

The Commission bought the main part of Culbin in five separate acquisitions between 1922 and 1931. The sand hills area was the second acquisition in North-east Scotland after Monaughty. In 1945 we acquired the Binsness plantations and later, areas from Dalvey and Brodie Estates. The total area of the forest before amalgamation as part of Laigh of Moray Forest was 7700 acres.

The general strategy was to plant from West to East as this was the direction of sand drift with the prevailing wind. In this way new sand would be progressively cut off at its source. Marram grass was to be used as the main fixing agent before planting, supplemented by a limited amount of thatching of incipient blowouts. Advances onto the moving sands were to be cautious until more experience was gained and advantage could be taken of fixed and planted areas to gradually build up shelter and slow down sand movement. It was hoped in this way to hem in the individual dunes and finally to plant them completely.

The first Commission plantings were accordingly in Low Wood, an area of stable sands with ericaceous vegetation which had previously been planted before the war. Where there was insufficient surface vegetation to render the sand stable, marram grass was planted. It was pulled locally (illegally!), the clumps were broken up and the pieces dibbled into the sand at 1ft x 1ft spacing, later 2ft x 2ft. This was done about 4 years before planting to bind the soil.

By 1933 it had become apparent that the use of marram was not altogether successful. It did not stop blowouts occurring and there were heavy losses owing to trees being buried in sand or drying out. Also its planting was very laborious.

In order to solve these problems, thatching was introduced using broom, birch branches and pine branchwood - brashings from older trees. The objects of thatching were:-

- a. to fix the sand
- b. to conserve moisture around the plant
- c. to provide a source of humus as it decomposes

The first experiments were carried out in 1934 and the first major area (Hill 99) was thatched and planted in 1937. The thatching material was laid so that the cut branch ends pointed into the prevailing wind. On exposed sites it was secured with wire. Initially 20, and later 40 tons of brushwood per acre were used. This was taken out to the site using a heavy sledge, at one time horse-drawn and later pulled by a caterpillar tractor. Even in those days the cost of thatching was £50 per acre. Where dibbles had been used for planting in the marram, schlick spades were now used to cut down through the thatch. This method of establishment proved entirely successful.

In the first 13 years 3217 acres were planted, and thereafter came a period of consolidation. But in June 1939 there was a disastrous fire in which 382 acres were burnt, and this was replanted in 1940 and '41. Lord Robinson, who witnessed the fire, records that it burned not only young plantations but also ran as a crown fire through semi-mature pines 60 ft or more in height. This must have been one of the first serious fires which the Commission had had, and as much as anything triggered off a phase of fire consciousness in the Commission's evolution which lasted for 25 years.

From November 1943 to May 1944 the forest, and part of the surrounding district was evacuated and converted into a battleground. The Royal Navy shelled the forest

from the sea, and the Army used the area as an arena for tank exercises. We are reminded of this occupation today when live shells are exposed, particularly in construction of sea defences.

After the war the large remaining area of moving dunes to the North-east of the forest was thatched and planted up. This is undoubtedly the most inhospitable part of the forest, and even today large areas have not closed canopy.

Labour

From 1922 to 1939 a staff of 50 men were employed, recruited from Forres, Findhorn, Dyke and Auldearn. There appears to have been a large turnover in labour, many workers leaving for seasonal jobs with farmers and salmon fisheries during the Summer months and returning to the forest for the Winter months. Between 1939 and 1946 the staff was a maximum of 20. In the post war planting phase from 1946 until the end of the 1960s the staff varied from 60 to 90, and the work included thinning and road making. Other jobs had been mechanised - four wheel drive lorries and wheeled and crawler tractors were used for the transport of thatching material. Between 1958 and 1971 the staff was run down drastically, and there were 12 men on the books when the amalgamation to form Laigh of Moray Forest took place. Presently Culbin forms part of Moray Forest District and there is no permanent squad working on the area.

Formation

Scots Pine was the most widely used species at around 65% and traditionally has been planted on the flatter areas (15i & 15l) and in the frosty hollows between the dunes, while, on the evidence of the early Binsness plantings Corsican Pine was used on the actual dunes and covers approx 30% of the area. It is tender to frost but responds positively to fertilisers and is a higher volume producer than S.P.

