

PLAN-GNÌOMHA  
AIRSON  
ÀRAINNEAN  
LAGÙN SAILLTE  
(OIRTHEIREACH)

SALINE (COASTAL)  
LAGOONS  
HABITAT ACTION  
PLAN



WESTERN ISLES LOCAL  
BIODIVERSITY ACTION PLAN

PLANA-GNÌOMHA  
BITH-IOMADACHD  
IONADAIL NAN EILEAN SIAR

## 1. HABITAT PROFILE

### Habitat definition:

Saline lagoons are essentially bodies, natural or artificial, of saline water partially separated from the adjacent sea. Saline lagoons may be brackish (less salty than seawater), fully saline (seawater), or even hypersaline (more salty than seawater). The Joint Nature Conservation Committee (JNCC) recognises five types of UK coastal lagoons, and there are examples of these five in the Western Isles.

### UK Biodiversity Status:

Priority habitat.

### Statutory Protection:

Saline lagoons are a priority habitat for protection as Special Areas of Conservation (SACs) under Annex I of the EC Habitats Directive. In the Western Isles, there are three SACs chosen primarily for coastal lagoons: Loch nam Madadh SAC, Loch Roag Lagoons SAC and Obain Loch Euphoirt SAC. South Uist Machair SAC includes lagoons as an extra qualifying feature.

Under the EC Birds Directive, the North Uist Machair and Islands Special Protection Areas (SPA) and the South Uist Machair and Lochs SPA both contain lagoonal habitat important for bird populations. Loch an Duin Ramsar Site includes a large area of lagoonal habitat in North Uist.

Many lagoons in the Western Isles are included within the boundaries of Sites of Special Scientific Interest (SSSIs) (Loch Siadar SSSI; Tob Valasay SSSI; Loch an Duin SSSI; Loch nam Madadh SSSI; Obain Loch Euphoirt SSSI; Loch Obisary SSSI; Lochs at Clachan SSSI; Loch Bee SSSI; Howmore Estuary, Lochs Roag and Fada SSSI).

National Scenic Areas (NSAs) in the Western Isles contain coastal lagoons within their boundaries.

The foxtail stonewort *Lamprothamnium papulosum*, present in many Western Isles saline lagoons, is protected under Schedule 8 of the Wildlife & Countryside Act 1981.

### Associated habitats and species:

Ten animals and plants associated predominantly with saline lagoons are priority UK BAP species. Of these, by far the most important and extensive beds of foxtail stonewort in the UK occur in the Western Isles, and may represent the most secure global stronghold for this species. The rare stonewort *Chara baltica* has been recorded from North Uist lagoons.

The brown seaweed *Ascophyllum nodosum* ecad *mackii*, also the subject of a UK priority action plan, has been reported from the outflow from 2 saline lagoons in the Western Isles (Loch Ceann Hulavig, Lewis and Loch Bee, South Uist). Other priority habitats contain saline lagoons (machair, coastal saltmarsh), or occur within saline lagoons (seagrass beds, tidal rapids, maerl beds) in the Western Isles.

Many lagoons in the Western Isles are included within the boundaries of Sites of Special Scientific Interest (SSSIs)



## 1. CUNNTAS ÀRAINN

### Mìneachadh Àrainn:

'S e tha ann an lagùn saillte, nàdarach no dèante, uisge saillte le pàirt den uisge air leth bhon mhuir rin taobh. Faodaidh lagùn saillte a bhith le blas an tsàile (gun a bhith cho saillte ri sàl), làn shaille (sàl), no eadhan os-shaille (nas saillte na sàl). Tha Co-chomataidh Glèidhteachas Nàdair (JNCC) a' toirt àite do chòig seòrsachan de lagùn oirthireach san RA, agus tha eisimpleirean dhan na coig dhiubh seo sna h-Eileanan Siar.

### Inbhe Bith-iomadachd RA:

Prìomh àrainn.

### Dìon Reachdail:

Tha lagùn saillte nam prìomh àrainn airson an dìon mar Ionadan Sònraichte Glèidhteachais (SACan) fo Leas-phàipear I de Riaghailt Àrainnean an EC. Sna h-Eileanan Siar, tha trì SACan air an taghadh gu sònraichte airson lagùn oirthireach: SAC Loch nam Madadh, SAC Lagùn Loch a Ròig agus SAC Òbain Loch Euphoirt. Tha SAC Machair Uibhist a Deas a' gabhail a-staigh lagùn, mar sin a' toirt inbhe a bharrachd dha.

Fo Riaghailt Eun an EC, tha àrainn lagùn cudromach airson eunlaith ann an Ionad Sònraichte Dìon (SPA) Machair agus Eileanan Uibhist a Tuath agus SPA Machair agus Lochan Uibhist a Deas.

Tha Làrach Ramsar Loch an Dùin a' gabhail a-staigh raon mhòr de àrainn lagùn an Uibhist a Tuath.

Tha mòran lagùn sna h-Eileanan Siar taobh a-staigh chrìochan Ionad Shuim Shònraichte Shaidheansail (SSSIan) (SSSI Loch Shiadair; SSSI Tòb Bhalasaigh; SSSI Loch an Dùin; SSSI Loch nam Madadh; SSSI Òbain Loch Euphoirt; SSSI Loch Obasaraigh; SSSI Lochan aig SSSI a' Chlachain; SSSI Loch Bi; Inbhir Tobha Mòr, SSSI Lochan Ròig agus Fada).

Tha lagùn oirthireach taobh a-staigh chrìochan Ceàrnaidhean de Bhòidhchead Nàiseanta (NSAan) sna h-Eileanan Siar.

Tha lus na cloiche earball shionnaich *Lamprothamnium papulosum*, a tha ann an iomadh lagùn saillte sna h-Eileanan Siar, air a dhìon fo Earrann 8 de Achd na Fiadh-bheatha is na Dùthcha 1981.

