Appendix 1

Table A1.1: Green, spatial, and grey characteristics of study sites, mean age of respondents and number of conducted valid suryes.

Site ID	Type	Place name	Share of tree cover	Tree richness per 100m2	Flowering richness per 100m2	Size of the site (ha)	Inhabitants in 300m	Seating possibilities per hectare	Lighting per hectare	Sport facilities (sum)	Mean age of respondents	Number of surveys
B01_1	Brownfield	Saalfelder Str.	21.04	0.22	4	1.21	3437.27	0	0	0	39	30
B08_1	Brownfield	Torgauer Platz	8.74	0.22	2.89	2.38	4076.59	0	3.36	0	38.31	15
B08_2	Brownfield	Kirschbergerstr.	38.67	2.37	0.59	5.1	2970.81	0	0.78	0	48.83	38
B10_1	Brownfield	Bayerischer Bahnhof	6.67	0.44	1.96	8.81	7238.92	0	0.57	0	34.97	38
B11_1	Brownfield	Kochstr.	14.82	0.32	32	0.06	3271.96	47.32	0	0	42.83	6
B12_2	Brownfield	Friedrich-Ebert-Str.	53.73	0.27	14	0.4	3811.47	2.49	0	0	30	6
B16_3	Brownfield	Zweinaundorfer Str.	97.66	0.89	0.22	1.67	4573.94	0	0	0	32.2	10
B17_2	Brownfield	Saarlaender Str.	36.02	0.15	12	0.39	250.46	0	5.12	0	25	1
B17_3	Brownfield	Luetzener Str./Odermannstr.	96.13	0.92	8	0.1	4488.31	0	0	0	32.56	10
B18_1	Brownfield	Zschochersche/ Makranstaedter Str.	7.54	0	2.67	1.33	1691.87	0	0	0	29.73	11
B18_2	Brownfield	Delitzscher Str.	37.57	0.67	4	0.13	3416.31	0	0	0	NA	0
B19_3	Brownfield	Bernhardiplatz	77.86	0.41	0	0.29	5161.78	0	0	0	NA	0
B20_3	Brownfield	Ossietzkystr.	70	1.02	0	0.09	3269.88	0	0	0	NA	0
B21_2	Brownfield	Eisenbahnstr.	54.64	0.54	10	0.17	6626.56	30.22	0	1	27	19
B21_3	Brownfield	Friedhof Mockau	82.13	1.56	0	1.37	2322.08	0	0	0	NA	0
B22_1	Brownfield	Jahrtausendfeld	2.2	0.67	3.56	2.65	4839.66	1.51	0	1	31.57	64
B22_3	Brownfield	Max-Liebermann Str.	75	2.44	0	0.72	609.96	0	0	0	NA	0
B24_2	Brownfield	Bernhardstrasse	64.94	0.77	10	0.12	4669.03	0	0	0	30	2
P01_2	Park	Arthur-Bretschneider Park	58.44	1.11	0.67	3.05	4156.66	8.2	0	0	43.69	111
P02_3	Park	Heinrich Schuetz Platz	76.85	0.44	0	1.45	8442.99	5.51	5.51	3	39.49	80
P03_3	Park	Gustav Schwabe Platz	89.59	2	0	1.19	3549.24	15.94	6.71	1	49.49	51
P04_1	Park	Rabet	18.4	0.59	0.44	6.28	11526.01	8.29	8.29	8	37.34	117
P04_2	Park	Lenné Anlage	65.76	0.67	0.44	1.38	1744.17	7.27	2.91	0	34.29	71
P04_3	Park	Richard Wagner Platz	79.19	0.89	0.89	1.02	3436.43	5.9	7.86	0	44.46	97
P05_1	Park	Henriettenpark	9.72	0.67	1.56	1.18	5987.78	12.68	18.6	2	33.18	88
P05_2	Park	Goethestrasse/ Schwanenteich	53.82	1.56	0	2.55	1653.5	6.28	3.53	0	43.74	102

