Aran LIFE

NATURA 2000

Treoir Dea-Chleachtais:
BAINISTIÚ AR CHOTHAITHIGH MACHAIR

Best Practice Guide:
NUTRIENT MANAGEMENT OF MACHAIR

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Togra AranLIFE

D'oibrigh togra AranLIFE le feilméaraí ar thrí Oileán Árann le cleachtais fheilméarachta traidisiúnta agus inbhuanaithe a rachadh chun tairbhe do thimpeallacht nádúrtha na nOileán a fhorbairt agus a chur chun cinn. Bhí sé i bhfeidhm ó 2014 go 2018 agus maoinithe trí Chiste LIFE Nature an AE (maoiniú 75% ó LIFE, 25% ó chomhpháirtithe an togra in Éirinn). Dhírigh an togra ar na cleachtais fheilméarachta as ar eascair tírdhreach speisialta Árann agus atá aitheanta in ainmniúchán shuíomh Natura 2000 na n-oileán (suímh a thugann cosaint do ghnáthóga agus do speicis a bhfuil tábhacht Eorpach leo). Baineadh leas as eolas agus as taithí na bhfeilméaraí áitiúla chomh maith le saineolas eolaíoch pháirtithe an togra chun na dúshláin a bhaineann le feilméaracht ar oileán a shárú agus le stádas caomhnaithe na suíomh Natura a fheabhsú.

AranLIFE Project

The AranLIFE project worked with farmers on the three Aran Islands to develop and promote traditional and sustainable farming practices to benefit the Islands' natural environment. It operated from 2014-2018 and was funded through the EU LIFE Nature Fund (75% LIFE funding; 25% Irish project partners). The project focused on the farming practices that created the iconic Aran landscape, and which is recognised in the designation of the Islands' Natura 2000 sites (sites to protect habitats and species of European importance). It harnessed local farming knowledge and experience with the scientific expertise of project partners to overcome the challenges of island farming and to improve the conservation condition of the Natura sites.

LIFE+ Dúlra agus Bithéagsúlacht

Tá 'LIFE+ Dúlra agus Bithéagsúlacht' ar cheann de phríomhshnáithe chlár maoinithe an Aontais Eorpaigh don chomhshaol. Tacaíonn sé le tionscadail a chuidíonn le feidhmiú Threoracha an AE maidir le hÉin agus Gnáthóga, le líonra Natura 2000 agus le sprioc an AE maidir le stop a chur le caillteanas bithéagsúlachta.

LIFE+ Nature and Biodiversity

LIFE+ Nature and Biodiversity is one of the main strands of the European Union's funding programme for the environment. It supports projects that contribute to the implementation of the EU Birds and Habitats Directives, the Natura 2000 network and that contribute to the EU's goal of halting the loss of biodiversity.

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Céard é Machair?

Is talamh féarach cothrom le cósta é Machair nach bhfuil ach ar chósta thiar na hAlban agus na hÉireann. In Éirinn, is ar Oileáin Árann atá an chuid is faide ó dheas den ghnáthóg seo. Is muirbheach cothrom gainmheach atá sa Machair a thagann chun cinn ar shuíomh aigéanach le haeráid fionnuar tais. Bíonn ithir an Mhachair an-chailcreach ar fad mar gheall ar an méid sliogán a bhíonn ann agus bíonn a luach pH >7 de ghnáth.

What is Machair?

Machair is a flat coastal grassland that only occurs on the west coast of Scotland and the west coast of Ireland. The Aran Islands mark the most southerly sites of the distribution of this habitat in Ireland. Machair consists of a flat sandy plain that develops in an oceanic location with a cool, moist climate. Machair soils are highly calcareous because of the high shell fragment content and usually have a pH >7.

