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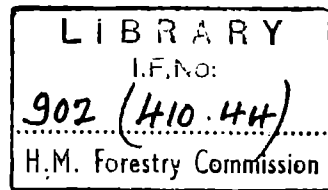
SELBY

FOREST

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FORESTRY COMMISSION

HISTORY

of

SELBY FOREST

1920 - 1951

NORTH EAST (ENGLAND) CONSERVANCY

HISTORY OF SELBY FOREST

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HISTORY OF SELBY FOREST

CHAIRMAN'S COMMENTS

Selby has proved to be one of our most difficult areas and I am not clear, after reading the history, that we yet know how to deal effectively with similar conditions.

The early (P.21-P.24) plantings of the extensive clear-felled areas with ash and poplar in mixture was a bad beginning and based on a misunderstanding (common at the time) of the silvicultural requirements of ash. Judging from subsequent experience in the use of conifers, however, and in particular of Douglas fir, Japanese larch and Sitka spruce (with regard to some of which there was no local evidence of suitability) I doubt whether we could have made a satisfactory job of it on the basis of straightforward planting, though better results than with ash could have been obtained by a more extensive use of poplar pure in the damp places and the frost-hardy Scots pine and perhaps Norway spruce on the drier ground.

My last visit to Selby was in 1941 and as I am unlikely to inspect the forest again I append a copy of my minute of 17/6/41 (File 68/29). I draw special attention to the last two paragraphs, which further experience of roughly comparable areas confirms. I think the history would be greatly improved if the Research Branch would add a section, based on an ad hoc inspection, on the results so far obtained or indicated by the new approach to Selby problems.

R.

1.1.52.

Copy Minute Sheet on File 68/29 - Inspection, Selby Forest.

I had time, unfortunately, for only a very short visit.

It appears that the early plantings which were on a relatively large scale were made with little experience of appreciation of the local conditions. These turned out to be most difficult by reason of the severity of spring frosts and the generally high water table. Extensive clear fellings and replanting with exacting species followed by routine methods of weeding landed us with unsatisfactory plantations for which it is difficult to prescribe treatment.

Scots pine on the slight elevations has done reasonably well and where Douglas fir was originally planted some of them have been nursed up into the pine crop. I liked the attempt to raise Norway spruce in a damp place under the partial protection of birch; Sitka spruce would probably not stand the frost even with such shelter.

The future of the hardwoods, among which there is much ash, is dubious. I saw something of the thinning in progress and it struck me as probably too drastic, but was unable to satisfy myself on the point. It should now be possible to bring up beech under some of it and an experiment in that direction should be made. (No beech has apparently ever been planted in the area).

Poplars have done well in places and what there are should be kept well thinned and pruned. I was told that the Research poplar plots had failed and been abandoned. I would like to have a report on this.

This area is a challenge to our silvicultural knowledge and procedure. It is not to be got right by wholesale methods but by slowly improving the stocking. Effective use of shelter, careful choice of species and economy in the use of plants are all necessary. This implies that there must be no rabbits, of which I saw far too much evidence.

It is important that we should learn how to deal effectively with felled woodlands of this and other types which are likely to come under our charge. There is much to learn from Selby and a good basis on which to develop procedure. I would, therefore, like the Research Branch to be

associated more closely with the Divisional Officer in working out and applying methods of treatment.

(initialled) R.L.R.

17.6.41

HISTORY OF SELBY FOREST

GENERAL DESCRIPTION OF THE FOREST

Situation

The forest is named after Selby Town lying four miles to the south-east. It is known locally as Bishopwood and is situated in the West Riding of Yorkshire. The motor road from Sherburn-in-Elmet to Selby passes through the Forest.

Area and Utilization

An area of 756 acres was acquired from the Church Commissioners of England by lease on the 25th December, 1920. There was a further acquisition from the Church Commissioners of 39 acres on the 9th November, 1948: this additional land is conveniently situated between Compartments 2, 3 and 5.

