

Ms Gillian Pearson  
Planning Department  
The Highland Council

By email – [epc@highland.gov.uk](mailto:epc@highland.gov.uk)

5 May 2023

Your ref: 23/00580/FUL  
Our ref: CEA170092

Dear Ms Pearson,

**Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations  
Construction of an 18 hole golf course, practice area, access, parking, ancillary infrastructure  
and the change of use of existing buildings to form clubhouse, pro shop, maintenance shed  
and ancillary facilities  
Land 1700m NW of Embo Community Centre, School Street, Embo**

Thank you for your consultation of 1 March 2023 requesting our comments on this proposal and for granting us an extension to the deadline.

**1. Summary**

We recognise the potentially large economic benefits that could arise from this proposal and their local and regional significance. We also recognise and acknowledge the commitment by the applicant to develop measures to reduce the footprint of the course, as well as to mitigate and offset impacts on nationally important natural heritage interests. However, the conclusion of our assessment is that this proposal is contrary to National Planning Framework 4 (NPF4) requirements not to compromise the objectives of SSSI designation and the overall integrity of Loch Fleet Site of Special Scientific Interest.

While we are unable to support this proposal as presented, we believe that a golf course could be progressed in this general location by using a much higher proportion of the adjacent agricultural land.

**Loch Fleet Site of Special Scientific Interest (SSSI)**

**We object to this proposal as it will result in significant adverse effects on sand dune habitat of national importance.**

**Dornoch Firth and Loch Fleet Special Protection Area (SPA) and Ramsar Site, Moray Firth SPA**

This proposal could be progressed with appropriate mitigation. However, because it could affect internationally important natural heritage interests, **we object to this proposal unless it is made**

**subject to conditions so that the works are done strictly in accordance with the mitigation detailed in our appraisal below.**

## **2. Appraisal of impacts and advice**

### 2.1 Loch Fleet SSSI and Dornoch Firth and Loch Fleet Ramsar site

This proposal lies within this SSSI protected for its range of coastal habitats and species.

The proposal also lies within this Ramsar site which is classified for a range of wetland habitats, species and waterbirds. In line with Scottish Government Policy we have considered the waterbird interest alongside the Dornoch Firth and Loch Fleet SPA, while other interests of the Ramsar site have been considered alongside the Loch Fleet SSSI.

#### *Sand dune*

The management objective for sand dune within the Site Management Statement for this SSSI is to 'restore the condition of the sand dune habitat'. We consider that the EIAR underplays the adverse impact of the development.

We advise that this proposal will have a significant adverse impact on the protected sand dune feature at Coul Links in respect of extent, structure and function, with consequent adverse impacts on the characteristic species. We therefore object to this proposal as it will result in unavoidable adverse effects on natural heritage interests of national importance.

We provide further detail in Annex 1.

We have considered other interests and taken them into account in reaching our conclusion on this proposal.

If the planning authority intends to grant planning permission against this advice, you must notify Scottish Ministers.

#### *Breeding bird assemblage (SSSI)*

The management objective for breeding birds within the Site Management Statement for this SSSI is 'to maintain the population of breeding birds and to avoid significant disturbance to these birds during the breeding season.'

There are natural heritage interests of national importance on the site, but these will not be affected by the proposal.

### 2.2 Dornoch Firth and Loch Fleet SPA and Ramsar Site

The proposal lies within the Dornoch Firth and Loch Fleet SPA and Ramsar site. This SPA is protected for its range of non-breeding waterfowl and breeding osprey and the Ramsar site is classified for its range of coastal features.

The site's status means that the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 (the 'Habitats Regulations') apply, or for reserved matters, The Conservation of Habitats and Species Regulations 2017. Consequently, The Highland Council is required to consider the effect of the proposal on the SPA before it can be consented (commonly known as Habitats

Regulations Appraisal). The NatureScot website has a summary of the legislative requirements (<https://NatureScot.scot/professional-advice/safeguarding-protected-areas-and-species/protected-species/legal-framework/habitats-directive-and-habitats-regulations>).

