

Blackpark Cottage,
Leachkin,
Inverness. 4
15/9/83

Dear Mr Stewart,

Thank you very much for your reply to my letter concerning my geography project on the Culbin Sands. Having looked over the leaflet which you sent me I have decided to base my project on the afforestation of Culbin Sands since the Forestry Commission bought the area in 1922. Here is a list of questions which I hope you will have time to answer.

1. When the Forestry Commission bought Culbin how much of the area was already planted with trees? What was the rest like?
2. Why did the Forestry Commission buy the area? Did they see it as becoming very profitable?
3. Could you describe how the Forestry Commission went about planting the forest ("thatching the sand, etc)? Was it a very difficult task?
4. Why were the pines (Scots, Corsican and Lodgepole) specifically chosen as the main species planted? Would others especially deciduous not be able to get enough water?
5. What would have happened to the area had the Forestry Commission not bought it, i.e. would it be semi-desert if no action had been taken?
6. How great was the dune movement before the Forestry Commission bought the area?

7. To what extent has afforestation halted the dune movement?
8. Do you have to be very careful to make sure that only a certain number of trees are felled each year?
9. Is there any danger to the forest from gale-force winds?
10. Is the coastline still growing and if so will more of the sand be planted?
11. Where does the timber that has been felled from the forest go?
12. What plans are there for the future of the forest?

Also, do you have any maps, pictures or diagrams that I could have (buy) which relate to my questions? I have been told that there is a museum about Culbin. Could you tell me where this is and when it is open as I would like to visit it.

Thank you very much.

Yours Sincerely,

Jackie Walder



FORESTRY Commission,
MORAY Forest District,
NEWTON, by ELGIN
MORAYSHIRE.

Ref. I 2.1

MISS J. WALDER,
BLACKPARK COTTAGE,
LEACHKIN,
INVERNESS.

Dear Miss Walder,

Please find the following notes answering the queries contained in your letter of 15/9/84. The numbers answer each of your specific questions.

- 1). One or two small plantations had already been successfully established especially in the proximity of neighbouring estates. One or two of these areas are still standing today. These isolated plantings were however very small in relation to the vast sandy desert which comprised the Culbin Sands. The bulk of the area was therefore sand both of wind borne (aeolian) and raised beach derivation. The remainder would have been in part colonised with bents, marram, broom, birch, scrub pine etc.
- 2). The Forestry Commission acquired the area (over several acquisitions) in order to take up the challenge of stabilizing these constantly moving sand dunes. Over the years colossal volumes of sand were being continually reshaped and moved onwards (mainly eastwards) by the wind. No private individual or body could hope to undertake a project of such large scale. The aim of the Forestry Commission therefore, was to stabilize the sand by creating a protection forest.
- 3). For the first decade or so, marram grass was planted (marram is xerophilous and is a natural coloniser of dry sandy areas both via underground roots and by seeding). Pieces of marram were planted out at approximately $\frac{1}{2}$ m spacing. One then had to wait 4/5 years prior to planting the tree crop. (the marram needed this length of time to start the stabilization process) This was both time consuming and laborious nor was it fully effective (blow-outs). By the mid 1930's a more immediate solution was adopted, this was thatching the sand surface with dead branches (pine / birch / broom etc.). This stopped the sand blowing in the short-term. The trees could then be planted immediately, their roots taking

over from the decaying thatch and thus continuing the stabilizing process on a permanent basis.

4/. The area is very dry generally with a climate as associated with the Moray Firth. Also some of the dunes were up to 30m tall, their sand surface being a long way from any water-table. These conditions severely limit other tree species and favour pines. Approximately two-thirds of the commercial crop is Scots Pine the remainder being Corsican Pine. Lodgepole pine has not been planted on any large scale. Natural birch is however prolific in most areas of the forest. This is very important ecologically.

5/. Certainly more agricultural land would have been lost to the advancing sand with all the repercussions that would have entailed. Also, possibly long before now, the present estuary of the River Findhorn would have been completely sanded up. The Findhorn is a powerful river and has to find an outlet somewhere. This means, assuming the river mouth was pushed eastwards, that the present village of Findhorn as we see it today (yachting marina / holiday complex) would no longer be in existence.