P08_1	Park	Rosental	13.84	0.05	0.44	21.32	3166.65	3.05	0	0	43.75	103
P08_2	Park	Palmengarten	55.54	0.53	0.81	20.96	4329.02	3.34	1.1	0	39.72	78
P08_3	Park	Wilhelm Kuelz Park	68.55	0.44	0	18.52	1282.33	2.65	1.03	0	42.73	26
P09_2	Park	Friedenspark	61.62	0.5	0.33	18.02	6044.99	1.66	0.06	7	38.9	81
P09_3	Park	Emmauskirchplatz	84.11	0.67	0.22	0.73	2798.3	8.22	4.11	0	45.85	60
P10_2	Park	Mariannenpark	62.28	0.74	0.15	16.78	5355.2	5.96	0	2	36.61	87
P11_1	Park	Alexis Schumann Platz	23.09	1.11	2.89	0.72	6761.4	16.63	6.93	1	29.35	86
P11_3	Park	Reudnitzer Park	72.8	1.78	0	2.1	6454.46	9.53	3.81	2	35.75	80
P13_1	Park	Lene Voigt Park	19.91	0.67	0.11	9.26	12214.46	7.34	6.8	7	32.16	111
P14_1	Park	Abtnaundorfer Park	32	1.33	2.11	8.85	1137.51	2.15	0	0	45.52	71

Figure A1.1
Two examples of urban parks with low tree cover (P13_1; P04_1) (Photos: J. Palliwoda)

Figure A1.2
Two examples of urban parks with medium tree cover (P08_2, P04_2) (Photos: J. Palliwoda)

Figure A1.3
Two examples of urban parks with high tree cover (P04_3, P09_3) (Photos: J. Palliwoda)

Figure A1.4
Two examples of green brownfields with low tree cover (B01_1; B10_1) (Photos: J. Palliwoda)

Figure A1.5
Two examples of green brownfields with medium tree cover (B08_2, B24_2) (Photos: J. Palliwoda)

Figure A1.6
Two examples of green brownfields with high tree cover (B17_3, B21_3) (Photos: J. Palliwoda)

Survey about the use of nature in parks and brownfields

… Your introduction text

Question 1
What do you use/enjoy/ disturbs you here? (Please choose **one activity** only)

[ ] Collecting food from plants
[ ] Drinking water
[ ] Collecting medicine, fibres etc. from plants or animals
[ ] Using energy from plants
[ ] Draft animal or mount

[ ] Providing shade and shelter
[ ] Mediating smell, noise, visual impacts

[ ] Experience diversity of plants & animals
[ ] Watching animals or plants
[ ] Enjoy landscape beauty
[ ] Experience cultural heritage, sense of place
[ ] Doing research, (environmental) education
[ ] Sacred or religious plants or animals
[ ] Being inspired by nature

[ ] Sport fishing or hunting
[ ] Biking
[ ] Walking the dog
[ ] Walking, strolling, hiking
[ ] Jogging, running
[ ] Meeting people
[ ] Barbequeing, picnicing
[ ] Camping
[ ] Gardening
[ ] Doing other activities in nature:

_____

[ ] Unsightly landscape (Due to natural reasons)
[ ] Causes hayfever/ allergic reaction
[ ] Pests (mosquitos, flies)
[ ] Bad water quality
[ ] Threatening site
[ ] Other problems (e.g. animal excrements; intruding animals or plants)

Question 2	**Question 2 (grey only)**	**Question 3**	**Question 3 (grey only)**
How important is that use/experience for you?	How severe is that problem to you?	How often do you use/do you experience this? [ ] Less than annual	What is the origin of the problem?
[ ] unimportant [ ] almost unimportant [ ] intermediate important [ ] important [ ] very important	[ ] Very low [ ] Low [ ] Intermediate [ ] High [ ] Very high	[ ] Yearly [ ] Monthly [ ] Weekly [ ] Daily	[ ] Human [ ] Mostly human [ ] Natural/ human [ ] Mostly natural [ ] Natural

Question 4	**Question 5**
By which means of transport did you get here?	Why do you do this here and not at other places?
[ ] By foot [ ] Bike, e-bike [ ] Moped, scooter, motorcycle [ ] Car, SUV [ ] Local (bus, metro, tram) [ ] Regional (bus, metro, regional train) [ ] Other :	[ ] Wilderness/nature, landscape or fresh air [ ] Tranquillity or seclusion [ ] Physical space for activities [ ] Social interaction, cultural activities [ ] Close to home, accessible, shortcut [ ] Other

If you want, you can leave a comment:
1) What do you like about the site? 2) What do you dislike or feel disturbed by?

Personal data:

City: _____

Street: _____

Postcode: _____

Gender: [ ] female   [ ] male   [ ] diverse

Age: ___ OR Age group: [ ] – 19   [ ] 20-29   [ ] 30-39   [ ] 40-49   [ ] 50-59   [ ] 60-69   [ ] 70+

Thank you for participating at the survey!

