Annex 3 Additional Question 1 supporting evidence

A3.1 Ozone trends at 18 rural/remote and 45 urban sites based on data up to 2005

Table A3-1 Trends in ozone concentrations (µg m^{-3} yr^{-1}) at rural and remote sites [a]

	Ozone trend µg m^{-3} yr^{-1}) [a]		
Site	**annual mean concentration**	**annual average of the daily maximum running 8-hour mean concentrations**	**99.9th percentile of the hourly-mean concentrations**
Aston Hill	0.3	0.1	**-3.0**
Bottesford	**0.7**	**0.8**	-0.3
Bush Estate	**0.3**	0.1	**-2.0**
Eskdalemuir	-0.1	-0.1	**-2.3**
Glazebury	**0.4**	0.4	-1.3
Great Dun Fell	0.3	0.2	-2.3
Harwell	0.3	0.2	-2.2
High Muffles	**0.4**	0.2	**-2.5**
Ladybower	0.2	-0.1	**-3.6**
Lough Navar	-0.2	-0.2	**-2.6**
Lullington Heath	0.1	0.1	**-2.6**
Rochester	0.3	0.1	-2.9
Sibton	0.2	0.1	-3.1
Somerton	0.0	-0.1	-2.9
Strath Vaich	0.3	**0.3**	-0.7
Wharleycroft	**2.0**	**2.1**	2.9
Wicken Fen	**1.5**	**2.0**	2.9
Yarner Wood	0.0	-0.1	**-4.5**

[a] The statistical significance of trends has been calculated using the Mann-Kendall approach, with the slopes estimated using the method of Sen. Numbers in bold show sites where the trend is statistically significant at the 95 % confidence level.

