COUNCIL OF EUROPE CONSEIL DE L'EUROPE
Committee of Ministers
Comité des Ministres

Resolution CM/ResDip(2008)1
on the revised regulations for the European Diploma for Protected Areas

(Adopted by the Committee of Ministers on 20 February 2008
at the 1018th meeting of the Ministers' Deputies)[1]

Appendix 5: Model plan for annual reports

Annual report for the year 2019

Annual reports should describe the changes that have taken place since the previous year in dynamic terms of management and function and not be limited to basic data. Any new text or map introducing a change in the situation of the area should be attached to the annual report.

State: Scotland

Name of the area: Fair Isle

Year and number of years since the award or renewal of the European Diploma for Protected Areas:
9

Central authority concerned:

Name: The National Trust for Scotland

Address: Hermiston Quay, 5 Cultins Road, Edinburgh, Scotland, UK, EH11 4DF

Tel: 0131 458 0200

Fax:

e-mail: information@nts.org.uk

www: nts.org.uk

Authority responsible for its management:

Name: The National Trust For Scotland

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www:

[1] As amended by Resolution CM/ResDip(2014)2 on 2 July 2014 at the 1204th meeting of the Ministers' Deputies.
Internet : http://www.coe.int/cm

1. Conditions: List here all conditions which were attached to the award or the renewal of the European Diploma. Explain either how the conditions have been totally complied with or detail the progress in complying with the conditions. Please also indicate any unresolved difficulties that you have encountered.

1. *in recognition of the internationally important seabird colonies and associated marine environment currently experiencing severe pressure, the United Kingdom and Scottish Governments should use the powers invested in them through the Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010 to establish the protected marine area which has been called for in successive diploma renewals. A new protected marine area should be in conformity with the Fair Isle Marine Action Plan (FIMP);*

Demonstration & Research Marine Protected Area (drMPA)
(information supplied by MPA Steering Group)
Good progress was made during the year despite the loss of the Bird Observatory to fire which hampered things somewhat. The Advisory Group met twice. There were two main work streams in this early stage: 1) setting up a SCIO (Scottish Charitable Incorporated Organisation) and related administration activities such that a project officer can be employed; 2) identifying and facilitating key research required to underpin the main aims of the MPA.

1) SCIO status has now been achieved; some funding has been secured with other options identified; A small amount of funding from Marine Scotland (MS) helped develop the SCIO with the remaining part of that funding planned to be used on small bits of equipment and producing some guides to encourage citizen science.

2) A prioritised list of research has been produced – this includes not only ecological but socio-economic topics as well. Some funding has been secured through Scottish Natural Heritage (SNH) to undertake some of the research; in-kind contributions (e.g. boat time) from Advisory group members have also been identified.

Research underway
Ongoing work has been mainly led by Fair Isle Bird Observatory (FIBO) with addition or adaptation of some work streams to support the MPA. This includes supporting related work from other organisations such as the National Trust for Scotland (NTS), British Trust for Ornithology (BTO), Royal Society for the Protection of Birds (RSPB) and Scottish Natural Heritage. They are as follows:
-investigation into the abundance and distribution of breeding habitats of storm petrels Hydrobates pelagicus and predation risks;
-effect of disturbance on nesting patterns of great skua and great skua responses to aircraft, continuation of a study begun in 2018.

Research at the planning stage
- A plan to use the Fair Isle Demonstration & Research Marine Protected Area as a platform for investigating the foraging areas important to breeding seabirds in the northern North Sea and their interaction with commercial fisheries.

- Preliminary investigations into the type, number and biological importance of sea caves. This is to provide a priority list for diver survey during 2020 to provide evidence that may support future Special Area of Conservation (SAC) designation.

- Preparatory work to include Fair Isle within any research planned for shell-fisheries in Shetland, e.g. lobster tag and release, brown crab Cancer pagurus measurements.

- Setting up a Whale & Dolphin Conservation (WDC) Shore watch site on Fair Isle: this is a location where regular short sea watches are undertaken to record cetaceans, thus building up effort-based data which is poor throughout Shetland. This will also feed into the Shetland Marine Spatial Plan.

- Securing a C-POD (acoustic receiver which picks up porpoise and dolphin clicks) for Fair Isle, this to be deployed at the Shorewatch site.

Wider Engagement

Fair Isle is now engaged within the Coastal Communities network, including attendance of Fair Islanders at network events. Feedback from the events has been very positive and it is clear that several other communities look to Fair Isle as a role model for what has already been achieved.

2. Recommendations: List here all recommendations which were attached to the award or the renewal of the European Diploma. Explain either how the recommendations have been totally complied with or detail the progress in complying with the recommendations. Please also indicate any unresolved difficulties that you have encountered.

