

Possible Opportunities for Future Forest Development in Scotland:

A scoping study

**MAIN REPORT
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Table 1a Current woodland distribution and extent by RFF

Regional Forestry Forum	Total area (ha)	Total wooded area		FC Scotland woodland		Other woodland	
		ha	% of total land area	ha	% of total wooded area	ha	% of total wooded area
Central Scotland	686 000	91 000	13%	20 000	22%	71 000	78%
Grampian	874 000	166 000	19%	52 000	32%	114 000	68%
Highland	3 175 000	397 000	12%	138 000	35%	259 000	65%
Perth & Argyll	1 786 000	376 000	21%	150 000	40%	226 000	60%
South Scotland	1 370 000	324 000	24%	127 000	39%	197 000	61%
Scotland	7 891 000	1 354 000	17%	487 000	36%	867 000	64%

Table 1b Current woodland distribution and extent by Unitary Authority

Unitary Authority	Total area (ha)	Total wooded area		FC Scotland woodland		Other woodland	
		ha	% of total land area	ha	% of total wooded area	ha	% of total wooded area
Aberdeen City	18184	1816	10	803	44	1013	56
Aberdeenshire	630376	100221	16	29548	29	70673	71
Angus	218636	20926	10	4367	21	16559	79
Argyll and Bute	706825	209545	30	96018	46	113527	54
Clackmannanshire	17982	1958	11	119	6	1839	94
City of Edinburgh	26178	1549	6	30	2	1519	98
City of Glasgow	17665	1142	6	0	0	1142	100
Dumfries & Galloway	644511	177170	27	74747	42	102423	58
Dundee City	6336	253	4	0	0	253	100
East Ayrshire	126994	25994	20	11691	45	14303	55
East Dunbartonshire	17435	1838	11	404	22	1434	78
East Lothian	67414	5449	8	0	0	5449	100
East Refrewshire	17342	1906	11	848	44	1058	56
Falkirk	29275	3394	12	435	13	2959	87
Fife	133257	14811	11	4211	28	10600	72
Highland	2617160	393052	15	137966	35	255086	65
Inverclyde	16295	1645	10	0	0	1645	100
Midlothian	35572	3210	9	5	0	3205	100
Moray	224071	64144	29	22120	34	42024	66
North Ayrshire	90681	13362	15	7765	58	5597	42
North Lanarkshire	47224	7167	15	2089	29	5078	71
Orkney Islands	102150	104	0	<1	0	104	100
Perth & Kinross	538772	86443	16	25719	30	60724	70
Renfrewshire	25998	2343	9	0	0	2343	100
Scottish Borders	473573	84893	18	22860	27	62033	73
Shetland Islands	146450	8	0	0	0	8	100
South Ayrshire	123158	35639	29	17446	49	18193	51
South Lanarkshire	177381	30644	17	3982	13	26662	87
Stirling	225328	49080	22	21483	44	27597	56
West Dunbartonshire	17982	3020	17	1244	41	1776	59
West Lothian	42916	7049	16	1359	19	5690	81
Western Isles	305802	3470	1	450	13	3020	87
Scotland	7888923	1353245	17	487709	36	865536	64

Table 2 Datasets used to determine potential maximum woodland coverage

<p><i>Landcover datasets</i></p> <ul style="list-style-type: none"> ▪ Scottish National Soil Map (Macaulay Institute, 2002) ▪ Land Cover of Scotland 1988 (LCS88) ▪ National Inventory of Woodland and Trees 2001 (NIWT) ▪ Forestry Commission planted areas (March 2004), taken from the sub-compartment database. ▪ Regional Forestry Forum (RFF) boundaries (same as FC Scotland conservancies) ▪ Unitary Authority boundaries (Ordnance Survey) ▪ Rockiness layer, derived from the Scottish National Soil Map (Macaulay Institute) ▪ Woodland HAP layer (SNH/Forest Research) ▪ Ancient woodland ▪ Scottish Semi Natural Woodland Inventory (SSNWI) ▪ Caledonian Pinewood Inventory buffer zone (FC) <p><i>ESC datasets</i></p> <ul style="list-style-type: none"> ▪ 250 metre resolution raster ESC climate datasets: accumulated temperature, moisture deficit, windiness (DAMS) and continentality. Note that DAMS scores have not been calculated above the 1200000 metre north grid line. ▪ 250 metre resolution raster soil quality datasets (soil moisture regime and soil nutrient regime), derived from the major soils sub-group of the 1:250 000 scale Scottish National Soil Map (Macaulay Institute, 2002).
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Table 3 Commercial tree species and NVC woodland types included in analysis

Commercial tree species		NVC woodland types
Conifer	Broadleaves	
Sitka spruce	alder	W3
Norway spruce	ash	W4
Scots pine	beech	W7
Lodgepole pine	downy birch	W11
Douglas fir	silver birch	W17
European larch	pedunculate oak	W18
Japanese larch	sessile oak	W19
	sycamore	
	wild cherry	

