

Griffin Forest

The Establishment of a Forest

**Tom McLellan
June 2020**

Griffin Forest

The Midland Bank Pension Trust (MBPT) purchased the first area of land on which Griffin Forest was established from Grandtully Estate in 1979 and subsequently six other areas were purchased from neighbouring landowners, the largest of these areas lying to the southeast being bought from the neighbouring Ballinloan Farm. The total area purchased by the MBPT was 4,171.5 ha.

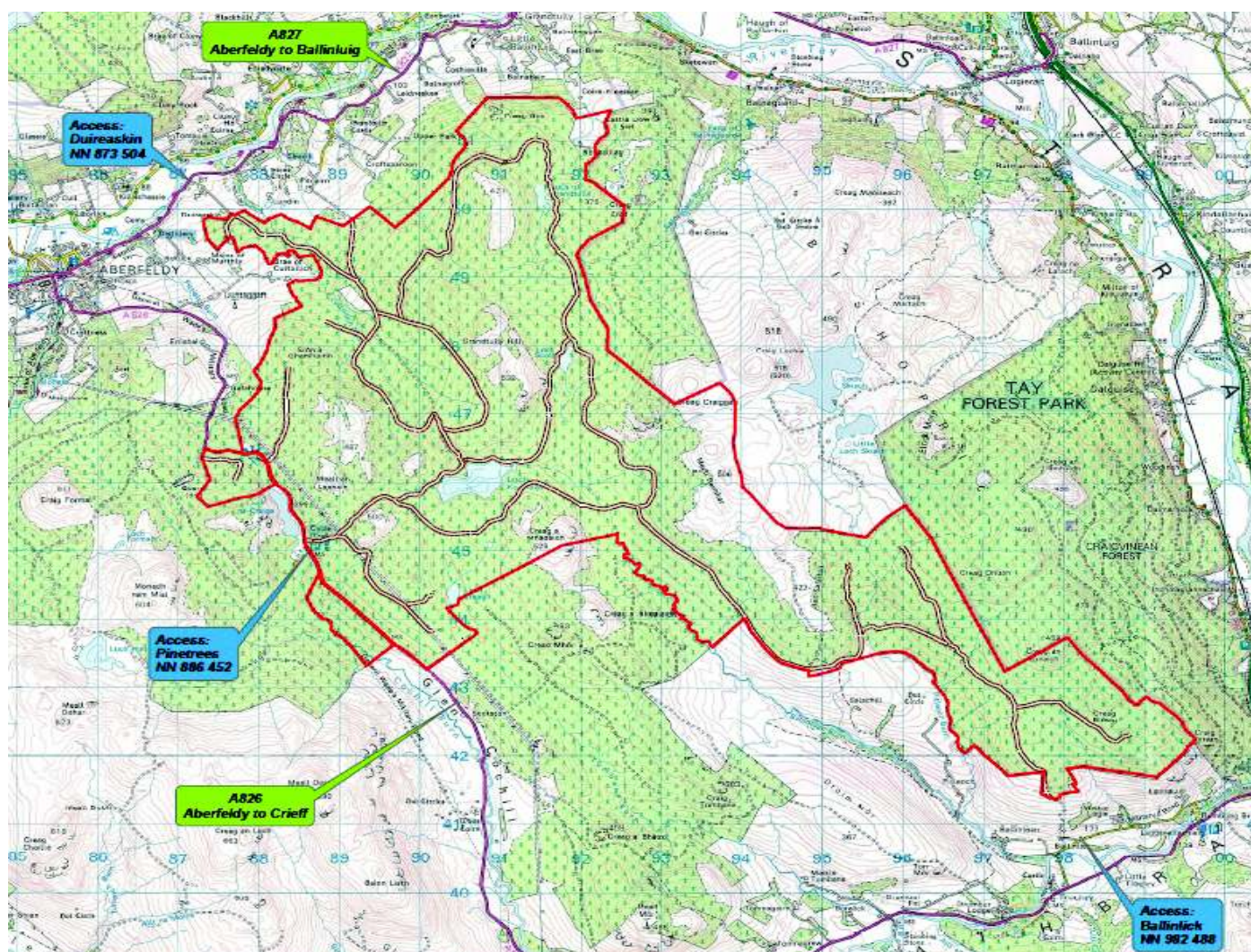
At that time the MBPT was one of a number of pension funds that saw commercial forestry as a sensible investment diversification of their pension fund portfolios. Unlike private individuals, institutional forestry investors did not benefit from any taxation incentives.

