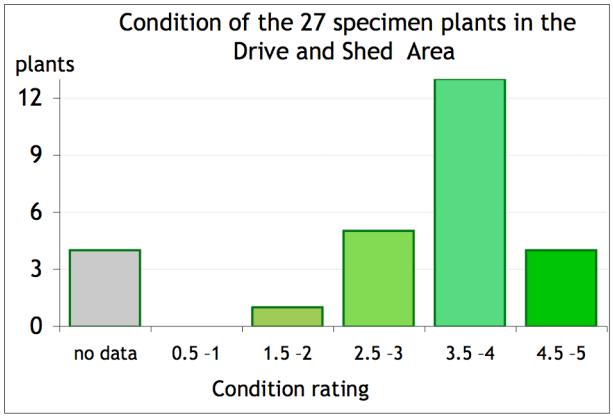
# The Areas

## Shed and Drive Area (D)

This small area runs between the drive from the main gateway to the road and the western boundary of the Field up past the Shed and around its north side. The ground cover in the open includes Couch grass *Elytrigia repens*, Herb Robert *Geranium robertianum*, Dock *Rumex* species, Nettles *Urtica* species, a few Sorrel *Rumex acetosa*, Ivy *Hedera helix* and Hogweed *Heracleum sphondylium*.




Some 63% of the 27 plants labelled in this Area are in reasonable to excellent condition.

About sixteen metres north of the gateway to the road, is an Elaeagnus, possibly *E. macrophylla*, that had self-sown in the Polytunnel and was planted out in 2002; it is in excellent health but has not yet fruited. Next to it is an unidentified three-stemmed shrub with large, simple pinnate leaves, which has never flowered or fruited. A little to the northwest of these is a multi-stemmed Butchers' Broom *Ruscus aculeatus*, in moderate health with some die back. North again are a four-stemmed Mahonia *Mahonia* x *media var.* 'Lionel Fortescue', and a *Mahonia confusa*, both planted in 2005, and both in very good health. Nearby is an unidentified Pyracantha bush that has been severely cut back and two White currants *Ribes sativum*. These were first planted to the east of the Mahonias, on the edge of the drive itself, and were dug up after being driven over and replanted a little to the northwest, further away from the drive. Just to the east is an unidentified twin-stemmed *Amelanchier* shrub, planted in 2005, which is in good condition, despite being shaded by a large self-sown Cherry *Prunus* species to its west. Just to the north of the Serviceberry is a Dwarf Quince *Chaenomeles* x *superba var.* 'Knap Hill Scarlet', planted 2005, which has been driven over, and will only survive if fenced or moved. To its north is a group of Barberries, described as "not useful", and two Pine trees possibly Austrian pines, right by hedge behind the Barberries. There is a Hazel stool to the north of the pines, and, between that and the hedge, a badly-shaded, unidentified Plum yew *Cephalotaxus* species, planted in 2005. A little way to the north is another unidentified twin-stemmed Serviceberry, planted in 2005, in good condition but so crowded by the group of Barberries that it is in danger of rapid deterioration if they are not cut back. Just to the northwest is an unidentified Thorn species tree, planted in the early 1990s; it is in moderate health and has a few nice-tasting fruit in late summer. Some two metres to the west is another Hazel and a line of

Beech saplings, two metres high, planted about three metres apart. They could be cut back to make it into a useful hedge. Just west of the unidentified Thorn is a Redcurrant *Ribes sativum*, which is in poor condition, shaded by both Hazel and Thorn, and would need the Hazel cut back in order for it to thrive.

Opposite the Shed is a patch of Japanese Wineberry *Rubus phoenicolasius*, in good condition, with Comfrey *Symphitum* species, Docks and a Hellebore *Helleborus* species growing under it. To the north, running along the fence between the Wineberry and the potting area, is a Grapevine *Vitis vinifera var.* 'Brandt', planted in the mid–1990s; it had an excellent crop in 2006 and is in reasonable condition. Running along the eastern edge of the potting area is a row of seven or eight Elaeagnus *Elaeagnus x ebbingei*, planted in the mid–1990s, and in good condition.

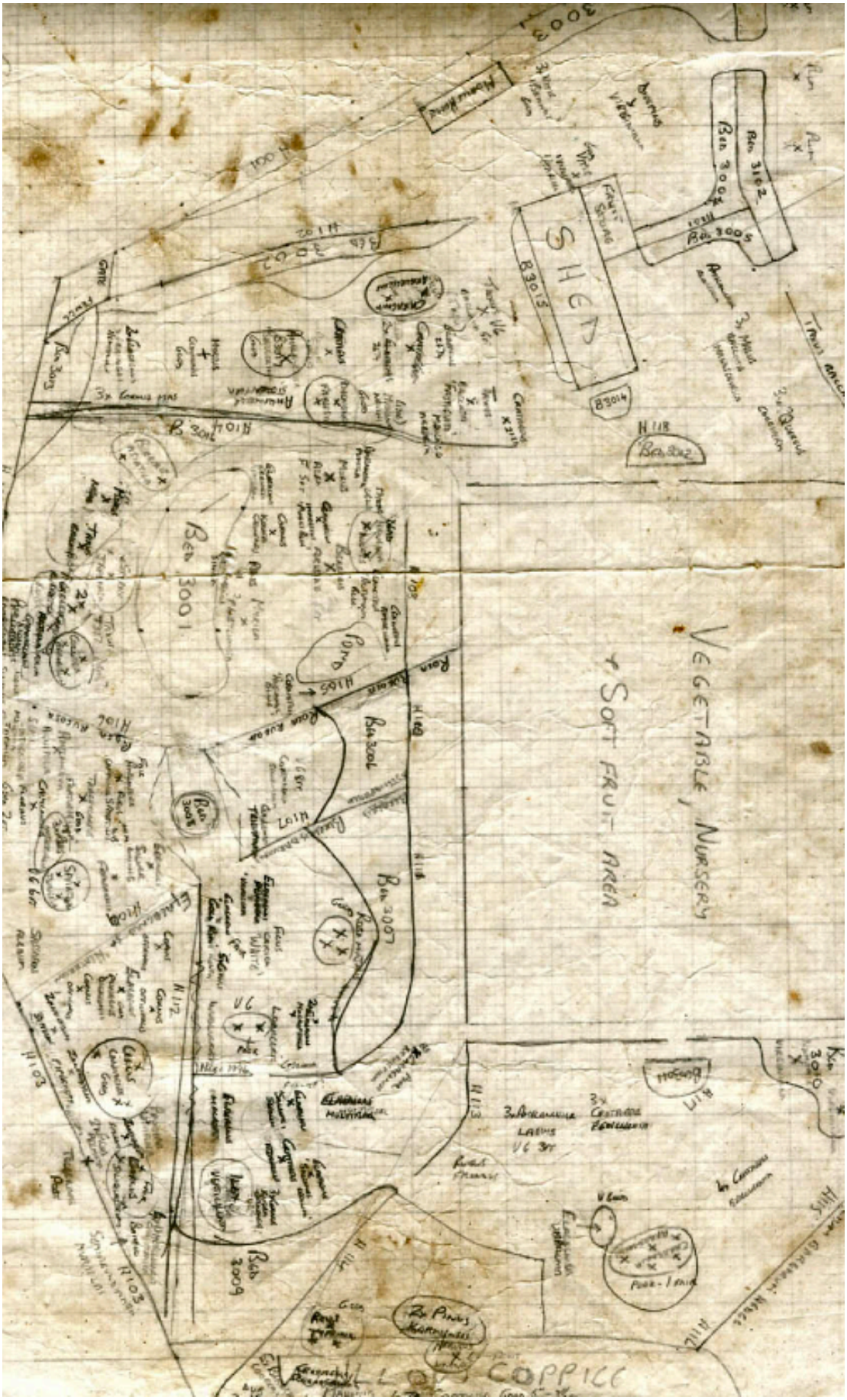
To the north of the shed, close by the hedge of Yew *Taxus baccata* bordering the Main Orchard, is a tall Bay tree, planted in the mid–1990s; it is in excellent condition but has been cut back quite severely to the south, to benefit a Gooseberry *Ribes uva-crispa* bush nearby. To the east of the Bay tree is another Red currant, in fair condition but a little shaded by the Yew hedge. Between the Gooseberry, this Red currant and a sucker from a Plum tree *Prunus domestica* growing on the other side of the Yew hedge, is a small unidentified Mahonia. Close by is an Apple tree *Malus domestica var.* 'Claygate Pearmain', planted in 2002; it is in fair condition, and yields well, although the apples do not keep. Very close by is a three-stemmed Barberry, possibly *B. x stenophylla*, similar to Darwin's Barberry but reputedly with nicer fruit; this yields well in July. To the east is another Red currant bush, an early yielder, in fair condition but with some blackcurrant stem borer damage, and a Gooseberry bush in good health. A little further east is an Apple tree *var.* 'Ingrid Marie', planted in 2000, now in fair condition, although it had been covered in Brambles, and its bark is damaged at the base of the trunk. Around it is a ground cover plant, Nepalese Raspberry *Rubus nepalensis*, which sends out stems with isolated flowers at intervals around June, and fruits in July and August. To the west of the Apple is a small patch of Rocky Mountain Raspberry *Rubus deliciosus* that has tiny, delicious fruit but is far from prolific. Immediately southeast of the Apple is a Thorn *Crataegus baroussana*, planted in 2000, with the Yew hedge close by to its east; it is in middling condition, with bark damage to the base of its trunk, and is severely shaded and crowded by the Yew hedge. It does fruit but is not prolific. Just on the far side of a short spur of hedge to the east of the thorn is a self–sown apple that bears scabby fruit that do not ripen properly; this has Turkish rocket *Bunias orientalis* growing under it. Four metres to the east of this Apple is a mediocre unidentified Serviceberry.

Growing around the Shed, from the north side of the door, is a Grapevine *var.* 'Isabella', planted in the 1990s; its growth is healthy but it does not fruit well as it is too shaded in late summer, and its abundance of leaves further shade the fruit, inhibiting ripening. On the south

side of the door is a Fig *Ficus carica var*. 'Brown Turkey', in good health, which bears numerous figs; few ripen but they are delicious when they do.

Survey map of the Shed, Drive and Ornamental Areas, with transects and mapping numbers of tagged specimens

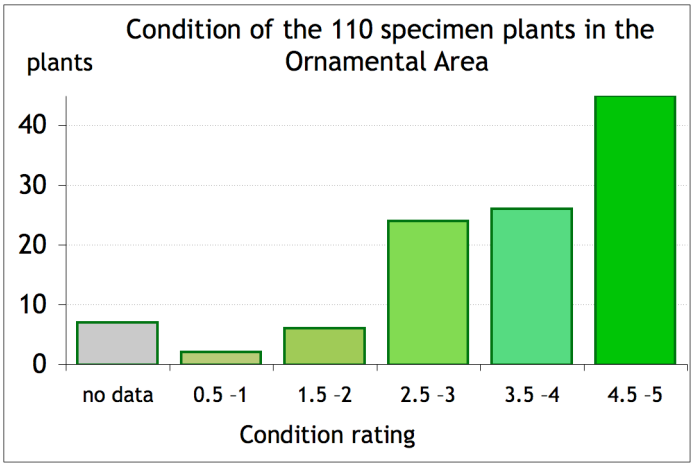
Ken Fern's map of the Drive and Ornamental Area, showing the original plantings, hedges and beds



## The Ornamental Area (ORN)

The Ornamental Area consists of a series of smaller areas separated by hedges and windbreaks, designed to resemble gardens so that visitors can relate to them and be inspired to replicate some of the ideas in their own gardens.

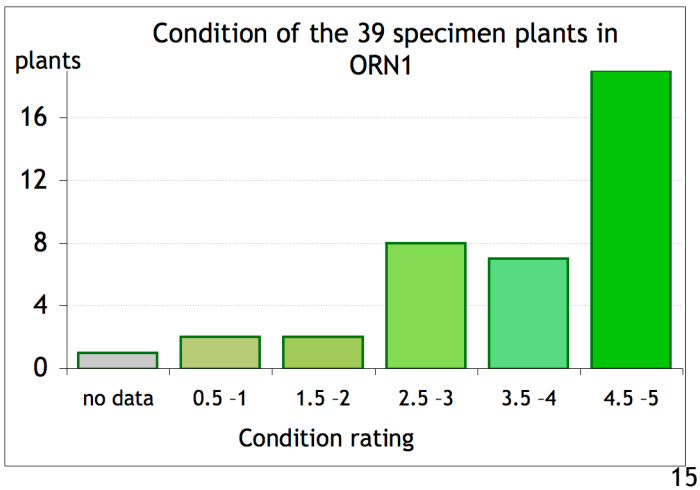
Some 65% of the 110 plants recorded in the survey are in reasonable to excellent health, although the percentages varied considerably between compartments, as shown by the bar charts for each. Many plants from the original maps and beds were not found when the area was surveyed. Hogweed and Nettles grow there in abundance, indicating fertile soil, with good concentrations of phosphates (Whitehead, 2004 p.50). The *Elaeagnus* species shrubs do very well there and have grown quite large, as have the rather vigorous Himalayan Giant blackberries, which fruit well and are appreciated. The whole area feels quite maze-like with the many windbreaks and hedges, which provide good shelter and some nice suntraps. The Ornamental Area runs to the southern boundary of the Field, where the original boundary hedge contains Sloe *Prunus spinosa*, Hazel *Corylus avellana*, Ash *Fraxinus excelsior*, Oak *Quercus* species, Blackberry *Rubus fruticosus* and Dog rose *Rosa canina*.




