Annex I-1
Climatic regions

The **Boreal** region comprises Finland, the central and northern parts of Sweden, Estonia except the coastal regions and some plots in northern and central Norway. The climate is mainly cold with a short vegetation period. In the northernmost parts the climate changes to arctic conditions. The Boreal region is dominated by *Picea abies* and *Pinus sylvestris*. In 2004, 18.7% of the plots of the European survey were located in the Boreal region.

The **Boreal (Temperate)** region covers most parts of southern Sweden and Norway, the whole of the Baltic countries Latvia and Lithuania, the coastal regions of Estonia and the whole of Belarus. This region contains a higher proportion of deciduous tree species, compared to the colder Boreal region. 15.3% of the assessed trees were in the Boreal (Temperate) region.

The **Atlantic (North)** region comprises the United Kingdom, Ireland, Denmark, the Netherlands, the southern coasts of Sweden and Norway, north-west Germany, northern Belgium and France. The climate is characterised by mild winters, a relatively uniform distribution of precipitation over the year and long transitional seasons. The forests consist of *Picea abies, Pinus sylvestris, Picea sitchensis, Quercus robur* and *Fagus sylvatica*. 5.6% of the plots were situated in this region.

The **Atlantic (South)** region comprises central and south-western France, the atlantic coast of Spain and the northern parts of Portugal. The climate is warm, with high precipitation in winter, but very little frost and snow. There is a higher proportion of oak species, dependent on warmer summers, than in the Atlantic (North) region. Also frequent are *Castanea sativa, Pinus pinaster, Pinus radiata* and *Pinis sylvestris.* 4.6% of the plots were located in this region.

The plots of the **Sub-Atlantic** region are located in Poland, the Czech Republic, the western parts of Slovakia, northern Austria and Switzerland, eastern and southern Germany, southern Belgium, central-eastern France, and the whole of Luxembourg. The climate is typically temperate and characterised by large temperature differences between summer and winter, with a gradient from the western parts to the eastern parts. If the whole region is considered, the forests are very heterogeneous, dominated by *Picea abies, Pinus sylvestris* and *Fagus sylvatica*. In this region 18.3% of all plots were located.

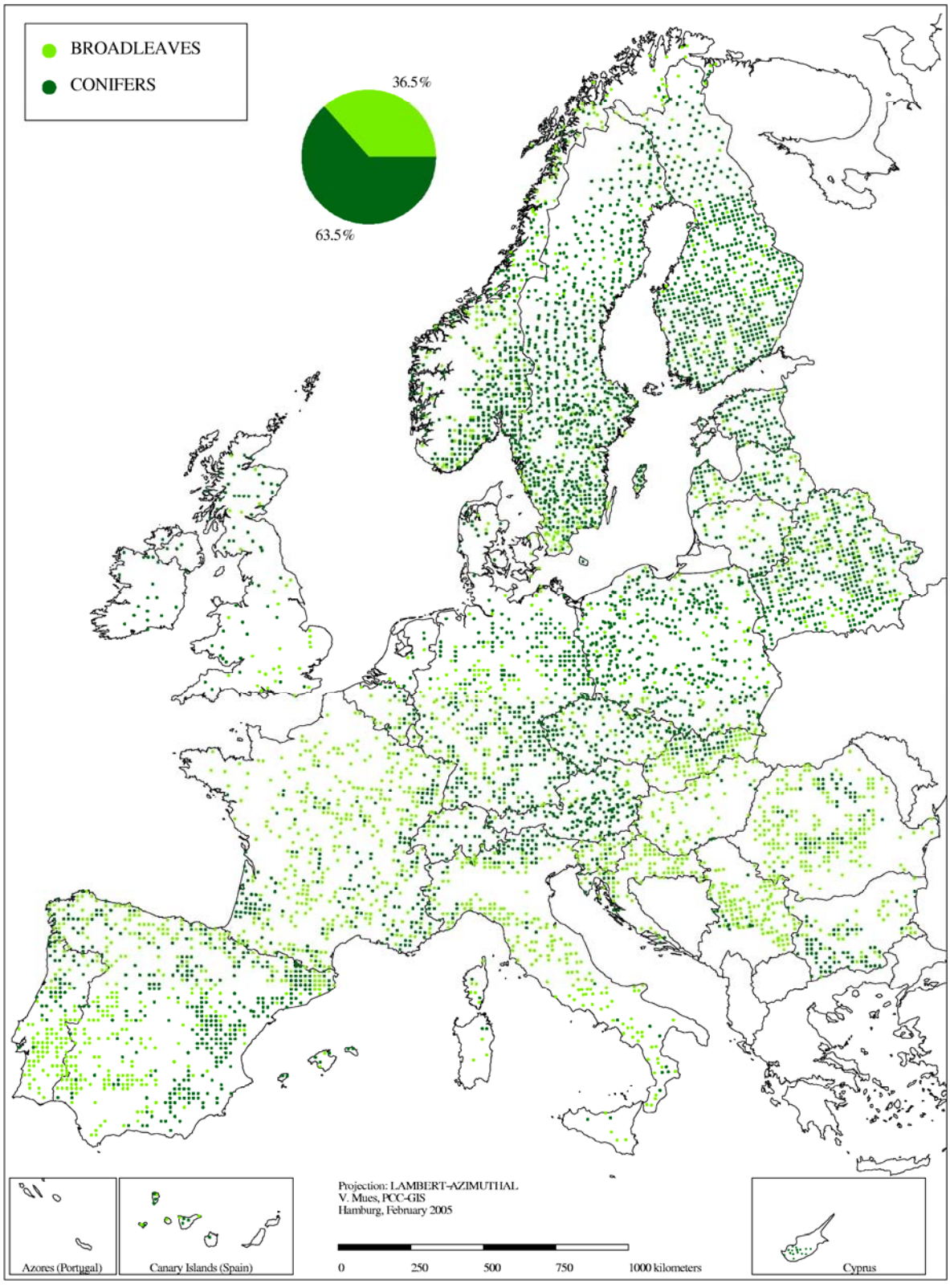
The **Continental** region consists of the Republic of Moldova, large parts of Romania, eastern and northern Bulgaria and nearly all Hungary. The climate is typically continental with warm and dry summers, and low temperatures in winter. The forests are characterised by oak species, *Fagus sylvatica, Robinia pseudoacacia, Carpinus betulus, Picea abies* and *Abies alba.* In 2004, 5.4% of the sample plots were located in this region.

The **Mountainous (South)** region comprises plots on several mountain ridges. They share steep climatic gradients and consequently complex geobotanical structures, depending on altitude and exposition. They comprise the Alpine system (Pyrenees, Alps, Tatras, Carpathians and the Balkan), the Appenin, the Vosges, and in Germany the Black Forest and the Bavarian/Bohemian Forests. The dominant species are *Picea abies, Fagus sylvatica, Larix decidua, Pinus nigra, Pinus sylvestris* and *Abies alba*. This climatic region comprises 12.1% of all sample plots.

The **Mountainous (North)** region was introduced to account for the peculiarities of the mountainous climate in northernmost Europe in comparison to that in the other parts of Europe. This region is located only in Norway. It is characterised by large seasonal variations in climate, but with a generally shorter vegetation period. The plots at lower altitudes on the Atlantic coast are influenced by the Gulf stream and have a more temperate climate. The most frequently occurring species are *Betula pubescens, Picea abies* and *Pinus sylvestris*. 4.7% of the sample plots were located in the Mountainous (North) region.

The Mediterranean region as a whole is divided in the **Mediterranean (Higher)** and **Mediterranean (Lower)** regions. The higher areas (5.9% of the plots) are situated between 400 m and ca. 1000 m altitude in Portugal, Spain, southern France, Italy, Slovenia, Croatia, Romania and Greece with humid climate. The Mediterranean (Lower) regions (9.4% of the plots) cover Cyprus and lower parts of the countries mentioned above. The climate is characterised by hot and dry summers and frequent drought periods in summer. Both Mediterranean regions are dominated by *Pinus halepensis, Pinus nigra, Pinus pinaster, Quercus ilex, Quercus cerris* and *Quercus pubescens.*

Annex I-2
Braodleaves and conifers (2004)



Annex I-3
Species assessed (2004)

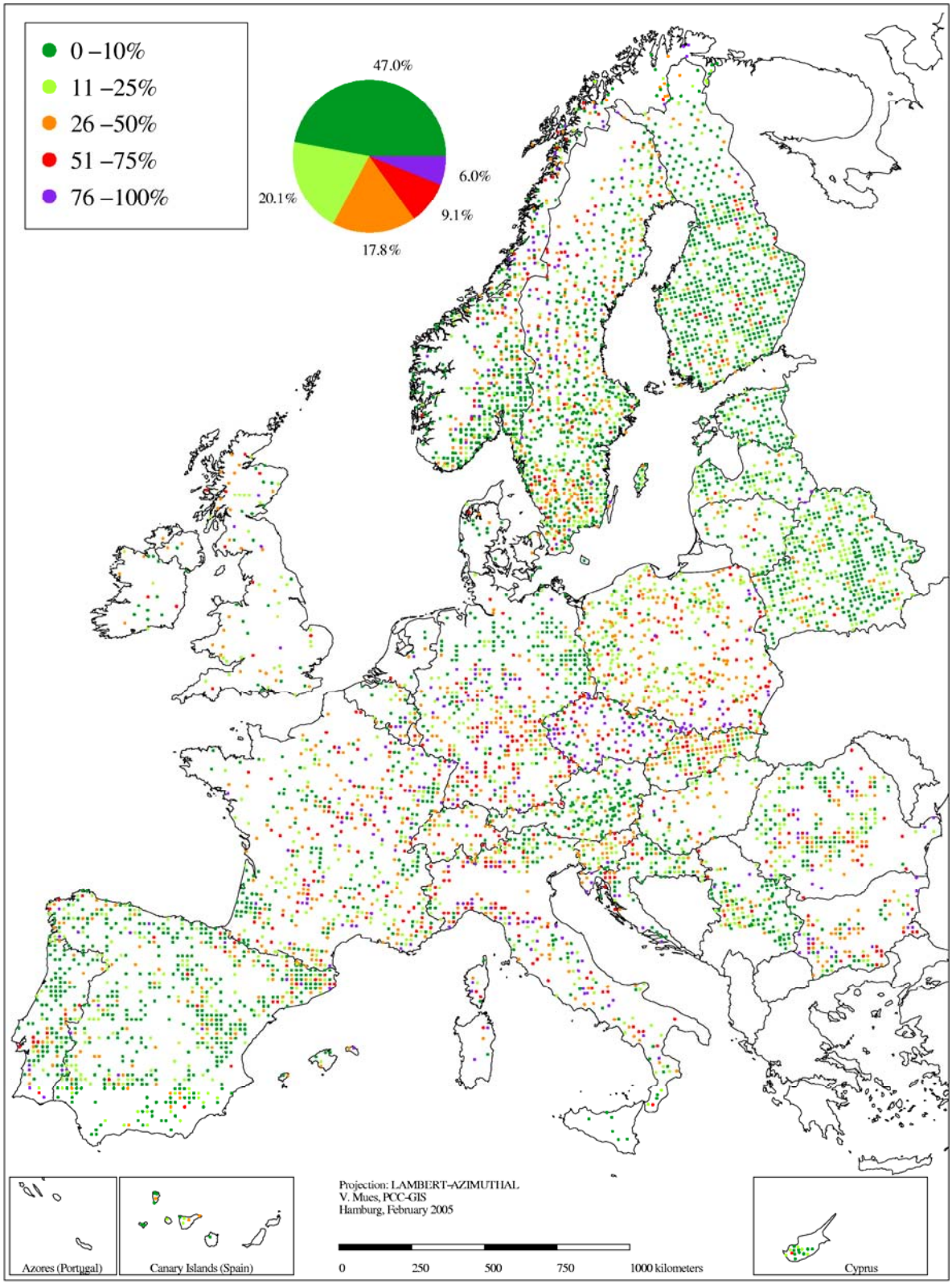
Species	Observed trees		Observed plots	
	Number	%	Number	%
Pinus sylvestris	37104	27.41	1910	18.01
Picea abies	27109	20.03	1543	14.55
Fagus sylvatica	11656	8.61	664	6.26
Quercus robur	4948	3.66	433	4.08
Betula pubescens	4667	3.45	724	6.83
Quercus ilex	3852	2.85	222	2.09
Betula pendula	3711	2.74	664	6.26
Quercus petraea	3517	2.60	359	3.39
Pinus pinaster	3507	2.59	182	1.72
Pinus nigra	2722	2.01	157	1.48
Pinus halepensis	2494	1.84	129	1.22
Abies alba	2215	1.64	216	2.04
Quercus cerris	2048	1.51	173	1.63
Quercus pubescens	1962	1.45	163	1.54
Carpinus betulus	1835	1.36	240	2.26
Quercus suber	1655	1.22	96	0.91
Eucalyptus spp.	1603	1.18	74	0.70
Castanea sativa	1277	0.94	148	1.40
Larix decidua	1264	0.93	187	1.76
Populus tremula	1120	0.83	263	2.48
Fraxinus excelsior	1005	0.74	197	1.86
Alnus glutinosa	1003	0.74	134	1.26
Quercus pyrenaica	975	0.72	55	0.52
Quercus frainetto	931	0.69	63	0.59
Fagus moesiaca	907	0.67	50	0.47
Picea sitchensis	902	0.67	46	0.43
Robinia pseudoacacia	882	0.65	76	0.72
Quercus rotundifolia	662	0.49	36	0.34
Acer pseudoplatanus	577	0.43	165	1.56
Pseudotsuga menziesii	564	0.42	50	0.47
Pinus pinea	496	0.37	39	0.37
Populus hybrides	488	0.36	23	0.22
Quercus faginea	398	0.29	51	0.48
Ostrya carpinifolia	397	0.29	64	0.60
Other broadleaves	377	0.28	82	0.77
Pinus radiata	322	0.24	16	0.15
Tilia cordata	309	0.23	72	0.68
Pinus brutia	300	0.22	14	0.13
Juniperus thurifera	279	0.21	22	0.21
Prunus avium	228	0.17	106	1.00
Alnus incana	221	0.16	38	0.36
Acer campestre	199	0.15	78	0.74
Pinus contorta	189	0.14	15	0.14
Fraxinus angustifolia	183	0.14	21	0.20
Pinus uncinata	176	0.13	15	0.14

Species	Observed trees		Observed plots	
	Number	**%**	**Number**	**%**
Olea europaea	173	0.13	20	0.19
Quercus rubra	154	0.11	22	0.21
Fraxinus ornus	144	0.11	52	0.49
Tilia platyphyllos	138	0.10	17	0.16
Acer platanoides	119	0.09	42	0.40
Populus nigra	108	0.08	10	0.09
Pinus cembra	94	0.07	10	0.09
Alnus cordata	88	0.07	5	0.05
Larix kaempferi	73	0.05	9	0.08
Sorbus aucuparia	66	0.05	27	0.25
Pinus strobus	65	0.05	9	0.08
Sorbus aria	50	0.04	32	0.30
Ulmus glabra	49	0.04	22	0.21
Juniperus oxycedrus	49	0.04	17	0.16
Salix caprea	46	0.03	29	0.27
Populus alba	45	0.03	11	0.10
Populus canescens	45	0.03	4	0.04
Acer opalus	44	0.03	17	0.16
Juniperus communis	43	0.03	7	0.07
Salix spp.	41	0.03	10	0.09
Other conifers	41	0.03	9	0.08
Cupressus sempervirens	34	0.03	4	0.04
Acer monspessulanum	32	0.02	11	0.10
Cedrus atlantica	32	0.02	4	0.04
Sorbus torminalis	28	0.02	23	0.22
Salix alba	27	0.02	5	0.05
Ulmus minor	27	0.02	11	0.10
Cedrus brevifolia	24	0.02	1	0.01
Juniperus phoenicea	22	0.02	9	0.08
Buxus sempervirens	21	0.02	3	0.03
Platanus orientalis	21	0.02	2	0.02
Corylus avellana	19	0.01	10	0.09
Quercus fruticosa	19	0.01	1	0.01
Quercus trojana	18	0.01	1	0.01
Arbutus unedo	14	0.01	5	0.05
Juglans regia	13	0.01	5	0.05
Ulmus laevis	12	0.01	6	0.06
Pyrus communis	10	0.01	6	0.06
Sorbus domestica	9	0.01	8	0.08
Tsuga spp.	9	0.01	1	0.01
Ilex aquifolium	8	0.01	5	0.05
Ceratonia siliqua	8	0.01	3	0.03
Phillyrea latifolia	8	0.01	2	0.02
Cupressus lusitanica	8	0.01	1	0.01
Carpinus orientalis	7	0.01	2	0.02
Cedrus deodara	4	0.00	1	0.01
Malus domestica	3	0.00	2	0.02
Prunus padus	3	0.00	2	0.02

Species	Observed trees		Observed plots	
	Number	**%**	**Number**	**%**
Quercus coccifera	3	0.00	3	0.03
Abies grandis	3	0.00	1	0.01
Pinus mugo	3	0.00	1	0.01
Thuya spp.	3	0.00	1	0.01
Prunus serotina	2	0.00	1	0.01
Juglans nigra	1	0.00	1	0.01
Salix cinerea	1	0.00	1	0.01
Salix eleagnos	1	0.00	1	0.01
Salix fragilis	1	0.00	1	0.01
Pistacia terebinthus	1	0.00	1	0.01
Picea omorika	1	0.00	1	0.01
Taxus baccata	1	0.00	1	0.01
All species	135372	100.00	10604	100.00

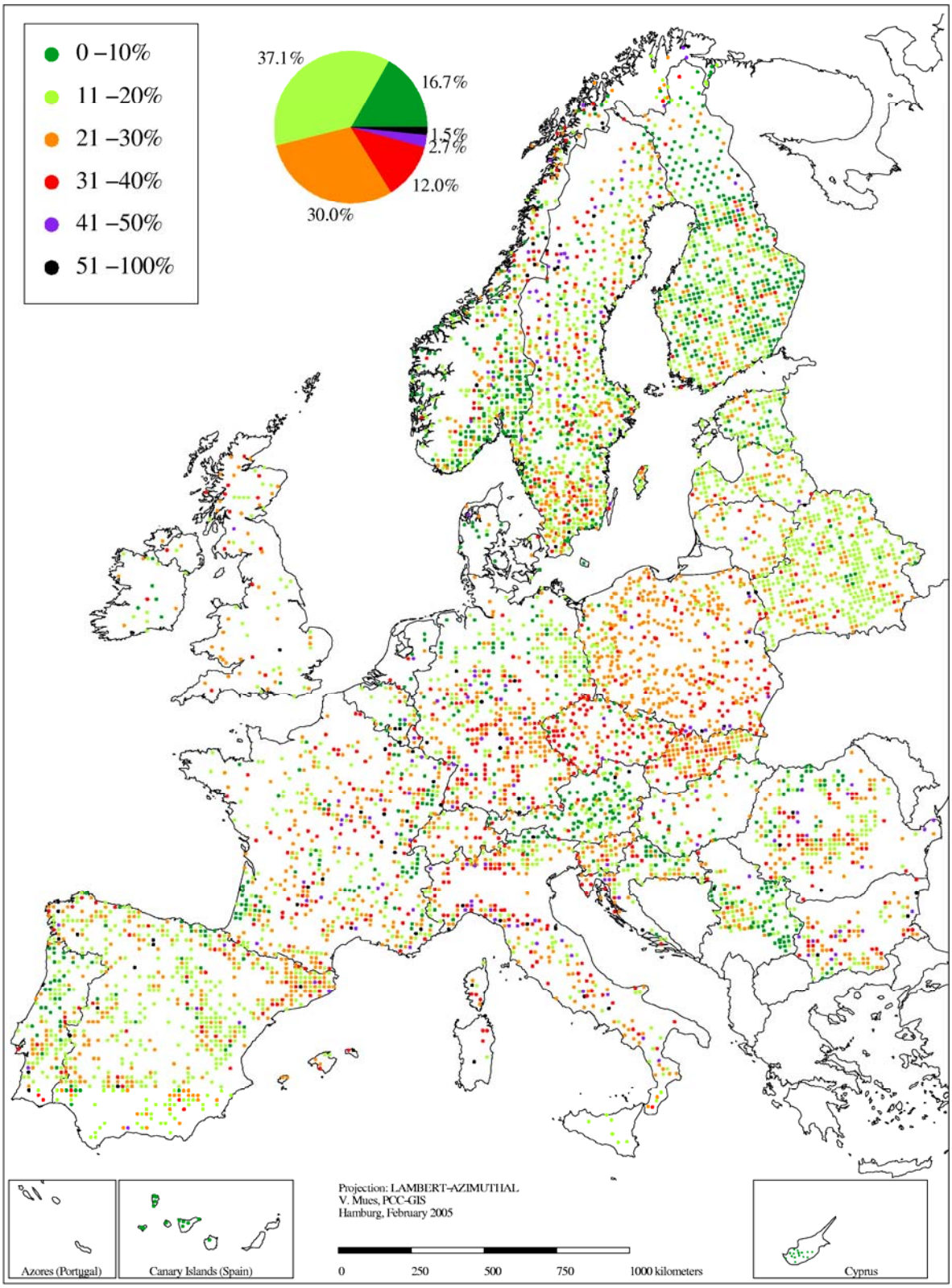
Annex I-4
Percentage of trees damaged (2004)

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction however does not affect the reliability of the trends over time.



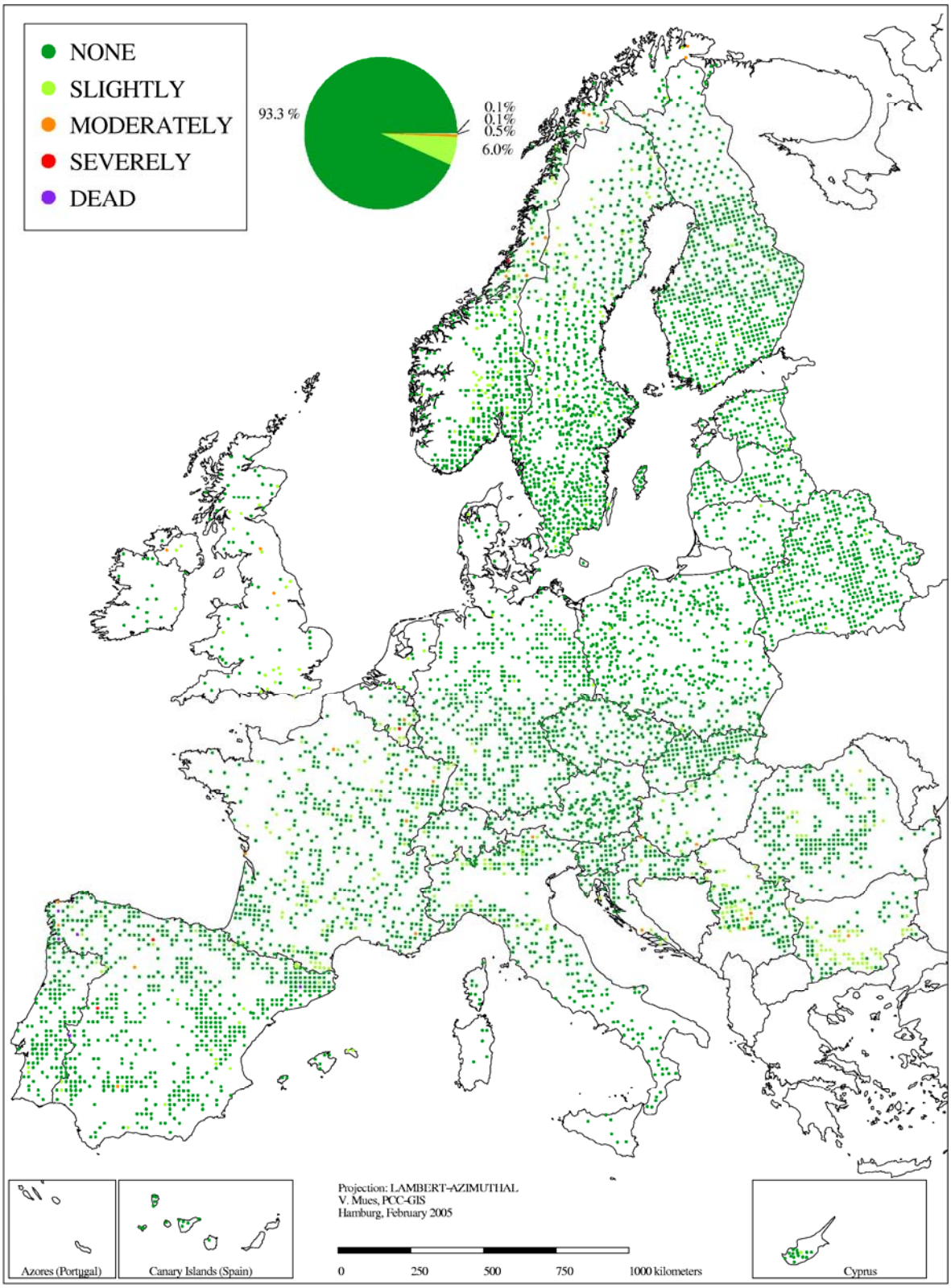
Annex I-5
Mean plot defoliation of all species (2004)

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction however does not affect the reliability of the trends over time.

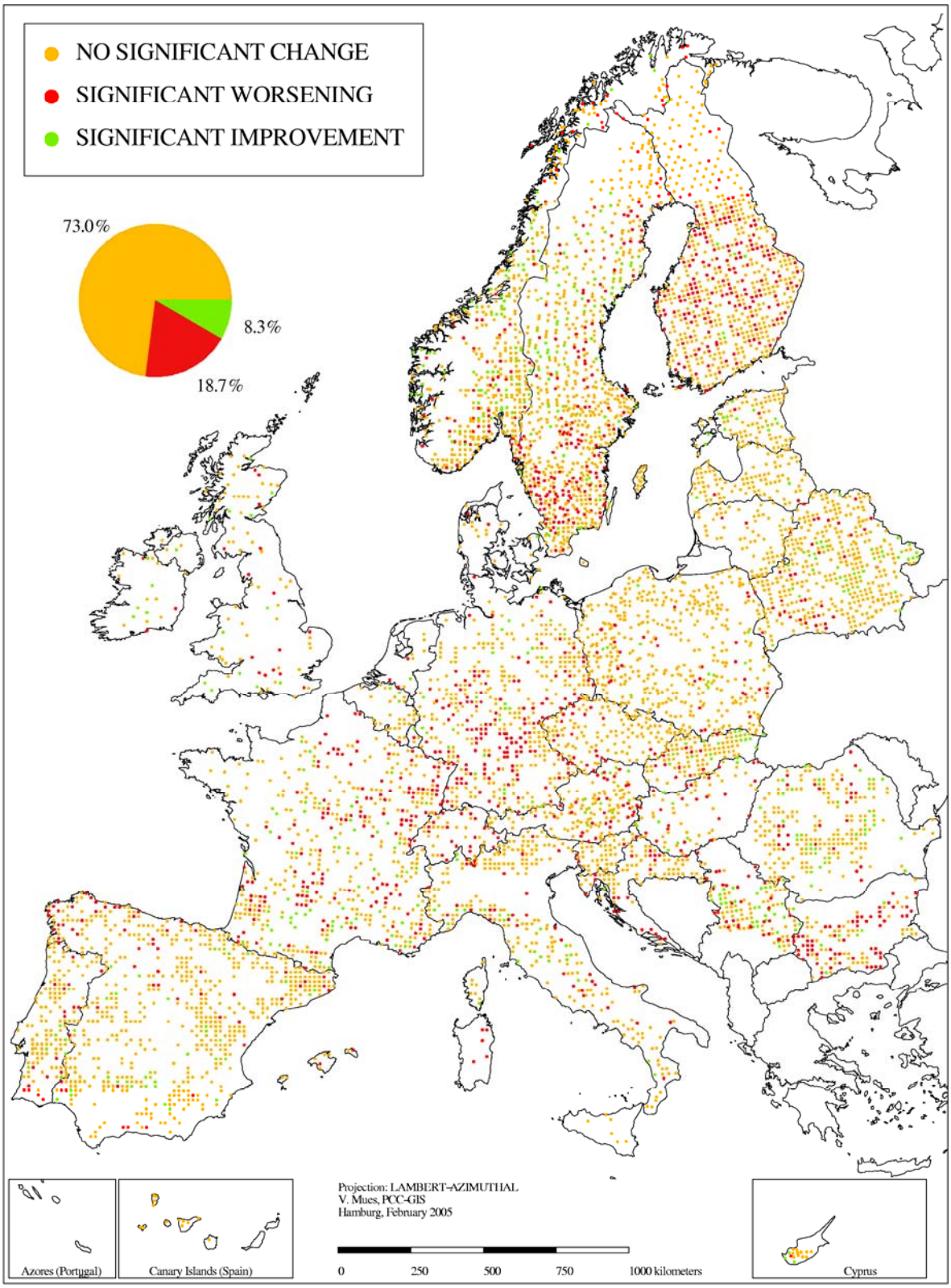


Annex I-6
Plot discolouration (2004)

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction however does not affect the reliability of the trends over time.