The first planting was carried out in 1980 with a projected net-planted area of 3,310 ha as noted in the table below :-

Designation	Hectares	%
Planted conifer crops	3290.0	78.9
Broadleaved crops	19.8	0.5
Roads, ridelines and bare ground	794.1	18.6
Hill lochs	44.7	1.1
Other ground (agriculture)	22.9	0.9
Total Area	4171.5	100

The total area of Griffin Forest that is recorded in the current Forest Plan is 4,177 Hectares, with a total planted area of 3,392 Hectares planted over an eleven-year period between 1980 and 1990.

The location of Griffin Forest is shown on the map below, taken from the current Forest Plan :-



Griffin Forest has been established and managed by Tilhill Forestry since 1979.



Foresters from Tilhill Forestry carrying out an inspection at Griffin Forest in 1980
 From L to R: Peter Sloan – Scottish Area Manager / Tom McLellan – Central Branch Manager
 Sandy Macpherson – Scottish Director / Fenning Welstead – Assistant Branch Manager
 Photograph Taken at Burnside, Griffin Forest

Griffin Forest is the largest single ownership private commercial forest in the UK and at the time of establishment in the 1980's was the largest in Europe.

The long-term aim of the owners of Griffin Forest has been to manage the forest to maximise its commercial timber production value.

The main commercial conifer that was planted was Sitka spruce (*Picea sitchensis*).

Although timber production is the main objective, the biodiversity value and access opportunities were also important and will also now have to be protected and enhanced to ensure that the minimum standards set out in the UK Forest Standard (UKFS) are met.

The forest rises from an altitude of 140 metres above mean sea level (amsl) in the North West corner to 532 metres amsl at the summit of Grandtully Hill.

The underlying geology over the area is primarily metamorphic quartzose mica-schist derived from sedimentary formations of the Dalradian Series, giving rise to brown earth soils on free draining sites, though to gleyed soils and peaty gleys / deep peat where the natural drainage is impeded. Skeletal soils with rock outcrops and boulders can be found at higher elevations.

The Windthrow Hazard Classification (WHC) is in the range 2 to 5 with a weighted average of 3.

The Yield Class (YC) of the Sitka spruce (SS), is estimated to be in the range 4 to 24, with a weighted average YC of 14 (as measured in 2015).

Fire

Griffin Forest was established on a derelict grouse moor that was primarily used for Red grouse shooting (I think I am correct in saying that Grandtully Estate at one time held the record for the most grouse shot by one gun in a day).

As such the ground vegetation was predominantly comprised of heather, some of it very rank that required to be burned off prior ground preparation in order to allow the overturned plough furrow to sit flat on the ground.



Paraffin fueled burners with a wick were found to be the most efficient method of lighting the heather



Burning had to be carried out with the wind in order to ensure that sufficiently large areas of rank heather were cleared.



Heather burning was only permitted during the statutory muirburn season, which ran from 1st October to 15th April inclusive, but the season could be extended to 30th April, with the permission of the landowner.

In general controlled burning of the heather was carried out without incident by ensuring that there was a fire proof buffer such as a road or pre-formed fire trace – a strip of ground that had been pre-burned prior to the main fire being lit at which the main fire would stop.

However, in one incident in 1980 a fire in the Ballinloan Basin did get out of control due to a change in wind direction. The fire “escaped” in a south easterly direction through very rank heather that had probably never been burned for 10 years or more and the fire then headed straight towards Craigvinean Forest. Fortunately after mobilising a large number of firefighters from the Fire Brigade, the Forestry Commission with the help of Darcy Black, Chief Forester at Dunkeld and local Army personnel, together with Griffin Forest personnel, after a week of hard fire fighting by hand with only fire beaters, the fire was stopped several hundreds of metres from the Craigvinean boundary.

It took another week of intensive dampening down using small Hathaway Fire Pumps, beaters and spades to ensure that the fire was under control and fully out.



There were some incidents where fires occurred that were not the result of controlled burning. The fire shown in the following photographs occurred in Glen Cochill in the mid-1980's on the neighbouring ground to the West of Griffin Forest. The exact cause of the fire was never determined, however it was the first time that I was involved in direct fire fighting with a helicopter.





