Appendix 1
Hampstead Heath's Hedges and their Management
July 2013

Contents

Introduction

1. Hedges are wonderful visual features, attractive in their own right and dividing up the landscape. They and their associated habitats are of prime importance to the biodiversity of the Heath for both flora and fauna.
2. The former agricultural areas of the Heath – Parliament Hill Fields, Kenwood and the Extension – would once have been criss-crossed with stock-proof hedges. Many of those present in the mid-19th century remain today, but not in their original form. Only the hedgerow trees remain from some, while others have expanded laterally into wide bands of trees and shrubs. Of only a few can no trace now be found.
3. In recent years many hedges on the Heath have been managed by laying, coppicing, topping and gapping up. New hedges have also been planted, some where former hedges grew, others in entirely new places.
4. A survey was carried out in 2012 to investigate the current resource of the hedges on Hampstead Heath and to produce a plan for future management.

The survey

5. What can today be termed a hedge is a good question in the context of the Heath. What we call a hedge, such as Hedge 3 on Parliament Hill, is often more like a corridor of woodland than a classic hedge characterised by dense shrubs

and a few metres wide and high. Recently planted hedges are the exceptions, being easily recognised as such.

6. Linear barriers of shrubs or of trees with shrubs beneath were included in the survey if they were less than about 20m wide. Major hedges marked on 19th century maps which now lie adjacent to woodland were also covered if at least shrubby vestiges of the hedge could still be discerned. All these are termed hedges for the purpose of this report.
7. Lines of trees adjacent to ponds, such as those to the west of Stock and the Mixed Bathing ponds, were excluded, as were lines of trees without any hedge shrubs below them. Regularly-clipped amenity hedges, such as those around the tennis courts at Parliament Hill, were also omitted.
8. Information recorded included a brief description of each hedge, length, an estimate of average height, width and density of the shrub canopy when in full leaf, ground flora, shrub and tree species, bordering habitat, and evidence of planting and management. An assessment was made of each hedge's biodiversity, landscape and historical interest, as well as future management which might advantageously be undertaken. Photographs were taken.
9. The survey was too extensive to be carried out in entirety at the optimal time of year. Most field work was carried out between May and September 2012, although due to unforeseen circumstances a few areas could not be surveyed until winter.
10. A total of 7.0km of hedges were surveyed, as shown in figure 1.

What constitutes a true hedge?

11. What is a real, true hedge? The original main purpose of a hedge was usually to confine stock, and a true hedge could be defined as one which is, or could be made (e.g. by laying), into a dense, relatively narrow, largely continuous barrier not more than say two to three metres high, with or without an overstorey of trees. 'Relatively narrow' is a matter of judgement, but being generous is here taken as up to about five metres wide.
12. Hedge shrubs have to receive enough light to thrive; hedges where the shrubs are heavily shaded by trees do not do well, and gapping up with additional stock is rarely very successful unless more light is provided by felling or raising the crowns of trees, which is often undesirable for other reasons. Lines of many large, shading trees are therefore not here considered true hedges unless they have dense shrubs beneath the canopy.
13. Figure 2 shows the locations of hedges where most of the length currently fulfils these criteria for 'true hedges'. They total 1.9km in length. Those shown in blue are planted since the late 1940s, most of them in the last 30 years. Only those shown in yellow, totalling 502 metres, may contain some component from the 19th century or earlier, though all of these include much recently planted or naturally colonised material.
14. 1.7km of hedges were recorded as having a shrub layer more than an estimated five metres wide. Most of these emanate from the 19th century or earlier. Although no longer retaining a true hedge-like character, these belts of trees and

shrubs make fine visual features and are of great significance for biodiversity, especially if the understory is dense, providing for example excellent feeding, roosting and nesting places for birds.

15. Many other hedges contain so many trees that they could not be managed effectively as true hedges without cutting down some of these.

What has become of our old hedges?

16. Figure 3 displays the locations of probable field boundaries shown on maps of the 1860s. Most of these would, at that date, presumably have comprised hedgerows, although boundaries with Kenwood or other external properties or roads or tracks might have been fences or railings.

17. Many old trees in the boundaries of the 1860s are present to this day. Figure 4 is a map of the trees identified as veteran in the Veteran Tree Survey carried out by Heath Hands; most are along old hedge lines. There are fine examples of these on the Extension and within what is now woodland on South Meadow, for example.

18. Contrasting with trees, far fewer shrubs remaining from the old field boundaries have survived..

19. Some boundaries may not have been in a functional, stock-proof state in 1866. An example is shown below, depicting the state of a hedge, probably Hedge 2 or Hedge 3, in 1894.

Photo of either Hedge 2 or 3 in 1894

20. Figure 5 shows those hedges containing significant remnants from the 1860s or before, in the form of old trees and/or shrubs. Two examples of hedges containing obviously old shrubs are the Saxon Boundary, where ancient hawthorns survive (see photo below), and the western end of Hedge 2, containing large old hazel and hawthorn stools.

Old hawthorns along the Saxon Boundary

Planting and new hedges

21. About 2.3km of hedgerow have been planted, replanted or significantly gapped up with native species over the past 25 years or so, as shown in figure 6. Of these, entirely new hedges total just over a kilometre long.

Hedges and biodiversity

22. Hedges and their associated habitats are of great value for fauna, notably for birds, invertebrates, mammals and bats for feeding, breeding and shelter and, in the case of bats, for route-finding across open country. For many groups of animals, including birds, the Heath's hedges and hedgerow trees are at least as rich, if not richer, than its woodlands. By contrast, although the Heath's hedges are important for tree and shrub species, the ground flora is disappointingly poor.

23. An ideal hedge for biodiversity should:

- Possess a dense shrub layer which starts at ground level. Quite a few of the Heath's hedges are bushy, for example many of those on the Extension, and management such as laying or coppicing aims to preserve and increase this further. As the Heath's woodlands tend to be poorly structured, with little beneath the trees, hedges contain a significant proportion of the Heath's shrubs apart from holly, which is abundant in woodland. Some hedges, notably on the Extension, are too heavily shaded to allow a thriving shrub layer to be created.