## First compartment (ORN1/T1)

The first compartment (ORN1/T1) runs from immediately south of the Shed, with a western windbreak (H102), of Ramanas Rose *var*. 'Scabrosa', which bears large, insipid fruit from August to October, at its northern end, and Boxleaf Honeysuckle *Lonicera nitida* with Spanish broom *Spartium junceum*, Bush Groundsel *Baccharis halimifolia* and an Umbrella bamboo *Semiarundinaria murielae* to the south, dividing it from the Drive. The eastern windbreak is of Escallonia *Escallonia* species (H104). Some 67% of the 39 plants tagged in this compartment were in reasonable to excellent health.

A large bed runs along the centre of this compartment, effectively forming two narrow gardens with shrubs and trees either side. Two bushes of *Elaeagnus cordifolia*, the most prolific of this species on the Field, planted in the mid-1990s and both in excellent



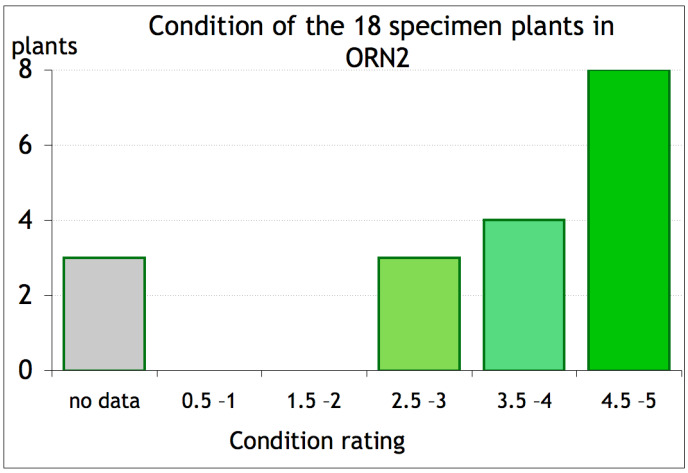
condition, share this bed with less productive plants, such as a Nettle tree *Celtis Australis*, one of four originally planted in the early 1990s, and reputedly the Lotus tree mentioned in Homer's Odyssey. A male Yew stands at the northern end of the bed, and a female Yew *var.* 'Fastigiata' at the northern end of the bed along the eastern windbreak. Just to the south is an Apple tree *var.* 'Flowith early', in excellent condition, with no sign of canker. The budwood was from an early–fruiting tree in Mr & Mrs. Flowith's garden in Lerryn, grafted onto a vigorous rootstock; it was planted in the late 1990s and is already bearing well. A little further south is a Chinese Haw *Crataegus pinnatifida major var.* 'Big Golden Star', planted in the late 1990s, in excellent condition and yielding moderate amounts of large, acid fruit in November. Just south again are two Blue Sausage fruit *Decaisnea fargesii* trees, planted in 1989, in moderate condition and bearing fruit in late autumn.

Along the southern side of the Shed is the Winter Salad Bed with various Alliums *Allium* species, Violet *Viola* species, Sorrel *Rumex acetosa* and Alpine strawberries *Fragaria vesca var.* 'Semperflorens' (listed in Appendix 1 "salads & herbs, herb layer" spreadsheet). This bed is well–maintained, receiving reasonably regular attention as it is near the Shed and winter salad plants are accessible subjects for volunteers. Behind this bed, climbing up and around the Shed itself, are four Kiwi vines, planted in the 1990s; two are of the Hardy species *Actinidia arguta*, and two of the more prolific *Actinidia deliciosa var.* 'Hayward'. All are in good or excellent condition.

Along the western windbreak are a Feijoa *Acca sellowiana*, which hasn't yet fruited, an Abutilon *Abutilon vitifolium*, which yields abundant edible flowers from May, and two Acacia *Acacia melanoxylon* trees. These nearly died in the cold winter of 2008–9, but are showing some sign of recovery in 2009. Near them is a tall, very healthy Cabbage palm *Livistona australis*, grown as a source of fibres. In the understorey, woodland ferns have established themselves in this area, around a Bamboo *Phylostachus virida glaucescens*. Most of the herbaceous layer plants have disappeared because of the growth of shrubs and trees; the same is true of Bed 3013, which lay at the southern end of this compartment, where a Manuka *Leptospermum scoparium* is struggling to survive. Nearby an Elaeagnus *E. x ebbingei*, planted in 1994 on a mound, is thriving but not fruiting well, although its fruit are sweeter than those of *E. cordifolia*. In the understorey are Tansy *Tanacetum vulgare*, Oregano *Oreganum vulgare* and Opopanax *Opopanax chironium*.

## Second compartment (ORN2)

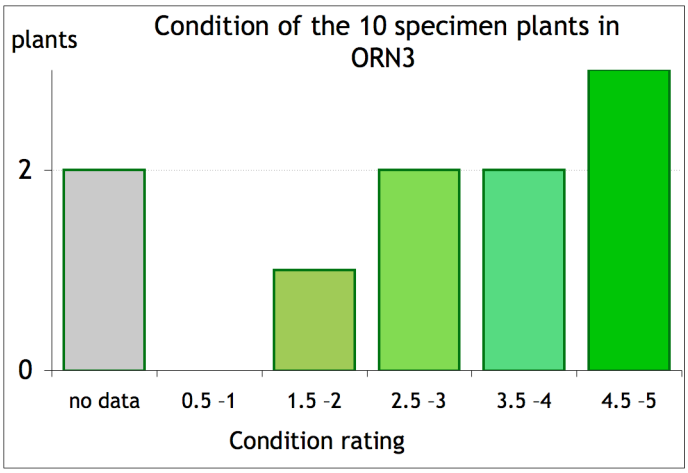
The second compartment (ORN2) runs between the Escallonia windbreak (H104) to the west, a tall Tawhiwhi *Pittosporum tenuifolium* hedge (H108) to the north and two Ramanas Rose windbreaks (H105 and H106) to the east; the Ramanas Roses were mainly grown from seed provided by Addy Fern, and display significant natural variation, producing fruit varying from acid to sweet. This hedge has an opening in the middle, level with a large bed known as




Jenny's bed (Bed 3001), which divides the compartment into northern and southern halves (ORN2/T1 and ORN2/T2). Some 67% of the 18 plants labelled in this compartment are in reasonable to excellent health.
A Szechuan pepper *Zanthoxylum simulans*, planted in the mid-1990s, is amongst the original plants in this bed and is still thriving and yielding. A bed for medicinal plants (Bed 3016) lay along the western Escallonia windbreak (H104), but many plants have disappeared. Those remaining include Skullcap *Scutellaria galericulata*, Mandrake *Mandragora officinarum* and different cultivars of Day Lily *Hemerocallis* species; all are listed in Appendix 1, in the "salads & herbs, herb layer" spreadsheet. In the northeastern corner is a pond, created to encourage frogs and other amphibians as natural predators against slugs, which it has succeeded in doing; Bogbean *Menyanthes trifoliata*, Sweet flag *Acorus calamus* and Pickerel weed *Pontederia cordata* are amongst the aquatic plants growing there.
West of the pond is a White mulberry *Morus alba*, planted in the early 1990s and in good condition, although what fruit it yields is eaten by birds before ripening. To the south, and just north of the central bed, are two Japanese dogwoods *Cornus kousa*, one planted in the early 1990s and the other a few years later, both in excellent health, and producing small, pleasant-tasting fruit with yellow flesh, in August. To their east is a Wax myrtle *Myrica cerifera* (or possibly a Northern Bayberry *M. pensylvanica*), planted in the early 1990s and in excellent condition although it does not yield well, perhaps because the climate is too cold.
In the southern half of the compartment are two Barberries *Berberis asiatica* and a third, unidentified Barberry, all planted in the early 1990s and in good condition; all flower well but no data was recorded on their fruit. To their east is a Crab apple *Malus x purpurea var.* 'Neville Copeman', which yields pleasant dark red fruit and has wild strawberries growing under it. Nearby is a Bramley apple, planted in 2006; the trunk had been severely damaged by deer, compelling the use of a taller tree guard. Further to the east is another Japanese dogwood, planted at about the same time, and a female Yew tree, planted in the early 1990s along with a male nearby; the female is in excellent health and bears some fruit in late summer and early autumn. In the southwestern corner of this compartment is a second Pepper tree, planted in the mid 1990s and in good health; it may be a Japanese pepper *Zanthoxylum piperitum*, rather than the Szechuan pepper *Z. simulans*. To the east is a clump of Ringal bamboo *Yushania anceps*, which produces good canes, and, further east, a Camellia *Camellia sasanqua* in the southern hedge.

The third compartment (ORN3) is bounded to the west by the Ramanas Rose windbreaks (H105 and H106), to the north by a hedge of Holly, and to the east by a windbreak, which consists of Barberries to the north (H107), with two plants of *Berberis x stenophylla* northenmost and then Darwin's Barberry *Berberis darwinii* to the opening.

South of the opening, the windbreak extends to the southern boundary, and consists of *Elaeagnus* species (H109), grown mainly from seed gathered at Heathrow airport. Half of the ten plants tagged in this compartment are in reasonable to excellent condition. The main path runs east-west through the centre of the compartment, with a Tree lupin *Lupinus arboreus* immediately to its north; this nitrogen-fixing pioneer tree was planted in the early 1990s and is in excellent health. To the north, close by the western windbreak, are three unidentified Chokeberries *Aronia* species, planted in 2005, one a metre tall, despite deer damage, and two smaller ones. Nearby are Pampas grass *Cortaderia selloana*, grown for fibre, an Apple *var.* 'Tywardreath', which is struggling, a Darwin's Barberry, and a large Wych Elm *Ulmus glabra*.



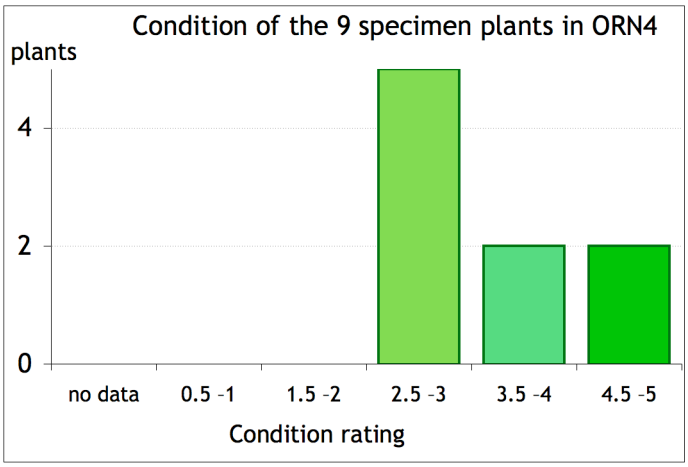

To the east is a Purple chokeberry *Aronia prunifolia var.* 'Serina', also planted in 2005 and in very good condition; although it had not fruited before, it did flower in May 2009. To the north is a Quebec Berry *Amelanchier stolonifera*, planted in 2005 and in excellent condition; it is almost the only *Amelanchier* bush on the Field to yield a harvest for humans rather than birds, bearing tasty fruit in July. In the northwest corner of the compartment is a Gooseberry bush. South of the path are three young Monkey puzzle trees *Araucaria araucana*, grown from seed and planted out in 2006 or 2007; they are in poor condition. Nearby are two more *Serviceberry* bushes, neither thriving nor yielding well, and two unidentified Palm trees, planted in the early or mid-1990s. A small Shallon *Gaultheria shallon*, planted near the southern boundary hedge in 2005, is in good health, bearing small fruit in August, which children like but Addy Fern

Darwin's Barberry *Berberis darwinii*

found insipid. To the east is an unidentified Plum yew, planted in 2005 and in moderately good condition. Near the southeastern corner of the compartment is a Sassafras tree *Sassafras albidum*, planted in the mid-1990s and in mediocre condition, which yields leaves and some flower buds that make a pleasant-flavoured tea.

## Fourth compartment (ORN4)

The fourth compartment (ORN4) is a small triangular area running along the southern boundary, with the *Elaeagnus* species (H107) windbreak to the west and a long mixed hedge (H112) to the north, which contains fruiting Barberries, probably the European barberry *Berberis vulgaris*, in excellent health, and Elaeagnus *E. x ebbingei* from seedlings, which produce a variable harvest of small pleasant fruit. Some 44% of the nine plants labelled in this compartment are in reasonable to excellent health.



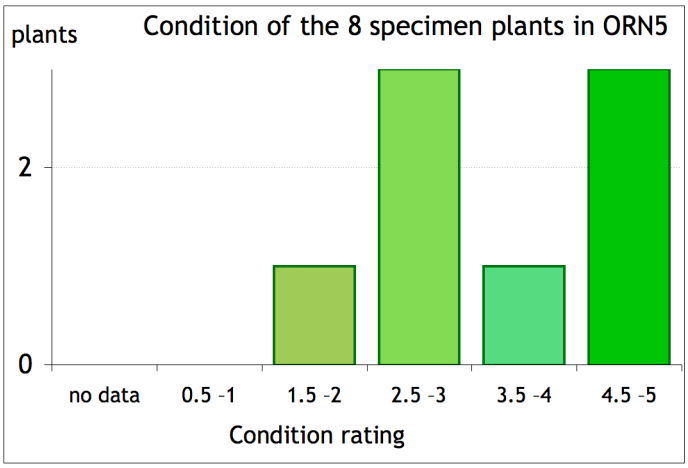

In the southwest corner of the compartment is a Szechuan or Japanese pepper tree *Zanthoxylum simulans* or *Z. piperitum*, planted in the 1990s and, as it is shaded by the boundary hedge, only in moderate health. To the northwest are four Shan Zhu Yu shrubs, planted in the early 1990s, in mediocre condition and somewhat crowded; they fruit in August and September but how well is not known.