The photograph on the left shows a training exercise of direct firefighting with a helicopter using a suspended bucket of water that had been pre-filled by firefighters elsewhere on site. A fire hose trails from the bottom of the bucket to the ground where a firefighter directs the spray of water or fire retardant onto the fire.

This technique was used on the fire in Glen Cochill by the white helicopter in the photograph on the previous page, but my recollection was that the downdraft from the rotor blades just fanned the fire, which together with insufficient water pressure through the hose resulted in a fairly ineffective and very costly method of fire fighting.

However the helicopter was very useful for laying out a system of Hathaway Lightweight Pumps from the nearby Cochill Burn (which were by no stretch of the imagination lightweight !) and for deploying firefighters.

Today, with specialist equipment and training a helicopter can drop 1000 litres of water directly onto a wildfire on average every 3-4 minutes allowing an otherwise out of control blaze to be slowed down and stopped in a much shorter period of time than using conventional ground based methods especially when the blaze is within areas of forestry or on inaccessible moorland.



This fire was eventually brought under control by a combination of direct firefighting and most importantly the natural dampening down effect of lighter winds, the colder overnight temperatures and dampness.

Ground Preparation

The majority of the area to be planted was ploughed with Double Throw Ploughs - either trailed ploughs pulled by D6 crawler tractors as shown in the photographs below or mounted on D4 crawler tractors, with the operators and equipment provided by Andrew Allan & Son from Callander.

The following photographs of a D6 Trailed Double Throw Plough were taken in the Burnside Basin.

The ploughman is Geordie Davidson who carried out most of the Double Throw ploughing within Griffin Forest.





This photograph demonstrated the action of a double mould board plough with this particular plough mould board being developed by Andrew Allan, throwing out a plough furrow like the bow wave of a ship, with the furrow “rolling over” with no straight edge cut formed and a smooth slope down to the base of the furrow, as can be seen in the photograph below. The hydraulic ram allowed the mould board to be held level at a set height.





A D4 Single Throw Plough working through an area that had been cleared of standing Birch. This type of plough was used in the early years of ground preparation, particularly on the shallower soils found at higher elevations as shown in the photograph below.

Later double throw ploughs were mounted onto the D4 crawler tractors.





These two photographs show a Sickle Plough mounted on a D7 Crawler Tractor. This was a heavy duty Single Throw Plough, which was used to plough areas of ground that had been cleared of standing Birch in the Culltullich area below Burnside. This was the most powerful ploughing rig you could get at the time and was used on clearfelled sites.



This photograph shows a Clark Humpy Draining Plough that was used for cross draining (sometimes pulled in tandem by either two D4 crawlers or a D6 & D4). It was also used to plough some of the areas of deep peat.

In essence the remit of ground preparation was :-

- to get a good level of cultivation to maximise mineralisation of the key nutrients in the soil for tree establishment, namely Nitrogen and Phosphate
- improve drainage, with spaced furrow ploughing at an average of 2 metre spacing
- to get early establishment so that the trees could get good height and stem growth in order to withstand attack by deer and White Hares
- to establish the trees as quickly and as uniformly as possible.

Direct planting provided none of the above benefits and ripping, which was being carried out elsewhere at the time, also did not provide sufficient cultivation to allow adequate mineralisation and in both cases the establishment was generally slower and less uniform.

One trial area of complete ploughing was carried out within Griffin Forest and the available Nitrogen in the soil was "lost" within a year and the SS planted trees very quickly went into check.



The author on a D6 Caterpillar - 1982

Roading

New forest roads were constructed from 1980 onwards until the whole road system amounting to some 47Km (30 miles) of forest road had been built, as shown on the location map above.

The forest roads were built using bulldozers, excavators and a grading machine supplied by Henderson Brothers, Cupar, Fife. Bulldozers with angle tilt blades created much of the road formation to form cross-falls and cambers. The formation was then surfaced with stone, with the majority of the road stone being won on site from as dug and graded material. The culverts were all bitumised Armco pipes.

The road system was built to permit access to the forest by articulated lorries.



This photograph above shows the track that existed round Loch Kennard at the time the land was purchased.



This photograph shows the new bridge over the Culltullich Burn below Burnside.



This photograph shows the Tilhill Nursery plant lorry having just delivered a full load of trees to what we called the Dunkeld Section of Griffin Forest (obviously in a dry period !).



This photograph shows a bulldozer working a gravel deposit on the neighbouring farmland at Duireaskin in order to form the entrance from the A827, together with the section of forest road from the A827 up to Burnside.

