

ROYAL FORESTRY SOCIETY
WHOLE SOCIETY MEETING 1993.

THE BRECHF A FOREST PLOTS, LLANDOVERY FOREST DISTRICT

The Brechfa Forest plots were an ambitious project organised and planted by the local Forestry Commission staff between 1957 and 1961. Choice of site, species and provenance appears to have been on a "What's available" basis. Over the years certain failed plots have been re-used. Sitka spruce, the most important planted species at the time and which would have made a good 'control' species was not included.

Silviculture (North) Research at Talybont-on-Usk, now part of the Forestry Authority, first became aware of the plots in 1980 and formally took over the running of the unmanaged area in 1982. Over the last ten years a new access road has been opened up. Measurements; light thinnings and, general maintenance, on a limited budget have continued.

Recent changes in forestry policy have made it desirable to reconsider the current state of species research in British forestry. These changes include the greater interest in farm woodlands, community forestry, and native woodlands. There is also the commitment to the diversification of production forests which may well include greater use of mixtures and broadleaves. Species research is also of considerable relevance to any attempt to increase biodiversity in British forestry. Other aspects which need to be considered are the potential impact of climatic change.

At present there are 2,400 taxa of tree capable of growing in Great Britain; 180 are established or are potential forestry species. Brechfa forest plots have over eighty species of tree established.

In 1992 it was proposed at an internal F.C. Species Discussion Meeting that the Brechfa Forest plots should be developed as one of four major collections of forest plots in the UK. The plots represent the South Western quarter of Great Britain.

At present the plots are managed as follows:

18 are or will be full Mensuration branch sample plots,

22 are Silviculture (N) measurement plots,

1 is a Pathology Lodgepole pine seedling experiment testing site
for resistance to *Ramichloridium pini*

The remaining plots are for observation on a minimum care and
maintenance basis.

BRECHFA 15/81

PROJECT NO: 840 SPECIES

SITE DETAILS -

GEOLOGY: Silurian (Tarannon and Llandovery series),

SOIL: Deep upland brown earth with an area of surface water gley
in the flushed hollow,

PH: 4.5 - 5,

ELEVATION: 220 - 250 M,

RAINFALL: 1700mm,

CLIMATE: Cool, wet and unexposed (C2M Hartnup and Bendelow
bioclimatic classification),

PLOT SIZE: Variable but most large enough for a 0.02 ha
assessment plot,

FERTILISER: Most plants received the standard 2 oz of Ground
Mineral phosphate at planting.

BRECHFA FOREST PLOTS

Plot No	Species	Origin	P. Year	Notes
1	<i>Pseudotsuga menziessii</i>	Washington	57	Many good trees
2	<i>Larix decidua</i>	Poland	60	Patchy plot
3	<i>Larix potaninii</i>	-	59	Failed
4	<i>Tsuga heterophylla</i>	Q.C.I.		Tall trees, fluting
5	<i>Tsuga mertensiana</i>	-	57	Poor, bushy
6	<i>Chamaecyparis lawsoniana</i>	Goytre W	57	Multi stemmed
7	<i>Thuja plicata</i>	Ladysmith V.I.	69	Excellent form
8	<i>Abies fraseri</i>	-	61	A rare abies
9	<i>Cupressus macrocarpa</i>	-	68	Poor health
10	<i>Sequoiadendron giganteum</i>	California	59	Good specimen trees
11	<i>Sequoia sempervirens</i>	California	58	Some excellent trees
12	<i>Eucalyptus (debeauzevillei)</i>	Australia	86	Hardy
13	<i>Cedrus deodara</i>	Northern Italy	58	Poor
14	<i>Picea abies</i>	Tyrol Austria	57	Healthy
15	<i>Abies koreana</i>	-	61	Small and rare
16	<i>Abies grandis</i>	Kittitas County, Washington	57	Excellent form and vigour
17	<i>Abies procera</i>	Washington	57	Excellent form and vigour
18	<i>Abies cephalonica</i>	-	57	Not too healthy
19	<i>Abies nordmanniana</i>	SW Germany	58	Better health
20	<i>Abies concolor</i>	Colorado	58	Few trees surviving
21	<i>Abies veitchii</i>	Japan	58	Healthy
22	<i>Abies concolor var lowiana</i>	Montana	58	Some deaths
23	<i>Abies homolepis</i>	Nagano Japan	59	Healthy
24	<i>Abies amabilis</i>	Washington	59	Healthy
25	<i>Abies delavayi</i>	-	59	Small plot
26	<i>Pinus nigra var pallasiana</i>	-	60	Poor plot
27	<i>Pinus nigra var austriaca</i>	Austria	60	Poor plot
28	<i>Pinus muricata</i>	-	59	Rough plot
29	<i>Pinus strobus</i>	Adirondack Mts, USA	59	Well stocked, healthy
30	<i>Pinus resinosa</i>	-	60	Poor condition
31	<i>Pinus unicata</i>	-		Poor condition
32	<i>Pinus thunbergii</i>	-	60	Slow growth