- Be formed from a variety of shrub species. Some species are particularly associated with hedges, such as hawthorn, hazel, buckthorn, spindle and, perhaps to a lesser degree, wych elm and Midland hawthorn. Our old hedges have lost many of their rarer shrub species, though Midland hawthorn and wych elm still survive from former times in some places. A wide range of shrubs has been included in many of our more recently planted hedgerows and for gapping up existing ones.

- Contain hedgerow trees of a range of species and ages, including veteran. Many of the Heath's hedges contain wonderful old trees, though in quite a few cases, notably on the Extension, these are so numerous that the hedge below has suffered. In addition, if there are too many mature trees this inhibits the younger trees which will in time replace them. As with shrubs, some tree species are particularly linked to hedgerows. On the Heath these are wild service, wych elm and crab apple, which are all relatively uncommon in England, and field maple, a more common species. Figure 7 displays a map of hedges containing wild service, wych elm or crab apple.

- Be bordered by adjoining habitat such as brambles, thistles and long grass, as well as ditches. Many of the Heath's hedges are bordered by good habitat, such as Hedges 1, 2 and 3 and some of the Extension hedges. Ditches also run within or adjacent to many of the latter, providing useful complementary habitat.

- Be relatively un-shaded. Hedges provide many of the berries which birds feed on in autumn and winter, and the shrubs fruit more prolifically if they receive plenty of light. Those with an un-shaded south or south-east facing aspect are particularly important, proving warm habitats for feeding, breeding and shelter. Notable here are several hedges on the Extension, and Hedges 1, 2 and 3 on Parliament Hill.

- Be undisturbed: an ideal hedge will not be bordered or crossed by footpaths or roads. Brambly and thistly edges are particularly important, especially in the context of the Heath, protecting hedges from disturbance by dogs and people (as well as providing valuable habitat in their own right).

- Be continuous.

24. There is such a diversity of hedges on the Heath that it is impossible to rate them all according to biodiversity interest. Information on a selection of nine hedges with important biodiversity features is given in table 1and figure 8. The list is not exhaustive.

Hedge management

25. If hedges are not managed, they tend eventually to grow into tall, leggy and gappy structures, and may expand laterally. The original shrubs may die through competition and shade. Once this has happened it can be very difficult to restore the former character of a true hedge, though they still need to be managed to retain and enhance their landscape and wildlife values.

26. Laying is the traditional way hedges were managed (see photos below). This preserves the hedge and its shrubs, and leads to a dense structure. If repeated periodically, say every seven to ten years, it can preserve the hedge indefinitely. Once layed, the hedge can be allowed to regrow immediately or can be topped annually or biennially to maintain it. It has to be left to grow again for several years before re-laying is carried out.

A recently layed hedge near the Goodison Fountain (above), and the same hedge the following summer (below).

27. It is not practical to lay all the Heath's hedges. Some contain many fine veteran trees, heavily shading the shrubs beneath, which would not thrive with laying. Others have developed into tall, wide barriers of great landscape value; laying the full width would change the landscape and would not recover a hedge-like character without removing trees and shrubs to reduce the width. Examples are Hedges 2 and 3 on Parliament Hill Fields.

28. It may still be beneficial to manage a band of shrubs and trees along the edges of hedges which are now very wide, e.g. by coppicing or laying. This can produce a band of thick growth of much greater biodiversity value than drawn up shrubs and young trees, especially to birds and invertebrates. This had been successfully tried in a number of places, for example on Hedge 3.

29. Alternatively, the full width of wide hedges can be layed, leaving some saplings to grow on into trees if appropriate. This can substantially alter the landscape, creating a shrubby barrier rather than a band of young trees, but it does ensure continuity, preventing the closely-spaced trees from becoming ever more drawn up. The eastern end of Hedge 1 was cut right through in this way in March 2013.

30. 'Gapping up' by planting new shrubs may be required where gaps have developed.

31. Existing hedgerows have been managed on the Heath and new ones planted. In 2012, 105 metres of hedge were layed and about 50 metres of new hedge were planted. Some 219 metres of hedge were layed or coppiced in the early months of 2013.

32. A programme for continuing management is proposed in table 2 and figure 9. Under this schedule, all suitable hedges, totalling just over a kilometre, should have been brought into appropriate management by 2022. This total excludes hedges which are topped or clipped annually, such as some near East Heath Bothy, and newly planted hedgerows (such as in Springett's Wood) which may or may not require management by then.

33. When hedges are gapped up or newly planted, stock is obtained from commercial nurseries. The provenance of this stock is normally required to be south-east England. However, it would be ideal if progeny from shrubs and trees actually growing on the Heath could be obtained, at least for the rarer species of tree and shrub. A priority would be Midland hawthorn, which can still be found in a few places on the Heath, and which might be grown from seed. Cuttings could also be taken from an old crab apple, now in a very poor state, found in a former hedge on the Extension. This appears to be the native species (although some botanists question whether the crab apple is truly native to Britain).

34. Another species worth propagating would be hazel. Because of the difficulty of obtaining nuts from wild trees, due to the ravages of grey squirrels, hazel plants obtained from nurseries are normally grown from nuts obtained from Kentish cobnut orchards. Kentish Cob is a domestic variety of hazel close to but not identical to the native species. Nurseries do not admit their stock is grown from Kentish Cob nuts, and may not realise the implications. Genes of our native stock are therefore being diluted throughout the country. It might be possible to obtain rooted cuttings cut from very old stools growing on the Heath, or to layer suckers

so that they root. Such stools can be found in a number of hedgerows, for example the western arm of Hedge 2.

35. Wild service, which is associated with hedges, has recently been grown from berries collected from trees on the Heath and a programme of planting these out has already begun. It is planned to restore a line of oaks marking an old boundary across Tumulus Field, and natural seedlings growing on the Heath will be used.