Table 4 Biophysical constraints to Woodland Development in Scotland and their extent

Constraint	Source	Area (ha)
Alpine, sub-alpine soils, lithosols	Soil map	444 000
Eroded peats (no trees)	LCS88	396 000
Montane (by vegetation)	LCS88	281 000
Water	LCS88	153 000
Built up areas, developed rural land (factories, airfields, cemeteries), roads and rail	LCS88	164 000
Cliffs	LCS88	40 000
Dubh lochs	LCS88	17 000
Salt marshes	LCS88	6 000
Tidal zone	LCS88	4 000

Note: The total area identified is not the sum of its parts, as the constraints may overlap where different sources were used.

Table 5 Current and potential woodland distribution with biophysical constraints identified by RFF

Regional Forestry Forum	Total area (ha)	Current woodland		Potential woodland area – low suitability		Potential woodland area - suitable		Area unsuitable for woodland		Area of biophysical constraint		Missing (No ESC climate or MI soil data)	
		ha	% total area	ha	% total area	ha	% total area	ha	% total area	ha	% total area	ha	% total area
Central Scotland	686 000	91 000	13%	28 000	4%	433 000	63%	5 000	<1%	113 000	16%	15 000	2%
Grampian	874 000	166 000	19%	111 000	13%	490 000	56%	18 000	2%	88 000	10%	1 000	<1%
Highland	3 175 000	397 000	12%	501 000	16%	1 305 000	41%	158 000	5%	754 000	24%	60 000	2%
Perth & Argyll	1 786 000	376 000	21%	215 000	12%	857 000	48%	84 000	5%	241 000	13%	13 000	<1%
South Scotland	1 370 000	324 000	24%	79 000	6%	895 000	65%	10 000	<1%	59 000	4%	3 000	<1%
Scotland	7 891 000	1 354 000	17%	935 000	12%	3 980 000	50%	275 000	3%	1 255 000	16%	92 000	1%

Table 6 Designation constraints and planning sensitivities to woodland expansion¹

Criteria ²	Critical Assumptions	Justification
Designated sites – non-woodland SSSIs	New planting of non-native species will be totally precluded; limited potential for natural regeneration of native species	Site establishment techniques will damage the integrity of non-woodland SSSIs
Blanket peat (> 1 metre deep)³	New planting of non-native species will be totally precluded; sites largely unsuited to natural regeneration	Site establishment techniques irreversibly damage the integrity of blanket peatlands. "Forests and Peatland Habitats" Guideline Note, FC (2000)
Designated sites – Natura 2000 sites (SACs and SPAs)	Type and scale of planting will be restricted on non-woodland sites; natural regeneration will be preferred on woodland sites	Non-native planting will damage the integrity of SACs and SPAs
Landscape primarily National Scenic Areas (NSA)s, Landscape Character Assessment (LCA) and Local Landscape Character Assessments (e.g. Ayrshire and Arran) Areas of Great Landscape Value (AGLV)	Woodland expansion is almost precluded if objective of LCA is to retain open ground; in others the nature and scale of new woodlands are likely to be influenced.	New woodland will impact on existing landscape character: woodland expansion is either desirable or undesirable depending on specific context
'Archaeologically sensitive areas'	New planting may be restricted depending on the nature and scale of the features on interest.	Forestry operations can damage the specific archaeological feature of interest and change the context of that feature;
Priority areas for heathland	In many areas, heathland occurs over the same natural range as many woodland types	Heathland will have equal priority or superiority over woodland in some areas
River basin management	Some catchments may be at or near their maximum woodland cover. Depending on the context, expansion may compromise public water supplies or flow and may increase risk of eutrophication or acidification.	River basin management planning is an integral part of the WFD
Prime agricultural land	Type and scale of planting will be restricted. Opportunities for fast growing broadleaved species	Agricultural land use will continue to be the one offering the greatest economic return

Important hill grazing land	Land with high natural grazing quality is in short supply	Loss of this land type will damage farm viability in some circumstances
Wild and remote bare land ³	The absence of trees, particularly non-native in some wild and remote landscapes is perceived as a positive attribute	Public attitudes? There appears to be no formal or informal designation of 'wild land' that has any legal basis?

¹The table below is based on the guidance provided in Circular 9/1999 Indicative Forestry Strategies and on the sensitivity criteria used in four Indicative Forestry Strategies – Highland, Moray, Dumfries and Galloway and Borders. Conservation designations, landscape and archaeology feature in all four IFs and agriculture and river basin management in the majority.