To the east are five *Cercis* species trees, Redbuds *Cercis canadensis* westernmost and Judas trees *Cercis siliquastrum* to the east. These were planted in the early 1990s and are in mediocre condition; the pink flowers are edible, as are the seed pods of the Judas tree. To their north is a Rui Ren *Prinsepia uniflora* shrub, planted in the early 1990s, which has not yet fruited, although it is in good condition. In the northwest of this compartment, close to the opening to the fifth, is a group of four Japanese Dogwood trees, planted in the early 1990s and in excellent condition, which yield sparsely in August, although the fruits are large and taste good.

Japanese Dogwood *Cornus kousa*

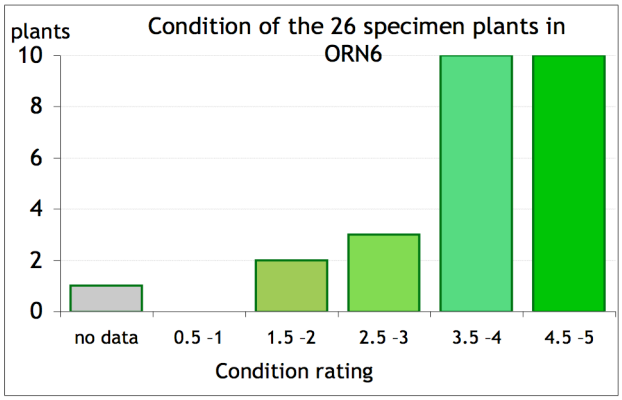
## Fifth compartment (ORN5)

The fifth compartment (ORN5) is a small square-ish area with the windbreak of Barberries (H107) to the west and a hedge of Biota *Platycladus orientalis* (H111) to the north, and the western end of the mixed hedge (H112) to the south. Half of the eight plants tagged in this compartment are in reasonable to excellent health. Bed 3007 covered the northern third of the area but of the original plants there, only an unidentified Eucalyptus tree survives; it has grown very tall and is in very good condition. The only other tree surviving from the 1990s is a white Fig *Ficus carica var*. 'Ischa', in the southeastern corner, which has not yet fruited and is in mediocre condition. To its west is an Apple *var*. 'Blenheim Orange', planted in 2000 and in very good condition despite the cultivar being prone to canker; west again is an Elaeagnus *Elaeagnus pungens var*. 'Variegata', which occasionally bears well but is not as reliable a cropper as *E. cordifolia*. All the other trees in this compartment were planted in 2005, and include a local Plum *var*. 'Lerryn loo', in good condition, which gives variable yields of small pleasant fruit in September, as well as four *Cornus* trees, spread across the middle of the compartment, one of an unidentified species, planted out after having been left in a pot for some time, and three Cornelian Cherries *Cornus mas*, including 'Pioneer' and 'Variegata' cultivars. Two are in mediocre condition, the 'Pioneer' cultivar is in excellent condition, and the 'Variegata' is in poor health; groundcover nearby includes Bistort *Polygonum bistorta*, Day Lilies and Skullcap. Two native Hazels, grown in pots, have been planted nearby, close to a self-sown Oak.




## Sixth compartment (ORN6)

The sixth compartment (ORN6) has three subcompartments. The first is adjacent to and east of the fifth compartment, and north of the fourth. The rest of the compartment runs from the southeast corner of the New Veg and Nursery area, between the Old Veg and Nursery Area and the Meadow, forming the second subcompartment, and extends south, immediately to the east of the first, forming the third subcompartment. Some 77% of the



plants labelled in this compartment are in reasonable to excellent health.

### The first subcompartment of ORN6

First subcompartment of ORN6 is bounded to the west by ORN5, to the north by the southeastern corner of the Old Veg and Nursery Area and a hedge of Tamarisk *Tamarix* species interspersed with *Elaeagnus macrophylla* (H113), and to the south by the easternmost part of the mixed hedge (H112) including two Kapuka *Griselinia littoralis* trees, a small ornamental Copper hazel *var.* 'Maxima Purpurea', and an unidentified Desmodium. To the east is a windbreak of unproductive *Elaeagnus* species bushes and Serviceberries at the southern end, and at its northern end, of Tamarisk *Tamarix* species (H114) with quite a lot of dieback on the branches and a pink unidentified Rose growing through it.

By the opening to ORN5 is a clump of the deciduous *Elaeagnus macrophylla* that has spread by layering itself from the original shrub planted in the early 1990s; it is in excellent health and flowers abundantly, although it is only occasionally prolific. The birds like the round-ish, red berries borne in September and October. To the east is a Goumi *Elaeagnus multiflora*, also planted in the early 1990s and also in excellent health; immediately to its south is an Elaeagnus *E.* x *ebbingei var.* 'Salcombe Seedling', in good condition but growing into the Goumi bush. Southeast is an Azarole *Crataegus azarolus*, planted in the early 1990s, in excellent health; it bears small but pleasant fruit in September. Nearby is a clump of Bamboo *Phyllostachys bissetii*. In the southwest corner of the subcompartment is a group of European barberries, planted in the early 1990s and in excellent health; the sweet-smelling flowers produce fairly acid fruits in September. Further east, near the hedge, is a Japanese Holly *Ilex crenata*, planted in the early 1990s, in very good condition. Near the southeastern corner is a Shallon *Gaultheria shallon*, planted in the mid-1990s and in good health, north of which is an Oregon grape that yields edible fruit in early summer but is very overshadowed by the eastern windbreak and the Bamboo.

### Second subcompartment of ORN6

The second subcompartment is bordered on the west by the Old Veg and Nursery area, to the northeast by a hedge of Goji berry *Lycium barbarum* bushes, which are very shaded by the Alder hedge of the Meadow and have never fruited; to the east is a windbreak planted with *Elaeagnus glabra*, Privet *Ligustrum* species, and Butterfly Bush *Buddleia davidii*, and to the south is the third subcompartment.

In the north of the second subcompartment, in line with the main path through the Meadow, is a Thorn *C. baroussana*, planted in 1997 and in good condition; it bears delicious, apple-like fruit that ripen in October and November. In the centre is a widely-spaced group of three Siberian peashrubs *Caragana arborescens*, planted in the early 1990s, one in good health, the others in poor health, all growing very slowly and bearing very few pods, unlike their parent shrub in the Cambridge Botanic gardens. Nearby are self-sown Oak and Hazel trees, and Early purple Orchids in the ground layer.

At the southeastern end of the subcompartment is a Bentham's cornel *Cornus capitata*, planted from seed in the early 1990s; the fruit, similar to those of the Japanese dogwood, ripen in November and December but are somewhat bitter. Ken Fern knows of a Bentham's Cornel in West Cornwall that fruits prolifically every year, with sweet fruits, very similar in flavour to those of the Japanese dogwood, but all seedlings he has grown from it and other Bentham's cornel trees have yielded bitter fruit. Vegetative propagation from sweet-fruited trees is often necessary to obtain good fruit.

### Third subcompartment of ORN6

The third subcompartment runs to the southern boundary and is bordered on the east by the Willow coppice *Salix* species at the southern end of the Meadow. In the northwest of the subcompartment is a Stag's horn sumach *Rhus typhina*, planted in the early 1990s and in good condition; the developing fruit can be made into a lemonade substitute. South of this is a large Osier *Salix viminalis*, planted for basketry canes in the early 1990s, and in excellent condition. Southeast is an unidentified Walnut *Juglans* species, growing well and in excellent condition. Northeast is a Kaya or California nutmeg tree *Torreya nucifera* or *T. californica*, in excellent health, with a wild orchid growing below it; the seed of the Kaya are edible but not those of the California nutmeg. North again are two Thorn trees, a *Crataegus schraderiana*, the birth tree for the Ferns' older son, planted in 1994, and a *C. arnoldiana*, the birth tree for their younger son, planted in 1999; both are in good health although somewhat shaded and crowded. The *C. schraderiana* bears very pleasant fruit from October on. To their north is a group of nine or ten Chinquapin *Castanea pumila*, planted in the early 1990s and in good condition; no information was recorded on their yields.

## The Orchards

When they first arrived at the Field, Addy Fern, who loves apples, brought about 100 apple cultivars with her. Because the Field was so windy, these were put where they still are, close to the remnants of hedges. The young apple trees thus benefited earliest from the shelter provided by these hedges that regenerated rapidly from their roots and what little top growth had survived repeated, severe flail mowing. Although the original design plan was to remove apple trees that were not thriving and propagate to other areas from those that were, gradually turning the areas into woodland gardens, Addy Fern has kept them as orchards. She has found that when plants are distributed throughout the Field, maintenance requirements are often increased, sometimes making them almost impossible to maintain, or even find, especially with the lack of sufficient people caring for the land. The design plan was partly based on the premise that pests and diseases are always more problematic where conspecific plants are grouped together but there are some potential benefits of grouping them, e.g. making it easier for pest predators to find their prey, such as the bats that eat the coddling moth, the main pest of apples in the southwest (Martin Crawford, 2009 *interview*). It is also likely that, wherever trees are in the Field, birds, singly or in flocks, will find them, so that distributing the trees will not significantly decrease their predation (Appendix 7). However, in the case of disease, grouping typically increases infection. Apple canker *Nectria galligena* is present in all the apples in the orchards. Spores can be transferred by wind, water splash, or insects, and the severity of the infection depends both on cultivar, as susceptibility is genetic, and the number of cankers on neighbouring trees (Johnson, Doust and Eaton, 1982).

Most fruit trees in the orchards have protection around their trunks, either clear plastic water

Tree trunk protection: manufactured guards and recycled materials, equally effective

bottles or tree guards. Many trunks show quite severe rabbit and deer damage, with the bark sometimes stripped all the way round where the guards have slipped. However, it is noticeable that these damaged trees survive and continue to grow, so the removal of the bark

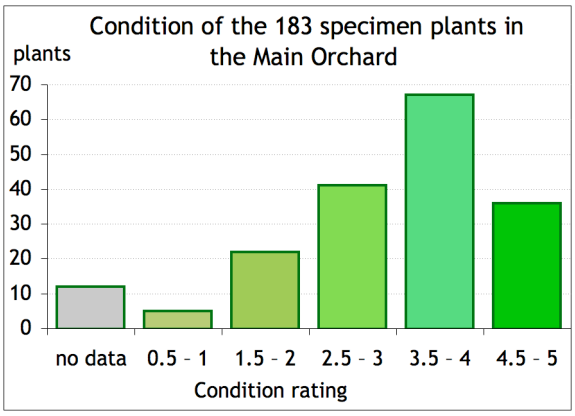
does not include all of the cambium; there is also no evidence of canker infesting these wounds. Addy Fern confirmed the bark will slowly grow back and that, on the whole, the trunk protection seems to work well. The great majority of the Apple trees in the orchards, and all in the Main orchard, are on MM106 semi-vigorous rootstock; some in Addy's orchard are on the vigorous MM111 rootstock. Many of those on the semi-vigorous rootstock might have grown better if they had been on the vigorous MM111 rootstock, or even the very vigorous M16, although that would produce trees so tall that ladders would be needed to harvest the topmost fruit. Addy Fern is gloomy in her assessment of many of the Apple trees in the Field, and has repeatedly commented that the apples from various trees do not taste, ripen or keep as well as they used to. She has suggested that, along with the Cornish climate, which is milder in winter and wetter in general, a lack of calcium in the soil might be a causative factor; other mineral deficiencies and shading from the tall windbreak trees may also contribute. In 2009, soil pH was tested at several locations in the Main and Addy's orchards, and values indicating soil acidity were found (low pH values, between 5 and 5.5) except in one place near the westernmost windbreak W1, where it a pH value of 6.5 was recorded. Orchards with low soil pH values have been found to have a higher incidence of fruit disorders (Raese, 2000), and Apple trees, according to the PFAF website, prefer soil pH values between 6.5 and 6.8. There are more sorrel plants in the ground layer of the Main and Addy's orchards than previously, which also suggests soil acidification. Windfall apples left on the ground around the trees can also increase the acidity of the soil. Grasses predominate in the ground layer of most of the Orchards, although Dwarf Elder has invaded much of one compartment in the Main Orchard.

Several of the windbreaks around the Main and Addy's Orchards have been pollarded in recent years, to heights between one-and-a-half and three metres. Before that they had grown unchecked and shaded much of these orchards. Mowing to control grass and weeds can be infrequent but all the orchards are accessible, and Addy's and the Main orchards are kept fairly clear. The Central Orchard, possibly because it is further from the shed, is more shaded and overgrown.