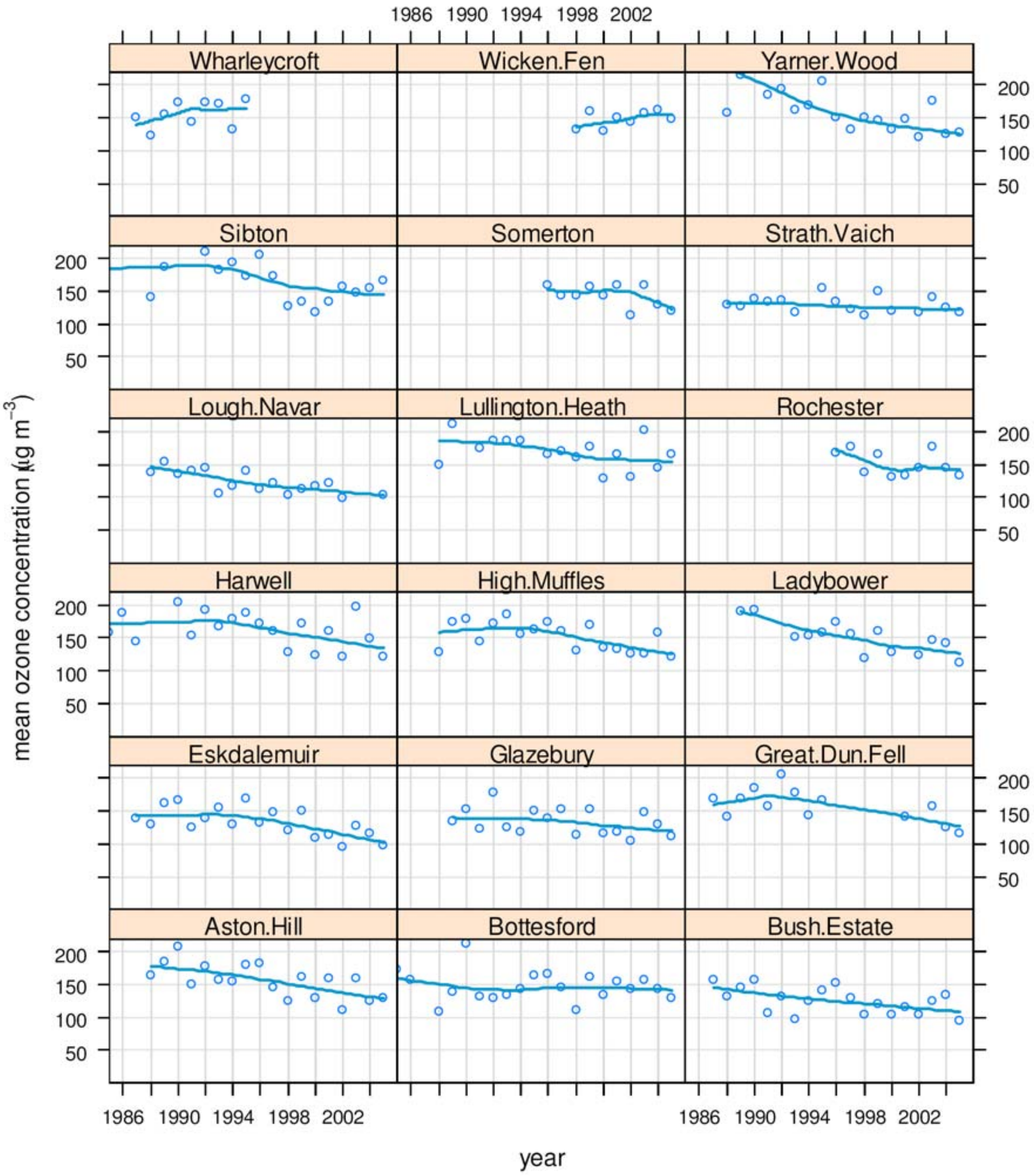

Figure A3.1 Trends in the 99.9th percentile of the hourly-mean ozone concentration at rural/remote UK locations, based on data up to 2005.

