FORESTRY COMMISSION

HISTORY

OF

MARDEN

FOREST

SE(E) CONSERVANCY

FORESTRY COMMISSION

HISTORY

of

MARDEN FOREST

1937 - 1951

SOUTH EAST (ENGLAND) CONSERVANCY

History of Marden Forest

Contents

HISTORY OF MARDEN FOREST

GENERAL DESCRIPTION OF THE FOREST

Situation

Marden Forest takes its name from the nearby villages of East Marden, West Marden and Up Marden. It lies midway between Chichester and Petersfield, being some 6 miles in a straight line from each town, and forms part of the Parishes of East Marden and Stoughton, in the County of Sussex.

The villages of Stoughton and Walderton are close to the Forest on its north-west side. The road linking these two villages connects with the Chichester road to the South, and the Petersfield road to the North. Emsworth is 5 miles to the south-west, and has the railway station nearest to the Forest.

Area and Utilisation

Marden Forest was acquired in three contiguous blocks, namely, Wildham Wood, Inholmes Wood and Stoughton Down, etc., and Walderton Down. Wildham Wood and Inholmes Wood consisted largely of hazel coppice with short-boled oak standards. In Wildham Wood there were plantations consisting of some 23 acres of European larch, Douglas fir and Scots pine, 4 acres of beech/ash 25 years old (approx.) and 9 acres of widely spaced larch and Douglas fir. Ash and sycamore were also present. In Inholmes Wood, the timber was reserved to the vendor, but in Wildham Wood, it was largely felled by the Commission, suitable trees being retained for overhead cover for beech. The Stoughton Down area was mainly used for sporting, rabbits being practically the only bag. The Stoughton Stables also made much use of the rides and gallops, and continued to do so until 1952. Walderton Down was similar to Stoughton Down in that it was used for little other than rabbit shooting. During the war years, the entire south east slope was turned over to agriculture, and it remains so to this day.

Statement of Acquisitions - TABLE I (Areas to nearest acre)

From	By	Date	Plantations Acquired	Plantable (excl. Col.4.)	Nurseries	Agricultural	F.W.H.	Unplantable (excl. Col.4.)	Other Land				Total
									Land Permanently Transferred		Land Temporarily Transferred		
									Description	Acreage	Description	Acreage	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Waid Helyer & Lloyds Bank Ltd.	Purchase	31/2/37							Agriculture	37			348
Liphook Game Farm Ltd.	Purchase	17/12/37	27	999	-	167	-	-	-	-	-	-	600
Phipps Hornby	Purchase	31/8/39											245
TOTALS			27	999	-	167	-	-	-	37	-	-	1193

Statement of Utilisation - TABLE II (Areas to nearest acre)

(a)	Plantations:-		
	Acquired	27	
	Formed by Commission	700	727 acres
(b)	In hand, awaiting planting:-		
	Blanks after felling	-	
	Burnt areas	-	
	Other land	299	299 acres
(c)	Nurseries		-
(d)	Agriculture		167 acres
(e)	F.W.H.		-
(f)	Unplantable land in hand		-
(g)	Other land		-
		Total	1193 acres

Physiography

Marden Forest has a most peculiar shape, not unlike that of a bent bow, about to send an arrow to the south east. The main slopes are towards the "string of the bow". Aspects vary and are mainly as under:-

Inholmes Wood - this block is shaped like an arm pointing south west. Aspects are south-east, north-west, and north-east. Exposure is not important. Heights 250 ft. - 350 ft.

Wildham Wood - a more or less square block sloping from 500 ft. in the north-east to 220 ft. in the south-west. The slope is gentle and exposure unimportant.

Stoughton Down and Bow Hill - this is the middle part of the "bow". Bow Hill is where the hand would grasp the weapon. The ridge of the "bow" is about 600 ft. high sloping (quite steeply in places) to about 300 ft. The slopes are mostly south-west, west, and north-west. There is a fair degree of exposure on some of the north-west slopes.

Walderton Down - this is the broadened foot of the "bow" with slopes to all points of the compass excepting north-east. The ruling slopes are north-north-west and south-south-east. High ground having the latter aspect (to the north of the down) is much exposed to the sea winds. Elsewhere exposure is not severe. Heights vary from 500 ft. to 250 ft.

Geology and Soil

The solid geology is chalk, but in its breakdown it has given rise to

soil types ranging from thin, dark rendzina through rendziform brown earths to brown earths proper. This soil formation depends upon the configuration of the ground, and upon the natural vegetation in the several areas.

In general, the steep slopes are characterised by thin rendzina soils with hardly more than 4 in. of calcareous soil before broken chalk is reached. The gentler slopes allow a deeper soil to form, and this is equally true of the relatively flat places; here acid conditions are often found, and downland heath associations (characterised by Erica cinerea) are produced. In the valleys, rich deep brown earth is frequently found. The hills have enriched the valleys over the centuries.

The soil changes in chalk areas are relatively speedy, once a tree crop has become established. An all round improvement of the rendzina soils can be expected after the first rotation, especially where slopes are not too steep.

Flints are present in all the soil types found at Marden.

Vegetation

The forest shows all gradations from open downland to established woodland.

Open Downland. These areas are characterised by the typical downland grasses (Festuca, Brachypodium, etc.) together with such herbs as burnet saxifrage, salad burnet, trefoil, thyme and several orchids. Squinancywort is also present.

Downland under Scrub. In places, an invasion of juniper, gorse, elder, thorn and small yew shows a further stage of ecological progression. On the higher ground "downland heath" has formed over several acres (especially in Compartment 31 and near to the gallops - Compartments 25, etc.). This is characterised by the appearance of Erica cinerea, bracken, and gorse, with scrub ash and thorn. Such an area has been set aside as an ecological reserve under the Nature Conservancy. The main study will be to see how far rabbit grazing affects the spread of Erica cinerea.

Downland under climax Yew. Large areas consist of dense and almost pure yew wood. They have with them variable numbers of scrub oak, ash and whitebeam. This is a climax woodland, the most famous example of which is that in Kingley Vale just outside the Forest boundary.

Established Woodland Areas. These have deeper soils, and have been under hardwoods for many years. Dogs mercury is common here, whilst numerous grasses make their appearance where light conditions permit. Clematis is a common weed and bramble is dominant in some places. Dogwood and privet are also common, especially the former. Amongst the less common plants, hellebore is noteworthy.

Meteorology

Details of climatic data have been supplied by the Air Ministry and copies of the schedules are attached. Climatic conditions are mild. Heavy snowfall is rare and frost very seldom severe.