## Main Orchard (W1)

The Main Orchard is of 1.05 acres, sheltered to the west, from where the prevailing winds blow, by a windbreak (H001/W1) of fast-growing Italian alder, now pollarded to three metres high with the exception of the four northernmost trees, planted alongside the original western boundary hedge. Much of the windbreak to the east (H007/W2) has also been pollarded; it is mainly of Beech *Fagus sylvatica* to the south and Hornbeam *Carpinus betulus* to the north, with some Wych Elm *Ulmus glabra*, Rowan *Sorbus aucuparia*, Birch *Betula pendula*, Alder *Alnus glutinosa* and Elder *Sambucus nigra*. The area is bordered to the south by a Yew Taxus

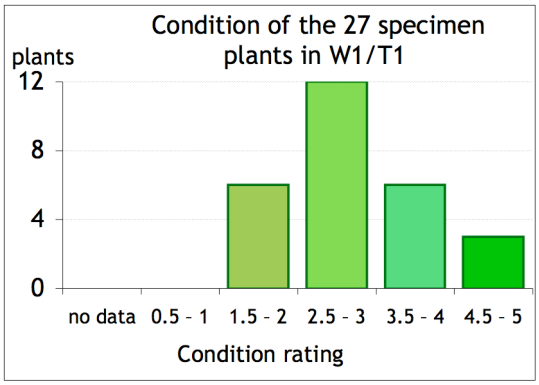
baccata hedge, to the north by a hedge of Pine *Pinus spp*, in front of Poplar *Populus* species and Cherry laurel *Prunus laurocerasus* (H007), and divided into three compartments by two double rows of hazels, with openings through the centre of them.




All the Apple trees in this orchard are on semi-vigorous rootstock. Of the 82 Apple trees on Ken Fern's map, 64 (78%) are still living. Only about a third yield well; none are in dire condition but only a third are in good condition. Of the 183 plants tagged in the Main Orchard, 56% are in reasonable to excellent condition, although the percentages varied considerably between compartments, as shown by the bar charts for each.

## First compartment (W1/T1)

The first, southernmost compartment of the Main Orchard (W1/T1) is by far the largest, with a central path running approximately north-south. Along the western edge of this compartment is a row of Pine trees with lots of gaps. These were originally intended to replace the Italian alders of the western windbreak, which were to have been cut down once the Pines were big enough, but they have not grown well, probably because the Alders were never removed. Of the 27 plants labelled in this compartment, a third are in reasonable to excellent condition.




### The trees

At the southern end of this compartment is a widely-spaced line of Plum trees *Prunus domestica*, planted in 1989 and 1990; all are different cultivars, in good or reasonable condition except the westernmost one, which is swamped by bamboo & eucalyptus, and looks very poorly. None are yielding well. A Plum *var*. 'Victoria', planted nearby in 2003, is not thriving and has some kind of fungal disease. Further into the compartment is a row of four Pear trees *Pyrus communis sativa*, each a different cultivar, planted in 1989 and 1990; all survive, although another pear tree ('Hessle') planted a little further north has gone, along with a Bentham's Cornel marked on Ken Fern's map. None of the Pears yield good fruit, and only the 'Winter Nellis' cultivar is reasonably prolific. In the centre of the row of pears is a Damson *Prunus insititia*, in good condition, also planted 1990.

North of the row of Pears are the Apple trees; of the 28 on Ken Fern's map of this compartment, five are gone, namely *var*. 'Sunset', *var*. 'Worcester Pearmain', *var*.

‘Discovery’, *var*. ‘St. Edmunds Pippin’, all in one area; the fifth casualty was a *var*. ‘Ida Red’, the westernmost one of three of this cultivar originally planted. All the surviving Apples have good or reasonable yields except for the ‘Christmas Pearmain’ and ‘Roxbury Russet’ cultivars; all are in good or reasonable condition except *var*. ‘Ontario’ and *var*. ‘Sanspareil’.
Further losses from Ken Fern’s planting map include two of the four *Elaeagnus glabra* and a Date Plum *Diospyros lotus* in the same area as four of the missing apple trees. However, the two other Date plums, one male and one female, are thriving. Two Walnuts *Juglans regia*, one that had been in a pot for some ten years before being planted in the late 1990s and the other a cultivar chosen for its quality, are growing slowly but are in excellent condition. A small Juneberry *Amelanchier canadensis*, planted in the late 1990s, is thriving although it does not fruit that well, and what fruit there are taken by birds before ripening. Two small Fig trees were planted in 2007 and are in reasonable condition; one was layered from the *var*. ‘Brown Turkey’ by the Shed, and the other, possibly the cultivar ‘White Marseille’, had been kept in a pot for some years, during which time the label was lost. Two Bay trees, one planted 1998 and one in 2005, are struggling to grow by the northern hedge.

## The Beds

The two easternmost Plums are interplanted with *Elaeagnus* bushes and underplanted with raspberries, which were planted there as canes accidentally dug up from another bed. The partial shade of the Plum tree has inhibited the grass but not the raspberries, and the *Elaeagnus* either side have provided nitrogen. Addy Fern has cut down the grass and cut back the *Elaeagnus* to encourage the raspberries. They have been the “most successful, least-work raspberries”, although she has tried the same combination in other areas and the raspberries died. Growing near frequent human activity (the shed is nearby) has also reduced bird predation.
Bed 3102 that runs along the northeast side of the yew hedge is empty, but in Bed 3101, running along the northwest side of the hedge, two species of bamboo and an American Plum survive behind the caravan that now occupies much of the space. There is a tall eucalyptus growing through the bamboo in the southwestern corner of this area.
A fenced-in bed now occupies the space to the east of the central path where four of the missing apple trees were. Addy Fern mulched the area heavily with cut grass, weeded it and then planted early and mid-season Raspberries with French scorozonera *Reichardia picroides*, Chicory *Cichorium intybus*, Musk mallow *Malva moschata* and Dandelions *Taraxacum officinale* as understorey plants. They are doing well and the raspberries seem to be spreading. The bed also contains Kale *Brassica oleracea var*. Acephala, Broccoli *Brassica oleracea var*. ‘Italica’, Parsley *Petroselinum crispum* and some rather slug-eaten Courgette plants *Cucurbita pepo*; the yellow-fruiting ones have been attacked less than the green. The fence protects the ground layer from rabbits and deer. There are also some Plum trees that Addy Fern rescued

from pots, all of the same species (possibly *Prunus maritima*) but with considerable variation between them. This bed is still in development.

To the east of this bed is a net tunnel, not presently in much use and between that and the Beeches of the Main orchard's eastern windbreak, is Bed 3115, which still contains Good King Henry *Chenopodium bonus-henricus*, Polish sorrel *Rumex acetosa*, Ramsons *Allium ursinum* and *Beta trigyna*. Next to the windbreak Pink purslane *Claytonia sibirica* has self-seeded and Garlic cress *Peltaria alliacea* has invaded from South of the bed, as well as strawberries *Fragaria spp* that hardly fruit and Creeping bramble *Rubus tricolor*. Towards the Southern end of the bed are Sweet violet *Viola odorata* and Sweet cicely *Myrrhis odorata*, Comfrey *Symphytum officinale* and Yellow avens *Geum aleppicum*, as well as weeds, including Nettles *Urtica* species and Garlic cress.

The central path now runs through where Bed 3112 once was but the Rowan, planted in the bed in 1989, is thriving; several of the original understorey plants are still present, including Dittander *Lepidium latifolium*, which spreads but is controlled by grass cutting, Red-veined dock *Rumex sanguineus*, Soapwort *Saponaria officinalis*, Water Avens *Geum rivale* and Crow garlic *Allium vineale*. Although Chives *Allium schoenoprasum* were planted in most of the beds there, it is the Crow garlic that has spread throughout the compartment; it has a head of very small bulbils, sometimes used as a garlic substitute, and its leaves emerge in winter long before those of Ramsons. Also present was some self-sown St. John's Wort *Hypericum perforatum*.

In Beds 3103 and 3104, next to the hedge dividing the first and second compartments of the Main orchard, and therefore south-facing, only Mahonia *Mahonia japonica var*. 'Charity' is in evidence. The Dwarf Strawberry tree *Arbutus unedo var*. 'Compacta', a Gooseberry, Chinese yam *Dioscorea batatas*, Camellia *Camellia japonica var*. 'Jupiter', Blackberry *var*. 'Thornless', the three Loquats *Eriobotrya japonica*, all originally planted in Bed 3103, have gone.

## The Polytunnel

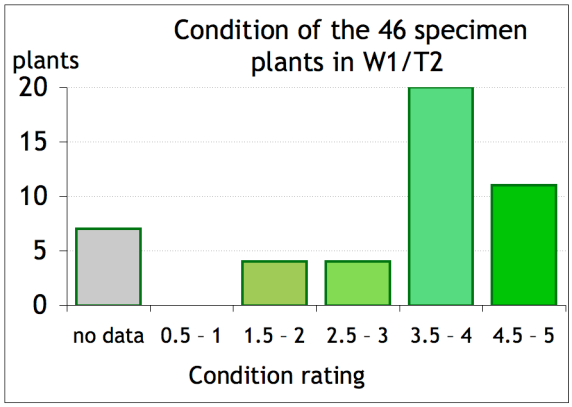
Along the northern half of the westernmost windbreak runs a Polytunnel, with beds, a small pond and propagation tables. The tables have copper strips around the legs to exclude slugs and snails, some of which nonetheless get on to the tables by climbing the polythene shell of the greenhouse and dropping onto them. Growing in the pond are a White water lily *Nymphea alba* and a Vietnamese coriander *Persicaria odorata* that died in the extreme cold snap of February 2009. A *Prunus*, self-seeded in 1996, flowers but has not fruited and is now constrained by the polytunnel roof. Lemon verbena *Aloysia triphylla*, various sages *Salvia* species, a *Citrus*, a *Fuchsia* and *Abutilon vitifolium* grow at ground level along with the ground cover plants, Harebell *Campanula persicifolia* and Trailing bellflower *Campanula porcharskyana*. Also present are Yacon *Polymnia edulis*, an *Akebia* and a *Dioscorea*.

Ken Fern's map of the Main Orchard, showing the original plantings, hedges and beds

The hedge between the first and second compartments of the main orchard (H005-006) is of two rows of hazels, with a central opening. Numerous clumps of Babbington's leeks *Allium ampeloprasum babbingtonii* grow under these; their bulbils are the part most often used, as the leaves are somewhat tough and Addy Fern has found many nicer, more edible alternatives (e.g. Ramsons) are available when the leeks are. In the western side of the hedge, a Eucalyptus has grown through the bottom of its pot and is now some ten metres tall.

## Second compartment (W1/T2)

Of the 46 plants tagged in this compartment, 67% are in reasonable to excellent health, including four of the seven Apple trees at Penpol that are very healthy and yield well.




### The trees

The second compartment (W1/T2) is about half the size of the first and the path runs through its eastern half. In the east of the compartment a nine-metre long row of Darwin's barberry was planted to enhance the eastern windbreak; they have grown lopsided because of it. Now that the eastern windbreak has been pollarded, the row of Barberries is almost three metres away from it. An unidentified Bamboo, which has pleasant-tasting edible shoots, is growing along the western windbreak and is regularly cut back to prevent it spreading.

Of the 25 apples on Ken Fern's map of this compartment, four have died. These are *var.* 'Arthur Turner', cut down by the grass cutter when young, *var.* 'Merton Worcester', cut down because of canker and poor fruiting, *var.* 'Nonpareil', and *var.* 'Oslin' that had "horrible little cracked apples", and was removed and replaced in the early 2000s. Ten of the 26 extant Apple trees in this compartment are in good condition, and five, a *var.* 'Roundway Magnum Bonum', a *var.* 'Wyken Pippin', a *var.* 'Duke of Devonshire' and two *var.* 'Hambleden Deux Ans', are in excellent condition. The best yielders seem to be *var.* 'John Standish' and *var.* 'Allen's Everlasting', the worst *var.* 'Encore' and *var.* 'Elton Beauty'. Significant canker was noted in *var.* 'Laxton's Superb' and *var.* 'Suntan', and in four of the ten *Sorbus* trees.

The *Elaeagnus x reflexa* planted in the mid 1990s just to the north of the hedge between the first and second compartments has not yet fruited, nor have the more recently planted *Elaeagnus*, possibly *E. x ebbingei*, nearby. This may be because of shading or pollination problems, as both are in good condition.

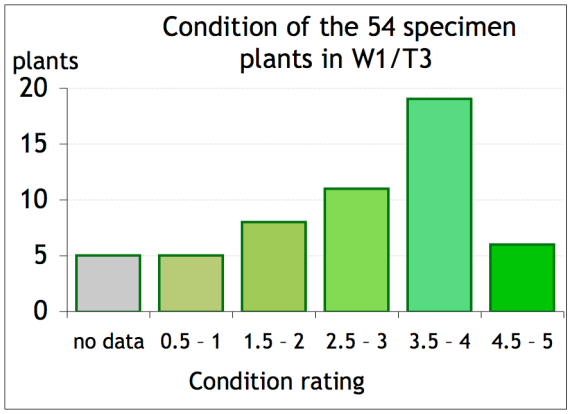
### The Beds

Beds 3105 and 3107 are empty, Bed 3106 contains some False oxlips *Primula veris* x *vulgaris* and Comfrey *Symphitum officinale*, and Bed 3108 contains a solitary Elecampane *Inula*

*helenium*, some Cowslips *Primula veris* and some Comfrey. Many of the plants in Bed 3113, in the middle of this compartment, survive and thrive, including two American cranberries *Viburnum trilobum*, an American elder *Sambucus canadensis*, which does not fruit, and a Rowan, planted to provide fruit for the birds. A New Zealand flax *Phormium tenax* in Bed 3116 was doing well until 2008, when it died, possibly because of shading from the eastern windbreak and brambles; a Tea tree *Leptospermum scoparium* nearby is in very poor condition. There is a very active Badger toilet in this compartment.