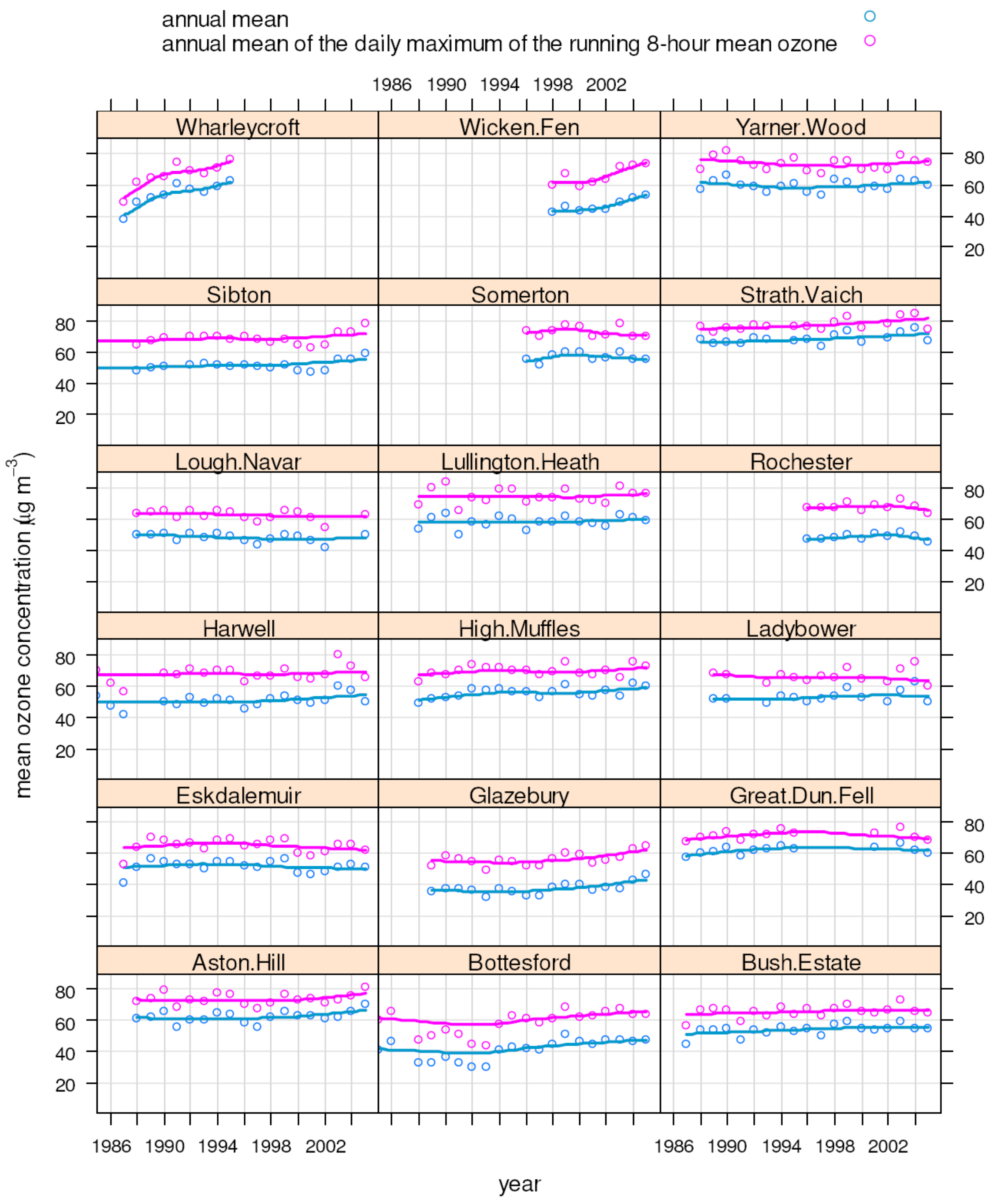

Figure A3.2 Trends in the annual mean and annual mean of the daily maximum 8-hour running mean ozone concentration at rural/remote UK locations, based on data up to 2005.

Table A3-2 Trends in ozone concentrations (μg m^{-3} yr^{-1}) at urban sites [a]

Site	annual mean concentration	annual average of the daily maximum running 8-hour mean concentrations	99.9th percentile of the hourly-mean concentrations
Barnsley Gawber	-0.5	-0.5	-1.5
Belfast Centre	**0.5**	**0.6**	-0.3
Birmingham Centre	**0.9**	**0.9**	0.0
Birmingham East	0.5	0.4	-1.8
Bolton	**1.0**	1.2	-1.2
Bradford Centre	1.0	1.0	1.1
Bristol Centre	0.5	0.5	-2.0
Cardiff Centre	0.9	**1.0**	-2.1
Derry	0.0	0.4	-0.3
Edinburgh Centre	0.6	0.7	-1.0
Glasgow Centre	**0.6**	**1.0**	0.6
Hull Centre	0.8	0.7	-1.1
Leamington Spa	0.5	0.6	-1.4
Leeds Centre	**0.9**	**1.0**	-0.3
Leicester Centre	**0.4**	**0.6**	-1.3
Liverpool Centre	0.3	0.4	-2.6
London Bexley	**0.5**	**0.7**	-1.5
London Bloomsbury	**0.5**	**0.5**	-1.1
London Brent	0.7	0.8	0.1
London Bridge Place	**1.5**	**1.9**	3.7
London Eltham	**0.5**	0.6	0.9
London Hackney	1.0	1.2	2.8
London Haringey	**1.1**	**1.3**	2.5
London Hillingdon	**0.7**	1.0	0.9
London Lewisham	**1.7**	**2.6**	6.7
London N. Kensington	**0.8**	1.1	-0.3
London Southwark	0.3	0.3	-1.0
London Teddington	**1.0**	**1.0**	-1.1
London Wandsworth	0.6	0.7	0.8
Manchester Piccadilly	0.5	0.5	-2.0
Manchester South	0.4	0.5	-1.4
Newcastle Centre	**1.0**	**1.1**	0.3
Norwich Centre	-0.6	-0.5	0.9
Nottingham Centre	**0.8**	**0.9**	0.3
Plymouth Centre	-0.7	-0.6	-2.2
Redcar	0.1	0.6	1.6
Rotherham Centre	0.0	-0.3	-2.0
Sandwell West Bromwich	-0.3	0.2	-2.5
Sheffield Centre	0.5	0.5	-2.6
Southampton Centre	0.4	0.2	-2.2
Stevenage	1.0	1.1	5.9
Stoke-on-Trent Centre	0.5	0.3	-0.6
Swansea	0.4	0.5	-2.2
Thurrock	0.4	0.6	0.9
Wolverhampton Centre	0.6	**1.0**	-3.4

[a] The statistical significance of trends has been calculated using the Mann-Kendall approach, with the slopes estimated using the method of Sen. Numbers in bold show sites where the trend is statistically significant at the 95 % confidence level.

