

Understanding the value of ecosystem services provided by our cemeteries and burial grounds

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Breathing new life into bereavement services
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The role of cemeteries in cities

- Cemetery space is multifunctional (Woodthorpe, 2011)
- International research recognises its importance in cities beyond bodily disposal (Evensen et al., 2017, Goh and Ching, 2020, Raem, 2021)
 - Spaces for recreation/reflection/leisure
 - Spaces for nature
 - Ecosystem services - cultural, regulating and provisioning?



But are they green infrastructure?

- Green infrastructure: “A **network of multi-functional green and blue spaces** and other natural features, urban and rural, which is capable of delivering a wide range of environmental, economic, health and wellbeing benefits for nature, climate, local and wider communities and prosperity.” (MHCLG, 2021)
- Cemeteries are rarely considered in local planning documents:
 - 38% of LAs had no policies for cemeteries
 - **14% = green infrastructure**
 - **14% = green/open space**
 - 10% = suitable for the green belt
 - 11% include a site allocated for a new/extended cemetery
 - 5% have specific policy
- But often missing from research on the benefits of green infrastructure / greenspace
- We examined the extent to which cemeteries in England are already contributing to greenspace provision and the potential for ecosystem service delivery

What are Ecosystem Services?

Provisioning

e.g. food, timber,
fibre, energy, water,
medicines

Regulating

e.g. pollination,
water and air quality
improvement, flood
protection

Cultural

e.g. physical activity,
education, heritage,
spiritual, recreation

Supporting

e.g. biodiversity, water cycle, soil formation

ESs from burial grounds

Type	Service cices.eu
Provisioning	Water supply due to permeable surfaces
	Food from pollination or vegetation onsite
	Timber from maintenance activities
Regulating	Flood risk management and reduction in water pollution
	Air quality improvement, reduction in urban heat island
	Visual screening
	Pollination, seed dispersal, genetic diversity
	Decomposition
	Regulation of soil quality
Cultural	Education and heritage, particularly in older cemeteries
	Religious and spiritual meaning
	Recreation, physical activity, restoration

Natural England's AGS (Accessible Greenspace Standards)

Name of criterion	Size distance criteria	} Priority AND/OR
Doorstep greenspace	At least 0.5ha within 200m	
Local greenspace	At least 2ha within 300m (straight line) or 500m (actual walking/cycling route)	
Neighbourhood	10ha within 1km	
Wider neighbourhood	At least 20ha within 2km	
District	100ha within 5km	
Sub-regional	500ha within 10km	
Local Nature Reserves	LNRs of at least 1ha per 1000 population	

+ at least 3ha of publicly accessible greenspace per 1000 inhabitants

[GI Standards](#)