### Àrainnean agus gnèithean co-cheangailte:

Tha deich beathaichean agus lusan aig a bheil ceangal sònraichte ri lagùn saillte nam prìomh ghnèithean BAP na RA. 'S ann sna h-Eileanan Siar a tha na leapannan de lus na cloiche earball shionnaich as cudromaiche agus as motha san RA, agus dh'fhaodadh gur e sin an tèarmann as tèarainte san tsaoghal don ghnè seo. Bha anlus na cloiche neo-chumanta *Chara baltica* air a chlàradh bho lagùn Uibhist a Tuath.

Bha cunntas mun fheamainn dhubh *Ascophyllum nodosum* ead *mackii*, a tha cuideachd ann am prìomh phlana-gnìomha na RA, bhon às-shruth bho 2 lagùn saillte sna h-Eileanan Siar (Loch Ceann Thùlabhig, Leòdhas agus Loch Bi, Uibhist a Deas). Tha lagùn saillte ann am prìomh àrainnean eile (machair, boglach shalainn oirthireach), no tha iad rim faighinn taobh a-staigh lagùn saillte (leapannan bilearach, bras-shruthan siùil-mara, leapannan maerl) sna h-Eileanan Siar.

Photos (left to right):

Slender naiad; Saline lagoons are an important resource for wading birds such as dunlin;

Habitats such as machair contain saline lagoons Dealbhan (cli gu deas):

Aibhneag; Tha lagùn saillte na àrainn chudromach do eòin grunnachaidh mar a' ghille-feadaig; Gheibhear lagùn saillte ann an àrainn mar machrach



tha mòran lagùn  
sna h-Eileanan  
Siar taobh  
a-staigh chrìochan  
Ionad Shuim  
Shònraichte  
Shaidheansail  
(SSSIan)



## 2. OBJECTIVES AND TARGETS

|   | Objective  | Target   |
|---|--|--|
| 1 | Maintain, and where appropriate enhance, the current number, area and distribution of saline lagoons.                          | There are at present about 2300ha of known saline lagoon habitat in the Western Isles; maintain at least this area and create new habitat if the opportunity arises.                   |
| 2 | Maintain, and where appropriate enhance, the quality and health of saline lagoon communities and species in the Western Isles. | Identify and address any decline in quality by monitoring a range of site types (including key species and communities) as described by the Marine Nature Conservation Review (MNCR).  |
| 3 | Raise awareness of the importance of the Western Isles lagoons.  | Create awareness particularly amongst those involved in the planning system, key land users, and those living beside saline lagoons, of their importance in a Scottish and UK context. |
| 4 | Complete information base on species diversity within the known lagoonal sites.  | Complete specialist surveys.   |

## 3. CURRENT STATUS

There are only around 360 saline lagoons in the UK, covering around 5200ha, making it one of the rarest habitats. 139 of these lagoons are in Scotland, covering about 3892ha. The 73 saline lagoons in the Western Isles surveyed by the MNCR occupied 2303ha, representing around 44% by area of the total UK saline lagoon habitat, and 59% by area of Scottish lagoons. 26 (590ha) of the Western Isles sites are silled lagoons, while 27 (1146.5ha) are sluiced lagoons, although in this category Loch Bee by itself accounts for 850ha, and is one of the largest saline lagoons in Britain. 17 (546ha) are marine inlets; there are two isolated lagoons and one percolation lagoon. Lagoons in the Western Isles are typically small and shallow; 77% of them are less than 20 hectares.

*...139 of the 360 Saline lagoons in the UK are in Scotland...*



## 2. AMASAN AGUS CUIMSEAN

|   | Amas  | Cuimse   |
|---|---|--|
| 1 | Àireamh, raon agus sgaoidhadh nan lagùn saillte a tha ann a chumail suas, agus far am bi e iomchaidh, an leasachadh.  | Aig an àm seo tha lorg air mu 2300ha de àrainn lagùn saillte sna h-Eileanan Siar; an ceàrn seo co-dhiù a chumail suas agus àrainn ùr a chruthachadh ma thig cothrom.   |
| 2 | Càileachd agus fallaineachd coimhearsnachdan agus gnèithean ann an lagùnan saillte sna h-Eileanan Siar a chumail suas, agus far am bi e iomchaidh, an leasachadh. | Comharrachadh agus cur aghaidh air lùghdachadh sam bith ann an càileachd le bhith a' cumail sùil air caochladh sheòrsa làraich (a' gabhail a-staigh gnèithean agus coimhearsnachdan cudromach) mar a tha air a mhinneachadh leis an Ath-sgrùdadh Glèidheadh Nàdar Mara (MNCR). |
| 3 | Mothachadh a leudachadh air cho cudromach 's a tha lagùnan nan Eilean Siar.   | Mothachadh a chruthachadh gu sònraichte am measg luchd-dealbhaidh, prìomh luchd-cleachdaidh fearainn, agus iadsan a tha a' fuireach ri taobh lagùnan saillte, air cho cudromach 's a tha iad a thaobh Alba agus an RA.   |
| 4 | Stòr fiosrachaidh ullachadh mu bhith-iomadachd ghnèithean taobh a-staigh nan làrach lagùn air a bheil lorg.   | Sgrùdaidhean speisealta a dhèanamh.  |

## 3. INBHE LÀITHREACH

Chan eil ach mu 360 lagùn saillte san RA, a' còmhach mu 5200ha, ga dhèanamh air aon de na h-àrainnean as gainne. Tha 139 de na lagùn sin an Alba, a' còmhach mu 3892ha. Bha na 73 lagùn saillte sna h-Eileanan Siar a chaidh an sgrùdadh leis an MNCR a' còmhach 2303ha, a' riochdachadh mu 44% de mhead nan àrainn lagùn shailte iomlan san RA, agus 59% de mhead nan lagùn Albannach. 'S e lagùn le sòl a tha ann an 26 (590ha) de làraich nan Eilean Siar, agus lagùn le tuil-dhoras ann an 27 (1146.5ha), ged a tha Loch Bì a tha den t-seòrsa seo a' còmhach 850ha, agus 's i aon de na lagùn shailte as motha am Breatainn. 'S e caolais mara a tha ann an 17 (546ha); tha dà lagùn iomallach ann agus aon lagùn siolaidh. Tha lagùn nan h-Eileanan Siar dualtach a bhith beag agus eu-domhain; tha 77% dhiubh nas lugha na 20 heactairean.

