

CONTRACT No. FINDON 1/95.

Findon 3 P.34. and Exts P.36-37-38-39-40-41-42.
Visual assessment of extensive plots 1 to 115.

General report with comments and recommendations.

Each of the extensive plots was examined and assessed in a visual manner for FORM-GROWTH-HEALTH-and SURVIVAL and recorded on pages 1 to 10.

The following intensive plots are of interest and are included in the report.

Barrisdale - 8 single tree seed collections.
 13 Polish lots collected by Dr. Nicolii
 Pinus peuce - one extensive plot.

It is my belief that the experiment as a whole contains a valuable source of educational and research value.

- 1). A demonstration for professional forestry society visits.
- 2). A source of genetic material for research.
- 3). A source for student study.

The F.34 replicated intensive plots in particular show quite dramatically the wide differences between the European and the Scottish and English provenances.

I therefor recommend keeping the whole experiment intact but paying particular attention to the extensive plots and the P.34 replicated intensive section.

The F.35-36-37-38 and 41 replicated intensive sections might also be worth further study.

In pages 1 to 10 of the assessment the native origin where known or strongly suspected from historical and other records is highlighted in green. Plots established from single trees (recorded by R.Lines) are shown in rose.

Further detailed information on each original seed lot can be obtained from the appended list extracted from R.Lines seed record cards by Tony Sharpe.

Mention is often made in these lists to "the old seed register" and also to seed record forms, such data could be of added value if available. Secondly very early detailed seed records were kept on card form at the research seed extractory at Fort Augustus from 1920 - 1925 onwards(?) where all the Findon expt 3 seed would have been processed and recorded. These records would also be of considerable value.

Research and reference has been widely sought with personal contact and through published and unpublished documents.

Scottish Records Office plans and documents, Gordon Castle Estate 1762.
 Darnaway Estate private records, Morton 17th Earl of Moray 1926.

The Native Pinewoods of Scotland, Steven & Carlisle 1959.

A History of Scottish Forestry Anderson 1967.

Arboriculture Gregor 1881.

The Natural History of Moray, Shaw 1775.

The Statistical Account of Forres, 1791.

The New Statistical Account 1845.

= NATIVE.

= SINGLE TREE.

FINDON 3P.34. SCOTS PINE PROVENANCE TRIAL.

VISUAL ASSESSMENT. September 1995.

Plot 1: P34 32/530 Hedmark, Norway.

Form: Very good, 95% straight, very light branching, narrow crowns.

Growth: Very slow.

Health: Very good, light blue-green foliage, short needles.

Survival: 50%.

Plot 2: P44 32/520 Aveyron, France.

Very poor, no straight stems, heavy branching, wide crowns.

Growth: Very poor.

Health: Poor, light blue-green foliage.

Survival: 25%.

Plot 3: P34 32/517 Haguenau, France.

Form: Very poor, no straight stems, heavy branching.

Growth: Very poor.

Health: Poor, light green foliage, long needles.

Survival: 25%.

Plot 4: P34 32/535 Altonside, Moray.

Form: Mod with 50% straight stems.

Growth: Mod vigorous.

Health: Very good.

Survival: 70%.

Plot 5: P34 31/512 Darnaway, Moray.

Form: Very good, 70% straight stems.

Growth: Very vigorous.

Health: Very good.

Survival: 90%.

Plot 6: P34 32/512 Assiniboine, Inverness.

Form: Mod good, 80% straight stems.

Growth: Mod vigorous.

Health: Good.

Survival: 75%.

Plot 7: P34 32/513 Glenelg, Inverness.

Only 13 trees, small plot, all trees of poor form and rough but vigorous.

Plot 8: P34 32/535 Altonside, Moray.

Form: Good, 80% straight stems, mod braching.

Growth: Vigorous.

Health: Very good.

Survival: 90%.

Plot 9: P34 31/512 Darnaway, Moray.

Form: Mod good, 70% straight stems, large dia but slightly rough branching.

Growth: Very vigorous.

Health: Very good.

Survival: 75%.

Plot 10: P34 32/508 Rannoch, Perth.

Form: Mod good, 80% straight, but heavy brabch.