Presently while the planting pattern follows similar lines there is an increasing use of Lodgepole Pine and also SS (where the water table is high). In restocking, the forest ecosystem has created its own particular problems and these are entirely different from those encountered at initial planting.

The present day problems are mainly:- Frost, an endemic weevil population, and a resident herbivore population mainly roe deer.

Using ploughing mainly to produce a bare sand surface has lessened the effect of frost.

All planting stock is dipped in insecticide but unfortunately the present ingestion type of insecticide does not give true protection. Roe deer control is carried out to a well defined management plan which identifies vulnerable areas as requiring strict observation and culling.

Harvesting

Annual output is in the region of 12KM³ consisting of:-

Transmission Poles	2K
Sawlogs	5K
Pulpwood	5K

The transmission pole market is a high value one and management is geared to maximise production of this material.

Normally thinning is on a 10 year cycle with pole marking carried out as the state of the market and crop dictates. Prior to any clear felling the area is de-poled although there have been occasions when the pole crop has been left to be worked post felling. This would be the case when the market placed constraints on timing. In clear fells on dunes we have found the Kockums Forwarder with long reach crane of great help. With organised directional felling there are few areas, which cannot be extracted while achieving output figures in excess of 10 M³/hr.

MORAY FOREST DISTRICT
1983.

Minute to Conservator E(S)

From: F.D.M. Moray

Ref V.1

12 September 1983

VISIT COMMISSIONER J.N. KENNEDY

Herewith my proposals for Mr Kennedy's visit.

In the introduction within Cloddymoss Centre I suggest we keep off any subject that will be dealt with during the outside visit.

We could keep the opening session^{to} acquisition history, present role of Culbin as we see it. i.e productive part of the enterprise but with a special role - educational, scientific and conservation - highlighting our management to fulfill this role.

The loop out to the Binsness shore and area sold to Mr Greig.

Binsness, could easily be missed, if you wish.

Re H Millers experiment on nitrogen application - if you decide that it should be explained broadly by forest staff, Hugh is willing to supply up-dated information.

The telepole stop can be used as a device to either spend or make-up time according to Mr Kennedy's travel arrangements.

Please advise if you require me to make up a hand-out.



S W R Stewart
Forest District Manager

Norwegian Foresters Visit 28/6/83 for Info,

File S18.1

8 Culbin

Investigation
Notes.

8 July 1983

To: Conservator E(S)

From: F.D.M. Moray F.D.

V5 SRS/JF

Norwegian Foresters Visit

Ref your minute V5 IADG/SR dated 28/6/83

Herewith my proposals for the visit:-

1. Short hand-out is in the process of being prepared. This will contain a potted history and a look at the present.
This will be sent so that it is available before arrival at Culbin.

2. ^{It}Itinerary - (Timing is approximate at this stage)

- | | |
|------------------------------|--|
| 10.00 | Wellhill Gate entrance - Introduction
(Particulars of surrounding crops available) |
| 10.30 | View P.881. SP on roadside and P74 SP opposite - Early
Restocking with no ground preparation. (Viewed from bus) |
| 10.35 | Buried tree area,

a. Explain old agricultural estate area - see agricultural
horizon in soil profile.
b. Sand movement, buried tree
c. Sample plot data available. See good C.P. growing |
| 11.20 | <u>Deficiency garden, Research Branch Speaker, AC.</u> |
| 12.00 | Buckie Loch area - coast erosion |
| <u>12.45</u>
<u>13.30</u> | At Cloddymoss for lunch - toilets |
| 13.45 | P22 Species Plots |
| 15.00 | Harvesting Stops - Explain pole working etc. Visit prep
producing squad, Kockums or Brunnet working. |
| 16.00 | West end. Restock site on plough, example of SS etc. |
| 16.30 | Finish at Loch Loy gate - exit to Inverness. |

A further stop is in reserve near the Loch Loy gate which can be put in if we are ahead of schedule.

I trust the foregoing meets with your approval.