² It is acknowledged that there will be considerable overlap in the spatial extent of a number of these criteria

³ Only the large bogs can be distinguished. There will be a large number that are too small to display

Key:

Critical constraints, affecting whole area and woodland development opportunities seriously constrained

Likely constraints, affecting parts of areas

Potential constraints, affecting parts of areas.

Table 7a Current and potential woodland distribution accounting for constraints to woodland expansion, by RFF

Regional Forestry Forum	Total area ha	Wooded area ha and % of total area	Potential woodland area outwith biophysical constraints suitable and <i>low suitability</i>		Potential woodland area outwith biophysical & critical constraints suitable and <i>low suitability</i>		Potential woodland area within the likely ¹ constraints suitable and <i>low suitability</i>		Potential woodland area within the possible constraints suitable and <i>low suitability</i>		Potential woodland area within the likely and possible constraints suitable and <i>low suitability</i>	
			ha	% of total area	ha	% of total area	ha	% of total area	ha	% of total area	ha	% of total area
Central Scotland	686 000	91 000 (13%)	433 000 <i>28 000</i>	63% <i>4%</i>	360 000 <i>17 000</i>	52% <i>2%</i>	57 000 <i><1 000</i>	8% <i><1%</i>	88 000 <i>5 000</i>	13% <i><1%</i>	5 000 <i>0</i>	<1% <i>0%</i>
Grampian	874 000	166 000 (19%)	490 000 <i>111 000</i>	56% <i>13%</i>	426 000 <i>68 000</i>	49% <i>8%</i>	211 000 <i>29 000</i>	24% <i>3%</i>	152 000 <i>11 000</i>	17% <i>1%</i>	66 000 <i>6 000</i>	7% <i><1%</i>
Highland	3 175 000	397 000 (12%)	1 305 000 <i>501 000</i>	41% <i>16%</i>	817 000 <i>302 000</i>	26% <i>10%</i>	440 000 <i>193 000</i>	14% <i>6%</i>	112 000 <i>44 000</i>	3% <i>1%</i>	48 000 <i>26 000</i>	1% <i><1%</i>
Perth & Argyll	1 786 000	376 000 (21%)	857 000 <i>215 000</i>	48% <i>12%</i>	655 000 <i>146 000</i>	37% <i>8%</i>	162 000 <i>61 000</i>	9% <i>3%</i>	217 000 <i>51 000</i>	12% <i>3%</i>	42 000 <i>20 000</i>	2% <i>1%</i>
South Scotland	1 370 000	324 000 (24%)	895 000 <i>79 000</i>	65% <i>6%</i>	656 000 <i>45 000</i>	48% <i>3%</i>	217 000 <i>24 000</i>	16% <i>2%</i>	134 000 <i>8 000</i>	10% <i><1%</i>	30 000 <i>4 000</i>	2% <i><1%</i>
Scotland	7 891 000	1 354 000 (17%)	3 979 700 <i>934 550</i>	50% <i>12%</i>	2 914 000 <i>578 000</i>	37% <i>7%</i>	1 087 000 <i>307 000</i>	14% <i>4%</i>	703 000 <i>119 000</i>	9% <i>1%</i>	191 000 <i>56 000</i>	2% <i><1%</i>

¹Likely constraints exclude archaeologically sensitive areas

Table 7b Current and potential woodland distribution accounting for constraints to woodland expansion, by Unitary Authority