Growth: Vigorous.

Health: Very good.

Survival: 70%.

Plot 11: P34 31/513 Glengarry, Inverness.

Form: Mod, 85% straight, light branch.

Growth: Vigorous.

Health: Very good.

Survival: 75%.

Plot 12 P34 ^{31/511} Avesgne, France, France.

Form: Poor, no straight stems, mod rough branch, mod narrow crown.

Growth: Mod.

Health: Good.

Survival: 50%.

Plot 13: P34 32/509 Darnaway, Moray.

Form: Good, 80% straight, slight rough branch.

Growth: Very vigorous, large dia.

Health: Very good.

Survival: 85%.

Plot 14 P34 32/517 Haguenau, France.

Form: Very poor, no **straight** stems, mod rough branch, broad crown.

Growth: Lacks vigour.

Health: Slightly unhealthy, light **blue-green** long needles.

Survival: Very poor, 30%.

Plot 15 P34 32/530 Hedmark, Norway.

Form: Perfect, 95% straight, light branch, narrow crown.

Growth: Very slow.

Health: Very good.

Survival: 75%.

Plot 16: P34 G2/511 Glennally, Inverness.

Form: Very good, 90% straight, light branch, mod narrow crown.

Growth: Slow, lacks **vigour**.

Health: Very good.

Survival: 95%.

Plot 17 P34 32/524 Hanau, Germany.

Form: Very poor, no straight stems, mod rough branch and narrow crown.

Growth: Very slow.

Health: Mod.

Survival: 60%.

Plot 18: P34 31/515 Achnashellach, Wester Ross.

Form: Very good, 90% straight, mod light branch.

Growth: Mod vigorous, though lacks dia.

Health: Very good.

Survival: 95%.

Plot 19 P34 31/1031 Cawdor, Nairn.

Form: Mod good, 75% straight.

Growth: **Vigorous**.

Health: Very good.

Survival: 75%.

Plot 20: P34 32/518 32/518 East Prussia, Germany (Poland).

Form: Good, 90% straight, mod branch.

Growth: Mod slow, uneven.

Health: Good, blue-green foliage short needles.

Survival: 75%.

Plot 21 P34 32/509 Dardara, Moray.

Form: Very good, 90% straight, mod light branch.
Growth: Vigorous, even.
Health: Very good, blue-green foliage.
Survival: 95%.

Plot 22 P34 31/1040 Allenstein, Germany (Poland).

Form: Mod good, 70% straight, mod light branch.
Growth: Poor vigour in height & girth.
Health: Mod.
Survival: Poor, 50%.

Plot 23 P34 31/516 Strathoyke, Sutherland.

Form: Mod good, 75% straight, mod light branch.
Growth: Lacks vigour.
Health: Very good.
Survival: 95%, very even.

Plot 24 P34 32/1019 East Prussia Germany (Poland) - wrongly labeled Achnashellach

Form: Mod good, 75% straight, light branch.
Growth: Very poor, slow growth.
Health: Good.
Survival: 70%.

Plot 25 P34 32/515 Strathoyke, Sutherland.

Form: Mod good, 80% straight, slight rough branching.
Growth: Vigorous.
Health: Very good.
Survival: 80%.

Plot 26 P34 32/510 Glendarray, Inverness.

Form: Very good, 90% straight, mod light branch.
Growth: lacks vigour.
Health: Very good.
Survival: 85%.

Plot 27 P34 32/520 Auvergne, France.

Form: Very poor, no straight stems, flat branch.
Growth: Very poor, slow.
Health: Mod.
Survival: Very poor, 40%.

Plot 28 P32 32/518 East Prussia, Germany (Poland).

Form: Slightly rough, 60% straight, mod heavy branch.
Growth: Vigorous in height & dia.
Health: Good.
Survival: 70%.

Plot 29 ^{P.37} Only 35/517 Glendarray

Very poor survival, only 6 trees of mod form.

Plot 30 P37 35/509 Gordon Castle, Moray.

Form: Very good, 90% straight, mod branch.
Growth: Mod vigorous.
Health: Very good.
Survival: 95%.

Plot 31 P37 35/508 Teindland, Moray.