Apart from the recent acquisition which is ridged and furrowed, it is probable that Bishopwood has been woodland for centuries. There is, however, not much evidence of the stocking of the wood before 1914. It was no doubt mainly hardwoods with a slight and irregular mixture of conifers probably Norway spruce, Scots pine and European larch.

The area included in the earlier lease was clear felled towards the close of the 1914-18 War. Planting by the Forestry Commission commenced in 1921. From this year until 1924 approximately 517 acres were planted with poplar and ash in mixture over the greater part of the area, and poplar pure in the wetter parts. A belt of Sitka spruce one chain wide was planted along the south and west boundaries of the forest. In 1925-1926 the remainder of the forest was planted with Douglas fir, European larch, on the bracken areas, and pure poplar on the wet areas.

Poplar and ash were regularly beaten up, and weeded twice yearly until 1927 but owing to severe damage done by frost to the ash it was decided to leave the whole crop to come through the undergrowth for protection. Poplar and ash, other hardwoods (coppice and natural regeneration) form the main crop to-day. The distribution of poplar is wide spaced; the mixed hardwoods are in the pole stage and there are some patches of scrub. Conifers have been introduced into some of the scrub areas.

In 1927 there was a severe late frost which destroyed all of the Douglas and larch and it was then decided to replant this area with Scots pine and later with a small area of Corsican pine.

In 1934 Norway spruce was introduced in Compartment 10 with promising results but the area was destroyed by fire in 1943.

The growth of the belt of Sitka spruce along the boundary and a few acres planted in Compartment 22 is very unsatisfactory.

The second acquisition was clear felled during the Second World War.

S E L B Y

TABLE I

From	By	Date	Plantations Acquired	Plantable Excl. Col. 4.	Nurseries	Agricultural	F. W. H.	Unplantable Excl. Col. 4.	Other Land		Land not Transferred	Total
									Description	Acreage		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Selby from the Ecclesiastical Commissioners	Lease	10.2.21	-	794	-	-	1	-	-	-	-	795
Part of Bishops Wood from the Church Commissioners	Lease	9.11.48	-	-	-	-	-	-	-	-	-	-
Totals			-	794	-	-	1	-	-	-	-	795

TABLE II

Utilisation of Ground

(a) <u>Plantations:-</u>		
Acquired	-	
Formed by the Commission	794	794 acres
(b) In hand, awaiting planting		
Blanks after felling	-	
Burnt areas	-	
Other land	-	-
(c) Nurseries		-
(d) Agricultural		
Number of tenancies	Area	-
(e) F.W.H. Number 1	Area	1 acre
(f) Unplantable land in hand		-
(g) Other land		-
		<hr/>
		795 acres
		<hr/>

Physiography

The ground is very nearly level but the variations in height which do occur are of great importance. The highest recorded contour is 25 ft. and the lowest recorded contour is 20.5 ft. but there is little doubt that there is land as low as 17 ft. and 15 ft.

To a large extent the present drains occupy natural valleys and thus, though artificially deepened and maintained, represent the ancient drainage system of the area. But there are a number of entirely artificial drains, modifying directions of outflow.

Geology and Soils

The greater part of the wood is on "Warp and Lacustrine Clays".

The soils of the wood vary in general from heavy loams to fine sandy medium loams. Clay is often present below a depth of 8 in. to 12 in. but pure clays are relatively rare.

Vegetation

The vegetation over much of the area has been in a state of constant change due to clear felling, planting, weeding and cleaning. Generally the vegetation is grasses, brambles and bracken patches. Two of the commonest ground vegetation dominants are Pteridium and Aira caespitosa.

Meteorology

There is no recorded rainfall at the forest. It is estimated to average 30 in. per annum.

Risks

Those compartments lying to the north of the motor road in which there are blocks or groups of conifers constitute the area where the fire risk is greatest. The area to the south side of the motor road is almost entirely hardwoods and the fire risk is low at all times.