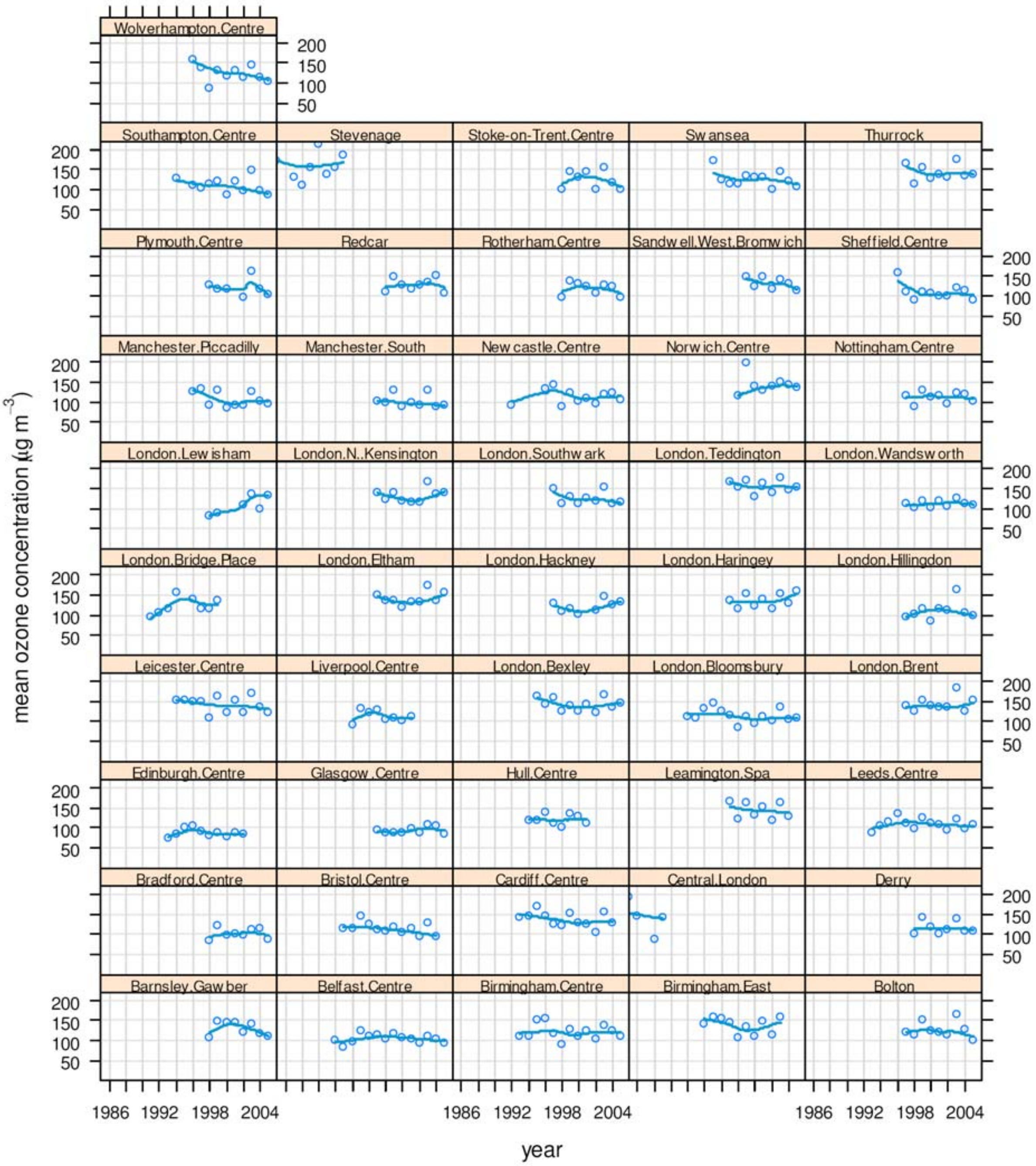

Figure A3.3 Trends in the 99.9th percentile of the hourly-mean ozone concentration at urban UK locations, based on data up to 2005.