Photos (left to right):

Eider duck nesting; Ringed Plover; Tidal rapids occur within saline lagoons in the Western Isles

Dealbhan (clì gu deas):

Lach lochlannach a' neadachadh; Trilleachan-tràghad; Tha bras-shruthan siuil-mara rim faighean ann an lagùn sailte sna h-Eileanan Siar



...tha 139 de na  
360 lagùn  
sailte san RA  
ann an Alba...

#### 4. ECOLOGY AND MANAGEMENT

Saline lagoon communities develop in response to a particular salinity regime, determined by the amounts of seawater and freshwater entering the system and how these are mixed. More seawater enters a lagoon over a sill at high water than over one at low water, or through a wide channel rather than a narrow culvert. In shallow lagoons the seawater and freshwater may be well mixed, while in deeper lagoons a layer of freshwater may float over a reservoir of more saline water in the deeper parts. Shallow lagoons heat up faster than deep ones, and some lagoons have more than one basin, each with its own characteristics. Every lagoon is a different shape, and different plant and animal communities may develop in different parts, often with a gradation from salt to fresh. They contain a variety of seabed types, but soft sediments (mud and sand) usually predominate over much of the lagoon, with coarser sediments or rock on shores, and where currents flow through the entrance or between basins.

Lagoons typically have a limited range of plant and animals, but many of these are special to lagoons and found nowhere else, or found in particular abundance in saline lagoons. In the Western Isles typical communities include dense beds of tassleweed together with abundant foxtail stonewort, seagrass beds, loose-lying red and green filamentous seaweeds with sea squirts and bubble shells, and mud with lugworms, mud shrimps, lagoon cockles, burrowing anemones and populations of rare sea cucumbers. The international importance of populations of animals and plants in saline lagoons is becoming better understood, and management for these groups is being developed.

Saline lagoons are particularly important for wading birds and wildfowl. They provide high tide refuges for birds feeding on adjacent intertidal flats and breeding sites for waders. Their margins are also a good source of food for songbirds, especially in winter.

*Lagoons typically have a limited range of plant and animals, but many of these are special to lagoons and found nowhere ELSE*





## 4. EAG-EÒLAS AGUS RIANACHD

Bidh coimhearsnachdan lagùn saillite a' tighinn gu bith mar thoradh air siostam salainneachd sònraichte, a rèir na bhios de shàl agus fìor-uisge a' tighinn a-steach don t-siostam agus an dòigh sa bheil iad sin a' measgachadh ri chèile. Tha barrachd sàl a' tighinn a-steach do lagùn tarsainn air sòl aig muir-thràigh na thig tarsainn oirre aig muir-làn, no tro chaolas farsaing seach saibhear cumhang. Ann an lagùn eu-domhain faodaidh an sàl agus am fìor-uisge a bhith air an deagh mheasgachadh, agus ann an lagùn nas doimhne dh'fhaodadh gum bi còmhach fìor-uisge a' seòladh air uachdar stòr-amar de uisge nas saillite sna pàirtean as doimhne. Tha lagùn eu-domhain a' teasachadh nas luaithe na feadhainn dhomhain, agus tha barrachd air aon srath ann an cuid de lagùn, le feartan sònraichte aca uile. Tha cumadh eadar-dhealaichte air a h-uile lagùn, agus faodaidh coimhearsnachdan bheathaichean agus lusan eadar-dhealaichte fàs ann an diofar phàirtean, gu tric a' dol bho uisge saillite gu fìor-uisge. Tha caochladh sheòrsa grunn annta, ach mar as trice tha làmh-an-uachdar aig grùidean boga (poll agus gainmheach) ann am pàirt mhòr den lagùn, le grùidean nas gairbhe no creag air cladaichean, agus fàr a bheil sruthan a' ruith tron bheul aca no eadar shrathan.

Mar as trice cha bhì mòran sheòrsachan de lusan agus bheathaichean ann an lagùn, ach tha mòran de na bhios annta sònraichte do lagùn agus chan fhaighear iad an àite sam bith eile, no tha iad gu sònraichte pailt ann an lagùn saillite. Sna h-Eileanan Siar tha coimhearsnachdan dualtach a bhith a' gabhail a-staigh leapannan dlùth de shnàth-lùs còmhla ri pailteas de lus na cloiche earball shionnaich, leapannan bilearach, feamainn fhileamaideach dhearg agus dhonn sgaoilte còmhla ri steallairean-mara agus sligean builgeanach, agus poll le lugais, carrain puill, coilleagan lagùn, cìochagan-thràghad a bhios a' tolladh agus àireamhan de chularain-mara neo-chumanta. Thathar a' tuigsinn nas motha cho cudromach 's a tha àireamhan de bheathaichean agus lusan ann an lagùn saillite aig ìre nàiseanta, agus tha rianachd ga chur air dòigh airson nam buidhnean sin.