Birch Harvesting

Areas of Birch along the north boundary of Griffin were converted to Sitka spruce (SS), Douglas fir (DF) and Grand fir (GF). In line with Government policy to create a strategic timber reserve after the two World Wars, it was the practice to convert areas of broadleaf woodland to fast growing commercial conifers for future timber production.

The Birch in the area below Burnside was harvested as shown in the photographs below, with the cut timber being sold to Scottish Timber Products (STP) at Stirling (subsequently it became Caberboard after STP was dissolved in 1989). The harvesting operation produced circa. 6,000 tonnes of timber and made a net return for the owners.

The Birch at the east end was line and chemically thinned and then under planted.



Fenning Welstead supervising the birch clearance. Health & Safety was not such a concern in these days !



The Shuttle Forwarder

This was a British made forwarder which was my first exposure to a dedicated forestry forwarder. It was being tested on our site and I think I am correct in saying it was the only one at that time. It was like a half-track, with tracks on the bogey, which you can't make out in the photograph and a set of small “guide” wheels at the front. Even from the look of it you could see that it was not fit for purpose - it did not complete the operation as I recall.





A more traditional tractor / trailer forwarding system was brought in with Graham Drennan-Smith, Harvesting Manager directing operations. The birch was then sent to STP at Stirling to be converted into chipboard

Planting and Establishment

Summary of Griffin Forest Area Breakdown

Projected Area Breakdown	Hectares	%
Planted conifer crops	3290	78.9
Broadleaved crops	19.8	0.5
Roads, ridelines and bare ground	794.1	18.6
Hill lochs	44.7	1.1
Other ground (agriculture)	22.9	0.9
Total Area	4171.5	100

As the table above shows, commercial conifers were planted on the majority of the area.

The species breakdown of the original conifer planting is composed of :-

- 80% - Sitka spruce (SS) – Queen Charlotte Island (QCI)
- 5% - Lodgepole pine (LP) – Skeena River
- 4.9% - Japanese larch (JL)
- 4.3% - Scots pine (SP)
- 4% - Douglas fir (DF)
- 1.2% - Grand fir (GF)
- 0.2% - Noble fir (NF)

SS was the predominant species planted, with "localised" areas of DF/GF on the better, lower lying ground, LP on areas of deep peat, JL / SP primarily on direct plant areas and a couple of small "high elevation" pockets of NF. Some Cherry was planted around Burnside.

Summary of Actual Planted Area by Planting Year

Year	Area (ha)
1980	104
1981	542
1982	1083
1983	824
1984	276
1985	184
1986	14
1987	198
1988	107
1989	24
1990	36
Total Area	3392

I recall in 1982 we started planting in early January and never finished until the end of July, using unbagged, bare root Sitka spruce planting stock from cold store. We planted 1,083 Hectares at Griffin that year which would be over 2.5 million trees.



The photograph above shows a sheugh of Sitka spruce being inspected by Murray Ure who was an area manager for Tilhill. As well as using roadside drains and plough furrows for sheughs to hold trees for 2 to 4 weeks, we also built temporary "beehive sheughs" adjacent to areas that were going to be planted within a week

The photograph below shows squad foreman John Lamond on a tracked dumper leading out trees. We also used at times Muskegs and Slipes pulled by one of the crawler tractors where we had not built the forest road into areas that were being planted





A squad of planters at Griffin, with heather burning going on simultaneously in the background

Planting squads were in the main local to Perthshire. The main local planting squads were led by Bill Shepherd, Hugh Carmichael, John Lamond and Ian Mathieson. On occasions planting squads had to be brought in from elsewhere, particularly the Borders however the local squads tended to be more reliable. At the height of the planting up to 50 planters could be on site.

The trees were planted in the centre of the plough ridge and were then were fertilised within a year of planting with Unground Rock Phosphate (P), the fertiliser being spread by hand at right angles to the plough furrow as there was evidence to suggest that this could influence lateral rooting at right angles to the line of the plough furrow. I do not recall Potassium (K) deficiency being an issue. Nitrogen deficiency became an issue after about 4 to 5 years, as noted below.

Damage from White hares was an issue and deer damage did occur but was not serious, as control by shooting was rigorous and a "deflection fence" was erected along the A826 as a buffer against the high Red deer numbers to the west which were prone to move East at times.