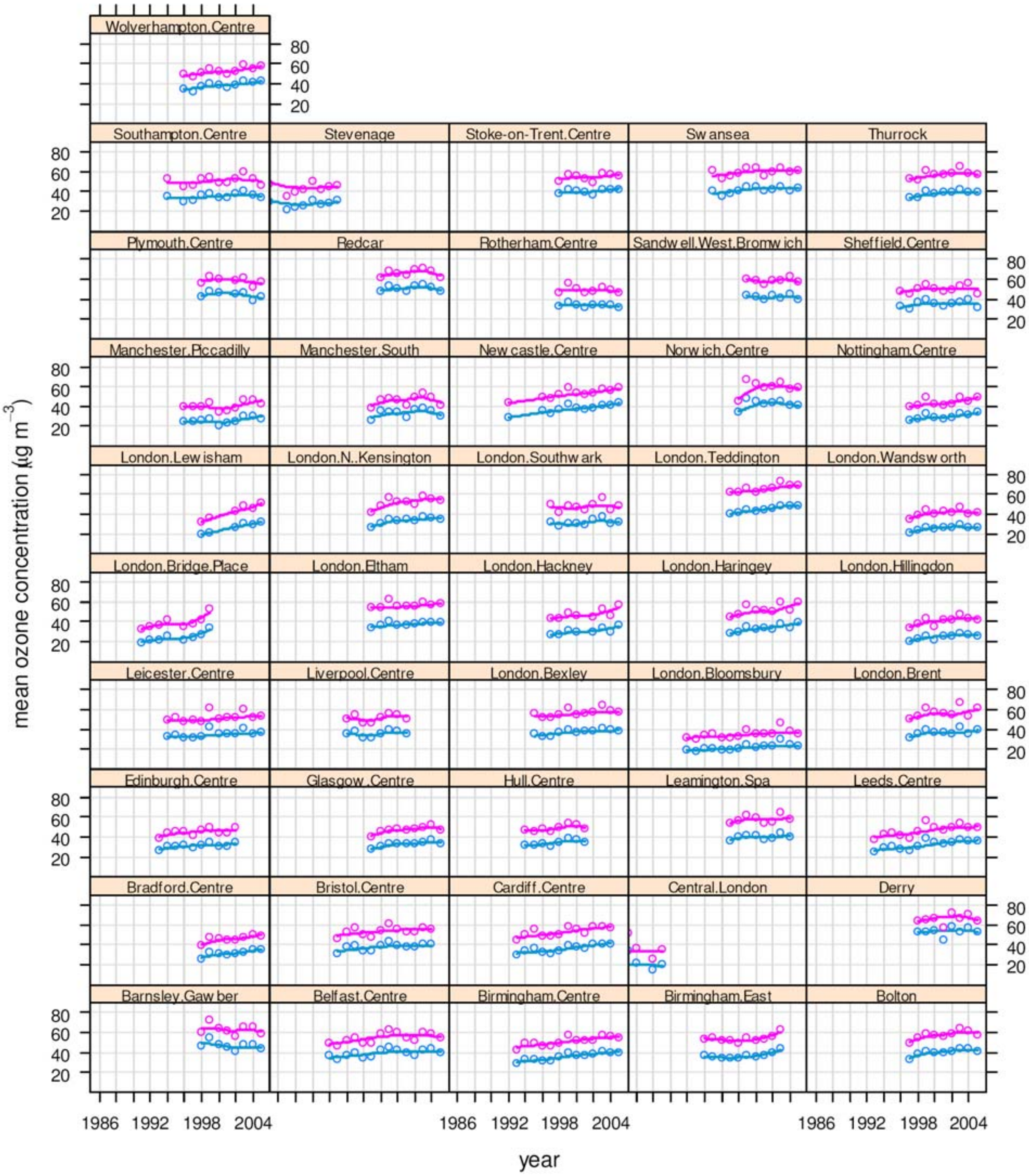

Figure A3.4 Trends in the annual mean of the daily maximum 8-hour running mean ozone concentration and the annual mean ozone concentration at urban UK locations, based on data up to 2005.