Conclusion

36. Hampstead Heath possesses a great number of hedgerows. A large proportion of those present today date back to the 1860s or before, but their character has changed very considerably since that time: although many ancient trees are still present, most of the original shrubs have disappeared in all but a few cases, and many of the old hedgerows now resemble narrow belts of trees rather than classic hedgerows. However, relict hazel and hawthorn stools are present in some.

37. New hedges have been planted, especially over the past quarter century.

38. The value of the hedges historically and for the landscape is immense. The hedges are also of very great value for nature conservation, supporting a wide range of fauna and to a lesser extent flora. They are of particular importance for birds and for bird watchers.

39. Management will prolong the life of the hedges and ensure that they continue to be of optimal value to nature conservation, its enjoyment, and the Heath's landscape.

Figures

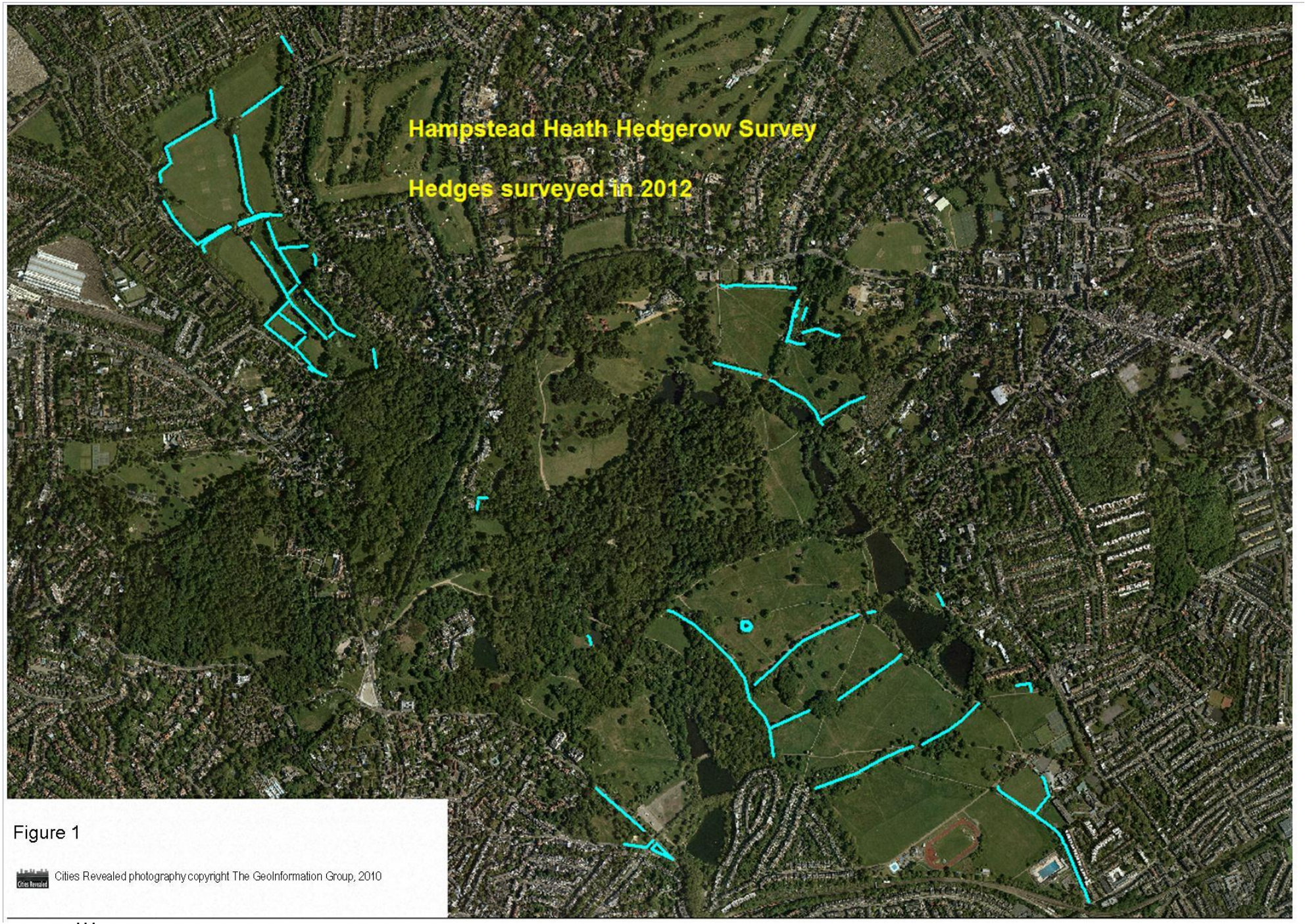

Figure 1

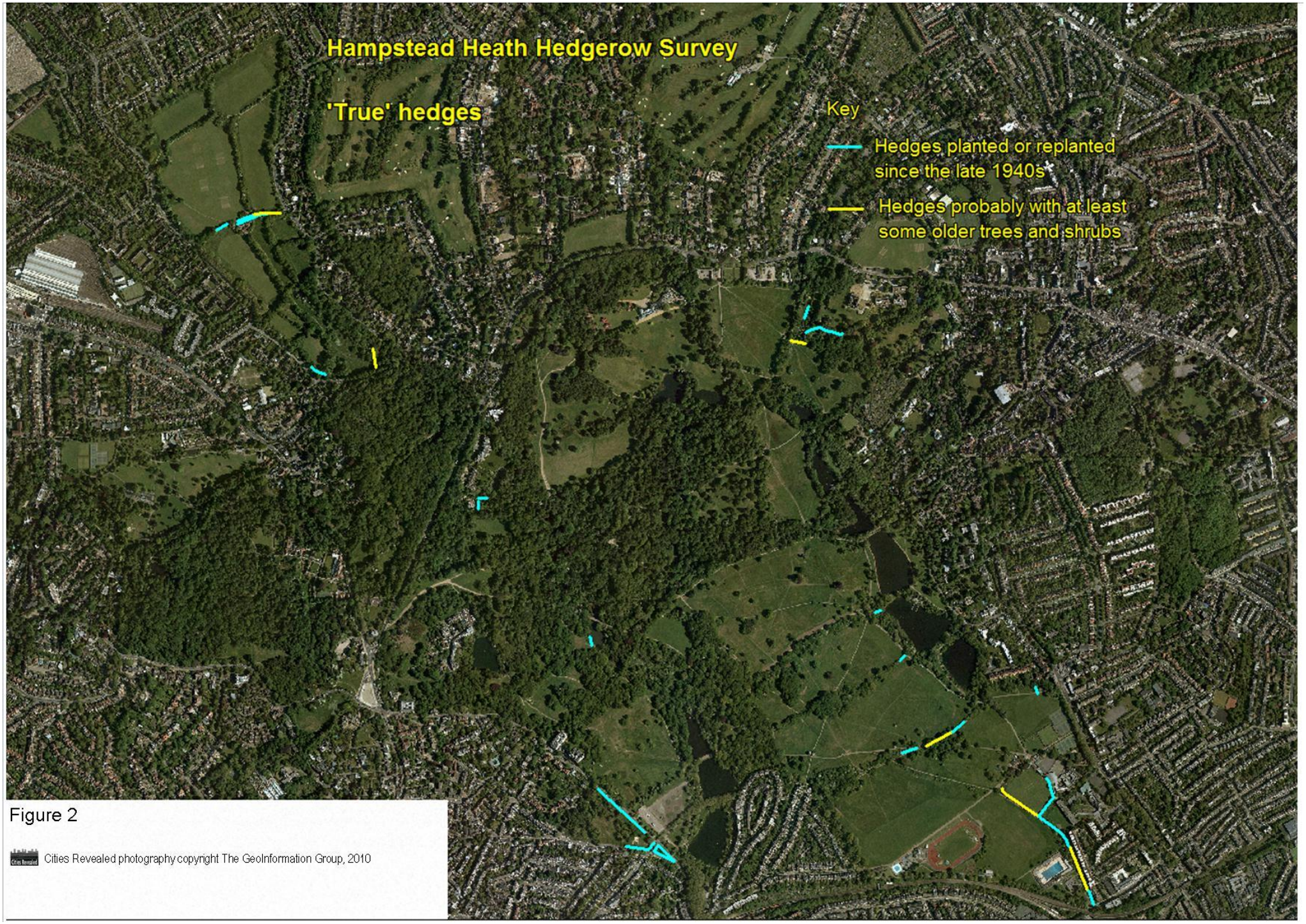

Figure 2