1. the needs and aspirations of the local community, as detailed in the FIMP, should be fully taken into account, as should the fragile socio-economic situation; SCIO status, transition from FIMETI to FIMRO:

The Fair Isle Marine Environment and Tourism Initiative (FIMETI) has served its purpose which was to seek a sustainable management programme safeguarding Fair Isle's marine resource for future generations, on and off the isle. As FIMETI lacked a suitable legal structure for this new d&rMPA stage, the SCIO has been formulated under the banner of the Fair Isle Marine Research Organisation (FIMRO) established by isle residents to formally replace FIMETI as a Steering Committee member in 2018. The Fair Isle MPA is first and foremost a community initiative and it is therefore of paramount importance that the community remains a strong voice on the Steering Committee. To this end, it was agreed that the project officer post designed to support the day to day work of the MPA should be managed by the Fair Isle community. This paves the way for the employment of a Project Officer and enables the community to carry out its own projects relating to the Fair Isle marine environment during the lifetime of the MPA and beyond. Support from external partners, primarily Fauna and Flora International, Scottish Natural Heritage and Marine Scotland, has been vital to this process.

2. all efforts should be made to solve the problem of the disposal of plastic in general and agricultural baling plastic in particular.
Agricultural production on small scale crofting basis. It is understood all waste in recycled once collected by Shetland Island council.

3. Site Management: List here any changes to the European Diploma holding site management, in relation to both terrestrial and aquatic environments (as appropriate), and in relation to staff and finances, since the last annual report was submitted to the Council of Europe. Please also indicate any unresolved difficulties that you have encountered.

National Trust for Scotland Management Structure update:

Alan Rankin left his post as Fair Isle Property Manager in spring 2018. At this time Fair Isle was moved into a management group ,North West and Islands, led by General Manager Clea Warner.

Clea has worked closely with the island throughout the year supported closely by Business Manager, Sheona Leonard, and Estate Surveyor North, Alan Barrow.

4. Boundaries: Give details of any changes to the boundaries of the European Diploma holding site since the last annual report was submitted to the Council of Europe. If there are any changes, please attach an appropriate map to this report. Please also indicate any unresolved difficulties that you have encountered.

None

5. Other information: List here any other information about the European Diploma holding site which you consider should be provided to the Council of Europe.

MAJOR EVENT – Fair Isle Bird Observatory Fire

On 10th February 2019 a catastrophic fire, of unknown cause but perhaps an electrical fault, completely destroyed the Fair Isle Bird Observatory building. Despite valiant efforts over a 36-hour period by islanders, supported by other fire fighter crews from Shetland, the building could not be saved. This event is noted at the outset as it had social as well as environmental impacts relevant to this report.

The National Trust for Scotland were able to provide emergency accommodation space for FIBOT and this is now expected to run on until the rebuild project has been completed.

Fair Isle Unified Low Carbon Electricity Storage and Generation Project

Despite some technical issues, not least the malfunction of one of the turbines, the new green electricity system is proving a great success. A second turbine developed a fault too but this was rectified during the summer. The input from the solar panels has been an average 115 KwH per day and along with the two turbines this has allowed diesel generator usage to be reduced from 2872 hours and 21,500 litres of diesel in the previous year to 527 hours (8835 litres diesel) in the 12 months of the new scheme. The proportional extent of the reduction is even greater than the figures show as usage relates to 24 hours' supply whereas the diesel generators were restricted before to a maximum 16 hours per day.

Water Treatment Works Extension and the SAC/SPA

The Fair Isle Water Treatment Station at Tarryfield is currently being improved. This requires a small boundary extension to accommodate a new building and storage tanks. The Station sits within the Fair Isle Special Protection Area for Birds (SPA) and Special Area of Conservation (SAC) for its vegetation and habitats. In order to ensure protection of the SPA and SAC interests, Scottish Water – the body responsible for the improvement – appointed Fair Isle resident ecologist Nick Riddiford as Ecological Clerk of Works. Shetland Archaeologist Samantha Dennis was also consulted. No disturbance was envisaged for Fair Isle's important archaeological sites. Riddiford undertook an initial survey, finding no critical habitat or vegetation constraints on the extension. However, there were breeding seabirds (Arctic skuas Stercorarius parasiticus, two pairs) close by and this delayed the start of works until September. The work within the enclosure included the removal of a considerable depth of soil for the building's foundations. To keep the soil within the SAC area, a nearby quarry was identified as recipient. This has a positive aspect for the landscape as the quarry was something of a visual scar before.

A widening of two corners along the access route to allow 70 tonne cranes to reach the site will be supervised by Riddiford to avoid damage to special biota, in particular Fair Isle's internationally important prostrate juniper Juniperus communis alpina population. Abundant prostrate juniper also fringes the quarry and efforts are being made to avoid damaging them during the soil disposal process.