## Third compartment (W1/T3)

The third and northernmost compartment (W1/T3) is slightly larger than the second; the path through it veers westward from the opening in the centre of the southern hedge and runs fairly close to the western windbreak. Many plants on the western side have suffered from shading by the Alders of the western windbreak and crowding by an unidentified Bamboo running along it, but many may recover since the windbreak has been pollarded. The eastern windbreak, mainly of Hornbeam, has a row of Darwin's Barberry at the southern end. A row of Elaeagnus *E.* x *ebbingei* seedlings in tree guards (a mix of manufactured and plastic bottle ones that work just as well) runs parallel to the eastern windbreak. It was planted five years ago and gapped up two years ago but is struggling because of deer and rabbit damage. Of the 54 plants labelled in this compartment, 46% are in reasonable to excellent condition.




### The Trees

Of the 29 Apple trees on Ken Fern's map of this compartment, nine have died. These were *var*. 'Gala', *var*. 'Gooseberry', *var*. 'Orleans Reinette', two *var*. 'Court pendu plat' and three unnamed cultivars in the northernmost row. A third *var*. 'Court pendu plat' survives although it is a sickly tree with lots of canker. Significant canker lesions were also noted on *var*. 'Gascoyne's Scarlet' and *var*. 'Tydemans' Late Orange' Apple trees. Six of the extant Apples in this compartment are in good condition; fourteen give reasonable yields.

### The Beds

Bed 3114 runs east-west across the compartment about one-third of the way up, with a multi-stemmed Rowan growing at each end; both are in good condition but their fruit are neither as good nor as abundant as those seen in eastern England. A Saskatoon *Amelanchier alnifolia* growing in this bed is in very good condition and bears very nice fruit in July that are nearly all taken by birds before ripening.

Survey Map of the Main and Addy's Orchards, with transects and mapping numbers of tagged specimens

Beds 3109 and 3110 are empty but the invasive Dwarf elder *Sambucus ebulus* from Bed 3117 has now spread across two thirds of the compartment.

Sambucus ebulus in the Main Orchard, in April (left) and in June (right)

Addy Fern calls it a "nightmare nuisance, a useless plant that smells horrible". Of the six Mrs Wilson's barberries *Berberis wilsoniae* that are on Ken Fern's map of the bed, one remains; it is in good condition and has good quality fruit in early autumn. The middle of this bed is now open, with a small Monkey puzzle tree *Araucaria araucana* and several Blue elders *Sambucus caerulea* in the gap. These have been cut back because they are not yielding much fruit and are shading more productive trees. None of the six Salmon barberries *Berberis aggregata* remain but there is one growing in front of Bed 3111, which fruits prolifically in Autumn but is picked early in Winter; it does not suffer much predation by birds but the fruit can go rotten or dry if left on the branch.

## The Ribery (Bed 3111)

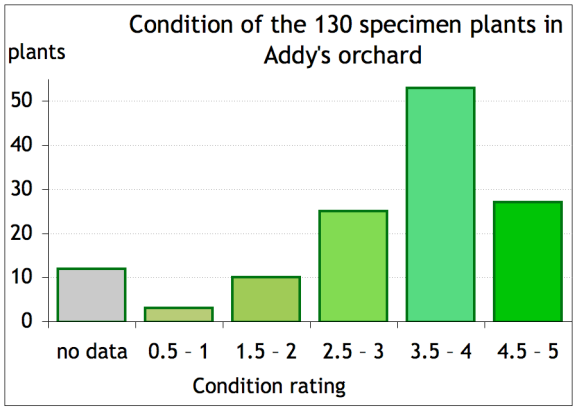
Most of the top third of the compartment is taken up by Bed 3111, "The Ribery", planted with sixteen different species of Currant *Ribes* species, of which the only truly productive bush is the Redcurrant. Of the other seven species surviving, three are growing vigorously: two bushes probably of Downy currant *Ribes warszewiczii*, several bushes of either Dogberry *Ribes cynosbati* or Japanese currant *R. fasciculatum* that have been cut back along with invading brambles, and Rocky Mountain Raspberry. This has very nice, tiny fruit but is not very prolific, and has spread, killing off many other *Ribes*; it has been cut back and is regrowing. One Golden currant *Ribes aureum* also survives. Along the back of the bed are two Plum yews, and towards the front five Ginkgo trees *Ginkgo biloba* planted in 2008.

Two small Monkey puzzle trees in front of the Eastern edge of the bed are shaded by the western windbreak and not very healthy. Four of the Plum yews were grown from seed and planted in the mid-1990s, and further three in 2007. The older trees, with one exception that

was badly crowded by bamboo running along the western windbreak, are in much better condition than the younger ones. Of the eight Willow-leaved seabuckthorn marked on Ken Fern's map, two females and a male survive; all are healthy but the female in the middle of the compartment is yielding increasingly poor fruit. The other female, near the southern opening, fruits prolifically most years. Around the southwest corner of the compartment there are several Junipers that were planted in 2007 after a long time in pots, and are in poor condition, being shaded by the western windbreak, which is also shading two Hazels that in reasonable condition but not apparently fruiting.

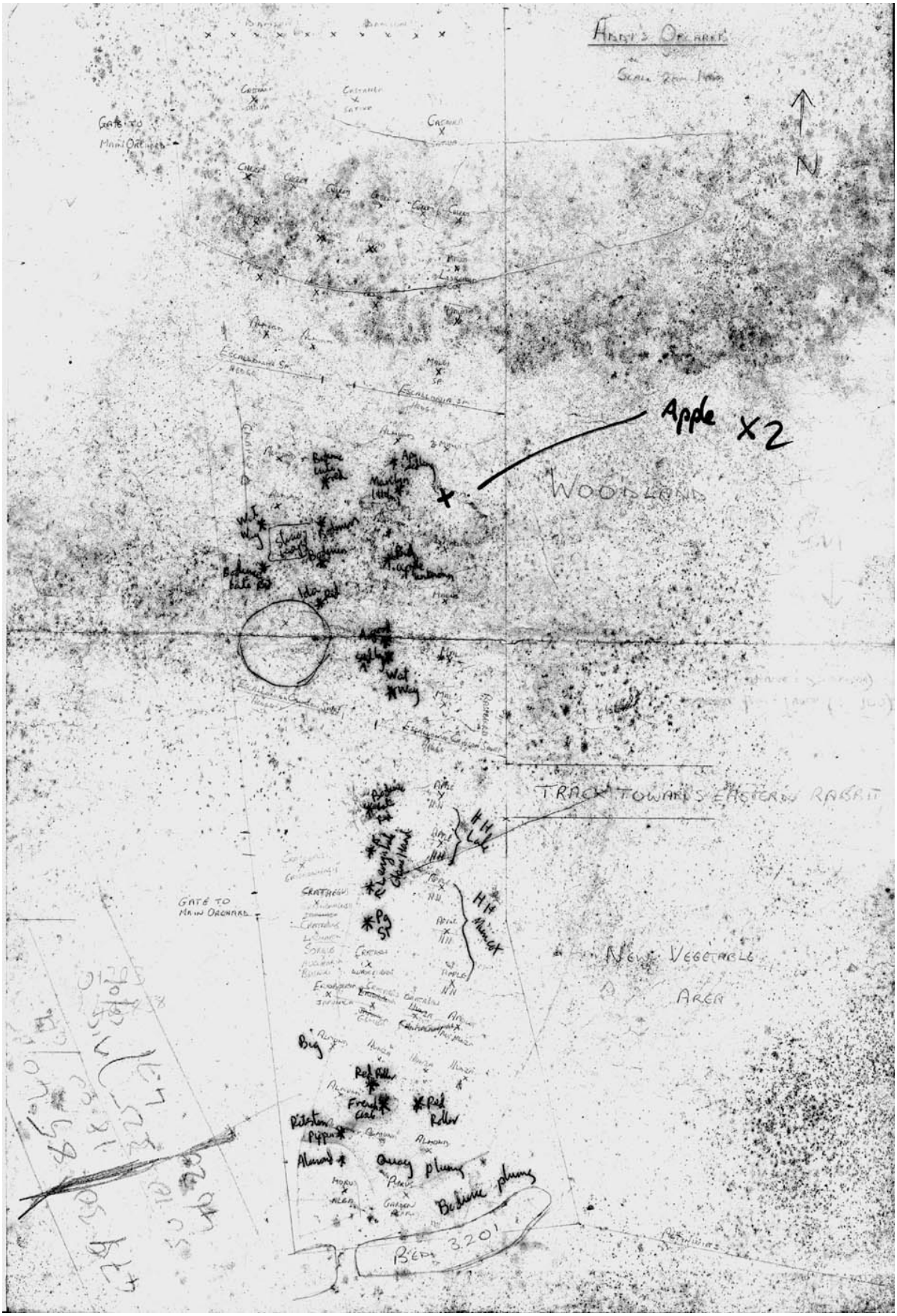
## Addy's Orchard (W2)

Immediately east of the Main orchard, Addy's orchard is slightly smaller than the Main orchard; no measurement of area is shown on Ken Fern's map. It is sheltered to the west by the Main orchard's eastern windbreak (W2/H007), the northern two-thirds of which were recently pollarded to one-and-a-half metres high. To eastern windbreak (W3/H008) is of Wych Elm *Ulmus glabra*, Lime *Tilia* species, Beech *Fagus sylvatica* and a few Plums and Cherries *Prunus* species in the south, which has not been pollarded, and the edge of the Coppice Area in the north. In the southwest corner, a short length of the Yew hedge (H010) runs to the opening for the path, and to the east of that the southern hedge is of Escallonia *Escallonia rubra var.* 'Crimson Spire' (H012), planted in the early 1990s. The northernmost hedge is of Cherry laurel and Poplar. Of the 130 plants tagged in Addy's Orchard, 62% are in reasonable to excellent health, although the percentages vary considerably between compartments, as shown by the bar charts for each.




The orchard is divided into five compartments, firstly (between W2/T1 and W2/T2) by the path that runs approximately east-west and goes from the main orchard to the beginning of the Track that runs south of the coppice and Arboreta to the eastern edge of the Field, then by hedges running approximately east-west. Going northwards, the first (between W2/T2 and W2/T3) is of Escallonia *var.* 'Crimson Spire', the next (between W2/T3 and W2/T4) is of unidentified Escallonia, and the last (between W2/T4 and W2/T5) is of multi-stemmed hazels. The 63 Apple trees in this orchard are on a mix of vigorous and semi-vigorous rootstocks. More than half (59%) were planted in 2000 or later; no date of planting was recorded for eleven (17%). Four (6%) are in dire condition, four in excellent condition and 22 (35%) in good condition; for seven trees (11%), no information on condition was recorded.

**Ken Fern's map of Addy's Orchard, showing some of the original plantings, hedges and beds, despite its damaged condition**



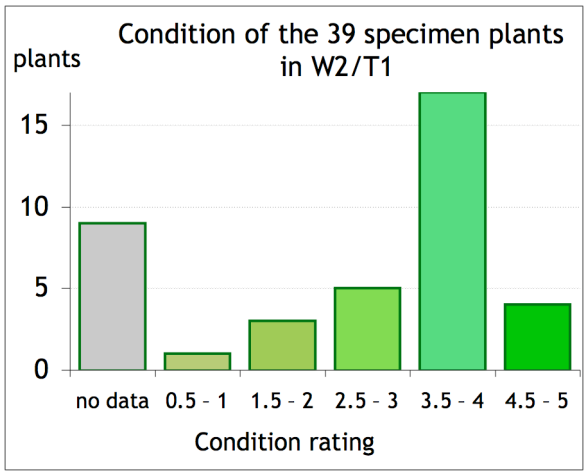
Twenty-one (33%) were grafted with budwood collected from local apple trees by the Ferns, nine (14%) with budwood from trees in London and two (3%) from trees at the Centre for Alternative Technology, Machynlleth, Wales. Four are or can be prolific, eight (13%) fruit well, nine (14%) moderately, nine poorly and 21 (33%) are too sick or too young; no yield data was recorded for 15 (24%) of the apple trees. Ken Ferns' map for this orchard has deteriorated and it is impossible to tell how many of what species were originally planted.

## First compartment (W2/T1)

The first, southernmost compartment of Addy's orchard (W2/T1) has compost heaps in its southwestern corner, up against its western windbreak, which is mainly of Hornbeam, some Alder and the occasional Elder and Rowan and has not been pollarded. Just inside this, to the north of the compost heaps, is a Ramanas rose hedge running parallel to the windbreak W2, planted in the mid 1990s; it is spreading east into the orchard and has been cut back over part of its length. The windbreak to the east contains several types of Lime *Tilia* species, including one that is pollarded, some unidentified wild Cherry trees, a self-sown unidentified Willow and several Wych Elms, grown from seeds gathered from a tree on Penglais Hill just outside the main campus at Aberystwyth University. One by the northeast opening in the windbreak, and therefore least shaded, bears fruit in profusion that are edible and tasty when young. There is a hedge on the eastern side of the northern boundary of the compartment, with Alders, some of which were pollarded in 2007; both the pollarded and non-pollarded Alders show dieback on new growth, possibly because of the very cold winter. This hedge has an understorey of Darwin's Barberry and one self-sown native Elder. The path runs northwards through the compartment from the southwestern corner, curves slightly east a little way in, and then runs northwards again up the centre of the compartment across the Track to the northern hedge.