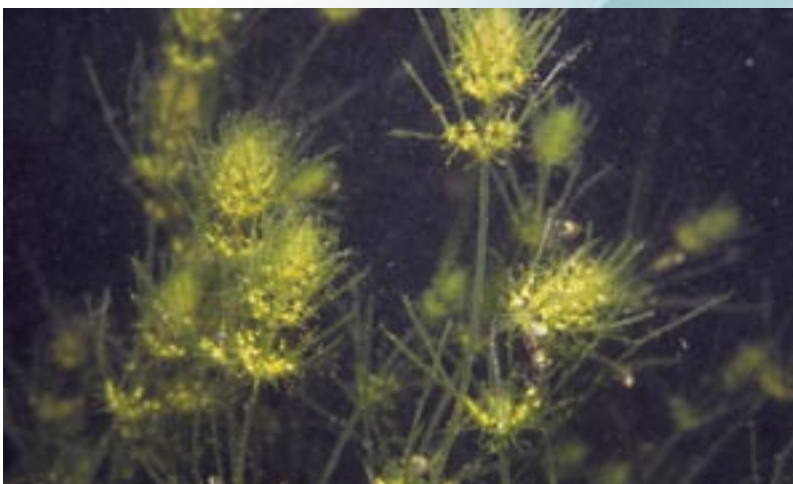
Tha lagùn saillite gu sònraichte cudromach do eòin-grunnachaidh agus eòin-uisge. Aig muir-làn tha iad nan tèarmann do eòin ag ithe air leacan eadar-làin rin taobh agus nan làraich briodaidh do eòin-grunnachaidh. Tha na h-oirean aca cuideachd math airson biadh do cheileirichean, gu h-àraidh sa gheamhradh.

Photos (left to right):

Saltmarsh – a habitat associated with saline lagoons; Shelduck; Foxtail stonewort

Dealbhan (cli gu deas):

Làthach-sailite – àrainn a tha co-cheangailte ri lagùn saillite; Crà-ghèadh; Lus na cloiché earball-shionnaich



Mar as trice cha bhì mòran sheòrsachan de lusan agus bheathaichean ann an lagùn, ach tha mòran de na bhios annta sònraichte do lagùn agus chan fhaighear iad an àite sam bith eile



## 5. BIODIVERSITY CONTEXT

Coastal lagoons are a scarce habitat in the EU and have a restricted distribution on the Atlantic coast. They are also an uncommon habitat in the UK, and have a UK action plan, with associated species statements. Some of the lagoon types have a very restricted distribution; for example silled lagoons are found mainly in the Western Isles.

The UK action plan for Saline Lagoons can be viewed at [www.ukbap.org.uk/asp/UKPlans.asp?UKListID=42](http://www.ukbap.org.uk/asp/UKPlans.asp?UKListID=42).

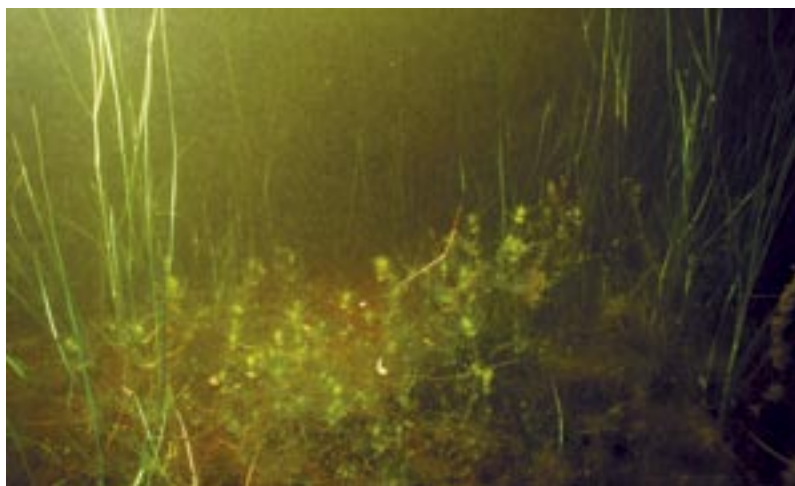
Western Isles saline lagoons are very important in a UK context. As well as accounting for a large proportion of the UK total by both number and area, the Western Isles lagoons are important because they show a wide variety of types, with a corresponding range of lagoonal communities and species.

*Western Isles lagoons are important because they show a wide variety of types, with a corresponding range of lagoonal communities & species.*



## 6. CURRENT FACTORS AFFECTING THE HABITAT

- ★ Road building has had a great impact on Western Isles saline lagoons. 25 of the 27 lagoons in the 'silled' category have their original channels modified into culverts or pipes running under roads, usually severely restricting the original water flow in and out of the lagoon, with consequent effects on the salinity regime and life within the lagoon. However many of these still contain interesting communities, and at a few sites road building may have resulted in creating lagoonal conditions from a previously more open, fully saline, tidal embayment. The road across Loch Bee restricts large parts of the loch still further from saltwater influence.
- ★ Altering water flow, for example by adding or manipulating sluice gates or building boulder walls, affects the salinity regime in the lagoon and the communities present.
- ★ Land claim through infilling of saline lagoons has caused loss of habitat.
- ★ Sewage enrichment from effluent discharging from septic tanks and soakaways is common at lagoon sites where houses are positioned close to the shore. Nutrient enrichment could have deleterious effects on lagoon life, particularly through excess algal growth causing smothering and anoxic conditions.
- ★ Fertiliser runoff from improved pasture or crops could also result in nutrient enrichment and excess growth of filamentous algae.
- ★ Sheep dippers and fanks are positioned near the shore at several lagoons. If dippers were found to be structurally corrupt, the contents could spill into the lagoons and could be highly toxic to wildlife.
- ★ Fishfarm cages, where inappropriately sited, for example, in an enclosed, poorly flushed lagoon situation, could cause serious damage to natural communities, through fallout of organic matter in fish faeces and uneaten food, and large amounts of dissolved nutrients, as well as toxic chemicals from any pesticide treatments.
- ★ Litter and debris was noted at some lagoons with houses nearby. In most cases effects are probably only cosmetic, but oil and chemicals for example from disused vehicles could be toxic to lagoon life.
- ★ Boat mooring and beaching was frequently noted as a human use at lagoonal sites, but is not generally considered a problem. Mooring chains sweeping the seabed could cause very localised damage to seabed life.