As we were at times planting right behind the ploughing, we generally got a good take even in dry weather but had to ensure that the plants were planted deep and even then at times firming up was required after the first heavy rain.

We did do singling of multiple leaders caused mainly as a result of White hare damage, but also possibly because we had planted some of the trees too deep. The singling was a useful alternative for the heather spraying squad during wet weather.



Sitka spruce establishment overlooking Loch Kennard

Second Stage Fertilising

As noted previously, Griffin Forest was established on a former grouse moor and as a result of the heather vegetation over much of the land, the Sitka spruce growth was impacted by "heather check" around the age of five years old.

The impact of Nitrogen (N) deficiency in spruce through "heather check" is comprehensively covered in Forestry Commission Bulletin 89 - Nitrogen Deficiency in Sitka spruce Plantations by Paul Tabbush & Charlie Taylor. I think I am correct in saying that Bulletin 89 is still the "bible" for the management of spruce on heathland sites where heather (*Calluna vulgaris*) is a major component of the vegetation and certainly within Griffin Forest the main conclusion of the bulletin could be observed, that heathland sites can be divided into four Site Categories A/B/C/D in terms of representing the Nitrogen availability for growing Sitka spruce, as set out in the undernoted table.

Site Categories of Nitrogen Availability

Site category	ESC soil nutrient regime	Comments
A (best)	Poor, occasionally medium	Soils are usually brown earths or surface-water gleys. Plant indicators of poor or medium SNR always present. Heather (<i>Calluna vulgaris</i>) has usually been promoted by land use and should not reinvade after felling.
B	Very poor or poor	Wide range of soils within these two classes of SNR. Plant indicators of poor SNR usually present. These sites are likely to upgrade to poor SNR during the first rotation and heather reinvansion should not be a serious problem after that.
C	Very poor	Soils range from the least fertile brown earths through podzols and ironpan soils to deep peats. Plant indicators of poor SNR are rare or absent. The better soils (brown earths) are likely to upgrade to poor SNR by the second rotation, but some heather reinvansion after clearfelling is likely.
D (worst)	Very poor	Soils are podzols, ironpan soils and unflushed deep peats. Plant indicators of poor SNR are usually absent. These sites will not upgrade to poor SNR during the first rotation and low availability of nitrogen will remain a severe limitation in the second rotation. Heather reinvansion is likely.

The management regime that we followed for the Sitka spruce at Griffin was :-

- Phosphate (P) application by hand within a year of planting. The P was Unground Rock Phosphate.
- Heather spray with 2,4-D or Glyphosate from year 4. Spraying with 2,4-D was carried out during June to mid-August and with Glyphosate from mid-August to end of September, with knapsack sprayers which provided a sufficient amount of chemical in mixture with water to give an even coverage of the heather and an effective kill, with generally no damage to the trees. Some damage occurred to side branches in hot weather when the 2,4-D volatilised and the vapour could damage the side branches.
- A second application of P by helicopter between years 5 and 8 together with a N application if the sites had not had a heather spray and / or heather had re-invaded and was causing check

For best advice on forestry fertilisation, Forestry Commission Bulletin 95 – Forest Fertilisation in Britain by Charlie Taylor was a follow up work that built on the experience gained from the work carried out on Bulletin 89.

Initial aerial P applications were with Unground Rock Phosphate, however although this material was suitable for targeted hand application, it was more difficult to get an even distribution when applied from a helicopter as seen by the cloud effect of the application from the helicopter in the undernoted photographs, which in turn could lead to uneven growth patterns, particularly on poorer sites.



By the mid 1980's prilled or granular fertiliser was available for both N and P which gave a much more accurate application when combined with electronic triangulation of the helicopters flight path which also gave a print out which would show up areas that were missed by the helicopter.

I can't recall a third application of either P or N being applied, although I suspect that site categories C and D could very well have checked again, as the benefit of N only lasts for 3 years. The trees would normally have benefited from the application of P for between 5 and 7 years. A and B sites would normally have only required the application of P at planting, followed by a second application of P at 5 to 7 years and if heather check was occurring, either one heather spray or one N application along with the second application of P.

The target was to get as uniform stand development as quickly as possible in order that the SS branches suppressed and killed the heather. Fortunately with QCI Sitka spruce the branching is heavier as compared with the new improved varieties of SS, so I guess it will be a more difficult job getting pure SS away on heather dominated sites now.