S.W.R. Stewart
Forest District Manager

3 And

COPY
PRINTS
2 1/2 CUBIN

* ELVID POWERS RD SIDE

FROM BURIED TREE
TO FINDHORN BAY
- 5 MINUTES -

5
2

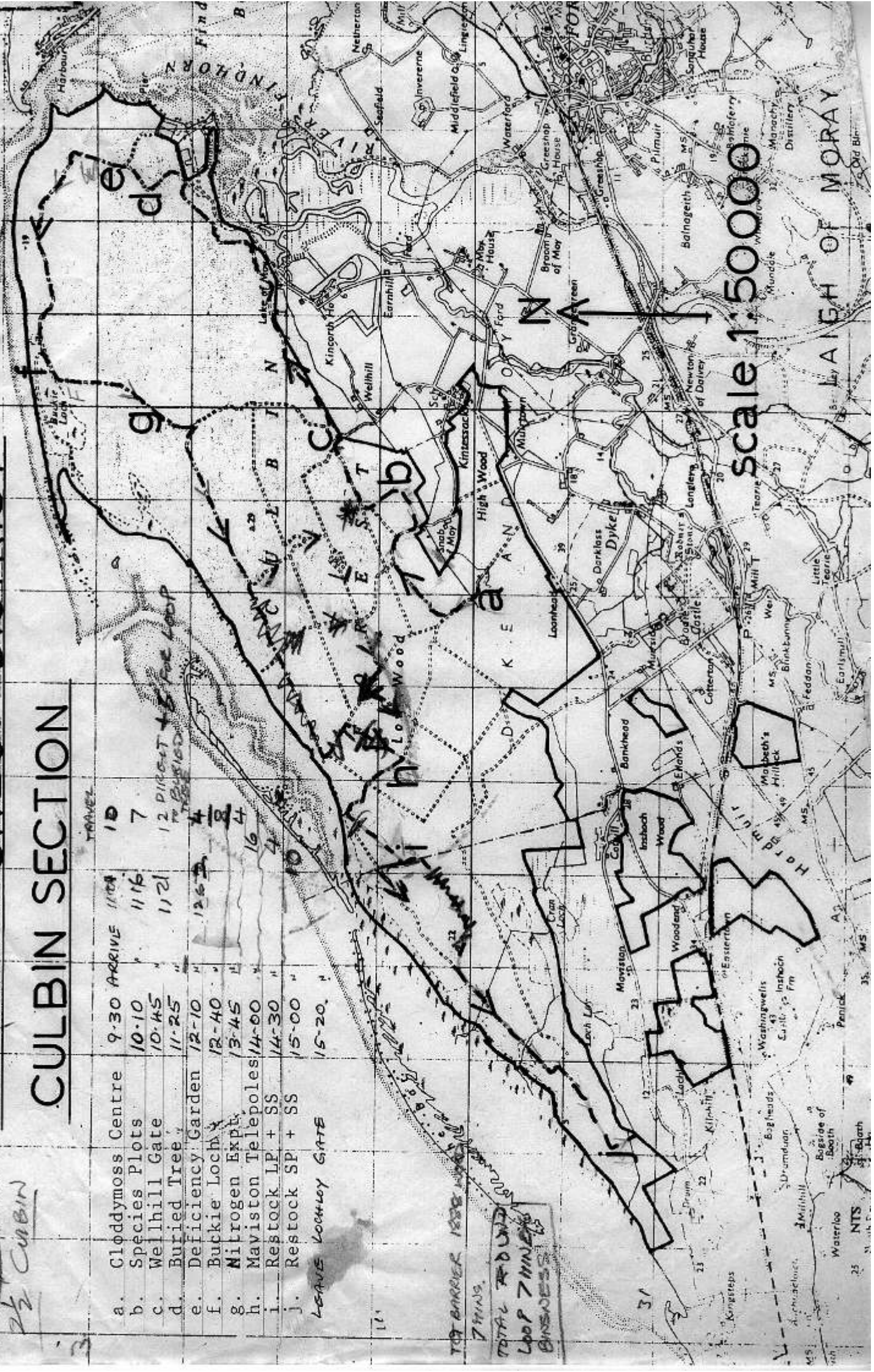
MORAY FOREST DISTRICT

CULBIN SECTION

	ARRIVE	11:04	10
a. Cloddymoss Centre	9-30	11:04	10
b. Species Plots	10-10	11:16	7
c. Wellhill Gate	10-45	11:21	12 DIRECT + 5 FOR LOOP
d. Buried Tree	11-25		12.6
e. Deficiency Garden	12-10		4
f. Buckie Loch	12-40		16
g. Nitrogen Expt	13-45		4
h. Maviston Telepoles	14-00		10
i. Restock LP + SS	14-30		15
j. Restock SP + SS	15-00		15-20