## 5. SUIDHEACHADH BITH-IOMADACHD

Tha àrainnean lagùn oirthreach glè ghann san EU agus tha an sgaoileadh aca air a chuibhreachadh ri cladhach a' Chuain Siar. 'S e àrainn neo-chumanta a tha annta cuideachd san RA, agus tha plana-gnìomha RA aca, le cunntasan ghnèithean co-cheangailte riutha. Tha sgaoileadh fìor chuingichte aig cuid de na seòrsachan lagùn; mar eisimpleir 's ann sna h-Eileanan Siar a tha a' chuid as motha de lagùnan le sòl.

Chithear plana-gnìomha na RA airson Lagùnan Shailte aig [www.ukbap.org.uk/asp/UKPlans.asp?UKListID=42](http://www.ukbap.org.uk/asp/UKPlans.asp?UKListID=42).

Tha lagùnan sailte nan Eilean Siar fìor chudromach a thaobh na RA. A bharrachd air a bhith a' dèanamh suas cuibhreann mhòr de na tha san RA a thaobh àireamh agus raon, tha lagùnan nan Eilean Siar cudromach oir tha mòran sheòrsachan ghnèithean annta, le àireamhan co-fhreagarrach de choimhearsnachdan agus ghnèithean lagùn.

## 6. NITHEAN A THA A' TOIRT BUÀIDH AIR AN ÀRAINN

★ Togail rathaidean air buaidh mhòr a thoirt air lagùnan sailte nan Eilean Siar. Tha na tùs chaolais a bha ann an 25 de na 27 lagùnan 'le tuil-dhoras' air an atharrachadh gu saibhearann no pioban a' ruith fon rathad, mar as trice a' fìor bhacadh an uisge bho bhith a' ruith mar a bha e bho thùs a-steach agus a-mach às an lagùn, le buaidhean co-leanailteach air an t-siostam salainneachd agus beatha taobh a-staigh an lagùn. Ach tha coimhearsnachdan inntinneach ann am mòran dhiubh sin fhathast, agus aig beagan de làraich dh'fhaodadh gur ann a chruthaich togail rathaidean suidheachadh lagùn far an robh roimhe geodha mara nas fhosgailte, agus làn-shailte. Tha an rathad tarsainn air Loch Bì a' cumail pìosan mòra den loch nas fhaide buileach bho bhuidh an t-sàile.

★ Atharrachadh sruthadh uisge, mar eisimpleir le bhith a' cur tuil-dhorsan an sàs no gan gluasad no a' togail ballachan cloiche, a' toirt buaidh air an t-siostam salainneachd san lagùn agus air na coimhearsnachdan a tha innte.

- ★ Còir fearainn tro lionadh a-steach lagùnan sailte ag adhbharachadh call hascausedàrainn.
- ★ Leasachadh òrachais tro àshruthadh nan tancaichean seaptaic agus amaran-sùghaidh a tha cumanta aig làraich lagùn far a bheil taighean faisg air a' chladach. Dh'fhaodadh leasachadh beathachaidh sgrios a dhèanamh air beatha san lagùn, gu sònraichte tro chus fais algal gam mùchadh agus ag adhbharachadh suidheachadh anogsaic.
- ★ Ruith-dheth tochair bho fheurach no pòran leasaichte cuideachd cunnartach a bhith a' mathachadh stuthan-beathachaidh agus a' leantainn gu cus alga fileamaideach.
- ★ Amaran-dupaidh agus faingean faisg air a' chladach aig grunn lagùnan. Nam biodh grodadh anns na h-amaran-dupaidh, dh'fhaodadh na bha nam broinn dòrtadh do na lagùnan agus a bhith ro thogsaineach do fhiadh-bheatha.

Photos (left to right):

Spillages from sheep dippers can be a hazard to lagoon wildlife; Foxtail stonewort and Ruppia (tassleweed) species; Saltmarsh at Northton, Harris Dealbhan (cli gu deas):

Faodaidh stuth a dh'òrtas bho amaran-dupaidh a bhith na chunnart do fìadh-bheatha lagùn; Lus na cloichè earballshionnaich agus gnèithean Ruppia (snàth-lus); Làthach-sailte aig Taobh Tuath, Na Hearradh



tha lagùnan nan Eilean Siar cudromach oir tha mòran sheòrsachan ghnèithean annta, le àireamhan co-fhreagarrach de choimhearsnachdan agus ghnèithean lagùn.



## 7. OPPORTUNITIES AND CURRENT ACTION

- ★ The current information database on saline lagoon sites, habitats and species in the Western Isles provides a good basis for underpinning many of the other opportunities for action.
- ★ Low intensity land use surrounding many of the Western Isles coastal lagoons is of major benefit in minimising the effects of pollution and eutrophication. The designation of Environmentally Sensitive Areas (ESAs) could include provision for the mitigation of potentially damaging activities from farming and crofting in these sensitive habitats. There is also an opportunity to target the habitat through agri-environment schemes such as Rural Stewardship Scheme (RSS).
- ★ Conservation designations (international, national and local) should be seen as a major opportunity for raising awareness and understanding of coastal lagoons, as well as protection.
- ★ Tourism initiatives, which in the Western Isles are often centred on wildlife and the natural environment, could include lagoon habitats as an extra element of interest for visitors. While some lagoonal habitats are intrinsically unappealing, others, such as seagrass beds, tassleweed and foxtail stonewort beds, are very beautiful and photogenic, with interesting life.
- ★ Environmental impact assessments for proposed coastal developments provide an opportunity to consider the true value of lagoonal habitats, and cost accordingly.



- ★ Development plans provide an opportunity to consider the health of coastal lagoons at the planning stage, thus avoiding possible high costs of restoration after the event.
- ★ Advantage could be taken of any proposed works near coastal lagoons (for instance road improvements or re-routing) to reverse any previously damaging impacts.