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The following sections of the form should only be filled in if your area is in the year before a renewal of its European Diploma for Protected Areas, i.e. year 4 after the award of the European Diploma or year 9 after its renewal.

6. Natural heritage (general abiotic description: geomorphology, geology and hydrogeology, habitats, flora, fauna, landscape) – State of conservation

6.1. *Environment: changes or deterioration in the environment, of natural or anthropic origin, accidental or permanent, actual or anticipated*

In 2018, common ragwort Senecio jacobaea and rosebay willow-herb Chamaenerion angustifolium, both potentially invasive species, were found. Both were within the Bird Observatory grounds. Remarkably, both survived the fire.

Future plans for the Kirk are unclear. The Church of Scotland is relinquishing responsibility. Whatever happens next, it is imperative that the conservation importance of the enclosure – one of the richest sites on the isle for flora including high diversity and rare threatened species – is recognised and its botanical values maintained.

Information from Dave Wheeler (Fair Isle Meteorological Station) showed that continuous sunshine had warmed the top few layers of soil and, where it was thin, the rock underneath too - which retains the heat. He considered this to be the major factor in bringing the plants on so early. In late April he measured 22° C just above the soil surface in a sheltered spot. That is the equivalent of the highest air temperature recorded on the isle.

It was an earliest ever year for nearly 50 species. Prime example was red campion Silene dioica, in flower from 8th April. The earliest previous recorded date was 26th April (2011) but even that was early. Its main flowering period starts in mid May. Red campion was still in flower in November, one of several species extending their season farther into the autumn than before.

The 2018 report drew attention to a recent marked decrease in the number of rabbits Oryctolagus cuniculus, possibly from Rabbit Haemorrhagic Disease (RHG). A recovery was noted this year, thought numbers remain much lower than in previous years

The lesser spotted dogfish has been in steep decline over the last 30 years but reports from lobster fishermen of an upswing of captures in their creels suggest the dogfish population is beginning to recover.

The biosecurity study is important but currently does not extend beyond mammalian predators. Fair Isle's wider environment is equably vulnerable, particularly from invasive invertebrates brought to the isle on imported shrubs and garden produce.

Fair Isle weather

There are few parts of the world, it seems, not affected by changes in weather patterns. On Fair Isle, the trend seems to be of unpredictability coupled with prolonged periods of a sustained weather pattern whereas in previous times day to day variability was expected. The early part of the year was again wet, as in 2018. This gave way in April to a sustained period of dry warm weather which had an effect in particular on the flowering season. Mixed weather, including periods of heavy rain, during the summer also seemed to suit the flora. In September a 10-day long period of dry easterlies was notable for the near-absence of migrant birds. For the birdwatching fraternity, autumn easterlies are usually profitable for numbers and diversity of birds on the move. Westerlies and north-westerlies occurred for much of the autumn, except for a brief October spell of easterlies which did bring in the birds.

6.2. *Flora and vegetation: changes in the plant population and in the vegetational cover; presumed causes*

Flora

It was a glorious year for flowering plants, providing considerable added value to Fair Isle's landscape quality for visitors during the summer months. Unusually warm weather from late March prompted a remarkable run of earliest ever flowering dates. The dry weather was accompanied by chilling easterlies but this did not deter the plants.

The spring and early summer was clearly favourable for many plants, particularly Northern marsh orchid Dactylorhiza purpurella whose population has grown from single figures in 1973 to many thousands in 2019, and with a considerable extension in range. The Kirk enclosure held record numbers of field gentian Gentianella campestris – 306 flowering spikes in late July – and was a picture with its high diversity of plants. Amongst these was common knapweed Centaurea nigra, previously only known from waste ground near the School.

Another important find was changing forgetmenot Myosotis discolor. A group of 25 was the first since the 1990s of a species previously considered lost to the isle. Another "lost" species sea sandwort Honckenya peploides, which had re-colonised in 2018 after a 37-year absence, doubled its population from one to two on Muckle Uri Geo. In addition, the original plant was far more robust than in its first year bringing hopes than the population will grow yet stronger. It shares a fenced-off area on Muckle Uri Geo with oysterplant Mertensia maritima, whose population continues to thrive. The older plants are now coalescing into a series of continuous mats and thus impossible to count individually. Some mats are better described as "carpets", reaching up to five metres across and comprising as many as a dozen coalesced plants. This has forced a change in monitoring technique. The census now comprises a count of mats along with individual counts for those small and medium plants isolated from the mats. An estimate was also made of the proportion of the exclosure occupied by the mats. The 2019 estimate is 35%.

Away from the coast, the hill prostrate juniper experienced moderate berry production for the second consecutive year. A pattern may be emerging of more consistent berry production than in recent history when, typically, berries were hard to find.