Form: Good, 0

Plot 31 P37 35/508 Teindland, **Gairn**.
Form: Good, 90% straight, mod **branch**.
Growth: Mod vigorous.
Health: Very good.
Survival: 75%.

Plot 32 P36 33/510 **Strathoykell**, Sutherland.
Form: Good, 90% straight, mod light branch.
Growth: Slow.
Health: Very good.

Plot 33 P35 32/540 Vastaras, Vastmanland, Sweden.
Form: Good, 90% straight, mod fine branch.
Growth: Very **slow**. **Health**
Health: Very good, light blue-green.
Survival: 90%.

Plot 34 P35 33/509 **Abnashell**, Wester Ross.
Form: Very good, 90% straight, mod light branch.
Growth: Lacks vigour in girth.
Health: Very good.
Survival: 95%.

Plot 35 P35 33/517 **Allyre**, Moray.
Form: Mod good, 75% straight, mod branch.
Growth: Vigorous.
Health: Very good.
Survival: 90%.

Plot 36 P34 30/549 West Norway.
Form: Excellent, 95% straight, light slight fastigate branch.
Growth: Mod **vigorous**.
Health: Very good.
Survival: 95%.

Plot 37 P37 35/510 **Gordon Castle**, **Gairn**.
Form: Very good, 80% straight, mod light branch.
Growth: Vigorous.
Health: Very good.
Survival: 95%.

Plot 38 P37 35/513 **Rannoch**, **Strath**.
Form: Good, 75% straight, mod branch, dense crown.
Growth: Mod-vigorous.
Health: Very good.
Survival: 90%.

Plot 39 P37 35/514 **Salloch**, Aberdeen.
Form: Good, 75% straight, mod branch.
Growth: Vigorous.
Health: Very good.
Survival: 90%.

V.

Plot 40 P37 35/516 Pitgaveny, Moray.
Form: Mod, 70% straight, mod branch.
Growth: Lacks vigour.
Health: Slightly unhealthy.
Survival: 70%.

Plot 41 P37 35/1036 Woolmer, Hampshire.
Form: Mod, 60% straight, mod branch.
Growth: Vigorous, good dia.
Health: Very good.
Survival: Poor, 50% (site).

Plot 42 P38 35/531 Strathmore, Angus.
Form: Rough, 50% straight, heavy branch.
Growth: Very vigorous.
Health: Very good.
Survival: 90%.

Plot 43 P38 No Id numbre. Achnashellach.
Form: Good, 90% straight.
Growth: Mod vigorous.
Health: Very good.
Survival: 90%.

Plot 44 P37 34/509 Achnashellach, Wester Ross.
Form: Good, 90% straight, mod light branch.
Growth: Lacks vigour.
Health: Very good.
Survival: 85%.

Plot 45 P37 34/503 Glencoe, Angus.
Form: Good, 90% straight, mod light branch.
Growth: Lacks vigour.
Health: Very good.
Survival: 90%.

Plot 46 P37 35/1041 Woolmer, Hampshire.
Form: Good, 85% straight, mod light branch.
Growth: Mod.
Health: Very good.
Survival: 80%.

Plot 47 P37 35/1039 Hockham, Norfolk.
Form: Very good, 90% straight, mod light branch.
Growth: Lacks vigour.
Health: Very good.
Survival: 80%.

Plot 48 P37 35/1038 Stowheath, Suffolk.
Form: Mod good, 80% straight, mod light branch.
Growth: Lacks vigour.
Health: Very good.
Survival: 75%.

Plot 49 P37 35/529 Glenmore, Inverness.

Form: Mod good, 80% straight, slightly heavy branch.
Growth: Lacks vigour, uneven.
Health: Very good.
Survival: 75%.

Plot 50 P37 34/513 Achnashellach, Wester Ross. Golden Valley, (Bad Trees).

Form: Mod good, 70% straight, mod branch.
Growth: Mod vigorous.
Health: Very good.
Survival: 80%.

Plot 51 P37 34/514 Achnashellach, Wester Ross. Golden Valley. (Good Trees).

Form: Very good, 90% straight, mod light branch.
Growth: Slow.
Health: Very good.
Survival: 95%.