Ramanas rose *Rosa rugosa*, invading the first compartment of Addy's Orchard (W2/T1)

Of the 39 tagged plants in this compartment, 54% are in reasonable to excellent health. Three of the 25 Apple trees in this compartment fruit well: *var*. 'Mouse', on budwood obtained from Lerryn, *var*. 'Red Roller' on donated local budwood, possibly from Heligan Garden, and a *var*. 'Late red' apple, on budwood from a tree on Hampstead Heath in London. One of two *var*. 'Page Street' apples, on budwood from London, and a *var*. 'Tywardreath Big Yellow' on local budwood, also yield good fruit. No information on fruiting was obtained for seven of the trees old enough to bear.




In the southeast of the compartment, along the north edge of a fenced bed, are a Pear, in poor condition that yields poor, sparse fruit, and a line of *var*. 'Lerryn Loo' Plums, in good condition with their suckers growing around them. 'Lerryn Loo' is a local yellow plum, originally found between toilets and car park at Lerryn, that yield very pleasant, damson-sized fruit from September, with a long, variable ripening season.

Several Almonds *Prunus dulcis* and Apricot trees *Prunus armeniaca*, including *var*. Hunza, were planted in this orchard; the single survivor has flowered once or twice but never fruited and is in poor condition. South of this are three Elaeagnus, one a small struggling bush, possibly *Elaeagnus parvifolia*, which may not survive because deer browse the tips growing above the tree guard, and two Silverberries *Elaeagnus commutata var*. 'Quicksilver', which are not as heavily browsed, and in reasonable condition. Contrary to hese two bushes produce excellent summer fruit.

North of and next to the Ramanas roses by W2 is a bed of mixed Raspberries. A further patch to the east is dying out but north of them, a taller cultivar of Raspberries are thriving and reasonably prolific; they bear pleasant, large, tasty fruit in early summer and again in September-October. These were donated at a mid-1990s Big Green Gathering, with the warning that although they were very good Raspberries, they carried a virus and so should be kept away from other Raspberries. After a while in quarantine, they were planted there. It may be that the other cultivar of Raspberry to the south is dying from this virus.

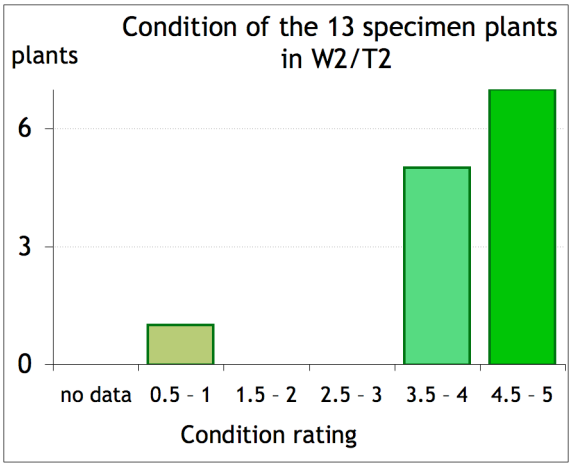
There are eight Thorn trees grouped in the northwest of the compartment, fairly close to the western windbreak; some are named cultivars, some are seedlings. They are in good or fairly good condition but only one tree, possibly *Crataegus durobrivensis* yields pleasant fruit of a reasonable size; unfortunately this tree is still small, although it was planted in the mid-1990s. South of these is a Rowan *var*. 'Beissneri', in very poor condition that hardly fruits or flowers. To the east of the Thorn trees is a bed of Raspberries, Gooseberries, Red and Black

currants, with Docks *Rumex* species, grass and Nettles under. A White mulberry *Morus alba* and several Loquats marked on the Ferns' map have perished.

In the southeastern corner is Bed 3201, which is fenced-in, although the fence is not high enough to exclude deer. A few Chicory plants are growing there, and Penpol's only surviving Perpetual Kale *Brassica oleracea ramosa*, which used to grow in the Winter Salad Garden. Also present are Rhubarb *Rheum rhaponticum*, Wild Corn salad *Valerianella locusta* that has self-sown (which it does on most bare ground in Penpol), Shepherd's Purse *Capsella bursa-pastoris*, and Crow garlic. Running in an East-West line in this bed are rootstock trees, and an Apple tree *var*. 'Marilyn's Green'.

## Second compartment (W2/T2)

The second compartment (W2/T2) is a small area comprising a fenced bed close by the western half of the Escallonia *var*. 'Crimson Spire' hedge and the area to the east of it, around the opening to the next compartment (W2/T3). As it is also close by a wide opening in the windbreak between the Main and Addy's orchards, to the north of which the windbreak is pollarded in 2007, the bed is not much shaded. It was the first bed that Addy Fern fenced in and functions quite well, as long as it is kept reasonably weed-free. Of the 13 Thorn, *Amelanchier* and Bay trees labelled in this compartment, 92% are in reasonable to excellent condition.




There are a number of trees in the bed, all planted in the early 2000s, including four *Amelanchier* bushes, two of the cultivar 'Ballerina', possibly *Amelanchier lamarckii* or *Amelanchier x grandiflora*, and two unidentified *Amelanchier* shrubs, one of which has "quite nice" fruit in July, normally eaten by birds; all four are in good condition. The five seedling Thorn trees in the bed had been kept in pots for a long time before being planted. Four are in good condition, and have recently been cut back heavily because they are casting too much shade; one bears medium yields of fairly large fruits in October. The fifth Thorn has canker in the main stem and is in poor condition but bears tasty fruit, although not abundantly as the tree is so small. There are also two self-sown Hazel trees, self-sown Raspberries, and some Blackcurrants.

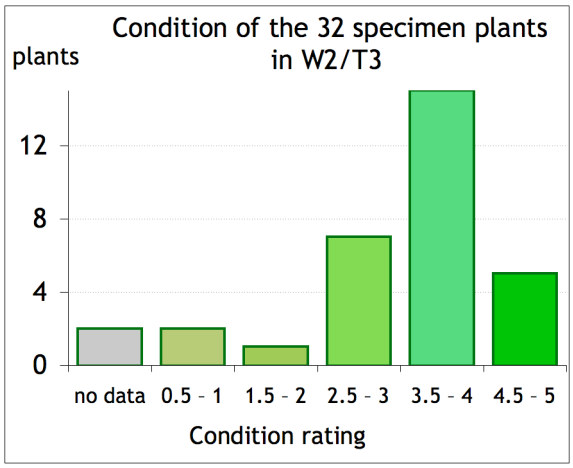
The understorey of the bed includes some quite vigorous plants, such as Lemon balm *Melissa officinalis*, which has to be cut back frequently, although it grows less vigorously since the windbreak was pollarded; Black peppermint *Mentha x piperita vulgaris*, and an unidentified Mint *Mentha* species that stays green late in the year, both sometimes have to be controlled

by pulling up, although the Raspberries now grow quite happily above them. Harebell and Trailing bellflower, also vigorous and invasive, abound. Common vetch *Vicia sativa* has come in and is welcome because it fixes nitrogen and is not invasive. Addy Fern is trying to encourage the Sweet cicely *Myrrhis odorata* and Fennel *Foeniculum vulgare*, growing in the bed, and surplus Chicory plants planted there in 2009. Also present are abundant Serpent garlic *Allium sativum ophioscorodon*, Ramsons, a Violet, which is pretty but the leaves are not very good eating, a slow growing Thyme *Thymus vulgaris* that is failing to thrive, Strawberries, some of which do not taste very good, Garlic cress, Chives, which have virtually disappeared, Pignut *Conopodium* species possibly *denudatum*, a non-native, not very tasty species, Sneezewort *Achillea ptarmica*, Oregano *Oreganum vulgare*, Scorzonera *Scorzonera hispanica*, Hogweed, Sage *Salvia officinalis*, Rosemary *Rosmarinus officinalis*, Garlic chives *Allium tuberosum*, an unidentified Skullcap *Scutellaria* species, St. John's wort, one Lovage *Levisticum officinale*, Ephedra *Ephedra* species possibly *sinica*, *major* or *gerardiana* along the southern edge of the bed, Tsi or Orange peel plant *Houttuynia cordata*, Musk mallow and Crow garlic.

To the east of the bed, near the opening in the hedge to the third compartment, are four Bay trees, three of which had been quite shaded, and are in reasonable condition. The fourth is close by the opening, so has been less shaded and is in better health.

## Third compartment (W2/T3)

The third compartment is about the same size as W1/T2. The western windbreak (W2) is mainly Alder, pollarded to one-and-a-half to two metres high; the windbreak to the east is mainly of Wych Elm, uncut and growing out into the compartment. The path runs northwards through the centre of the compartment. Of the 32 plants tagged in this compartment, 63% are in reasonable to excellent health.




In the southwestern corner is a large Pine tree, possibly Austrian pine, which had two main stems until the mid 2000s, when one broke off; the remaining stem is thriving. In a large circle around this Pine are Willows, planted along with the Pine at a permaculture event in 1994, to create a tree house with the Pine as a central tree. However, the circle became chaotic, and many of the Willow trees fell over, so it was recently coppiced almost to the ground. Something has eaten many large holes into the Willow stumps, as the picture shows.

There is Pink purslane growing within the circle and three self-sown native Elders on its western side. Just to the north of the circle, growing into a nearby Plum tree and along the western windbreak, is a very vigorous, rampant Grapevine with many stems. It does bear but the fruit rarely ripens before winter, except in an exceptional year, such as 2006, when bunches were ripe in September.

The Apple trees are fairly evenly distributed across the northern half of the compartment, with two exceptions growing in the southeastern half. Of fifteen Apples, two are in dire condition, and seven in good condition. None fruit particularly well, although *var*. 'Bodmin Late', of which there are two trees, could apparently be "a really great apple", if the fruit ripened properly, which they may do in a sheltered position in full sun. There are three seedling Crab apples *Malus x* there, including two from a 'John Downey' cultivar, one of which is prolific and has fruit similar to *var*. 'Golden Hornet' (*Malus x zumi calocarpa*).

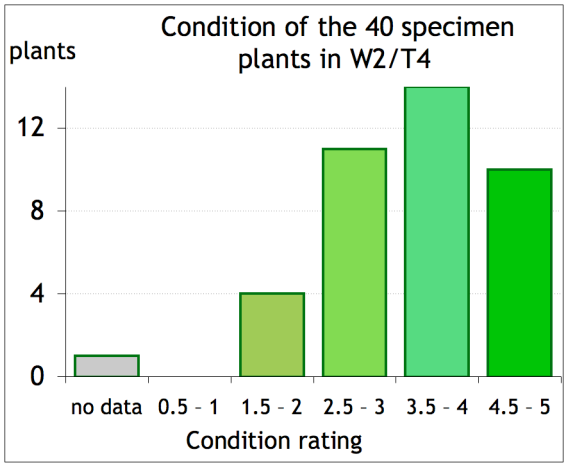
The six Serviceberry trees there were planted in the mid-to-late 1990s; all are in good condition but the birds take all the fruit before it ripens. There are two Plum trees in this compartment, a *var*. 'Victoria' and a local cultivar, either 'Lerryn Loo' or 'Bodinnick', which remains healthy despite the grapevine to the west growing into and over it. The 'Victoria' Plum is not in as good a condition as the other, and the most fruitful branch was broken in 2009, possibly pulled down by deer. Of the three Japanese Apricot *Prunus mume* trees, planted in the early 2000s, one has died, one is in dire condition and the other is thriving, although it hasn't fruited yet.

On the eastern side of the compartment is a series of large Blackcurrant bushes, planted in the mid-to-late 1990s, running northwards from the southeastern corner; Nettles flourish around them. The southernmost bushes are grown from cuttings, and the northernmost bush is a Blackcurrant *var*. 'Giant'. Further north are Gooseberry bushes, and in the northeastern corner are several more Blackcurrants *var*. 'Giant' and Gooseberries. The birds seem to take all but the hard, unripe, sour blackcurrants.

## Fourth compartment (W2/T4)

The fourth compartment (W2/T4) is slightly smaller than the third, with a path running from the centre of the southern hedge to the eastern end of the northern hedge. In the southwest corner, the grapevine from the third compartment is spreading north by layering, to about three metres east of the western windbreak.

Of the 40 plants tagged in this compartment, 60% are in reasonable to excellent health. All 23 Apple trees there are all on the vigorous M111 rootstock; nine are in good health and two in poor health; none are in dire condition. Four trees were planted in the 1990s and nineteen in the 2000s, most of which are insufficiently mature to bear much fruit. The only good fruiter is a *var*. 'Liskeard mini-cox seedling', in the southeastern corner. A *var*. 'Crawley Beauty', planted in the 2000s in the middle of the compartment, is much healthier than those of the same cultivar in the main orchard on MM106 rootstock.