Internal information:

| Date/ day of the week:	
Time:	
Site ID:	
Interviewer:	
Weather conditions:	
Shade/sun:	
Location(Path, meadow, …):	
Moving/Resting:	
Other:	

Table A1.2: Pearson's residuals of chi-square test for benefits in urban parks. Positive values mean a positive association between age group and benefit, negative values mean negative association between age group and benefit (p<0.001). Highest positive residuals are marked in grey.

Benefit	Young adults (18-30y)	Adults (31-64y)	Older persons (65+y)
Art & buildings	0.04	0.37	-0.62
Dog-friendly	-0.04	0.93	-1.36
Gardening & environmental education	0.13	0.3	-0.64
Green landscape/aesthetics	-1.68	-0.43	3.03
Infrastructure	-1.69	2.07	-0.78
Natural elements	-1.12	-0.25	1.96
Park design & maintenance	0.4	0.46	-1.27
Regulating ecosystem services	2.05	-1.61	-0.44
Seclusion	0.26	-0.12	-0.19
Sense of place	-0.68	-0.22	1.3
Size/availability & location	2.18	-1.04	-1.48
Social & cultural interactions	-0.91	1.2	-0.55
Sport facilities	2.83	-0.7	-2.94
Wilderness	-1.65	-0.55	3.16
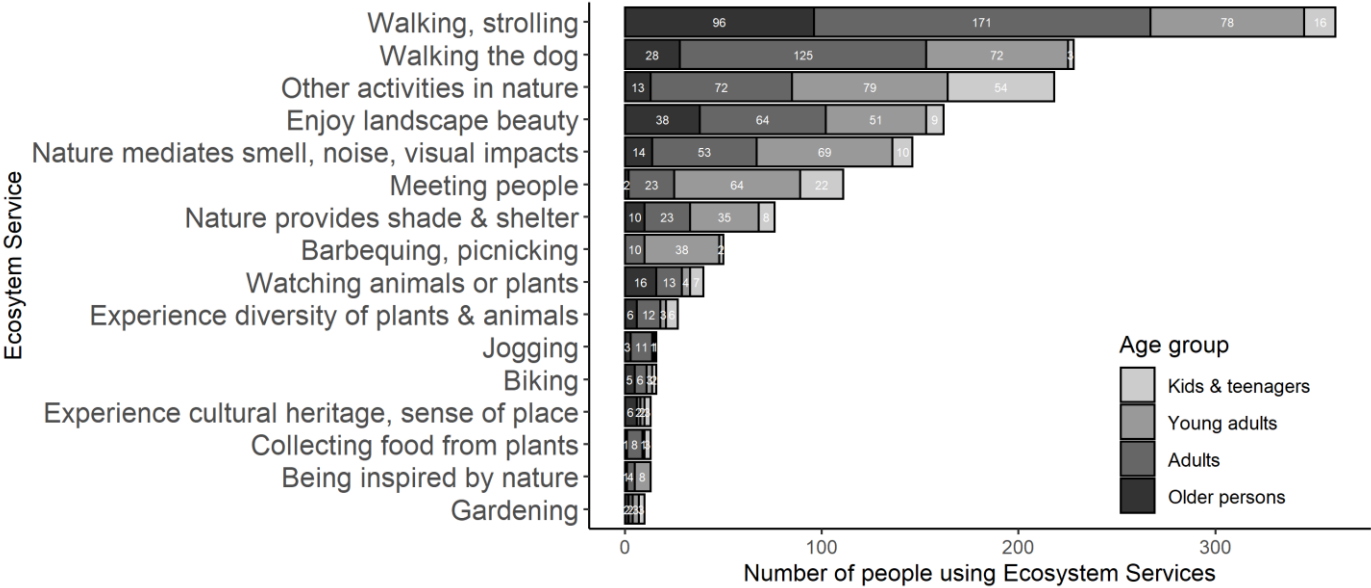
Figure A1.7: Respondents of different age groups from surveys (n=1500) in urban parks and their used ecosystem service (question with predefined ecosystem services). Ecosystem services that were used from less than 10 respondents were aggregated in "Other activities in nature" for graphical reasons.
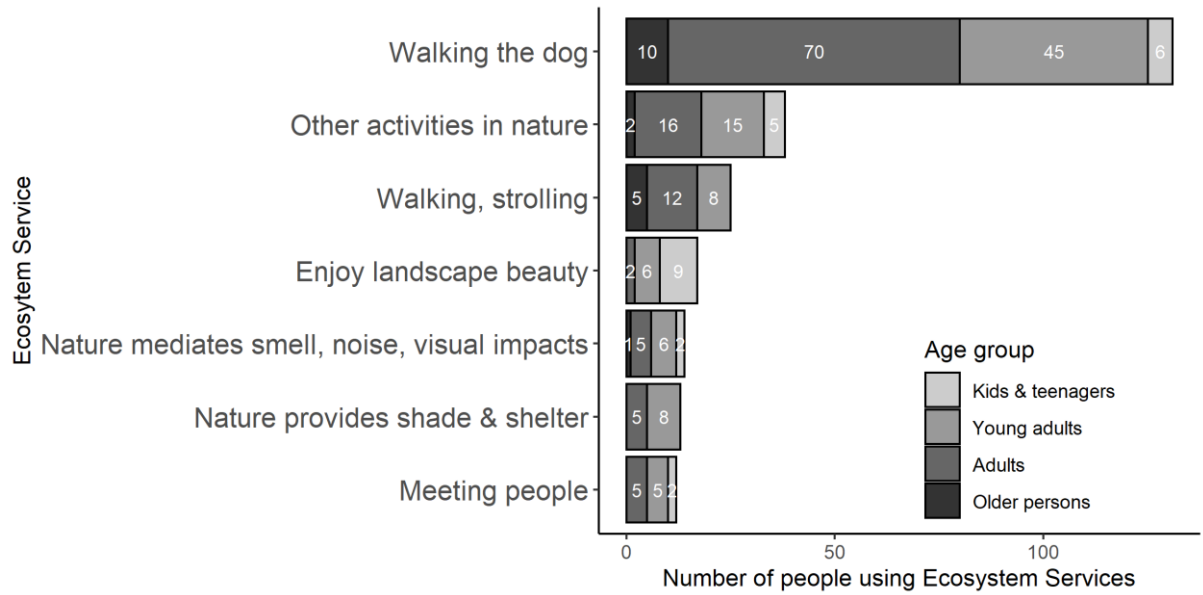
Figure A1.8: Respondents of different age groups from surveys (n=250) on brownfields and their ecosystem used service (question