Unitary Authority	Total area (ha)	Planted area (ha)	Potential woodland area outwith physical constraints suitable and <i>low suitability</i>		Potential woodland area outwith physical & critical constraints suitable and <i>low suitability</i>		Potential woodland area within the likely ¹ constraints suitable and <i>low suitability</i>		Potential woodland area within the possible constraints suitable and <i>low suitability</i>		Potential woodland area within the likely and possible constraints suitable and <i>low suitability</i>	
			ha	% of total area	ha	% of total area	ha	% of total area	ha	% of total area	ha	% of total area
Aberdeen City	18184	1816	10788 <i>0</i>	59% <i>0%</i>	9825 <i>0</i>	54% <i>0%</i>	5075 <i>0</i>	27% <i>0%</i>	663 <i>0</i>	4% <i>0%</i>	125 <i>0</i>	<1% <i>0%</i>
Aberdeenshire	630376	100221	386069 <i>76406</i>	61% <i>12%</i>	341875 <i>45913</i>	54% <i>7%</i>	167050 <i>21763</i>	27% <i>3%</i>	138125 <i>9713</i>	22% <i>2%</i>	60713 <i>5144</i>	10% <i><1%</i>
Angus	218636	20926	134219 <i>30325</i>	61% <i>14%</i>	111394 <i>28056</i>	51% <i>13%</i>	875 <i>4213</i>	<1% <i>2%</i>	60044 <i>12425</i>	27% <i>6%</i>	250 <i>1650</i>	<1% <i><1%</i>
Argyll and Bute	706825	209545	291638 <i>74813</i>	41% <i>11%</i>	225419 <i>45913</i>	32% <i>6%</i>	115256 <i>27919</i>	16% <i>4%</i>	43413 <i>10419</i>	6% <i>1%</i>	29769 <i>7231</i>	4% <i>1%</i>
Clackmannanshire	17982	1958	9525 <i>1569</i>	53% <i>9%</i>	7288 <i>1225</i>	41% <i>7%</i>	150 <i>0</i>	<1% <i>0%</i>	1950 <i>1188</i>	11% <i>7%</i>	0 <i>0</i>	0% <i>0%</i>
City of Edinburgh	26178	1549	12369 <i>213</i>	47% <i>1%</i>	11844 <i>175</i>	45% <i>1%</i>	0 <i>0</i>	0% <i>0%</i>	7444 <i>156</i>	28% <i><1%</i>	0 <i>0</i>	0% <i>0%</i>
City of Glasgow	17665	1142	2088 <i>0</i>	12% <i>0%</i>	1725 <i>0</i>	10% <i>0%</i>	6 <i>0</i>	<1% <i>0%</i>	506 <i>0</i>	3% <i>0%</i>	6 <i>0</i>	<1% <i>0%</i>
Dumfries & Galloway	644511	177170	408831 <i>31544</i>	63% <i>5%</i>	307650 <i>20075</i>	48% <i>3%</i>	129188 <i>13869</i>	20% <i>2%</i>	49069 <i>4550</i>	8% <i><1%</i>	16000 <i>2538</i>	2% <i><1%</i>
Dundee City	6336	253	1431 <i>0</i>	23% <i>0%</i>	1406 <i>0</i>	22% <i>0%</i>	0 <i>0</i>	0% <i>0%</i>	1400 <i>0</i>	22% <i>0%</i>	0 <i>2538</i>	0% <i>0%</i>
East Ayrshire	126994	25994	84319 <i>7000</i>	66% <i>6%</i>	63194 <i>2519</i>	50% <i>2%</i>	16781 <i>2144</i>	13% <i>2%</i>	2119 <i>475</i>	2% <i><1%</i>	1356 <i>156</i>	1% <i><1%</i>
East Dunbartonshire	17435	1838	10138 <i>525</i>	58% <i>3%</i>	9481 <i>425</i>	54% <i>2%</i>	488 <i>0</i>	3% <i>0%</i>	2138 <i>250</i>	12% <i>1%</i>	0 <i>0</i>	0% <i>0%</i>

East Lothian	67414	5449	55663 2856	83% 4%	47825 1613	71% 2%	0 0	0% 0%	31556 0	47% 0%	0 0	0% 0%
East Refrewshire	17342	1906	11269 819	65% 5%	9931 181	57% 1%	0 0	0% 0%	0 0	0% 0%	0 0	0% 0%
Falkirk	29275	3394	20181 6	69% 0%	16813 0	57% 0%	15531 0	53% 0%	3988 0	14% 0%	2994 0	10% 0%
Fife	133257	14811	103888 125	78% 0%	91075 106	68% 0%	1719 0	1% 0%	40806 0	31% 0%	206 0	<1% 0%
Highland	2617160	393052	1075000 394538	41% 15%	654881 248106	25% 9%	320644 141538	12% 5%	104931 41550	4% 2%	42938 24481	2% 1%
Inverclyde	16295	1645	10100 863	62% 5%	8294 206	51% 1%	4856 119	30% <1%	688 106	4% <1%	181 19	1% <1%
Midlothian	35572	3210	27094 1175	76% 3%	22450 663	63% 2%	0 0	0% 0%	11994 469	34% 1%	0 0	0% 0%
Moray	224071	64144	92988 34450	41% 15%	74781 21581	33% 10%	39156 7756	17% 3%	13538 969	6% <1%	4913 869	2% <1%
North Ayrshire	90681	13362	52544 5213	58% 6%	33213 1888	37% 2%	4269 138	5% <1%	7094 1700	8% 2%	356 0	<1% 0%
North Lanarkshire	47224	7167	27031 69	57% 0%	23356 25	49% 0%	16263 6	34% <1%	394 6	<1% <1%	263 6	<1% <1%
Orkney Islands	102150	104	88394 3356	87% 3%	58056 119	57% 0%	25750 81	25% <1%	1138 0	1% 0%	650 0	<1% 0%
Perth & Kinross	538772	86443	246350 83050	46% 15%	177206 54463	33% 10%	13369 18325	2% 3%	61856 20338	11% 4%	4106 6931	<1% 1%
Renfrewshire	25998	2343	14775 144	57% 1%	12675 138	49% 1%	750 0	3% 0%	1894 138	7% <1%	0 0	0% 0%
Scottish Borders	473573	84893	324981 36844	69% 8%	224294 20494	47% 4%	41619 5938	9% 1%	74519 3119	16% <1%	7269 781	2% <1%
Shetland Islands	146450	8	51894 23444	35% 16%	39775 7919	27% 5%	32013 5519	22% 4%	4525 1400	3% 1%	3981 744	3% <1%
South Ayrshire	123158	35639	75413 3725	61% 3%	60638 2181	49% 2%	29769 1988	24% 2%	7888 156	6% <1%	5225 144	4% <1%
South Lanarkshire	177381	30644	115381 14756	65% 8%	97450 11238	55% 6%	0 0	0% 0%	5856 2000	3% 1%	0 0	0% 0%