Plot 52 P37 34/517 Gordon Castle, Deer Park, Moray.

Form: Mod good, 80% straight, mod branch.
Growth: Mod.
Health: Very good.
Survival: 95%.

Plot 53 P37 34/526 Strathowall, Moray.

Form: Mod good, 75% straight, mod heavy branch.
Growth: Mod vigorous.
Health: Very good.
Survival: 95%.

Plot 53 P37 34/527 Gordon Castle, Moray. Peeps Wood.

Form: Mod good, 80% straight, mod branch.
Growth: Mod.
Health: Very good.
Survival: 80%.

Plot 55 P37 34/540 Ardvoirich, Perth.

Form: Good, 75% straight, mod branch.
Growth: Mod vigorous.
Health: Very good.
Survival: 80%.

Plot 56 P37 34/1 (Plus Trees). Achnashellach, Wester Ross. Glen Uig.

Form: Very good, 90% straight, mod light branch.
Growth: Mod vigorous.
Health: Very good;
Survival: 90%.

Plot 57 P37 34/1 (Plus Trees) Darnaway, Moray.

Form: Mod, 70% straight, slight rough branch.
Growth: Mod vigorous,
Health: Very good.
Survival: 80%.

Plot 58 P38 35/1042 Pickering, Yorks.

Form: Mod, 70% straight, mod branch.

Growth: Lacks vigour.

Health: Good

Survival: 80%.

Plot 59 P38 35/504 Rannoch, Perth.

Form: Good, 80% straight, mod branch.

Growth: Mod vigorous.

Health: Good.

Survival: 80%.

Plot 60 P38 35/507 Gordon Castle, Perth. Balnacoul Wood.

Form: Mod good, 85% straight, mod fine branch.

Growth: Vigorous.

Health: Good.

Survival: 95%.

Plot 61 P42 39/548 Finton, Easter Ross.

Form: Good, 85% straight, mod branch.

Growth: Mod vigorous.

Health: Good.

Survival: 85%.

Plot 62 P39 36/526 Ramuck, East Prussia.

Form: Mod, 70% straight, mod fine branch, narrow crown.

Growth: Very slow.

Health: Good, Light blue-green foliage.

Survival: 50%.

Plot 63 P42 39/533 Inchnacardoch, Inverness.

Form: Mod, 70% straight, mod branch.

Growth: Mod vigorous.

Health: Good.

Survival: 65%.

Plot 64 P39 36/503 Culsachan, Inverness.

Form: Very good, 90% straight, mod fine branch, very narrow crown.

Growth: Mod vigorous.

Health: Very good.

Survival: 95%. Best provenance assessed.

Plot 65 P39 36/507 Beaufort, Inverness.

Form: Slightly rough, 60% straight, mod branch.

Growth: Mod.

Health: Good.

Survival: 90%.

Plot 66 P39 36/502 Achnashellach, Wester Ross.

Form: Mod, 70% straight, mod branch.

Growth: Vigorous.

Health: Good.

Survival: 80%.

Plot 67 P39 36/501 Achnasheilich, Wester Ross.

Form: Good, 80% straight, mod fine branch.

Growth: Lacks vigour.

Health: Good.

Survival: 85%.

Plot 68 P39 37/505 Orton, Moray.

Form: Mod, 75% straight, mod branch...

Growth: Mod vigorous.

Health: Good.

Survival: 80%.

Plot 69 P39 37/506 Lethen, Nairn.

Form: Mod good, 80% straight.

Growth: Mod vigorous.

Health: Good.

Survival: 85%.

Plot 70 P39 37/536 Hluboka, Czechoslovakia.

Form: Very good, very straight, 90%.

Growth: Very slow.

Health: Good.

Survival: 60%. Light blue-green foliage. *Contains many A.P. individuals throughout.*

Plot 71 P38 36/527 Gordon Castle, Moray.

Form: Good, 85% straight, mod branch.

Growth: Vigorous.

Health: Good.

Survival: 85%.

Plot 72 P38 35/530 Auchness, Seafield, Grantown, Moray.

Form: Good, 85% straight.

Growth: Mod vigorous.