Around the mid to late 1980's we started planting SS in mixture with SP on sites we were identifying as C and possibly some of category B. I hope that we had stopped planting D sites by then ! This was primarily on the new forest to the south of Griffin Forest that was owned by the Salvesen Family at that time. The mixture was in alternate triplets and again everything was given a hand application of P at planting. I was not around to see what if anything was given as a second stage input on these sites.





Sitka spruce establishing in the Ballinloan Basin

Other Points of Interest

Purchase of the Land and Dedication to Forestry

My recollection is that Grandtully Estate sold the land as a former grouse moor with no forestry designation, however the area was considered as being suitable for afforestation.

I do recollect that the MBPT were in competition with others for the purchase of the land, including the Forestry Commission (FC). At the time that the land on Grandtully Estate came up for sale, the FC were planning the afforestation of an area of land at Balnaguard, on neighbouring ground lying immediately to the east of the Grandtully Estate land. I do not recall how many others were looking to purchase the land, but I have a recollection that the FC were second highest bidders and I recall when I met Darcy Black in 1980 he was lamenting the fact that the FC had been unsuccessful, as this would have secured a substantial planting program for his team of foresters and **infact** if the FC had been successful it would probably have been the last big land acquisition by the FC, at least in Perthshire.

At the time the private forestry sector could seek Government support for forestry planting through the Dedication Scheme (Basis I & II) which was introduced in 1947 in order to continue the development of a strategic forest resource following Second World War, by encouraging private sector landowners to retain their land in forestry and to introduce good forestry practice. The Dedication Basis III scheme was introduced in 1974, providing grants for new planting and additional supplements for broadleaves. Tilhill Forestry on behalf of the MBPT negotiated with Government agencies the approval to afforest the land that became Griffin Forest with grant support under the Basis III Dedication Scheme. I think that the Department of Agriculture & Fisheries (Scotland) was initially reluctant to see the whole area planted, however agreement was eventually reached and the afforestation was supported under the Basis III Dedication Scheme.

The Basis III Dedication Scheme was closed to new applications in 1981 and those forests owners still under Dedication could continue to be within the scheme but Dedication would terminate on a change of ownership. I think that Griffin Forest remained in the Basis III scheme during my period in charge although we would have moved the new planting areas into the Forestry Grant Scheme (FGS) that replaced it where the grant support for planting was higher.

I do recollect having some interesting discussions with FC Private Woodland Officers regarding open ground and how they would dock grant if I left too much – of course many had previously been practicing foresters and had probably endured the wrath of their Head or Chief Foresters for not “planting right up to the fence” ! This illustrates the change that was taking place with regard to Government support for forestry during the 1980’s – between forestry being seen as the creation of a strategic timber resource and the developing view that forestry should be encouraged to deliver more than just timber.

I do recall that there were critical comments made about how close some of the planting on Griffin Forest was to the A826 in Glen Cochill and this was certainly taken into consideration when we were planning the planting of the area to the south of Griffin under FGS, when there was more flexibility and understanding in terms of leaving appropriate Open Ground.

Neighbouring Landowners and Local Interest

As noted previously, the land that forms Griffin Forest was purchased in seven separate transactions. This was the result of generally getting on well with the neighbouring landowners, with these transactions being to the mutual benefit of both parties by rationalising, improving or extending their land ownership or arranging leases to grazing land and of course not least, providing the seller with a significant capital sum from the sale of their land.

We developed the viewpoint adjacent to the A826 overlooking Abefeldy and looking towards Schiehallion in conjunction with the Aberfeldy Rotary Club and Perth & Kinross Council.

Local people assisted with the control of deer and other species that would damage the newly planted trees.

There were arrangements made with local fishing clubs to permit fishing on Loch Kennard, Loch Scoly and Loch Grandtully, all of which had reasonable trout fishing.

There was unrestricted access by foot or bicycle over the 40km (30 miles) of new forest road and occasional vehicular access was permitted to some people who were less mobile and had a specific interest in the area.

Archaeology

Griffin Forest has four Bronze Age sites that have been identified on the ground, three of which have been scheduled. They include 2 Cup Marked Rocks, a Cup and Ring Marked Rock and 2 Hut Circles.

There are 6 Farmsteads and Crofts from the 17th / 18th / 19th Centuries. I recall the Fank at Burnside being one of the best examples on Tayside and the adjoining Headwall Dyke that can be seen at Burnside stretching from Loch Tay to Balnaguard and possibly even Craigvinean.