Tangmere is the nearest meteorological station to Marden for which full climatological records are available.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Chichester													
Average Rainfall	2.42	2.02	2.01	1.63	1.74	1.87	2.22	2.49	2.28	3.75	3.16	3.16	28.75
Period 1881-1915													
Tangmere													
Temperature F.													
Averages of mean daily max.	45.3	45.4	50.3	56.6	62.0	67.1	70.9	71.0	66.7	59.1	51.8	45.6	57.6
Period 1946-50													
Averages of mean daily min.	34.8	35.0	36.8	40.1	44.6	50.5	53.6	53.1	51.6	45.3	40.5	35.5	43.4
Period 1946-50													
Highest Max.	55	59	66	71	82	87	92	91	82	73	61	57	92
Lowest Min.	15	13	23	27	29	39	41	39	35	26	21	16	13
Period 1946-50													
Snow Average annual number of days with snow falling: 12													
Average annual number of days with snow lying: 5													
Midhurst Average date of first frost: November 13th													
Average date of last frost: April 10th													
Highest max	54	57	65	73	81	85	89	93	87	75	60	55	93
Lowest min.	17	17	16	25	32	36	39	42	33	30	25	17	16
Period 1908-20													

Risks

Fire

Inspection Reports record damage by fire in the first acquisition, Wildham Wood (see esp. Appendix I - Report of 24th November 1937). This portion of the Forest adjoins the East Marden - Stoughton Road, and the fire may well have originated from there. In general, the fire danger is not great. Those who walk the downs here generally appreciate the dangers of fire. For others, who motor out for the day, a grass car park has been left unfenced at the foot of the down, near to the forester's office. This is a very attractive corner, and few care to stray into the plantations having once established themselves on this grassy slope.

The most dangerous time for fire is in late winter and early spring: for then the hills are covered with dead vegetation, which, even a brief spell of drying winds can convert into highly inflammable material. It will be appreciated that the exclusion of rabbits allows the downland grasses to grow rapidly, and form dense mats in many places. Areas of gorse offer another danger. Fortunately, there are many points of vantage from which large stretches of the forest can be observed. Generally, one patrol suffices during dangerous times.

Animals

(a) Rabbits and Badgers - Rabbits have proved by far the greatest enemy to the establishment of young plantations. In the past, extensive damage has been caused. In the P.51 area, for example, at a time when no local warrener was available, several acres were devastated during the snows of the January of that year. During the same period, widespread destruction was caused in the P.50 compartments. Indeed, sporadic damage was caused everywhere in the younger beech plantations. To meet this very strong invasion, warreners were brought in from Buriton, and efforts made to find a permanent warrener. This was done and later a second permanent warrener added. For some years to come extreme vigilance will be needed to avoid recurrence of past damage. Daily inspections of the fence line are part of the routine work of the warreners (see the note on badgers below).

In P.51 Renardine was used on the fence line at Walderton Down and appeared to reduce the attempts to break in.

As at the nearby Buriton Forest, so at Marden, fencing is absolutely

necessary if a crop is to be raised. Here badgers have been more troublesome than in most areas, for whereas a fence rooting badger may be a tolerable nuisance elsewhere, there is no doubt that unless such damage is speedily repaired at Marden, rabbits, in numbers will gain entry. This danger becomes less and less as the years pass, for the vigorous warrening from 1951 onwards, coupled with the gradual intake of dense yew for planting, have and are lessening the pressure from rabbits. Indeed it has been observed that foxes have foresaken the almost rabbitless downland scrub for the now more likely hunting ground in Wildham Wood and on neighbouring land. The problem of exterminating rabbits in the yew areas is not so great as might be imagined, provided a really skilled warrener is employed. Rabbits do not choose the dense yew groves for a dwelling place; they prefer such open grass glades as occur in the yew areas. The problem is not so much the numbers of rabbits which lurk in the yew, as the difficulty of access. Brushing up of the base of the yew helps, although it is expensive when done over large areas. The system adopted at Marden is to fence in the selected yew block; prepare the ground for planting (this involves the removal of some yew) and improve access by brushing and racking. The warreners can now make a full attack on rabbits, although further brushing up of yew will be needed to enable them to reach all the warrens with gassing equipment.

(b) Squirrels - These animals are very numerous outside the forest boundaries, although they are well under control inside. The earliest beech plantations are now of a size which the squirrel selects in his activities. Little damage has been done so far, however, but the case has been very different in the Liphook Game Farm section of Inholmes Wood. This is not Commission property, but bears a crop of beech about 45 years old. In some parts of this very good crop squirrels have done severe damage: many trees are almost ringed at the base, the bulk of the harm seems to have been done in 1949 - a drought year which saw similar destruction in nearby Buriton Forest, though in younger stands.

(c) Deer - Fallow deer are fairly numerous. There are usually about a dozen in the general area of the Forest. There has been no damage of any significance.

(d) Foxes - These animals are common, but their numbers are kept in check by the warrener and there have not been any complaints from the adjoining farmer.

Birds

(a) Game - Pheasants are preserved in Wildham and Inholmes Woods, the shooting rights being reserved to the respective vendors. This does not affect management in any marked degree, but it raises the question of the destruction of stoats and weasels. It is written into the lease that the shooting tenant should do this, and no doubt the question is one of relative values. Game cannot be preserved where stoats and weasels abound; neither can the natural balance be kept without a head of stoats and weasels. The revenue from shooting rights may be thought to more than outweigh this interference with the scheme of nature. In any event, the revenue helps to pay the warrener.

(b) Magpies and Carrion Crows - These are kept down by the shooting tenant, for his own benefit.

(c) Rarer Birds - Hobby hawks and stone curlew are sometimes seen. These are protected birds, mentioned here for their singular interest and beauty.

Fungi. There have been no serious fungal attacks.

Insects. There has been no notable damage.

Climate

In periods of drought, the young plantations on exposed downland are liable to suffer. Insolation is also a frequent occurrence at such time. Frost damage is uncommon.

Roads

The Forest is served by the secondary road from East Marden to Walderton. Petersfield to the North, and Chichester to the South are quite accessible. Emsworth, the nearest railway station, is 5 miles distant and reached over sound roads. Within the Forest, old bridle roads follow the path of least resistance up the slopes, and these are the main internal access routes. In dry weather, transport can pass freely along the main bridle roads; in wet weather, only tractors can negotiate the steeper portions. Road works have consisted in improving existing tracks by use of hardcore and clinkers. Grips have been found necessary, where the gradients are steep enough to cause erosion.

It is intended to improve access by bulldozing and grading certain inferior rides. These will be allowed to grass down and will be mowed as required: thus both access and fire protection will be enhanced.

Labour

During the war, the labour position was difficult, but at present there is no great difficulty in keeping the staff at its average level of fourteen workers. This is perhaps surprising for most of them live many miles away from the Forest, and spend much time in reaching it, and in getting back home. The result has been that only those really fond of their work remain. The staff is quite exceptional in its capacity for work and in its happy spirit.

Despite this, it is clearly undesirable to have a forest of growing importance virtually destitute of resident staff. Housing sites have been difficult to obtain in a district of meagre water supply but there is a firm prospect of one in Stoughton. It is a matter of the utmost importance, that at least two or three tactically situated dwellings should be erected.

SILVICULTURE

Preparation of Ground Prior to Planting

This operation falls into several categories depending upon the nature of the soil and upon the vegetation it bears:-

(a) Old Woodland Sites - The first acquisitions, namely, Wildham Wood and Inholmes Wood, fell mainly into this category. They were found to contain scattered oak of generally poor quality, planted Douglas fir and European larch, together with sycamore, birch and hazel. Dogwood and privet were present. Most of the oak, Douglas and larch were felled and the birch and sycamore utilised as overhead cover for beech. Where overhead cover was absent or deficient, some drifting through hazel was done. The general policy in such areas was then, and remains, to use the crop on the ground as a nurse for the raising of beech. Where both coppice and an overhead canopy are found, the coppice is not permitted to form a second cover over the planted crop. This implies cutting back in ground preparation work and regular cleaning thereafter, until the plantation is out of danger.