*lagoonal habitats can be beautiful and photogenic, and of interest to tourists...*



*Top: Loch nam Madadh SAC, chosen primarily for coastal lagoons;*

*Left: Low intensity land use surrounding lagoons is of major benefit in minimising the effects of pollution and eutrophication. Opposite: Dunlin.*

*Gu h-àrd: SAC Loch nam Madadh, air a thaghadh anns a' chiad àite airson lagùnan oirthreach.*

*Clì: Tha beag chleachdadh air talamh mun cuairt lagùnan na bhuanachd mòr ann a bhith a' lùghdachadh buaidh truaillidh.*

*Mu choinneimh: Gille-feadaig.*

- ★ Cèidsichean thuathanas-èisg ann an àite mì-fhreagarrach mar eisimpleir, dùinte a-staigh ann an suidheachadh lagùn, gun an tuisge a’ ruith mar is còir, dh’fhaodadh milleadh mòr a dhèanamh air coimhearsnachdan nàdarra, tro dhuslach fàs-bheairteach ann an salchar an èisg agus biadh a tha air fhàgail gun ithe, agus mòran stuthan-beathachaidh leaghte, a bharrachd air ceimigean tocsaineach bho leasachadh sam bith le puinnsean-bhiastan.
- ★ Sgudal agus sprùilleach a chaidh fhaicinn aig beagan lagùn faisg air taighean. Sa chuid as motha de shuidhichidhean ’s dòcha nach eil a’ bhuidh ach air an uachdar, ach dh’fhaodadh ola agus ceimigean mar eisimpleir bho sheann charbadan a bhith tocsaineach do bheatha san lagùn.
- ★ Bàtaichean aig acair no air tìr gu tric aig làraich lagùn, ach san fharsaingeachd chan eil e air fhaicinn mar dhuilgheadas. Dh’fhaodadh slabhraidhean airson an acrachadh a’ sguabadh grunn na mara milleadh a dhèanamh air beatha air grunn na mara dìreach mu chuairt an làraich.

## 7. COTHROMAN AGUS OBAIR LÀITHREACH

- ★ Tha an stòr-dàta a tha ann cheana mu làraich lagùn sailte, àrainnean agus ghnèithean sna h-Eileanan Siar a’ toirt deagh bhunait airson taic a thoirt do mhòran chothroman eile air obair a dhèanamh.
- ★ Tha cleachdadh fearainn beag-dèine timcheall air mòran de lagùn oirthireach nan Eilean Siar fìor fheumail airson buaidh truailidh agus mathachaidh a lùghdachadh. Dh’fhaodadh sònrachadh Cheàrnaidhean le Àrainnean Chugallach (ESAan) a bhith a’ gabhail a-staigh ullachadh airson lùghdachadh obair tuathanais agus croitearachd a dh’fhaodadh milleadh a dhèanamh sna h-àrainnean cugallach sin. Tha cothrom ann cuideachd a bhith a’ cuimseachadh gu sònraichte air an àrainn tro sgeamaichean àiteachais-àrainneachd leithid Sgeama Stiùbhartachd Dùthchail (RSS).
- ★ Bu chòir sònrachadh glèidhteachais (eadar-nàiseanta, nàiseanta agus ionadail) a bhith air fhaicinn mar chothrom mòr air mothachadh agus tuigse a leudachadh air lagùn oirthireach, a bharrachd air an dìon.
- ★ Dh’fhaodadh iomairtean turasachd, a tha gu tric sna h-Eileanan Siar a’ cur cudrom air fiadh-bheatha agus an àrainneachd nàdarra, a bhith a’ gabhail a-staigh àrainnean lagùn mar eileamaid eile airson luchd-turais

a tharraing. Ged nach eil cuid de na h-àrainnean lagùn tarraingeach gu nàdarra, tha cuid eile, leithid leapanan bilearach, snàth-lus agus lus na cloiche earball shionnaich, glè bhrèagha agus math airson dealbhan-camara, le gnèithean beatha inntinneach.

- ★ Tha measaidhean air buaidh àrainneachdail airson leasachadh oirthireach a thathar an dùil a dhèanamh a’ toirt cothrom air beachdachadh mu cho fìor luachmhor ’s a tha àrainnean lagùn, agus bu chòir measrachadh cosgais a bhith a rèir sin.
- ★ Tha planaichean leasachaidh a’ toirt cothrom air beachdachadh mu dè cho fallain ’s a tha lagùn oirthireach aig ìre dealbhaidh, mar sin a’ seachnadh cosgaisean àrda a dh’fhaodadh a bhith an lùib an ath-nuadhachadh an dèidh làimhe.
- ★ Dh’fhaodadh cothrom a ghabhail air obraichean sam bith a bhios air am moladh faisg air lagùn oirthireach (mar eisimpleir leasachadh no atharrachadh rathaidean) gus buaidhean a dhèanadh cron roimhe a cheartachadh.



*faodaidh  
àrainnean lagùn  
a bhith glè  
bhrèagha agus  
math airson  
dealbhan-camara  
agus inntinneach  
do luchd-turais...*