Annex I-7
Changes in mean plot defoliation (2003-2004)



Annex I-8
Development of defoliation of most common species (1990-2004).

Picea abies

ATLANTIC (NORTH)	Number of trees	0-10%	>10-25%	>25%
1990	526	52.3	28.3	19.4
1991	524	54.8	22.7	22.5
1992	525	49.5	30.7	19.8
1993	521	47.8	21.7	30.5
1994	522	39.7	26.2	34.1
1995	503	42.6	28.6	28.8
1996	495	49.5	30.1	20.4
1997	475	51.6	26.3	22.1
1998	497	52.3	27.6	20.1
1999	507	56.0	24.7	19.3
2000	489	53.1	26.0	20.9
2001	490	61.9	21.6	16.5
2002	466	64.0	22.3	13.7
2003	466	61.8	21.9	16.3
2004	465	62.4	21.7	15.9

SUB-ATLANTIC	Number of trees	0-10%	>10-25%	>25%
1990	3822	27.4	39.5	33.1
1991	3767	25.5	39.1	35.4
1992	3826	24.6	40.7	34.7
1993	3781	24.6	37.2	38.2
1994	3778	21.1	37.8	41.1
1995	3833	25.9	34.0	40.1
1996	3835	31.0	36.4	32.6
1997	3855	25.1	40.4	34.5
1998	4674	27.6	39.9	32.5
1999	4651	26.7	40.9	32.4
2000	4651	22.9	43.6	33.5
2001	4444	21.9	44.8	33.3
2002	4509	21.3	42.1	36.6
2003	4563	21.0	44.5	34.5
2004	4540	18.0	40.4	41.6

BOREAL (TEMP.)	Number of trees	0-10%	>10-25%	>25%
1990	405	35.6	41.2	23.2
1991	599	32.4	46.6	21.0
1992	595	30.1	50.9	19.0
1993	594	29.0	54.0	17.0
1994	531	37.1	47.5	15.4
1995	547	39.5	45.5	15.0
1996	585	30.4	52.0	17.6
1997	545	32.5	48.1	19.4
1998	551	36.5	47.5	16.0
1999	552	32.8	49.6	17.6
2000	549	24.8	51.3	23.9
2001	540	25.7	53.2	21.1
2002	540	23.1	60.8	16.1
2003	522	24.3	58.8	16.9
2004	518	27.8	56.2	16.0

MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1990	1715	29.6	37.3	33.1
1991	1727	22.4	44.5	33.1
1992	1697	15.4	45.5	39.1
1993	1674	18.2	44.2	37.6
1994	1708	17.1	42.3	40.6
1995	1803	21.1	44.3	34.6
1996	1778	25.2	42.9	31.9
1997	1726	23.0	44.2	32.8
1998	2151	25.8	43.2	31.0
1999	2131	29.1	43.1	27.8
2000	2076	24.0	47.2	28.8
2001	2016	20.2	50.6	29.2
2002	1994	16.3	55.0	28.7
2003	2011	13.2	58.1	28.7
2004	1955	9.4	49.6	41.0

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1990	6485	30.7	38.0	31.3
1991	6634	27.8	39.8	32.4
1992	6660	24.9	41.9	33.2
1993	6584	25.4	39.2	35.4
1994	6553	23.0	38.8	38.2
1995	6700	27.1	37.2	35.7
1996	6707	30.9	39.0	30.1
1997	6615	27.2	40.9	31.9
1998	7887	29.4	40.5	30.1
1999	7855	29.8	41.0	29.2
2000	7779	25.4	43.9	30.7
2001	7504	24.4	45.5	30.1
2002	7523	22.7	45.7	31.6
2003	7568	21.7	47.7	30.6
2004	7484	19.2	42.8	38.0

Pinus sylvestris

ATLANTIC (NORTH)	Number of trees	0-10%	>10-25%	>25%
1990	588	50.2	41.8	8.0
1991	591	51.3	37.2	11.5
1992	581	55.1	32.7	12.2
1993	592	50.0	39.4	10.6
1994	591	45.7	42.5	11.8
1995	576	44.3	45.8	9.9
1996	577	38.1	51.0	10.9
1997	573	47.5	46.2	6.3
1998	573	54.1	39.4	6.5
1999	647	46.4	43.7	9.9
2000	643	44.0	45.6	10.4
2001	648	42.4	48.5	9.1
2002	648	46.5	43.8	9.7
2003	647	48.8	41.6	9.6
2004	639	55.5	38.2	6.3

MEDITERR. (HIGHER)	Number of trees	0-10%	>10-25%	>25%
1990	541	85.9	12.8	1.3
1991	541	72.8	21.3	5.9
1992	564	67.4	23.0	9.6
1993	564	56.6	26.6	16.8
1994	540	51.5	31.3	17.2
1995	549	45.2	39.9	14.9
1996	541	47.4	43.4	9.2
1997	540	45.0	44.3	10.7
1998	540	44.4	48.2	7.4
1999	603	50.6	44.3	5.1
2000	602	55.5	40.2	4.3
2001	604	53.3	40.1	6.6
2002	603	48.0	41.6	10.4
2003	601	44.1	46.9	9.0
2004	601	41.6	49.6	8.8

Pinus sylvestris

MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1990	739	66.9	21.2	11.9
1991	742	51.1	32.3	16.6
1992	758	39.4	40.7	19.9
1993	743	36.9	41.2	21.9
1994	731	29.5	40.7	29.8
1995	747	31.7	54.9	13.4
1996	754	35.5	49.5	15.0
1997	763	34.3	55.7	10.0
1998	829	39.6	50.0	10.4
1999	918	48.4	41.7	9.9
2000	904	35.6	51.7	12.7
2001	895	37.5	49.5	13.0
2002	896	26.2	54.7	19.1
2003	896	23.1	59.0	17.9
2004	899	20.7	61.7	17.6

BOREAL (TEMP.)	Number of trees	0-10%	>10-25%	>25%
1990	960	10.4	34.4	55.2
1991	1154	4.9	32.8	62.3
1992	1130	3.1	26.3	70.6
1993	1156	4.0	34.2	61.8
1994	1099	9.9	43.8	46.3
1995	1079	15.9	56.6	27.5
1996	1117	20.0	57.8	22.2
1997	1096	18.0	61.7	20.3
1998	1115	19.5	60.7	19.8
1999	1134	14.2	67.0	18.8
2000	1068	15.0	67.8	17.2
2001	1121	12.3	74.9	12.8
2002	1133	15.5	72.0	12.5
2003	1131	19.6	71.0	9.4
2004	1134	17.5	72.7	9.8

SUB-ATLANTIC	Number of trees	0-10%	>10-25%	>25%
1990	8491	13.5	46.2	40.3
1991	8534	8.2	45.8	46.0
1992	8538	8.6	43.9	47.5
1993	8549	8.9	44.6	46.5
1994	8011	5.4	41.5	53.1
1995	7838	7.5	42.1	50.4
1996	7838	12.4	51.7	35.9
1997	7815	12.1	54.8	33.1
1998	8210	12.9	56.8	30.3
1999	8205	12.5	61.0	26.5
2000	8216	10.5	61.9	27.6
2001	8195	10.4	62.4	27.2
2002	8059	9.1	63.2	27.7
2003	8103	8.5	63.4	28.1
2004	8139	8.1	61.9	30.0

CONTINENTAL	Number of trees	0-10%	>10-25%	>25%
1990	149	46.3	18.1	35.6
1991	157	56.0	25.5	18.5
1992	158	62.6	20.3	17.1
1993	162	63.0	16.0	21.0
1994	162	59.9	17.3	22.8
1995	166	69.3	12.0	18.7
1996	168	66.7	14.3	19.0
1997	168	64.9	14.9	20.2
1998	181	62.4	21.0	16.6
1999	180	68.4	17.2	14.4
2000	170	65.9	14.7	19.4
2001	170	68.8	15.9	15.3
2002	170	61.2	18.2	20.6
2003	169	53.3	26.0	20.7
2004	168	57.8	20.2	22.0

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1990	11630	23.1	41.1	35.8
1991	11877	17.2	41.5	41.3
1992	11887	16.6	40.0	43.4
1993	11924	15.9	41.6	42.5
1994	11292	13.2	40.6	46.2
1995	11113	15.3	44.0	40.7
1996	11154	19.1	51.0	29.9
1997	11115	19.2	53.6	27.2
1998	11608	20.4	54.6	25.0
1999	11847	20.6	57.3	22.1
2000	11764	18.3	58.7	23.0
2001	11794	17.9	59.8	22.3
2002	11670	16.4	60.3	23.3
2003	11708	15.9	60.9	23.2
2004	11741	15.5	60.2	24.3

Fagus sylvatica

ATLANTIC (NORTH)	Number of trees	0-10%	>10-25%	>25%
1990	420	18.8	45.0	36.2
1991	420	28.3	47.2	24.5
1992	420	25.0	46.2	28.8
1993	420	25.5	45.2	29.3
1994	425	28.2	44.3	27.5
1995	423	14.4	43.8	41.8
1996	404	19.8	47.5	32.7
1997	420	24.5	43.8	31.7
1998	420	27.1	42.4	30.5
1999	431	22.0	47.8	30.2
2000	436	15.8	41.1	43.1
2001	461	29.7	41.9	28.4
2002	459	26.1	43.4	30.5
2003	463	28.3	42.5	29.2
2004	472	23.1	31.1	45.8

ATLANTIC (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1990	123	65.9	21.1	13.0
1991	95	57.9	28.4	13.7
1992	119	59.7	31.1	9.2
1993	119	62.2	31.1	6.7
1994	80	33.8	54.9	11.3
1995	120	59.2	35.0	5.8
1996	96	33.3	52.1	14.6
1997	120	29.2	54.1	16.7
1998	120	27.5	60.8	11.7
1999	121	35.5	55.4	9.1
2000	126	42.9	47.6	9.5
2001	127	48.8	46.5	4.7
2002	128	28.9	57.8	13.3
2003	128	27.3	60.2	12.5
2004	128	15.6	71.1	13.3

Fagus sylvatica

SUB-ATLANTIC	Number of trees	0-10%	>10-25%	>25%
1990	2372	31.2	46.2	22.6
1991	2430	33.6	44.3	22.1
1992	2447	20.4	48.4	31.2
1993	2425	23.8	47.1	29.1
1994	2386	16.2	49.8	34.0
1995	2421	18.0	46.1	35.9
1996	2435	21.4	51.2	27.4
1997	2477	22.5	54.2	23.3
1998	2685	23.5	51.5	25.0
1999	2719	17.8	56.3	25.9
2000	2732	23.6	50.6	25.8
2001	2722	20.6	48.4	31.0
2002	2725	24.9	52.0	23.1
2003	2743	23.8	51.4	24.8
2004	2757	14.6	50.5	34.9

MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1990	976	48.3	41.7	10.0
1991	994	59.0	33.8	7.2
1992	1001	52.2	31.9	15.9
1993	1014	52.2	32.9	14.9
1994	950	48.0	36.7	15.3
1995	1010	40.4	42.7	16.9
1996	1004	35.4	48.5	16.1
1997	1011	30.7	49.9	19.4
1998	1053	45.4	44.5	10.1
1999	1158	34.4	52.3	13.3
2000	1204	43.1	45.9	11.0
2001	1193	29.0	54.7	16.3
2002	1200	31.8	56.4	11.8
2003	1202	17.8	49.7	32.5
2004	1195	25.2	49.4	25.4

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1990	4015	37.0	43.0	20.0
1991	4064	40.9	41.2	17.9
1992	4091	31.4	42.8	25.8
1993	4109	33.6	42.0	24.4
1994	3948	27.0	45.4	27.6
1995	4127	25.9	44.0	30.1
1996	4092	26.2	49.9	23.9
1997	4163	25.8	51.6	22.6
1998	4417	30.2	48.7	21.1
1999	4568	24.1	53.9	22.0
2000	4637	29.6	47.9	22.5
2001	4640	25.0	49.2	25.8
2002	4649	27.6	52.2	20.2
2003	4678	23.9	50.0	26.1
2004	4693	19.4	48.5	32.1

Quercus ilex and *Q. rotundifolia*

MEDITERR. (HIGHER)	Number of trees	0-10%	>10-25%	>25%
1990	652	80.4	18.7	0.9
1991	652	56.1	40.8	3.1
1992	653	42.0	49.1	8.9
1993	653	31.2	60.4	8.4
1994	653	25.4	56.1	18.5
1995	671	17.1	50.7	32.2
1996	665	21.1	53.5	25.4
1997	665	25.6	58.5	15.9
1998	657	35.0	51.6	13.4
1999	770	26.6	56.5	16.9
2000	764	27.0	56.2	16.8
2001	765	24.7	62.8	12.5
2002	765	17.3	64.4	18.3
2003	766	20.2	60.7	19.1
2004	766	20.9	61.3	17.8

MEDITERR. (LOWER)	Number of trees	0-10%	>10-25%	>25%
1990	2326	65.0	21.5	13.5
1991	2308	47.2	36.3	16.5
1992	2323	38.2	45.7	16.1
1993	2298	36.4	56.9	6.7
1994	2294	31.4	57.4	11.2
1995	2277	16.6	56.4	27.0
1996	2278	20.5	54.7	24.8
1997	2278	29.0	56.2	14.8
1998	2278	31.9	54.4	13.7
1999	2896	21.8	56.2	22.0
2000	2914	17.6	60.8	21.6
2001	2914	19.4	65.2	15.4
2002	2918	17.6	64.4	18.0
2003	2919	14.1	66.1	19.8
2004	2916	20.3	64.4	15.3

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1990	3074	67.8	20.9	11.3
1991	3064	49.4	37.2	13.4
1992	3080	38.6	46.6	14.8
1993	3055	35.1	57.8	7.1
1994	3027	29.3	57.4	13.3
1995	3052	16.3	55.6	28.1
1996	3034	20.6	55.1	24.3
1997	3034	28.3	56.9	14.8
1998	3026	32.8	53.8	13.4
1999	3820	23.4	56.4	20.2
2000	3852	20.2	59.8	20.0
2001	3853	20.4	64.5	15.1
2002	3857	17.4	63.8	18.8
2003	3859	15.6	64.4	20.0
2004	3855	20.2	63.7	16.1

Pinus pinaster

ATLANTIC (SOUTH)	Number of trees	0-10%	>10-25%	>25%	MEDITERR. (HIGHER)	Number of trees	0-10%	>10-25%	>25%
1990	467	44.3	17.8	37.9	1990	426	77.5	14.3	8.2
1991	461	38.6	27.8	33.6	1991	380	75.0	14.7	10.3
1992	482	53.3	26.6	20.1	1992	370	84.1	13.5	2.4
1993	451	59.0	31.9	9.1	1993	370	75.9	21.4	2.7
1994	423	60.3	31.0	8.7	1994	432	72.9	17.8	9.3
1995	420	57.1	36.2	6.7	1995	432	69.3	27.5	3.2
1996	420	54.5	34.3	11.2	1996	432	69.2	22.9	7.9
1997	410	60.3	32.9	6.8	1997	427	72.6	20.1	7.3
1998	410	52.7	39.3	8.0	1998	432	69.6	26.2	4.2
1999	598	52.9	43.1	4.0	1999	511	61.2	28.8	10.0
2000	600	49.0	40.2	10.8	2000	482	61.2	29.0	9.8
2001	592	41.7	53.2	5.1	2001	481	62.4	34.7	2.9
2002	593	41.3	48.8	9.9	2002	482	54.2	42.5	3.3
2003	565	37.0	57.0	6.0	2003	482	50.6	44.0	5.4
2004	563	32.9	52.9	14.2	2004	472	55.3	37.3	7.4
MEDITERR. (LOWER)	Number of trees	0-10%	>10-25%	>25%	ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1990	1712	71.4	18.6	10.0	1990	2654	68.1	17.5	14.4
1991	1699	61.7	27.6	10.7	1991	2589	60.1	25.4	14.5
1992	1698	64.1	25.6	10.3	1992	2599	65.3	23.8	10.9
1993	1582	67.7	23.5	8.8	1993	2452	67.5	24.6	7.9
1994	1638	65.7	27.8	6.5	1994	2542	66.0	26.8	7.2
1995	1480	59.2	32.2	8.6	1995	2381	60.9	31.9	7.2
1996	1449	57.0	34.6	8.4	1996	2350	59.3	32.0	8.7
1997	1433	43.6	45.9	10.5	1997	2333	52.9	38.0	9.1
1998	1427	44.2	45.8	10.0	1998	2332	51.2	40.2	8.6
1999	1661	42.9	47.4	9.7	1999	2886	50.0	41.8	8.2
2000	1661	46.5	45.4	8.1	2000	2859	51.1	40.3	8.6
2001	1653	47.7	46.3	6.0	2001	2842	50.1	44.8	5.1
2002	1649	48.4	45.7	5.9	2002	2840	48.5	45.3	6.2
2003	1459	45.9	44.6	9.5	2003	2622	45.2	47.1	7.7
2004	1427	43.9	41.7	14.4	2004	2579	44.1	43.5	12.4

Quercus suber

MEDITERR. (LOWER)	Number of trees	0-10%	>10-25%	>25%	ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1990	1403	39.1	19.2	41.7	1990	1442	38.9	18.9	42.2
1991	1382	26.6	29.7	43.7	1991	1419	26.7	29.2	44.1
1992	1449	29.6	37.7	32.7	1992	1487	29.6	37.2	33.2
1993	1401	46.1	44.5	9.4	1993	1438	47.6	43.3	9.1
1994	1397	39.2	47.0	13.8	1994	1434	40.7	45.8	13.5
1995	1398	19.4	54.3	26.3	1995	1435	21.3	53.1	25.6
1996	1400	32.9	52.1	15.0	1996	1437	33.9	51.5	14.6
1997	1403	34.3	53.2	12.5	1997	1440	35.8	52	12.2
1998	1403	26.8	58.2	15.0	1998	1440	28.1	57.2	14.7
1999	1511	23.4	56.9	19.7	1999	1548	24.5	56.3	19.2
2000	1533	21.2	62.0	16.8	2000	1570	22.4	61.2	16.4
2001	1534	22.0	59.6	18.4	2001	1571	22.5	59.4	18.1
2002	1557	22.1	60.4	17.5	2002	1594	22.5	60.2	17.3
2003	1541	19.4	54.4	26.2	2003	1578	19.8	54.5	25.7
2004	1557	20.9	52.4	26.7	2004	1594	21.6	52.2	26.2

Quercus robur and *Q. petraea*

ATLANTIC (NORTH)	Number of trees	0-10%	>10-25%	>25%	ATLANTIC (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1990	322	57.2	30.4	12.4	1990	269	66.5	8.6	24.9
1991	323	39.9	43.7	16.4	1991	257	55.3	13.2	31.5
1992	323	25.1	56.3	18.6	1992	237	49.4	27.8	22.8
1993	326	25.2	41.4	33.4	1993	238	51.7	34.9	13.4
1994	316	35.8	33.2	31.0	1994	197	55.3	33.5	11.2
1995	331	37.2	41.0	21.8	1995	239	40.2	48.1	11.7
1996	328	15.9	39.0	45.1	1996	237	32.9	49.4	17.7
1997	335	17.9	43.0	39.1	1997	238	34.5	52.1	13.4
1998	335	25.7	47.7	26.6	1998	240	33.8	44.5	21.7
1999	335	23.6	39.4	37.0	1999	280	35.4	53.5	11.1
2000	337	27.3	47.2	25.5	2000	278	30.6	57.9	11.5
2001	341	20.8	52.8	26.4	2001	281	20.3	60.8	18.9
2002	342	24.9	46.4	28.7	2002	282	20.6	62.7	16.7
2003	338	15.1	51.5	33.4	2003	298	22.1	62.5	15.4
2004	340	12.9	47.1	40.0	2004	299	20.4	58.9	20.7

Quercus robur and ***Q. petraea***

SUB-ATLANTIC	Number of trees	0-10%	>10-25%	>25%
1990	1634	27.3	49.2	23.5
1991	1635	17.0	48.6	34.4
1992	1624	13.1	49.1	37.8
1993	1624	10.2	43.6	46.2
1994	1630	6.9	37.3	55.8
1995	1631	8.5	38.6	52.9
1996	1608	10.6	43.0	46.4
1997	1627	11.2	45.4	43.4
1998	1693	12.2	42.4	45.4
1999	1723	13.8	52.1	34.1
2000	1725	12.3	52.7	35.0
2001	1729	12.1	52.7	35.2
2002	1735	15.4	52.0	32.6
2003	1737	9.4	53.8	36.8
2004	1744	10.7	47.3	42.0

MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1990	205	12.2	23.4	64.4
1991	212	26.9	39.6	33.5
1992	212	14.6	58.5	26.9
1993	214	18.7	34.1	47.2
1994	197	11.2	55.8	33.0
1995	210	21.0	45.2	33.8
1996	209	12.9	30.6	56.5
1997	209	17.2	26.8	56.0
1998	238	19.3	35.3	45.4
1999	243	18.5	39.5	42.0
2000	241	18.3	44.8	36.9
2001	244	18.4	45.1	36.5
2002	246	13.8	46.8	39.4
2003	247	15.4	45.3	39.3
2004	267	19.1	39.7	41.2

CONTINENTAL	Number of trees	0-10%	>10-25%	>25%
1990	166	47.6	25.3	27.1
1991	178	35.9	29.8	34.3
1992	177	42.4	27.1	30.5
1993	177	28.2	32.8	39.0
1994	185	30.3	19.5	50.2
1995	185	33.0	27.0	40.0
1996	190	36.8	27.4	35.8
1997	191	38.2	24.1	37.7
1998	207	37.1	30.0	32.9
1999	207	47.8	25.1	27.1
2000	208	47.1	22.6	30.3
2001	205	52.7	23.9	23.4
2002	205	46.4	26.8	26.8
2003	204	40.7	26.5	32.8
2004	264	43.6	26.1	30.3

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1990	2633	35.8	38.8	25.4
1991	2640	26.4	42.2	31.4
1992	2609	20.7	47.0	32.3
1993	2615	18.3	40.9	40.8
1994	2559	16.8	36.7	46.5
1995	2643	18.1	39.8	42.1
1996	2619	15.7	41.1	43.2
1997	2651	17.2	42.9	39.9
1998	2764	18.7	41.9	39.4
1999	2839	20.5	47.7	31.8
2000	2868	20.2	49.3	30.5
2001	2879	18.2	50.9	30.9
2002	2889	19.5	50.4	30.1
2003	2902	14.1	52.3	33.6
2004	2998	16.0	46.3	37.7

Abies alba

SUB-ATLANTIC	Number of trees	0-10%	>10-25%	>25%
1990	385	11.2	27.5	61.3
1991	385	10.1	23.9	66.0
1992	386	9.8	23.1	67.1
1993	382	8.1	26.7	65.2
1994	385	7.8	22.9	69.3
1995	402	8.0	30.8	61.2
1996	401	9.7	35.4	54.9
1997	392	11.5	35.7	52.8
1998	432	11.6	34.5	53.9
1999	429	10.5	37.5	52.0
2000	430	9.3	36.0	54.7
2001	419	10.3	29.6	60.1
2002	459	15.9	32.2	51.9
2003	459	13.7	38.3	48.0
2004	459	14.2	37.9	47.9

MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1990	335	21.5	30.1	48.4
1991	348	22.7	34.2	43.1
1992	347	14.7	43.5	41.8
1993	347	11.2	30.8	58.0
1994	343	15.5	39.7	44.8
1995	359	14.8	37.6	47.6
1996	366	13.7	32.8	53.5
1997	360	10.3	40.8	48.9
1998	342	16.4	38.9	44.7
1999	347	13.8	42.1	44.1
2000	383	17.5	43.1	39.4
2001	374	16.0	46.3	37.7
2002	425	13.4	49.7	36.9
2003	439	10.0	44.6	45.4
2004	440	11.1	47.1	41.8

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1990	748	15.6	28.9	55.5
1991	761	16.0	28.6	55.4
1992	761	13.8	32.9	53.3
1993	757	9.5	29.2	61.3
1994	756	12.4	31.2	56.4
1995	785	11.1	34.1	54.8
1996	795	11.8	35.0	53.2
1997	780	11.4	39.4	49.2
1998	802	14.6	36.8	48.6
1999	804	12.9	39.6	47.5
2000	817	13.1	39.4	47.5
2001	793	13.0	37.5	49.5
2002	884	14.7	40.6	44.7
2003	898	11.9	41.4	46.7
2004	903	12.6	42.5	44.9

Picea sitchensis

ATLANTIC (NORTH)	Number of trees	0-10%	>10-25%	>25%	ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1990	294	61.2	28.6	10.2	1990	294	61.2	28.6	10.2
1991	285	45.9	30.2	23.9	1991	285	45.9	30.2	23.9
1992	286	45.8	29.7	24.5	1992	286	45.8	29.7	24.5
1993	287	33.4	29.3	37.3	1993	287	33.4	29.3	37.3
1994	266	35.7	39.1	25.2	1994	266	35.7	39.1	25.2
1995	259	39.0	33.6	27.4	1995	259	39.0	33.6	27.4
1996	265	52.1	29.8	18.1	1996	265	52.1	29.8	18.1
1997	269	61.4	24.5	14.1	1997	269	61.4	24.5	14.1
1998	288	51.7	29.5	18.8	1998	288	51.7	29.5	18.8
1999	266	72.9	16.2	10.9	1999	266	72.9	16.2	10.9
2000	267	65.9	22.5	11.6	2000	267	65.9	22.5	11.6
2001	262	62.3	22.1	15.6	2001	262	62.3	22.1	15.6
2002	266	49.6	31.6	18.8	2002	266	49.6	31.6	18.8
2003	245	61.3	26.9	11.8	2003	245	61.3	26.9	11.8
2004	250	60.4	20.8	18.8	2004	250	60.4	20.8	18.8

All species

ATLANTIC (NORTH)	Number of trees	0-10%	>10-25%	>25%	ATLANTIC (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1990	2729	47.8	34.3	17.9	1990	1668	66.6	14.0	19.4
1991	2729	44.8	34.8	20.4	1991	1555	56.6	21.7	21.7
1992	2718	41.4	37.8	20.8	1992	1799	64.3	23.2	12.5
1993	2710	38.8	35.6	25.6	1993	1782	61.3	27.3	11.4
1994	2693	38.5	36.8	24.7	1994	1608	59.2	28.7	12.1
1995	2642	36.2	37.6	26.2	1995	1704	58.8	33.0	8.2
1996	2624	37.0	39.9	23.1	1996	1560	51.4	37.9	10.7
1997	2605	42.0	38.0	20.0	1997	1680	56.1	35.2	8.7
1998	2628	45.8	36.2	18.0	1998	1704	49.3	38.3	12.4
1999	2754	45.9	35.4	18.7	1999	2376	55.2	37.1	7.7
2000	2726	43.6	36.2	20.2	2000	2376	48.6	37.2	14.2
2001	2765	45.7	36.4	17.9	2001	2376	42.8	48.5	8.7
2002	2746	43.6	37.9	18.5	2002	2376	36.6	50.1	13.3
2003	2724	43.7	37.2	19.1	2003	2376	34.8	51.9	13.3
2004	2746	43.4	33.9	22.7	2004	2376	35.6	48.9	15.5
SUB-ATLANTIC	Number of trees	0-10%	>10-25%	>25%	MEDITERR. (HIGHER)	Number of trees	0-10%	>10-25%	>25%
1990	18600	21.3	43.3	35.4	1990	3636	78.4	16.9	4.7
1991	18638	17.8	43.2	39.0	1991	3586	60.3	30.8	8.9
1992	18707	15.2	43.0	41.8	1992	3600	50.9	36.0	13.1
1993	18654	15.6	42.1	42.3	1993	3600	46.8	40.8	12.4
1994	18016	11.6	40.5	47.9	1994	3612	43.0	39.6	17.4
1995	18056	14.8	39.6	45.6	1995	3684	34.0	44.9	21.1
1996	18005	19.0	46.1	34.9	1996	3660	36.1	46.1	17.8
1997	18052	18.3	49.2	32.5	1997	3636	40.2	46.3	13.5
1998	19727	19.5	48.8	31.7	1998	3636	42.9	45.9	11.2
1999	19765	18.6	52.6	28.8	1999	4356	40.0	48.3	11.7
2000	19847	17.8	52.6	29.6	2000	4326	39.2	49.7	11.1
2001	19547	17.1	52.5	30.4	2001	4326	33.6	53.1	13.3
2002	19570	16.9	53.2	29.9	2002	4326	30.4	53.7	15.9
2003	19577	15.6	54.0	30.4	2003	4326	28.7	56.6	14.7
2004	19591	13.0	51.9	35.1	2004	4326	28.5	56.6	14.9
MEDITERR. (LOWER)	Number of trees	0-10%	>10-25%	>25%	MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1990	8715	67.4	18.5	14.1	1990	5271	45.5	31.8	22.7
1991	8634	57.5	26.5	16.0	1991	5336	42.3	35.7	22.0
1992	8853	50.8	32.7	16.5	1992	5347	32.4	40.7	26.9
1993	8622	51.6	38.6	9.8	1993	5320	31.6	40.6	27.8
1994	8578	46.8	39.4	13.8	1994	5232	28.0	42.2	29.8
1995	8394	32.6	46.2	21.2	1995	5506	27.2	47.0	25.8
1996	8424	36.3	47.1	16.6	1996	5498	29.2	45.4	25.4
1997	8435	37.0	50.9	12.1	1997	5458	28.9	46.1	25.0
1998	8454	38.1	48.9	13.0	1998	6074	35.2	42.5	22.3
1999	10038	33.7	51.5	14.8	1999	6633	36.7	43.8	19.5
2000	10188	31.5	54.1	14.4	2000	6763	33.3	47.0	19.7
2001	10218	30.5	56.6	12.9	2001	6647	28.2	50.6	21.2
2002	10248	28.5	57.2	14.3	2002	6745	24.3	53.4	22.3
2003	9978	25.7	57.4	16.9	2003	6794	19.8	53.7	26.5
2004	9888	27.9	56.6	15.5	2004	6734	19.9	51.3	28.8

All species

BOREAL (TEMP.)	Number of trees	0-10%	>10-25%	>25%
1990	1920	28.9	34.1	37.0
1991	2424	22.6	37.7	39.7
1992	2396	18.7	37.5	43.8
1993	2420	20.1	41.9	38.0
1994	2257	27.1	43.7	29.2
1995	2262	34.4	46.2	19.4
1996	2368	31.8	50.1	18.1
1997	2297	30.0	53.5	16.5
1998	2326	30.4	53.6	16.0
1999	2348	25.2	57.9	16.9
2000	2256	18.8	61.1	20.1
2001	2325	18.0	65.9	16.1
2002	2340	19.7	66.7	13.6
2003	2293	21.4	65.9	12.7
2004	2290	21.3	65.8	12.9

CONTINENTAL	0-10%	>10-25%	>25%	0-10%
1990	1133	60.9	19.2	19.9
1991	1151	64.0	19.1	16.9
1992	1151	62.3	18.2	19.5
1993	1162	56.9	18.5	24.6
1994	1140	53.9	17.9	28.2
1995	1160	61.5	15.9	22.6
1996	1117	65.3	15.0	19.7
1997	1073	66.9	14.9	18.2
1998	1155	66.5	16.0	17.5
1999	1230	71.9	13.7	14.4
2000	1230	67.7	13.6	18.7
2001	1211	64.1	18.9	17.0
2002	1182	63.5	17.3	19.2
2003	1182	58.0	18.3	23.7
2004	1422	62.1	16.5	21.4

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1990	43672	42.9	32.1	25.0
1991	44053	36.5	35.8	27.7
1992	44571	32.2	38.1	29.7
1993	44270	31.6	39.5	28.9
1994	43136	28.6	39.3	32.1
1995	43408	26.7	41.6	31.7
1996	43256	29.3	44.9	25.8
1997	43236	29.8	47.1	23.1
1998	45704	31.2	46.1	22.7
1999	49500	30.9	48.4	20.7
2000	49712	28.7	49.7	21.6
2001	49415	26.8	51.9	21.3
2002	49533	25.2	52.8	22.0
2003	49250	23.1	53.6	23.3
2004	49373	22.9	51.6	25.5

Annex I-9
Development of defoliation of most common species (1997-2004).