Health: Good.

Survival: 80%.

Plot 73 P38 35/512 Strathayell, Strathayell

Form: Poor, 50% straight, heavy branch.

Growth: Vigorous.

Health: Good.

Survival: 85%.

Plot 74 P38 35/1037 New Forest, Hampshire.

Form: Mod poor, 65% straight, mod branch.

Growth: Slow, lacks vigour.

Health: Good.

Survival: 75%.

Plot 75 P38 35/505 Darnaway, Moray.

Form: Very good, 90% straight, Mod branch.

Growth: Mod vigorous.

Health: Good.

Survival: 90%.

Plot 76 P38 L.P. 34/23 SHuswap Lake, BC. 24 trees, vigorous, forking.

Plot 77 P38 P. insignis. Complete failure.

Plot 78 P38 32/66 Pinus peuce, Bulgaria.

Form: Perfect, 100% straight, very light branch-flat.

Growth: Mod vigorous, high basal area.

Health: Very healthy.

Survival: Fully stocked after thinning.

Asdrematic contrast in species. Good cone crop, plus trees selected.

Plot 79 P41 38/516 Glendoe, Ft. Augustus, Inverness.

Form: Very good, 90% straight, mod light branch.

Growth: Mod vigorous.

Health: Good.

Survival: 85%.

Plot 80 P41 38/518 Teindland, Moray.

Form: Mod, 70% straight, slightly heavy branch.

Growth: Mod vigorous.

Health: good.

Survival: 65%.

Plot 81 P41 38/519 Findlays Seat, Moray.

Form: Mod, 80% straight, mod branch.

Growth: Mod vigorous.

Health: Good.

Survival: 75%.

Plot 82 P42 39/500 Balnagowan, Inverness.

Form: Mod poor, 65% straight, heavy branch.

Growth: Lacks vigour.

Health: Good.

Survival: 60%.

Plot 83 P42 39/536 Inchnacardoch, Inverness.

Form: Mod, 70% straight, mod branch;

Growth: Lacks vigour.

Health: Good.

Survival: 70%.

Plot 84 P42 39/549 Findon, Easter Ross.

Form: Good, 95% straight, mod fine branch.

Growth: Mod vigorous.

Health: Good.

Survival: 85%.

Plot 85 P42 39/552 Findon, Easter Ross.

Form: Mod good, 80% straight, mod branch.

Growth: Mod vigorous.

Health: Good.

Survival: 75%.

Plot 86 P87 P40 Exp 5-6.

Plot 88 Failed. 34/534 Inchnacardoch.

Plot 89 P42 38/513 Findon, Moray.

Form: Good, 95% straight, fine branch.

Growth: Mod vigorous.

Health: good.

Survival: 90%.

Plots 90-102 intensive plots.

Plots 103-110 complete failure. (Small plots various spec~~o~~/s).

Plot 111 P42 Tainland, Moray. 39/546.

Form: Mod **good**, 75% straight, mod fine branch.

Growth: Mod vigorous.

Health: Good.

Survival: Poor, 50%.

Plot 112 P43 39/557 ~~Glengarry~~ Inverness.

Form: **Mod** poor, 60% straight, mod heavy branch.

Growth: Mod, vigorous, very uneven.

Health: Good.

Survival: Poor, 50%.

Plot 112 P42 39/551, Findon, Easter Ross.

Form: Mod, 75% straight, mod branch.

Growth: Mod vigour.

Health: Good.

Survival: 60%.

Plot 114 P42 39/550 Findon, Easter Ross.

Form: Good, 90% straight, mod light branch.

Growth: Lacks vigour.

Health: Good.

Survival: 70%, poor on west edge.

Plot 115 P42 39/545, ~~Glengarry~~ Inverness.

Form: Mod good, 75% straight, mod branch.

Growth: Lacks height but good girth.

Health: Good.

Survival: 60% overall very poor on west edge.

Notes of interest.

Barrisdale P37 plots, 8 intensive all from single trees.

5 plots show mod to good **form**, 2 of poor form and 1 complete failure.

The Polish collections made by Dr. Nicolii Danzig, (13 intensive plots) all very poor or a complete failure.