with predefined ecosystem services). Ecosystem services that were used from less than 10 respondents were aggregated in "Other activities in nature" for graphical reasons.
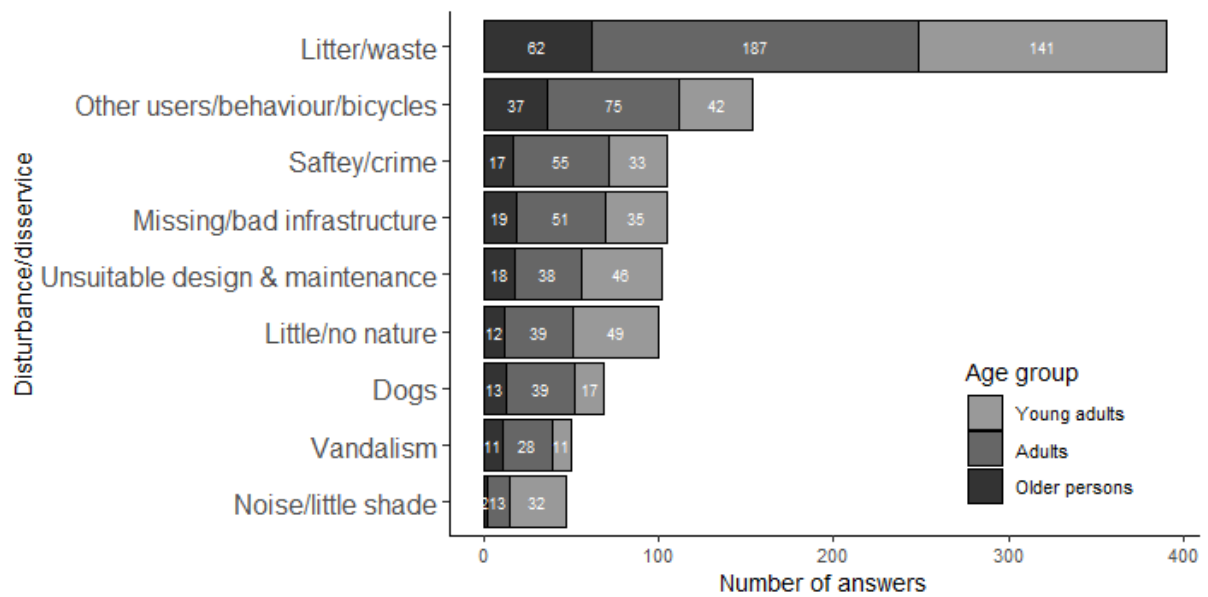
Figure A1.9: Frequencies of perceived disturbances/disservices (categorized answer from open question) in urban parks mentioned by respondents of different age groups in Leipzig. Multiple answers were possible. The white numbers display the number of answers for each age group.
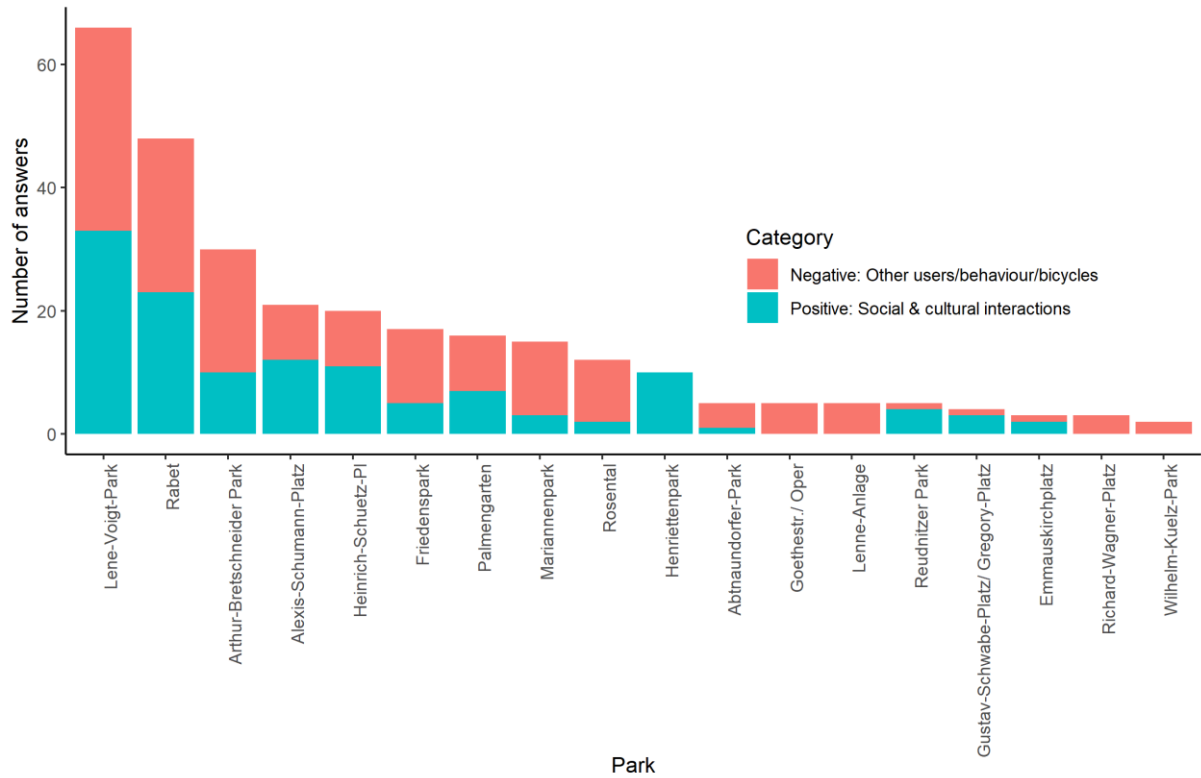
**Figure A1.10:** Trade-offs between social & cultural interactions as perceived benefits (positive) and people feeling disturbed (negative) by other users and their activities in 18 urban parks (categorized answers from open question).