Picea abies

ATLANTIC (NORTH)	Number of trees	0-10%	>10-25%	>25%	SUB-ATLANTIC	Number of trees	0-10%	>10-25%	>25%
1997	1285	64.4	23.1	12.5	1997	8253	20.9	31.0	48.1
1998	1314	57.2	30.2	12.6	1998	7269	30.3	34.2	35.5
1999	1336	55.0	31.9	13.1	1999	7551	31.1	34.0	34.9
2000	1333	56.5	26.8	16.7	2000	7528	28.6	35.7	35.7
2001	1216	61.6	25.5	12.9	2001	7324	26.7	37.9	35.4
2002	1196	60.0	24.9	15.1	2002	7381	26.9	35.2	37.9
2003	1178	55.2	27.8	17.0	2003	7435	26.6	36.9	36.5
2004	1162	52.6	30.1	17.3	2004	7484	24.3	34.0	41.7
MEDITERR. (HIGHER)	Number of trees	0-10%	>10-25%	>25%	MEDITERR. (LOWER)	Number of trees	0-10%	>10-25%	>25%
1997	116	40.5	41.4	18.1	1997	83	77.1	14.5	8.4
1998	116	26.7	42.3	31.0	1998	76	42.1	35.5	22.4
1999	128	27.3	45.4	27.3	1999	87	56.3	25.3	18.4
2000	128	25.8	51.5	22.7	2000	82	65.8	23.2	11.0
2001	116	31.0	42.3	26.7	2001	81	65.5	22.2	12.3
2002	103	35.0	47.5	17.5	2002	108	40.7	30.6	28.7
2003	116	44.8	36.2	19.0	2004	101	37.6	34.7	27.7
2004	115	47.8	33.9	18.3	2004	101	30.7	35.6	33.7
MOUNTAIN-OUS (NORTH)	Number of trees	0-10%	>10-25%	>25%	MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1997	735	44.8	21.5	33.7	1997	5383	55.4	26.7	17.9
1998	728	45.5	20.2	34.3	1998	5803	53.4	27.3	19.3
1999	724	48.9	22.9	28.2	1999	5927	55.4	27.6	17.0
2000	713	47.5	26.6	25.9	2000	6106	53.6	28.8	17.6
2001	791	53.6	18.7	27.7	2001	5995	51.7	30.5	17.8
2002	837	49.1	23.4	27.5	2002	5958	51.2	31.4	17.4
2003	862	54.2	20.5	25.3	2003	6001	47.8	34.5	17.7
2004	916	61.0	19.3	19.7	2004	5986	44.7	32.9	22.4
BOREAL	Number of trees	0-10%	>10-25%	>25%	BOREAL (TEMPERATE)	Number of trees	0-10%	>10-25%	>25%
1997	5805	40.9	32.1	27.0	1997	4653	37.6	42.6	19.8
1998	5878	39.7	33.9	26.4	1998	4587	38.4	41.3	20.3
1999	5864	40.0	32.9	27.1	1999	4559	33.6	42.8	23.6
2000	5780	37.3	36.6	26.1	2000	4566	38.2	41.8	20.0
2001	5739	35.0	35.4	29.6	2001	4548	35.9	45.2	18.9
2002	5701	37.5	35.9	26.6	2002	4558	45.9	41.7	12.4
2003	5640	36.0	35.4	28.6	2003	4587	41.2	43.7	15.1
2004	6209	38.6	35.7	25.7	2004	4539	39.8	41.2	19.0
CONTINENTAL	Number of trees	0-10%	>10-25%	>25%	ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1997	540	33.7	30.9	35.4	1997	26908	38.4	31.7	29.9
1998	511	34.4	29.2	36.4	1998	26341	40.9	33.1	26.0
1999	502	37.2	31.1	31.7	1999	26728	40.9	33.3	25.8
2000	465	31.6	34.9	33.5	2000	26750	40.0	34.6	25.4
2001	463	42.5	29.4	28.1	2001	26322	38.8	35.5	25.7
2002	455	37.2	32.5	30.3	2002	26346	40.6	34.7	24.7
2003	447	33.5	33.5	32.9	2003	26416	38.5	36.2	25.3
2004	395	37.2	37.7	25.1	2004	26956	37.6	34.7	27.7

Pinus sylvestris

ATLANTIC (NORTH)	Number of trees	0-10%	>10-25%	>25%	ATLANTIC (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1997	1165	49.9	41.2	8.9	1997	216	59.3	24.5	16.2
1998	1243	47.9	42.8	9.3	1998	216	52.3	36.1	11.6
1999	1318	45.0	42.3	12.7	1999	217	43.7	42.9	13.4
2000	1361	43.5	42.8	13.7	2000	212	57.5	32.1	10.4
2001	1360	36.5	49.8	13.7	2001	211	51.7	33.6	14.7
2002	1362	42.9	41.0	16.1	2002	212	44.8	42.9	12.3
2003	1379	42.9	43.1	14.0	2003	210	48.6	35.7	15.7
2004	1370	45.0	40.7	14.3	2004	210	50.9	36.7	12.4

Pinus sylvestris

SUB-ATLANTIC	Number of trees	0-10%	>10-25%	>25%
1997	10366	18.8	48.5	32.7
1998	10650	19.8	52.9	27.3
1999	10676	20.0	54.9	25.1
2000	10683	18.2	55.9	25.9
2001	10677	17.3	57.4	25.3
2002	10545	15.7	57.7	26.6
2003	10586	14.0	58.9	27.1
2004	10638	14.0	56.5	29.5

MEDITERR. (HIHGER)	Number of trees	0-10%	>10-25%	>25%
1997	779	40.6	45.0	14.4
1998	780	41.7	45.2	13.1
1999	869	45.8	43.7	10.5
2000	866	48.0	42.5	9.5
2001	869	48.1	39.5	12.4
2002	870	43.3	41.4	15.3
2003	865	37.6	47.5	14.9
2004	865	37.1	45.8	17.1

MEDITERR. (LOWER)	Number of trees	0-10%	>10-25%	>25%
1997	138	48.6	36.2	15.2
1998	138	50.0	34.8	15.2
1999	155	49.0	31.6	19.4
2000	154	40.9	44.2	14.9
2001	154	38.3	46.1	15.6
2002	154	37.0	44.2	18.8
2003	155	31.0	49.6	19.4
2004	155	28.4	53.5	18.1

MOUNTAIN-OUS (NORTH)	Number of trees	0-10%	>10-25%	>25%
1997	823	47.0	36.6	16.4
1998	823	44.7	39.4	15.9
1999	826	48.3	37.5	14.2
2000	825	52.8	36.5	10.7
2001	843	53.6	36.2	10.2
2002	841	49.5	38.6	11.9
2003	851	54.6	35.3	10.1
2004	871	62.9	28.7	8.4

MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1997	2574	23.7	37.3	39.0
1998	2636	26.0	31.9	42.1
1999	2568	31.2	34.1	34.7
2000	2190	28.0	41.0	31.0
2001	2128	36.4	37.7	25.9
2002	2119	27.1	44.6	28.3
2003	2392	19.4	50.5	30.1
2004	2295	19.9	45.6	34.5

BOREAL	Number of trees	0-10%	>10-25%	>25%
1997	7814	65.0	28.2	6.8
1998	7822	65.6	28.8	5.6
1999	7806	65.6	28.5	5.9
2000	7836	65.9	29.3	4.8
2001	7903	59.7	32.3	8.0
2002	7954	58.4	35.5	6.1
2003	7930	55.6	37.4	7.0
2004	9536	59.6	34.9	5.5

BOREAL (TEMP.)	Number of trees	0-10%	>10-25%	>25%
1997	10654	17.3	52.1	30.6
1998	10679	21.8	50.9	27.3
1999	10631	19.3	57.1	23.6
2000	10576	23.4	57.2	19.4
2001	10650	21.3	60.9	17.8
2002	10611	31.9	57.1	11.0
2003	10610	35.9	54.5	9.6
2004	10576	36.7	53.9	9.4

CONTINENTAL	Number of trees	0-10%	>10-25%	>25%
1997	435	44.2	17.2	38.6
1998	449	50.2	12.2	37.6
1999	370	58.6	23.0	18.4
2000	503	55.9	26.2	17.9
2001	544	43.9	37.7	18.4
2002	500	44.0	32.6	23.4
2003	482	38.2	38.4	23.4
2004	451	35.0	41.5	23.5

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1997	34964	31.9	43.1	25.0
1998	35436	33.8	43.8	22.4
1999	35436	33.6	46.5	19.9
2000	35206	34.4	47.5	18.1
2001	35339	32.2	49.9	17.9
2002	35168	34.2	49.7	16.1
2003	35460	33.5	50.3	16.2
2004	36967	36.0	47.7	16.3

Fagus sylvatica

ATLANTIC (NORTH)	Number of trees	0-10%	>10-25%	>25%
1997	965	38.5	40.6	20.9
1998	966	31.3	46.7	22.0
1999	993	24.9	49.8	25.3
2000	994	22.8	43.9	33.3
2001	1011	31.0	43.6	25.4
2002	1029	25.2	46.2	28.6
2003	1034	30.1	45.8	24.1
2004	1041	18.7	40.1	41.2

ATLANTIC (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1997	252	35.7	43.7	20.6
1998	229	46.7	47.2	6.1
1999	230	42.2	51.7	6.1
2000	238	53.8	39.5	6.7
2001	239	59.4	38.1	2.5
2002	240	36.7	53.3	10.0
2003	239	31.4	53.5	15.1
2004	241	16.2	63.9	19.9

SUB-ATLANTIC	Number of trees	0-10%	>10-25%	>25%
1997	3185	27.0	51.1	21.9
1998	3367	28.5	48.4	23.1
1999	3504	24.0	52.0	24.0
2000	3435	27.5	48.0	24.5
2001	3459	24.3	47.1	28.6
2002	3490	27.8	49.1	23.1
2003	3514	25.8	50.4	23.8
2004	3534	17.8	46.3	35.9

MEDITERR. (HIGHER)	Number of trees	0-10%	>10-25%	>25%
1997	761	38.7	34.8	26.5
1998	786	36.0	35.8	28.2
1999	891	34.2	38.9	26.9
2000	892	33.7	42.0	24.3
2001	909	28.9	41.4	29.7
2002	873	30.1	44.1	25.8
2003	848	29.5	49.3	21.2
2004	852	26.3	48.7	25.0

Fagus sylvatica

MEDITERR. (LOWER)	Number of trees	0-10%	>10-25%	>25%	MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1997	617	47.5	31.9	20.6	1997	3419	36.5	44.3	19.2
1998	629	47.2	32.8	20.0	1998	3513	40.4	42.3	17.3
1999	828	36.7	37.5	25.8	1999	3638	37.0	43.5	19.5
2000	826	36.3	38.8	24.9	2000	3862	39.9	41.8	18.3
2001	832	28.6	39.9	31.5	2001	3663	31.3	46.8	21.9
2002	821	31.4	45.8	22.8	2002	3716	33.4	46.3	20.3
2003	791	31.7	48.1	20.2	2003	3748	29.6	45.4	25.0
2004	851	26.9	48.9	24.2	2004	3607	28.0	48.6	23.4
CONTINENTAL	Number of trees	0-10%	>10-25%	>25%	ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1997	1637	48.0	32.9	19.1	1997	10841	36.4	42.8	20.8
1998	1755	46.6	34.8	18.6	1998	11250	37.2	42.5	20.3
1999	1448	51.1	26.5	22.4	1999	11537	33.6	43.9	22.5
2000	1436	49.4	27.6	23.0	2000	11689	35.5	41.9	22.6
2001	1576	48.3	28.2	23.5	2001	11696	31.7	43.0	25.3
2002	1636	51.8	30.1	18.1	2002	11812	33.2	44.9	21.9
2003	1559	50.2	31.8	18.0	2003	11740	31.4	45.8	22.8
2004	1509	49.1	35.5	15.4	2004	11642	26.3	45.9	27.8

Quercus ilex and *Q. rotundifolia*

MEDITERR. (HIGHER)	Number of trees	0-10%	>10-25%	>25%	MEDITERR. (LOWER)	Number of trees	0-10%	>10-25%	>25%
1997	863	25.8	53.5	20.7	1997	2567	27.9	55.3	16.8
1998	813	32.3	50.8	16.9	1998	2552	29.5	54.7	15.8
1999	934	25.9	55.0	19.1	1999	3190	21.4	56.4	22.2
2000	928	26.4	55.0	18.6	2000	3211	17.2	60.2	22.6
2001	929	24.3	58.6	17.1	2001	3225	19.1	64.2	16.7
2002	929	17.7	60.2	22.1	2002	3212	17.4	63.6	19.0
2003	931	20.2	56.7	23.1	2003	3186	13.9	64.8	21.3
2004	955	19.8	60.3	19.9	2004	3188	19.7	63.0	17.3
MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%	ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1997	155	24.5	41.3	34.2	1997	3675	27.2	54.6	18.2
1998	155	25.2	64.5	10.3	1998	3610	30.0	54.3	15.7
1999	240	30.0	54.2	15.8	1999	4454	23.0	56.0	21.0
2000	281	31.7	56.9	11.4	2000	4510	20.3	58.5	21.2
2001	282	25.2	53.9	20.9	2001	4526	20.6	62.0	17.4
2002	281	22.4	44.1	33.5	2002	4512	17.8	61.5	20.7
2003	237	16.0	42.2	41.8	2003	4444	15.8	61.3	22.9
2004	281	19.6	48.7	31.7	2004	4514	19.9	61.4	18.7

Pinus pinaster

ATLANTIC (SOUTH)	Number of trees	0-10%	>10-25%	>25%	MEDITERR. (HIGHER)	Number of trees	0-10%	>10-25%	>25%
1997	1279	58.0	28.6	13.4	1997	475	65.5	20.2	14.3
1998	1283	41.8	41.7	16.5	1998	466	65.4	25.8	8.8
1999	1458	58.0	34.4	7.6	1999	544	57.7	29.8	12.5
2000	1409	58.4	33.2	8.4	2000	511	58.2	29.5	12.3
2001	1421	54.4	38.8	6.8	2001	510	59.2	35.1	5.7
2002	1401	52.3	38.3	9.4	2002	512	51.4	41.4	7.2
2003	1373	49.2	39.5	11.3	2003	512	47.6	42.0	10.4
2004	1372	48.1	38.3	13.6	2004	506	51.6	35.8	12.6
MEDITERR. (LOWER)	Number of trees	0-10%	>10-25%	>25%	MOUNTAIN. (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1997	1547	42.5	45.6	11.9	1997	71	78.8	12.7	8.5
1998	1521	43.8	46.0	10.2	1998	69	71.1	15.9	13.0
1999	1755	42.9	47.4	9.7	1999	134	79.2	10.4	10.4
2000	1755	45.9	45.9	8.2	2000	130	76.9	13.1	10.0
2001	1747	46.4	46.9	6.7	2001	129	69.8	18.6	11.6
2002	1743	46.9	45.9	7.2	2002	129	58.2	30.2	11.6
2003	1553	43.7	45.0	11.3	2003	129	47.3	40.3	12.4
2004	1501	42.5	42.0	15.5	2004	128	50.0	41.4	8.6

Pinus pinaster

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1997	3372	52.4	34.9	12.7
1998	3339	46.6	40.9	12.5
1999	3891	51.8	38.8	9.4
2000	3805	53.2	37.9	8.9
2001	3807	51.9	41.3	6.8
2002	3785	49.8	42.0	8.2
2003	3567	46.5	42.3	11.2
2004	3507	46.3	39.6	14.1

Quercus suber

MEDITERR. (LOWER)	Number of trees	0-10%	>10-25%	>25%
1997	1434	33.9	53.1	13.0
1998	1434	26.9	57.6	15.5
1999	1541	23.4	56.9	19.7
2000	1563	21.5	61.8	16.7
2001	1564	22.2	58.6	19.2
2002	1587	22.3	59.5	18.2
2003	1571	19.4	54.1	26.5
2004	1587	20.6	52.9	26.5

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1997	1502	36.7	50.8	12.5
1998	1501	29.6	55.6	14.8
1999	1632	25.6	55.1	19.3
2000	1654	22.9	61.0	16.1
2001	1654	22.8	58.9	18.3
2002	1678	22.6	59.6	17.8
2003	1638	20.0	54.4	25.6
2004	1655	21.8	52.5	25.7

Quercus robur and *Q. petraea*

ATLANTIC (NORTH)	Number of trees	0-10%	>10-25%	>25%
1997	1230	24.2	46.3	29.5
1998	1296	25.1	45.5	29.4
1999	1299	21.7	48.3	30.0
2000	1287	28.1	51.2	20.7
2001	1294	18.8	49.7	31.5
2002	1300	17.8	48.2	34.0
2003	1292	16.8	48.9	34.3
2004	1294	15.8	47.1	37.1

ATLANTIC (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1997	1431	20.3	40.4	39.3
1998	1450	25.7	40.0	34.3
1999	1475	25.6	48.0	26.4
2000	1495	29.8	44.5	25.7
2001	1483	25.0	46.8	28.2
2002	1488	21.6	50.0	28.4
2003	1502	17.1	46.6	36.3
2004	1502	19.2	45.2	35.6

SUB-ATLANTIC	Number of trees	0-10%	>10-25%	>25%
1997	2606	11.3	46.4	42.3
1998	2666	16.0	44.7	39.3
1999	2727	16.9	50.5	32.6
2000	2736	14.7	51.2	34.1
2001	2739	14.3	51.9	33.8
2002	2748	16.0	52.3	31.7
2003	2750	11.3	48.7	40.0
2004	2763	10.0	45.6	44.4

MEDITERR. (HIGHER)	Number of trees	0-10%	>10-25%	>25%
1997	211	15.6	45.1	39.3
1998	217	19.4	41.9	38.7
1999	220	25.0	44.5	30.5
2000	219	23.3	47.0	29.7
2001	222	17.6	51.8	30.6
2002	215	13.5	53.9	32.6
2003	211	10.4	54.1	35.5
2004	218	8.7	51.4	39.9

MEDITERR. (LOWER)	Number of trees	0-10%	>10-25%	>25%
1997	515	21.4	40.5	38.1
1998	585	20.0	38.8	41.2
1999	631	23.9	43.8	32.3
2000	628	26.0	39.9	34.1
2001	629	27.2	45.3	27.5
2002	634	26.0	48.8	25.2
2003	626	23.6	50.0	26.4
2004	643	28.0	45.9	26.1

MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1997	693	14.1	30.4	55.5
1998	737	14.8	36.0	49.2
1999	719	13.9	40.5	45.6
2000	789	14.7	40.8	44.5
2001	683	18.0	41.4	40.6
2002	672	13.1	46.6	40.3
2003	689	13.4	44.9	41.7
2004	763	16.1	40.0	43.9

BOREAL (TEMPERATE)	Number of trees	0-10%	>10-25%	>25%
1997	308	15.9	43.2	40.9
1998	303	23.1	42.6	34.3
1999	289	14.9	48.8	36.3
2000	310	27.1	42.3	30.6
2001	312	22.1	48.7	29.2
2002	304	31.6	51.3	17.1
2003	307	18.2	48.6	33.2
2004	308	21.8	41.5	36.7

CONTINENTAL	Number of trees	0-10%	>10-25%	>25%
1997	842	19.4	35.2	45.4
1998	851	20.9	35.6	43.5
1999	781	29.1	33.9	37.0
2000	814	24.0	26.2	49.8
2001	813	23.9	29.4	46.7
2002	652	23.9	30.1	46.0
2003	646	19.7	36.8	43.5
2004	678	21.2	35.7	43.1

Quercus robur and ***Q. petraea***

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1997	7846	17.1	42.1	40.8
1998	8115	20.3	41.6	38.1
1999	8150	20.9	46.4	32.7
2000	8286	22.0	45.2	32.8
2001	8183	19.6	46.9	33.5
2002	8019	19.0	48.7	32.3
2003	8030	15.3	47.3	37.4
2004	8175	15.9	44.5	39.6

Abies alba

SUB-ATLANTIC	Number of trees	0-10%	>10-25%	>25%
1997	640	30.9	28.4	40.7
1998	647	29.4	29.1	41.5
1999	688	29.2	32.0	38.8
2000	647	29.5	29.8	40.7
2001	637	30.0	25.3	44.7
2002	679	32.8	27.4	39.8
2003	678	30.2	32.3	37.5
2004	682	29.8	33.0	37.2

MEDITERR. (HIGHER)	Number of trees	0-10%	>10-25%	>25%
1997	125	30.4	17.6	52.0
1998	123	32.5	13.8	53.7
1999	141	31.2	17.7	51.1
2000	141	28.4	17.7	53.9
2001	128	24.2	18.8	57.0
2002	129	26.4	19.4	54.2
2003	128	25.0	19.5	55.5
2004	128	21.1	19.5	59.4

MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1997	1055	35.4	33.7	30.9
1998	1046	34.4	35.7	29.9
1999	1070	32.6	38.5	28.9
2000	1109	34.8	38.1	27.1
2001	1057	36.9	38.6	24.5
2002	1079	34.9	38.0	27.1
2003	1129	31.1	37.5	31.4
2004	1128	35.1	34.9	30.0

CONTINENTAL	Number of trees	0-10%	>10-25%	>25%
1997	176	17.6	26.7	55.7
1998	181	16.0	30.9	53.1
1999	170	20.0	28.8	51.2
2000	164	15.2	33.5	51.3
2001	164	29.9	31.1	39.0
2002	166	28.3	36.2	35.5
2003	166	21.1	46.4	32.5
2004	171	28.1	32.2	39.7

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1997	2060	32.2	31.0	36.8
1998	2060	31.5	32.1	36.4
1999	2131	30.8	34.1	35.1
2000	2098	31.6	33.6	34.8
2001	2020	33.7	32.4	33.9
2002	2086	33.4	33.3	33.3
2003	2136	30.1	35.3	34.6
2004	2146	32.3	33.1	34.6

Picea sitchensis

ATLANTIC (NORTH)	Number of trees	0-10%	>10-25%	>25%
1997	972	42.8	39.3	17.9
1998	1017	36.5	37.6	25.9
1999	923	44.9	34.9	20.2
2000	970	41.4	35.8	22.8
2001	941	37.4	38.8	23.8
2002	921	29.4	41.3	29.3
2003	900	28.2	41.5	30.3
2004	881	32.6	38.9	28.5

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1997	995	44.1	38.4	17.5
1998	1039	37.8	36.9	25.3
1999	945	46.2	34.1	19.7
2000	992	42.7	35.0	22.3
2001	963	38.5	38.2	23.3
2002	943	30.2	41.2	28.6
2003	922	29.2	41.2	29.6
2004	902	33.5	38.7	27.8

All species

ATLANTIC (NORTH)	Number of trees	0-10%	>10-25%	>25%
1997	6919	46.0	37.5	16.5
1998	7109	42.8	39.4	17.8
1999	7190	42.0	39.9	18.1
2000	7247	43.2	38.0	18.8
2001	7137	40.7	39.7	19.6
2002	7159	38.9	39.0	22.1
2003	7120	37.9	40.3	21.8
2004	7109	35.1	39.7	25.2

ATLANTIC (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1997	5720	45.0	31.6	23.4
1998	5724	42.9	35.2	21.9
1999	6336	49.3	35.8	14.9
2000	6215	48.8	34.6	16.6
2001	6215	45.7	39.9	14.4
2002	6196	39.6	42.5	17.9
2003	6136	35.6	41.2	23.2
2004	6096	34.5	41.6	23.9

SUB-ATLANTIC	Number of trees	0-10%	>10-25%	>25%
1997	28382	22.0	42.3	35.7
1998	28077	25.9	44.2	29.9
1999	28774	26.0	46.2	27.8
2000	28572	24.8	46.6	28.6
2001	28348	23.4	47.5	29.1
2002	28414	22.9	47.9	29.2
2003	28437	20.9	48.6	30.5
2004	28594	18.7	46.2	35.1

MEDITERR. (HIGHER)	Number of trees	0-10%	>10-25%	>25%
1997	7402	33.5	39.6	26.9
1998	7387	36.4	41.3	22.3
1999	8423	34.3	43.7	22.0
2000	8379	32.9	45.7	21.4
2001	8389	28.7	46.4	24.9
2002	8235	27.3	47.5	25.2
2003	8233	25.0	49.9	25.1
2004	8401	25.4	49.7	24.9