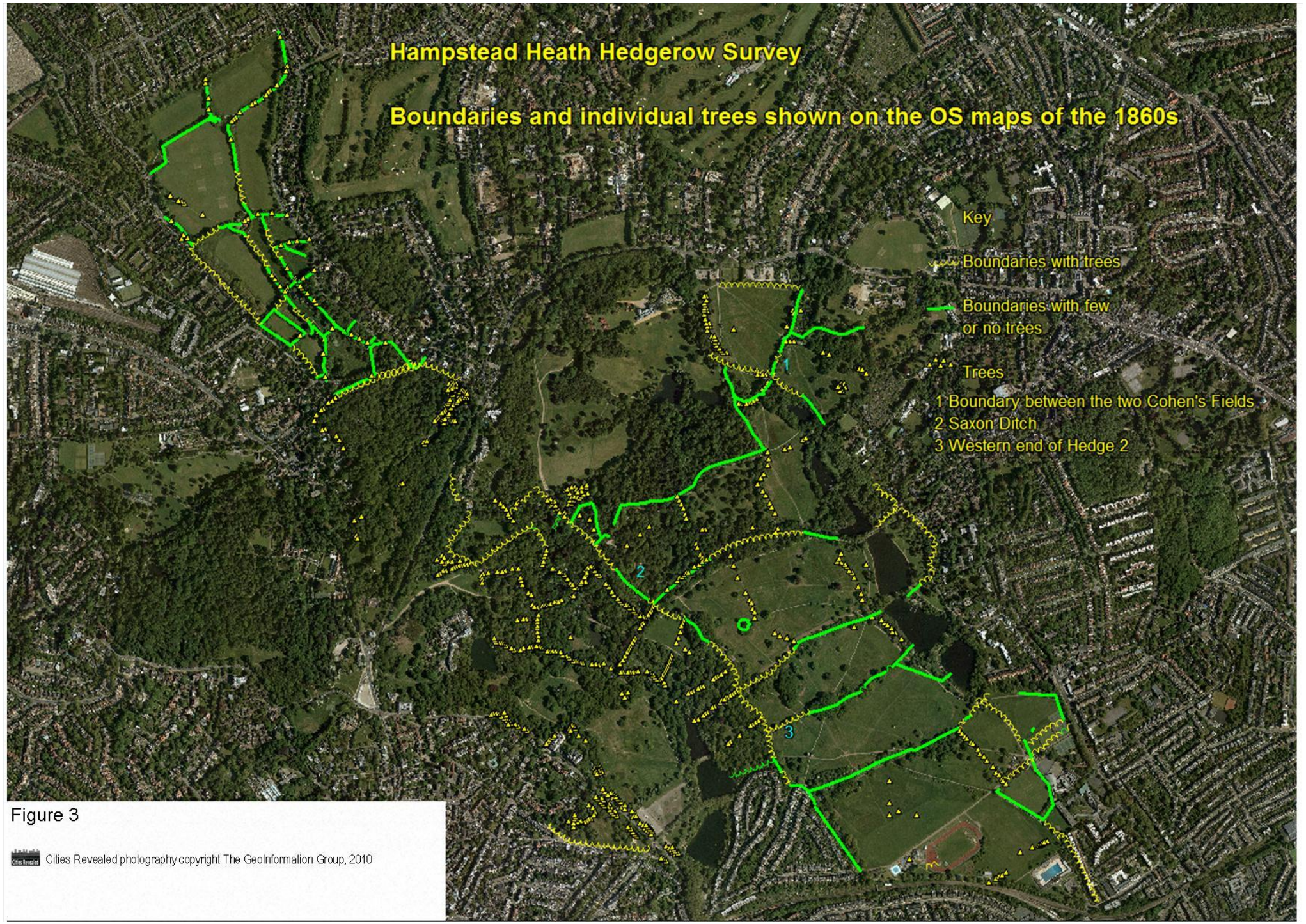

Figure 3

Figure 4

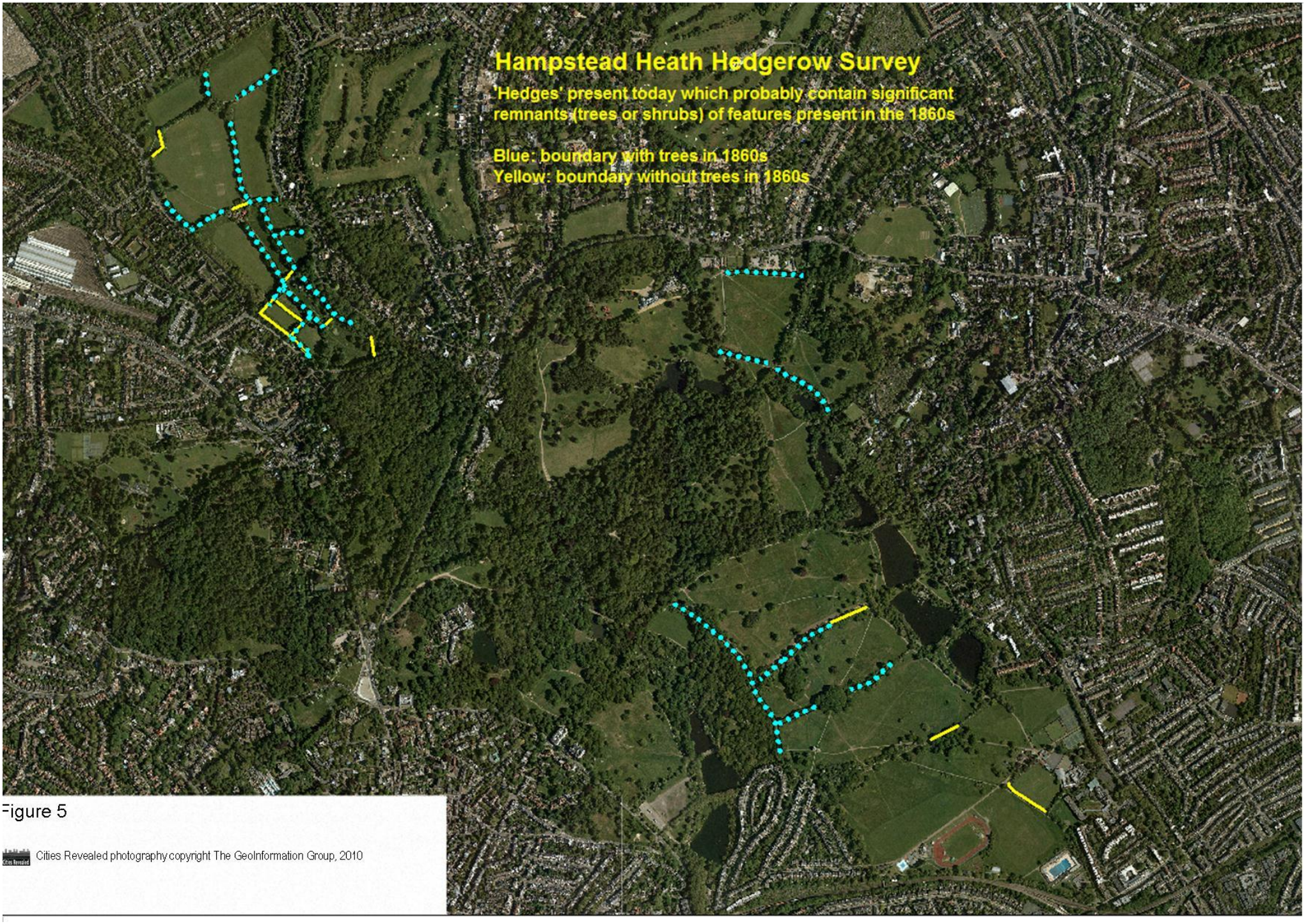

Figure 5

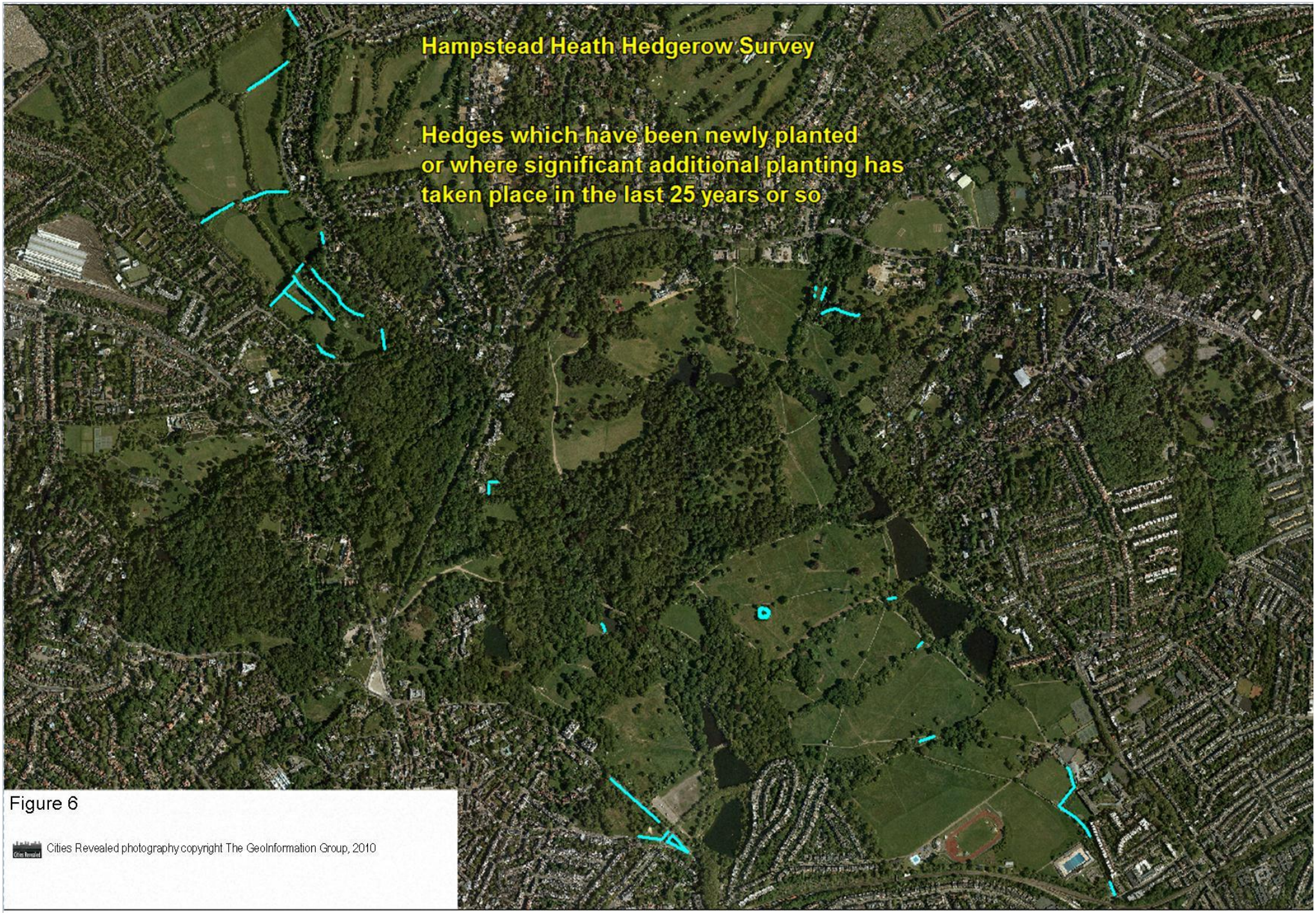

Figure 6

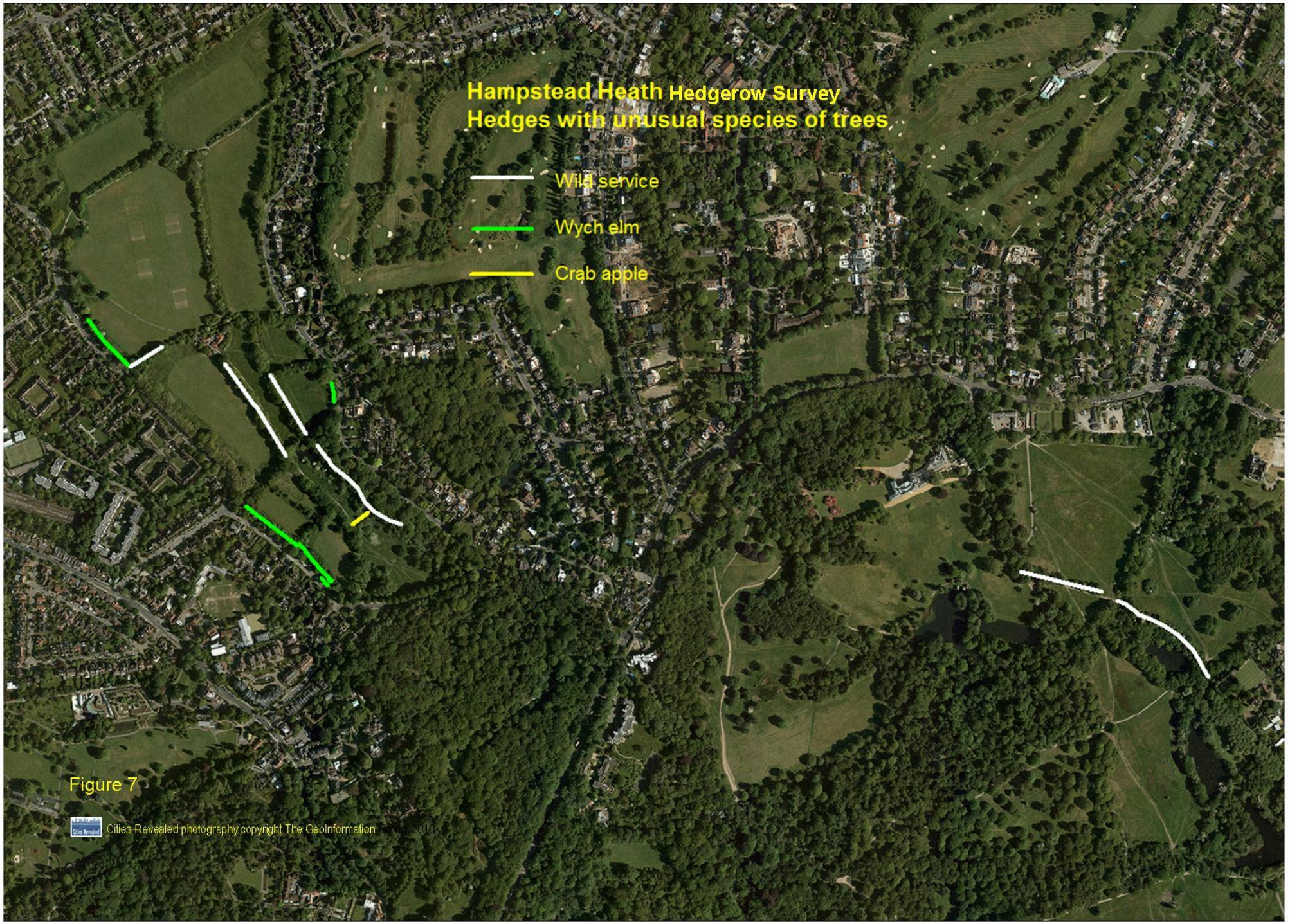

Figure 7

Figure 8

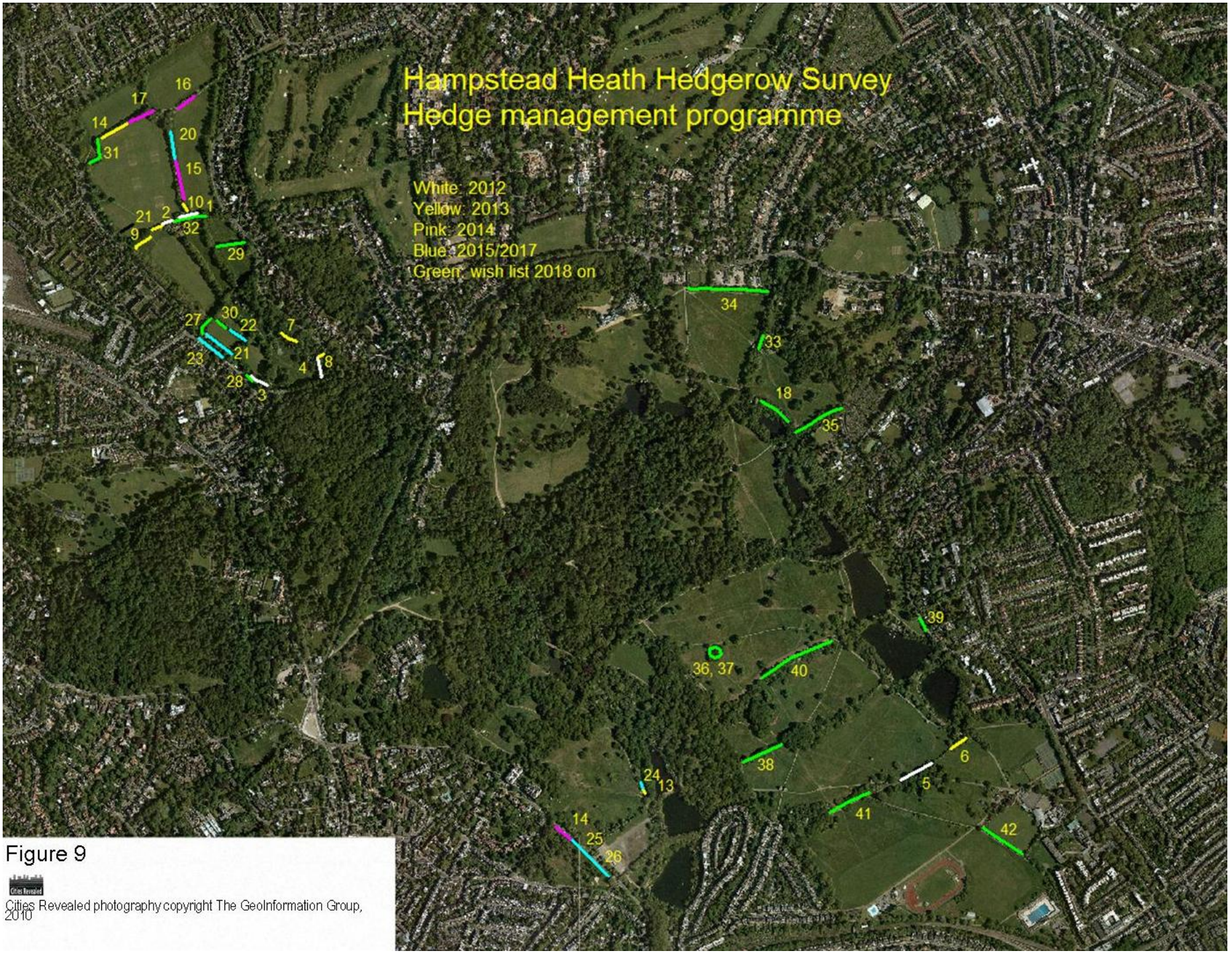

Figure 9

Tables

Table 1 Nine examples of hedges with special biodiversity features

Map ref	Name/location	Special characteristics
1	Parliament Hill, Hedge 2, eastern section	South-east facing; thick; undisturbed on both sides; adjacent to conservation grassland and scrub; good for birds and enjoyed by birdwatchers
2	Parliament Hill, Hedge 2, western end	South-east facing; thick; undisturbed on both sides & protected by dense bramble; adjacent to conservation habitat; probably good for birds; very old hawthorn and hazel stools
3	Parliament Hill, Hedge 3	South-east facing; thick; south side undisturbed and protected by bramble, especially at western end; adjacent to conservation grassland and scrub; good for birds, including whitethroat, and enjoyed by birdwatchers
4	Kenwood, Stock Pond path hedge	Wonderful old wild service tree
5	Extension, south-west of **???**	Large number of wych elms, shrubs and trees; several nice hazel and hawthorn stools; relatively undisturbed; good band of bramble and thistle on NE side
6	Extension, west of central path	Very high number of veteran trees; wild service
7	Extension, short section of hedge east of main path	Very old crab apple; possibility of taking cuttings
8	Extension, between two small meadows	South facing; relatively undisturbed (no footpath on south side); conservation grassland on each side
9	Extension, north of cricket pitches	South facing; ditch on south-facing side