Stirling	255328	49080	107500 25381	48% 11%	74644 15994	33% 7%	32688 10244	13% 4%	14275 6538	6% 3%	7756 4125	3% 2%
West Dunbartonshire	17982	3020	8644 519	48% 3%	6363 300	35% 2%	3650 6	20% <1%	1181 281	7% 2%	188 6	1% <1%
West Lothian	42916	7049	28081 556	65% 1%	24631 288	57% 1%	8988 0	21% 0%	7031 188	16% <1%	500 0	1% 0%
Western Isles	305802	3470	89863 80163	29% 26%	63756 46194	21% 15%	61225 45456	20% 15%	1069 813	<1% <1%	1031 794	0% <1%
Scotland	7888923	1353245	3978449 934447	50% 12%	2913206 577994	37% 7%	1087128 307022	14% 4%	703092 118947	9% 2%	190776 55619	2% <1%

Table 8 Estimated extent of archaeologically sensitive areas

Regional Forestry Forum	Area estimate of archaeologically sensitive areas (ha and % total area)
Central Scotland	27 000 (4%)
Grampian	21 000 (2%)
Highland	35 000 (1%)
Perth & Argyll	31 000 (2%)
South Scotland	27 000 (2%)
Scotland	141 000 (2%)

Table 9. Assessment of the overall suitability of Scotland for woodland based upon biological and land use planning constraints (see also Figure 5 and Table 7a).

Suitability for Woodland	Degree of Constraint	Area of Scotland (ha)	%
Suitable and Low suitability land (includes existing woodland)	No biological or land use planning constraints	2,571,130	33
Potentially suitable 1	No biological but some minor land use planning constraints	822,000	10
Potentially suitable 2	No biological but some moderate land use planning constraints	1,420,380	18
Unsuitable	Either biological and/or critical land use planning constraints	3,077,490	39
		7,891,000	100

Table 10. Species included in assessment of timber potential and their minimum yield class

Species		Minimum yield class
Softwoods	Douglas fir	16
	Sitka spruce, Corsican pine	12
	Norway spruce	10
	Japanese larch	8
	Scots pine, European larch	6
Hardwoods	Sessile oak, pedunculate oak, downy birch, silver birch, ash, sycamore, beech, wild cherry, alder	4

Table 11 Area (ha) of potential commercial non-native softwoods and Scots pine by yield class

Yield class	Existing woodland where timber production could be the priority non-native species; Scots pine (ha)	Potential land ¹ where timber production could be the priority non-native species; Scots pine (ha)	Total area where timber production could be the priority non-native species; Scots pine	
			ha	% total land area
< 12	4 000 33 000	3 000 88 000	7 000 121 000	<1% 2%
12 – 14	750 000 0	1 480 000 0	2 230 000 0	28% 0%
16 – 18	488 000 0	1 610 000 0	2 098 000 0	26% 0%
> 18	15 000 0	42 000 0	57 000 0	1% 0%
Total	1 257 000 33 000	3 135 000 88 000	4 392 000 121 000	55% 2%
Unsuitable for timber production ²	48 000	269 000	317 000	4%
Unclassified ³	14 500	0	14 500	<1%

¹ Land identified as suitable or having low suitability for planting

² Yield class less than the minimum specified for every species considered

³ Area unclassified due to missing ESC climate/soil data

Table 12 Area (ha) of potential commercial non-native softwoods (excluding Sitka spruce) and Scots pine by yield class

Yield class	Existing woodland where timber production could be the priority non-native species; Scots pine (ha)	Potential land ¹ where timber production could be the priority non-native species; Scots pine (ha)	Total area where timber production could be the priority non-native species; Scots pine	
			ha	% total land area
< 12	108 000 629 000	329 000 937 000	437 000 1 566 000	5% 20%
12 – 14	389 000 0	1 279 000 0	1 668 000 0	21% 0%
16 – 18	114 000 0	509 000 0	623 000 0	8% 0%
> 18	7 000 0	20 000 0	27 000 0	<1% 0%
Total	618 000 629 000	2 137 000 937 000	2 755 000 1 566 000	35% 20%
Unsuitable for timber production ²	91 000	419 000	510 000	6%
Unclassified ³	14 500	0	14 500	<1%