MEDITERR. (LOWER)	Number of trees	0-10%	>10-25%	>25%
1997	12101	35.3	46.6	18.1
1998	12099	34.8	46.5	18.7
1999	14446	31.4	49.0	19.6
2000	14542	29.5	50.9	19.6
2001	14604	28.1	52.4	19.5
2002	14691	26.6	53.3	20.1
2003	14266	24.2	53.6	22.2
2004	14323	26.0	52.9	21.1

MOUNTAIN-OUS (NORTH)	Number of trees	0-10%	>10-25%	>25%
1997	2632	42.7	34.3	23.0
1998	2673	42.7	33.7	23.6
1999	2672	43.9	34.7	21.4
2000	2686	46.6	35.8	17.6
2001	2864	48.9	32.4	18.7
2002	2975	44.9	34.8	20.3
2003	3025	47.9	33.0	19.1
2004	3302	51.4	28.7	19.9

MOUNTAIN-OUS (SOUTH)	Number of trees	0-10%	>10-25%	>25%
1997	17757	38.2	34.8	27.0
1998	18560	39.1	33.5	27.4
1999	19778	39.7	35.4	24.9
2000	20029	38.8	36.7	24.5
2001	19692	37.0	37.9	25.1
2002	19268	36.2	39.2	24.6
2003	19516	32.8	41.3	25.9
2004	19617	31.3	41.1	27.6

BOREAL	0-10%	>10-25%	>25%	0-10%
1997	15922	56.1	29.3	14.6
1998	15978	55.6	30.5	13.9
1999	15892	55.5	30.0	14.5
2000	15870	53.9	32.7	13.4
2001	15860	50.0	33.7	16.3
2002	15879	50.3	35.8	13.9
2003	15808	48.4	36.4	15.2
2004	18659	52.1	35.0	12.9

BOREAL (TEMP.)	Number of trees	0-10%	>10-25%	>25%
1997	19935	27.1	48.0	24.9
1998	19893	29.2	47.3	23.5
1999	19801	25.6	52.8	21.6
2000	19815	28.7	52.6	18.7
2001	19933	27.5	55.5	17.0
2002	19906	37.0	51.8	11.2
2003	19942	37.5	50.3	12.2
2004	19815	38.0	49.4	12.6

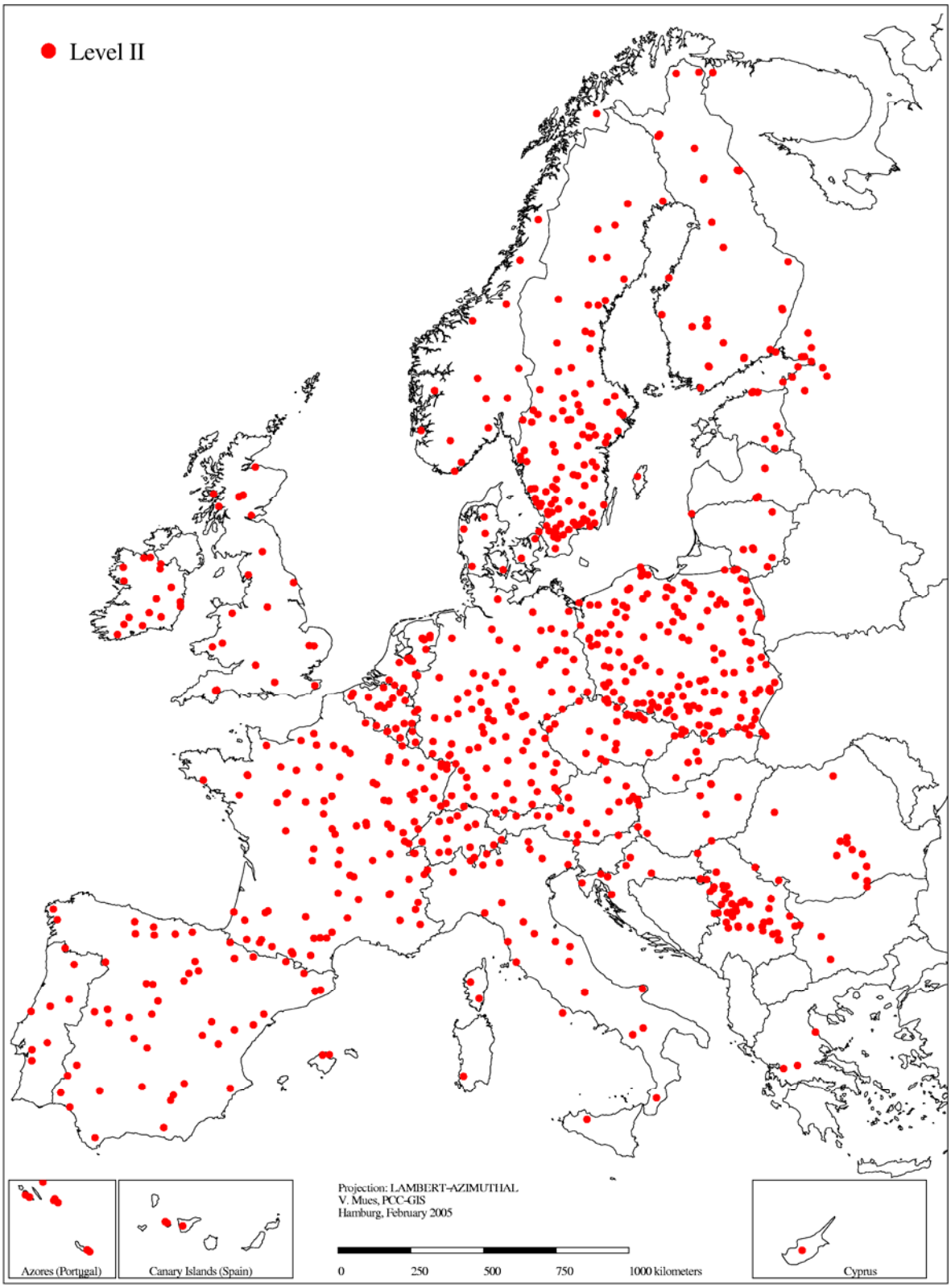
CONTINENTAL	Number of trees	0-10%	>10-25%	>25%
1997	6394	35.5	32.1	32.4
1998	6922	33.7	31.8	34.5
1999	6167	41.8	29.9	28.3
2000	6323	38.7	27.9	33.4
2001	6538	39.4	31.2	29.4
2002	6418	37.9	34.6	27.5
2003	6174	34.5	35.9	29.6
2004	6013	36.5	36.1	27.4

ALL REGIONS	Number of trees	0-10%	>10-25%	>25%
1997	123452	35.1	39.3	25.6
1998	124734	36.2	39.9	23.9
1999	129791	35.9	41.9	22.2
2000	129990	35.4	42.6	22.0
2001	129892	33.5	44.2	22.3
2002	129453	34.0	44.7	21.3
2003	128969	32.2	45.2	22.6
2004	132241	32.6	43.9	23.5

Period 1990 - 2004				Period 1997 - 2004		
Year	**No. of trees** N	**Mean defoliation** $\bar{x}$	**Standard error** $s_{\bar{x}} = s/\sqrt{N}$	**No. of trees** N	**Mean defoliation** $\bar{x}$	**Standard error** $s_{\bar{x}} = s/\sqrt{N}$
Pinus sylvestris						
1990	11630	24.3	0.15			
1991	11877	26.2	0.14			
1992	11887	26.9	0.14			
1993	11924	26.6	0.14			
1994	11292	27.7	0.14			
1995	11113	26.0	0.14			
1996	11154	23.3	0.13			
1997	11115	22.5	0.12	34964	20.7	0.08
1998	11608	21.9	0.12	35436	20.0	0.08
1999	11847	21.3	0.11	35436	19.3	0.07
2000	11764	21.9	0.12	35206	18.8	0.07
2001	11794	21.8	0.11	35339	19.2	0.07
2002	11670	22.4	0.12	35168	18.6	0.07
2003	11708	22.5	0.12	35460	18.7	0.07
2004	11741	22.7	0.12	36967	18.4	0.07
Picea abies						
1990	6485	22.4	0.22			
1991	6634	22.5	0.21			
1992	6660	23.3	0.20			
1993	6584	24.3	0.22			
1994	6553	25.7	0.23			
1995	6700	24.6	0.23			
1996	6707	22.3	0.21			
1997	6615	22.9	0.20	26908	20.4	0.1
1998	7887	22.0	0.18	26341	19.2	0.1
1999	7855	21.8	0.18	26728	19.3	0.1
2000	7779	22.9	0.18	26750	19.4	0.1
2001	7504	22.7	0.17	26322	19.4	0.1
2002	7523	23.3	0.18	26346	19.1	0.1
2003	7568	23.2	0.18	26416	19.6	0.1
2004	7484	25.3	0.19	26956	20.3	0.1
Quercus robur and ***Q. petraea***						
1990	2633	21.0	0.34			
1991	2640	23.4	0.33			
1992	2609	24.1	0.32			
1993	2615	26.2	0.32			
1994	2559	27.6	0.34			
1995	2643	26.9	0.34			
1996	2619	27.9	0.36			
1997	2651	26.3	0.32	7846	27.2	0.20
1998	2764	25.9	0.31	8115	26.0	0.20
1999	2839	23.8	0.28	8150	24.2	0.18
2000	2868	23.5	0.28	8286	24.2	0.18
2001	2879	23.7	0.27	8183	24.7	0.18
2002	2889	23.3	0.27	8019	23.9	0.17
2003	2902	24.6	0.26	8030	26.0	0.17
2004	2998	26.5	0.31	8175	26.8	0.18
Fagus sylvatica						
1990	4015	17.9	0.22			
1991	4064	17.2	0.21			
1992	4091	20.8	0.23			
1993	4109	20.0	0.24			
1994	3948	21.6	0.22			
1995	4127	22.2	0.22			
1996	4092	21.1	0.21			
1997	4163	20.6	0.20	10841	19.2	0.14
1998	4417	19.5	0.20	11250	18.9	0.14
1999	4568	20.6	0.19	11537	19.8	0.14
2000	4637	20.5	0.21	11689	19.8	0.15
2001	4640	21.5	0.21	11696	20.8	0.14
2002	4649	20.0	0.19	11812	19.9	0.14
2003	4678	21.7	0.20	11740	20.3	0.14
2004	4693	24.2	0.22	11642	22.3	0.14

Period 1990 - 2004				Period 1997 - 2004		
Year	**No. of trees** N	**Mean defoliation** $\bar{x}$	**Standard error** $s_{\bar{x}} = s/\sqrt{N}$	**No. of trees** N	**Mean defoliation** $\bar{x}$	**Standard error** $s_{\bar{x}} = s/\sqrt{N}$
Pinus pinaster						
1990	2654	13.2	0.30			
1991	2589	15.8	0.37			
1992	2599	14.0	0.33			
1993	2452	12.1	0.33			
1994	2542	12.5	0.31			
1995	2381	12.8	0.28			
1996	2350	14.6	0.36			
1997	2333	15.5	0.33	3372	16.3	0.31
1998	2332	15.8	0.32	3339	16.7	0.27
1999	2886	16.5	0.32	3891	15.8	0.27
2000	2859	17.8	0.38	3805	16.5	0.31
2001	2842	14.7	0.23	3807	14.4	0.21
2002	2840	15.4	0.24	3785	15.3	0.22
2003	2622	16.1	0.27	3567	16.4	0.25
2004	2579	18.6	0.37	3507	18.1	0.31
Quercus ilex and ***Q. rotundifolia***						
1990	3074	13.8	0.25			
1991	3064	16.0	0.22			
1992	3080	17.4	0.24			
1993	3055	16.0	0.17			
1994	3027	19.6	0.29			
1995	3052	24.0	0.28			
1996	3034	22.6	0.27			
1997	3034	19.4	0.25	3675	20.4	0.24
1998	3026	18.5	0.23	3610	19.3	0.21
1999	3820	21.1	0.23	4454	21.2	0.21
2000	3852	20.9	0.19	4510	21.1	0.18
2001	3853	20.2	0.19	4526	20.7	0.18
2002	3857	21.2	0.18	4512	21.7	0.18
2003	3859	22.3	0.22	4444	22.8	0.21
2004	3855	20.3	0.17	4514	21.0	0.18

Annex I-10
Level II plots



Annex II

National Surveys

Annex II-1
Forests and surveys in European countries (2004)

Participating countries	Total area (1000 ha)	Forest area (1000 ha)	Coniferous forest (1000 ha)	Broadleav. forest (1000 ha)	Area surveyed (1000 ha)	Grid size (km x km)	No. of sample plots	No. of sample trees
Albania	2875	1036	172	607	779	10x10	299	8970
Andorra	47	17	15	2	17	16 x 16	3	72
Austria	8385	3878	2683	798	3481	16 x 16	136	3582
Belarus	20760	7845	4728	3117	7845	16 x 16	406	9603
Belgium	3035	691	281	324	691	4^2 / 8^2	125	2966
Bulgaria	11100	3314	1172	2142	3314	4^2/8^2/16^2	124	4356
Croatia	5654	2061	321	1740	2061	16 x 16	87	2082
Cyprus	925	298	172	0	138	16x16	15	360
Czech Republic	7886	2630	2057	573	2630	8^2/16^2	140	6585
Denmark	4300	468	294	174	468	7^2/16^2	24	576
Estonia	4510	2267	1113	1154	2267	16 x 16	93	2201
Finland	30460	20302	18058	1962	20020	16^2 / 24x32	594	11210
France	54926	14591	9228	4058	1305	16 x 16	511	10219
Germany	35562	11076	6084	4236	10890	16^2 / 4^2	451	13741
Greece	12890	2512	954	1080	no survey in 2004			
Hungary	9300	1836	244	1592	1836	4 x 4	1204	28313
Ireland	8442	650	399	37	399	16 x 16	19	403
Italy	30128	8675	1735	6940	8675	16 x 16	255	7111
Latvia	6459	2923	1565	1209	2923	8 x 8	352	8384
Liechtenstein	16	8	6	2	no survey in 2004			
Lithuania	6520	2069	1159	809	2069	8x8/16x16	261	6243
Luxembourg	259	89	30	54	no survey in 2004			
Rep. of Moldova	3376	318	6	312	318	2x2/2x4	680	11895
The Netherlands	3482	334	158	52	210	16 x 16	11	232
Norway	32376	12000	6800	5200	12000	3^2/9^2	1566	8191
Poland	31268	8894	6848	2046	6968	16 x 16	1276	25520
Portugal	8893	3234	1081	2153	3234	16 x 16	133	3990
Romania	23750	6244	1929	4315	6244	4 x 4	3827	100041
Russian Fed.	11100	8125			no survey in 2004			
Serbia and Montenegro	8836	2360	179	2181	1868	16 x 16	130	3031
Slovak Republic	4901	1961	815	1069	1961	16 x 16	108	4216
Slovenia	2027	1099	410	688	1099	16 x 16	42	1008
Spain	50471	11588	5910	4056	11588	16 x 16	620	14880
Sweden	41000	23400	19600	900	20600	varying	2819	14805
Switzerland	4129	1186	818	368	1186	16 x 16	48	1041
Turkey	77945	20199	9426	10773	no survey in 2004			
Ukraine	60350	9316	3969	5347	918	16 x 16	57	1395
United Kingdom	24100	2156	1520	636	2156	random	347	8328
TOTAL	652443	201650	111939	72706	142158	varying	16763	325550

Serbia and Montenegro: Serbia only.

Annex II-2
Defoliation of all species by classes and class aggregates (2004)

Participating countries	Area surveyed (1000 ha)	No. of sample trees	0 none	1 slight	2 moderate	3+4 severe and dead	2+3+4
Albania		8970	42.7	45.1	10.9	1.3	12.2
Andorra	17	72	16.7	47.1	25.0	11.1	36.1
Austria	3481	3582	51.4	35.4	10.4	2.8	13.1
Belarus	7845	9603	40.0	50.0	7.7	2.3	10.0
Belgium	691	2966	38.2	42.4	16.5	2.9	19.4
Bulgaria	3314	4356	19.8	40.5	34.8	4.9	39.7
Croatia	2061	2082	35.3	39.5	22.8	2.4	25.2
Cyprus	138	360	22.5	65.3	12.2	0.0	12.2
Czech Republic	2630	6585	11.7	31.0	56.2	1.1	57.3
Denmark	468	576	64.9	23.3	8.7	3.1	11.8
Estonia	2267	2201	49.4	45.3	4.8	0.5	5.3
Finland	20020	11210	57.1	33.1	9.0	0.8	9.8
France	13100	10219	32.0	36.3	27.7	4.0	31.7
Germany	10890	13741	27.6	41.0	28.5	2.9	31.4
Greece			no survey in 2004				
Hungary	1836	28313	39.9	38.6	15.6	5.9	21.5
Ireland	399	403	56.8	25.8	15.9	1.5	17.4
Italy	8675	7111	20.5	43.6	31.4	4.5	35.9
Latvia	2923	8384	20.9	66.6	10.2	2.3	12.5
Liechtenstein			no survey in 2004				
Lithuania	2069	6243	10.7	75.4	11.4	2.5	13.9
Luxembourg			no survey in 2004				
Rep. of Moldova	318	11895	30.1	35.9	28.6	5.4	34.0
The Netherlands	210	232	52.2	20.3	23.7	3.8	27.5
Norway	12000	8191	43.3	36.0	17.7	3.0	20.7
Poland	6968	25520	8.3	57.1	32.5	2.1	34.6
Portugal	3234	3990	44.8	38.6	14.5	2.1	16.6
Romania	6244	100041	62.5	25.8	10.3	1.4	11.7
Russian Fed.			no survey in 2004				
Serbia and Montenegro	1868	3031	58.3	27.4	13.4	0.9	14.3
Slovak Republic	1961	4216	11.3	62.0	25.7	1.0	26.7
Slovenia	1099	1008	30.5	40.2	24.2	5.1	29.3
Spain	11588	14880	24.0	61.0	11.9	3.1	15.0
Sweden	20600	14805	48.8	34.7	13.9	2.6	16.5
Switzerland	1186	1041	25.6	45.3	20.2	8.9	29.1
Turkey			no survey in 2004				
Ukraine	918	1395	18.6	51.5	27.9	2.0	29.9
United Kingdom	2156	8328	24.2	49.3	24.7	1.8	26.5

Serbia and Montenegro: Serbia only.

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction, however, does not affect the reliability of the trends over time.

Annex II-3
Defoliation of conifers by classes and class aggregates (2004)

Participating countries	Coniferous forest (1000 ha)	No. of sample trees	0 none	1 slight	2 moderate	3+4 severe and dead	2+3+4
Albania	171	5370	27.4	58.6	12.6	1.4	14.0
Andorra	15	72	16.7	47.1	25.0	11.1	36.1
Austria	2683	3184	52.2	34.7	10.2	2.9	13.1
Belarus	4728	7064	39.9	51.2	6.8	2.1	8.9
Belgium	281	1071	39.9	44.5	13.4	2.2	15.6
Bulgaria	1172	2467	13.7	39.2	41.1	6.0	47.1
Croatia	321	313	5.8	23.6	62.3	8.3	70.6
Cyprus	172	360	22.5	65.3	12.2	0.0	12.2
Czech Republic	2057	5444	9.8	27.6	61.5	1.1	62.6
Denmark	294	317	83.5	10.7	1.3	4.5	5.8
Estonia	1177	2068	47.9	46.8	4.8	0.5	5.3
Finland	18058	9297	56.7	33.2	9.3	0.8	10.1
France	9228	3544	51.5	29.9	15.8	2.8	18.6
Germany	6084	9490	30.2	43.5	24.6	1.7	26.3
Greece	954		no survey in 2004				
Hungary	244	3988	34.2	41.6	18.1	6.1	24.2
Ireland	399	403	56.8	25.8	15.9	1.5	17.4
Italy	1735	2133	42.7	35.6	18.6	3.1	21.7
Latvia	1565	6134	19.0	69.1	9.8	2.1	11.9
Liechtenstein	6		no survey in 2004				
Lithuania	1159	4262	11.6	78.2	8.5	1.7	10.2
Luxembourg	30		no survey in 2004				
Rep. of Moldova	6	66	48.0	16.5	34.2	1.3	35.5
The Netherlands	158	151	75.5	7.3	13.9	3.3	17.2
Norway	6800	6244	47.9	35.4	14.4	2.3	16.7
Poland	3503	19480	7.9	58.7	31.3	2.1	33.4
Portugal	1081	1177	53.7	35.5	10.0	0.8	10.8
Romania	1929	24936	70.7	21.7	6.7	0.9	7.6
Russian Fed.	5800		no survey in 2004				
Serbia and Montenegro	179	363	50.2	30.0	19.0	0.8	19.8
Slovak Republic	815	1761	4.1	59.7	34.9	1.3	36.2
Slovenia	410	388	29.1	33.5	32.2	5.2	37.4
Spain	5910	7498	27.5	58.5	10.2	3.8	14.0
Sweden	19600	13312	48.5	34.0	14.7	2.8	17.5
Switzerland	818	737	25.1	47.5	20.7	6.7	27.4
Turkey	9426		no survey in 2004				
Ukraine	3969	582	17.0	71.6	11.2	0.2	11.4
United Kingdom	1520	4704	26.2	50.6	21.7	1.5	23.2

Serbia and Montenegro: Serbia only.

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction, however, does not affect the reliability of the trends over time.

Annex II-4
Defoliation of broadleaves by classes and class aggregates (2004)

Participating countries	Broadleav. forest (1000 ha)	No. of sample trees	0 none	1 slight	2 moderate	3+4 severe and dead	2+3+4
Albania	599	3600	58.1	31.6	9.2	1.1	10.3
Andorra			only conifers assessed				
Austria	798	398	45.7	40.7	11.3	2.3	13.6
Belarus	3117	2618	41.5	45.6	9.9	3.0	12.9
Belgium	324	1895	36.3	42.4	18.0	3.3	21.3
Bulgaria	2142	1889	27.7	42.2	26.7	3.4	30.1
Croatia	1740	1769	40.5	42.3	15.8	1.4	17.2
Cyprus			only conifers assessed				
Czech Republic	573	1141	20.8	47.4	30.6	1.2	31.8
Denmark	174	269	42.6	38.3	17.6	1.5	19.1
Estonia	1072	133	73.6	21.1	4.5	0.8	5.3
Finland	1962	1913	59.0	32.6	7.3	1.1	8.4
France	4058	6675	21.6	39.7	34.1	4.6	38.7
Germany	4236	4251	22.5	36.0	37.6	3.9	41.5
Greece	1080		no survey in 2004				
Hungary	1517	24325	40.8	38.2	15.0	6.0	21.0
Ireland	37		only conifers assessed				
Italy	6940	4978	11.0	47.0	36.9	5.1	42.0
Latvia	1209	2250	25.9	59.8	11.5	2.8	14.3
Liechtenstein	2		no survey in 2004				
Lithuania	809	1981	8.6	69.6	17.6	4.2	21.8
Luxembourg	54		no survey in 2004				
Rep. of Moldova		11829	30.0	36.1	28.5	5.4	33.9
The Netherlands	52	81	13.5	39.6	42.0	4.9	46.9
Norway	5200	1947	28.4	38.4	28.2	5.0	33.2
Poland	738	6040	9.6	51.7	36.2	2.5	38.7
Portugal	2153	2813	41.1	39.9	16.3	2.7	19.0
Romania	4315	75105	59.8	27.2	11.5	1.5	13.0
Russian Fed.	510		no survey in 2004				
Serbia and Montenegro	2181	2668	59.5	27.0	12.6	0.9	13.5
Slovak Republic	1069	2455	16.5	63.6	19.1	0.8	19.9
Slovenia	688	620	31.4	44.4	19.2	5.0	24.2
Spain	4056	7382	20.3	63.6	13.5	2.6	16.1
Sweden	900	1493	50.7	41.0	7.0	1.3	8.3
Switzerland	368	304	26.7	40.5	19.1	13.7	32.8
Turkey	10773		no survey in 2004				
Ukraine	5347	813	19.7	37.1	40.0	3.2	43.2
United Kingdom	636	3624	21.8	47.6	28.5	2.1	30.6

Norway: Special study on birch. *Serbia and Montenegro*: Serbia only.

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction, however, does not affect the reliability of the trends over time.

Annex II-5

Defoliation of all species (1993-2004)

Participating countries	All species Defoliation classes 2-4												change % points
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2003/ 2004
Albania						9.8	9.9	10.1	10.2	13.1		12.2	
Andorra												36.1	
Austria	8.2	7.8	6.6	7.9	7.1	6.7	6.8	8.9	9.7	10.2	11.1	13.1	2.0
Belarus	29.3	37.4	38.3	39.7	36.3	30.5	26.0	24.0	20.7	9.5	11.3	10.0	-1.3
Belgium	14.8	16.9	24.5	21.2	17.4	17.0	17.7	19.0	17.9	17.8	17.3	19.4	2.1
Bulgaria	23.2	28.9	38.0	39.2	49.6	60.2	44.2	46.3	33.8	37.1	33.7	39.7	6.0
Croatia	19.2	28.8	39.8	30.1	33.1	25.6	23.1	23.4	25.0	20.6	22.0	25.2	3.2
Cyprus									8.9	2.8	18.4	12.2	-6.2
Czech Rep.	51.8	57.7	58.5	71.9	68.6	48.8	50.4	51.7	52.1	53.4	54.4	57.3	2.9
Denmark	33.4	36.5	36.6	28.0	20.7	22.0	13.2	11.0	7.4	8.7	10.2	11.8	1.6
Estonia	20.3	15.7	13.6	14.2	11.2	8.7	8.7	7.4	8.5	7.6	7.6	5.3	-2.3
Finland	15.2	13.0	13.3	13.2	12.2	11.8	11.4	11.6	11.0	11.5	10.7	9.8	-0.9
France	8.3	8.4	12.5	17.8	25.2	23.3	19.7	18.3	20.3	21.9	28.4	31.7	3.3
Germany	24.2	24.4	22.1	20.3	19.8	21.0	21.7	23.0	21.9	21.4	22.5	31.4	8.9
Greece	21.2	23.2	25.1	23.9	23.7	21.7	16.6	18.2	21.7	20.9			
Hungary	21.0	21.7	20.0	19.2	19.4	19.0	18.2	20.8	21.2	21.2	22.5	21.5	-1.0
Ireland	29.6	19.7	26.3	13.0	13.6	16.1	13.0	14.6	17.4	20.7	13.9	17.4	3.5
Italy	17.6	19.5	18.9	29.9	35.8	35.9	35.3	34.4	38.4	37.3	37.6	35.9	-1.7
Latvia	35.0	30.0	20.0	21.2	19.2	16.6	18.9	20.7	15.6	13.8	12.5	12.5	
Liechtenstein													
Lithuania	27.4	25.4	24.9	12.6	14.5	15.7	11.6	13.9	11.7	12.8	14.7	13.9	-0.8
Luxembourg	23.8	34.8	38.3	37.5	29.9	25.3	19.2	23.4					
Rep. of Moldova	50.8		40.4	41.2				29.1	36.9	42.5	42.4	34.0	-8.4
The Netherlands	25.0	19.4	32.0	34.1	34.6	31.0	12.9	21.8	19.9	21.7	18.0	27.5	9.5
Norway	24.9	27.5	28.8	29.4	30.7	30.6	28.6	24.3	27.2	25.5	22.9	20.7	-2.2
Poland	50.0	54.9	52.6	39.7	36.6	34.6	30.6	32.0	30.6	32.7	34.7	34.6	-0.1
Portugal	7.3	5.7	9.1	7.3	8.3	10.2	11.1	10.3	10.1	9.6	13.0	16.6	3.6
Romania	20.5	21.2	21.2	16.9	15.6	12.3	12.7	14.3	13.3	13.5	12.6	11.7	-0.9
Russian Fed.		10.7	12.5						9.8	10.9			
Serbia and Monten.				3.6	7.7	8.4	11.2	8.4	14.0	3.9	22.8	14.3	-8.5
Slovak Rep.	37.6	41.8	42.6	34.0	31.0	32.5	27.8	23.5	31.7	24.8	31.4	26.7	-4.7
Slovenia	19.0	16.0	24.7	19.0	25.7	27.6	29.1	24.8	28.9	28.1	27.5	29.3	1.8
Spain	13.0	19.4	23.5	19.4	13.7	13.6	12.9	13.8	13.0	16.4	16.6	15.0	-1.6
Sweden			14.2	17.4	14.9	14.2	13.2	13.7	17.5	16.8	19.2	16.5	-2.7
Switzerland	15.4	18.2	24.6	20.8	16.9	19.1	19.0	29.4	18.2	18.6	14.9	29.1	14.2
Turkey													
Ukraine	21.5	32.4	29.6	46.0	31.4	51.5	56.2	60.7	39.6	27.7	27.0	29.9	2.9
United Kingdom	16.9	13.9	13.6	14.3	19.0	21.1	21.4	21.6	21.1	27.3	24.7	26.5	1.8

Austria: From 2003 on, results are based on the 16x16 km transnational gridnet and must not be compared with previous years.
Czech Republic: Only trees older than 60 years assessed until 1997. *France*: Due to methodological changes, only the time series 1993-94 and 1997-2004 are consistent, but not comparable to each other. *Italy*: Due to methodological changes, only the time series 1993-96 and 1997-2004 are consistent, but not comparable to each other. *United Kingdom*: The difference between 1992 and subsequent years is mainly due to a change of assessment method in line with that used in other States.