## 8. ACTIONS

|          | ACTION  | Lead                 | Priority | Time-scale            | Partners  | Objective  |
|----------|---|----------------------|----------|-----------------------|---|------------|
| <b>1</b> | <b>Policy and Legislation</b>   |                      |          |                       |   |            |
| 1.1      | Consider health of saline lagoons in future Statutory Development Plans.  | CnES                 | High     | As plans are produced | SNH   | 1, 2, 3    |
| 1.2      | Incorporate awareness of saline lagoons into ESA and similar schemes, which aim to balance land use and conservation.   | SNH                  | Medium   | Medium                | CC, SCF<br>Land-owners<br>SEERAD                            | 1, 2, 3    |
| 1.3      | Implement appropriate actions contained in the Loch nam Madadh EMS Management Scheme.   | EMS Management Group | Medium   | On-going              | Comann na Mara  | 2, 4       |
| 1.4      | Investigate green-tourism opportunities for the saline lagoon habitat.  | WIE<br>CnES          | Medium   | Medium                | WITB, SNH   | 3          |
| 1.5      | Develop a saline lagoon management policy as part of an ICZM for the Western Isles that sets policies to proactively address potential impacts from development.  | SNH<br>CnES          | High     | Short                 |   | 1, 2, 3, 4 |
| <b>2</b> | <b>Site Safeguard and Management</b>  |                      |          |                       |   |            |
| 2.1      | Address land management methods that detrimentally affect saline lagoons.   | SEPA                 | Medium   | Medium                | FC, SAC,<br>SEERAD, SNH                                     | 1, 2, 3,   |
| 2.2      | Identify and quantify lagoons that may be adversely affected by sewage inputs with the long-term aim of preventing any further adverse impacts. The possibility of financial assistance to individuals to upgrade their sewage system should be investigated. | SEPA                 | High     | Long                  | SNH, SW<br>NGOs,<br>CnES                                    | 1, 2, 3    |
| 2.3      | Review the possibility of removing prohibitive culverts. Assess these on an individual basis.   | CnES                 | High     | Long                  | SNH, SEPA<br>SW, NGOs                                       | 1, 2, 3    |
| 2.4      | Investigate incorporating Saline Lagoon site information onto CnES Systems for use e.g. by the planning function when considering development proposals.  | CnES                 | Medium   | Medium                | SNH   | 1, 2, 3, 4 |
| <b>3</b> | <b>Advisory</b>   |                      |          |                       |   |            |
| 3.1      | Summarise data on saline lagoons in the Western Isles into a user-friendly form, and distribute to most relevant parties. This should include good visual material to convey the character of saline lagoon habitats and species.                             | SNH                  | High     | Short                 | CnES  | 1, 2, 3    |
| <b>4</b> | <b>Monitoring and Research</b>  |                      |          |                       |   |            |
| 4.1      | Monitor existing key populations and species at key sites.  | SNH                  | Medium   | Medium;<br>long-term  | SWT,<br>NGOs,<br>Land-owners                                | 1, 2, 3, 4 |
| 4.2      | Commission further specialist surveys. Many lagoonal species require specialist identification and will not have been recorded by MNCR surveys.   | SNH                  | Medium   | Medium                | JNCC,<br>Universities                                       | 4          |
| <b>5</b> | <b>Communications and Publicity</b>   |                      |          |                       |   |            |
| 5.1      | Develop a targeted awareness campaign. Address the issue of marine litter in this campaign.   | SNH                  | High     | Medium                | CnES,<br>Curracag,<br>SWT, Comann<br>na Mara, SIAT,<br>WITB | 2, 3       |

### ABBREVIATIONS:

|      |  |        |   |
|------|--|--------|---|
| CC   | Crofters Commission                                    | NGO    | Non-Governmental Organisation                             |
| CNES | Comhairle nan Eilean Siar                              | RSPB   | Royal Society for the Protection of Birds                 |
| EMS  | European Marine Site<br>(Special Area of Conservation) | SAC    | Scottish Agricultural College                             |
| ESA  | Environmentally Sensitive Area                         | SCF    | Scottish Crofting Foundation                              |
| FC   | Forestry Commission                                    | SEERAD | Scottish Executive Environment & Rural Affairs Department |
| ICZM | Integrated Coastal Zone Management                     | SNH    | Scottish Natural Heritage                                 |
| JNCC | Joint Nature Conservation Committee                    | SW     | Scottish Water  |
|      |  | SWT    | Scottish Wildlife Trust                                   |
|      |  | WITB   | Western Isles Tourist Board                               |



## 8. GNÌOMHAN

|          | Gnìomh  | Stiùradh                   | Fianbhas   | Rian-ama                                  | Compartichean                                   | Amas       |
|----------|---|----------------------------|------------|---|---|------------|
| <b>1</b> | <b>Poileasaidh agus Reachdas</b>  |                            |            |   |   |            |
| 1.1      | Beachdachadh mu dè cho fallain 's a tha lagùnan saille san àm ri teachd Planaichean Leasachaidh Reachdail.  | CnES                       | Àrd        | Mar a bhios planaichean air and ullachadh | SNH   | 1, 2, 3    |
| 1.2      | Mothachadh air lagùnan saille fhilleadh a-staigh do ESA agus sgeamaichean eile leithid sin, a tha ag amas air cleachdadh fearainn agus glèidhteachas a cho-chothromachadh.  | SNH                        | Meadhanach | Meadhanach                                | CC, SCF Uachdarain, SEERAD                      | 1, 2, 3    |
| 1.3      | Gnìomhan iomchaidh ann an Sgeama Rianachd EMS Loch nam Madadh a bhùileachadh.   | Buidheann Stiùiridh an EMS | Meadhanach | Leantainneach                             | Comann na Mara                                  | 2, 4       |
| 1.4      | Cothroman air turasachd-uaine airson nan àrainnean lagùn shaille a rannsachadh.   | WIE, CnES                  | Meadhanach | Meadhanach                                | WITB, SNH                                       | 3          |
| 1.5      | Poileasaidh rianachd airson lagùnan saille a dhèanamh mar phàirt de ICZM airson nan Eilean Siar a bhios a' cur ri chèile poileasaidhean le dòigh for-ghnìomhach air dèiligeadh ri na buaidhean a dh'fhaodadh a bhith an cois leasachaidh.   | SNH, CnES                  | Àrd        | Goirid                                    |   | 1, 2, 3, 4 |
| <b>2</b> | <b>Dion agus Rianachd Làraich</b>   |                            |            |   |   |            |
| 2.1      | Aghaidh a chur air modhan rianachd fearainn a tha a' dèanamh cron air lagùnan saille.   | SEPA                       | Meadhanach | Meadhanach                                | SAC, SNH, SEERAD, FC                            | 1, 2, 3,   |
| 2.2      | Comharrachadh agus measadh a dhèanamh air lagùnan a dh'fhaodadh a bhith a' fulang aig òtrachas a' tighinn a-steach le sùil san fhad-ùine ri casg a chur air tuilleadh buaidh mhi-fhàbharach. Bu chòir rannsachadh a bheil cothrom air taic-airgid do dhaoine airson leasachadh air an tsìostam òtrachais aca. | SEPA                       | Àrd        | Fada                                      | SNH, SW, NGOan, CnES                            | 1, 2, 3    |
| 2.3      | Sgrùdadh a dhèanamh gus faighinn a-mach a bheil e comasach saibhearan neo-iomchaidh a thoirt às. Measadh a dhèanamh air gach aon dhiubh sin.  | CnES                       | Àrd        | Fada                                      | SNH, SEPA SW, NGOan                             | 1, 2, 3    |
| 2.4      | Rannsachadh a dhèanamh air fiosrachadh mu làraich Lagùn Saille fhilleadh a-staigh do Shìostaman CnES airson an cleachdadh e.g. leis an roinn dealbhadh nuair a bhios iad a' beachdachadh mu mhòlaidhean leasachaidh.  | CnES                       | Meadhanach | Meadhanach                                | SNH   | 1, 2, 3, 4 |
| <b>3</b> | <b>Comhairle</b>  |                            |            |   |   |            |
| 3.1      | An dàta mu lagùnan saille sna h-Eileanan Siar a ghearradh sìos gu cunntas a tha furasta a chleachdadh, agus a chur chun an luchd-com-pàirt as iomchaidhe. Bu chòir don seo a bhith a' gabhail a-staigh deagh stuth lèirsinneach a sheallas feartan àrainnean agus gnèithean lagùnan saille.                   | SNH                        | Àrd        | Goirid                                    | CnES  | 1, 2, 3    |
| <b>4</b> | <b>Sgrùdadh agus Rannsachadh</b>  |                            |            |   |   |            |
| 4.1      | Sùil a chumail air na prìomh àireamhan agus gnèithean aig na prìomh làraich.  | SNH                        | Meadhanach | Meadhanach; fad-ùine                      | SWT, NGOan, Uachdarain                          | 1, 2, 3, 4 |
| 4.2      | Tuilleadh sgrùdaidhean sònraichte a bharrantachadh. Feumaidh mòran gnèithean lagùn comharrachadh speisealta agus cha bhì iad air an clàradh ann an sgrùdaidhean MNCR.   | SNH                        | Meadhanach | Meadhanach                                | JNCC, Oilthighean                               | 4          |
| <b>5</b> | <b>Conaltradh agus Follaiseachd</b>   |                            |            |   |   |            |
| 5.1      | Iomairt mothachaidh cothromach a chur air dòigh. Aghaidh a chur air cùis sgudal mara san iomairt seo.   | SNH                        | Àrd        | Meadhanach                                | CnES, Curracag, SWT, Comann na Mara, SIAT, WITB | 2, 3       |