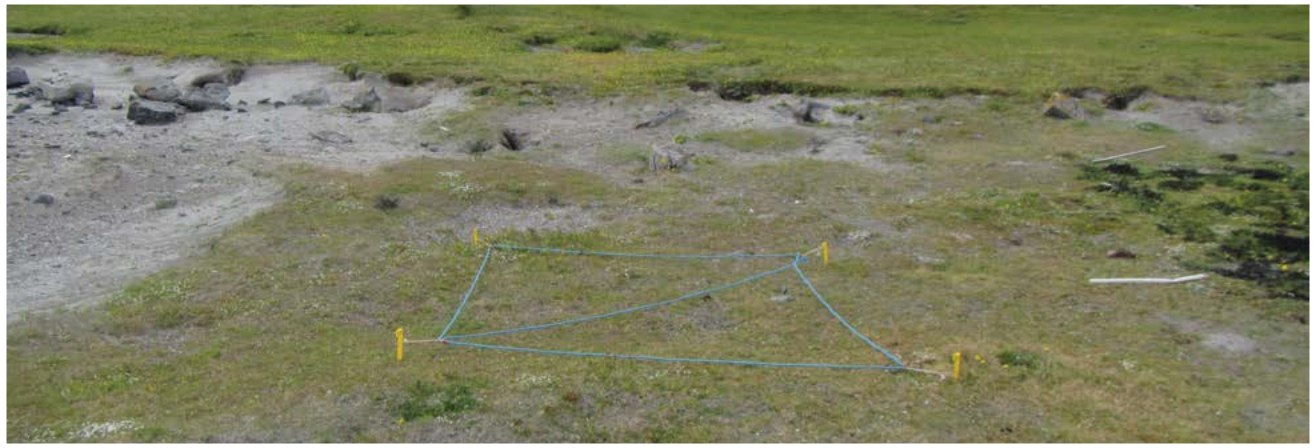
Cén sórt cuma a bhíonn ar Mhachair dea-bhainistithe?

Ba cheart go mbeadh talamh Machair lán le speiceas agus é comhdhéanta de luibheanna, cíb agus féara. Is cuid thábhachtach den Mhachair é caonach ach gan an iomarca de a bheith ann. Ar na hoileáin tá caonach ag scaipeadh an iomarca ar roinnt de na suímh Machair. Tá leibhéil inbhuanaithe innilte riachtanach le go bhfanfaidh an saibhreas speiceas sa Machair. Má dhéantar an iomarca innilte scaipfidh an caonach, beidh níos mó gaineamh lom ann agus seans creimeadh freisin agus mura ndéantar dóthain innilte beidh an iomarca féir gan mórán speiceas tríd ann. Faoina leibhéil innilte is fiúntaí ba cheart go mbeadh báinseach dlúth ann le saibhreas speiceas, agus le go dtarlóidh sé seo ba cheart an áit a ithe taobh amuigh den tréimhse blátha, sin Bealtaine go Lúnasa.

What should a well-managed Machair look like?

Machair grassland should be species-rich and composed of herbs, sedges and grasses. Mosses are an important component of Machair but should not dominate. Moss dominance has become an increasing problem in some Machair sites on the islands. Sustainable grazing levels are vital to maintain a species-rich Machair. Overgrazing can lead to an overdominace of moss species, an increase in bare sand and increase risk in erosion while undergrazing leads to the development of grass-dominated, species-poor vegetation. Ideal grazing levels should produce a species-rich, close-cropped sward, and to achieve this, the grazing period should be outside of the flowering period May to August.

Machair speiceas-shaibhir le meascán luibheanna
Species-rich Machair with a diversity of herbs



Machair ar déanadh an iomarca innilte air agus a bhféadfadh creimeadh tarlú ann
Over grazed Machair prone to erosion

Cén cineál Machair a dtéann leasú feamainne go maith dó?

Is ithir ghainmheach saorshilteach a bhíonn sa Machair agus mar sin níl an cumas ann greim a choinneáil ar na cothaithigh a theastaíonn d'fhás féir. In imeacht ama sceitheann na cothaithigh as agus ní bhíonn an ithir sách torthúil d'fhásra Machair agus dá réir sin bíonn an foráiste do na beithígh teoranta. De bharr laghdú sa bhfásra féir bíonn deis ag an gcaonach scaipeadh agus a theacht chun cinn. Is rud coitianta é an creimeadh ar na suímh Machair íseal-chothaithe seo, cheal dóthain fásra a choinneodh an ghaineamh ina chéile. Cuidíonn leasú feamainne le cothaithigh a sholáthar agus le hábhar orgánach na hithreach a mhéadú agus feabhsaíonn freisin an cumas le huisce a choinneáil. Níor cheart feamainn a chur amach ar Mhachair a bhfuil neart féir ag fás ann mar, leis na cothaithigh breise ón bhfeamainn, is amhlaidh a thiocfaidh glac bheag speiceas plandaí chun cinn go mór san áit uilig agus laghdóidh an éagsúlacht speiceas go mór.