6.3. *Fauna: changes in the sedentary or migratory populations; congregating, egg-laying and breeding grounds*

Birds

With data on migration and seabirds having been collected by FIBO for over 70 years it was important to continue the census and seabird monitoring despite the absence after the fire of a Bird Observatory building. Any gaps in the data have the potential to devalue all the work that has gone before but, with considerable support from the National Trust for Scotland (NTS), islanders and volunteers, the means were met, in terms of temporary accommodation and field works, to achieve full census coverage, seabird monitoring work and a range of allied activities.

Seabirds (information provided by David Parnaby, Fair Isle Bird Observatory)

It was generally a decent breeding season for seabirds on Fair Isle, despite some poor weather in the summer, with most species more or less holding their own in population terms in comparison to 2018. The biggest increases were recorded by Arctic terns Sterna paradisaea, the 286 nests representing a 51% rise compared to 2018 and European shags Phalacrocorax aristotelis, which showed an increase of 24% in the population plots.

Productivity was a mixed bag. Arctic skuas fared well with the 28 pairs fledging 18 chicks, the highest recorded since 2006. To put this into context, the previous two years had seen a total of just two chicks from a similar number of breeding birds. Another positive came from the Arctic terns, which also recorded their highest productivity since 2006 – 0.28 chicks fledged per Apparently Occupied Nest (AON). Black-legged kittiwakes Rissa tridactyla also fared well, with the 0.67 chicks fledged per AON representing the second-highest productivity since 2000.

Atlantic puffin Fratercula arctica, razorbill Alca torda, shag and Northern fulmar Fulmarus glacialis recorded slight falls in productivity compared to 2018. The biggest falls recorded were in common guillemot Uria aalge, which showed a 53% decrease to 0.31 chicks fledged per egg laid and bonxie (great skua Stercorarius skua). Although bonxies had their third highest population count of all time, 490 Apparently Occupied Territories (AOT), their productivity fell 60% to just 0.14 chicks fledged per AOT. Cannibalism was frequently noted amongst the Bonxies, whilst prolonged spells of wet weather in the summer may also have had an effect, particularly on some of the earlier nesting individuals.

AOT = Apparently Occupied Territories; AON = Apparently Occupied Nests

The Breeding Season on Land

The breeding highlight away from the seabird colonies was the successful fledging of red-necked phalarope Phalaropus lobatus. Though just one, it is the third consecutive year that this UK breeding rarity has successfully raised young. Studies in Shetland suggest that UK birds cross the Atlantic to winter in the Pacific Ocean.

Migrants

There was a strong spring passage of common migrants, beginning in late March. April was busier than usual, probably helped by the exceptional dry, warm weather. Notable amongst the commoner migrants were record numbers of reed buntings Emberiza schoeniclus and hawfinches Coccothraustes coccothraustes. Sixty years of Fair Isle data show that the length of passage is widening at both ends, early and late and, typically for recent years, late migrants were still moving through into June.

For common and scarce migrants, autumn was initially disappointing even during spells of easterly winds. Barnacle goose Branta leucopsis passage was impressive though, with a record count in September of 1429. Several colour-ringed birds were recorded. These were Svalbard breeders on their way to the Solway Firth. October easterlies were much more productive. A host of rarities appeared on 14th and that was followed by a spectacular arrival of passerines on 16th. The fields were covered, with redwings Turdus iliacus dominating but lots more too. The census count for redwings was 12,820 – the highest count since 2000 – but the size of the arrival was also reflected in totals of 407 for robin Erithacus rubecula and 686 for song thrush Turdus philomelos.

Vagrants

One might think, after over 100 years of bird observations including intensive comprehensive cover since FIBO was launched in 1948, that there would be no new species to come. But still they arrive, two in 2019: Franklin's gull Leucophaeus pipixcan from North America and Black-winged stilt Himantopus himantopus from the Mediterranean bringing the island total to an immense 393. It is the extraordinary diversity and range of vagrants from Europe and beyond that attracts so many birdwatchers to the isle, well illustrated by the following examples:

Spring: black kite Milvus migrans, tawny pipit Anthus campestris and red-rumped swallow Cecropis daurica from southern Europe, eastern olivaceous warbler Iduna pallida and river warbler Locustella fluviatilis from south-east Europe, thrush nightingale Luscinia luscinia from eastern Europe, white-tailed eagle Haliaeetus albicilla from northern Europe, rustic bunting Emberiza rustica from north-eastern FennoScandia and Siberia, Blyth's reed warbler Acrocephalus dumetorum and citrine wagtail Motacilla citreola from Russia, lesser yellowlegs Tringa flavipes from North America.