### GIORRACHADH:

CC Ùghdarras nan Croitearan

CNES Comhairle nan Eilean Siar

EMS Làrach Mara Eòrpach (Ionad Sònraichte Glèidteachais)

ESA Ceàrn Àrainneachd Chugallach

FC Ùghdarras nan Coilltean

ICZM Riaghladh Amalaichte Sòn Oirthireach

JNCC Co-chomataidh Glèidhteachais Nàdair

NGO Buidheann Neo-Riaghaltais

RSPB Comann Rioghail Dion nan Eun

SAC Colaiste an Àiteachais

SCF Urras Croitearachd na h-Alba

SEERAD Roinn na h-Àrainneachd & Chùisean Dùthchail Riaghaltas na h-Alba

SNH Dualchas Nàdair na h-Alba

SW Uisge na h-Alba

SWT Urras Fhìadh-bheatha na h-Alba

WITB Bòrd Turasachd nan Eilean

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*Tranche 2 Action Plans. Volume V – Maritime species and habitats.* English Nature, Peterborough

**WEBSITES**

[www.falkirk.gov.uk](http://www.falkirk.gov.uk)  
 (examples of existing local biodiversity action plans).

[www.jncc.gov.uk](http://www.jncc.gov.uk)  
 (information on priority species and habitats, SACs and other designated sites). Click on MERMAID to access the MNCR database of sites and species

[www.ukbap.org.uk](http://www.ukbap.org.uk)  
 (information on biodiversity action plans).

*Some of the lagoon types have a very restricted distribution; for example silled lagoons are found mainly in the Western Isles.*





## 9. FIOSRACHADH

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## LÀRAICH-LÌN

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(eisimpleirean de phlanaichean-gnìomha bith-iomadachd ionadail a tha ann cheana).

[www.jncc.gov.uk](http://www.jncc.gov.uk)

(fiosrachadh mu phrìomh ghnèithean agus àrainnean, SACan agus làraich shònraichte eile). Clioc air MERMAID gus cothrom fhaighinn air stòr-dàta MNCR de làraich agus ghnèithean

[www.ukbap.org.uk](http://www.ukbap.org.uk)

(fiosrachadh mu phlanaichean-gnìomha bith-iomadachd).

tha sgaoiteach  
fìor chuingichte  
aig cuid de  
na seòrsachan  
lagùn; mar  
eisimpleir sna  
h-Eileanan Siar  
a tha a' chuid  
as motha de  
lagùnan le sòl



Photos (left to right):

Members of the public examining the draft action plans; Redshank; Eider Duck.

Dealbhan (cli gu deas):

Buill den phoball a' sgrudadh na deachd planaichean gnìomh; Canghlas; Lach Lochlannach.

The production of the Western Isles Local Biodiversity Action Plan has been jointly funded by Comhairle nan Eilean Siar and Scottish Natural Heritage.

Bha ullachadh Plan-gnìomha Bith-iomadachd Ionadial nan Eilean Siar co-mhaoinichie le Comhairle nan Eileana Siar agus Dualchas Nàdair na h-Alba.



Photographs courtesy of Angus & Michelle MacDonald, Uisdean Robertson, Sue Scott, SNH & RSPB.

Dealbhan le cead bho Angus & Michelle MacDonald, Uisdean Robertson, Sue Scott, SNH & RSPB.

May 2004 • An Cèitean 2004



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