Our advice is that this proposal is likely to have a significant effect on SPA waders (oystercatcher, bar-tailed godwit, curlew, dunlin, and redshank), teal, wigeon, greylag goose and the waterfowl assemblage of Dornoch Firth and Loch Fleet SPA as a result of disturbance during construction and operation of the proposal. Consequently, the Highland Council, as competent authority, is required to carry out an appropriate assessment in view of the site's conservation objectives for its qualifying interests. To help you do this, we advise on the basis of the appraisal carried out to date, if the proposal is carried out strictly with the following mitigation, our conclusion is that the proposal will not adversely affect the integrity of the site.

The Recreation Access Management Plan (RAMP) mitigation will help reduce human disturbance to bird species during the winter which includes:

- Temporary signage raising awareness of wintering birds;
- Site interpretation boards;
- A walks leaflet identifying sensitive bird areas and suitable seasonal walk routes;
- Provision of a new circular walking route away from the coast; and
- Regular monitoring review of access management to benefit SPA birds.

To ensure disturbance from golf course maintenance:

- From December to March (inclusive), green-keeping operations on holes 10-18 must only take place between one hour after sunrise and one hour before sunset. This will reduce disturbance to a level that is more reflective of current use.

And to ensure sensitive bird areas are avoided during construction:

- An access diversion (if required).

We advise that the RAMP mitigation measures will need to be implemented in advance of construction taking place, should the proposal receive consent.

The appraisal we carried out considered the impact of the proposal on the following factors:

- It is considered that the foreshore will receive more recreational disturbance during the winter than the golf course area and the RAMP mitigation measures will help reduce recreational disturbance during winter along the coastal zone.
- Disturbance levels to the dune slacks, which are used primarily by teal and wigeon, will be minimised and be more reflective of current use.
- The RAMP will be monitored to gauge its effectiveness. This will involve bird surveys, observations on access behaviour and effectiveness of temporary signage and a people counter on the main access route through the course.
- On-site meetings will be arranged to review the effectiveness of the RAMP and to agree any future changes that may be required should any unforeseen/unexpected issues be identified. The frequency of the review meetings has been front-loaded so that any issues are addressed early on in the process.

### 2.3 Moray Firth SPA

The proposal lies adjacent to the Moray Firth SPA, protected for its marine waterfowl and seabirds.

Our advice is that this proposal is likely to have a significant effect on SPA eider as result of disturbance during construction and operation of the proposal. Consequently, the Highland Council, as competent authority, is required to carry out an appropriate assessment in view of the site's conservation objectives for its qualifying interests. To help you do this, we advise on the basis of the appraisal carried out to date, if the proposal is carried out strictly with the mitigation as identified above for the Dornoch Firth and Loch Fleet SPA, our conclusion is that the proposal will not adversely affect the integrity of the site.

If the planning authority intends to grant planning permission against this advice without the suggested mitigation, you must notify Scottish Ministers.

Please let us know if you need any further information or advice on this proposal by contacting [Alexander.Macdonald@nature.scot](mailto:Alexander.Macdonald@nature.scot).

The advice in this letter is provided by NatureScot, the operating name of Scottish Natural Heritage.

Yours sincerely,

**David Mackay**

Head of Operations – North

c.c. [dafydd.jones@highland.gov.uk](mailto:dafydd.jones@highland.gov.uk)

## Annex 1.

### Direct impact on sand dune habitats

#### *EIAR data and assessment*

NatureScot made a number of requests for GIS shapefiles of the course layout prior to the submission of the application, but unfortunately did not receive them. As a result, we have undertaken that task and digitised the course layout as shown in the documents submitted as part of the planning application to help with our assessment of the proposal. Though this might introduce small differences between our statistics and those of the applicant, they will be comparatively small in relation to the significant differences arising from our different interpretation of impacts.

The applicant has mapped vegetation using a range of intermediate and 'mosaic' (multiple) vegetation types within many polygons. Splitting these statistically detracts from the ecological reality that each of these polygons is wholly of this type across its extent. We have used a hierarchical approach, allocating the entire extent of such polygons to the more/most important of its habitat components. Where there are two vegetation types of equal extent, we have allocated the entire area of the polygon to the more important type, and this allocation was applied where a more important type contributes a minimum area of 30%, so that a polygon that is 70% dune grassland and 30% dune heath, would have its entire area allocated to dune heath. The various permutations of vegetation types are listed within the tables, allowing a perspective on the impact of this approach on our calculated totals.