In autumn, there was a strong association with wind directions. Easterlies brought birds from eastern Europe and beyond, including a host of vagrants from Siberia: highlights were greenish warbler Phylloscopus trochiloides from eastern Europe; red-throated pipit Anthus cervinus and red-flanked bluetails Tarsiger cyanurus from north-eastern FennoScandia and Siberia; brown shrike Lanius cristatus, olive-backed pipit Anthus hodgsoni, Pechora pipit Anthus gustavi, yellow-browed warbler Phylloscopus inornatus, Pallas's leaf warbler Phylloscopus proregulus, dusky warbler Phylloscopus fuscatus, Radde's warbler Phylloscopus schwarzi and lanceolated warbler Locustella lanceolata from Siberia; Eastern stonechat Saxicola torquata maurus, Blyth's reed warbler and citrine wagtail from Russia. A north-west wind brought Hornemann's Arctic redpoll Carduelis hornemanni from Greenland and a pectoral sandpiper Calidris melanotos from North America appeared after westerlies. The brown shrike is only the second Fair Isle record.

Not all bird displacements are restricted to the spring and autumn. July was marked by a record-breaking influx of two-barred crossbills Loxia leucoptera, shared by other parts of coastal north-east Britain. They peaked at 16 on the isle but further arrivals into August meant rather more were involved. Two-barred crossbills breed across the Taiga of Russia but they are prone to irruptive movements when their food supply – larch Larix seeds – dries up. This is the biggest irruption into the UK on record and points to a widespread failure of the larch crop within their native range. On Fair Isle they appeared to be subsisting on items wrapped up in sheep droppings.

Other ecological patterns emerge from the long-term data on scarce migrants. The red-flanked bluetail for instance was an extreme rarity three decades ago. Now it is an annual migrant, including three in autumn 2019. The increase in records, which extends to yellow-browed warbler in particular and some other species too – e.g. Firecrest Regulus ignicapillus – denote expanding populations

within and at the borders of their known range. On the detrimental side there has been a massive decrease in numbers of common birds such as redstart Phoenicurus phoenicurus and pied flycatcher Ficedula hypoleuca passing through the isle. This reflects large population declines across their northern breeding grounds.

Mammals

Marine

Cetaceans have been a frequent feature of recent years but, in contrast, rather few were seen in 2019. There was just one minke whale Balaenoptera acutorostrata seen from land though three others were reported from ferry, cruise ship and air service. Harbour porpoises Phocoena phocoena were seen infrequently, maximum count 7. There were only four sightings of killer whales Orcinus orca, the best viewings restricted to after the tourist season when a returning pod spent several days around the isle including close inshore. Risso's dolphin Grampus griseus was the only species to occur in normal numbers, making their annual showing on several autumn dates.

The 2019 grey seal Halichoerus grypus pup count is on a par with 2018, 47 pups to late November, suggesting breeding success is stable. Common seals Phoca vitulina were formerly regular visitors but only one was seen in 2019 (and none the previous year).

Terrestrial

One bat was recorded during the year but its identity was not established beyond pipistrelle species Pipistrellus. The storm petrel breeding study had an unexpected secondary bonus. Camera traps and night viewing equipment demonstrated that the Fair Isle field mouse Apodemus sylvaticus fridariensis remains common and very active on Fair Isle cliffs, at least during the summer period of the study.

Fish (summary provided by Stewart Thomson, Quoy)

The season started with good catches of top-quality coalfish (saithe) Pollachius virens at two favoured sites but as the season progressed monitoring encountered much smaller individuals. This indicates that the breeding cycle was 3 to 5 months later than the long-term norm: there were plenty of fish but not the size and age expected. Early in the season to mid July their diet consisted mainly of whiting Merlangius merlangus and cod Gadus morhua fry of 25-50 mm length.

Thereafter it was small shrimps. Pollack Pollachius pollachius were present in good quality and size for much of the season but tailed off later in the year. A lack of parasitic worms and lice suggested a constant through movement of fish throughout the season. For the second consecutive year, mackerel Scomber scombrus were later than normal with few catches before the end of June.

The inshore grounds were very poor. There were no haddock Melanogrammus aeglefinus or whiting and just a few small codling, gurnard Eutriglia gurnardus and lesser spotted dogfish Scyliorhinus canicula. Ling Molva molva had a reasonable season based on decent catches of moderate to good sized fish in August-September. As autumn wore on, some decent sized cod off North Light included 4.5 to 5.5 kg (10-12 lb) individuals. Stomach contents indicated they were targeting small coalfish – of a size one would normally expect in March or April!

There were a few small shoals of sand-eel Ammodytes in the North Haven during the summer but counter to the historical pattern of a single size, they equated to two different cohorts a month to six weeks apart.