¹ Land identified as suitable or having low suitability for planting

² Yield class less than the minimum specified for every species considered

³ Area unclassified due to missing ESC climate/soil data

Table 13 Area (ha) of potential commercial hardwoods by yield class

Yield class	Existing woodland where timber production could be the priority (ha)	Potential land ¹ where timber production could be the priority (ha)	Total area where timber production could be the priority	
			ha	% total land area
4 - 6	217 000	713 000	930 000	12%
8 - 10	325 000	1 190 000	1 515 000	19%
Total	542 000	1 903 000	2 445 000	31%
Unsuitable for timber production ²	797 000	1 589 000	2 386 000	30%
Unclassified ³	14 500	0	14 500	<1%

¹ Land identified as suitable or having low suitability for planting

² Yield class less than the minimum specified for every species considered

³ Area unclassified due to missing ESC climate/soil data

Table 14 Areas where carbon mitigation could be a priority – commercial softwoods

Yield class	Existing woodland where carbon mitigation could be the priority (ha)	Potential land ¹ where carbon mitigation could be the priority (ha)	Total area where carbon mitigation could be the priority	
			ha	% total land area
< 12	3 000	1 000	4 000	<1%
12 – 14	59 000	148 000	207 000	3%
16 – 18	125 000	679 000	804 000	10%
> 18	4 000	10 000	14 000	<1%
Total	191 000	838 000	1 029 000	13%
Unsuitable for carbon mitigation ²	500	2 500	3 000	<1%
Unclassified ³	0	0	0	0%

Commercial softwoods by yield class

¹ Land identified as suitable or having low suitability for planting

² Yield class less than the minimum specified for every species considered

³ Area unclassified due to missing ESC climate/soil data

Yield class	Central	Grampian	Highland	Perth & Argyll	South	Total
<12	0	2 000	500	500	0	3 000
12-14	5 000	12 000	28 000	10 000	4 000	59 000
16-18	32 000	7 000	5 000	58 000	23 000	125 000
>18	0	0	0	2 000	2 000	4 000
Total	37 000	21 000	33 500	70 500	29 000	191 000

Area (ha) of existing woodland, by Regional Forestry Forum and Yield Class, where carbon mitigation could be a priority: Commercial softwoods

Yield class	Central	Grampian	Highland	Perth & Argyll	South	Total
<12	0	500	0	500	0	1 000
12-14	21 000	24 000	49 000	44 000	10 000	148 000
16-18	230 000	44 000	10 000	212 000	183 000	679 000
>18	2 000	0	0	3 000	5 000	10 000
Total	253 000	68 500	59 000	259 500	198 000	838 000

Area (ha) of potential woodland (suitable and low suitability classes), by Regional Forestry Forum and Yield Class, where carbon mitigation could be a priority: Commercial softwoods

Table 15 Areas where carbon mitigation could be a priority – commercial hardwoods

Yield class	Existing woodland where carbon mitigation could be the priority (ha)	Potential land ¹ where carbon mitigation could be the priority (ha)	Total area where carbon mitigation could be the priority	
			ha	% total land area
4 - 6	30 000	142 000	172 000	2%
8 - 10	107 000	581 000	688 000	9%
Total	137 000	723 000	860 000	11%
Unsuitable for carbon mitigation ²	54 000	117 000	171 000	2%
Unclassified ³	0	0	0	0%

Area (ha) of Scotland where carbon mitigation management could be a priority: Commercial hardwoods by yield class

¹ Land identified as suitable or having low suitability for planting

² Yield class less than the minimum specified for every species considered

³Area unclassified due to missing ESC climate/soil data

Yield class	Central	Grampian	Highland	Perth & Argyll	South	Total
4 - 6	11 000	3 000	2 000	8 000	6 000	30 000
8 - 10	24 000	7 000	3 000	52 000	21 000	107 000
Total	35 000	10 000	5 000	60 000	27 000	137 000

Area (ha) of existing woodland, by Regional Forestry Forum and Yield Class, where carbon mitigation could be a priority: Commercial hardwoods

Yield class	Central	Grampian	Highland	Perth & Argyll	South	Total
4 - 6	77 000	4 000	6 000	16 000	39 000	142 000
8 - 10	169 000	50 000	7 000	199 000	156 000	581 000
Total	246 000	54 000	13 000	215 000	195 000	723 000

Area (ha) of potential woodland (suitable and low suitability classes), by Regional Forestry Forum and Yield Class, where carbon mitigation could be a priority: Commercial hardwoods

Table 16 Potential woodland area (ha) where biodiversity management could be a priority, by RFF