This hierarchy referred to above is as follows:

Dune Heath > all other vegetation (where > means 'more important than')  
 Dune slack (SD14-SD17) > all except dune heath  
 Mire (M) > Swamp (S)  
 Grey dune (SD12) > grassland (MG)

### Assessment of impacts to sand dune

We present our advice below with respect to the various sand dune habitats before discussing wider effects to all habitats, before summarising overall impacts.

#### *Dune heath*

The EIA concludes adverse impact on 1.5 ha of dune heath. This is probably the most important and certainly the most vulnerable element of the dune system on the site. The mowing of dune heath will tend to convert it to grassland and, even if the heath plants survive, they and the dense growth of mosses will have most of their vertical component removed, along with its microclimate and the rich epiphytic flora and the invertebrate fauna inhabiting this vegetation canopy.

The loss to 'water feature' here amounts to 0.1119ha, and is mainly to vegetation types that are not usually associated with wet areas, so there are grounds for assuming that all the figures above represent habitat loss, amounting to over 5.6965 ha (see Table 1 below), almost four times the 1.5 ha presented by the developer. It is not clear how the developer has calculated total dune heath area to enable us to comment on the apparent differences. Subtracting the 'water feature' impact gives a total damage/loss figure of 5.5846 ha which is significant. Heath is a very fragile habitat, and there will be further losses from trampling damage from golfers seeking lost golf balls or balls that have missed the target fairways, and also from the edge creep of vegetation from new edges, with species

from the matrix (usually grassland) invading and reducing habitat area. The edge effect and the impact of fragmentation are discussed in more detail below.

*Table 1: Total area of dune heath habitat that will be lost to the planned development, including a breakdown of habitat area into component golf course features. The attribute 'MapL\_NVC' has been taken from the NVC SSSI information provided by the applicant.*

<b>MapL_NVC</b>	<b>Total Area_ha</b>	<b>Tees</b>	<b>Fairways</b>	<b>Semi-Rough</b>	<b>Greens</b>	<b>Water</b>
H11b	0.2289	0.0188	0.1480	0.0621		
H11b-SD17	0.1436		0.0451	0.0231	0.0347	0.0408
H11b 50% SD9x 50%	1.3223	0.1262	0.7863	0.2978	0.0751	0.0369
H11c	2.9254	0.2324	1.9485	0.4969	0.2334	0.0142
H11c-MGh	0.0632		0.0599	0.0033		
H11c-W2	0.0085	0.0085				
H11-U2a-W17	0.9038	0.0091	0.6629	0.2118		0.0201
W23a 70% H11 30%	0.1008		0.0625	0.0383	0.0000	
	5.6965	0.3950	3.7131	1.1332	0.3432	0.1119

#### *Dune slack*

Sand dune slacks of exceptional quality and scale are widespread at Coull Links. This is a major habitat at Coull, and is now rare on intact systems in east Scotland. Though avoiding the major dune slacks, the course directly impacts almost 2 ha of this habitat, which is significant. We have taken the precautionary approach in relation to flooding of the slacks as water features, assuming this flooding to be permanent. If this is not the case, it should be clarified in the EIAR.

The total habitat loss here would be 1.9356 ha (see Table 2 below), but excluding the 'water feature' element on the assumption that this might not involve any changes to the existing habitat would give a total dune slack loss of 1.1071 ha, which is 10.08% of the total area of dune slack at Coull Links (total area is 10.98 ha).