(b) Open Downland - This is characterised by a close-knit turf which, in the absence of grazing by sheep or rabbits, degenerates into an uneven shaggy mat. Trees can, and have been raised by direct planting without any

sort of ground preparation, but growth is quicker and the "take" better, if some sort of cultivation is done. On poor downland soils, cultivation serves several important ends:- it reduces weed competition for water and nutrition below ground; it reduces weed competition for light above ground; it improves soil aeration and helps the tree roots to spread quickly. At this stage, it is as well to note that the question of competition for light is the least important of the points raised above and applies more particularly to relatively sheltered downland, where a dense growth of grass can be expected early in the life of the plantation. On open downland, there is much to be said for using weeds as protection against insolation; but even here, there is no advantage in allowing the plant to be pressed in by grass: it should have a few inches clearance during its early life; outside this circle, grass will serve to shield the plant from the direct rays of the sun.

With these aspects in mind several systems of soil cultivation have been tried:-

(i) Ploughing - This was done extensively in the P.50 block. An "R.L.R." plough was employed and furrows were turned at planting distance. The trees were planted half-way down the furrow side on a consolidated "platform". The slopes here are not steep, so the question of contour ploughing, to conserve moisture, hardly arose. There is no question that the results have been remarkably good, although in theory ploughing has the disadvantage of causing an undesirable drying effect; this effect is no doubt counterbalanced by elimination of weed/root competition for two years at least, and by the shelter offered by the furrow side. Furthermore, the unploughed strips bear vegetation, not near enough to the planting to cause early competition, but near enough to afford some degree of protection. Soil aeration is effectively accomplished by ploughing.

Deep or relatively deep ploughing should probably be confined to places where the soil has proceeded somewhat beyond the rendzine stage, and therefore has a fair depth. This implies, indirectly, that steep slopes should be avoided. In any case, contour ploughing of many steep slopes is impracticable, and vertical ploughing would cause drying out, and erosion; it would also be very unwelcome from an amenity standpoint.

(ii) Complete Cultivation - In P.51 and P.52, ploughing gave way to complete cultivation. In P.51 the Sunshine Stump jump plough was used. This machine, consisting of heavy, spring loaded discs can, when properly adjusted, produce a very effective cultivation. A crawler tractor is needed to pull it. It is at its best when the ground vegetation is not too dense; where it is dense, the cut turf is liable to flop back into place, instead of turning over. Should this happen, a cross cultivation, at right angles to the original cultivation, has been found quite effective.

This tool has the advantage of leaving the surface soil in situ, whilst giving a good, and well aerated planting medium. It does, however, need some time to weather down, for the completed work is exceedingly rough and rugged. Planting, for several weeks after cultivation, is neither easy nor advisable.

In P.52, an excellent planting medium was produced, by discing several "stump-jumped" areas with heavy Talbot discs. This operation broke down the turf previously chopped up by the plough into a fine tilth. It settled quickly and had only one disadvantage: in wet weather it became exceedingly gluey and was not, at such times, a planting proposition.

Before considering the merits of this type of cultivation, one further piece of equipment remains to be described - the Ferguson tractor with double-disc plough. This was tried in P.52, but proved almost useless. The slopes were often too much for the tractor and the slice cut by the discs usually flopped back into place, or stood up at awkward angles. After a fair trial use of this machine was abandoned.

The clearest merit of the ground preparation done by the stump jump and the Talbot discs is that a good planting medium is produced without bringing chalk, in quantity, to the surface. Less drying out effect is to be expected than is the case with deep ploughing. The main nutritive soil layers are also readily available to the plant; in ploughing on fairly thin soils over chalk, some dispersal of surface soil is inevitable. Furthermore, grass competition is effectively reduced for a year or two. There is a danger here, in that there may not be enough weedgrowth to give protection from insolation, although ragwort and sow thistle, etc. may quickly establish themselves. Future extraction will not be hampered by deep plough furrows.

Complete cultivation is particularly applicable to shallow soils, and even the danger of insolation is not reason enough to preclude its use, wherever it can be employed.

(iii) Screefing - On steep rendzina slopes where mechanical cultivation is neither possible nor desirable, screefing comes into its own. The screefed patch should be at least ten inches square. Where amenity is important, contour screefing is always done.

(c) Scrub Downland - The sort of territory implied here is downland which has been invaded by elder, juniper, gorse and perhaps an occasional yew. Blackthorn and hawthorn may also appear. Mechanical cultivation is not applicable here, for it would involve the destruction of useful cover. The technique adopted varies with the density of the scrub. Usually it can be thinned out, and brushed up; trees can then be planted through it on screefed patches. Dense gorse and thorn are not amenable to this treatment, and here drifts can be clear cut, leaving protective hedges at either flank. This was done in P.51 at Walderton Down. The drifts are conveniently a quarter of a chain wide, and the hedges about four feet broad. Cultivation by machine would be possible along these drifts, but a seed bed for gorse would be produced and go far to nullify the advantage. The hedges should be at right angles to the prevailing wind, although amenity consideration may step in, and dictate contour drifting. There is no reason why useful cover should not be left within the drift itself, and indeed such thorn or juniper, etc. as will stand should be left after brushing up.

(d) Dense Yew - These natural yew woods set a singular and very interesting problem. Many acres at Marden are covered with a thick, dark blanket of yew, which at a distance appears continuous and impenetrable. On closer examination, it is found that open spaces are not uncommon, and that here and there the yew become smaller or more widely spaced. Here and there, too, ash and oak are discovered and in such places the careful removal of such trees together with selected yew, will often produce a small open space, ideal for group planting. With this in mind, the yew woods, at Marden, are gradually being converted to beech woods in a yew matrix.

Not only does this system gratify silvicultural demands, but it promises to enhance the scenic attraction of the downland.

Screefing before planting is not necessary in all places in the yew wood, for the floor is already bare. The larger, pre-existing, open spaces bear grass, however, and here screefing is necessary.

The eradication of rabbits is essential and as already mentioned can be achieved.

Fencing against rabbits is entirely necessary over the whole Forest.

Choice of Species

Beech is the inevitable final crop tree over most of Marden Forest. Soil conditions dictate this; but where deeper soils are found it is possible and desirable to modify this choice. Thus in the fertile soil of Greatdean Bottom, oak have grown quite well and will be used there when the time comes for replanting. Sycamore, too, has a place, but as in other areas, natural seeding will suffice (it is understood that such is the profusion of sycamore natural regeneration in the devastated woodlands, that planting is quite unnecessary). Ash seeds strongly in places, but, except on the deeper soils, is purely seral and will come to nothing of value. An example of good ash soil is found in Compartment 36 - an old woodland site - where groups are being preserved in the P.53 work. Greatdean Bottom is another likely ash site. Cherry and lime (esp. Tilea cordata - the native lime) are worthy of limited planting for amenity and for timber.

