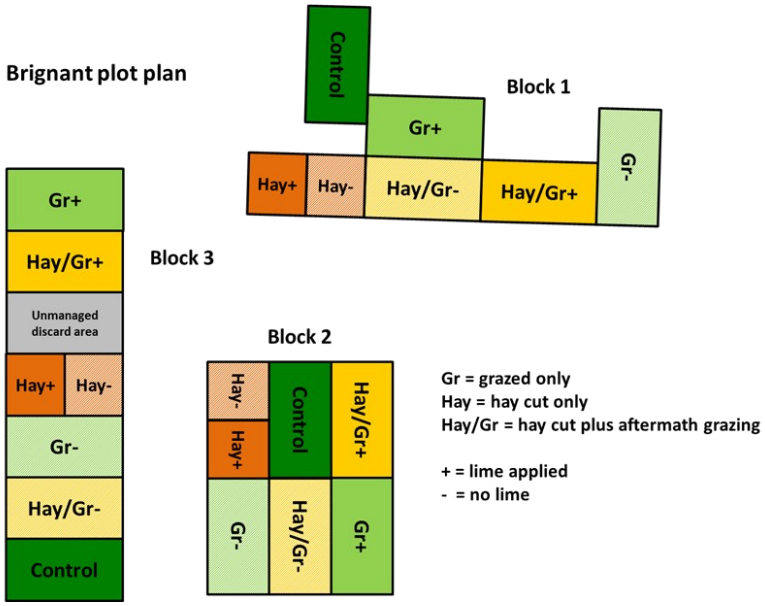
PROJECT INFORMATION SHEET

The Brignant long-term plots

The Brignant plots are a unique experimental resource. They were originally set up to test the effectiveness of different management options in achieving reversion of improved permanent pasture to semi-natural vegetation. They were established in 1994 on typical upland permanent pasture (last reseeded in 1973) which had received regular inputs of fertiliser and lime. At the time the plots were created, sown grass species still dominated the pasture, with ryegrass at 58% sward cover. Seven different management regimes were imposed in three replicated blocks. The treatments are: sheep grazing, with and without lime application; hay cutting only, with and without lime application; and hay cutting followed by aftermath sheep grazing, with and without lime application. Control plots continuing the previous site management (i.e. limed, fertilised and grazed by sheep) are also included within each block. These receive an annual application of 60 kg N fertilizer plus P and K fertilizer as required.

Studies over the years have demonstrated that the most effective management for restoring botanical diversity has been hay cutting with aftermath grazing, and that the changes in plant species diversity are linked to changes in insect populations, including pollinators. The latest IBERS projects are using the plots to investigate the long-term impacts of the different management regimes on additional parameters, such as soil carbon and rainfall infiltration. The results will support a comparative assessment of public goods delivery from pastures under alternative management regimes, with related outputs providing an evidence base for policies relating to this important grassland type. The resource is also available to national and international scientists for the study of all processes and interactions within managed grassland ecosystems, and the meteorological station at the site is part of the UK Environmental Change Network.



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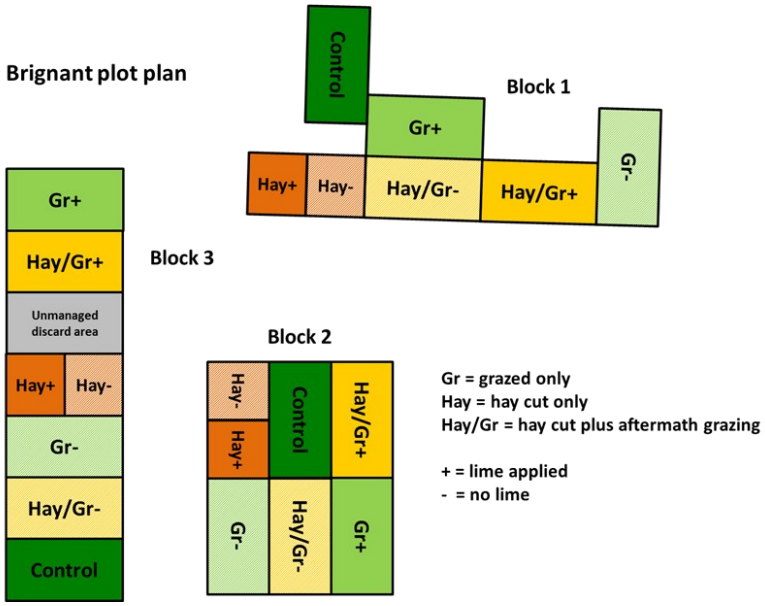
PROJECT INFORMATION SHEET

Mae lleiniau Brignant

Mae lleiniau Brignant yn adnodd arbrofol unigryw a sefydlwyd yn wreiddiol i brofi effeithiolrwydd gwahanol opsiynau rheolaeth er mwyn troi tir pori parhaol wedi'i wella yn ôl yn llystyfiant lled-naturiol. Cawsant eu sefydlu ym 1994 ar dir pori parhaol nodweddiadol a gafodd ei aredig a'i ail hadu ym 1973, ac a oedd wedi derbyn mewnbwn gwrtaith a chalch rheolaidd. Pan grëwyd y lleiniau roedd rhywogaethau glaswellt wedi'u hau yn dal i ddominyddu'r gwndwn, gyda gorchudd rhygwellt yn 58%. Mae cyfanswm o saith gwahanol drefn rheolaeth wedi cael eu gweithredu mewn tri bloc sy'n cael eu hailadrodd. Mae'r triniaethau fel a ganlyn: pori defaid, gyda gwasgariad calch a hebddo; torri gwair yn unig, gyda gwasgariad calch a hebddo; a thorri gwair gan bori defaid yn syth wedi hynny, gyda gwasgariad calch a hebddo. Mae lleiniau rheoli sy'n parhau â'r rheolaeth safle blaenorol (h.y. wedi'u calchu, gwrteithio a'u pori gan ddefaid) hefyd yn cael eu cynnwys yn y bloc. Maent yn derbyn gwasgariad gwrtaith blynyddol o 60 kg N a 30 kg P ha-1.

Mae astudiaethau dros y blynyddoedd wedi dangos mai'r modd mwyaf effeithiol i adfer amrywiaeth botanegol yw torri gwair ac yna pori'r hyn sy'n weddill, a bod newidiadau i amrywiaeth rhywogaethau planhigion yn gysylltiedig â newidiadau mewn niferoedd pryfed, gan gynnwys peillwyr. Mae prosiectau diweddaraf IBERS yn defnyddio'r lleiniau i ymchwilio i effeithiau hir dymor gwahanol weithdrefnau ar wasanaethau ecosystemau ehangach. Bydd y canlyniadau'n cael eu defnyddio i ddarparu asesiad cymharol o berfformiad cynhyrchu a'r nwyddau cyhoeddus a geir o dir pori parhaol dan wahanol ddulliau o reoli'r tir, a bydd deilliannau cysylltiedig yn cynnig tystiolaeth ar gyfer trafodaethau polisi yn ymwneud â'r math hwn o dir glas. Mae'r adnodd hefyd ar gael i wyddonwyr cenedlaethol a rhyngwladol i allu astudio'r holl brosesau a'r cyswllt o fewn ecosystemau tir glas a reolir, ac mae'r orsaf feteoroleg ar y safle yn rhan o Rwydwaith Newid Amgylcheddol y DU.



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