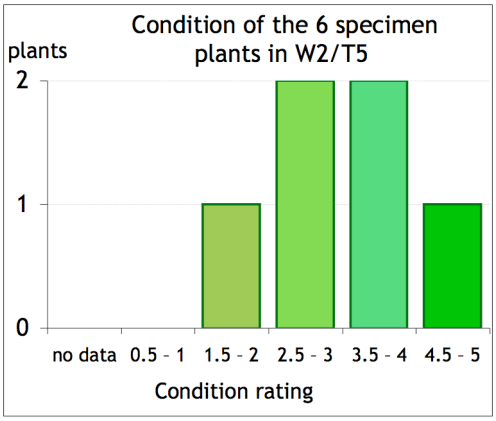

Four unidentified *Amelanchier* shrubs were planted in the mid-2000s across the southern part of compartment; all are in excellent condition but the birds take all the fruit before they ripen. Two Monkey Puzzle Trees, previously left for some time in pots, were planted in 2001 in the middle of the compartment, and are already more than two metres high, in excellent condition, although one has a very small amount of deer damage at its base. Nearby, a Victoria Plum planted in the mid-2000s, is in dire condition. A Thorn *C. schraderiana* was planted in the mid-2000s on the eastern side quite near the eastern windbreak, and is in excellent condition.

Two Ginkgo trees, which had been kept in pots for a long time, were planted in the western side of the compartment around 2001; they are in good health but crowded by Dwarf Elder, Docks, Nettles and other weeds. Two *Sorbus* trees that had been left in pots for some time, were planted in the mid-2000s; one in the southwestern corner, probably a Rowan, is in poor condition, heavily bent over, away from the western windbreak, and the other, near the northwestern corner, is in dire condition, with one of its four stems showing a severe canker about a metre from the ground. Five Cherries *Prunus cerasus* or *P. avium var*. 'Park', planted in the mid-2000s, and one sucker from them, are growing in an east-west line, just south of the compartment's northern boundary hedge. They are all shaded, some heavily, but are reasonably healthy, and bear small, slightly bitter, cherries. In the northeasternmost corner, by the opening to the last compartment (W2/T5), is a Morello cherry tree *Prunus cerasus austera*, obtained from Trago Mills and planted in the mid-2000s; it is in reasonable condition, although it has been quite slow growing, and bore its first four cherries in 2009. There is a Redcurrant growing at the base of an unidentified Apple tree close to the northern hedge and shaded by it. Nearby are some of the tall, virus-carrying Raspberries originally donated at a Big Green Gathering, with two Jostaberry *Ribes x culverwellii* or Worcesterberry *Ribes divaricatum* plants to their south.

The hedge between the fourth and fifth compartments has Babbington's leeks growing in between the two rows of Hazels, as well as Bluebells *Hyacinthoides non-scripta* that were planted but have been heavily grazed, preventing them from flowering. Further west, Ramsons have been planted; their condition has improved since the windbreak to the west was pollarded. In the middle are 'cushions' of moss, and two young native Elder trees, possibly self-sown.

## Fifth compartment (W2/T5)

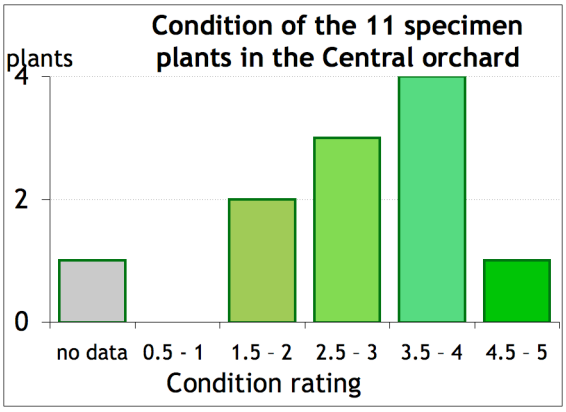
The fifth compartment is very small, sandwiched between the multi-stemmed hazel hedge to the south and a Poplar and Cherry laurel hedge to the north. There is no clear path there, although the eastern end is far less overgrown than the rest of the compartment. Of the six trees labelled in this compartment, half are in reasonable to excellent health. There are two Apple trees in this eastern part, one planted in the late 1990s and the other in the early 2000s. Both are somewhat shaded, in reasonable health but their fruit does not seem to ripen.




Further west are two Sweet chestnut *Castanea sativa* trees, planted in the early 1990s, one from a shop-bought chestnut that germinated. Neither is in good condition; the branches of one are dying back to the south, where it is shaded by the Hazel trees of the hedge, and the other showing the effects of shading by the windbreak to the west. The fruit, if any, is not collected. At the western end of the compartment are two more trees, both in good health and planted in the early 1990s: a multi-stemmed Hazel, seedling of a productive tree elsewhere on the Field, and a Cherry plum *Prunus cerasifera*, which had self-sown in a pot that had contained another Plum and was planted in its stead; it is an extremely "shy bearer", not at all prolific. Just to the west of the Cherry plum, close to where a Strawberry bed used to be, is a small enclosure containing Elaeagnus bushes *E. x ebbingei*, mid-season fruiting Raspberries, Babbington's leeks, Garlic Mustard *Alliaria petiolata* and Three-Cornered Leek *Allium triquetrum*. The ground layer is mainly of Nettles, Docks and long grass, which are overgrowing three small Monkey puzzle trees, about half a metre high, between the two Chestnut trees. There are some heavily grazed *Elaeagnus* bushes near the Hazel, and more in the northern hedge further east, along with some self-sown Blackthorn trees *Prunus spinosa*.

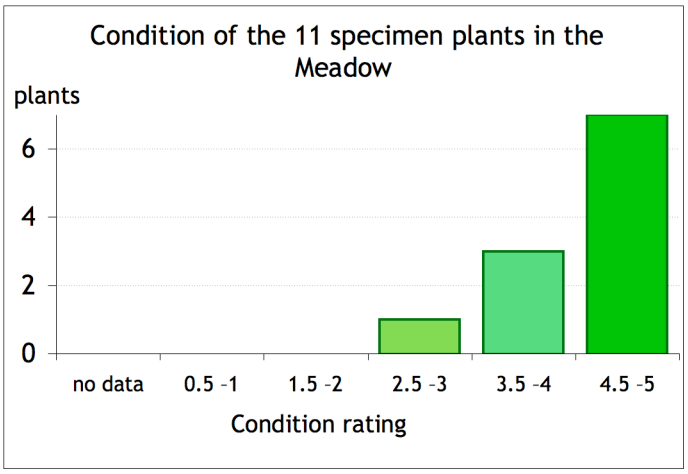
## Central Orchard (CO)

This small orchard lies immediately to the south of the Track, with a central path running southwards to an opening in its southern hedge that leads to the Meadow. It is bounded to the north by the Track, and the southern trees of Arboretum West, which are mainly *var*. 'Bodinnick' or *var*. 'Lerryn Loo' Plums and their suckers to the west and Cherry plums to the east, extending along the Track. The windbreak to the west is a line of very tall Leyland cypress *Cupressocyparis leylandii*, and to the east is of White willow *Salix alba* at the northern end and Osier *Salix viminalis var*. 'Bowles hybrid' at the southern end. The southern hedge is of Hornbeam, Beech and Hawthorn to the west of the opening into the Meadow, and of Beech, Alder Buckthorn *Rhamnus frangula,* Hazel and Field maple *Acer campestre*, which has badly damaged bark, to the east. At more than eight metres, the hedges are very tall and the area would benefit if they were pollarded.




Of the 11 tagged plants in the Central Orchard, 40% are in reasonable to excellent condition. Of the eight Apple trees there, all planted in the early 1990s, one is in dire condition, one in poor condition, both *var*. 'Orleans Reinette' trees, and three are in good health. Although the Apples shaded by the southern hedge have grown well, they have hardly fruited; the only good fruiter in this orchard is a *var*. 'Bramley' in the middle, just to the east of the central path. In the northwest corner, west of the path, are two *var*. 'Lerryn Loo' or *var*. 'Bodinnick' Plum trees, suckers from the hedge to the north. In the southeastern corner are some Narrow-fruited currant bushes *Ribes stenocarpum*, planted in the early 1990s, that have tiny, unimpressive fruit that are taken by birds before they ripen. The grass there is not cut often, and is interspersed with tall Nettles, Hogweed, and self-sown Willows. There is a patch of Comfrey in the northeastern corner.

## The Meadow (M)




The Meadow is a fairly open area, mainly long rough grass around Seabuckthorns and young self-sown native trees. Nothing was initially planted there except the Poplars and Willows of the coppice that extends over the southern part of the Meadow and the Robert Hart Garden. The path runs approximately north-south, from the opening in the northern hedge, that leads to the Central Orchard, to the northeast of the Ornamental Area. Parallel to the path is a windbreak with Escallonia species that runs between the Meadow and the New Veg and Nursery Area. The northern hedge is of Hornbeam, Beech and Hawthorn to the west of the opening, and, to the east, of Beech, Alder Buckthorn, Hazel and Field maple, which has badly damaged bark. The southern hedge contains Alder, Hornbeam and Witch hazel *Hamamelis virginiana*. Of the 11 tagged specimens in the Meadow, 92% are in reasonable to excellent health.

Seven Willow-leaved Seabuckthorn were planted in the winter of 2001-2, including a male close by the eastern side of the northern hedge, two females further into the Meadow, one of which was pollarded in 2007, and one more some metres south of them. They are all in excellent condition, with the exception of the male that now has considerable dieback on branches on its western side, because of shading by the hedge to its north. The other three, all females, are in the southern part of the Meadow, in reasonable health, with several large suckers, which are in excellent condition. All the mature females are fruiting well.

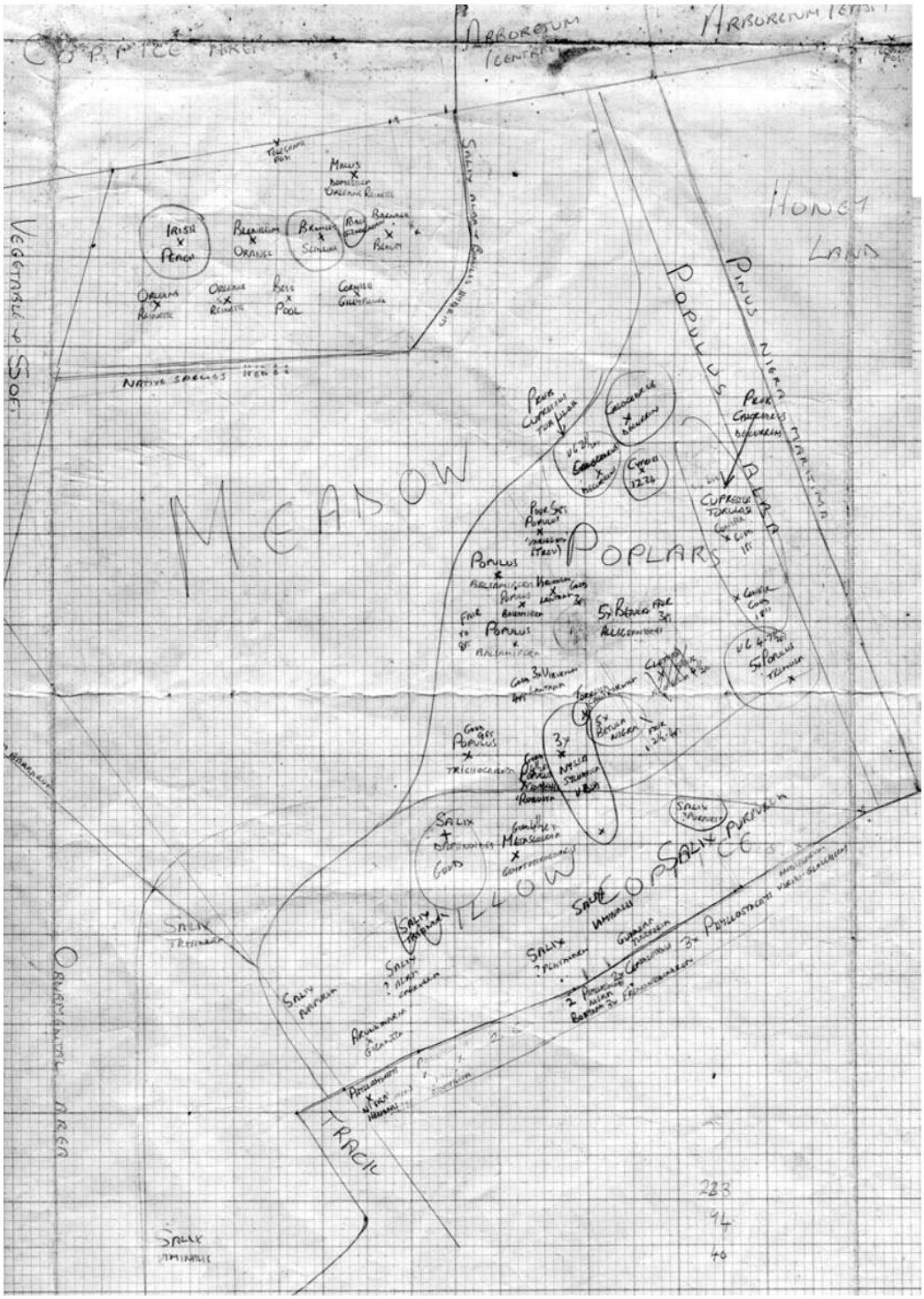
Three Seabuckthorn, of a special large-fruited cultivar obtained by Ken Fern, were planted in the mid-2000s, in the northeast of the Meadow. Two survive, both female; they have not yet fruited, although both are healthy.

An unidentified Oak, possibly *Quercus muehlenbergii*, that had been growing in a pot and was effectively root-pruned when moved and planted in the middle of the Meadow in the winter of 2007-8; it is now established and doing well. Various seedlings, mainly Willow, Oak and Ash, were also planted there in the winter of 2001-2. Around the southern hedge, near the opening to the Ornamental Area are Lungwort *Pulmonaria* species and Solomon's Seal *Polygonatum* species groundcover.