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction, however, does not affect the reliability of the trends over time.

Annex II-6
Defoliation of conifers (1993-2004)

Paticipating countries	Conifers Defoliation classes 2-4												change % points
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2003/ 2004
Albania						12.0	12.1	12.3	12.4	15.5		14.0	
Andorra												36.1	
Austria	8.2	7.9	6.6	7.3	6.3	6.3	6.4	9.1	9.6	10.1	11.2	13.1	1.9
Belarus	33.8	44.0	43.9	43.1	41.2	33.9	28.9	26.1	23.4	9.7	9.5	8.9	-0.6
Belgium	18.3	21.2	21.0	25.8	19.2	13.5	15.5	19.5	17.5	19.7	18.6	15.6	-3.0
Bulgaria	26.9	25.0	41.4	46.5	53.5	69.8	48.9	46.4	39.1	44.0	38.4	47.1	8.7
Croatia	33.9	39.3	57.5	57.0	68.7	45.8	53.2	53.3	65.1	63.5	77.4	70.6	-6.8
Cyprus									8.9	2.8	18.4	12.2	-6.2
Czech Rep.	51.5	59.0	60.7	74.9	71.9	54.6	57.4	58.3	58.1	60.1	60.7	62.6	1.9
Denmark	37.0	38.7	34.8	23.2	15.9	17.0	9.9	8.8	6.7	4.5	6.1	5.8	-0.3
Estonia	21.2	16.0	14.2	14.6	11.4	9.0	9.1	7.5	8.8	7.9	7.7	5.3	-2.4
Finland	15.6	13.1	13.7	13.7	12.8	12.2	11.9	12.0	11.4	11.9	11.1	10.1	-1.0
France	8.2	8.2	9.2	13.5	16.2	16.8	14.1	12.0	14.0	15.2	18.9	18.6	-0.3
Germany	21.4	21.6	18.3	16.7	15.4	19.0	19.2	19.6	20.0	19.8	20.1	26.3	6.2
Greece	13.9	13.2	13.6	14.4	13.8	12.9	13.5	16.5	17.2	16.1			
Hungary	20.1	21.2	18.7	17.8	17.4	18.7	17.6	21.5	19.5	22.8	27.6	24.2	-3.4
Ireland	29.6	19.7	26.3	13.0	13.6	16.1	13.0	14.6	17.4	20.7	13.9	17.4	3.5
Italy	15.1	15.0	19.4	25.1	28.1	25.5	23.1	19.2	19.1	20.5	20.4	21.7	1.3
Latvia	41.0	34.0	23.0	24.8	21.9	18.9	20.6	20.1	15.8	14.3	12.2	11.9	-0.3
Liechtenstein													
Lithuania	29.2	26.3	26.6	12.9	13.9	13.6	11.5	12.0	9.8	9.3	10.7	10.2	-0.5
Luxembourg	9.0	12.8	12.9	12.7	8.0	10.5	8.7	7.0					
Rep. of Moldova	45.2		33.3	48.4							55.4	35.5	-19.9
The Netherlands	30.6	27.7	45.4	43.5	45.3	43.2	14.5	23.5	20.7	17.5	9.4	17.2	7.8
Norway	20.9	22.4	24.0	25.1	28.5	27.5	24.3	21.8	25.1	24.1	21.2	16.7	-4.5
Poland	50.8	55.6	54.5	40.5	36.8	34.6	30.6	32.1	30.3	32.5	33.2	33.4	0.2
Portugal	7.1	5.4	6.6	5.6	7.8	6.6	6.0	4.3	4.3	3.6	5.3	10.8	5.5
Romania	16.6	15.5	15.2	10.4	10.3	9.0	9.1	9.8	9.6	9.9	9.8	7.6	-2.2
Russian Fed.	4.5	9.4	10.1	9.4	0.0				9.8	10.0			
Serbia and Monten.				4.4	7.9	6.0	9.2	10.0	21.3	7.3	39.6	19.8	-19.8
Slovak Rep.	49.9	50.3	52.0	41.0	42.2	40.3	40.2	37.9	38.7	40.4	39.7	36.2	-3.5
Slovenia	27.0	19.0	33.6	26.0	32.5	36.7	38.0	34.5	32.2	31.4	35.3	37.4	2.1
Spain	14.7	19.1	18.1	18.1	11.5	12.9	9.8	12.0	11.6	15.6	14.1	14.0	-0.1
Sweden	10.6	16.2	14.5	16.9	15.9	15.0	13.6	13.5	18.4	17.7	20.4	17.5	-2.9
Switzerland	17.4	19.6	23.2	21.4	19.9	19.7	18.3	33.0	19.1	19.9	13.3	27.4	14.1
Turkey													
Ukraine	21.7	34.8	25.7	45.8	32.7	64.9	50.0	47.3	16.8	14.6	15.4	11.4	-4.0
United Kingdom	16.8	15.0	13.0	13.9	17.0	19.8	20.1	20.2	20.6	25.1	25.8	23.2	-2.6

Austria: From 2003 on, results are based on the 16x16 km transnational gridnet and must not be compared with previous years.
Czech Republic: Only trees older than 60 years assessed until 1997. *France*: Due to methodological changes, only the time series 1993-94 and 1997-2004 are consistent, but not comparable to each other. *Greece*: Excluding maquis. *Italy*: Due to methodological changes, only the time series 1993-96 and 1997-2004 are consistent, but not comparable to each other. *United Kingdom*: The difference between 1993 and subsequent years is mainly due to a change of assessment method in line with that used in other States.

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction, however, does not affect the reliability of the trends over time.

Annex II-7
Defoliation of broadleaves (1993-2004)

Paticipating countries	Broadleaves Defoliation classes 2-4												change % points
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2003/ 2004
Albania						8.0	8.1	8.4	8.4	10.7		10.3	
Andorra										only conifers assessed			
Austria	7.7	7.4	6.5	11.6	12.2	9.6	9.4	7.6	10.4	11.3	10.2	13.6	3.4
Belarus	16.6	18.6	22.9	29.2	23.0	19.3	17.0	16.9	13.3	9.0	15.8	12.9	-2.9
Belgium	11.7	12.8	26.6	18.5	16.1	19.2	19.1	18.8	18.3	17.0	16.6	21.3	4.7
Bulgaria	16.6	34.4	32.7	33.0	43.9	48.4	35.9	45.8	26.0	29.0	27.2	30.1	2.9
Croatia	15.6	26.4	35.2	26.0	27.8	21.9	16.8	18.3	18.7	14.4	14.3	17.2	2.9
Cyprus													
Czech Rep.	54.4	48.0	30.6	34.0	26.5	13.5	17.1	21.4	21.7	19.9	24.4	31.8	7.4
Denmark	27.0	32.4	39.7	36.1	28.4	30.1	18.8	13.9	8.5	15.4	16.6	19.1	2.5
Estonia	1.1	2.0	1.1	5.3	7.4	1.0	1.1	9.5	2.1	2.7	6.7	5.3	-1.4
Finland	12.8	12.0	11.0	10.3	8.4	9.4	8.6	9.9	8.8	8.8	8.3	8.4	0.1
France	8.4	8.4	14.3	20.1	29.9	26.9	22.9	21.6	23.6	25.5	33.5	38.7	5.2
Germany	29.9	30.1	29.9	30.8	28.6	25.2	26.9	29.9	25.4	24.7	27.3	41.5	14.2
Greece	29.8	35.0	38.2	34.6	34.9	31.7	20.2	20.2	26.6	26.5			
Hungary	21.2	21.8	20.2	19.5	19.7	19.0	18.2	20.8	21.5	20.8	22.0	21.0	-1.0
Ireland													
Italy	18.3	20.7	18.5	31.2	38.0	38.9	39.3	40.5	46.3	44.6	45.0	42.0	-3.0
Latvia	17.8	15.0	10.0	11.4	11.3	13.6	14.2	22.2	14.8	12.8	13.5	14.3	0.8
Liechtenstein													
Lithuania	23.8	23.3	20.8	12.2	15.9	19.7	11.8	17.7	16.3	19.0	24.6	21.8	-2.8
Luxembourg	31.0	46.8	51.4	49.8	41.8	33.3	25.8	33.5					
Rep. of Moldova	50.9	21.9	40.5	41.1	30.0		41.4	29.2	36.9	42.5	42.3	33.9	-8.4
The Netherlands	13.1	5.1	10.8	19.2	17.8	14.0	10.0	18.8	18.5	29.6	33.7	46.9	13.2
Norway	42.1	47.6	47.4	45.0	38.9	42.2	44.8	34.0	33.7	30.4	29.0	33.2	4.2
Poland	45.6	51.5	46.7	37.4	35.8	34.8	31.1	32.0	31.4	33.1	39.6	38.7	-0.9
Portugal	7.5	5.8	10.4	8.3	8.6	12.0	13.7	13.2	12.8	12.6	16.2	19.0	2.8
Romania	21.4	22.9	23.1	18.7	16.9	13.3	14.0	15.8	14.7	14.8	13.3	13.0	-0.3
Russian Fed.		39.4	34.4							16.0			
Serbia and Monten.				3.5	7.4	10.1	13.0	6.7	6.7	0.6	21.5	13.5	-8.0
Slovak Rep.	29.1	35.6	35.8	28.0	23.3	27.0	19.3	13.9	26.9	14.5	25.6	19.9	-5.7
Slovenia	11.0	13.0	19.3	15.0	21.4	21.7	23.2	18.4	26.7	25.9	22.6	24.2	1.6
Spain	11.4	19.6	28.7	20.7	15.8	14.4	16.1	15.7	14.4	17.3	19.1	16.1	-3.0
Sweden			7.9	20.7	6.1	7.4	8.7	7.5	14.1	9.6	11.1	8.3	-2.8
Switzerland	12.7	16.2	27.0	19.8	12.5	18.1	20.4	22.1	16.3	16.0	18.1	32.8	14.7
Turkey													
Ukraine	21.6	29.9	33.0	46.2	30.7	43.2	59.7	69.6	53.3	36.7	35.3	43.2	7.9
United Kingd.	17.1	12.4	14.5	15.0	22.0	22.9	23.2	23.8	21.9	30.3	23.2	30.6	7.4

Austria: From 2003 on, results are based on the 16x16 km transnational gridnet and must not be compared with previous years.
Czech Republic: Only trees older than 60 years assessed until 1997. *France*: Due to methodological changes, only the time series 1993-94 and 1997-2004 are consistent, but not comparable to each other. *Greece*: Excluding maquis. *Italy*: Due to methodological changes, only the time series 1993-96 and 1997-2004 are consistent, but not comparable to each other. *United Kingdom*: The difference between 1993 and subsequent years is mainly due to a change of assessment method in line with that used in other States.

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction, however, does not affect the reliability of the trends over time.

Annex II-1
Forests and surveys in European countries (2004)

Participating countries	Total area (1000 ha)	Forest area (1000 ha)	Coniferous forest (1000 ha)	Broadleav. forest (1000 ha)	Area surveyed (1000 ha)	Grid size (km x km)	No. of sample plots	No. of sample trees
Albania	2875	1036	172	607	779	10x10	299	8970
Andorra	47	17	15	2	17	16 x 16	3	72
Austria	8385	3878	2683	798	3481	16 x 16	136	3582
Belarus	20760	7845	4728	3117	7845	16 x 16	406	9603
Belgium	3035	691	281	324	691	4^2 / 8^2	125	2966
Bulgaria	11100	3314	1172	2142	3314	4^2/8^2/16^2	124	4356
Croatia	5654	2061	321	1740	2061	16 x 16	87	2082
Cyprus	925	298	172	0	138	16x16	15	360
Czech Republic	7886	2630	2057	573	2630	8^2/16^2	140	6585
Denmark	4300	468	294	174	468	7^2/16^2	24	576
Estonia	4510	2267	1113	1154	2267	16 x 16	93	2201
Finland	30460	20302	18058	1962	20020	16^2 / 24x32	594	11210
France	54926	14591	9228	4058	1305	16 x 16	511	10219
Germany	35562	11076	6084	4236	10890	16^2 / 4^2	451	13741
Greece	12890	2512	954	1080	no survey in 2004			
Hungary	9300	1836	244	1592	1836	4 x 4	1204	28313
Ireland	8442	650	399	37	399	16 x 16	19	403
Italy	30128	8675	1735	6940	8675	16 x 16	255	7111
Latvia	6459	2923	1565	1209	2923	8 x 8	352	8384
Liechtenstein	16	8	6	2	no survey in 2004			
Lithuania	6520	2069	1159	809	2069	8x8/16x16	261	6243
Luxembourg	259	89	30	54	no survey in 2004			
Rep. of Moldova	3376	318	6	312	318	2x2/2x4	680	11895
The Netherlands	3482	334	158	52	210	16 x 16	11	232
Norway	32376	12000	6800	5200	12000	3^2/9^2	1566	8191
Poland	31268	8894	6848	2046	6968	16 x 16	1276	25520
Portugal	8893	3234	1081	2153	3234	16 x 16	133	3990
Romania	23750	6244	1929	4315	6244	4 x 4	3827	100041
Russian Fed.	11100	8125			no survey in 2004			
Serbia and Montenegro	8836	2360	179	2181	1868	16 x 16	130	3031
Slovak Republic	4901	1961	815	1069	1961	16 x 16	108	4216
Slovenia	2027	1099	410	688	1099	16 x 16	42	1008
Spain	50471	11588	5910	4056	11588	16 x 16	620	14880
Sweden	41000	23400	19600	900	20600	varying	2819	14805
Switzerland	4129	1186	818	368	1186	16 x 16	48	1041
Turkey	77945	20199	9426	10773	no survey in 2004			
Ukraine	60350	9316	3969	5347	918	16 x 16	57	1395
United Kingdom	24100	2156	1520	636	2156	random	347	8328
TOTAL	652443	201650	111939	72706	142158	varying	16763	325550

Serbia and Montenegro: Serbia only.

Annex II-2
Defoliation of all species by classes and class aggregates (2004)

Participating countries	Area surveyed (1000 ha)	No. of sample trees	0 none	1 slight	2 moderate	3+4 severe and dead	2+3+4
Albania		8970	42.7	45.1	10.9	1.3	12.2
Andorra	17	72	16.7	47.1	25.0	11.1	36.1
Austria	3481	3582	51.4	35.4	10.4	2.8	13.1
Belarus	7845	9603	40.0	50.0	7.7	2.3	10.0
Belgium	691	2966	38.2	42.4	16.5	2.9	19.4
Bulgaria	3314	4356	19.8	40.5	34.8	4.9	39.7
Croatia	2061	2082	35.3	39.5	22.8	2.4	25.2
Cyprus	138	360	22.5	65.3	12.2	0.0	12.2
Czech Republic	2630	6585	11.7	31.0	56.2	1.1	57.3
Denmark	468	576	64.9	23.3	8.7	3.1	11.8
Estonia	2267	2201	49.4	45.3	4.8	0.5	5.3
Finland	20020	11210	57.1	33.1	9.0	0.8	9.8
France	13100	10219	32.0	36.3	27.7	4.0	31.7
Germany	10890	13741	27.6	41.0	28.5	2.9	31.4
Greece			no survey in 2004				
Hungary	1836	28313	39.9	38.6	15.6	5.9	21.5
Ireland	399	403	56.8	25.8	15.9	1.5	17.4
Italy	8675	7111	20.5	43.6	31.4	4.5	35.9
Latvia	2923	8384	20.9	66.6	10.2	2.3	12.5
Liechtenstein			no survey in 2004				
Lithuania	2069	6243	10.7	75.4	11.4	2.5	13.9
Luxembourg			no survey in 2004				
Rep. of Moldova	318	11895	30.1	35.9	28.6	5.4	34.0
The Netherlands	210	232	52.2	20.3	23.7	3.8	27.5
Norway	12000	8191	43.3	36.0	17.7	3.0	20.7
Poland	6968	25520	8.3	57.1	32.5	2.1	34.6
Portugal	3234	3990	44.8	38.6	14.5	2.1	16.6
Romania	6244	100041	62.5	25.8	10.3	1.4	11.7
Russian Fed.			no survey in 2004				
Serbia and Montenegro	1868	3031	58.3	27.4	13.4	0.9	14.3
Slovak Republic	1961	4216	11.3	62.0	25.7	1.0	26.7
Slovenia	1099	1008	30.5	40.2	24.2	5.1	29.3
Spain	11588	14880	24.0	61.0	11.9	3.1	15.0
Sweden	20600	14805	48.8	34.7	13.9	2.6	16.5
Switzerland	1186	1041	25.6	45.3	20.2	8.9	29.1
Turkey			no survey in 2004				
Ukraine	918	1395	18.6	51.5	27.9	2.0	29.9
United Kingdom	2156	8328	24.2	49.3	24.7	1.8	26.5

Serbia and Montenegro: Serbia only.

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction, however, does not affect the reliability of the trends over time.

Annex II-3
Defoliation of conifers by classes and class aggregates (2004)

Participating countries	Coniferous forest (1000 ha)	No. of sample trees	0 none	1 slight	2 moderate	3+4 severe and dead	2+3+4
Albania	171	5370	27.4	58.6	12.6	1.4	14.0
Andorra	15	72	16.7	47.1	25.0	11.1	36.1
Austria	2683	3184	52.2	34.7	10.2	2.9	13.1
Belarus	4728	7064	39.9	51.2	6.8	2.1	8.9
Belgium	281	1071	39.9	44.5	13.4	2.2	15.6
Bulgaria	1172	2467	13.7	39.2	41.1	6.0	47.1
Croatia	321	313	5.8	23.6	62.3	8.3	70.6
Cyprus	172	360	22.5	65.3	12.2	0.0	12.2
Czech Republic	2057	5444	9.8	27.6	61.5	1.1	62.6
Denmark	294	317	83.5	10.7	1.3	4.5	5.8
Estonia	1177	2068	47.9	46.8	4.8	0.5	5.3
Finland	18058	9297	56.7	33.2	9.3	0.8	10.1
France	9228	3544	51.5	29.9	15.8	2.8	18.6
Germany	6084	9490	30.2	43.5	24.6	1.7	26.3
Greece	954		no survey in 2004				
Hungary	244	3988	34.2	41.6	18.1	6.1	24.2
Ireland	399	403	56.8	25.8	15.9	1.5	17.4
Italy	1735	2133	42.7	35.6	18.6	3.1	21.7
Latvia	1565	6134	19.0	69.1	9.8	2.1	11.9
Liechtenstein	6		no survey in 2004				
Lithuania	1159	4262	11.6	78.2	8.5	1.7	10.2
Luxembourg	30		no survey in 2004				
Rep. of Moldova	6	66	48.0	16.5	34.2	1.3	35.5
The Netherlands	158	151	75.5	7.3	13.9	3.3	17.2
Norway	6800	6244	47.9	35.4	14.4	2.3	16.7
Poland	3503	19480	7.9	58.7	31.3	2.1	33.4
Portugal	1081	1177	53.7	35.5	10.0	0.8	10.8
Romania	1929	24936	70.7	21.7	6.7	0.9	7.6
Russian Fed.	5800		no survey in 2004				
Serbia and Montenegro	179	363	50.2	30.0	19.0	0.8	19.8
Slovak Republic	815	1761	4.1	59.7	34.9	1.3	36.2
Slovenia	410	388	29.1	33.5	32.2	5.2	37.4
Spain	5910	7498	27.5	58.5	10.2	3.8	14.0
Sweden	19600	13312	48.5	34.0	14.7	2.8	17.5
Switzerland	818	737	25.1	47.5	20.7	6.7	27.4
Turkey	9426		no survey in 2004				
Ukraine	3969	582	17.0	71.6	11.2	0.2	11.4
United Kingdom	1520	4704	26.2	50.6	21.7	1.5	23.2

Serbia and Montenegro: Serbia only.

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction, however, does not affect the reliability of the trends over time.

Annex II-4
Defoliation of broadleaves by classes and class aggregates (2004)

Participating countries	Broadleav. forest (1000 ha)	No. of sample trees	0 none	1 slight	2 moderate	3+4 severe and dead	2+3+4
Albania	599	3600	58.1	31.6	9.2	1.1	10.3
Andorra			only conifers assessed				
Austria	798	398	45.7	40.7	11.3	2.3	13.6
Belarus	3117	2618	41.5	45.6	9.9	3.0	12.9
Belgium	324	1895	36.3	42.4	18.0	3.3	21.3
Bulgaria	2142	1889	27.7	42.2	26.7	3.4	30.1
Croatia	1740	1769	40.5	42.3	15.8	1.4	17.2
Cyprus			only conifers assessed				
Czech Republic	573	1141	20.8	47.4	30.6	1.2	31.8
Denmark	174	269	42.6	38.3	17.6	1.5	19.1
Estonia	1072	133	73.6	21.1	4.5	0.8	5.3
Finland	1962	1913	59.0	32.6	7.3	1.1	8.4
France	4058	6675	21.6	39.7	34.1	4.6	38.7
Germany	4236	4251	22.5	36.0	37.6	3.9	41.5
Greece	1080		no survey in 2004				
Hungary	1517	24325	40.8	38.2	15.0	6.0	21.0
Ireland	37		only conifers assessed				
Italy	6940	4978	11.0	47.0	36.9	5.1	42.0
Latvia	1209	2250	25.9	59.8	11.5	2.8	14.3
Liechtenstein	2		no survey in 2004				
Lithuania	809	1981	8.6	69.6	17.6	4.2	21.8
Luxembourg	54		no survey in 2004				
Rep. of Moldova		11829	30.0	36.1	28.5	5.4	33.9
The Netherlands	52	81	13.5	39.6	42.0	4.9	46.9
Norway	5200	1947	28.4	38.4	28.2	5.0	33.2
Poland	738	6040	9.6	51.7	36.2	2.5	38.7
Portugal	2153	2813	41.1	39.9	16.3	2.7	19.0
Romania	4315	75105	59.8	27.2	11.5	1.5	13.0
Russian Fed.	510		no survey in 2004				
Serbia and Montenegro	2181	2668	59.5	27.0	12.6	0.9	13.5
Slovak Republic	1069	2455	16.5	63.6	19.1	0.8	19.9
Slovenia	688	620	31.4	44.4	19.2	5.0	24.2
Spain	4056	7382	20.3	63.6	13.5	2.6	16.1
Sweden	900	1493	50.7	41.0	7.0	1.3	8.3
Switzerland	368	304	26.7	40.5	19.1	13.7	32.8
Turkey	10773		no survey in 2004				
Ukraine	5347	813	19.7	37.1	40.0	3.2	43.2
United Kingdom	636	3624	21.8	47.6	28.5	2.1	30.6

Norway: Special study on birch. *Serbia and Montenegro*: Serbia only.

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction, however, does not affect the reliability of the trends over time.

Annex II-5

Defoliation of all species (1993-2004)

Participating countries	All species Defoliation classes 2-4												change % points
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2003/ 2004
Albania						9.8	9.9	10.1	10.2	13.1		12.2	
Andorra												36.1	
Austria	8.2	7.8	6.6	7.9	7.1	6.7	6.8	8.9	9.7	10.2	11.1	13.1	2.0
Belarus	29.3	37.4	38.3	39.7	36.3	30.5	26.0	24.0	20.7	9.5	11.3	10.0	-1.3
Belgium	14.8	16.9	24.5	21.2	17.4	17.0	17.7	19.0	17.9	17.8	17.3	19.4	2.1
Bulgaria	23.2	28.9	38.0	39.2	49.6	60.2	44.2	46.3	33.8	37.1	33.7	39.7	6.0
Croatia	19.2	28.8	39.8	30.1	33.1	25.6	23.1	23.4	25.0	20.6	22.0	25.2	3.2
Cyprus									8.9	2.8	18.4	12.2	-6.2
Czech Rep.	51.8	57.7	58.5	71.9	68.6	48.8	50.4	51.7	52.1	53.4	54.4	57.3	2.9
Denmark	33.4	36.5	36.6	28.0	20.7	22.0	13.2	11.0	7.4	8.7	10.2	11.8	1.6
Estonia	20.3	15.7	13.6	14.2	11.2	8.7	8.7	7.4	8.5	7.6	7.6	5.3	-2.3
Finland	15.2	13.0	13.3	13.2	12.2	11.8	11.4	11.6	11.0	11.5	10.7	9.8	-0.9
France	8.3	8.4	12.5	17.8	25.2	23.3	19.7	18.3	20.3	21.9	28.4	31.7	3.3
Germany	24.2	24.4	22.1	20.3	19.8	21.0	21.7	23.0	21.9	21.4	22.5	31.4	8.9
Greece	21.2	23.2	25.1	23.9	23.7	21.7	16.6	18.2	21.7	20.9			
Hungary	21.0	21.7	20.0	19.2	19.4	19.0	18.2	20.8	21.2	21.2	22.5	21.5	-1.0
Ireland	29.6	19.7	26.3	13.0	13.6	16.1	13.0	14.6	17.4	20.7	13.9	17.4	3.5
Italy	17.6	19.5	18.9	29.9	35.8	35.9	35.3	34.4	38.4	37.3	37.6	35.9	-1.7
Latvia	35.0	30.0	20.0	21.2	19.2	16.6	18.9	20.7	15.6	13.8	12.5	12.5	
Liechtenstein													
Lithuania	27.4	25.4	24.9	12.6	14.5	15.7	11.6	13.9	11.7	12.8	14.7	13.9	-0.8
Luxembourg	23.8	34.8	38.3	37.5	29.9	25.3	19.2	23.4					
Rep. of Moldova	50.8		40.4	41.2				29.1	36.9	42.5	42.4	34.0	-8.4
The Netherlands	25.0	19.4	32.0	34.1	34.6	31.0	12.9	21.8	19.9	21.7	18.0	27.5	9.5
Norway	24.9	27.5	28.8	29.4	30.7	30.6	28.6	24.3	27.2	25.5	22.9	20.7	-2.2
Poland	50.0	54.9	52.6	39.7	36.6	34.6	30.6	32.0	30.6	32.7	34.7	34.6	-0.1
Portugal	7.3	5.7	9.1	7.3	8.3	10.2	11.1	10.3	10.1	9.6	13.0	16.6	3.6
Romania	20.5	21.2	21.2	16.9	15.6	12.3	12.7	14.3	13.3	13.5	12.6	11.7	-0.9
Russian Fed.		10.7	12.5						9.8	10.9			
Serbia and Monten.				3.6	7.7	8.4	11.2	8.4	14.0	3.9	22.8	14.3	-8.5
Slovak Rep.	37.6	41.8	42.6	34.0	31.0	32.5	27.8	23.5	31.7	24.8	31.4	26.7	-4.7
Slovenia	19.0	16.0	24.7	19.0	25.7	27.6	29.1	24.8	28.9	28.1	27.5	29.3	1.8
Spain	13.0	19.4	23.5	19.4	13.7	13.6	12.9	13.8	13.0	16.4	16.6	15.0	-1.6
Sweden			14.2	17.4	14.9	14.2	13.2	13.7	17.5	16.8	19.2	16.5	-2.7
Switzerland	15.4	18.2	24.6	20.8	16.9	19.1	19.0	29.4	18.2	18.6	14.9	29.1	14.2
Turkey													
Ukraine	21.5	32.4	29.6	46.0	31.4	51.5	56.2	60.7	39.6	27.7	27.0	29.9	2.9
United Kingdom	16.9	13.9	13.6	14.3	19.0	21.1	21.4	21.6	21.1	27.3	24.7	26.5	1.8

Austria: From 2003 on, results are based on the 16x16 km transnational gridnet and must not be compared with previous years.
Czech Republic: Only trees older than 60 years assessed until 1997. *France*: Due to methodological changes, only the time series 1993-94 and 1997-2004 are consistent, but not comparable to each other. *Italy*: Due to methodological changes, only the time series 1993-96 and 1997-2004 are consistent, but not comparable to each other. *United Kingdom*: The difference between 1992 and subsequent years is mainly due to a change of assessment method in line with that used in other States.

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction, however, does not affect the reliability of the trends over time.