Regional Forestry Forum	Total area (ha)	Existing woodland where biodiversity could be the priority (ha)	Potential land where biodiversity could be the priority (ha and % of total potential land available) ¹	Potential non-woodland where biodiversity could be the priority ² (ha)	Potential unclassified land where biodiversity could be the priority (ha)	Total potential area (ha and % of total area)
Central Scotland	686 000	43 000	170 000 (45%)	0	5 000	218000 (32%)
Grampian	874 000	111 000	200 000 (40%)	0	1 000	312000 (36%)
Highland	3 175 000	221 000	211 000 (19%)	5 000	2 000	439000 (14%)
Perth & Argyll	1 786 000	211 000	322 000 (40%)	1 000	3 000	537000 (30%)
South Scotland	1 370 000	77 000	227 000 (32%)	0	1 000	305000 (32%)
Scotland	7 891 000	663 000	1 130 000 (32%)	6 000	12 000	1811000 (23%)

¹ Land identified as suitable or having low suitability for planting

² Land within the inclusion buffer identified as unsuitable for woodland by ESC

Table 17 Predicted woodland HAP areas (ha), by RFF, on potential woodland expansion areas where biodiversity could be a priority

Woodland HAP	Central Scotland	Grampian	Highland	Perth & Argyll	South Scotland	Scotland (ha and % of total potential land available¹)
Native pinewood	1 000	8 000	20 000	7 000	0	36 000 (1%)
Birch, wet woodland or mosaic	0	0	37 000	17 000	3 000	57 000 (1%)
Birch, pine or mosaic	1 000	7 000	32 000	16 000	2 000	58 000 (1%)
Upland birchwoods	1 000	2 000	19 000	15 000	3 000	40 000 (1%)
Wet woodland	5 000	6 000	4 000	11 000	8 000	34 000 (1%)
Upland ash	12 000	7 000	6 000	18 000	20 000	63 000 (2%)
Upland oak	90 000	76 000	61 000	127 000	90 000	444 000 (13%)
Oak, birch or mosaic	0	1 000	7 000	4 000	1 000	13 000 (<1%)
Ash, oak or mosaic	10 000	13 000	6 000	16 000	33 000	78 000 (2%)
Lowland mixed broadleaved	46 000	76 000	8 000	82 000	52 000	264 000 (7%)
Mixed, ash or mosaic	0	0	0	0	12 000	12 000 (<1%)
Other land	4 000	4 000	10 000	8 000	3 000	29 000 (<1%)
Unclassified	0	0	1 000	1 000	0	2 000 (<1%)
Total potential land² where biodiversity could be the priority	170 000	200 000	211 000	322 000	227 000	1 130 000 (32%)

¹ Total potential area available for woodland (section 3.2.1) excludes the biophysical and critical constraints

² Land identified as suitable or having low suitability for woodland

Table 18 Number of settlements by RFF

Regional Forestry Forum	Population size < 200	Population size 200 - 499	Population size 500 - 999	Population size 1000- 1999	Population size 2000- 2999	Population size >3000
Central Scotland	4	2	30	35	23	75
Grampian	0	6	22	29	3	20
Highland	2	4	15	17	2	12
Perth & Argyll	0	1	32	32	11	34
South Scotland	0	2	23	20	16	29
Scotland	6	15	122	133	55	171

Table 3.16 Number of population centres in Regional Forestry Forums, by population size.

Table 19 Area (ha) of current and potential woodland where social objectives could be the primary objective: **Scotland**

Distance	Population size < 200						Population size 200 – 499					
	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	300	800	1100	2100	3700	5500	<100	500	1100	3800	7200	1200
Potential ¹ woodland (ha)	1400	2900	4900	9500	15500	22300	600	2800	6100	16600	31500	50100

¹ Land identified as suitable or having low suitability for planting

Distance	Population size 500 - 999						Population size 1000- 1999					
	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	300	4100	10800	32600	60800	9400	800	6100	14400	39400	70400	109100
Potential ¹ woodland (ha)	2000	21100	51200	137200	254500	389600	4200	27500	60100	150600	270500	409400

Distance	Population size 2000- 2999						Population size >3000					
	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	400	2900	7100	19200	35200	55000	6400	19900	32600	63500	98500	138500
Potential ¹ woodland (ha)	1600	13400	29500	71000	125700	190800	17200	92600	170600	331900	497100	657400

Area (ha) of current and potential woodland where social objectives could be the primary objective: **Central Scotland**

Distance	Population size < 200						Population size 200 - 499					
	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	100	400	700	1500	3000	4600	0	<100	100	400	600	900
Potential ¹ woodland (ha)	300	1300	2600	6100	11200	17600	<100	300	600	1600	3200	5400

Distance	Population size 500 - 999						Population size 1000- 1999					
	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	<100	700	2100	2100	12800	18800	100	1100	2600	7000	12300	19400
Potential ¹ woodland (ha)	400	4900	12600	12600	59000	88100	600	7200	16800	42100	73800	111500

