



Bristol Tree Forum response to the Small Sites Metric consultation

1. Urban area habitats do not include trees.

Urban
Allotments
Artificial unvegetated, unsealed surface
Bioswale
Brown roof
Built linear features
Cemeteries and churchyards
Developed land; sealed surface
Extensive green roof
Facade-bound green wall
Ground based green wall
Ground level planters
Intensive green roof
Introduced shrub
Rain garden
Sand pit quarry or open cast mine
Sustainable urban drainage feature
Un-vegetated garden
Vacant/derelict land/ bareground
Vegetated garden

- a. Small sites often contain trees.
- b. The area habitat category used in Biodiversity Metric 3.0 (BM3.0), 'Urban Tree' should be added. This habitat is listed in tabs 10 & 11 anyway.

2. There are two tables for allocating tree areas sizes

- a. Is it necessary to have two tables?

Table 1

Street trees			
Tree size	Diameter M	RPA Radius M	RPA ha
Small	0.1	1.2	0.0005
Medium	0.3	3.6	0.0041
Large	0.5	6	0.0113

- b. [Stem] Diameter should be in expressed centimetres, not metres. This is the standard way of reporting stem diameters (also called DBH). If it is to be expressed in metres, it should be accurate to two decimal places so that the relationship between stem diameter and RPA radius can be understood.



- c. Biodiversity Metric 3.0 not longer uses the category ‘Street Tree’. ‘Urban Tree’ replaces it. This should be used in the heading.

Table 2

Street trees			
Tree size	Diameter M	RPA Radius M	RPA ha
Small	0.1	1.2	4.5216
Medium	0.3	3.6	40.6944
Large	0.5	6	113.0400

- d. See 2.a above
- e. The RPA ha values are wrong - see table 1

3. These tables are unworkable

In our view these table are unworkable because they give no guidance on how the table is to be interpreted nor offer any logical way of allocating a given tree with a given stem diameter to one of the three tree size categories.

Here is an extract from an email we recently sent to a respected ecologist who was involved in the development of BM3.0. It explains our concerns about the use of this table in BM3.0:

“I have just finished a two week planning inquiry where, amongst other things, we made representations about how table 7-2 of the new Metric should be interpreted. This is the table:

TABLE 7-2: Urban tree size by girth and their area equivalent

Size	Diameter at Breast Height (cm)	Stem Diameter (cm)	RPA (radius in metres)	Area equivalent (ha)	No. of Trees equivalent to 1 ha
Small	30cm	10cm	1.2m	0.0005 ha	2,000 trees
Medium	90cm	30cm	3.6m	0.0041 ha	244 trees
Large	150cm	50cm	6 m	0.113	89 trees

Note the error in the second column heading - 'Diameter' should be 'Girth'. A similar table first appeared with BM2.0, but without the error.

In the course of our discussions, the applicant's ecologist explained that he and his colleagues apply the table by assigning urban trees as follows: DBH less than 30 cm = Small, DBH between 30cm and 50cm = Medium, and DBH >=50cm = Large.



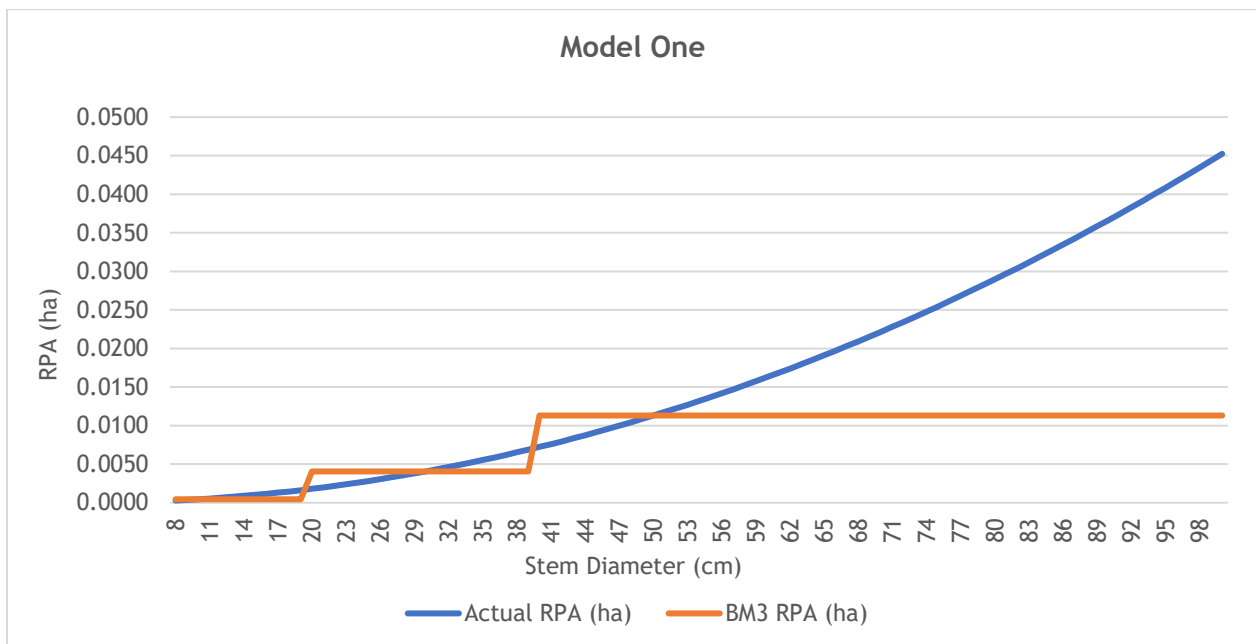
We pointed out that the effect of this is significantly to undervalue the habitat area of urban trees - all trees with a DBH greater than 10, 30 or 50 cm will have their habitat areas undervalued.