6/. As mentioned earlier there was considerable sand movement with new dune configurations constantly appearing over the years. In the aftermath of each gale a new landscape appeared. You could easily check with the Met. Office or from weather statistics on the general periodicity of gales in this area.

7/. Afforestation has completely halted the dune movement, obviating all the losses and disasters which might well have taken place otherwise (as outlined in '5').

8/. A forest never stands still. Timber is an infinite resource and is part of the biological cycle of the forest. This means that when the trees mature they can be felled for timber and the area replanted again to continue the cycle. The aim is not to have all your forest maturing in one block but rather to create a mosaic or patchwork of uneven age-classes. This ensures that any area currently being clear-felled will not be over-large. In general terms this is beneficial to wildlife creating ecotones and different habitats. As regards Cullbin this also prevents possible

sand movement. One must bear in mind however that the tree stumps complete with extensive root systems are still there. Another factor is that a tree crop having been there for some fifty/sixty years has altered the micro-site somewhat (humus etc.). Any clear-fell areas in Culbin usually become rapidly colonised with sand sedge.

9). No. There is very little wind-blown in Culbin. (Wind-blown is the technical term used to describe trees uprooted by the wind). Pines are naturally a deep rooting species and in Culbin their roots have to ramify into the sand for considerable distances in the search for water and nutrients. Here there are no rocks, soil pan, waterlogged conditions etc. to prevent root spread, the usual cause of wind-blown.

10). As has been indicated we have very successfully stabilized the sandy desert by establishing a forest, but in spite of various attempts we have not succeeded in stopping the scouring action of the waves along the coast (Long shore drift). In the future therefore, we may lose small coastal stretches of the forest to the sea. Accretion is naturally attendant on erosion so that conceivably in the future the western edges of the forest may become appreciably higher and drier. The future can only be speculation and within the next decade or so, the more likely result is that a small area on the coast may well be lost to the sea.

11). The forest has evolved from that of a protection forest (the concept being to stabilize the sand) into that of a valuable production forest, producing some 13,000 m³ of timber annually. (For comparison purposes a cubic metre is approximately equal to a tonne or metric ton). One must bear in mind that the timber product element is of prime importance but timber production also has an important part to play in the rural infra-structure, for example creating employment not only directly within the forest, but helping maintain ancillary industries such as timber haulage, sawmills, wood processing factories etc.

The break-down of timber products leaving Culbin annually is as follows,

Pulp / smallwood	- 5000 m ³
Pallet wood	- 2000 m ³
Sawlogs	- 5000 m ³
Transmission poles	- 1000 m ³

Approximate total annual production - 13,000 m³.

12). There is no other forest of this size, and planted on pure sand, to be found anywhere else in the British Isles. On this scale therefore, Culbin is unique. The prime function, that of producing timber has been fully covered above. There are many other equally valuable facets to this forest eg. valuable habitats for wildlife, flora and fauna, have been created. Due to the unique features and the uniformity of the sand a great deal of experimental work has and is being conducted in Culbin, both by the Research Branch of the Forestry Commission also by outside Scientific Bodies. To protect and preserve this very important and fragile environment the whole area has been designated an S.S.S.I. The danger of fire is very real and has to be continually guarded against. A fully aware public can help enormously in this respect. Some years ago the Forestry Commission opened up a picnic site and beach facility in nearby Roseisle forest in order to alleviate the pressure on Culbin.

The plans for the future are therefore to protect and preserve Culbin Forest for the reasons outlined above and in so doing we can continue to cream off the interest in monetary terms each year in the form of the many thousands of cubic metres of timber which annually aid the local economy, and still leave Culbin to function as a forest in the broadest sense.

Regarding your last paragraph, the Forestry Commission do cater for larger groups of interested parties. During Spring and early Summer numerous parties from Schools and Colleges do visit the area on an official, conducted basis. For this there is a set charge made. For obvious reasons the casual holiday-maker type individuals are encouraged to visit Roseisle instead.

We have no map hand-outs but an Ordnance Survey map of suitable scale should satisfy your requirements (local library perhaps).

P.S. You could also check out the Elgin/Ferries Museums.

FOR FOREST DISTRICT MANAGER

A.W.F. Watson

19/9/84.