Distance	Population size 2000- 2999						Population size >3000					
	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	100	600	1800	4600	8000	13100	4600	11600	16600	26200	35000	43000
Potential ¹ woodland (ha)	600	5500	12200	28100	49600	74200	9000	49300	88000	153900	203600	239300

¹ Land identified as suitable or having low suitability for planting

Area (ha) of current and potential woodland where social objectives could be the primary objective: **Grampian**

Distance	Population size < 200						Population size 200 - 499					
	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	0	0	0	0	0	0	<100	200	400	1400	2200	4100
Potential ¹ woodland (ha)	0	0	0	0	0	0	200	1500	3400	9300	18000	28200

Distance	Population size 500 - 999						Population size 1000- 1999					
	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	<100	400	900	900	7200	12000	100	800	2500	8100	15500	24300
Potential ¹ woodland (ha)	300	3200	8300	8300	44700	68200	900	6000	13300	33500	61000	92900

Distance	Population size 2000- 2999						Population size >3000					
	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	100	300	700	1700	3100	4500	200	1600	3100	8500	15200	23000
Potential ¹ woodland (ha)	100	800	1700	4300	8200	13300	1900	10400	20000	41900	67800	96600

¹ Land identified as suitable or having low suitability for planting

Area (ha) of current and potential woodland where social objectives could be the primary objective: **Highland**

Distance	Population size < 200						Population size 200 - 499					
	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	200	400	400	600	700	800	<100	300	600	1700	3900	6200
Potential ¹ woodland (ha)	1100	1600	2200	3400	4300	4800	200	500	900	2300	3800	5800

Distance	Population size 500 - 999						Population size 1000- 1999					
	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	100	1100	2600	2600	12000	18900	300	1400	3000	7200	11900	17600
Potential ¹ woodland (ha)	300	2100	4500	4500	22300	35700	1700	4600	7700	16100	27700	40500

Distance	Population size 2000- 2999						Population size >3000					
	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	<100	300	700	1700	3100	4500	400	1600	2800	6400	11800	18500
Potential ¹ woodland (ha)	100	400	800	2200	4100	6600	1700	6200	10400	20500	32200	45000

¹ Land identified as suitable or having low suitability for planting

Area (ha) of current and potential woodland where social objectives could be the primary objective: **Perth and Kinross**

	Population size < 200						Population size 200 - 499					
Distance	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	0	0	0	0	0	0	0	0	<100	100	200	300
Potential ¹ woodland (ha)	0	0	0	0	0	0	<100	200	500	1600	3100	5300

	Population size 500 - 999						Population size 1000- 1999					
Distance	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	100	1300	3600	3600	19700	29200	200	2000	4700	12900	23300	35600
Potential ¹ woodland (ha)	700	6600	15000	15000	72800	111800	700	6000	13700	34900	61600	91400

	Population size 2000- 2999						Population size >3000					
Distance	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	200	900	2200	6100	11200	17000	700	3300	6400	13600	22000	31100
Potential ¹ woodland (ha)	400	2600	5500	13400	23400	35100	3100	15600	28700	59900	97700	137300

¹ Land identified as suitable or having low suitability for planting

Area (ha) of current and potential woodland where social objectives could be the primary objective: **South Scotland**

	Population size < 200						Population size 200 - 499					
Distance	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	0	0	0	0	0	0	0	<100	100	300	400	500
Potential ¹ woodland (ha)	0	0	0	0	0	0	<100	200	600	1800	3300	5400

	Population size 500 - 999						Population size 1000- 1999					
Distance	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	<100	500	1600	1600	9200	15100	100	600	1500	4100	7400	12200
Potential ¹ woodland (ha)	300	4200	10700	10700	55800	85700	400	3700	8600	24000	46500	73100

	Population size 2000- 2999						Population size >3000					
Distance	0	0-500m	0-1km	0-2km	0-3km	0-4km	0	0-500m	0-1km	0-2km	0-3km	0-4km
Current woodland (ha)	<100	700	1800	5100	9700	15800	500	1900	3600	8800	14500	23000
Potential ¹ woodland (ha)	400	4100	9300	22900	40500	61400	1700	11200	23600	55700	95800	139200

¹ Land identified as suitable or having low suitability for planting

Table 20 Summary of the relative potential for woodland expansion related to the 4 interest groups reviewed.

Stakeholder Group	Land holding with high potential for woodland creation	Numbers of actors	General attitudes towards forestry	Short-term potential in terms of area of woodland expansion
Farmers	HIGH	HIGH	NEGATIVE	LOW
Large Land Owners	MODERATE	LOW	POSITIVE	MEDIUM
Communal groups	LOW	LOW	POSITIVE	LOW
Environmental NGOs	MODERATE	LOW	VARIABLE	LOW