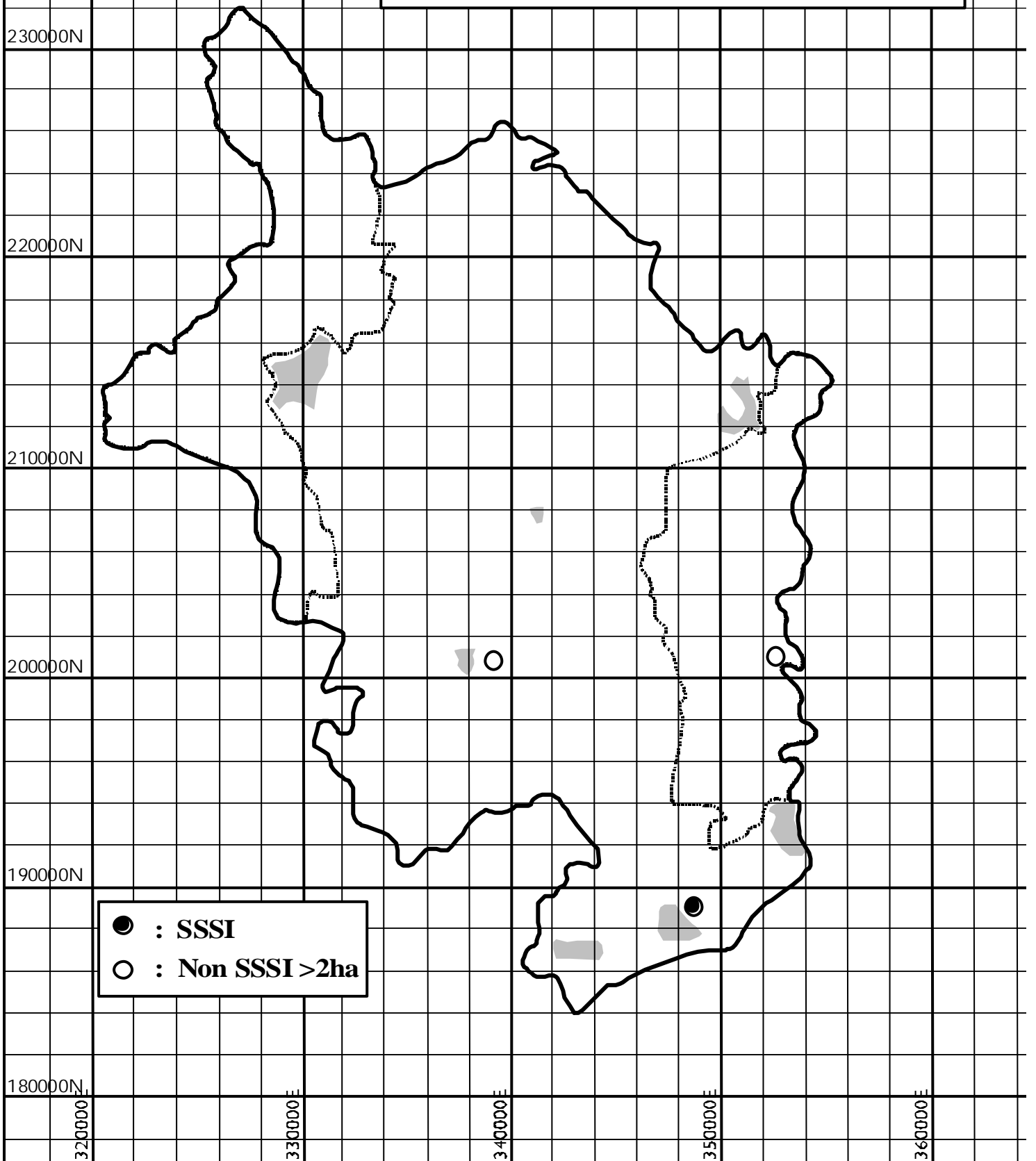
The plan should be considered in conjunction with any future plans prepared for specific grassland types or any habitat that may be dependant on succession from grassland such as scrub. The plan can also be used alongside the lapwing and greater butterfly orchid action plans. Any future action plan for a species

that relies on grassland habitats, such as bats, invertebrates and specific grassland plant species, should also link to this plan.

8. Data Source

Information regarding hectares of grassland taken from *Priority habitats of Wales a technical guide*, produced by the CCW, 2003.

SEASONALLY FLOODED PASTURE



Scale 1:250000

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LA 090 12L (2002)

LOWLAND NEUTRAL GRASSLAND

230000N

220000N

210000N

200000N

190000N

180000N

320000E

330000E

340000E

350000E

360000E

- : SSSI
- : Non SSSI > 2 ha

Scale 1:250000

LOWLAND DRY ACIDIC GRASSLAND

230000N

220000N

210000N

200000N

190000N

180000N

320000E

330000E

340000E

350000E

360000E

○ : Non SSSI > 2 ha

Scale 1:250000

LOWLAND CALCAREOUS GRASSLAND

230000N

220000N

210000N

200000N

190000N

180000N

● : SSSI
○ : Non SSSI

320000E

330000E

340000E

350000E

360000E

Scale 1:250000

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MARSHY GRASSLAND OR RHOS PASTURE

230000N

220000N

210000N

200000N

190000N

180000N

320000E

330000E

340000E

350000E

360000E

- : SSSI
- : Non SSSI > 2 ha

Scale 1:250000