33	<i>Quercus petraea</i>	Brechfa (L)	57	Reasonable form
34	<i>Quercus robur</i>	Cilgwyn (L)	57	Reasonable form
35	<i>Quercus rubra</i>	Holland		Reasonable form
36	<i>Tilia cordata</i>	Lower Austria	59	Bushes
37	<i>Nothofagus obliqua</i>	-	57	Large rough trees
38	<i>Fagus sylvatica</i>	Dedham	57	Squirrel damaged stems
39	<i>Pinus densiflora</i>	Nagano Japan	59	Failed
40	<i>Pinus peuce</i>	Macedonia	59	Excellent
41	<i>Pinus pungens</i>	New England USA	59	A poor plot
42	<i>Pinus ponderosa</i>	Susanville Calif	57	Poor plot
43	<i>Picea asperata</i>	-	58	Small group
44	<i>Pinus banksiana</i>	-	57	Very rough
45	<i>Pinus mugo</i>	Dorset	59	Bushlike
46	<i>Pinus mugo var pumilo</i>	France	57	Bushlike
47	<i>Pinus contorta</i>	Long Beach	57	A rough windblown plot
48	<i>Pinus radiata</i>	-	57	A failed plot
49	<i>Pinus jeffreyi</i>	Chester Calif	57	Unhealthy plot
50	<i>Cryptomeria japonica</i>	Sanwa Japan	57	Fair form
51	<i>Picea glauca</i>	Denmark	57	Fair form
52				Lost
53				Lost
54	<i>Picea orientalis</i>	-	57	Fair plot
55	<i>Picea rubens</i>	-	57	Fair plot
56	<i>Picea omorika</i>	-	59	Healthy plot
57	<i>Picea mariana</i>	Ontario	60	Healthy, rare
58	<i>Picea smithiana</i>	-	59	Failed, now LP expt
59	<i>Abies lasiocarpa</i>	Oakridge Oregon	60	Healthy
60	<i>Abies balsamea</i>	Wisconsin	60	Poor plot
61	<i>Acer pennsylvanicum</i>	Austria	60	Fair plot
62	<i>Ulmus glabra</i>	-	60	A few bushes
63	<i>Quercus canariensis (merbeckii)</i>	Gloucester	59	Good plot
64	<i>Acer saccharinum</i>	Tennessee	59	Poor form
65	<i>Quercus lusitanica</i>	Kew	59	Poor plot
66	<i>Quercus cerris</i>	Home		Healthy
67	<i>Acer pseudoplatanus</i>	-	57	Fair form

68	<i>Acer platanoides</i>	Hexham	57	Good plot
69	<i>Populus TT.</i>	-	61	Not impressive
70	<i>Tilia cordata</i>	-	59	Fairly healthy plot
71	<i>Liriodendron tulipifera</i>	-	59	Bush like trees
72	<i>Castanea sativa</i>	France	57	Coppice like
73	<i>Aesculus hippocastanum</i>	-	58	Poor plot
74	<i>Populus TT.</i>	-	61	Not impressive
75	<i>Picea koyamai</i>	-	61	Good complete plot
76	<i>Picea sitchensis</i>	Oregon	88	Now OSS
77	<i>Tilia platyphyllos</i>	Lower Austria	59	Few left
78	<i>Davidia vilmoriana</i>	-	58	Failed
79	<i>Robinia pseudoacacia</i>	-	57	Few unhealthy trees
80	<i>Populus robusta</i>	-	61	Poor
81	<i>Populus serotina</i>	-	61	Poor
82	<i>Cupressocyparis leylandii</i>	-	65	Vigorous
83	<i>Betula pendula</i>	-	59	Not impressive
84	<i>Stranvaesia davidiana</i>	-	57	Thicket
85	<i>Betula alba</i>	Hants	61	Fair
86	<i>Alnus rubra</i>	Hants	59	Poor
87	<i>Betula pendula</i>	Mildenhall	59	Unimpressive
88	<i>Betula maximowicziana</i>	Nagano Japan	57	Fair plot
89	<i>Betula lenta</i>	Pennsylvania	58	Fair plot
114	<i>Pinus contorta</i>	Mixed inc Lulu Island	56	Filler

FORESTRY COMMISSION RESEARCH - STATISTICS(N)

Experiment	Brechfa 15 /81	Dataset number	5462
Species	VAR	Program	BASAR
Assessment	B.H.D. (CMS)	Branch	SILV
Date of Assessment	1989-02-27	Processed by	LR
Project number	38	Date processed	1992-03-13

Plot area = 0.020000 ha

Table of basal area in m2/ha, and no. of trees per plot

Treatments	1	Total
1	49.59	49.59
	21	
4	47.18	47.18
	31	
6	57.49	57.49
	39	
7	59.36	59.36
	33	
10	87.54	87.54
	33	
11	90.38	90.38
	22	
14	33.56	33.56
	23	
16	60.51	60.51
	24	
17	61.49	61.49
	26	
19	37.79	37.79
	48	
21	40.63	40.63
	49	
23	48.88	48.88
	56	
24	45.59	45.59
	41	
29	45.26	45.26
	45	
40	45.21	45.21
	31	
50	56.25	56.25
	38	
56	49.63	49.63
	60	
57	28.83	28.83
	66	
75	38.11	38.11
	70	
82	48.44	48.44
	80	
114	37.37	37.37
	52	