Table A1.3: Pearson's residuals of chi-square test for perceived disturbances in urban parks. Positive values mean a positive association between age group and disturbance, negative values mean negative association between age group and disturbance (*p<0.001*). Highest positive residuals are marked in grey.

Disturbance	Young adults (18-30y)	Adults (31-64y)	Older persons (65+y)
Dogs	-1.59	1.18	0.37
Little/no nature	2.13	-1.14	-1.22
Missing/bad infrastructure	-0.49	0.27	0.27
Noise/little shade	3.64	-1.92	-2.12
Other users/behaviour/bicycles	-1.84	0.35	2.11
Saftey/crime	-0.81	0.84	-0.21
Litter/waste	-0.01	0.33	-0.54
Unsuitable design & maintenance	1.5	-1.41	0.15
Vandalism	-1.67	0.95	0.85
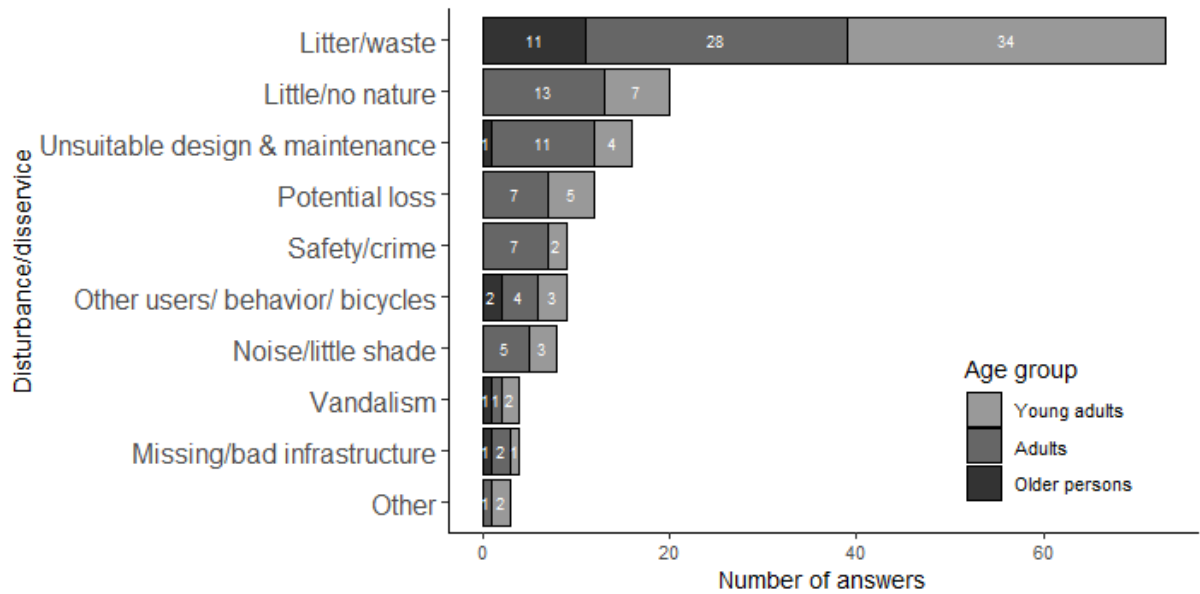
Figure A1.11: Frequencies of perceived disturbances/disservices (categorized answer from open question) on brownfields mentioned by respondents of different age groups in Leipzig. Multiple answers were possible. The white numbers indicate the number of mentions for each age group
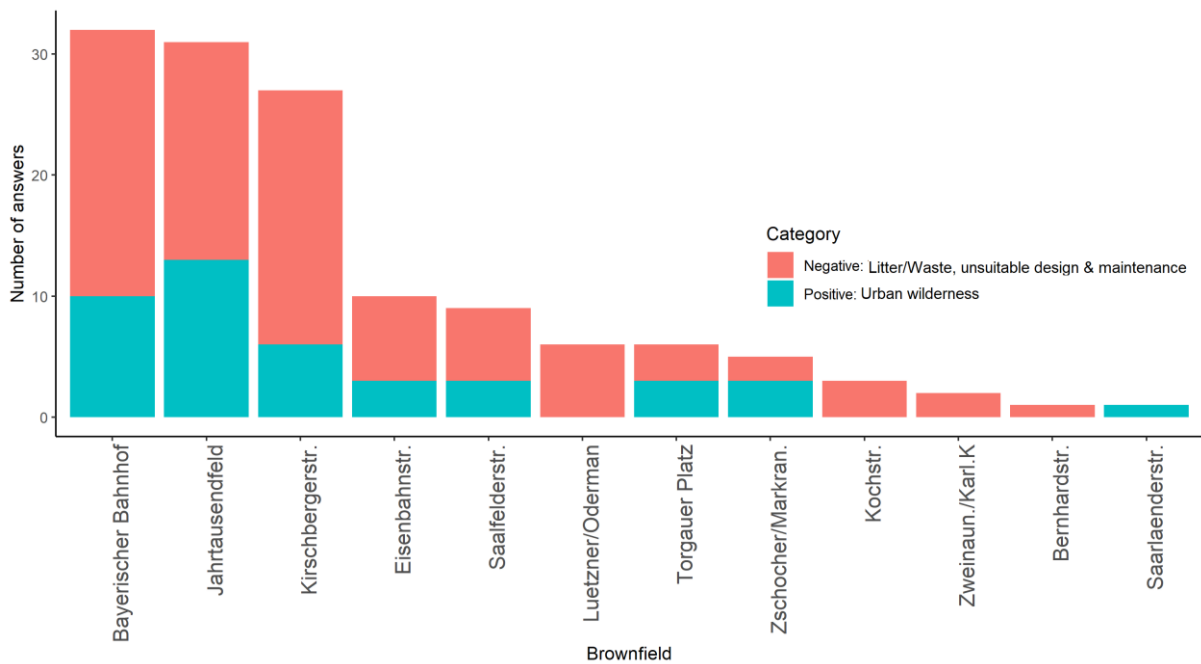