Annex II-6
Defoliation of conifers (1993-2004)

Paticipating countries	Conifers Defoliation classes 2-4												change % points
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2003/ 2004
Albania						12.0	12.1	12.3	12.4	15.5		14.0	
Andorra												36.1	
Austria	8.2	7.9	6.6	7.3	6.3	6.3	6.4	9.1	9.6	10.1	11.2	13.1	1.9
Belarus	33.8	44.0	43.9	43.1	41.2	33.9	28.9	26.1	23.4	9.7	9.5	8.9	-0.6
Belgium	18.3	21.2	21.0	25.8	19.2	13.5	15.5	19.5	17.5	19.7	18.6	15.6	-3.0
Bulgaria	26.9	25.0	41.4	46.5	53.5	69.8	48.9	46.4	39.1	44.0	38.4	47.1	8.7
Croatia	33.9	39.3	57.5	57.0	68.7	45.8	53.2	53.3	65.1	63.5	77.4	70.6	-6.8
Cyprus									8.9	2.8	18.4	12.2	-6.2
Czech Rep.	51.5	59.0	60.7	74.9	71.9	54.6	57.4	58.3	58.1	60.1	60.7	62.6	1.9
Denmark	37.0	38.7	34.8	23.2	15.9	17.0	9.9	8.8	6.7	4.5	6.1	5.8	-0.3
Estonia	21.2	16.0	14.2	14.6	11.4	9.0	9.1	7.5	8.8	7.9	7.7	5.3	-2.4
Finland	15.6	13.1	13.7	13.7	12.8	12.2	11.9	12.0	11.4	11.9	11.1	10.1	-1.0
France	8.2	8.2	9.2	13.5	16.2	16.8	14.1	12.0	14.0	15.2	18.9	18.6	-0.3
Germany	21.4	21.6	18.3	16.7	15.4	19.0	19.2	19.6	20.0	19.8	20.1	26.3	6.2
Greece	13.9	13.2	13.6	14.4	13.8	12.9	13.5	16.5	17.2	16.1			
Hungary	20.1	21.2	18.7	17.8	17.4	18.7	17.6	21.5	19.5	22.8	27.6	24.2	-3.4
Ireland	29.6	19.7	26.3	13.0	13.6	16.1	13.0	14.6	17.4	20.7	13.9	17.4	3.5
Italy	15.1	15.0	19.4	25.1	28.1	25.5	23.1	19.2	19.1	20.5	20.4	21.7	1.3
Latvia	41.0	34.0	23.0	24.8	21.9	18.9	20.6	20.1	15.8	14.3	12.2	11.9	-0.3
Liechtenstein													
Lithuania	29.2	26.3	26.6	12.9	13.9	13.6	11.5	12.0	9.8	9.3	10.7	10.2	-0.5
Luxembourg	9.0	12.8	12.9	12.7	8.0	10.5	8.7	7.0					
Rep. of Moldova	45.2		33.3	48.4							55.4	35.5	-19.9
The Netherlands	30.6	27.7	45.4	43.5	45.3	43.2	14.5	23.5	20.7	17.5	9.4	17.2	7.8
Norway	20.9	22.4	24.0	25.1	28.5	27.5	24.3	21.8	25.1	24.1	21.2	16.7	-4.5
Poland	50.8	55.6	54.5	40.5	36.8	34.6	30.6	32.1	30.3	32.5	33.2	33.4	0.2
Portugal	7.1	5.4	6.6	5.6	7.8	6.6	6.0	4.3	4.3	3.6	5.3	10.8	5.5
Romania	16.6	15.5	15.2	10.4	10.3	9.0	9.1	9.8	9.6	9.9	9.8	7.6	-2.2
Russian Fed.	4.5	9.4	10.1	9.4	0.0				9.8	10.0			
Serbia and Monten.				4.4	7.9	6.0	9.2	10.0	21.3	7.3	39.6	19.8	-19.8
Slovak Rep.	49.9	50.3	52.0	41.0	42.2	40.3	40.2	37.9	38.7	40.4	39.7	36.2	-3.5
Slovenia	27.0	19.0	33.6	26.0	32.5	36.7	38.0	34.5	32.2	31.4	35.3	37.4	2.1
Spain	14.7	19.1	18.1	18.1	11.5	12.9	9.8	12.0	11.6	15.6	14.1	14.0	-0.1
Sweden	10.6	16.2	14.5	16.9	15.9	15.0	13.6	13.5	18.4	17.7	20.4	17.5	-2.9
Switzerland	17.4	19.6	23.2	21.4	19.9	19.7	18.3	33.0	19.1	19.9	13.3	27.4	14.1
Turkey													
Ukraine	21.7	34.8	25.7	45.8	32.7	64.9	50.0	47.3	16.8	14.6	15.4	11.4	-4.0
United Kingdom	16.8	15.0	13.0	13.9	17.0	19.8	20.1	20.2	20.6	25.1	25.8	23.2	-2.6

Austria: From 2003 on, results are based on the 16x16 km transnational gridnet and must not be compared with previous years.
Czech Republic: Only trees older than 60 years assessed until 1997. *France*: Due to methodological changes, only the time series 1993-94 and 1997-2004 are consistent, but not comparable to each other. *Greece*: Excluding maquis. *Italy*: Due to methodological changes, only the time series 1993-96 and 1997-2004 are consistent, but not comparable to each other. *United Kingdom*: The difference between 1993 and subsequent years is mainly due to a change of assessment method in line with that used in other States.

Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction, however, does not affect the reliability of the trends over time.

Annex II-7
Defoliation of broadleaves (1993-2004)

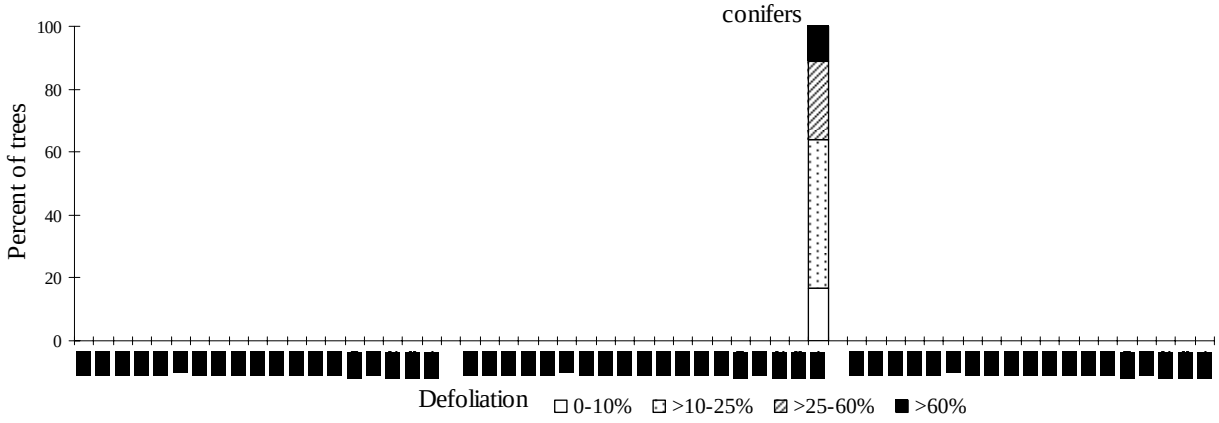
Paticipating countries	Broadleaves Defoliation classes 2-4												change % points
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2003/ 2004
Albania						8.0	8.1	8.4	8.4	10.7		10.3	
Andorra										only conifers assessed			
Austria	7.7	7.4	6.5	11.6	12.2	9.6	9.4	7.6	10.4	11.3	10.2	13.6	3.4
Belarus	16.6	18.6	22.9	29.2	23.0	19.3	17.0	16.9	13.3	9.0	15.8	12.9	-2.9
Belgium	11.7	12.8	26.6	18.5	16.1	19.2	19.1	18.8	18.3	17.0	16.6	21.3	4.7
Bulgaria	16.6	34.4	32.7	33.0	43.9	48.4	35.9	45.8	26.0	29.0	27.2	30.1	2.9
Croatia	15.6	26.4	35.2	26.0	27.8	21.9	16.8	18.3	18.7	14.4	14.3	17.2	2.9
Cyprus													
Czech Rep.	54.4	48.0	30.6	34.0	26.5	13.5	17.1	21.4	21.7	19.9	24.4	31.8	7.4
Denmark	27.0	32.4	39.7	36.1	28.4	30.1	18.8	13.9	8.5	15.4	16.6	19.1	2.5
Estonia	1.1	2.0	1.1	5.3	7.4	1.0	1.1	9.5	2.1	2.7	6.7	5.3	-1.4
Finland	12.8	12.0	11.0	10.3	8.4	9.4	8.6	9.9	8.8	8.8	8.3	8.4	0.1
France	8.4	8.4	14.3	20.1	29.9	26.9	22.9	21.6	23.6	25.5	33.5	38.7	5.2
Germany	29.9	30.1	29.9	30.8	28.6	25.2	26.9	29.9	25.4	24.7	27.3	41.5	14.2
Greece	29.8	35.0	38.2	34.6	34.9	31.7	20.2	20.2	26.6	26.5			
Hungary	21.2	21.8	20.2	19.5	19.7	19.0	18.2	20.8	21.5	20.8	22.0	21.0	-1.0
Ireland													
Italy	18.3	20.7	18.5	31.2	38.0	38.9	39.3	40.5	46.3	44.6	45.0	42.0	-3.0
Latvia	17.8	15.0	10.0	11.4	11.3	13.6	14.2	22.2	14.8	12.8	13.5	14.3	0.8
Liechtenstein													
Lithuania	23.8	23.3	20.8	12.2	15.9	19.7	11.8	17.7	16.3	19.0	24.6	21.8	-2.8
Luxembourg	31.0	46.8	51.4	49.8	41.8	33.3	25.8	33.5					
Rep. of Moldova	50.9	21.9	40.5	41.1	30.0		41.4	29.2	36.9	42.5	42.3	33.9	-8.4
The Netherlands	13.1	5.1	10.8	19.2	17.8	14.0	10.0	18.8	18.5	29.6	33.7	46.9	13.2
Norway	42.1	47.6	47.4	45.0	38.9	42.2	44.8	34.0	33.7	30.4	29.0	33.2	4.2
Poland	45.6	51.5	46.7	37.4	35.8	34.8	31.1	32.0	31.4	33.1	39.6	38.7	-0.9
Portugal	7.5	5.8	10.4	8.3	8.6	12.0	13.7	13.2	12.8	12.6	16.2	19.0	2.8
Romania	21.4	22.9	23.1	18.7	16.9	13.3	14.0	15.8	14.7	14.8	13.3	13.0	-0.3
Russian Fed.		39.4	34.4							16.0			
Serbia and Monten.				3.5	7.4	10.1	13.0	6.7	6.7	0.6	21.5	13.5	-8.0
Slovak Rep.	29.1	35.6	35.8	28.0	23.3	27.0	19.3	13.9	26.9	14.5	25.6	19.9	-5.7
Slovenia	11.0	13.0	19.3	15.0	21.4	21.7	23.2	18.4	26.7	25.9	22.6	24.2	1.6
Spain	11.4	19.6	28.7	20.7	15.8	14.4	16.1	15.7	14.4	17.3	19.1	16.1	-3.0
Sweden			7.9	20.7	6.1	7.4	8.7	7.5	14.1	9.6	11.1	8.3	-2.8
Switzerland	12.7	16.2	27.0	19.8	12.5	18.1	20.4	22.1	16.3	16.0	18.1	32.8	14.7
Turkey													
Ukraine	21.6	29.9	33.0	46.2	30.7	43.2	59.7	69.6	53.3	36.7	35.3	43.2	7.9
United Kingd.	17.1	12.4	14.5	15.0	22.0	22.9	23.2	23.8	21.9	30.3	23.2	30.6	7.4

Austria: From 2003 on, results are based on the 16x16 km transnational gridnet and must not be compared with previous years.
Czech Republic: Only trees older than 60 years assessed until 1997. *France*: Due to methodological changes, only the time series 1993-94 and 1997-2004 are consistent, but not comparable to each other. *Greece*: Excluding maquis. *Italy*: Due to methodological changes, only the time series 1993-96 and 1997-2004 are consistent, but not comparable to each other. *United Kingdom*: The difference between 1993 and subsequent years is mainly due to a change of assessment method in line with that used in other States.

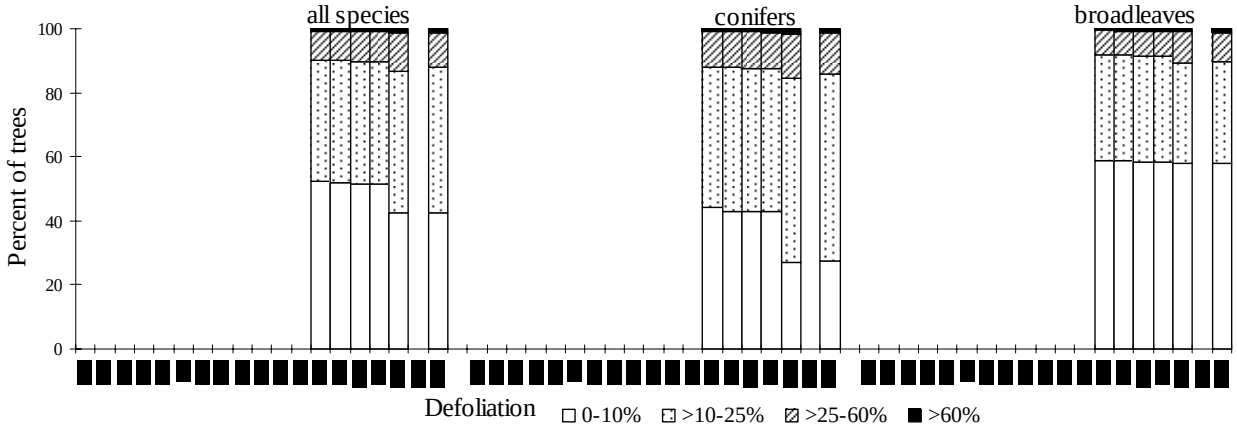
Note that some differences in the level of damage across national borders may be at least partly due to differences in standards used. This restriction, however, does not affect the reliability of the trends over time.

Annex II-8
Changes in defoliation (1986-2004)

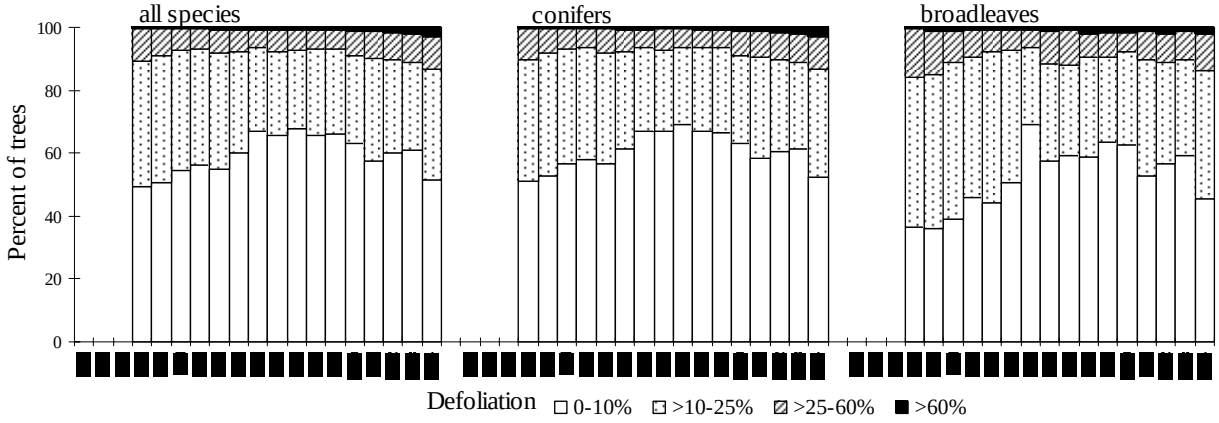
Andorra



Albania

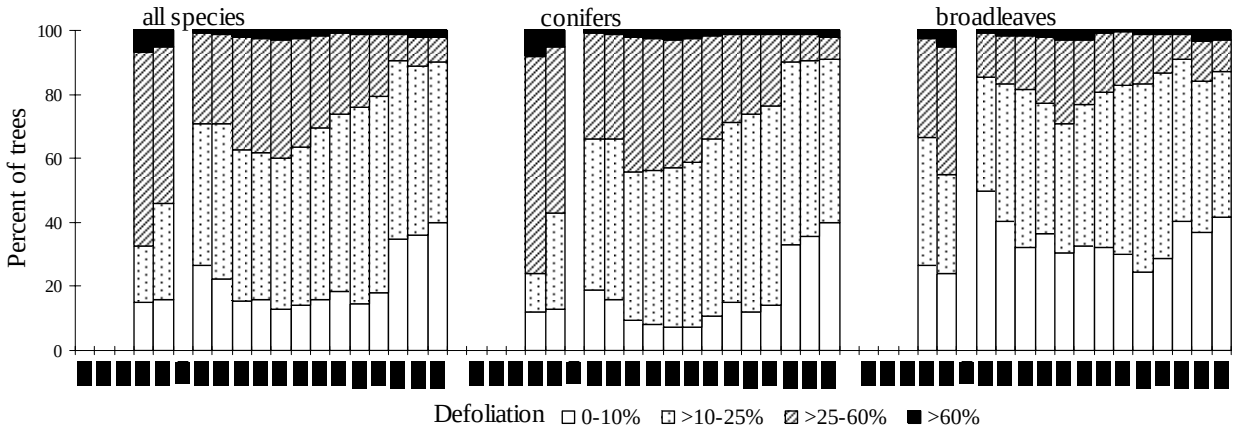


Austria *

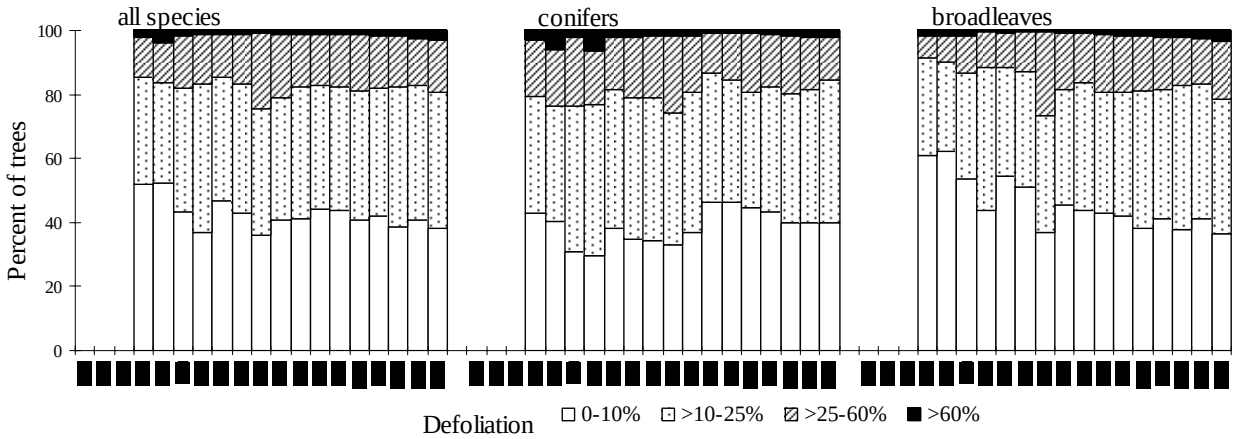


* from 2003 on, results are based on the 16x16 km transnational gridnet and must not be compared with previous years.