Invasion by rabbits from neighbouring lands is difficult to stop due to the numerous dykes passing through the fencing and the loose nature of the soil. The fencing needs constant patrolling to stop holes.

Infestation by Pine Shoot Moth is considerable and damage by late spring frosts is often severe. There is some soot deposit on foliage but there is no recorded evidence as to its bad effects on the tree growth in these woods.

Roads

The recent widening and improvement of existing rides and the construction of new culverts and cinder roads has done much to improve access and extraction through the plantations.

Labour

Lately the supply of labour has been inadequate for all operations planned.

SILVICULTURE

(i) Preparation of Ground

A great part of the area had to be cleaned of lop and top prior to planting. Coppice growth is rapid in the open and birch is widespread. The whole area is fenced with rabbit netting. As the forest is almost flat with a very low elevation there is a very intricate system of dykes and smaller drains.

(ii) Choice of Species

Scots pine. This species was not introduced until 1928. It has suffered badly from Pine Shoot Moth. There is some soot deposit on foliage but there is no recorded evidence as to its bad effects on the tree growth in these woods.

Corsican pine. This pine was introduced about 1930. It is less liable to attack from shoot moth and seems more smoke resistant. The form is much better than Scots pine.

Japanese larch. If protected by high open cover Japanese larch seems to escape damage by late frost.

Douglas fir. This species was introduced in 1925 but was practically all destroyed by late frosts in 1927.

Norway spruce. The results are promising in mixture with pines.

Sitka spruce. This species has suffered severely from frost though open high cover appears to afford some protection.

Abies grandis. This tree was only introduced recently over a small area under high cover.

Beech. There is only a small area of this species. Results are promising where shade is afforded by other hardwoods.

Oak. A small area planted pure (Compartment 7) and other areas (Compartments 11 and 19) planted alternatively with Norway spruce are doing well.

Ash. This tree has suffered severely from frost damage.

Poplar. Due to attack by unidentified larvae poplar is difficult to establish but once established it grows well.

Sycamore. What there is of this species has been entirely got from natural regeneration and coppice.

(iii) Planting

(a) Spacing. Ash was planted over the greater part of the hardwood area (Compartments 1 - 17) at $5\frac{1}{2}$ ft. and poplar was also planted in small pure groups at 9 ft. Douglas fir was planted over about 200 acres at $5\frac{1}{2}$ ft. but this species was replaced following severe frost damage by Scots pine at the same planting distance. Replanting with Norway spruce, Corsican pine and Sitka spruce following fire has been at $5\frac{1}{2}$ ft. x $4\frac{1}{2}$ ft.

(b) Type of Plants. Conifers have usually been 2 + 1 or 2 + 2 obtained from Allerston District nurseries. Poplar plants were mostly one year rooted cuttings struck in the forest.

(c) Methods of Planting. Poplar was pitted and the other species were notched. Part of the area replanted after fire was ploughed by R.L.R. at $5\frac{1}{2}$ ft.

(d) Annual rate of planting. Much of the planting was done in 1922 and the succeeding few years. Replanting of the burnt area in Compartments 10, 11, 18 to 20 was carried out from P.44 - P.47.

(e) Manuring. There has been no manuring.

(f) Success or otherwise of establishment. See observations under Choice of Species.

(iv) Ploughing

Part of the area replanted after fire was ploughed by R.L.R. Planting was on steps on the side of the furrows.

(v) Beating Up

Ash was beaten up and heavily weeded for several years but was continually damaged by late frost. This was then left to fight its way through undergrowth and coppice with the result that part of the area is now mostly natural regenerated birch and plots of sycamore with few ash amongst them. Douglas fir was practically all destroyed by late frost and a change was made to Scots pine for beating up. Most species were difficult to establish and required at least beating up two or three times.

(vi) Weeding

Owing to heavy growth of grass and bracken weeding has been necessary at least twice annually for four or five years following planting.