7. Cultural heritage and socio-economic context

7.1. Cultural heritage

The Bird Observatory fire took place nearly three months before it opened for the season. This allowed some visitors, determined still to visit, to make arrangements with accommodation outlets down the isle – which were very busy

Hardest hit in many ways was the resident wardening family at the Bird Observatory who lost virtually everything. But the prestige of the Bird Observatory and the extent to which it is loved and revered away from the isle, was amply demonstrated when a fund-raising scheme set up for the family by islanders met its target within a couple of weeks, including donations from many parts of the world.

FIBO itself also drew many pledges of support from a mention in the UK parliament to funding sources identified for the re-build. The Fair Isle Bird Observatory Trust (FIBOT) directors immediately set about planning for a new building. Investigations over the fire demonstrated no blame attributable to FIBOT and agreement was met with the insurers for the re-build. By the end of the year architects had been appointed and building constructor contracted. FIBOT chairman, Douglas Barr, kept all parties – including the islanders – advised during every step. It is currently envisaged that a new building will be up and open to visitors by mid 2021.

7.1.1. Changes concerning cultural heritage
Nothing significant

7.2. Socio-economic context

Loss of FIBOT visitor numbers was felt in terms of sale of goods (knitwear) and business channelling through the island shop. This was only partly off-set by a good cruise ship season (18, though only 12 were able to land passengers) and North Haven full of visiting yachts during the main summer sailing season. Both are important additional sources of income for the isle.

7.2.1. Changes concerning the socio-economic context
Nothing significant

8. Education and scientific interest

8.1. Visitors – Information policy

Information is available to the public at the Airstrip, Museum and shop. The islanders have a dedicated web page and long established newsletter " The Fair Isle Times" . The National Trust for Scotland also detail the island on a dedicated web pages and also on an annual basis in their guide book.

Bird Observatory and Ranger Service

The Bird Observatory was able to sustain its scientific programme despite the loss of the building from fire. It also hosted the Fair Isle Ranger Service which is open to all visitors and island residents.

8.1.1. Arrangements for receiving and informing the public (building, booklets, maps, cards, etc.)

Fair Isle School

Under the continued tutelage of Pat Thomson, focus was again on flowers and some of the children are becoming quite knowledgeable as well as enthusiastic on the subject. Mrs Thomson also introduced them to the study of the moths. In the autumn, the children joined teachers and resident ecologist Nick Riddiford in a monitoring study of the endangered post-ice age water boatman Corixa iberica to see how it was faring against the predatory backswimmer Notonecta glauca, a water bug which has move north with climate change to colonise the isle

8.1.2. Frequentation by visitors and behavior (number, distribution in time and space)
Affected during 2019 season by FIBIT fire as detailed above

8.1.3. Special visits (distinguished persons, groups, etc.)

Fair Isle's Council of Europe Diploma Appraisal visit

Fair Isle's Council of Europe Diploma was renewed for ten years in 2010. In response to this time line, the Council of Europe sent an Independent Assessor, Robert Brunner on an appraisal visit. On his three-day visit, 27th-29th August, his role was to assess the extent to which Fair Isle had met its commitments laid down by the 2010 renewal and to assess Fair Isle's suitability and measures required for a further 10-year renewal from 2020. Despite the short time allowed, he met a wide cross-section of the isle community and expressed himself well pleased with the warm welcome and pertinent information forthcoming from these meetings. His confidential report will be delivered to the Council of Europe Group of Specialists before the end of the year.

National Trust for Scotland Workcamp

The NTS generally organises two "Thistle" workcamps during the year where communal projects can be tackled along with helping individuals with tasks around the croft and house. It also brings benefits for the social life on the isle. In 2019, the two usual summer camps did not go ahead, mainly because the accommodation was needed for other purposes, including for visiting researchers. However, the premise was available in the autumn and a very successful camp in September took on the task, under expert tuition, of restoring Fair Isle's major old stone dykes. This was done with impressive efficiency, closing gaps and returning the walls on the hill to a very high standard.

8.2. Scientific research

DNA testing has become a new aid in the identification process, particularly for birds difficult otherwise to distinguish. The expertise required has now been made available to FIBO by Professor Martin Collinson of Aberdeen University. He is able to analyse DNA by matching it to a global database. Feathers are preferred but droppings will sometimes work. Droppings scraped off a cliff path proved sufficient in October to confirm the identity of a Radde's warbler. Droppings from an Eastern stonechat, either Siberian Saxicola maurus or Stejneger's Saxicola stejnegeri, were also sent away for review.

8.2.1. Current or completed research (observation, experimentation, etc.; identification or inventory of the species listed in the appendices to the Bern Convention, etc.)