As was noted previously, the area at one time was a major Grouse Shooting Estate. There are a considerable number of shooting butts throughout the forest, some of which I recall were sequentially numbered. This Reflects rural life in the 19th / 20th Century and the fact that Grandtully Estate once held the record for the most grouse shot by one gun in one day.

Conservation

There are several species of conservation interest known to inhabit Griffin Forest.

- Black Throated Diver: A successful breeding pair of Black Throated Divers has inhabited Loch Kennard for the past 40 years. See undernoted article.
- Peregrine Falcon: Known to nest within Griffin Forest, utilising the open ground network. My recollection is that Griffin is on the flight path of pigeons and the Peregrine would hang about on the cliffs waiting for them to pass by!
- Mountain Hare: occurred in quite big numbers during the 1980’s. They were considered a pest at that time as they would run up the rows of trees and just nip the tops off and leave them lying on the ground – real vandals! This was the main reason that we had to carry out singling – generally if it was 10% + (good wet weather alternative work during the heather spraying season). We carried out hare shoots (which included Red grouse and Black grouse) and also night shooting of hares. They were also good for eating!

- Black Grouse: were present in the 1980's, with a major Leck in the field at Burnside, but have not been recorded within Griffin Forest for a significant period. It is possible that when the forest enters production and restructuring of the second-generation of trees, this will provide a provide a mosaic of open ground and pre-canopy closure stands of conifers that will create ideal Black Grouse habitat, especially where these areas adjoin open moorland surrounding the forest.
- Red Grouse: were present in the 1980's and I would have thought that they would still be around on the open ground on the high tops. With increased open ground in the second generation forest I would have thought that there is a good chance that their numbers would increase
- Blackheaded Gulls – a colony nested on Loch Scolly but disappeared in the late 1980's. I recall that locals used to collect their eggs for eating.
- Golden Eagle – there were frequent sightings of eagles in the 1980's. There was no record of them ever nesting within Griffin Forest.
- Osprey – a pair of Ospreys nested on the island in Loch Kennard and at two locations on the mature Scots pine to the south of the loch. Some years the pair were quite successful in rearing two chicks. Roy Dennis (an Osprey expert) used to ring the young birds. At the time there were quite a few incidences of Osprey nests being robbed for their eggs in Scotland and I recall at least one covert operation being set up to monitor the nest in Griffin. Maybe one day they will return? See undernoted article – the photograph is of the Osprey coming into the nest on Griffin Forest with a very large trout. The photograph was taken by Don McCaskill who was Chief Forester at Strathyre
- Other species also known to inhabit the forest or the surrounding area such as, Crossbill, Goshawk, hen Harrier, Short Eared Owl, Long Eared Owl, Otters, Pine Martin and Wildcat

UNDER OUR WING

BIRDS of prey and those that feed on fish have been heavily persecuted for "sport" and by gamekeepers trying to protect grouse shooting and salmon or trout fishing. Numbers of the rarer birds are still at risk from unscrupulous egg collectors who can have a significant effect on local populations.

None was more harassed than the osprey, which was, in fact, extinct in Britain at the beginning of this century, and the black-throated diver suffered from nest disturbance and egg-collecting which did little to help a bird which has a poor breeding success in Britain.

However, the establishment of large areas of forest in Scotland since the end of World War One has been a factor in the recovery of some of the harder-pressed bird populations. Afforestation has reduced the pressure on upland areas from gamekeepers trying to protect grouse stocks and, assisted by a more enlightened attitude by the sporting fraternity, has brought relief from illegal shooting and trapping.

Afforestation has also provided suitable habitat for the breeding and hunting requirements of some birds and created an undisturbed refuge for long periods which benefits many bird species.

On one estate in the Highlands, Tilhill is actively involved in protecting nesting ospreys and black-throated divers which, although present before afforestation began, had been experiencing infrequent breeding success. The osprey is a summer visitor, returning from Northern Africa each year to the same nest site. They are large birds and can be very conspicuous at the nesting area by calling loudly and using prominent perches.

Tilhill staff have, therefore, maintained close liaison with the local Forestry Commission wildlife officer and the RSPB to give protection to the ospreys and to maintain the appropriate habitat to ensure that the birds breed successfully.