Figure A1.12: Trade-offs between urban wilderness including low maintenance as benefit (positive) and disturbances (negative) due to litter/waste and insufficient management on 12 urban brownfields, where these benefits and disturbances/disservices were specified (categorized answers from open question).

	Gardening & environmental education		Green landscape/ aesthetics		Natural elements		Regulating ecosystem services		Sense of place		Social & cultural interactions		Urban wilderness		Art & buildings		Dog-friendly		Infrastructure		Park design & maintenance		Seclusion		Size/ availability & location		Sport facilities	
Confidence interval limit	0.05	0.95	0.05	0.95	0.05	0.95	0.05	0.95	0.05	0.95	0.05	0.95	0.05	0.95	0.05	0.95	0.05	0.95	0.05	0.95	0.05	0.95	0.05	0.95	0.05	0.95	0.05	0.95
Gardening & environmental education	1	1	-0.52	0.2	-0.17	0.6	-0.44	0.5	-0.4	0.41	0.09	0.72	-0.43	-0.12	-0.59	-0.22	-0.23	0.57	-0.17	0.57	-0.02	0.59	-0.24	0.45	-0.25	0.47	0.01	0.71
Green landscape/ aesthetics	-0.53	0.19	1	1	-0.48	0.59	-0.23	0.67	-0.65	0.23	-0.44	0.52	-0.03	0.6	-0.15	0.67	-0.13	0.67	-0.15	0.72	-0.32	0.49	-0.29	0.55	-0.53	0.5	-0.33	0.57
Natural elements	-0.22	0.59	-0.44	0.61	1	1	-0.18	0.69	-0.35	0.59	-0.56	0.51	-0.21	0.49	-0.61	0.12	-0.18	0.6	-0.25	0.72	-0.46	0.37	-0.11	0.63	-0.47	0.43	-0.5	0.55
Regulating ecosystem services	-0.47	0.53	-0.21	0.68	-0.14	0.69	1	1	-0.58	0.18	-0.71	0.1	-0.21	0.38	-0.18	0.56	0.04	0.74	-0.58	0.2	-0.41	0.41	0.18	0.76	-0.52	0.17	-0.68	0.29
Sense of place	-0.38	0.41	-0.66	0.23	-0.33	0.59	-0.59	0.17	1	1	-0.3	0.59	-0.52	0.07	-0.71	-0.17	-0.47	0.35	-0.42	0.49	-0.65	0.11	-0.34	0.43	-0.48	0.42	-0.3	0.62
Social & cultural interactions	0.1	0.73	-0.43	0.5	-0.55	0.51	-0.7	0.08	-0.32	0.59	1	1	-0.72	-0.22	-0.79	-0.3	-0.4	0.49	0.57	0.92	-0.34	0.57	-0.55	0.26	-0.16	0.63	0.71	0.93
Urban wilderness	-0.42	-0.12	-0.05	0.57	-0.19	0.48	-0.22	0.4	-0.5	0.08	-0.71	-0.21	1	1	0.28	0.83	-0.35	0.5	-0.44	0.19	-0.41	0.47	-0.37	0.57	-0.59	0.45	-0.65	-0.27
Art & buildings	-0.62	-0.22	-0.17	0.66	-0.6	0.11	-0.18	0.55	-0.73	-0.18	-0.8	-0.31	0.3	0.84	1	1	-0.31	0.53	-0.68	0.04	-0.56	0.44	-0.4	0.39	-0.76	0.31	-0.78	-0.04
Dog-friendly	-0.23	0.55	-0.11	0.66	-0.15	0.57	0.01	0.75	-0.47	0.34	-0.43	0.51	-0.33	0.51	-0.28	0.51	1	1	-0.33	0.5	-0.19	0.63	0.55	0.89	-0.66	0.13	-0.35	0.51
Infrastructure	-0.14	0.56	-0.17	0.71	-0.28	0.7	-0.6	0.18	-0.4	0.48	0.57	0.92	-0.42	0.21	-0.68	0.02	-0.36	0.53	1	1	-0.34	0.5	-0.43	0.38	0.03	0.69	0.44	0.88
Park design & maintenance	-0.01	0.59	-0.33	0.5	-0.45	0.36	-0.39	0.42	-0.65	0.1	-0.3	0.59	-0.42	0.47	-0.55	0.46	-0.2	0.62	-0.33	0.52	1	1	-0.08	0.64	0.11	0.78	-0.43	0.36
Seclusion	-0.26	0.45	-0.28	0.56	-0.09	0.62	0.18	0.77	-0.36	0.46	-0.56	0.28	-0.42	0.56	-0.37	0.41	0.55	0.88	-0.4	0.39	-0.33	0.52	1	1	-0.41	0.43	-0.52	0.34
Size/ availability & location	-0.25	0.45	-0.52	0.52	-0.44	0.48	-0.54	0.19	-0.51	0.38	-0.15	0.62	-0.6	0.59	-0.75	0.26	-0.66	0.11	0.05	0.68	0.11	0.77	-0.38	0.43	1	1	-0.28	0.6
Sport facilities	0.04	0.74	-0.31	0.55	-0.51	0.53	-0.67	0.28	-0.29	0.61	0.7	0.93	-0.65	-0.27	-0.78	-0.05	-0.35	0.57	0.44	0.87	-0.48	0.39	-0.52	0.3	-0.27	0.61	1	1