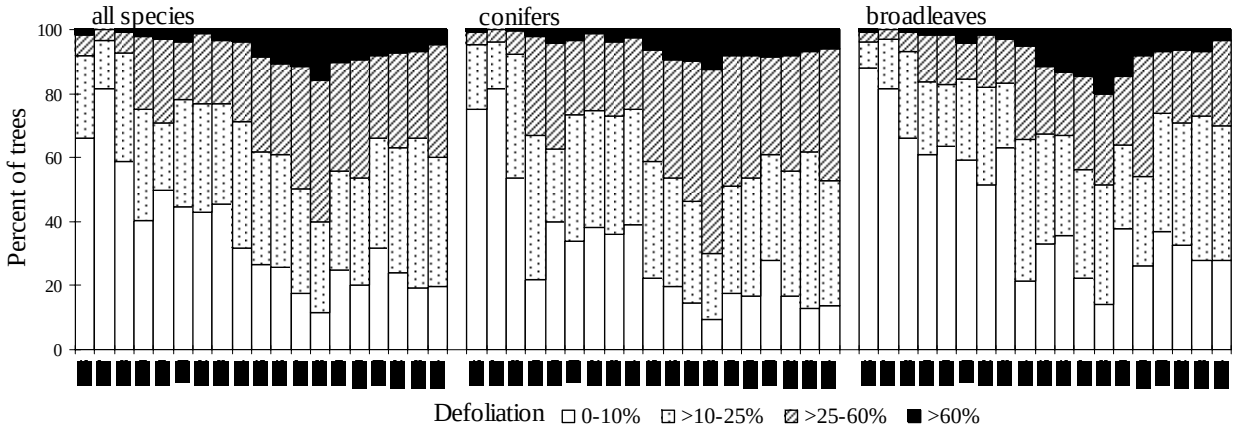
Belarus



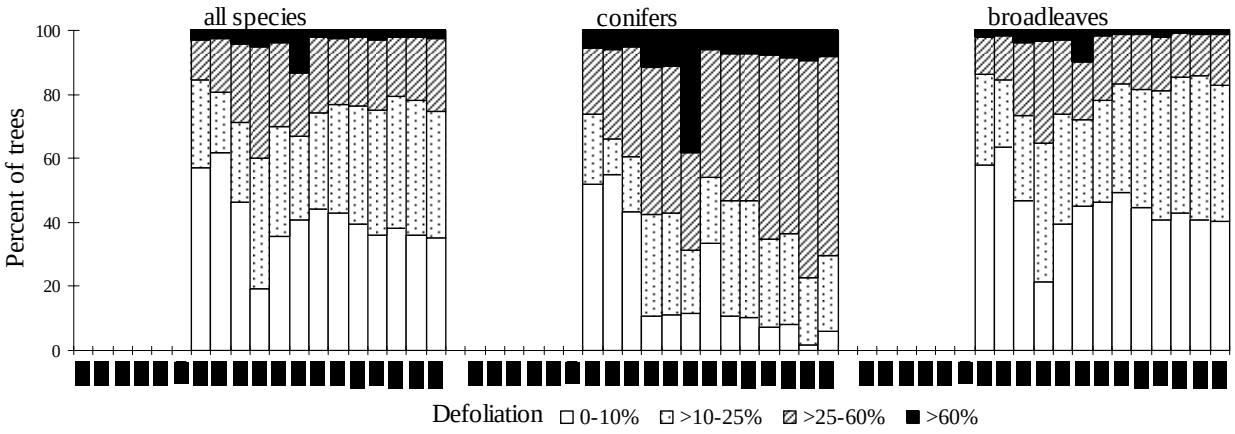
Belgium



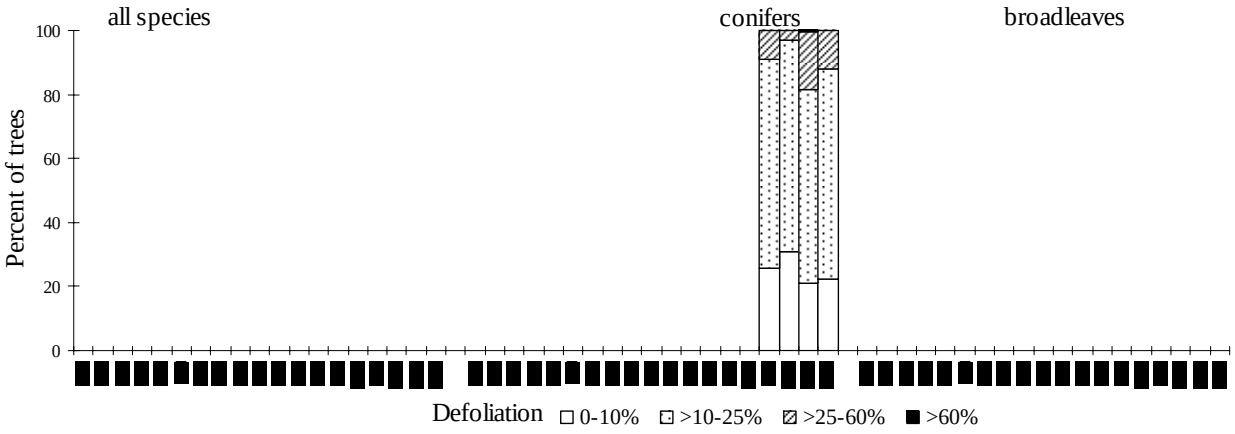
Bulgaria



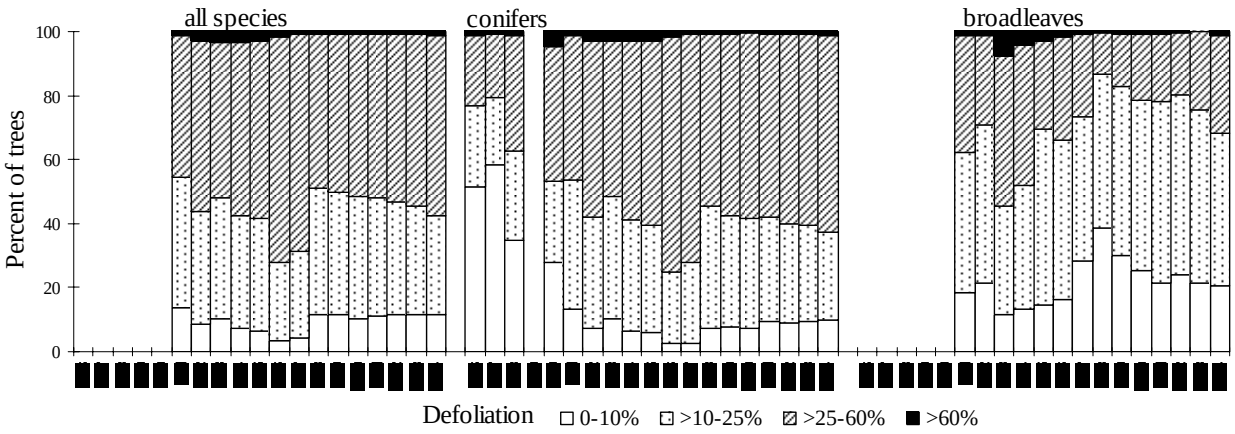
Croatia



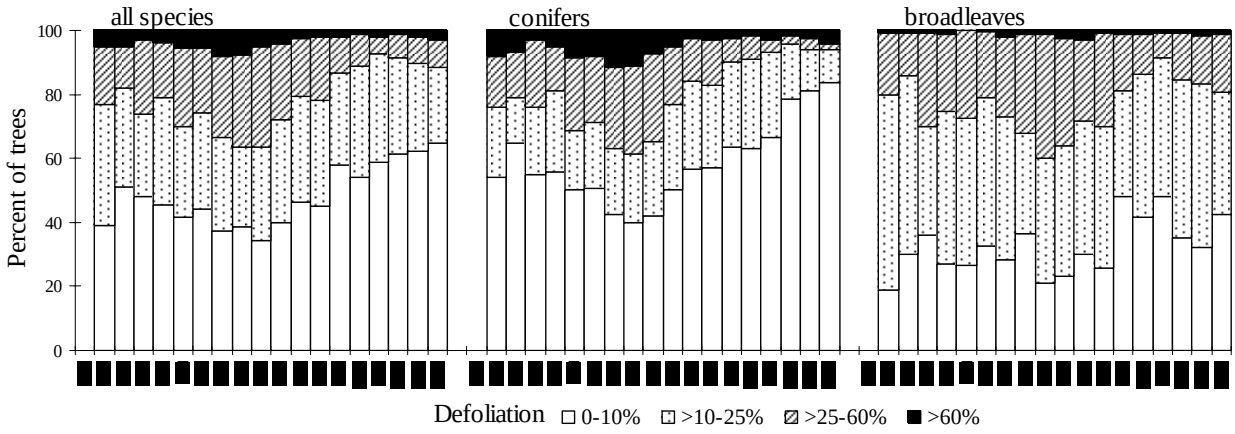
Cyprus



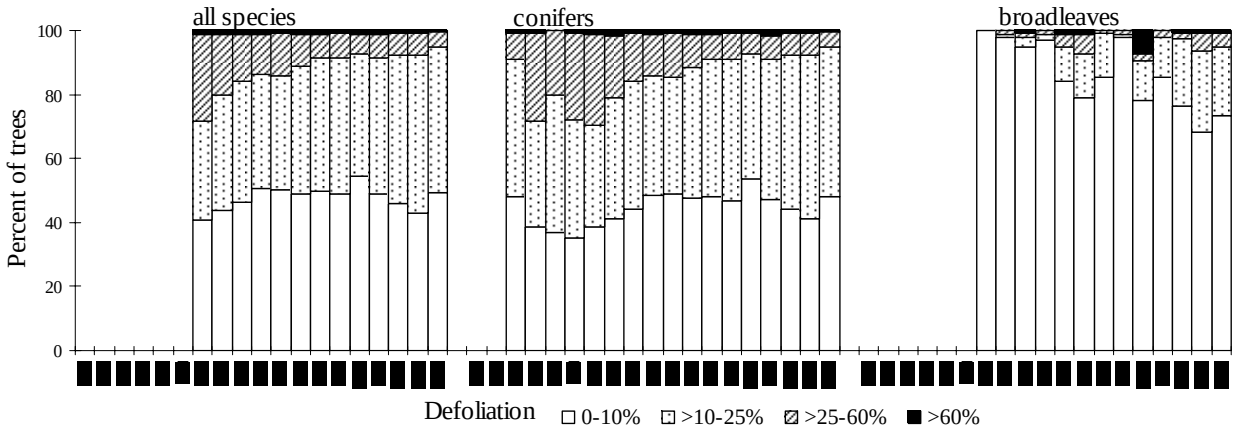
Czech Republic



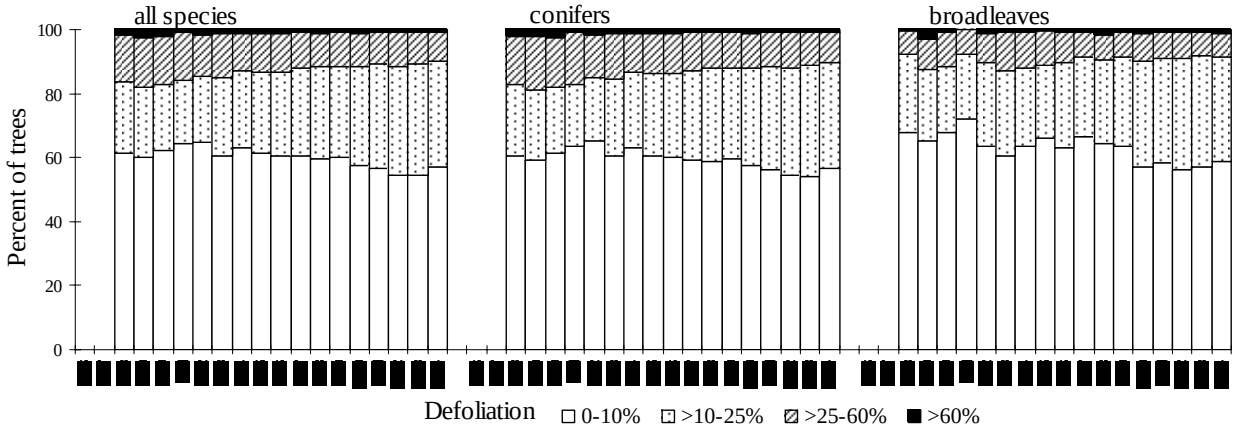
Denmark



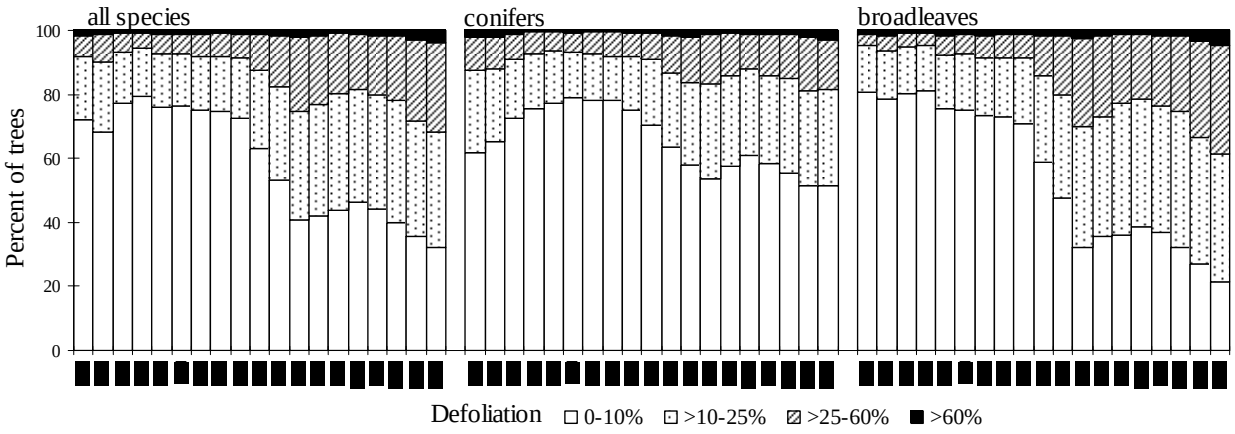
Estonia



Finland

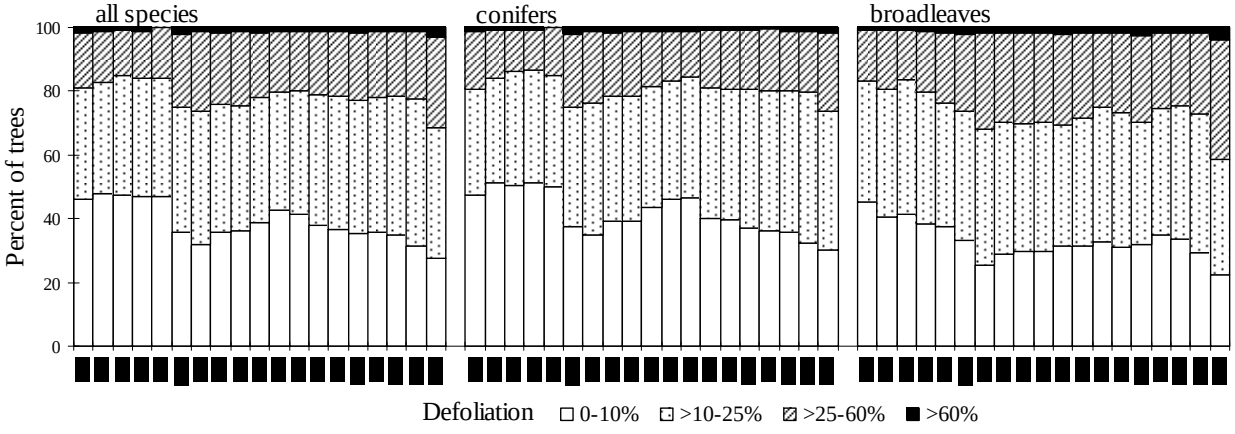


France *



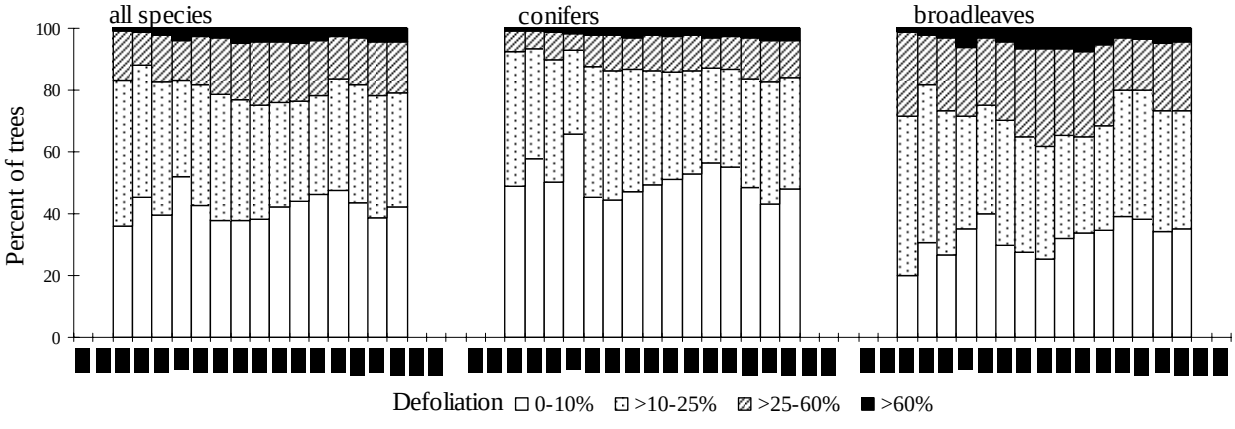
***** due to methodological changes, only the time series 1988-94 and 1997-99 are consistent, but not comparable to each other.

Germany

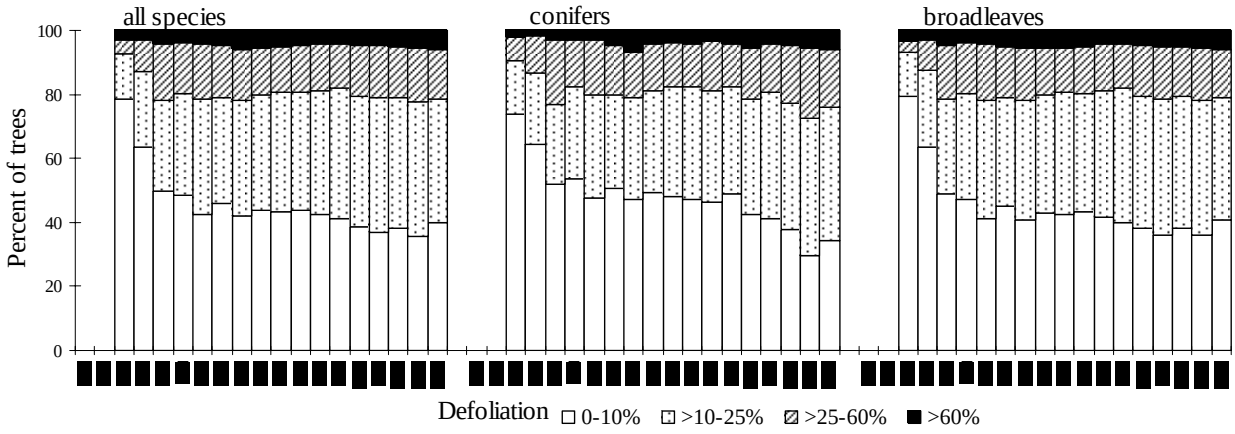


* since 1991 with former GDR

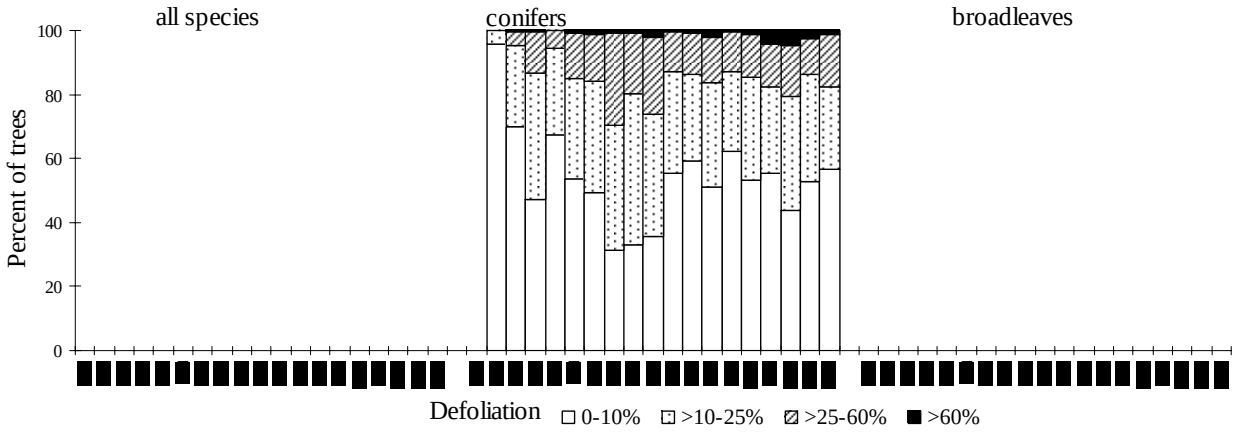
Greece



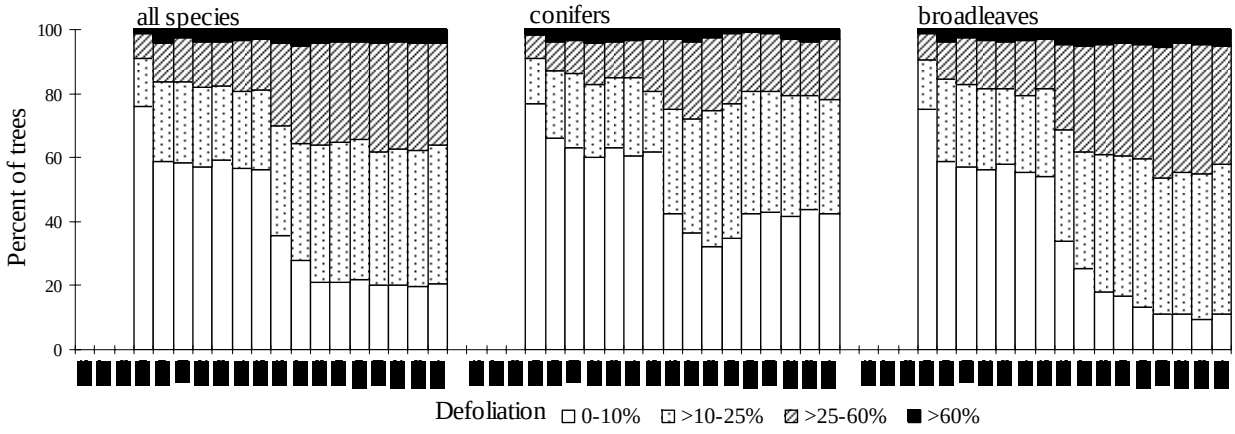
Hungary



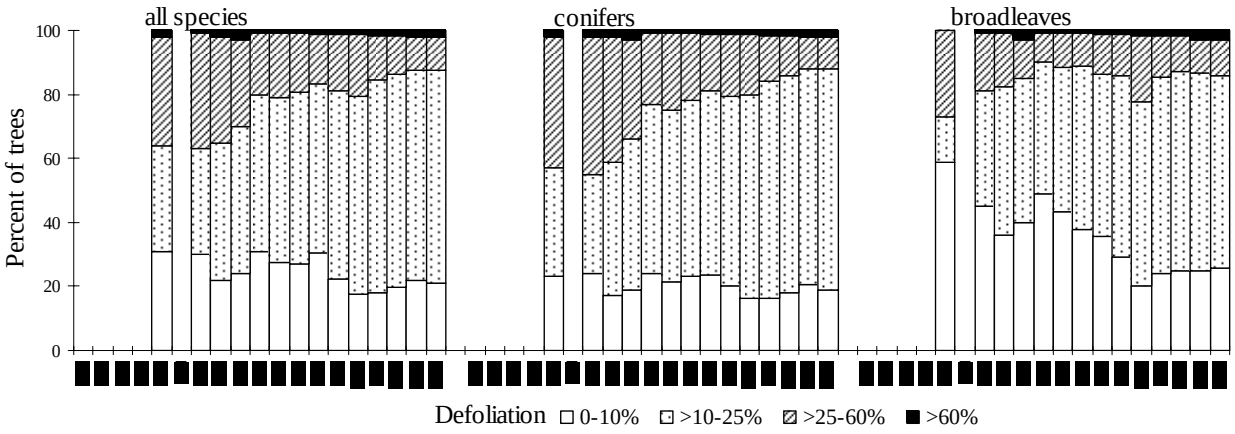
Ireland



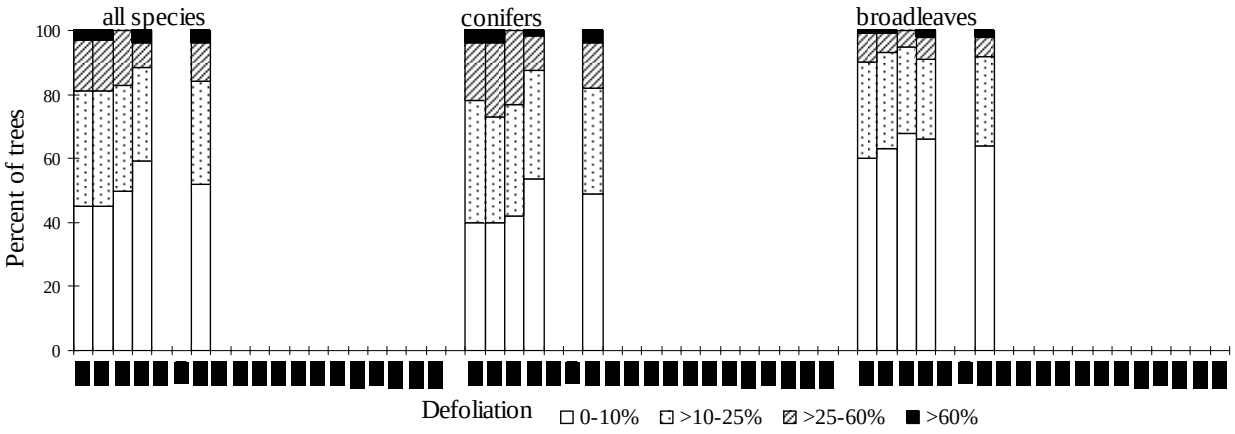
Italy



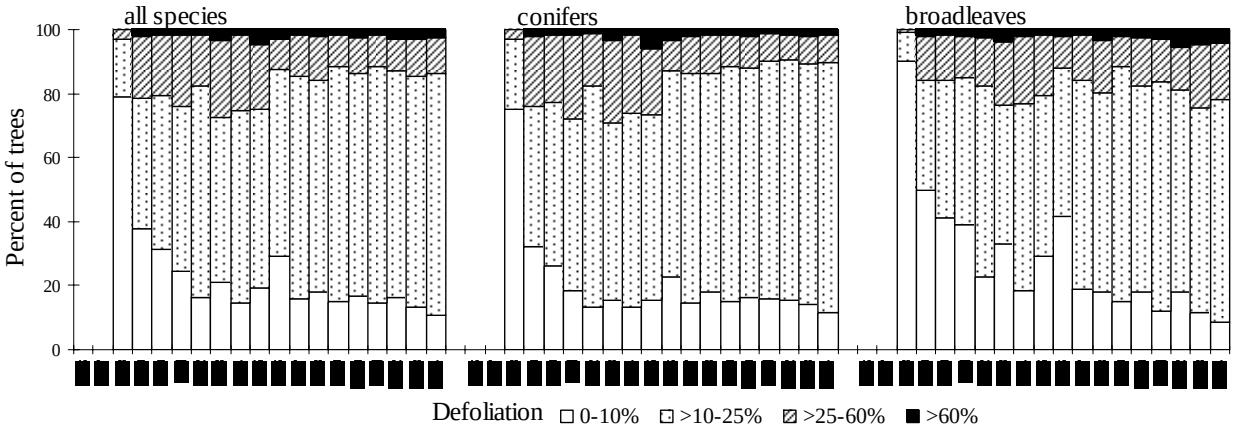
Latvia



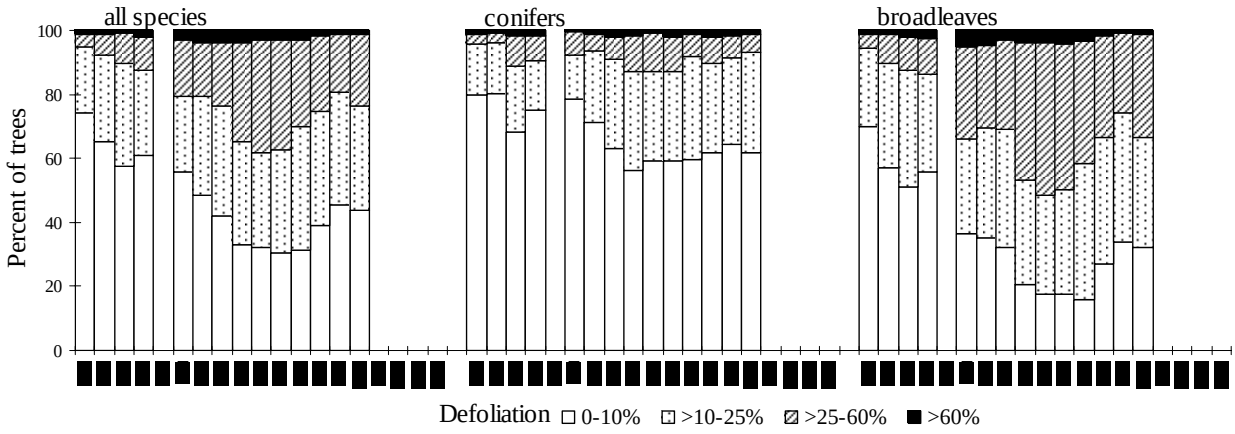
Liechtenstein



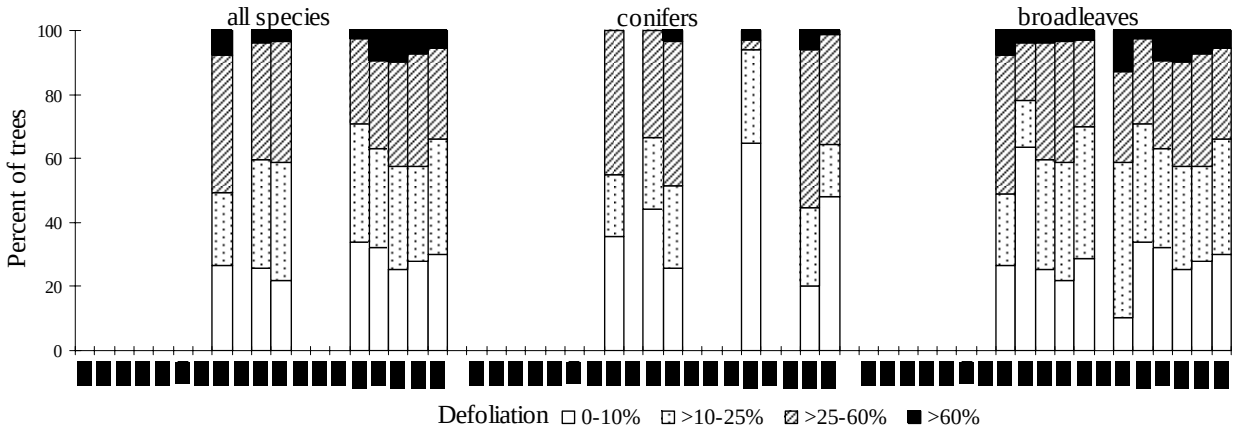
Lithuania



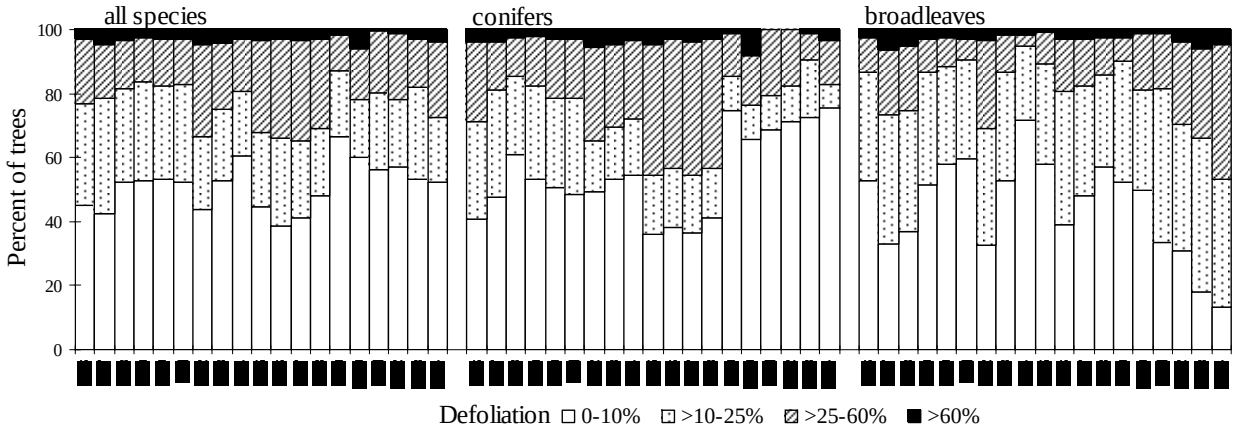
Luxembourg



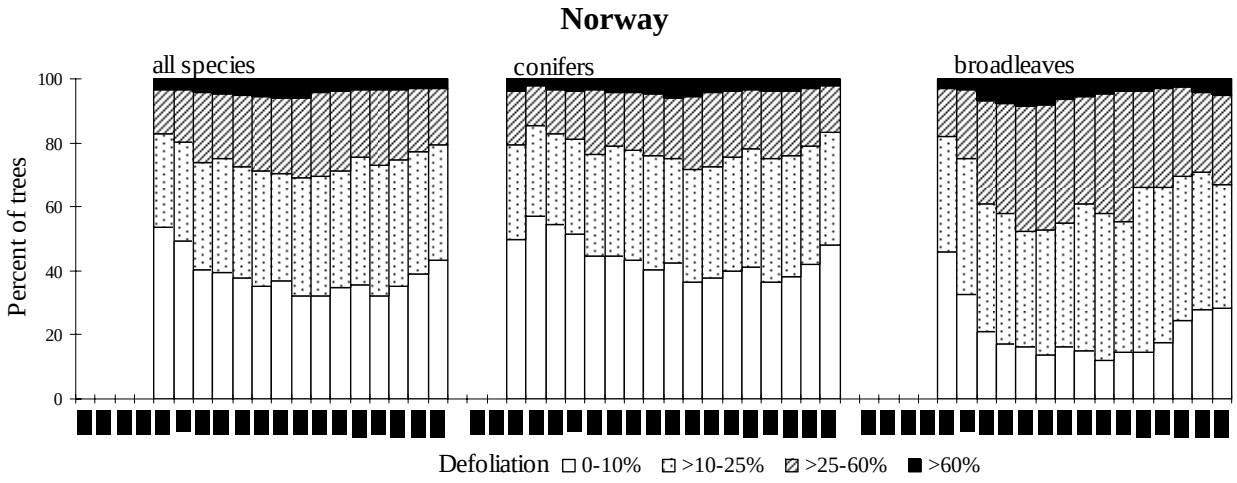
Republic of Moldova

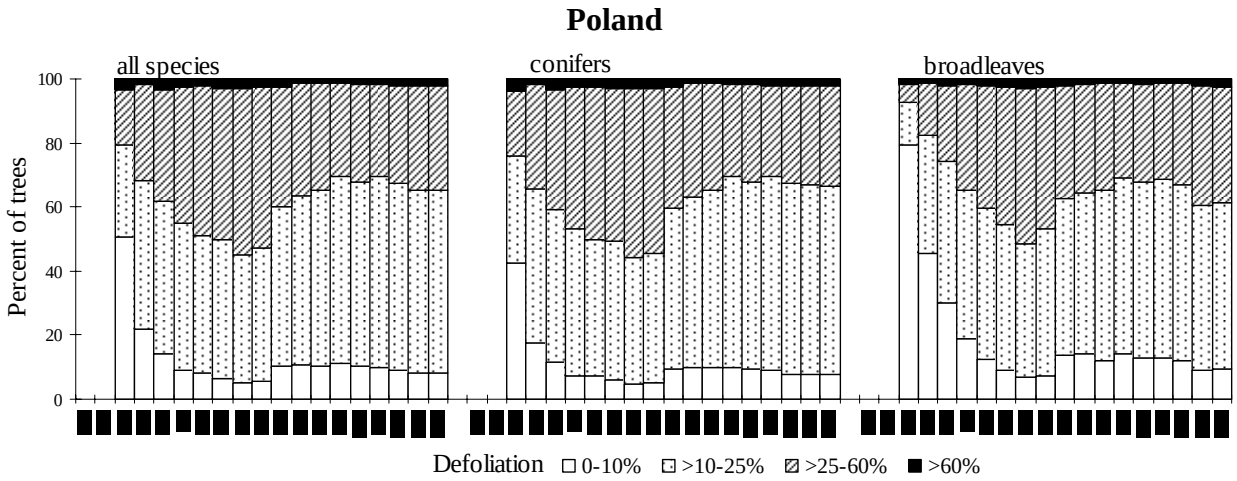


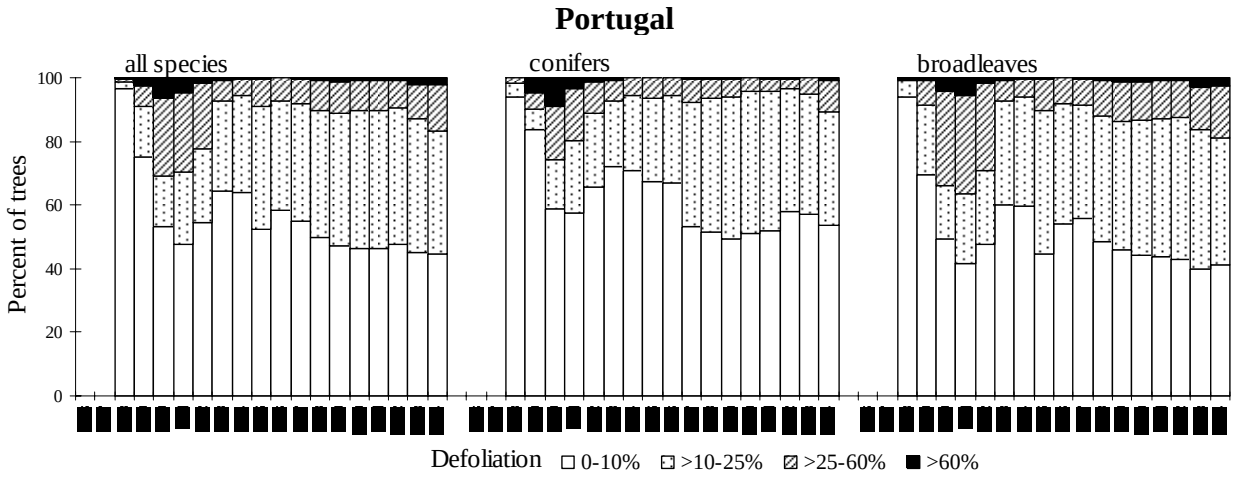
The Netherlands



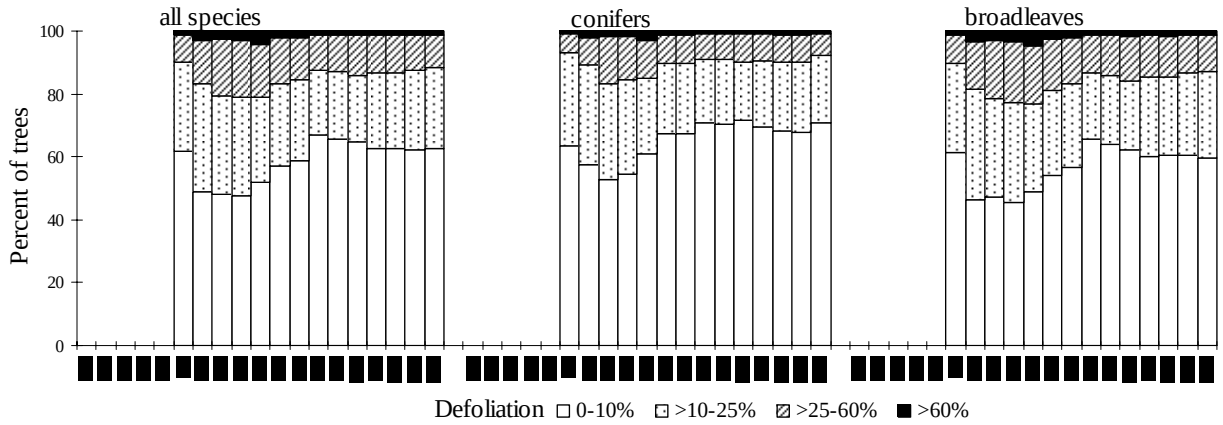
1989-1994: 1500 plots, 1995-1998: 200 plots, since 1999: 11 plots