The ospreys first attempted to breed on the estate in 1979 before it was managed by Tilhill;

In the Scottish Highlands, Tilhill is actively engaged in working with conservation specialists to protect and encourage two rare and magnificent birds. Here, we outline the measures adopted by Tilhill in ensuring the future of a small but valuable aspect of our national heritage.

their choice was a pine tree on an island of a loch also being used by the black-throated divers. While breeding was successful at first, the choice of nest site caused two problems; the nest was highly visible and it was robbed of eggs for the next two years and the presence of the ospreys disturbed the black-throated divers.

The divers failed to raise young for three successive years. In consultation with the RSPB and the Forestry Commission wildlife officer, the decision was taken to move the osprey nest into an old stand of pine quite close to the loch. The ospreys accepted it immediately and both they and the divers bred successfully the next year.

However, three years ago, the male osprey



• An adult osprey feeding its young; wildlife author and photographer Don MacCaskill took the picture.

returned with a new female who chose to build a new nest in a tree on the island again. Once again, the eggs were stolen, the divers failed to breed and Tilhill's assistance was required.

Black-throated divers conveniently spend the winter months on the coast and man was able to step in to assist, quite literally, by walking across the frozen loch and felling the ospreys' island tree!

Another nest was artificially constructed in a tree some distance from the loch and, immediately on its return the following year, the female osprey took up residence. To further help the divers, Tilhill has restricted fishing on the loch during the critical months of April to late June to minimise disturbance.

Since these steps were taken, both these pairs of birds have bred successfully.

Postscript

Over the last 30 years, although the ownership has changed, the establishment of Griffin Forest has continued to be nurtured under the management of Tilhill Forestry.

During the period some 560 Hectares of the forest was felled in order to incorporate into the forest a substantial windfarm development involving some 37 wind turbines.

Thinning has been carried out over northern sections of the forest and commercial clearfell commenced in 2017.

By all accounts Griffin Forest will be as productive as I might have reasonably expected and I am confident that the forest will go on and fulfill the main management objective, of maximizing its commercial timber production value by producing a good proportion of quality sawlogs and contributing to Britain's strategic timber requirements and Scotland's one billion-pound forest industry.

Foresters Who Helped With the Establishment of Griffin Forest During the 1980's

Fenning Welstead

Is a Partner in John Clegg & Co. and is a former Past President of the institute of Chartered Foresters.

Tom Dunlop

Is a Partner and Forestry Consultant in Abbey Forestry.

Colin MacBrayne

Was Branch Manager with Tilhill Forestry at Kirriemuir and now runs his own business Woodland Consulting

Colin Macpherson

Went into insurance, moved to Russia and was latterly teaching in China. Sadly now deceased.

John Macdonald

Formed his own business Scotwood Macdonald carrying out forest management and forest mensuration.

Rupert Pearson

Became Branch Manager in Argyll; &, latterly, District Manager in E. Anglia with Tilhill Forestry. Now retired.

John Burrow

Joined the RSPB - worked on forest policy & as a Reserve Manager in Fife and then SNH Perth. Now retired.

Iain Sutherland

Became Harvesting Manager for Tilhill Forestry/BSW Sawmills. Now has own forestry business WnG Alba Ltd.

Mike Hodgson

Emigrated to New Zealand and is Senior Operations Manager with PF Olsen.

Neil Hughes

Emigrated to Canada and is the Forest Establishment Leader for British Columbia.

Tom McLellan Bsc(For) Aberdeen, has been a practicing forester throughout most of Scotland for the last 45 years. Tom started his career in forestry in 1971 working for the Forestry Commission in Glen Orchy which at that time was one of the largest afforestation schemes in the country, together with a short period working for Luss Estates beside Loch Lomond, followed by three years at Aberdeen University under the direction of Professor John Matthews.

Tom joined Tilhill Forestry in 1975 as an Assistant Branch Manager, working with Northern Branch Manager John Lambert managing forests in Morayshire and Aberdeenshire and then with Solway Branch Manager Colin Forsyth managing forests in southwest Scotland. At both branch offices he was also involved with commercial landscaping work. In 1978 Tom moved back north to Central Branch at Stirling where Bill Morgan was the Branch Manager. In 1979 Tom was promoted to Branch Manager of Central Branch and then spent the following 33 years as a District Manager with Tilhill Forestry at Central District (12 years), North Highland District (2 years) and West Highland District (19 years). In 2012 he set up his own company Fyne Forestry Ltd. in Argyll.