(vii) Mixture of Species

All mixtures were planted at the same time. Scots pine is outgrowing Norway spruce and Corsican pine but it is likely that the Corsican pine will overtake the Scots pine. In P.44 a small area of oak was planted in alternate lines with Norway spruce as a nurse; the oak is outgrowing the Norway spruce which are being removed for sale as Christmas trees. In 1949 an area of birch and hardwood coppice was opened up and underplanted with Abies grandis. Japanese larch was also used but only under a very light high cover left as protection against frost.

(viii) Rates of Growth

A graph showing the height growths of poplar, Corsican pine and Scots pine is attached to this history.

(ix) Past Treatment of Established Plantations.

To date approximately 200 acres of Scots pine ranging from 18 - 20 years old have been brashed. Poplar has been pruned annually.

Cleaning of coppice growth has been necessary throughout the forest. Apart from the poplar areas and the best of the hardwood areas little thinning has been done yet. Poplar has been sold for round mining timber and Scots pine for stakes.

Research

Dr. E. W. Jones, Imperial Forestry Institute, Oxford, visited Selby from 8th to 15th April, 1942, and subsequently prepared a report upon the whole forest dated 5th May, 1942.

The Research Branch have two sample plots as follows:

Poplar	Compartment 4	first measured 1942
Sycamore	Compartment 12	first measured 1950

Conclusions

Frost and the high water table have made the establishment of these low lying plantations very difficult. The growth of poplar and Corsican pine once established is fair. Scots pine is subject to severe damage by shoot moths. Douglas fir and Sitka spruce are too susceptible to frost and the growth of Norway spruce is not vigorous. There is much good quality birch and sycamore in the pole stage. Small areas of young planted oak are encouraging. Very little beech has been used so far but what little has been planted is making good growth under or beside shade.

History of Selby Forest

APPENDIX I

NOTES FROM INSPECTION REPORTS

1. Sir John Stirling Maxwell's Visit. 16.8.28. The almost total failure of Douglas fir due to severe frosts was noted and it was decided to plant fair sized Scots pine plants on mounds.
2. Mr. Sangar's Visit. - 10.30. It was seen that Scots pine on turves were less successful than on the flat.
3. Technical Commissioner's Visit. 3.10.31. Frost damage to Douglas fir and larch seen to be very heavy. Protection afforded by coppice and weedgrowth was having a decidedly beneficial effect on ash and poplar. The future treatment of the whole area was suggested and should be according to vegetation types.
4. Assistant Commissioner's Visit. 23.1.33. Areas originally planted with Douglas fir and European larch and since beaten up with Scots pine are now growing strongly. Ash and poplar are growing quite well in some places.
5. Acting Assistant Commissioner's Visit. 9.4.41. The hardwood crop to the south of the motor road was considered to be very unsatisfactory and doubt was expressed as to the future of the crop. The growth of poplar was not considered satisfactory. On the north side Scots pine had been attacked by the Pine Shoot Moth and it was considered not suitable for this area, smoke being one of the factors affecting this species and making it prone to attack by the Pine Shoot Moth. Growths of Norway spruce and Corsican pine were considered satisfactory.
6. Chairman's Visit. 19.5.41. Growth of poplar in Compartment 4 was considered to be satisfactory. Growth of Norway spruce in Compartment 10 was very satisfactory; this had been afforded high cover by birch against frost. Corsican pine (P.30) in Compartment 23 was considered to be fairly satisfactory but some doubt was expressed as to the merits

of this species to withstand wind fall on an area of the Selby type.