*Table 2: Total area of dune slack habitat that will be lost to the planned development, including a breakdown of habitat area into component golf course features. The attribute 'MapL\_NVC' has been taken from the NVC SSSI information provided by the applicant.*

<b>MapL_NVC</b>	<b>Total Area_ha</b>	<b>Tees</b>	<b>Fairways</b>	<b>Semi-Rough</b>	<b>Greens</b>	<b>Water</b>
M27 50% SD17 50%	0.2412		0.1995	0.0417		
MG10a-SD17	0.0570		0.0570			
SD12-SD17 80% Burnet rose 20%	0.4374		0.2779	0.1235	0.0360	
SD15-SD17	0.0222			0.0222		
SD15a	0.7380	0.0090	0.0737	0.0075		0.6479

SD15a 70%	0.1318					0.1318
SD15a 70% M27 30%	0.2509		0.1555	0.0954		
SD17	0.0196		0.0082			0.0115
SD17 60% M25a 40%	0.0374					0.0374
	1.9356	0.0090	0.7718	0.2903	0.0360	0.8285

### *Grey dune (fixed dune grassland)*

We have defined this habitat, grey dune, in strict terms, and have not included Mesotrophic Grassland (MG) or the habitat allocated to burnet rose by the applicant. Total area lost to the development amounts to 2.1548 ha (see Table 3 below), with no impact from water features, which is significant. Nevertheless, there are negative attributes of mowing (see below) that should be taken into consideration in assessing the impact on this habitat, one of the more resilient dune habitats on the site.

*Table 3: Total area of grey dune habitat that will be lost to the planned development, including a breakdown of habitat area into component golf course features. The attribute 'MapL\_NVC' has been taken from the NVC SSSI information provided by the applicant.*

<b>MapL_NVC</b>	<b>Total Area_ha</b>	<b>Tees</b>	<b>Fairways</b>	<b>Greens</b>
MG9 60% SD12b 20% SD17 20%	0.0032			
SD12 60% MG1c 40%	0.1047		0.0770	
SD9x	2.0470	0.0849	1.3144	0.1127
	2.1548	0.0849	1.3914	0.1127

### *Semi-fixed dune*

We conclude that a total area of 0.8547 ha will be lost to the development (see Table 4 below). Disturbance from mowing of the vegetation may destabilise this fragile habitat. The intervention proposed to cope with such an event is a disruption of natural processes.

The RPS Coastal Report states, “*Although the dune system at Coul Links is considered to be dynamically stable, the future increases in relative sea level rise are likely to result in a trend of slow landward retreat of the vegetation line.*” The report also concedes the likelihood of periodic “*arduous storm events*”. In this context, the developers propose to locate their course within 10m of this dynamic coastal edge. The 18<sup>th</sup> tee appears to be even closer to the coastal edge. The vegetation over most of the 17<sup>th</sup> fairway and all of the 17<sup>th</sup> green is semi-fixed dune, and mowing this risks destabilising the coastal edge. Any response to such destabilisation could result in the introduction of coastal protection, or moving the hole along the coast or into the dune slack, thereby increasing the risk to this site. The location of Mean High Water Springs (MHWS) and the vegetation edge are not the only indicators of future vulnerability. The identity of the vegetation at or near to the coastal edge is also very important, and the likelihood of sediment adjustment in this dynamic zone in response to Relative Sea Level Rise does not seem to have been considered.

*Table 4: Total area of semi-fixed dune habitat that will be lost to the planned development, including a breakdown of habitat area into component golf course features. The attribute 'MapL\_NVC' has been taken from the NVC SSSI information provided by the applicant.*

<b>MapL_NVC</b>	<b>Total Area_ha</b>	<b>Tees</b>	<b>Fairways</b>	<b>Semi-Rough</b>	<b>Greens</b>	<b>Water</b>
SD7y	0.8547	0.0225	0.5204	0.2592	0.0527	

#### *Other habitats*

Impacts including the water feature are given in brackets. There is also a significant impact on mires – 0.1813 ha (0.5839 ha), swamps 0.0584 (0.4567 ha) and inundation grassland MG11 0.1144 ha (0.1144ha). Though these are not protected features, they lie within the extent and function of a protected feature and the functionality of the wider sand dune feature interacts with these, as is true of almost all of the site (see next section).