The raising of beech in exposed places, naturally brings in the question of pioneer or nurse species. It is now accepted practice to adopt a conifer/beech, 3 row/3 row mixture, simultaneously planted. An examination of the P.50 area reveals that on ploughed ground, the beech keeps pace with the Scots pine; both are growing well. On uncultivated ground, it is probably true to say that Scots pine leads the way for a number of years, although every compartment produces patches to confound the generalisation. What is apparent, in all cases, is that no significant nursing effect is exerted by the conifer, for several years after planting. At this stage, the nurse will no doubt help to improve the form of the beech. It will also give the intermediate return in thinnings so valuable in an essentially hardwood area.

Probably the most effective means of raising a beech crop is by planting a pioneer crop of Scots pine or Corsican pine. This can be thinned, possibly at the pitwood stage, and beech introduced in lines and/or groups. An example, not dissimilar to this, is found in Wildham Wood (Compartment 13) where a P.39 Scots pine block was interplanted with beech from P.43 onwards. Although the shade was too dense until recently, it gave an example of what could be done. Considerations of present amenity preclude this approach over many compartments, but whenever possible it should be adopted. Such a method is particularly applicable on exposed "downland heath".

The raising of beech in old woodland areas, presents no special problems. Here the cover is thinned as necessary and beech planted pure. Even here there is scope for mixture; there is no reason why Douglas fir/beech or Norway spruce/beech should not be used where a foot or more of soil is found, above the chalk. Several vigorous Douglas fir exist in Wildham Wood, and there is no reason why future planting should not take account of their usefulness. The dilution of beech is an important consideration when one remembers the grey squirrel menance.

The life of conifers over chalk will vary with the depth of soil available. On thin soils Scots pine and Corsican pine cannot be expected to last more than about 40 years at the most. Douglas fir, European larch and Norway spruce on the deeper soils should go on for 60-80 years.

Planting

(a) Spacing - The spacings adopted in the past three years are as follows:-

Pure beech under cover - 5 ft. x 5 ft.
Scots pine/beech (3 row/3 row) and Corsican pine/beech (3 row/3 row).

Corsican pine or Scots pine - $4\frac{1}{2}$ ft. x 5 ft.) $4\frac{1}{2}$ ft. between Scots pine
Beech ... - $4\frac{1}{2}$ ft. x $4\frac{1}{2}$ ft) and beech rows.

In future the mixture will be 4 beech/3 conifer rows.

Earlier spacings were:-

Pure beech under cover - $4\frac{1}{2}$ ft. x $4\frac{1}{2}$ ft.
Pure beech in open - $4\frac{1}{2}$ ft. x 3 ft.
Scots pine/beech - Scots pine at $4\frac{1}{2}$ ft. x $4\frac{1}{2}$ ft.) $4\frac{1}{2}$ ft. between
- Beech at $4\frac{1}{2}$ ft. x 3 ft.) Scots pine and beech rows.

(b) Type of Plants used - Mostly 1+1, 2+1, and 1+2 beech and 1+1 Scots pine. Recently (P.50 onwards) the plants have come from the following nurseries: Brsmshill, Buriton, Micheldever and Abinger. The best beech are sturdy, well-rooted 1+2 or 2+2 beech for this sort of downland work.

(c) Method of planting - Notch planting with the Schlich spade.

(d) Annual Rate of Planting -

P.39	-	44.5	acres
P.40	-	16.05	"
P.41	-	68.5	"
P.42	-	23.5	"
P.43	-	25.5	"
P.47	-	12.0	"
P.48	-	79.5	"
P.49	-	102.75	"
P.50	-	134.8	"
P.51	-	124.75	"
P.52	-	63.4	"
P.53	-	38.1	"

(e) Success of Establishment - Results have been especially good in the old woodland areas and upon mechanically cultivated ground. On screefed downland, the take has been good, but for a year or two the plants make little growth. They begin to "move" in the third year.

Beating Up

Beating up has been caused less by natural deaths than by rabbit damage. In P.52, extensive beating up of the P.48, 49 and 50 areas was undertaken to put right the "exceptional" damage caused in F.Y.51. The present policy is not to beat up in the year after planting.

Scots pine has been used to beat up failed beech areas in small areas of flinty soil in Inholmes Wood.

Weeding and Cleaning

Weeding continues for about four years, in which time the trees have outgrown the herbaceous growth. Coppice weeding, however, may continue for much longer than this. Coppice and clematis cleaning, together with the removal of overhead shade as required, form the next series of operations in the establishment of the plantations.

Some remarks on weeding have been made in the first paragraph of this section. The point was there made that, on open downland, complete weeding is undesirable since it allows the suns rays to strike directly upon the trees. Conversely, weed growth must not be allowed to choke the plant.

If grass is permitted to form a tight collar round a plant in its early years, little growth can be expected from it.

Rates of Growth - See Appendix III

Conclusion

Most of the Forest has now been planted and the dense yew areas which remain will all have been treated within two or three years. The experience gained here, in downland afforestations, supports and supplements that gleaned at Buriton, Charlton, Slindon and at other forests over the past quarter century. In the group planting of beech in dense yew woods, Marden has opened a line of land use, which may well be applied quite widely elsewhere.

Just as the destruction of rabbits is essential to establish a beech plantation, so the destruction of squirrels is essential if that plantation is to become a forest.

Conservator's Remarks

This is a most interesting forest. Its silviculture has, in the main, been good, and there are some of the most promising young beech plantations in the country. Possibly too much overhead has been removed too early in the past, but this was because we knew less about beech then than we know today.

R. H. Smith,

17/2/54.

APPENDIX I

Notes from selected Inspection Reports

Date	Inspecting Officer
16th September, 1937	Assistant Commissioner
24th November, 1937	Chairman
28th February, 1941	A/Assistant Commissioner
28th May, 1942	A/D.O. S.E. (E)
12th February, 1943	A/D.O. S.E. (E)
2nd June, 1943	A/D.O. S.E. (E)
19th May, 1944	A/D.O. S.E. (E)
4th July, 1945	A/D.O. S.E. (E)
21st November, 1946	Conservator S.E. (E)
15th February, 1947	Conservator S.E. (E)
22nd July, 1947	Divisional Officer
12th December, 1947	Divisional Officer
21st January, 1949	Conservator S.E. (E)
10th August, 1949	Conservator S.E. (E)
21st September, 1949	Conservator S.E. (E)
9th March, 1950	Divisional Officer
21st March, 1950	Divisional Officer
9th August, 1950	Divisional Officer
14th September, 1950	Conservator S.E. (E)
28th February, 1951	Divisional Officer
11th April, 1951	Divisional Officer
11th September, 1951	Divisional Officer

APPENDIX I

Notes from Selected Inspection Reports

Compartment 9 - Mixed Conifers and Sycamore Poles - Generally speaking, excepting Compartment 9, the soil is light and poor and chalk comes to within a few inches of the surface over most of the area. In the denser coppice areas some form of strip method will be adopted for replanting but the older and higher coppice will probably be thinned out, favouring birch and ash, and underplanted with beech.

Beech will be the species mainly planted with ash where opportunity arises. (Report 16th September, 1937. W.L. Taylor, The Assistant Commissioner).

Compartment 9 - Mixed Conifers and Sycamore Poles - A neglected area which urgently needs thinning. The sycamore, larch and Douglas fir are growing well, but the Scots pine are rough and will probably not reach the final crop. The growth of the Douglas fir is surprisingly fast, and it was agreed that they were as good as could be expected under the conditions in which they were growing. As a matter of interest borings will be taken and their age determined by ring counts.