7. Mr. Guillebaud's Visit. 8.10.41. (with Dr. M. C. Rayner).
Poplar seems to have made remarkable growth during the past five years; Ash backward but improving. Sycamore were beginning to seed generally over the area and a considerable number of oak seedlings were appearing. Scots pine were very vigorous but considerably damaged by Tortrix and likely to produce coarse timber. Patches of Norway spruce seen were very encouraging but Sitka spruce crippled by frost.
8. Acting Assistant Commissioner's Visit. 19.7.43. On this occasion a rather more optimistic view was taken of the hardwood area/^{than}in 1941.
9. Mr. W. L. Taylor's Visit. 14.8.43. This was mainly in connection with a fire which occurred on the north side of the forest on 31st July, 1943.
10. Deputy Director General's Visit. 8.12.47. The planting of spruce was questioned.
11. Silviculturist (N) Visit. 17.2.48. Surprise was expressed at the good progress of Norway spruce (P.44).
12. Conservator (E) Visit. 7.12.46. Deputy Director General's Visit. 8.8.47., and the Chief Research Officer and Conservator (E) Visit. 15.3.48. Arising out of these visits the following proposals for the future treatment of Selby Forest have been agreed:-
 - (i) Every effort will be made to reduce the water table in this forest by improvement of drainage.
 - (ii) Clear felling will be avoided in future.
 - (iii) Where there is sufficient birch or other hardwoods of good quality to form a crop these areas will be developed with that object in view cutting out the bad trees and favouring the better ones.
 - (iv) Where the present tree growth on the ground is so poor and badly formed as to show no prospect of producing a useful timber crop, it should be allowed to grow up to form a canopy at least 10 ft. - 15 ft. clear of the ground

(i.e. the trees should be 20 ft. - 25 ft. high) or more.

It should then be underplanted.

The species to use for underplanting will be beech, consisting of large well-rooted plants, at least $1\frac{1}{2}$ ft. - $2\frac{1}{2}$ ft. high. The overwood should not be too dense and should be removed gradually whenever the beech begins to show signs of the effects of shade, usually five to eight years after planting.

(v) In existing large blanks where there is no overhead shade it is proposed to try Corsican pine, but intensive weeding will have to be done and the drainage will have to be carefully watched.

(vi) In all areas proposed for planting, intensive drainage will be done three years before planting but the clearing and preparations of the ground will be done the same year as planting takes place.

(vii) Where groups of natural regenerated sycamore exist they should be retained and tended.

13. Later it was agreed that birch should be grown on a turnery rotation not to timber as there was no point in producing birch which is unsaleable, though if pure it should not all be felled at once but sufficient left to form a feathery top for underplanting with beech.

APPENDIX II

SUPERVISION

Conservators

1946 - 47	Mr. R. E. Fossey (acting)
1947 - 50	Mr. G.J.L. Batters
1950 - to date	Mr. C. A. Connell

Divisional Officers

1921 - 27	Mr. A. P. Long
1927 - 39	Mr. A. D. Hopkinson
1939 - 48	Mr. R. E. Fossey
1948 - 50	Mr. W. Forsyth
1950 - to date	Mr. P. F. Garthwaite

District Officers

1925 - 26.	Mr. G. B. Ryle
1926 - 33	Mr. A.H.H. Ross
1933 - 39	Mr. R. E. Fossey
1939 - 47	Mr. A. Paterson
1947 - to date	Mr. T. G. Wood