### **Wider impacts to sand dune habitats**

#### **Fragmentation**

The current proposal attempts to reduce the fragmentation associated with the first application. Connecting corridors have been added together with the creation of gradual rather than abrupt vegetation edges. Connecting corridors are useful restoration devices when fragments have been totally severed, but do not begin to provide the level of connectivity associated with an intact area of habitat.

The northern group of holes (2-8) forms a rough circle that isolates the areas in the centre from the rest of the dune system. Only a small seaward section in the NE of the dune system is unaffected by the fragmentation which would be introduced by the course, with most of the site having at least two breaks in a land-sea transect. Though the severance is obviously not total, connectivity is seriously compromised. It is well established that isolated patches of habitats are less viable than large patches.

The main issue with the edge effect is the removal of cover (and its associated microclimate). Breaking up habitat will create edges and gaps. The width of the gap – be it path or fairway – is irrelevant, as animals that occupy the sand dune habitat and are part of its function are reluctant to move outside cover for the simple reason that their survival depends on that cover. As a result fragmented habitats become isolated in terms of biodiversity exchange.

Calculation of the additional 'edge' created within heath habitat by the construction of fairways, green and tees reveals that an additional 6.49 km of edge will be created (derived via GIS analysis of source datasets). Additional edge will lead to significant heathland habitat loss over and above the direct impact, as the patch will be 'invaded' by species from adjacent habitat, for example heath will be replaced with grasses at edges.

#### **Mowing**

NatureScot acknowledges that we have not objected to the establishment of golf fairways at Machrihanish Dunes by mowing only (i.e. no reprofiling or use of fertiliser). That response was based



on a view that mowing emulated grazing, a view we have since learned was incorrect. Mowing introduces a level of uniformity in the sward height that is seen only in very heavily grazed swards (which usually have a small area). Grazing not only varies sward height, but hoof imprints, urine and droppings add variation. Mowing constitutes a meaningful biodiversity loss relative to grazing. Mowing of heath will destroy it by removing the all-important canopy of heath and mosses.

### **Sand Dune Condition**

When last surveyed as part of NatureScot's Site Condition Monitoring programme, the Coull Links section of Loch Fleet SSSI failed to meet 17 targets in respect of the sand dune feature. Failure to meet a target does not necessarily lead to Unfavourable status. Analysis of the report suggests that all but three are simply 'less than ideal'. The three failures leading to Unfavourable status cover only two issues: scrub invasion and the presence of other invasive species. Both of these two issues are the subject of an existing management agreement that NatureScot have with the owner of Coull Links which commenced in 2021.

The issue of scrub invasion is not straightforward. It could be argued that the development of scrub is the natural climax vegetation of a dune system, and there is evidence that European dune systems, including some in the UK, have had past wooded phases. We are keeping this situation under review, but in the meantime are complying with prevailing opinion on dune management and encouraging the removal of invasive native scrub.

Though the very dense growth of meadowsweet at the south end of the large dune slack is less than ideal, there is no evidence that this is anything other than a natural development, perhaps in response to the nutrient contribution of wintering wildfowl. In winter, when the slacks are most used by wildfowl, the vegetation has died back, and during our visit on 30 March 2023, most of the area of the large slack was open water.

### **Biodiversity Net Gain**

A Biodiversity Net Gain paper forms part of the planning application. However it does not appear to follow the CIRIA/CIEEM Guidelines as the Executive Summary (Baker *et al.* 2019) states, "**BNG does not apply to statutory designated sites or irreplaceable habitats**".

### **Intervention**

The management proposed by the applicant comprises a level of active intervention that we would not recommend, including active management of meadowsweet and a contingency for dune stabilisation in the event of erosion associated with Hole 17. We promote an ecosystem approach to habitat function and protection, whereby the natural function of processes is encouraged, protecting habitats and their structure and, in turn, protecting the species within these habitats. The proposed active intervention will add to the habitat disruption and damage caused by the construction of the course, which removes significant areas of heath and disrupts this and other natural habitats within this wider dune ecosystem, so that dune structure and function are severely compromised. This in turn will obstruct the ability of the dune system to adjust naturally to environmental change, because so much of the structure has been 'frozen' by the development.