What type of Machair benefits from seaweed application?

The sandy soils of Machair are free-draining and so have little capacity to retain nutrients for grass growth. Over time, nutrients leach out leaving insufficient soil fertility for Machair vegetation to develop, resulting in limited forage available for cattle. With the reduction in competition from the grass vegetation, the moss component of the vegetation can become dominant. Erosion is a common feature of these undernourished Machair sites, as there is insufficient vegetation to bind the sand together. The application of seaweed helps both to supply nutrients and to increase the organic matter of soil, while also improving water retention capacity. Applications of seaweed should be avoided in areas of Machair that have strong grass growth, as nutrient input here will lead to the dominance of a few plant species and an overall reduction in species diversity.

Cén chaoi le foráiste agus éagsúlacht speiceas Machair a mhéadú?

Sa bhFómhar is féidir feamainn a bhíonn caite i dtír sna cladaí a bhailiú (braitheann an meascán feamainne ar an gcladach inár frítheadh é, ach is iondúil gur feamainn bhoilgíneach agus feamainn dearg a bhíonn ann) agus a scaipeadh thart sna paistí loma agus paistí atá tiubh le caonach. Sraith tanaí a theastaíonn mar má chuirtear amach an iomarca beidh sé ina mhóta agus ní fhásfaidh aon luibheanna, féara ná cíb. Nuair a thosóidh na luibheanna agus féar ag fás clúdófar an caonach agus laghdóidh sé dá réir.

How to increase forage and species diversity of Machair?

Storm-deposited seaweed (which can be a range of species depending on where it is deposited, but is mainly bladder wrack and kelp) can be collected from the seashore and spread on the impoverished and moss-dominated areas of Machair in autumn, layered loosely over the target areas. Coverage should be light, as heavy coverage will act like a mulch, preventing herbs, grasses, and sedges from growing. By encouraging the herb and grass growth, the moss layer will be shaded and reduce in coverage.

Gaineamh lom i bpíosa Machair ar cuireadh feamainn air 3 bliana i ndiaidh a chéile. Chuidigh an fheamainn, idir an t-ábhar orgánach agus feabhsú sa gcumas le uisce a choinneáil, leis an tsraith gainimh a dhaingniú. Taobh istigh de 2 bhliain bhí coilíniú speiceas sna háiteacha loma seo, mar aon le féar Machair le meascán níos mó speiceas, a bhí feiliúnach do bheathú beithíoch.

Bare sand within an area of Machair where seaweed was applied for 3 consecutive years. The seaweed applications helped stabilise the sandy substrate, through a combination of supplying organic matter and improving the water retaining capacity of the substrate. This led to species colonisation of the bare areas within 2 years, and to Machair grassland with increased species diversity, capable of supporting grazing livestock.

Meán Fómhair/September 2014

Aibreán/April 2015

Meitheamh/June 2015

Samhain/November 2015

Lúnasa/August 2018

Cén chaoi a gcuireann an fheamainn le luach caomhnaithe féarach Machair?

I gcás Machair, le paistí loma gainimh, nó Machair a bhfuil na cothaithigh sceite as thar roinnt ama agus nach bhfuil féar innilte ag fás ann, cuidíonn an fheamainn ó thaobh an fásra atá ann a nascadh ina chéile agus cuireann ábhar orgánach san ithir ghainmheach. Coinníonn feamainn uisce agus mar sin seasann an fliuchras níos faide san áit thirim seo. Cuidíonn na nithe seo eatarthu leis an éagsúlacht speiceas a mhéadú, go háirithe táscspeicis dhearfacha ar nós glanrosc, lus na mban sí, gliográn, cíb ghainimh agus cíb liathghorm, agus ag an am céanna ardaíonn luach an fhoráiste a bhíonn ar fáil.

How does seaweed improve the conservation value of Machair grassland?