Foresters

1921 - 1926	Mr. J. T. Anderson
1926 - to date	Mr. W. Wood

APPENDIX III

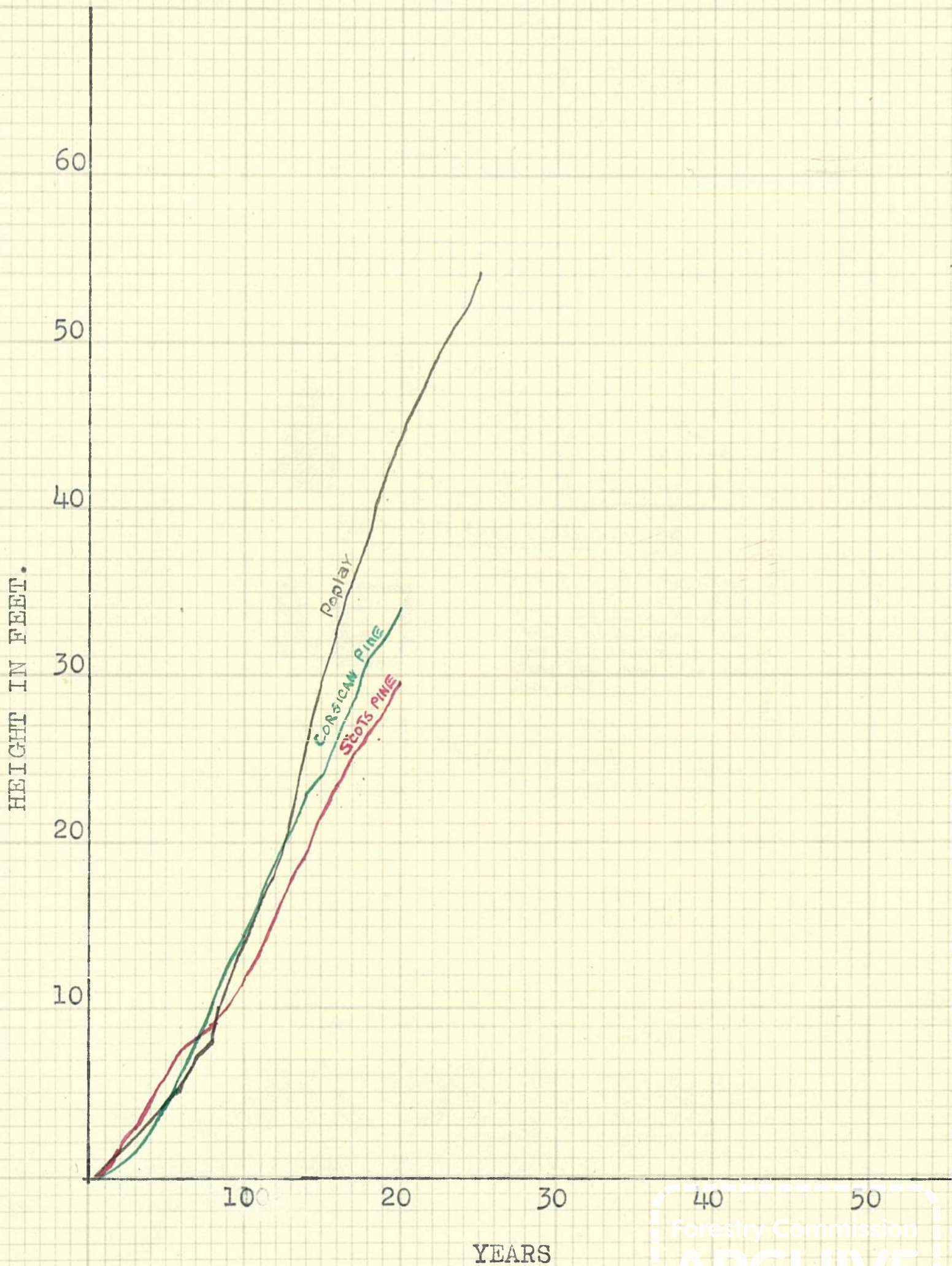
6 in. Photoprint showing P. Years

APPENDIX IV

B - Graph of Height Growth of Poplar (P.25),
Scots pine (P.30) and Corsican pine (P.30).

HISTORY OF SELBY FOREST

APPENDIX III - B.



Height Growth of Poplar, Corsican Pine and Scots Pine.