Tha plantation has been marked for thinning with a view to favouring the sycamore and larch. Whilst the method of marking was approved, it was thought that in places too much was being taken out and that the result would be large holes in the canopy. It was, therefore, decided to thin rather lighter this season and then if necessary the plantation could be gone into a second time next year. It was seen that a very large proportion of the stems had been damaged in the past by fire and as many of these as possible are being removed in the thinnings.

In the east of the Compartment, a large area of the plantation has almost completely failed. Only a few larch and Douglas fir have been able to outgrow the dense undergrowth of birch, ash and hazel coppice. The crop now standing is too poor to justify its growing on and the area will have to be replanted. It was decided that the larch might remain, the

the undergrowth and Douglas fir cut out, and the taller birch and ash coppice lightened. The area is then to be underplanted with beech, oak or ash groups.

Compartments 5 and 6 - Another neglected area with only a few poor quality oak standards per acre. In places, deer, rabbits and bad management in the past have completely killed out the coppice, but it was seen that there was a fair depth of soil and it was agreed that there would be no difficulty in growing hardwoods.

In the North of Compartment 5 the coppice is of a different type, being taller and very much older. Many of the coppice stools are either dead or moribund, and these will be taken out with the thinning of the healthier stools when the time comes for underplanting with beech.

It was remarked here that as some of the birch was large and of a fair quality, every endeavour should be made to obtain a market for it.

Compartment 4 - Ploughland - It was decided that although this area was fairly high, it was not really exposed and as there was no danger from frost there would be no necessity to put in an advance crop. Beech, therefore, will be put straight in. It was noted that as seed trees were lining the south boundary, much natural regeneration of sycamore, birch and ash could be anticipated.

Compartment 3 - Much natural regeneration was seen here, particularly of sycamore, and a discussion was held on the results which might be expected throughout the forest after the area had been fenced in and the rabbits exterminated. It was generally agreed that a mass of young forest trees and weed growth would appear in a very short time.

Compartment 12 - Downland - This Compartment, together with Compartment 13 adjoining, will have to be planted up soon after fencing, as the grass will grow rapidly immediately the rabbits are killed down. It was suggested that in order to stave off the rapid growth of grass the area might be ploughed and this might also give a seed bed for birch etc., which would all help in giving shade to the main crop of beech. It was generally agreed that a nurse would be required, as the area gets very dry and baked in the summer and it was decided that larch would probably be the best tree for this purpose.

In the Frost Hole to the south-east, Norway spruce are to be planted, and an endeavour will be made to find the frost line through this Compartment in a normal frost year.

Stoughton Down - A walk through Stoughton Down followed, and it was decided that when this area came for planting up, it should be tackled from the North. It is not expected that much difficulty will be met with, as there appears to be a fair depth of good soil over most of the area seen. Yew and juniper are thick in places, with some clumps of thorn and a few medium quality oak. Full use will be made of all the available cover and when planting in the yew and scrub the group method is to be adopted. Wherever the risk from frost is not too great, ash will be tried and if successful this will be followed up by beech and oak.

It was pointed out that care must be taken not to spoil the scenic effect by removing too much yew and in any case outside belts will have to be left.

Compartment 8 - The beech and ash Plantation in the South of this Compartment was next inspected. As in Compartment 9, there is much fire damage, but in addition to this many of the trees have double tops. It was decided that at present there was little that could be done to help the plantation, but that when the time for thinning came, the worst trees should be removed and beech might then be put into any holes formed. (Extracts from Report of 24th November, 1937. The Chairman - R. L. Robinson).

Conifers have grown well in Wildham Wood in the past and it was thought that some larch planting should be done again and a 50% 50% mixture with beech was recommended.

The proposal to let the derelict land in Compartments 8 and 13 for war cultivation was agreed.

The neighbouring plantations on the Westdean Estate were inspected where all the ordinary conifers are doing well high up on the downs on old woodland soils. Young and old beech woods look particularly promising and it was noted that a very good type of plant was being used. (Report 28/2/41 - The A/Assistant Commissioner - A.P. Long.)

Compartments 7, 8, P.42 beech, Scots pine, with ash and oak groups - Ash should not have been put out in the open; the 1.5 acres beyond the limit of the planted beech should be ignored. Drifts are crooked in many places and this has spoilt a good many of the rows; they must be made straight in the area now being prepared. It will be an advantage to make them wider than $4\frac{1}{2}$ ft. as this will facilitate weeding; they may be 5 ft. wide and the beech planted 5 ft. x 4 ft. The beech and European larch plantation in Compartment 8 needs thinning; take out most of the larch and the damaged and burnt beech and convert to pitprops.

Compartment 9 - P.41 beech and European larch - Beat up next year with beech using Scots pine to replace failed European larch. Plant the rest of the compartment with beech except in places where young sycamore is established. Groups of young sycamore should be marked with posts while in leaf. Omit the 2 acres of pure sycamore in the south corner.

Compartment 10 - P.39 Scots pine - There are several blanks. Fill these with large plants of Douglas fir in order to keep pace with the Scots pine. (Extracts Report 28th May, 1942 - A/D.O. S.E.(E) - F. C. Best).

North part of Compartment 10 - Keep birch or ash crop wherever possible and thin it. Some mature European larch and Scots pine found in Compartment 1; Timber Production Department may take what they want of this, then favour what oak is left.

Compartment 10 - Beech being planted at the lower end of this compartment. Preparation of ground somewhat too elaborate. Put also beech groups among the adjoining Scots pine P.39, about 6 plants per group. Eventually a beech crop should be formed; Scots pine was put in only because the area was believed to be a frost hollow.

Compartment 8 - Beech, P.20 - Thinnings have been marked and will be taken out when labour is available. Planting in this compartment is nearly finished, a small bit of preparation of ground having been left to the last. There are a few mature oak in this area, it was waste of labour to prepare the ground under them. (Extracts - Report 12th February, 1943 - A/D.O. S.E.(E) - F. C. Best).

Compartment 10 - Scots pine, P.39 - Beat up beech P.43, two rows of three each in patches. Weed early or they may be smothered. (Report 2nd June, 1943 - A/D.O. S.E.(E) - F. C. Best).

Compartments 9, 10 and 13 - Frost damage to beech very severe in low lying parts of Compartments 9 and 10 and in Compartment 13. Side shelter appears to have saved some on the higher slopes as damage begins on the same level some distance from the shelter, the intervening beech being only slightly affected. Norway maple in the hollow alongside the road between Compartments 8 and 9 has escaped entirely.

Felling of mature oak by Kenneth Long in Wildham Wood is going ahead. It may be possible to plant Compartments 2, 3 and 11 next winter, if so beech is the species. The area is already fenced. (Report 19th May, 1944 - A/D.O. S.E.(E) - F. C. Best).

Compartment 1 - Coppice area worked by Timber Production Department for trackway pales was measured and found to be about 7 acres. This is subject to final measurement with Timber Production Department.

Area for P.46 was inspected. About 20 acres in Compartments 2 and 3 can be planted without excessive preparation of ground. Beech is the species to use. Aspen group near the ride between Compartments 3 and 10 to be thinned this winter. (Report 4th July, 1945 - A/D.O. S.E.(E) - F.C.Best).