Table A3-3 Trends and their statistical significance, in the annual average daily maximum 8-hour mean ozone concentrations for 46 EMEP rural sites with elevations below 500 m over the period from 1990-2002, together with the 1990 values of the ozone metric. Derived from data compiled by Solberg and Hjellebrekke (2004).

	Initial value	Slope			Initial value	Slope	
Site	**μg m^{-3}**	**μg m^{-3} yr^{-1}**	**Significance**	**Site**	**μg m^{-3}**	**μg m^{-3} yr^{-1}**	**Significance**
AT02	83.6	0.10		GB15	74.7	0.17	
AT30	87.7	0.12		GB31	78.0	-0.13	
AT45	75.4	-0.16		GB32	54.2	1.63	**
AT46	75.6	0.84	+	GB33	67.7	0.21	
AT47	77.8	-0.03		GB34	56.5	0.09	
BE32	60.9	1.74	***	GB36	68.5	-0.24	
BE35	74.4	0.83		GB38	81.2	-0.40	
DE01	66.1	1.47	**	GB39	68.2	-0.59	***
DE02	67.0	0.32		IE31	76.5	0.39	
DE07	46.1	0.97	+	IT04	78.3	-0.10	
DE09	60.4	0.93	*	LT15	59.6	1.23	
DE12	54.3	0.24		NL09	76.2	-0.36	
DE26	78.3	0.13		NL10	72.6	-0.61	+
DK31	61.9	0.20		NO01	67.1	0.00	
DK32	60.6	-0.05		NO39	56.4	0.96	**
DK41	61.3	-0.10		NO43	62.4	1.04	**
FI09	73.9	0.23		NO45	71.5	-0.33	
FI17	67.1	0.48		PT04	65.6	1.81	
FI22	71.9	-0.18		SE02	67.8	0.27	
GB02	68.2	-0.42		SE11	68.6	0.44	*
GB06	64.9	-0.33		SE12	69.4	0.82	+
GB13	80.8	-0.49		SE32	78.7	0.09	
GB14	66.5	-0.07		SE35	62.8	0.53	+

Notes: *** implies statistical significance at the 99.9%, ** at the 99%, * at the 95% and + at the 90% levels.

AT02: Illmitz, Austria
AT30: Pillersdorf, Austria
AT45: Dunkelsteinerwald, Austria
AT46: Ganserndorf, Austria
AT47: Stixneusiedl, Austria
BE32: Eupen, Belgium
BE35: Vezin, Belgium
DE01: Westerland, Germany
DE02: Langenbrugge, Germany
DE07: Neuglobosow, Germany
DE09: Zingst, Germany
DE12: Bassum, Germany
DE26: Ueckermunde, Germany
DK31: Ulborg, Denmark
DK32: Frederiksborg, Denmark
DK41: Lille Valby, Denmark
FI09: Uto, Finland
FI17: Virolahti, Finland
FI22: Oulanka, Finland
GB02: Eskdalemuir, United Kingdom
GB06: Lough Navar, United Kingdom
GB13: Yarner Wood, United Kingdom
GB14: High Muffles, United Kingdom

GB15: Strath Vaich, United Kingdom
GB31: Aston Hill, United Kingdom
GB32: Bottesford, United Kingdom
GB33: Bush, United Kingdom
GB34: Glazebury, United Kingdom
GB36: Harwell, United Kingdom
GB38: Lullington Heath, United Kingdom
GB39: Sibton, United Kingdom
IE31: Mace Head, Ireland
IT04: Isra, Italy
LT15: Preila, Lithuania
NL09: Kollumerwaard, Netherlands
NL10: Vreedepeel, Netherlands
NO01: Birkenes, Norway
NO39: Karvatn, Norway
NO43: Prestebakke, Norway
NO45: Jelly, Norway
PT04: Monte Vehlo, Portugal
SE02: Rorvik, Sweden
SE11: Vavihill, Sweden
SE12: Aspreveten, Sweden
SE32: Knorra-Kvill, Sweden
SE35: Vindeln, Sweden