Table A1.4: Lower and upper confidence intervals for 1000 bootstrapped correlation coefficients for weighted Spearman's rank-correlation of benefits in urban parks. Confidence intervals that do not include zeros (= are below or above zero) are suggesting significant correlations ($p<0.05$).

	Green landscape/ aesthetics		Natural elements		Social & cultural interactions		Urban wilderness		Dog-friendly		Freedom/ no regulations		Infrastructure		Seclusion		Size/ availability & location	
Confidence interval limit	**0.05**	**0.95**	**0.05**	**0.95**	**0.05**	**0.95**	**0.05**	**0.95**	**0.05**	**0.95**	**0.05**	**0.95**	**0.05**	**0.95**	**0.05**	**0.95**	**0.05**	**0.95**
Green landscape/ aesthetics	1	1	-0.3	0.87	-0.42	0.86	-0.27	0.88	0.03	0.96	-0.01	0.93	-0.52	0.75	0.2	0.95	-0.34	0.86
Natural elements	-0.33	0.84	1	1	-0.45	0.81	-0.18	0.89	-0.14	0.99	-0.02	0.95	-0.74	0.26	-0.55	0.72	-0.24	0.91
Social & cultural interactions	-0.43	0.85	-0.37	0.82	1	1	-0.12	0.95	-0.32	0.91	0.01	0.95	-0.26	0.91	-0.33	0.94	0.09	0.94
Urban wilderness	-0.16	0.89	-0.18	0.88	-0.16	0.93	1	1	0.09	0.97	0.73	1	-0.61	0.72	-0.12	0.91	0.39	0.97
Dog-friendly	-0.05	0.95	-0.16	0.98	-0.26	0.91	0.14	0.97	1	1	0.31	0.99	-0.74	0.6	0.2	0.94	-0.06	0.97
Freedom/ no regulations	-0.02	0.95	0	0.95	0.06	0.95	0.69	1	0.31	0.99	1	1	-0.61	0.66	-0.02	0.9	0.59	0.97
Infrastructure	-0.51	0.72	-0.75	0.17	-0.25	0.91	-0.56	0.72	-0.77	0.57	-0.61	0.62	1	1	-0.44	0.74	-0.59	0.72
Seclusion	0.18	0.95	-0.55	0.69	-0.32	0.95	-0.07	0.9	0.19	0.94	-0.09	0.88	-0.5	0.75	1	1	-0.33	0.83
Size/ availability & location	-0.35	0.85	-0.23	0.92	0.08	0.94	0.31	0.97	-0.12	0.96	0.61	0.97	-0.59	0.69	-0.34	0.85	1	1

Table A1.5: Lower and upper confidence intervals for 1000 bootstrapped correlation coefficients for weighted Spearman's rank-correlation of benefits in green brownfields. Confidence intervals that do not include zeros (= are below or above zero) are suggesting significant correlations ($p<0.05$).