Long-term studies

Studies of a long-term nature are rare and as such of immense importance, particularly during the current era of rapid, unpredictable change. Fair Isle's long-term studies continuing in 2019 were: high profile monitoring of seabirds by FIBO as part of the national Seabird Monitoring Programme, begun in 1986 and coordinated by the UK's Joint Nature Conservation Committee; three monitoring sites feeding constant effort records to Butterfly Conservation's National Moth Recording Programme (www.mothscount.org); systematic logging of Fair Isle cetacean and migrant butterfly records (FIBO); full data from the Fair Isle Meteorological Station, now highly automised including the recording of sea surface data as part of the UK Meteorological Office network.

Shorter-term studies were mainly associated with the Demonstration and Research element of Fair Isle's marine protected area. Three of these entered their third year: 1) the study into Arctic skua feeding patterns during the breeding season by staff of the British Trust for Ornithology in conjunction with FIBO; 2) the study of great skuas, encompassing a colour-ringing scheme, and the species as an aircraft collison risk funded by Scottish Natural Heritage and the NTS with input from FIBO; and 3) high-tech tracking of seabirds away from the Isle.

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1. The Arctic skua is a rapidly declining species in the UK with breeding populations largely confied to Orkney and Shetland. Lack of food availability is heavily suspected so to study foraging behaviour researchers from the BTO have attached geolocator tags on Fair Isle breeding birds. The ultimate aim is to develop a Species Recovery Plan based on the knowledge gained from the study. The Arctic skua is the emblem of the Fair Isle Bird Observatory and thus of iconic significance for the island.

2. Darvic-ringing of great skuas (bonxies) began on Fair Isle in 2017, with this year seeing two 2016-ringed chicks recorded in late winter; one in Germany, the other in Denmark. Chicks ringed in 2017 were observed at sea in Brittany and Portugal in August and September 2019 respectively. The first darvic-ringed bonxie to return was one ringed in 2017 and seen chasing barnacle geese on 24th

September this year. A student from the isle was contracted to monitor interactions of bonxies and the air service during the summer.

3. More high-tech tracking of Fair Isle breeding seabirds away from the Isle was undertaken by Bob Furness and the BTO, who retrieved loggers that will show where razorbills and guillemots and Arctic skuas respectively have spent the last two winters – currently gaps in knowledge of their ecology away from the isle.

A new study, begun in 2019, investigated Biosecurity. The project, entitled “Biosecurity for LIFE”, is a partnership between the RSPB, NTS and National Trust (of England & Wales) and will run until July 2022. Its aim is to address the problem of mammalian predators reaching islands that currently provide safe nesting grounds for seabirds. Over the next three years the group will work to implement effective biosecurity on all 41 of the UK’s island SPAs that are designated for seabirds. The launch of this study has allowed the RSPB along with SNH & FIBO to implement a parallel study into the abundance and distribution of breeding habitats of storm petrels and predation risks. Storm petrels bred historically in the old stone walls but are now restricted to the cliffs where they are impossible to monitor effectively. The first year of this study, conducted in July, discovered birds breeding in a number of locations around the isle. The two parallel studies are a first step towards better knowledge of the breeding population and the dangers it faces.

Other shorter-term studies were terrestrial. 2019 was the second of a three-year study into the variation and genetics of Fair Isle’s eyebrights Euphrasia species involving a post graduate and a Masters student from the University of Edinburgh. Camila Quinteros, Royal Botanic Garden Edinburgh and University of Edinburgh Masters graduate, returned in the spring to continue her study of the flora.

8.2.2. Scientific publications

Publications reported since the last report using Fair Isle data

Andrews, I. & Nightingale, B. (eds.). 2019. Fair Isle Bird Observatory Report for 2018. Fair Isle Bird Observatory Trust, Fair Isle.

Becher, A., Brown, M. & Twyford, A. 2018. Testing local adaptation in Fair Isle Eyebrights. Poster, School of Evolutionary Biology, University of Edinburgh.

Bot, S., Groenendijk, D & van Oosten, H. H. 2014. Eastern yellow wagtails in Europe: identification and vocalisations. Dutch Birding 36: 295-311.

Clemons, L. 2018. Distribution maps of the Tephritidae of Britain and Ireland, 14 January 2018. www.dipteristsforum.org.uk/documents/TEPHRITIDAE

Cooper, D., Thomason, B. & Fray. R. 2019. The record-breaking Two-barred Crossbill irruption in Shetland, July-August 2019. BirdGuides https://www.birdguides.com/articles/rare-birds/the-record-breaking-two-barred-crossbill-irruption-in-shetland.

Gunton, H. 2019. Stormie nights on Fair Isle. Scotland’s Nature (November 5, 2019). https://scotlandsnature.blog/

Holling, M & the Rare Breeding Birds Panel. 2019. Rare breeding birds in the UK in 2017. Brit. Birds 112: 706–758.

Holt, C., French, P & the Rarities Committee. 2019. Report on rare birds in Great Britain in 2018. Brit. Birds 112: 556–626.