LEAVE LOCHWAY GATE

TOTAL ROAD
LOOP 7 MINUTES
BUSINESS



scale 1:50,000

LAY OF MORAY

CULBIN FOREST

encroachment of moving sand on to agricultural land. Culbin was the second forest started by the Forestry Commission in North-East Scotland when the sand-

Culbin Forest now extends to 7,380 acres of which approximately 6,000 acres is situated in one block of low lying coastal sand dunes. This runs approximately 7 miles westwards from the mouth of the River Findhorn on the southern shore of the Moray Firth.

Planting on stable sand was straightforward for trees were direct planted. The early history of this district is uncertain, but it is probable that for hundreds of years large quantities of sand were brought down to the sea by the River Findhorn and deposited along the coastline by west-flowing currents and tide, building up sand dunes of considerable size, particularly in the area known as the Maviston Sandhills towards Nairn. In 1694 the Barony of Culbin, a large and fertile estate comprising many farms and crofts, was completely buried by sand which was blown from the west in a windstorm or series of storms of great violence. Not even the River Findhorn escaped, for sand blocked the river mouth and the water found another course to the sea, some miles to the east, where it still runs today.

From then until the early 19th century the Culbin sands lay bare, a desolate waste of moving sand dunes with here and there shallow depressions filled with water and known as "Winter Lakes". In 1839 Mr. R. Grant of Kincorth, made the first planting on Culbin when he planted Scots Pine and European Larch on 70 acres, primarily to create a barrier which would prevent further movement of sand on to agricultural land. This was followed by further plantings by other estates so that by about 1860 there were believed to be about 500 acres planted. Scots Pine regenerated freely on the more sheltered, stable sand areas where it could escape rabbit damage, so that by the end of the 19th century there were approximately 3,000 acres of woodland, though much of this was of poor quality, particularly on the seaward side.

The whole area was logged over during the 1914-18 war leaving only a few scattered blocks and a strip to the north and east to prevent sea erosion, and the

these conditions favour Corsican Pine and over 2,000 acres have been planted.

/encroachment

This is believed to be the furthest north planting of this tree on such a large scale. Lodgepole Pine has been planted on only a small scale because of its high moisture requirement, other species play a very minor role.

In the ten years up to 1964 almost all the timber output from Culbin was used for mining timber, either sawn or in the round as props, in about equal proportions. The situation has changed and at present 67% of the outturn is made into pulpwood for the Fort William mill, most of the remainder being used for saw timber, although small quantities of wood wool and G.P.O. telegraph poles are also prepared. 200,000 hoppus feet of timber is cut annually, mostly in the form of thinnings, with small final fellings of old acquired woodlands. Half this amount is sold standing and half is worked by Commission personnel.

From 1947 to 1954 there were about 80 men in the squad, working on thatching, planting, road-making and production. Planting has ceased except for replanting felled areas and road-making is almost completed. These changes in work availability, coupled with increased productivity through training, have lead to a drastic reduction to the present labour force of 18. Three of these men are currently helping to clear timber blown during the January Gale in West Scotland.

It is necessary to maintain a certain minimum labour force for fire protection. The combination of low rainfall and light sandy soil sometimes causes a wilting condition in the trees which makes them particularly inflammable. To combat the danger of forest fires there are two fire towers linked by telephone to a Fire Control centre at the Forester's Office, which is equipped with V.H.F. radio, so that squads working in the Forest can be summoned immediately any emergency arises and contact can be maintained with fire fighting vehicles which are similarly equipped. Happily there have been no fires at Culbin for several years.