In damaged Machair, with bare patches of sand, or Machair that has become leached of nutrients over time and not producing grazable forage, the addition of seaweed helps to bind the existing vegetation and adds organic matter to the sandy soil. The rewetting properties of seaweed mean that moisture is retained for longer in this moisture deficient environment. These impacts combine to increase species diversity, particularly of positive indicator species, such as eyebright, fairy flax, yellow rattle, sand and glaucous sedge, while at the same time increasing the value of available forage.

Ceisteanna Eile

Toiliú

Is Gnáthóg le stádas tosaíochta é Machair atá liostaithe in Iarscríbhinn 1 Threoir an AE maidir le Gnáthóga agus tá sé ar cheann de leasanna incháilithe LCS Inis Meáin agus Inis Mór. Bíonn cead le fáil roimh ré ón tSeirbhís Páirceanna Náisiúnta agus Fiadhúlra le leasú ar nós feamainn a chur amach ar Mhachair.

Other issues

Consents

Machair is a priority habitat listed in Annex I of the EU Habitats Directive and is one of the qualifying interests of Inis Meáin SAC and Inis Mór SAC. The application of fertiliser, such as seaweed, on to the Machair is an activity that requires prior consent from the National Parks and Wildlife Service (NPWS).

Pilibín agus Éanacha eile a neadaíonn ar an talamh

Is áiteacha neadaithe tábhachtacha iad Machair na n-oileán don philibín agus don gheabhróg agus d'éanacha eile a neadaíonn ar an talamh ar nós an fhuiseog agus an riabhóg mhóna. Ba cheart feamainn a chur amach taobh amuigh den séasúr neadaithe, séasúr a shíneann ón 1 Márta go 31 Lúnasa.

Lapwing and other ground nesting birds

Machair sites on the islands are important nesting grounds for both lapwing and tern and other ground nesting birds such as skylark and meadow pipit. It is important that any seaweed applications are completed outside of the bird nesting season, which runs from the 1st March to the 31st August.

Nead Pilibín ar Mhachair. Corr uair a fheictear pilibín goir anois ar an mórthír ach bíonn roinnt mhaith acu fós ar gor ar ghnáthóga Machair ar na hoileáin.

Lapwing nest on Machair. Breeding lapwing is a rare occurrence now on the mainland, however quite good numbers still breed on Machair habitat on the islands.

An seilmide rinseach béalchaol (*Vertigo angustior*)

Is seilmide beag neamhchoitianta é an seilmide rinseach béalchaol agus tá sé sa Machair in Inis Mór. Tá an speiceas seo in ann lonnú i gcuid mhaith áiteacha. Teastaíonn miocraeráid ar leith uaidh áfach agus cuireann draenáil, athruithe ar innilt agus ar bhainistiú as dó. Tá an speiceas seo liostaithe in Iarscríbhinn II Threoir an AE maidir le Gnáthóga agus é faoi bhaol san Eoraip. Ní fheileann Machair lom, creimthe don chineál seo seilmide agus nuair a chuirtear amach feamainn le caighdeán an fhéir a fheabhsú bíonn sé ina bhuntáiste freisin don speiceas neamhchoitianta seo.

The narrow-mouthed whorl snail (*Vertigo angustior*)

The narrow-mouthed whorl snail, is a small, rare snail that occurs on Machair habitat on Inis Mór. This species can occur on a wide variety of sites. The exact micro-climate that it requires, however, is very specific and it is sensitive to drainage and changes in grazing and management. This species is on Annex II of the EU Habitats Directive and is considered threatened within Europe. Bare, eroded Machair is an unsuitable habitat for this snail species and applications of seaweed which improve the sward quality will also benefit this rare species.

An seilmide rinseach béalchaol atá in Inis Mór. Is léir, nuair á bhíonn an speiceas seo i ngnathóg, nach bhfuil aon cheo as alt sa ngnáthóg sin, mar go bhfuil riachtanais hidrigeolaíocha an-bheacht ón speiceas seo agus go ngoillfeann athrú sa mbainistiú orthu.

The narrow-mouthed whorl snail, which occurs on Inis Mór. The presence of this species indicates undisturbed habitat as the hydrogeological requirements of this species are very precise and prone to disturbance through changes in management.