Table 2 Management 2012-2022

Hampstead Heath hedgerow management 2012-2022										
Hedgerow	**Map ref**	**Year**	**Planned or done?**	**Description of work & objective**	**Laying**	**Thick-ening**	**Coppic-ing**	**Topp-ing**	**Other**	**Totals laying, thickening & coppicing**
2012										
Extension north of horse ride, NW of Bothy	1	2012	Completed	Topping				42		
Extension north of horse ride, north of Bothy	2	2012	Completed	Topping				29		
Extension nr SW corner	3	2012	Completed	Topping				36		
Extension from Pond 1 SW alongside ditch	4	2012	Completed	Laying	35					
Hedge 1 adjacent to copse	5	2012	Completed	Laying	70					
Totals 2012					**105**			**107**		**105.00**
2013										
Hedge 1, end by pond	6	2013	Completed	Laying, to retain hedge character and thicken up	39					
Extension, old hedge by pond 2	7	2013	Completed	Laying, to preserve remining old hedgerow shrubs	49					
Extension, hedge in wood from Pond 1 to path	8	2013	Planned (autumn)	Laying, to preserve remaining hedgerow shrubs	15					
Extension, south of horse ride western end	9	2013	Completed	Laying, to retain hedgerow character	53					
Extension, north of horse ride north-west of Bothy	2	2013	Planned (autumn)	Topping, to retain hedgerow character and keep hedge thick				32		
Extension, hedge by cricket nets	10	2013	Completed	Coppicing west side, provide light to stream, preserve any remining shrubs, and cut back from cricket nets			33			
Extension, north end, hedge by stream, west half	14	2013	Completed	Laying south side, to preserve hedgerow shrubs and provide light to stream	78					
Extension, north end, hedge by stream, east half	17	2013	Planned (autumn)	Laying south side, to preserve hedgerow shrubs and provide light to stream	78					
Topping as per 2012		2013	Planned (autumn)	Topping, to retain hedgerow character and keep hedge thick				107		
Note - proposed Stock Pond path deferred till after 2014										
Totals 2013 excluding Stock Pond Path					**312**	**0**	**33**	**139**		**345.00**

40.

2014										
Preachers Hill, west edge, north section	14	2014	Planned	Laying and gapping up, to preserve hedgerow character and thicken up	56					
Extension, hedge east of cricket nets - south section	15	2014	Planned	Laying west side, to retain hedgerow character and preserve any remaining hedgerow shrubs	107					
Extension, near NE corner	16	2014	Planned	Laying and gapping up, to preserve hedgerow character and thicken up	57					
Pryor's Field, boundary with Mixed Pond, south end	13	2014	Planned	Laying and coppicing, to thicken up and preserve remaining hedgerow shrubs	12					
Topping as per 2013		2014	Planned	Topping to retain hedgerow character and keep hedge thick				139		
Total 2014					**232**			**139**		
Totals 2012-2014					**532**	**0**	**33**	**385**		**565.00**
2015/7, excluding topping										
Stock Pond Path hedge	18	**2015/7**	Planned	To be discussed; to thicken hedgerow and reduce cut-throughs		142				
Extension hedge east of cricket squares, north section	20	**2015/7**	Planned	Laying west side, to retain hedgerow character and preserve any remaining hedgerow shrubs	77					
Extension, hedge east of horse ride latitude of Children's Playground	21	**2015/7**	Planned	Laying, to preserve old shrubs and retain hedgerow character	89					
Extension, south-west of Children's Playground	22	**2015/7**	Planned	Laying, to preserve hedgerow character	54					
Extension, intermittent tree line west of horse ride latitude of Children's playground	23	**2015/7**	Planned	Planting and laying. To create new hedge in place of desultory tree line	84					
Pryor's Field, next section of boundary with Mixed Pond	24	**2015/7**	Planned	Laying and coppicing, to preserve remaining shrubs and thicken up						
Preachers Hill, west edge, middle section	25	**2015/7**	Planned	Laying and gapping up, to preserve hedgerow character and thicken up	77					
Preacher's Hill, west edge, southern section	26	**2015/7**	Planned	Possible laying, to preserve hedgerow character. Will cause temporary major change in apprearance	57					
Total 2015/7					**438**					**as required**

41.

Wish list 2018-2022, excluding topping											
Extension, near NW corner	31	from 2018	Planned	Laying to maintain hedge density	85						
Extension, north of bothy	32	from 2018	Planned	Laying to maintain hedge shrubs and density	89						
Extension, between 2 small fields	29	from 2018	Planned	Lay north edge to preserve hedgerow shrubs; fell several small trees to provide light	84						
Extension, near Children's Playground	30	from 2018	Planned	Re-lay to preserve hedge density	34						
Extension, horse ride NW corner	27	from 2018	Planned	Re-lay to increase hedgerow density	55						
Extension, SW corner	28	from 2018	Planned	Re-lay to preserve hedgerow shrubs (having left for several years to re-grow)	19						
West of Harry's compartment	33	from 2018	Planned	Lay and gap up	7						
North edge of west Cohen's Field	34	from 2018	Planned	Coppice willow at west end and blackthorn at east end			20				
East edge of east Cohen's Field	35	from 2018	Planned	Coppice streamside to provide light to stream			144				
Tumulus, outer hedge	36	from 2018	Planned	Remove sycamore saplings & trees and bramble growing into gorse					92		
Tumulus, inner hedge	37	from 2018	Planned	Lay, do not gap up due to archaeological interest	73						
Hege 2, west end section	38	from 2018	Planned	Consider major coppicing and laying from north side, to preserve ancient hedgerow shrubs, which are heavily shaded, and thicken up centre	121						
Millfield Lane, opposite Men's Pond	39	from 2018	Planned	Gap up					38		
Hedge 3, eastern half	40	from 2018	Planned	Lay or coppice several sections on north side to take back from cycle track, thicken up and provide grassy adjacent habitat	50						
Hedge 1, central section	41	from 2018	Planned	Lay south side to thicken up and provide better edge habitat. Reduce expansion into grassland on north side	122				15		
Hedge by Lido, north section	32	from 2018	Planned	Lay/coppice and gap up to thicken hedge at bottom and prevent access within hedge	136						
Total, wish list 2018-2022					**875**		**164**		**145**	**as required**	

42.