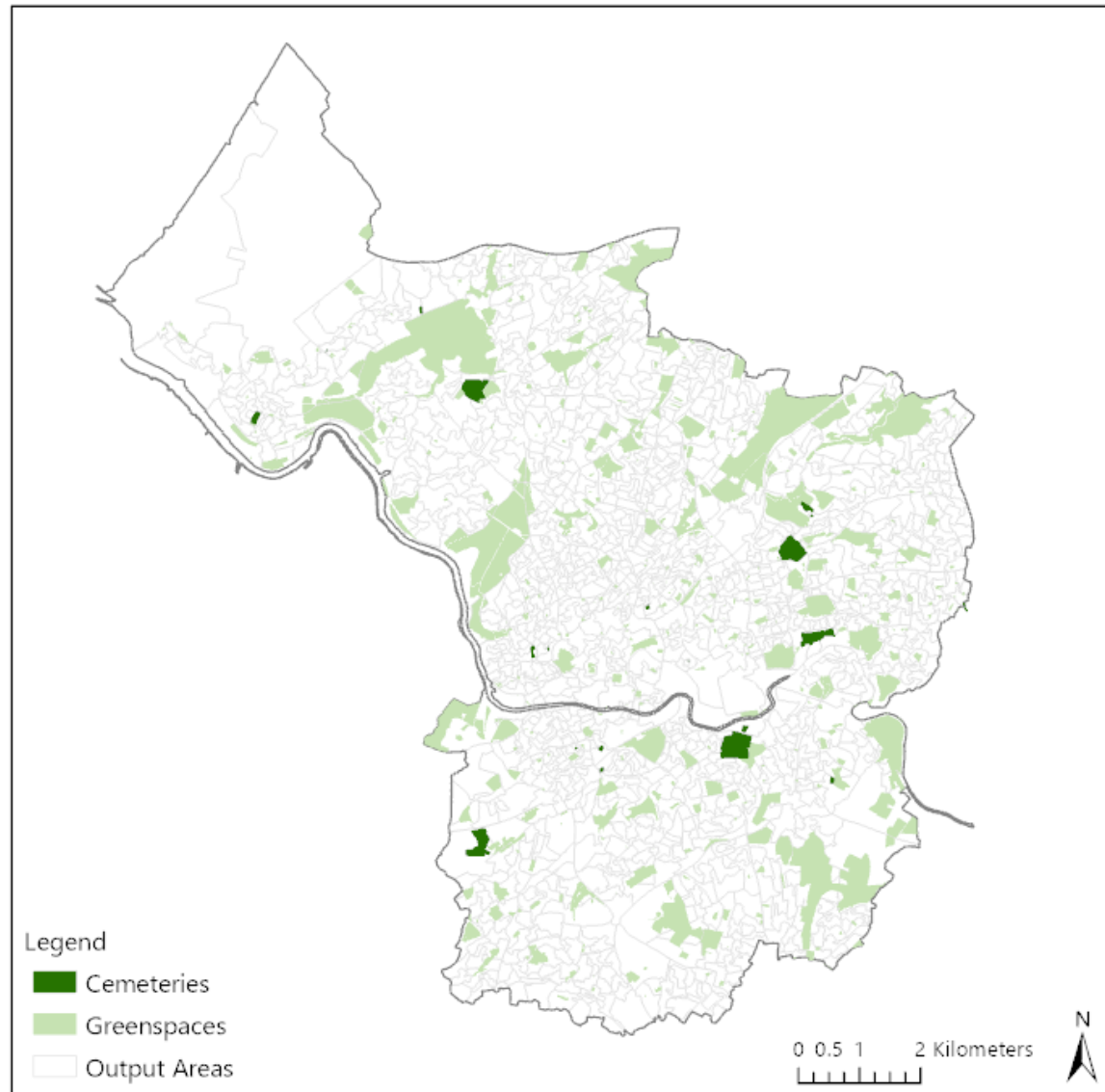
Cemeteries as greenspace

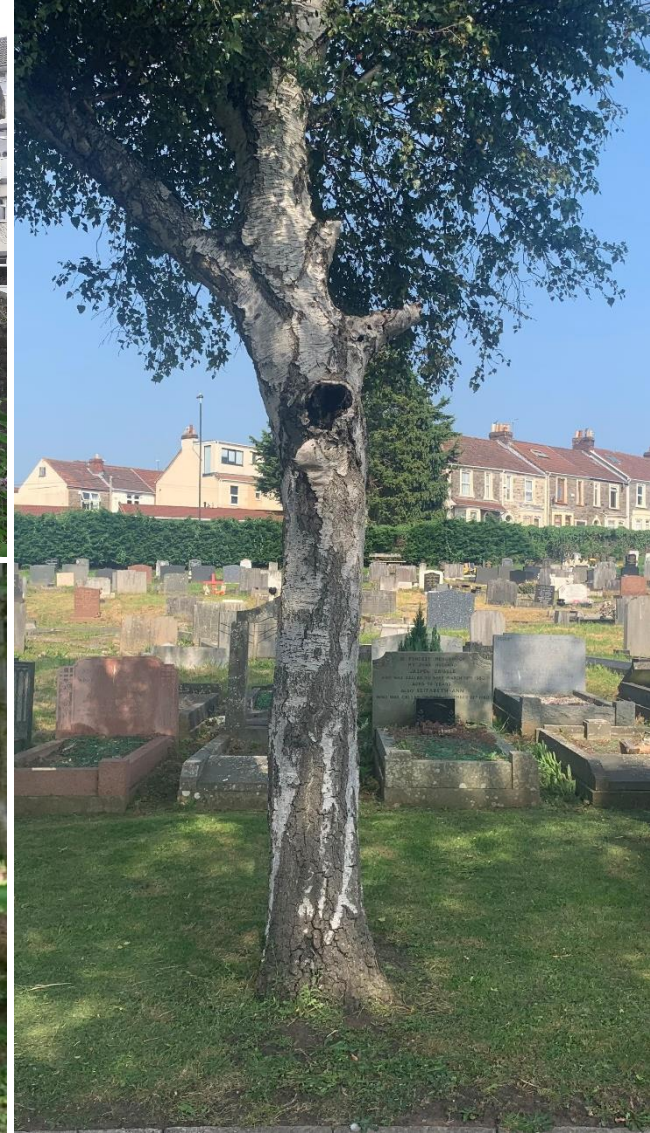
	Proportion of people with access to		
	Doorstep	Local	Neighbourhood
Any greenspace type	43.4%	45.1%	58.6%
Includes cemeteries	3.3%	4.3%	7.4%
Only cemeteries	2.1%	2.2%	2.6%
	1.18m	1.09m	1.39m people