Compartments 7 and 8 - P.40, 42, 43 - The beech throughout these compartments have suffered from neglect during the war years and damage has occurred especially from deer. Beating up is to be carried out this year and it was said that pine should be used in the open spaces, which are often difficult to afforest and beech should be used to beat up the areas carrying cover.

Compartments 5, 9, 10 - Some weeding has been done and it is hoped to complete this in order to beat up several patches which have failed. The overhead canopy of ash and birch is now requiring thinning in Compartments 9 and 10 and this should be done if and when the labour force permits.

Douglas fir regeneration in Compartment 9 was also seen and the bad damage by deer noted. (Report 21st November, 1946 - Conservator S.E.(E) - F. C. Best).

Compartment 10 - Scots pine, P.30 - It was thought that the beech groups in this planting should be relieved and the gaps beaten up with beech in P.48. This is a legitimate method of raising a beech crop and should not now be abandoned.

Compartment 10 - P.39b and Compartment 9 - P.43 and 41 Beech - The thinning of overhead shade now in progress was inspected and the degree of removal of stems approved. Great stress was laid upon the necessity for ringing properly, where this method was employed. It is essential that the cambium be broken the whole way round the stem and it is far better to cut a circle two inches wide into the wood around the stem than to merely strip off the bark to a width of a foot. Generally it was thought best to fell as many of the stems, not now required for shelter purposes, as is compatible with reasonable cost.

It was thought that the removal of large ash in Compartment 9,P.41 would be of advantage. It is not necessary at this stage to maintain an even canopy, as beech has been seen elsewhere to grow extremely well in gaps in the overhead shade.

In both compartments patches were noted where no trees could be seen for the heavy bracken growth. This is due to wartime neglect and it is hoped to bring the whole planted area into proper management during the coming year.

Conservator's Comments - The beech groups in the Scots pine were somewhat experimental and should be looked after as we want to know whether we can successfully introduce beech into pine at this stage. At least one Scots pine per beech group should be cut out and the beech kept well weeded and beaten up. (Reports 15th February, 1947 - Conservator S.E.(E) - F.C.Best).

Compartment 9 - The middle aged sycamore at the South end was inspected and found to be badly damaged by a previous selective felling - at some near future date this crop should be felled as it has little hope of making a good mature stand.

Compartment 10 - P.39 Scots pine - groups of beech - This stand should be beaten up. The general scheme of opening out the Scots pine around these groups should continue while the time is opportune.

Compartment 10 - P.39 and 41 beech - Noted that removal of overhead shade proceeding at a satisfactory rate. As a general guide it was felt that complete overhead shade removal should be attained when the beech are 8 ft. to 10 ft. high.

Compartments 2, 3, 5 - P.47 Beech appeared to have benefited where low overhead shade was afforded by bracken but such areas should now be weeded within the next three weeks.

P.48 areas in these compartments are being rather too heavily opened out and future markings should aim at leaving rather more trees per acre for this purpose. To remedy this state of affairs hazel shoots are now being left on the areas already sold at the rate of two shoots (on one stool) for each tree left standing. To minimise any inconvenience caused by firewood merchants not completing their contracts on the due date the principle of selling in one-acre lots should be adopted.

Compartment 6 - A very satisfactory crop - removal of overhead shade is proceeding at a satisfactory rate.

Compartment 9 - P.41 European larch/beech on the roadside is poor and frosted and should be beaten up with Scots pine. Another path of European larch/beech on the west side of the compartment had done better but had been neglected in the war and had also suffered from deer damage. The P.43 beech beaten up last year with Scots pine is still very poor and needs further beating up. The older sycamore giving overhead shade are badly damaged (by wartime "thinning") and are dying-out but should be left pro tem.

Compartment 13 - P.39 Beech/Scots pine, alternate rows - The Scots pine should be cut back where they are interfering with the development of the beech and this crop should be kept in mind for beginning gradual removal of Scots pine over the next few years.

Compartment 12 - Noted that some 30 acres had been taken over by the War Agricultural Executive and the remaining 7 acres marked beech is now largely Scots pine due presumably to beating up.

Compartment 8 - P.20 Beech/European larch - A good crop spoiled by unskilled removal of European larch during the war. A very light thinning (chiefly removal of ash whips and badly formed or badly damaged trees) could be carried out in the next year or two. It is doubtful if a sufficient number of undamaged beech remain to form a mature crop.

P.43 - Beech. P.42 - Beech - Damage due to felling of old oak noted. Decided to cease felling such trees and to ring-bark them instead. This area will be difficult to weed as previous coppice growth was not burnt after felling but was left in lanes after felling.

Compartment 40 - A patch of natural sycamore of about 2-3 acres was found to be sufficiently promising as to be retained. It is rather whippy and Mr. Ruddock should mark a light thinning to be carried out by trainees.

As a general policy clearing but leaving overhead shade and re-planting should be carried out in Compartments 1, 2, 3, 5, 11 first and then proceed to Compartments 39-45 (Inholmes Wood). Saleable areas to be dealt with by firewood contractors; remainder by Forestry Commission labour.

Divisional Officer's Comments -

Compartment 9 - It is no use attempting to underplant sycamore.

Compartment 10 - Removal of overhead shade when beech 8 ft. to 10 ft. high.

Compartments 2, 3, 5 - Weed bracken within 3 weeks.

Compartments 1, 2, 3, 5 and 11 - Overhead shade for beech planting must be left when clearing.

Inholmes Wood - The Forester to mark it carefully for the leaving of adequate overhead shade for beech planting. (Report 22nd July, 1947 - Divisional Officer - R. H. Smith).

Compartment 10 - P.39 - It was decided that the overhead shade could be reduced and a 33% thinning should be carried out.

Compartment 10 - P.41 - Similar treatment was prescribed here but the intensity of the thinning should be 50% and should include all the ringed trees.

Compartment 5 - P.41 - Same as Compartment 10.

Compartment 3 - P.47 - With the exception of any birch which have not been ring-barked all trees of the previously existing crop should now be felled.

Compartments 7 and 8 - P.42-3 - All ring-barked trees can now be taken out.

Compartments 39 and 40 - Progress in clearing ground and thinning overhead cover in preparation for P.49 was noted as good but Mr. Smith warned that the labour position was not very stable and care should be taken not to prepare

more ground than a probably reduced labour force could deal with in succeeding years. (Report 12th December, 1947 - Divisional Officer - R. H. Smith).

Compartments 14, 15, 16, 17, 18, 19, 20 - Clearance of scrub growth (principally yew) in preparation for planting should be kept under careful control as a wholesale clearance is ruled out on economic grounds. The densest patches should be left untouched except for possible straightening of boundaries to allow for easier control, weeding, etc. In less dense areas the matter should be considered carefully and endeavour should be made to remove such bushes as will give the maximum plantable area with the minimum of cutting. It was agreed that a certain amount of shelter would be advantageous in establishing a beech crop especially on the higher and more exposed sites and clearance should be limited accordingly. Isolated bushes should be retained for shelter on the higher ground but cleared where exposure is not so great so as to facilitate ploughing.

In Compartments 15 and 18 groups of good natural ash and oak should be retained with a view to underplanting but the poorer and more scattered trees of these species should be felled as part of the preparation of ground operations. Extracts Report 21st January, 1949 - Conservator S.E.(E) - A. L. Felton).