Selby

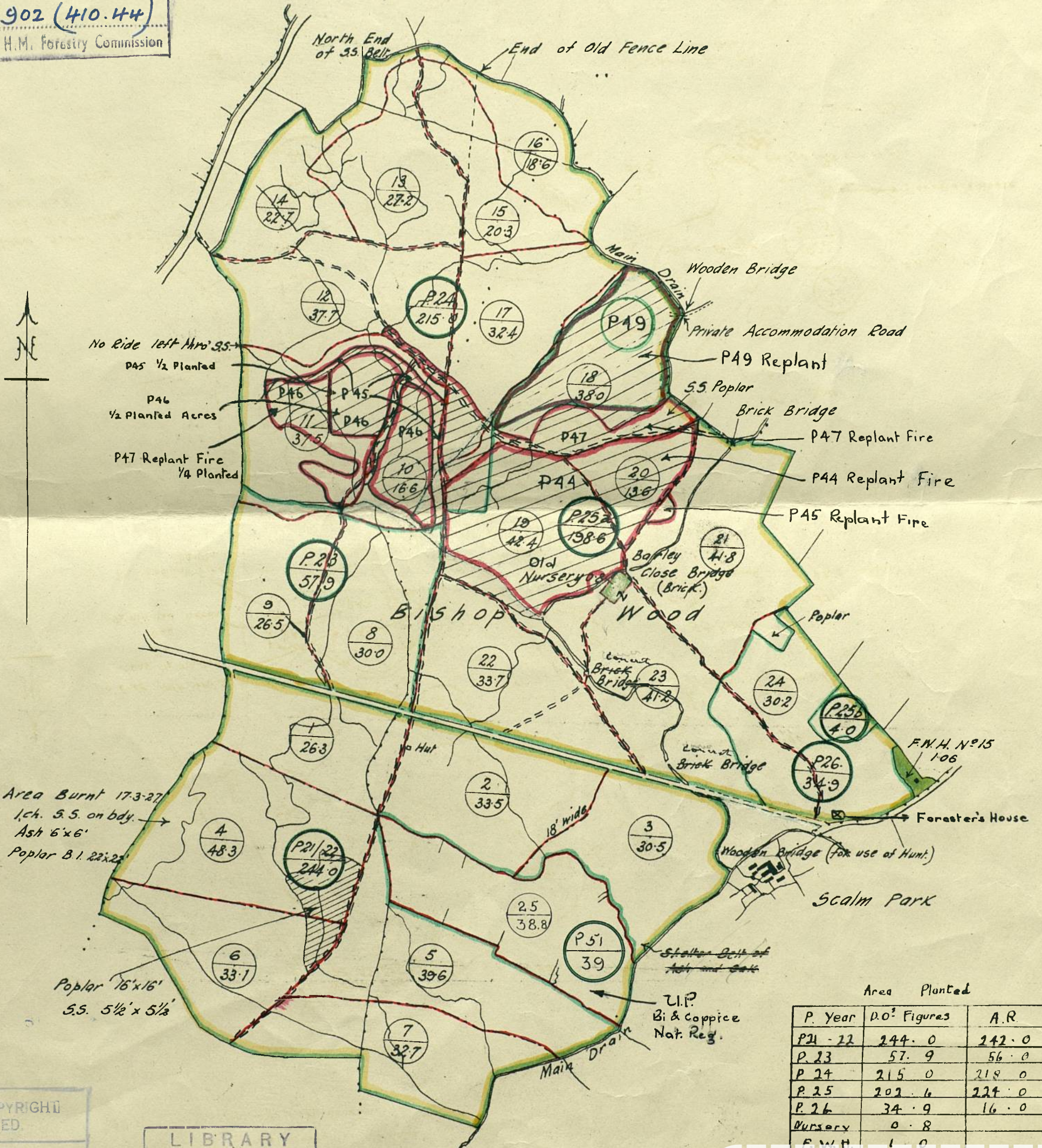
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Area Planted		
P. Year	DO ³ Figures	A.R.
P21-22	244.0	242.0
P23	57.9	56.0
P24	215.0	218.0
P25	202.6	224.0
P26	34.9	16.0
Nursery	0.8	
F.W.H.	1.0	
Totals	756.2	756.0
P44	46.1 acres RP (P24 + P25)	
P45	" " " " "	
P46	22.5 " " " "	
P47	14.5 " " " "	
P49	24.5 " " " "	

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Scale: 6" = 1 Mile.