Humphreys, L., Calladine, J., Harris, S., Thaxter, C., Agombar, C. & Balmer, D. 2019. The possible demise of one of the UK’s most charismatic seafaring birds. Seabird Group Newsletter 140: 5-6.

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O’Hanlon, N. 2019. Nest incorporation of debris by seabirds. Seabird Group Newsletter 140: 2.

Parnaby, D. 2019. Breeding Season Reports: Fair Isle. Seabird Group Newsletter 142: 7-8.

Perkins, A., Ratcliffe, N., Suddaby, D., Ribbands, B., Smith, C., Ellis, P., Meek, E. & Bolton, M. 2018. Combined bottom-up and top-down pressures drive catastrophic population declines of Arctic skuas in Scotland. Journal of Animal Ecology 87: 1573-1586. DOI: 10/1111/1365-2656.12890

Riddiford, N. J., Watling, R. & Murfitt, A. 2019. Grassland fungi. http://www.fairislebirdobs.co.uk/grassland_fungi.html, FIBO, Fair Isle.

Riddiford, N. J. 2019. You've Been Clamped, Accidental Phoresy Can Give You Wings. Atropos 63: 49.

Riddiford, N. J. 2019. Ramalina siliquosa and the Fair Isle weather. British Lichen Society Bulletin 124: 23-25.

White, S. & Kehoe, C. 2019. Report on scarce migrant birds in Britain in 2017: non-passerines. Brit. Birds 111: 444–468.

White, S. & Kehoe, C. 2019. Report on scarce migrant birds in Britain in 2017: passerines. Brit. Birds 112: 639–660.

The FIBO Report for 2018

This comprehensive report, published in 2019, included the following informative papers

Furness, B & Buckingham, L. Tracking Guillemots and Razorbills using Geolocators. FIBO Rep. 70: 150-152.

Holmes, E. A study of the plastic ingestion and associated diet of great skuas breeding on Fair Isle. FIBO Rep. 70: 148-149.

Parnaby, D. Cetaceans and other marine wildlife. FIBO Rep. 70: 164-168.

Parnaby, D. Butterflies, insects and other wildlife. FIBO Rep. 70: 169-173.

Parnaby, D. Encouraging the next generation at FIBO. FIBO Rep. 70: 180-185.

Riddiford, N. J. Some non-avian highlights. FIBO Rep. 70: 174-178.

9. Site description (vulnerability, protection status, ownership, documentation)

9.1. Changes in legislation or regulations
No change noted of significance during 2019

9.2. Changes in ownership title (conversion to public property, rentals, etc.)
Springfield croft , Koolin House, Taft House, Southlight House Flat 1 and Puffin relet during 2019.

9.3. Extension or transfer, new uses (for example, conversion into total reserve)
Small area of common Grazing's land sold to Scottish Water to facilitate island wide water treatment improvements

10. Site management (management plans, budget and personnel)

10.1. Improvements made

The National Trust for Scotland run an ongoing maintenance and compliance regime for the let properties.

10.1.1. Ecological action affecting the flora and biotopes; controls of fauna

10.1.2. Protection against the elements (fire, water regime)
The Fair Isle Fire Rescue service remains in place and well manned.

10.1.3. Approaches and thoroughfares (paths, roads, car parks, signposting, fencing, etc.)
No change recorded

10.1.4. Field equipment (hides and study facilities)
No change recorded

10.1.5. Waste management
Shetland Island council services
And Island led Da Voar Redd Up
As always, the beginning of spring was marked by the annual Voar Redd Up, organised on Fair Isle by the children. This not only ensures the isle is at its best at the start of the visitor season but is sponsored so raises money for charity. The worst of the rubbish by far comes from the sea, materials jettisoned from boats which eventually gets washed up on shore. Efforts were extended to a second beach clean-up by a visiting volunteer group in September.

10.1.6. Use of renewable energy systems

Commissioning the Fair Isle Unified Low Carbon Electricity Storage and Generation Project

10.2. Management

10.2.1. Administrative department: changes made

See Site Management above.

10.2.2. Wardens' department: changes made

10.2.3. Internal policing measures

Vigilance and visitor interaction remains the primary mechanism for engaging with and informing visitors. Initiatives such as Da Vor redd up keep the community aware and informed of the importance of their efforts to keep the island tidy – they have a pride in the natural heritage of the island which makes this second nature

10.2.4. Infringement of regulations and damage; legal action

There has been no legal actions taken in relation to infringement of regulation or damage and indeed none has been reported.

11. Influence of the award of the European Diploma for Protected Areas

The Diploma is an award that is rated extremely highly by the Fair Isle Community and National Trust for Scotland alike. It provides a great source of focus when working on any management, Socio Economic, Natural or Cultural Heritage related island issues and its presence is often a strengthening factor in applications for projects designed to build on and improve any of these areas.