Norway
all species
conifers
broadleaves
Percent of trees
100
80
60
40
20
0
Defoliation
0-10%
>10-25%
>25-60%
>60%

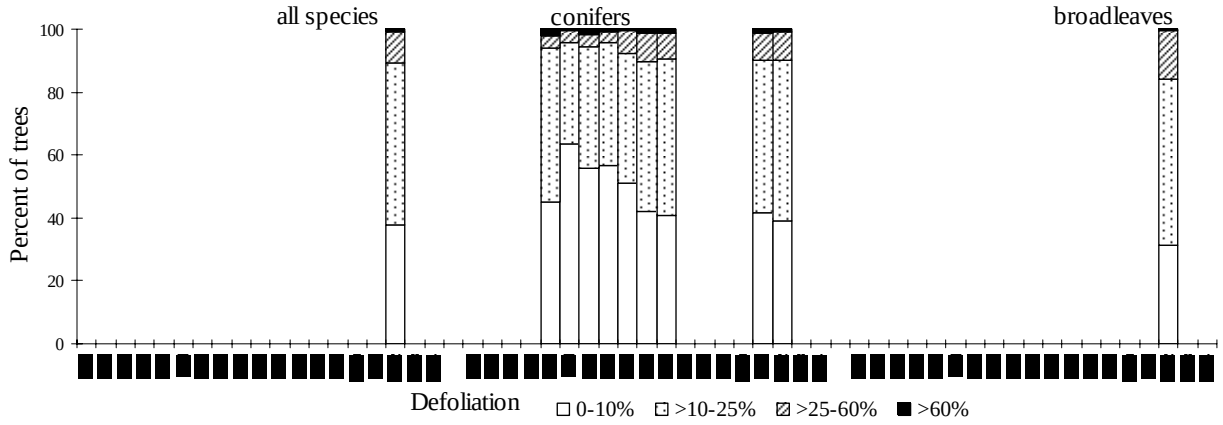

Poland
all species
conifers
broadleaves
Percent of trees
100
80
60
40
20
0
Defoliation
0-10%
>10-25%
>25-60%
>60%


Portugal
all species
conifers
broadleaves
Percent of trees
100
80
60
40
20
0
Defoliation
0-10%
>10-25%
>25-60%
>60%

Romania

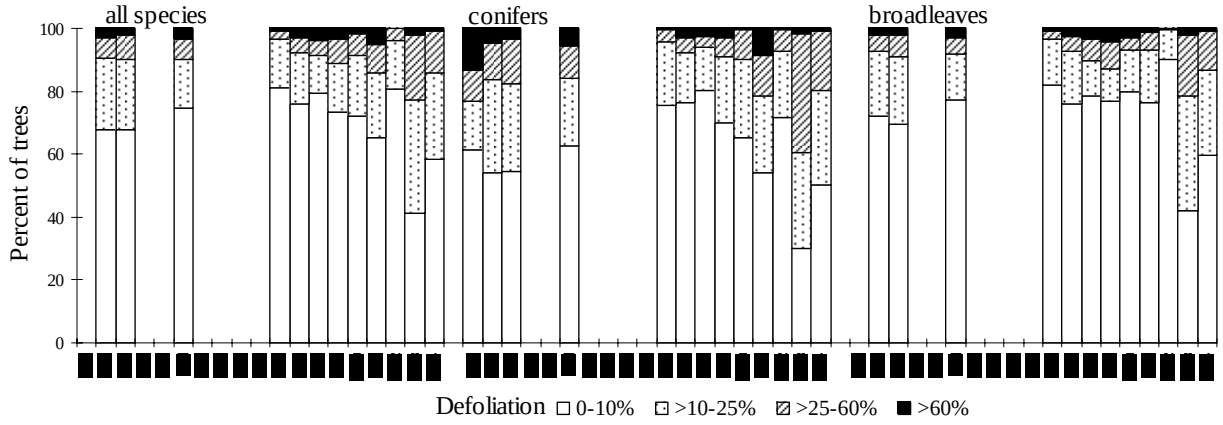


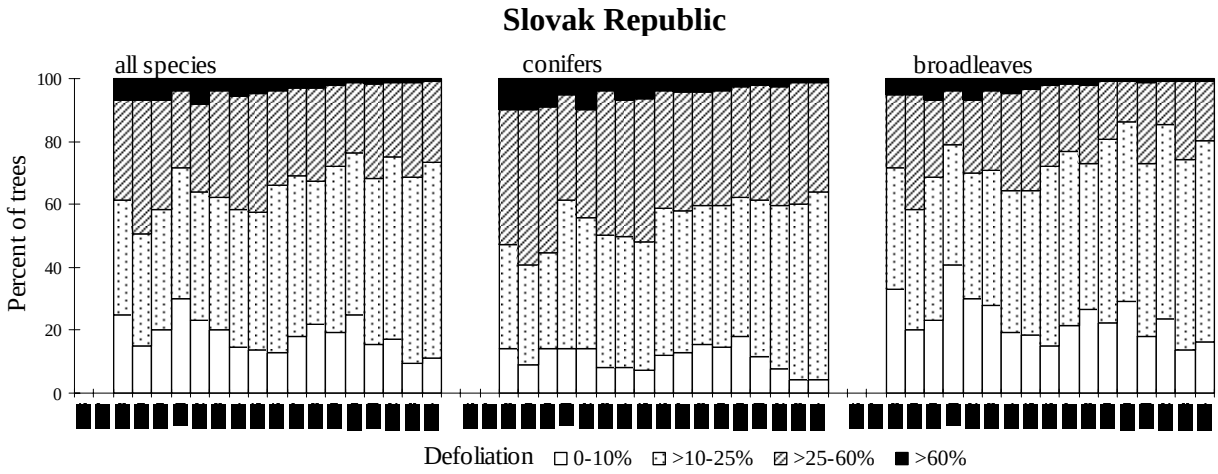
Russian Federation *

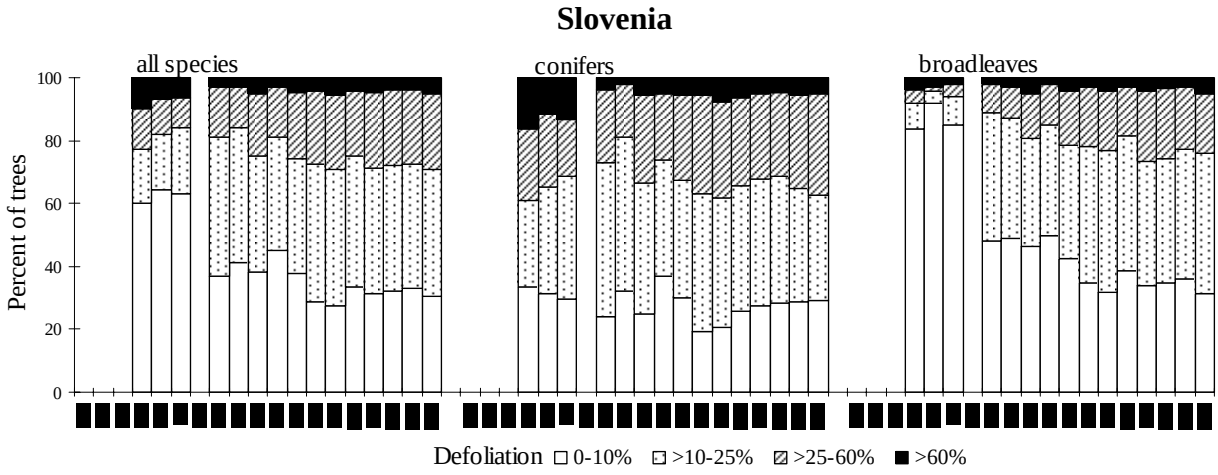


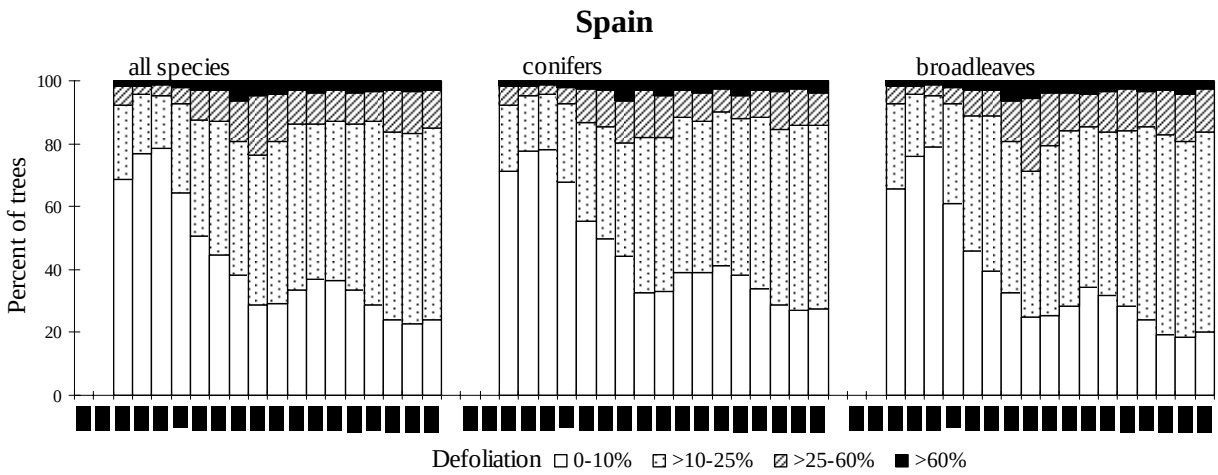
* Only regional surveys in north-western and Central European parts of Russia.

Serbia and Montenegro

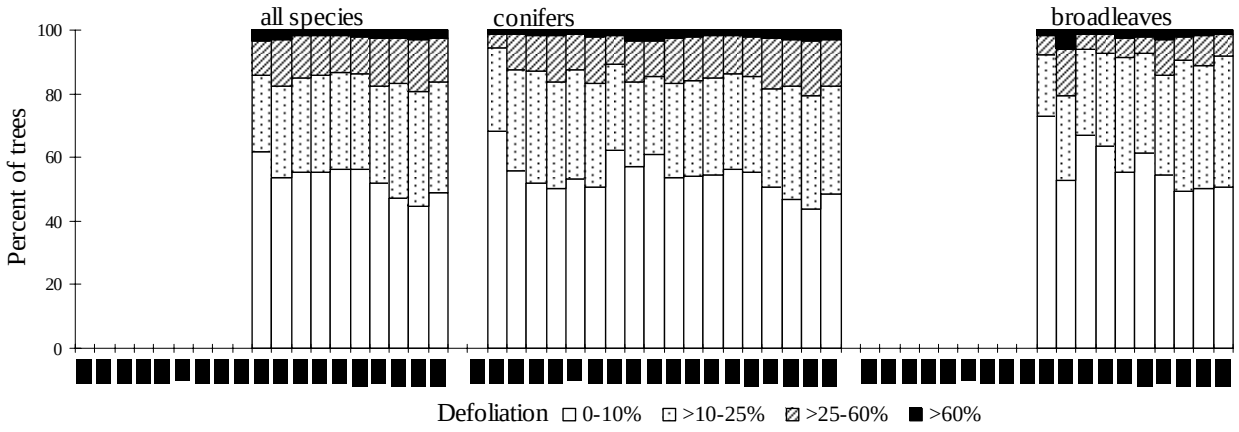



Slovak Republic
all species
conifers
broadleaves
Percent of trees
100
80
60
40
20
0
Defoliation □ 0-10% ⊡ >10-25% ▨ >25-60% ■ >60%

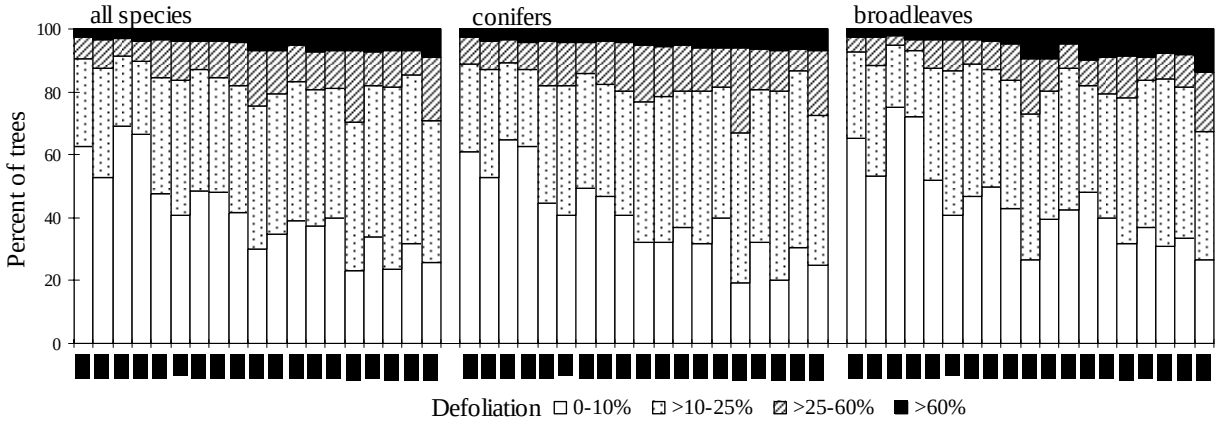

Slovenia
all species
conifers
broadleaves
Percent of trees
100
80
60
40
20
0
Defoliation □ 0-10% ⊡ >10-25% ▨ >25-60% ■ >60%


Spain
all species
conifers
broadleaves
Percent of trees
100
80
60
40
20
0
Defoliation □ 0-10% ⊡ >10-25% ▨ >25-60% ■ >60%

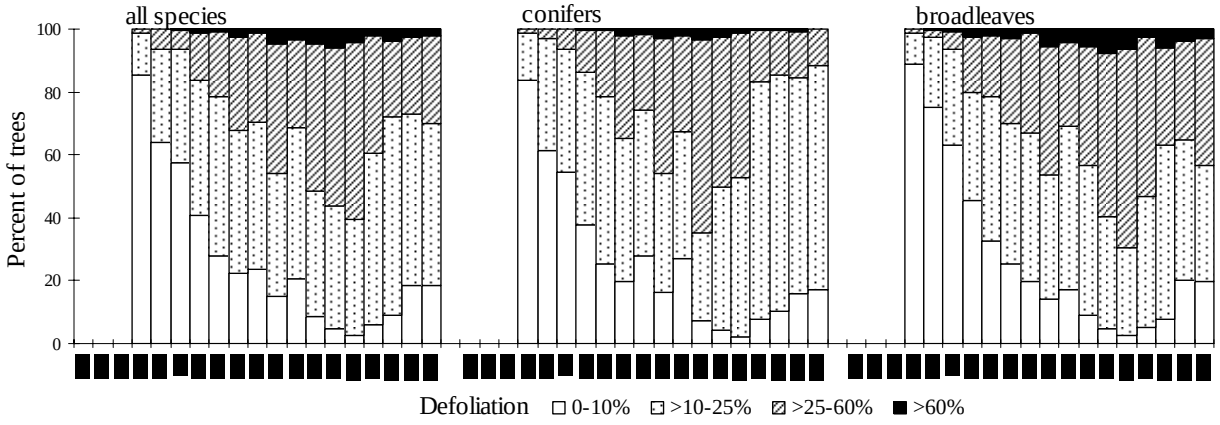
Sweden

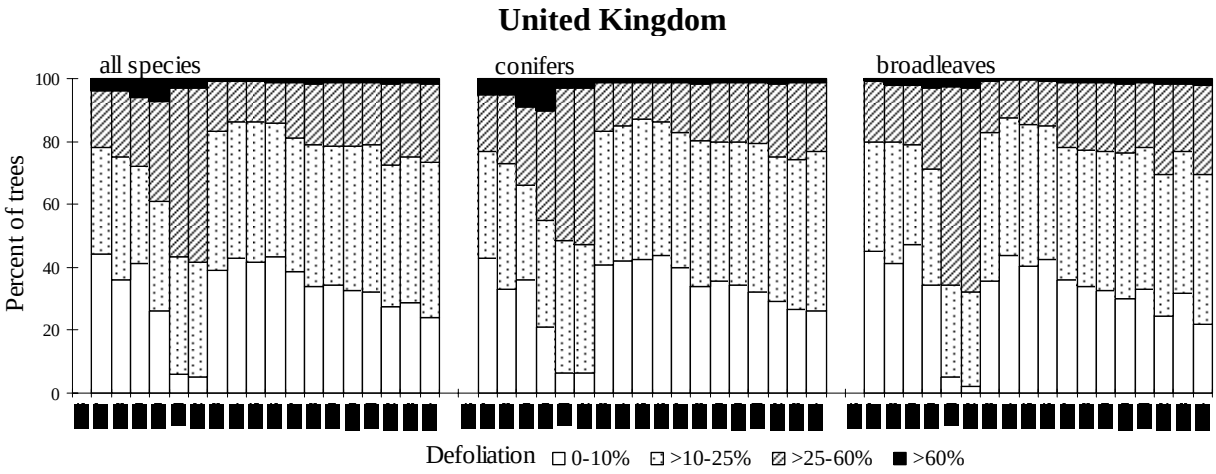


Switzerland



Ukraine





after 1992 change of assessment method in line with that used in other countries

Annex III
Main species referred to in the text

Botanical name	Danish	Dutch	English	Finnish	French	German
Fagus sylvatica	Bøg	Beuk	Common beech	Pyökki	Hêtre	Rotbuche
Quercus petraea	Vintereg	Wintereik	Sessile oak	Talvitammi	Chêne rouvre	Traubeneiche
Quercus robur	Stilkeg	Zomereik	European oak	Metsätammi	Chêne pédonculé	Stieleiche
Quercus ilex	Steneg	Steeneik	Holm oak	Rautatammi	Chêne vert	Steineiche
Quercus suber	Korkeg	Kurkeik	Cork oak	Korkkitammi	Chêne liège	Korkeiche
Pinus sylvestris	Skovfyr	Grove den	Scots pine	Metsämänty	Pin sylvestre	Gemeine Kiefer
Pinus nigra	Østrigsk fyr	Oostenrijkse Corsicaanse zwarte den	Corsican/ Austrian black pine	Euroopanmustamänty	Pin noir	Schwarzkiefer
Pinus pinaster	Strandfyr	Zeeden	Maritime pine	Rannikkomänty	Pin maritime	Seestrandkiefer
Pinus halepensis	Aleppofyr	Aleppoden	Aleppo pine	Aleponmänty	Pin d'Alep	Aleppokiefer
Picea abies	Rødgran	Fijnspar	Norway spruce	Metsäkuusi	Epicéa commun	Rotfichte
Picea sitchensis	Sitkagran	Sitkaspar	Sitka spruce	Sitkankuusi	Epicéa de Sitka	Sitkafichte
Abies alba	Ædelgran	Zilverden	Silver fir	Saksanpihta	Sapin pectiné	Weißtanne
Larix decidua	Lærk	Europese lariks	European larch	Euroopanlehtikuusi	Mélèze d'Europe	Europäische Lärche

Botanical name	Greek	Italian	Portuguese	Russian	Spanish	Swedish
Fagus sylvatica	Οξυά δασική	Faggio	Faia	бук лесной	Haya	Bok
Quercus petraea	Δρυς απόδισκος	Rovere	Carvalho branco Americano	дуб скальный	Roble albar	Bergek
Quercus robur	Δρυς ποδισκοφόρος	Farnia	Carvalho roble	дуб черещатый	Roble común	Ek
Quercus ilex	Αριά	Leccio	Azinheira	дуб каменный	Encina	Stenek
Quercus suber	Φελλοδρύς	Sughera	Sobreiro	дуб пробковый	Alcornoque	Korkek
Pinus sylvestris	Δασική πεύκη	Pino silvestre	Pinheiro silvestre	сосна обыкновенная	Pino silvestre	Tall
Pinus nigra	Μαύρη πεύκη	Pino nero	Pinheiro Austríaco	сосна чёрная	Pino laricio	Svarttall
Pinus pinaster	Θαλασσία πεύκη	Pino marittimo	Pinheiro bravo	сосна приморская	Pino negral	Terpentintall
Pinus halepensis	Χαλέπιος πεύκη	Pino d'Aleppo	Pinheiro de alepo	сосна алеппская	Pino carrasco	Aleppotall
Picea abies	Ερυθρελάτη υψηλή	Abete rosso	Picea	ель европейская	Abeto rojo	Gran
Picea sitchensis	Ερυθρελάτη	Picea di Sitka	Picea de Sitka	ель ситхинская	Picea de Sitka	Sitkagran
Abies alba	Λευκή ελάτη	Abete bianco	Abeto branco	пихта белая	Abeto común	Sivergran
Larix decidua	Λάριξ ευρωπαϊκή	Larice	Larício Europeu	литвенница европейская	Alerce	Europeisklärk

Annex IV

Testing statistical significance of the differences in mean plot defoliation between two years of assessment.

Differences between mean plot defoliation were statistically examined for Common Sample Plots (CSPs) using the following test statistic:

$$t = \frac{\left|\bar{x}_{2004} - \bar{x}_{2003}\right|}{\sqrt{\frac{s^2}{n_{2004}} + \frac{s^2}{n_{2003}}}}$$

where $\bar{x}_{2004} - \bar{x}_{2003}$ is the difference in mean plot defoliation between the assessments in 2003 and 2004,

s - the standard deviation of these differences,

n_{2004}, n_{2003} - number of sample trees on plots being tested.

The standard deviation s is calculated as follows

$$s = \sqrt{\frac{(n_{2004} - 1)s_{2004}^2 + (n_{2003} - 1)s_{2003}^2}{n_{2004} + n_{2003} - 2}}$$

with standard deviations s_{2004}, s_{2003} derived from the defoliation scores for the years 2004 and 2003 on the plots investigated.

The minimal difference for qualifying a plot as having changed its mean defoliation was 5% and more. This applies to the map in Annex I-7. This additional criterion to the formal statistical test was chosen since 5% is the highest accuracy in the assessment of defoliation in the field.

Annex V
Addresses
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Expert Panel on Soil and Soil Solution	Laboratorium Bodemkunde Universiteit Gent Geologisch Instituut Krijgslaan 281 B-9000 GENT Phone: +32 9 264 46 37/Fax: +32 9 264 49 97 e-mail: eric.vanranst@ugent.be Mr Eric van Ranst, Chairman
Expert Panel on Foliar Analysis	University of Oulu, Department of Biology P.O. Box 3000 FIN-90014, Oulu. Finland Phone: +358 8-553 1510/Fax: +358 8-553 1061 e-mail: pasi.rautio@metla.fi Mr Pasi Rautio, Chairman
Expert Panel on Forest Growth	Eidgenössische Forschungsanstalt für Wald, Schnee und Landschaft WSL Zürcherstr. 111 CH-8903 BIRMENSDORF Phone: +41 44 739 25 94/Fax: +41 44 739 22 15 e-mail: dobbertin@wsl.ch Mr Matthias Dobbertin, Chairman
Expert Panel on Deposition Measurements	Office National des Forêts Boulevard de Constance F-77300 FONTAINEBLEAU Phone: +33 1 60 749221/Fax: +33 1 64 224973 e-mail: erwin.ulrich@onf.fr Mr Erwin Ulrich, Chairman Norwegian Forest Research Institute Høgskoleveien 8 N-1432 AS Phone: +47 64 94 8892/Fax: +47 64 94 2980 e-mail: Nicholas.clarke@skogforsk.no Mr Nicholas Clarke, Co-Chairman
Working Group on Ambient Air Quality	CEAM c/Charles Darvin, 14 E-46980 VALENCIA e-mail: MJose@ceam.es Ms M. Sanz, Chairwoman

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Expert Panel on Ground Vegetation Assessment	Norwegian Forest Research Institute Høgskolevn. 12 N-1432 ÅS Phone: +47 64 94 89 92/Fax: 47 64 94 29 80 e-mail: dan.aamlid@skogforsk.no Mr Dan Aamlid, Chairman
WG on Forest Biodiversity Assessment	Coillte Teoranta Research and Development Newtownmountkennedy IRL- CO. WICKLOW Phone: +353 120 11 162/Fax: +3531 20 111 99 e-mail: Pat.Neville@coillte.ie Mr Pat Neville, Chairman
Expert Panel on Phenology, Meteorology and Litterfall	Institute for Environment and Sustainability Via E. Fermi 1 I-21020 ISPRA (VA), Italy Phone: +39 0332 78 6362 /Fax: +39 0332 78 9222 e-mail : annemarie.bastrup-birk@jrc.it Ms Annemarie Bastrup-Birk, Chairwoman Finnish Forest Research Institute Punkaharju Research Station Finlandtie 18 FIN-58450 PUNKAHARJU Phone: +358 211 4010/Fax: +358 211 4001 e-mail: egbert.beuker@metla.fi Mr Egbert Beuker, Co-chairman Phenology Bavarian State Institute of Forestry Am Hochanger 13 D-85354 FREISING Phone: +49 (8161) 71 – 4921Fax: e-mail: ras@lwf.uni-muenchen.de Mr Stephan Raspe, Co-chairman Meteorology

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