Compartment 10 - P.39 Scots pine - It was noted that beech had been sporadically introduced. The Conservator directed that more should be introduced with the aim of ultimately getting a full crop of beech and weeding must be very thorough to avoid two storey canopy.

P.39 Beech and P.41 Beech - Overhead cover is not to be removed for some considerable time and the effect of its retention is to be regularly assessed. It is hoped that it will draw up the crop.

P.48 Beech - The overhead cover is not to be lightened until there are clear indications of ill effect of lack of light.

The party then assembled at the office and proceeded to the downland area now being ploughed by R.L.R.

Compartments 19, 18, 17 & 15 - The following decisions were made -

(1) Planting position to be half-way down furrow on consolidated "platform" as demonstrated (preferably in north side of slice "R.H.S").

(2) There are to be 3 blocks of 5 acres each of pure beech; beech/pine and pure pine on (a) sheltered site and (b) open site (i.e. two sections of 15 acres each) made on the P.50 area and permanently marked and recorded.

(3) Unploughed lanes are to be 3 chains apart.

(4) No further destruction of yews is to be carried out on the rest of the downland.

(5) The timber now standing in Greatdean Bottom and on the east slope of Compartment 15 is to be sold forthwith.

(6) The bulldozer is to be used to grade access rides. (Report dated 10th August, 1949 - Conservator S.E.(E) - R. H. Smith).

Compartments 16, 17, 18, 19, 20, 21 - Proposed P.50 Area. The method of dealing with yew has been the subject of adverse comment by members of the public and as already instructed no further yews have been dealt with. The method previously adopted was to trim off the lower branches and burn these at the base of the tree. This has been found to be more effective than girdling the tree and has been practised at Marden in the wooded areas for at least two years. It is an effective and cheap method of destroying yew but in the open is rather unsightly.

Certain undertakings have been given by the Commissioners regarding the preservation of the British Camp and the Kingley Vale Nature Reserve. The appropriate files must be consulted and future operations modified accordingly.

Compartment 18 - Further consideration was given to the middle aged oak, ash, etc. in Greatdean Bottom. About 2 acres of the eastern end of the belt should be retained and thinned carefully. The remaining trees in this area which are rougher in type and more scattered should be put on the market and the forester should prepare an estimate of volume as soon as possible.

The work of the stump jump plough was seen in Compartment 18. This is very effective and single ploughing without additional work such as cross ploughing or rolling appears to give adequate cultivation. (Report 21st September, 1949 - Conservator, S.E.(E) R. H. Smith).

Observations and Discussions - Ground for planting P.51 was investigated. A great deal of the remaining unplanted part of the forest (excluding agricultural ground) is so heavily infested with yew that it is uneconomic to clear it.

It was agreed that preparation of ground operations could start in Compartments 33, 38. No yew trees should be cut and a certain amount of thorn should be left for shelter where it is possible to plant through it. Elsewhere it should be cut and burnt.

Approaches are to be made from the Conservator's office to the County Council concerning the possibility of gating the rights of way rather than fencing both sides of them and to the Planning Authority and the Society of Sussex Downsmen on the question of amenity. (Report 9th March, 1950 - Divisional Officer - J. M. Ross.)

Rights of Way - Several tracks through plantable land in the unplanted area of the forest are claimed as rights of way on the County Council's records. Some of these tracks appear to be redundant and in different sites to that shown on the map.

Nature Reserve - The approximate boundary of the proposed Kingley Vale Nature Reserve has been marked on the ground. The reserve (if this boundary is correct) will include some plantable ground, notably in Compartment 24.

Ground for P.51 - The available ground which it is possible to plant is set out in the notes of the visit on 9/3/50. It is now understood that the agricultural land in Compartments 31, 32, 34, 35, 36, 37 is available at six months notice but it was not decided whether any resumption action should be taken. It was noted that the tenant is repairing the buildings at the junction of Compartments 32, 34, 35.

For the moment it was decided that the more or less open area in Compartments 23, 24 and 33, 38 and part 30 could be regarded as definite P.51 areas. In the case of Compartments 23, 24 careful reconnaissance (with the aid of the aerial photographs) should be carried out with a view to determining the most economical fence line to enclose the "preparable" area. Any patches of yew enclosed in this fence should be trimmed near

the ground to facilitate rabbit-catching. No attempt should be made to destroy the yew which are to be left to preserve the amenities. As regards other existing growth (chiefly juniper and thorn) this should only be cut or trimmed sufficiently to allow planting to be carried out and it is important to maintain as much of this shelter (consistent with planting) as possible.

The species to be used is beech and where necessary (i.e. on the more exposed patches, such as above the earth work and where there is no natural growth) Scots pine can be used as a nurse. The Conservator considered the soil to be of sufficient depth in Compartment 24 and bare appearance to be due to an abnormally high rabbit population.

Inholmes Wood - Part of this wood outside the Forestry Commission boundary is carrying a very good crop of beech in urgent need of thinning. The District Officer was instructed to approach the owner (Major Andrews) with the suggestion of assistance by the local staff in carrying out this thinning on an agency basis. (21/3/50 - Divisional Officer - J. M. Ross).

Marden Forest Inspection - (1) During the inspection Sir A. Tansley defined the areas he would like to include in the proposed Nature Conservancy. Areas concerned are as (approximately) defined on the maps of the S.F.O. and D.O., but will be the subject of a formal agreement at a later date. (Report 9/8/50 - Divisional Officer - J. M. Ross; Sir A. Tansley).

Compartment 21 - A brief inspection of P.50 in Compartment 21 was made. There has been a good take but there is evidence that rabbits are not entirely eliminated although no damaged plants were seen. The forester reported difficulty in getting a warrener. (Report 14th September, 1950 - R. H. Smith - Conservator S.E.(E).

Walderton Down - The P.51 area was examined and the heavy damage, caused by rabbits in the western half of Compartment 38 was noted. This was the area first planted at Marden and most of the damage was done during the snow and hard frosts towards the end of January. At this stage, the two warreners from Buriton rabbited the area and from that date little damage was done to the beech.

Mr. Ross gave instructions for the correct method of contour planting, to preserve the amenity of the area.

Compartment 24 - ..... The allocation of cherry will be sited at various suitable points on the hillside. These points will be marked on the ground and groups planted at these points, an irregular outline being the aim. Should no cherry arrive this year, the groups will be planted in F.Y.52.

In both this Compartment and Compartment 25, the best means of contour planting was discussed. It is better to plant in lines of shallow radius, as shown in the diagram below:-

This will be adopted and plants will be staggered in their rows.
(Report 28th February, 1951 - Divisional Officer - J. M. Ross.)

Walderton Down - P.50 Area - Thorough warrening is needed for there is a constant pressure of rabbits from adjacent land.

Compartment 16 has not been adequately weeded. Grass is strong here and needs early cutting; the aim should be to release the collars of the plants by careful hand weeding.

F.Y.52 - Planting Programme - The planting programme for F.Y.52 will embrace about 70 acres, excluding Greatdean Bottom. The acreage is made up as follows:-

Compartment	14	-	15 acres
"	15	-	12 "
"	19	-	6 "
"	22	-	12 "
"	23	-	3 "
"	41	-	4 "
"	44	-	14 "
"	45	-	3 "
	Total		69 "

Greatdean Bottom is to be examined and the area possible for planting to be reported.