- Cemeteries contribute around 4% of the total greenspace area in English towns and cities.
 - Important in areas of high-density housing, with higher levels of flats, social rent, unemployment, numbers of children and lower car ownership
 - And areas with greater than average levels of ethnic diversity

A case study of Bristol's cemeteries

- 19 cemeteries met the AGS criteria
- Surveyed 11 which were the only greenspace for some people
- National Greenspace Survey Tool





Cemeteries in Bristol

Site	Total domain score (maximum; weighting)						
	Area (ha)	Access (11; 18%)	Recreation facilities (25; 16%)	Amenities (16; 22%)	Natural features (16; 20%)	Incivilities (14; 24%)	Total Score /100
Arnos Vale Cemetery	18.43	8	8	9	9	14	71.6
Wesleyan Burial Ground	0.50	0	0	0	4	14	29.9
St John's Burial Ground	0.54	6	5	2	8	12	51.5
Avon View Cemetery	8.73	5	2	2	3	14	39.9
Birdcage walk	1.06	4	6	6	7	14	55.2
Greenbank Cemetery	12.99	5	4	2	7	13	48.5
Canford Cemetery	11.71	6	6	6	8	14	60.7
Henbury Cemetery	0.58	3	3	5	3	13	39.9
Shirehampton Cemetery	2.15	2	1	2	3	13	32.8
St. John's Churchyard	0.57	6	4	3	7	14	53.1
South Bristol Cemetery	11.00	2	3	5	5	13	42.7

Quick wins for wildlife (and people)

- Leave areas with longer vegetation (e.g. boundaries)
- Wildflowers if possible
- Limit pesticide use
- Include a diversity of vegetation
- Include trees (e.g. fruiting, berries) – heavy standards
- Select native species or those that are climate adapted
- Incorporate built features (e.g. bat and bird boxes, bug hotels)
- Select species that will contribute to local biodiversity action plans
- Create networks with other habitats
- Get people involved in design and delivery
- Include signage to let other people know
- Wildlife-friendly maintenance plan for contractors



Cemeteries as green infrastructure

- Management for nature
 - Space for tree planting ambitions?
 - BNG?
 - History, place attachment
 - Walking and cycling
 - Part of the multifunctional network
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- Balanced with their purpose as sacred spaces of remembrance



Future research

- Sustainable Cemeteries:
 - Public perception of acceptable use of cemetery space?
 - Planning for new cemeteries - building in ecosystems services by design
- Potential for energy generation:
 - What are the technical and social/cultural barriers to installing Ground Source Heat Pumps (GSHPs) in cemeteries?
 - To what extent could GSHPs installed in cemeteries contribute to the heating/energy needs of nearby community buildings?
 - What is the potential scale and impact of implementing cemetery-based GSHPs across England?
- If you are interested, katie.mcclymont@uwe.ac.uk would love to hear from you!



Thank you!

Open access paper: [Planning Cemeteries: Their Potential Contribution to Green Infrastructure and Ecosystem Services](#)

Blog: [New research suggests that cemeteries provide many of the same benefits as green spaces](#)

Other blogs: [Centre for Sustainable Planning and Environments blog](#)

CeMi: [Cemeteries and Crematoria as public spaces of belonging in Europe: a study of migrant and minority cultural inclusion, exclusion and integration](#)