Coiníní

Má dhéantar an iomarca innilte ar an Machair, bíodh gur beithígh nó luibhiteoirí eile a bhíonn i gceist, milltear an gnáthóg. Tá deacracht mhór le coiníní ag déanamh an iomarca innilte ar an Machair in Iaráirne, Inis Mór agus é níos coitianta anois freisin ar an Machair in Inis Meáin. Tharla nach bhfuil creachadóirí nádúrtha ann ní mór smacht ceart a choinneáil ar na coiníní mar go bhfuil siad ag déanamh an iomarca innilte ar an bhféar agus dá bharr seo beidh an gnáthóg á creimeadh de réir a chéile agus laghdú ag teacht ar an gcaighdeán. Nuair nach mbíonn na coiníní smachtaithe agus go gcuirtear feamainn amach ar an Machair is amhlaidh a bhíonn níos mó bia ansin ag na coiníní seachas foráiste a bheith ann don bheostoc.

Rabbits

Overgrazing of Machair leads to degradation of the habitat, and this applies whether livestock or other herbivores are grazing. Overgrazing by rabbits is a significant issue on the Machair at Iararna, Inis Mór, and is becoming more frequent on Machair at Inis Meáin. In the absence of any natural predators, rabbits need to be kept under effective control as they are over-grazing the grassland which in turn is leads to erosion of the habitat and a decline in quality. Where the rabbit population is not controlled, applying seaweed to the Machair ultimately produces more food for the rabbits rather than forage for livestock.

Leagadh síos cásaí leis na coiníní a choinneáil amach ar an Machair in Iaráirne, Inis Mór leis an tionchar a bhíonn ag innilt na gcoiníní ar an bhfásra a mheas. Bhí níos mó fásra agus caighdeán níos fearr fásra faoina cásaí (ar chlé sa bpictiúr) seachas mar bhí (ar dheis sa bpictiúr) san áit a mbíonn na coiníní ag ithe.

Rabbit exclusion cages were erected on Iararna Machair, Inis Mór, to assess the impact of rabbit grazing on the vegetation. Better quality and quantity of vegetation occurs under the cage (left of photo) than outside the cage (right of photo) where rabbits graze.

Achoimre

- Ní mór cead na Seirbhíse Páirceanna Náisiúnta agus Fiadhúlra a fháil sula scaiptear feamainn ar Mhachair i LSC (Limistéar Caomhantais Speisialta).
- Níor cheart úsáid ach feamainn a bhíonn caite i dtír.
- Ba cheart clúdach tanaí feamainne a chur ar na háiteacha loma sa bhFómhar.
- Feictear na torthaí is fearr sna háiteacha den Mhachair a bhíonn ar bheagán tairbhe, lom nó creimthe.
- Is gnáthóg thábhachtach an Machair d'éanacha a neadaíonn ar an talamh, mar sin ba cheart feamainn a chur amach taobh amuigh den séasúr neadaithe, séasúr a shíneann ón 1 Márta go 31 Lúnasa.
- Teastaíonn gnáthóg féir le báinseach maith ó speicis áirithe seilmidí ar nós an seilmide rinseach béalchaol. Má chuirtear feamainn ar mhachair lom, creimthe, seans go méadóidh an gnáthóg a bhéas feiliúnach don speiceas neamhchoitianta seo.
- Sna háiteacha le cuimse coiníní níl an fheamainn chomh tairbheach mar go n-itheann na coiníní an fásra de réir mar a ghobann sé aníos.

Summary

- Seaweed application on Machair within the SAC (Special Area of Conservation) requires consent from the NPWS.
- Only seaweed that has been storm-deposited should be collected and applied.
- A light coverage of seaweed should be applied to the target areas in autumn.
- Best results are seen on areas of impoverished, bare and eroding areas of Machair.
- Machair is an important habitat for ground nesting birds so it is important that any seaweed applications are completed outside the bird nesting season which runs from the 1st March to the 31st August.
- Snail species, such as the narrow-mouthed whorl snail, require grassland habitat with a well-developed sward. Applications of seaweed, on bare, eroded machair has the potential to increase the available habitat for this rare species.
- In areas with a high rabbit population, the application of seaweed had reduced effects as the rabbits graze the emerging vegetation before it establishes.

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National Tourism Development Authority

An Chomhairle Oidhreachta
The Heritage Council

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