In addition to the above there are pockets of land scattered amongst the dense yew clumps. These should be worth planting when the rabbits are exterminated. (Report 11th April, 1951 - Divisional Officer - J.M.Ross).

Compartment 14 - The stump jumped area has been invaded by thistle. This is now on the point of seeding and must be scythed immediately. The dense yew area was entered. Examination revealed several places where the

brushing up of some yew and the removal of small groups of other yew, would allow plots of beech to be planted in what is now a sterile area. It was laid down that as much of the yew in this compartment as possible should be fenced in and rabbits exterminated. The oak scattered amongst the yew should be felled and utilised and beech groups - planted in accordance with the preceding observations.

A "screen" of untouched wood is to be left adjacent to the car park.

Compartment 22 - The area between the two north-south rights of way will not be planted. The remaining area will be fenced, making full provision however to leave a vista from the tumulus towards Racton Tower (as agreed with Ministry of Town & Country Planning).

The object of fencing the whole compartment to include the yew is:-

(a) To exterminate the rabbits which would otherwise be a constant menace.

(b) To plant beech groups in the sterile yew areas.

Compartment 15 - It was agreed that the yew and oak along the east boundary should be temporarily fenced out; later it is to be fenced in and dealt with as in Compartment 22 above.

General - The policy of fencing in the yew areas is to be extended gradually over the whole forest area. In this way many extra acres will be available for planting and the rabbit danger will be greatly diminished. (Report . 11th September, 1951 - Divisional Officer - J. M. Ross.)

APPENDIX II

Supervision

Divisional Officers

1937-1939	Mr. A. L. Felton
1939-1946	Mr. F. C. Best

Conservators

1946-1947	Mr. F. C. Best
1947-1949	Mr. A. L. Felton
1949-	Mr. R. H. Smith

State Forest Officers

1946-1948	Mr. R. H. Smith
1948-	Mr. J. M. Ross

District Officers

1937-1940	Mr. C.A.J. Barrington
1940-1946	Mr. T. Clear
1946-1947	Mr. J. F. Goodwin
1947-1950	Mr. J. White
1950-	Mr. L. C. Troupe

Foresters

1937-1946	Mr. R. Dibden
1946-1948	Mr. E. J. Ruddock
1948-1951	Mr. W. R. Shepherd
1951	Mr. E.J.D. Wilkinson
1951-1952	Mr. A. G. Pyman
1952-	Mr. E. B. Cordery

APPENDIX III

Rates of Growth

Compt.	Species	P.Yr.	Soil	(a) Altitude (b) Aspect (c) Slope (d) Exposure	Mean Ht. of 50 Dominants to end of F.Y. 51.	Mean Annual Height Increment
3	Beech	47	Brown earth	(a) 350' (b) S.E. (c) Gradual (d) Slight	7'	17"
7	Beech	42	Rend-zini-form	(a) 225' (b) N.E. (c) Gradual (d) Slight	5'4"	6.4"
7	Beech	40	Brown earth	(a) 234' (b) N.E. (c) Gradual (d) Slight	10'7"	10.7"
8	Beech	20	Rend-zini-form	(a) 300' (b) E. (c) Gradual (d) Moderate	52'	19.5"
8	Beech	43	Rend-zini-form	(a) 200' (b) N.E. (c) Moderate (d) Moderate	8'	10.6"
9	Beech	41	Brown earth	(a) 204' (b) S.W. (c) Gradual (d) Slight	7'9"	8.4"
10	Beech	39	Brown earth	(a) 200' (b) S. (c) Gradual (d) Slight	15'3"	14"

PHOTOGRAPHIC SUPPLEMENT

Key to Photographs (all taken on 20th January, 1953).

1. Locality: Marden Forest, Compartment 14.

   Subject: General view of Compartment 14 from West. Planted P.52. Species: Scots pine/beech (3 row/3 row), in ground previously ploughed by Stump jump, along bottom of slope pure beech in gaps almost yew.

2. Locality:) As for No. 1.
   Subject:)

3. Locality: Marden Forest, Compartment 10.

   Subject: Scots pine P.39. Beech groups introduced in P.43 and beech lines in P.48. In P.53 every other Scots pine row removed to relieve beech. Scots pine sold as pulpwood.

4. Locality:) As for No. 3.
   Subject:)

5. Locality: Marden Forest, Compartment 9.

   Subject: Douglas fir in background, 36 years old and about 65' high. Beech, P.43 in foreground.

6. Locality: Marden Forest, Compartment 9.

   Subject: Sycamore, P.13 (approximately) thinned F.Y.52.

7. Locality:) As for No. 6.
   Subject:)

8. Locality: Marden Forest, Compartment 9.

   Subject: Beech, P.41 planted under Sycamore and Ash cover.

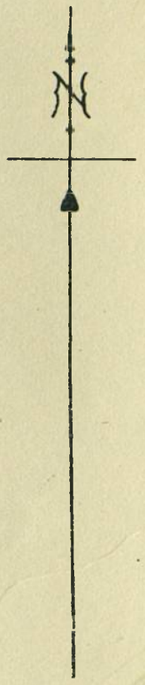
Warden

— MARDEN —

Sussex 34SW, 47E. & 48W.

1. Purchase from Waid & Helyer. 31-3-37. 384·763 acres.
2. " " Lipbrook Game Farm. 17-12-37. 600·268 " .
3. " " Major Phipps Hornby. 31-8-39. 245·059 " .

Total:- 1230·090 acres.



Scale :- Six Inches to One Mile.

— Area Planted. —

P.Yr.	D.O.S. figs.	A.R. figs.
P.39.	44·5	44·5
P.40.	43·0	43·0
P.40.	53·0	53·0
P.41.	53·0	53·0

(1)

(2)

MARDEN FOREST HISTORY

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MARDEN FOREST

1
Marden Forest, Compartment 14.
General view of compartment 15 from west.
Planted P.52.
Species: Scots pine/beech (3 row/3 row), in ground previously ploughed by Stump jump, along bottom of slope pure beech in gaps almost yew.

2
Marden Forest, Compartment 14.
General view of compartment 15 from west.
Planted P.52.
Species: Scots pine/beech (3 row/3 row), in ground previously ploughed by Stump jump, along bottom of slope pure beech in gaps almost yew.

3
Marden Forest, Compartment 10.
Scots pine P.39. Beech groups introduced in P.43 and beech lines in P.48. In P.53 every other Scots pine row removed to relive beech. Scots pine sold as pulp wood.

4
Marden Forest, Compartment 10.
Scots pine P.39. Beech groups introduced in P.43 and beech lines in P.48. In P.53 every other Scots pine row removed to relive beech. Scots pine sold as pulp wood.

5
Marden Forest, Compartment 9.
Douglas fir in background, 36 years old and about 65' high. Beech, P.43 in foreground.

6
Marden Forest, Compartment 9.
Sycamore, P.13 (approximately) thinned F.Y.52

7
Marden Forest, Compartment 9.
Sycamore, P.13 (approximately) thinned F.Y.52

8
Marden Forest, Compartment 9.
Beech, P.41 planted under Sycamore and Ash cover.