We said that, on its face, the table is unworkable, but by way of compromise (and because we must find a way to use it while it applies) it would be better to set the ranges to Small = DBH <20cm. Medium = DBH >= 20 cm and <40 cm and Large = DBH >=40 cm. This is still not ideal but at least it undervalues fewer urban tree habitats.

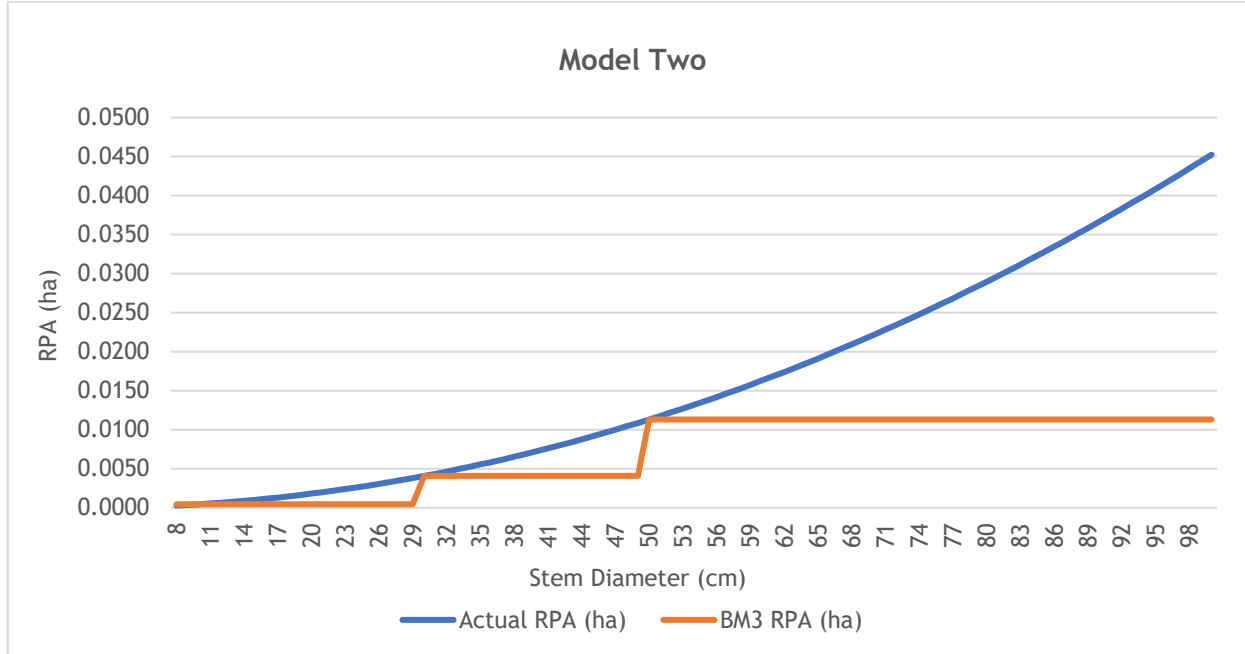
It is surprising that this table is used at all! As you know, all planning applications which will impact trees should produce a BS 5837-compliant Arboricultural Impact Assessment. This will report DBH and RPA and canopy radii for each tree surveyed. Why not use these data to calculate the true habitat areas of each tree without having to try to use this table?

We think that the tree's canopy area should be used. This is the best proxy for valuing tree habitat and is widely adopted when measuring the ecological value of trees. RPA is an artificial construct designed only to protect trees during construction and, as far as we can see, bears little or no relation to a tree's biodiversity value.”

To illustrate our point, we have calculated the Root Protection Areas (RPA) for trees with stem diameters from 8 cm to 100 cm.¹ We have then modelled the two scenarios set out in the email above - Model One where the step changes from Small to Medium then Medium to Large occur at 20 cm and 40 cm and, Model Two, where they occur at 30 cm and 50 cm. These are the results shown as graphs:



¹ RPA is based on a radius of 12 x DBH.



In both cases, the majority (all bar three in the case of Model Two) of habitat areas are discounted as a result of the Urban Tree area size constraints imposed by the Metric such that, by the time the area habitat of a tree with a DBH of 71 cm is measured, it has been discounted by 50%. If the tree’s DBH is 100 cm, then the discount is 75%. Trees like this are often veterans which offer a very rich biodiversity value.

Why should this be so? No other area habitat has had sort of discount imposed.

In our view, it would be far better if the actual, measured RPA of a tree was used, or better still, the tree’s canopy area (also reported in a BS 5837-compliant Arboricultural Impact Assessment). Tree canopy is a far better proxy for the habitat that an tree provides than using its RPA.

Our modelling calculations are set out here - [BM3 RPA comparison](#).

Bristol Tree Forum

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