Though intervention in dune systems is frequently undertaken in England and Wales by NatureScot's counterparts, it is almost invariably a response to an extreme situation not experienced at Coull Links: atmospheric nitrogen deposition exceeding critical levels. Even with this justification, the intervention

has been heavily criticised in the scientific press, and such interventionist dune management as practised in England and Wales cannot be used to justify comparable action in Sutherland.

***Effects on notable species supported by SSSI sand dune habitat - Fonseca's seed fly (Botanophila fonsecai)***

This rare fly is restricted globally to sand dune habitats, in proximity to Dornoch and Embo, and features on the Scottish Biodiversity List as requiring conservation action. The EIAR shows that Coul Links supports a population of the fly.

As so little is known about this fly, we cannot estimate the level of disturbance that would be considered tolerable. The disturbance resulting from the creation of fairways and greens and the subsequent long-term stabilisation of the dunes will very likely damage parts of the species' habitat, with additional impacts arising from any use of herbicides and insecticides.

We welcome the developer's intention to promote further research on this fly. The only mitigation proposed which is likely to benefit to Fonseca's seed fly is the retention of large areas supporting *Compositae* flowers (e.g. sow-thistle and black knapweed, etc.). Therefore, we recommend this is taken forward as mitigation should the proposal receive planning permission:

- Ensure large and important areas of *Compositae* flowers are retained throughout Coul Links for Fonseca's seed fly.

Previous surveys found the species in significantly greater numbers than the latest survey. This factor is likely to reduce the resilience of the population to such a proposal. Like most endemic species, this fly is intrinsically at risk of extinction.

**Conclusion – sand dune habitats**

**Overall impact**

Instead of compartmentalising the protected dune feature, it is useful to look at the direct and indirect impact on the dune system as a whole, as dune features do not exist in isolation but as an interactive, functional whole: the dune sectors of the system are dependent to varying extents on their functional context, so that the non-dune sectors are part of the wider dune ecosystem. This aspect has been largely overlooked in the EIAR, despite the EIA Guidance including it.

We calculated the direct impact of the current development on the sand dune protected feature using applicant data as the source, and a GIS approach to calculate area of NVC lost to golf course features (excluding water feature impact). We compare direct loss of protected dune figures for the previous application and current application in Table 5 below.

*Table 5. Comparison of estimated direct loss of protected dune features for the two golf course proposals at Coul (all figures in hectares)*

Habitat	Applicant loss Coul 1	SNH loss Coul 1	NatureScot loss Coul 2
Dune heath	4.47	8.5	5.58
Dune grassland (fixed dune)	2.51	3.28	2.15

Semi-fixed dune (SD7)	0.74	0.91	0.85
Dune slack	0.27	2.20	1.1
Total	7.99	14.9	9.68

Note: Figures for Coull 1 (previous application) taken from S Angus Witness Statement for PLI. The figures for the NatureScot calculation for Coull 2 (current application) are conservative in respect of dune grassland and do not include grassland that is not SD (dune) vegetation.

Several provisos are made in respect of the above statistics. Firstly there are issues relating to the information supplied by the applicant in that the vegetation identified in some polygons is incomplete, e.g. U2a 40% (no information on remaining 60%). There are then qualifiers to our own interpretation of some situations. It could be argued, for example that the woodland areas converted to golf course (1.5ha) do not constitute habitat damage, but there is a current agreement to restore these areas to sand dune. On some existing golf courses, we have advised that some trimming of semi-rough by mowing improves species diversity, but this situation is not transferrable to a dune system that retains much of its natural structure and function. We have included habitat that will become water features as loss as there is no indication within the application that such water features will not be permanent.

The adverse impact of this proposal will seriously impact the extent, structure and function of Coull Links, with onward adverse impacts on the characteristic species. We consider that the EIAR underplays the adverse impact of the development.

Though this application differs from the previous one by reducing the use of fertiliser, reducing reprofiling, and by not removing turf from fairways, it nevertheless constitutes a major adverse impact on the sand dune feature of this protected area in direct and indirect terms. Its indirect impact on structure and function are on a similar scale to the previous development, other than in respect of nutrient input.