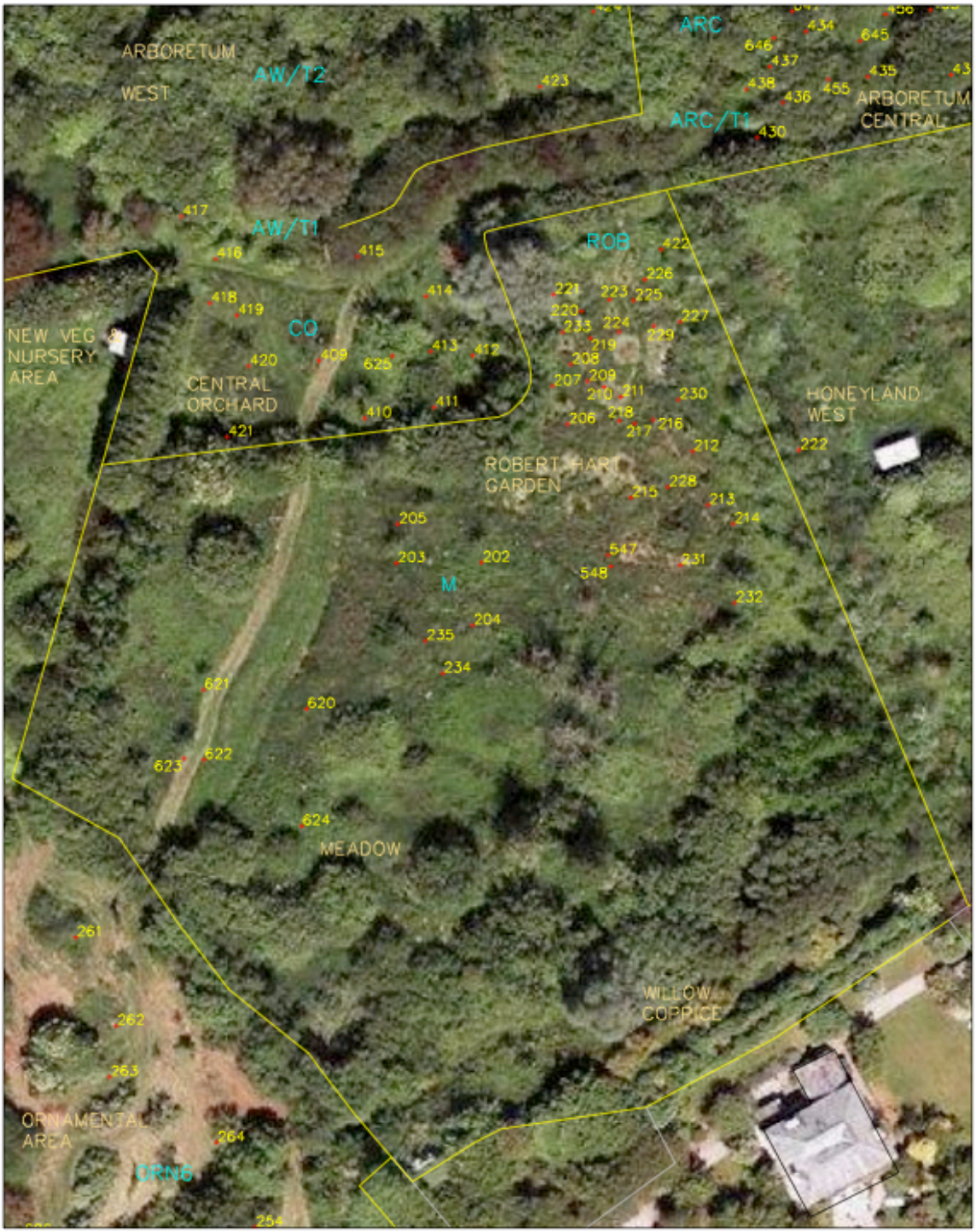
In the south of the Meadow is a group of six Balsam poplar trees *Populus balsamifera*, and two single trees further east; all are moribund, with only the occasional living twig on them. Jelly ear fungus *Auricularia auricula-judae* and Oyster mushrooms *Pleurotus ostreatus* are fruiting

on their trunks. To the east are four Birch trees, possibly Yellow birch *Betula alleghaniensis*, and beyond them a large number of tall Aspens *Populus tremula*, possibly suckers of the five trees originally planted, with a Plum yew growing in the middle of them. Nearby more Balsam poplars are also dying; they were never coppiced and have grown very tall. To the south, other poplars have been coppiced and thriving, along with another Willow-leaved Seabuckthorn and Nettles flourishing around them. Further south are various Willows growing down to the southern boundary of the Field.

Ken Fern's map of the Central Orchard and Meadow Areas



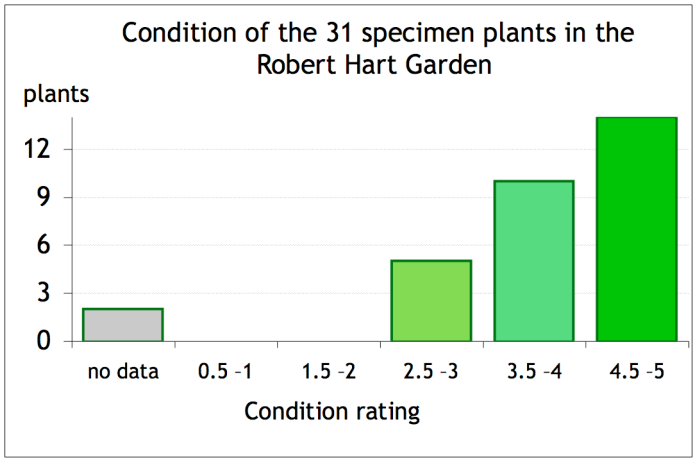
Survey map of Central Orchard, Meadow and Robert Hart Garden, with transects and mapping numbers of tagged specimens




CENTRAL ORCHARD & MEADOW 1 : 500

## The Robert Hart Garden (ROB)

The Robert Hart Garden was planted from 1999 onwards, in memory of Robert Hart, who initiated Forest Gardening in the UK. A Forest Garden is planted to mimic a young forest or forest edge, which is, ecologically, the most productive area. Trees, shrubs and herbaceous plans are chosen to occupy up to seven layers of vegetation, ranging from large canopy trees, to groundcover, roots and climbers. The garden is looked after by Phil James, who is very passionate and enthusiastic about the garden, although he declares his plant knowledge is not very extensive. Some of the plants came from Robert Hart's garden; some were bought by Phil after fundraising activities. Several plants ended up in the garden because a friend of Phil's was moving house and didn't have enough space in his new garden; some were bought in sales. The result is a slightly haphazard combination of plants. Of the 31 labelled plants in the Robert Hart Garden, 77% are in reasonable to excellent health.




The Robert Hart garden is still in the relatively early stages; the ground cover and herbaceous layers get invaded by native plants unless they are kept clear. A herbaceous plant island bed is located in the middle of the plot, south of most of the trees planted there, and facilitates maintenance as it is relatively clear. Some trees are quite well established. There are six Apple trees distributed around the island bed, most of which are unidentified, including one that is probably from Robert Hart's garden, but all are in good condition despite deer damage to their bark. They were planted in 1999 and 2000; four of them are fruiting, one prolifically and one from both scion and rootstock. There are several Monkey puzzle trees, planted in 2006 and 2009, two near the central island bed and a group of four at the southern end of the area; one of these was found, self-sown, in a garden in Lerryn. All are in excellent health.

Of the three Plums trees planted north of the island bed in 2000, two, a *var*. 'Shropshire' (bought from Duchy Nursery because Robert Hart's garden was in Shropshire) and a *var*. 'Victoria', are in moderate health and fruiting, the third is suckering overmuch, and needs the suckers removed. Growing around this last are St John's Wort, Day Lilly and Fennel. Two Cherry trees *Prunus avium*, planted in 2000, are in very good condition although not fruiting. A Damson, also planted in 2000, close to the northwest corner, is in very good condition and fruits well sporadically. Nearby, two *Elaeagnus* trees, planted in 1999, are in good health and one, probably *E. x ebbingei* grown from seed gathered at Southmead Hospital in Bristol, is

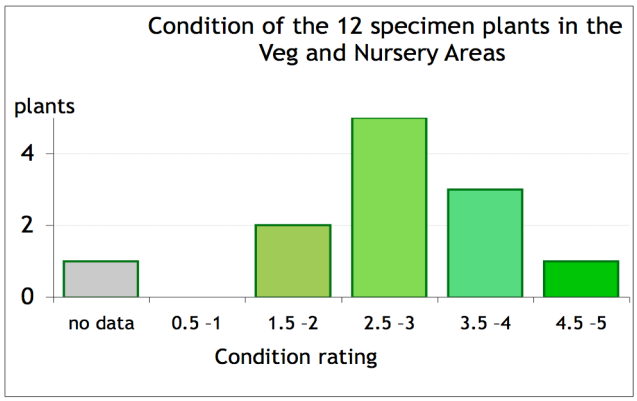
fruiting well. Two Whitebeam trees *Sorbus aria*, planted in 1999 and favourites of Phil's in the garden, are in very good health and fruiting.

Near the northeast corner, by the eastern windbreak, a large Elder tree, planted in 2000, is in excellent health and fruiting well; further south along the windbreak an unidentified Hazel, planted in 1999 and also in excellent health, is bearing its first few nuts; between these two, the groundcover is of Bowles' Mint. Nearby a seedling Japanese walnut, planted in 2006, is growing well and in very good condition. Two of the three Plum Yews planted in 1999 have been badly damaged, with shoots only at ground level; the third is in excellent condition. The southernmost tree, a Willow-leaved Seabuckthorn, planted in 2002, is in excellent condition and fruiting well.

The middle, bush layer consists mostly of fruit bushes, such as Redcurrants, Blackcurrants and a Blueberry bush *Vaccinium* species, some of which have suffered deer damage. Only the Blackcurrants, planted in 1999, are fruiting. A clump of Japanese Knotweed *Polygonum japonicum* is kept in check by shade, although it is an invasive weed, and, under the Wildlife and Countryside Act 1981 it is an offence to actively plant or otherwise cause the species to grow in the wild (Schedule 9, Section 14: www.naturalengland.org.uk/Images/section-14-guidance_tcm6-16966.pdf), and it is classed as "controlled waste" in the Environmental Protection Act 1990 (www.defra.gov.uk/wildlife-pets/wildlife/management/non-native/knotweed.htm).

## The Veg and Nursery Areas (OVN)

Of the 12 tagged plants in the Old and New Veg and Nursery Areas, a third are in reasonable to excellent condition.




## The Old Veg and Nursery Area

This was the first vegetable area planted; it is roughly square, and has become very overgrown, making it difficult to walk through, with tall trees shading much of the eastern half. Its western windbreak is of Western Red Cedar *Thuja plicata*, some eight metres high, reinforced with taller Alders, to the south, and of Arrow Bamboo *Pseudosasa japonica* to the north.

Right by the opening between the Western Red Cedar and Bamboo hedges, is a tall Almond *Prunus dulcis*, which has never fruited and carries abundant lichen; also a Spindle Tree *Euonymus europaeus*, brought from North London. North of the Bamboos is a line of Limes *Tilia* species The eastern windbreak is of Alder with Escallonia species, the southern edge

borders the pond compartment of the Ornamental Area (ORN2/T1), and to the north is the New Veg and Nursery area.

Survey map of the Old and New Veg Areas, with transects and mapping numbers of tagged specimens

## Ken Fern's map of the Old Veg and Nursery Area

The area was originally divided into four strips running east-west, each divided into two beds by a central path. The southernmost strip originally contained the vegetable beds, and Raspberry canes; it is now completely overgrown, and all the Raspberry canes have gone. The next strip contained the soft fruit beds, and many of the bushes survive despite Brambles invading the beds. In the western bed are various Gooseberries which all bear good fruit, although whether they ripen depends on bird predation; further across are Whitecurrant bushes *Ribes glandulosum*, then more Gooseberry bushes, which are not thriving as much as those by the western windbreak. Hawthorn seedlings were planted amongst the soft fruit to create a woodland garden; these are vigorous but not prolific, although they have shaded out much of the Brambles. Nearby are

Young trees growing close together in the Old Veg Area nursery/rootstock beds

two Tansy-leaved thorn trees *Crataegus tanacetifolia*, planted in the 1990s, both suffering from the shade of a large, unidentified multi-stemmed tree just to their north. They used to bear pleasant fruit in September, but only the unshaded branches flowered in 2009. The next two beds, at the northern end of the area, are nursery beds, from which many plants have been relocated. East of the Thorn trees are Sweet chestnuts with Blackcurrant *Ribes nigrum* bushes growing under them. The lower branches of the chestnuts have been cut back but still cast too much shade. The Blackcurrant fruits are quite tasty but some have a virus infection. Further east is the site of the first pond created on the Field, which has become a small swamp; to the East of it is an old standpipe and tap. To the north are various species of Currant, growing in the shade of various tall trees along with Elder, Nettles and weeds. Further north are *Actinidia* vines, which bear fruit late in the year, one Kiwi fruit and some seedlings, some of which are good, some not. The fruit on the seedlings is smaller and ripens earlier than those on the parent vine. They are climbing into the trees and have broken the trunk of an Alder tree. To the south of these vines and east of the nursery beds are two Apple rootstock beds with the trees still growing in closely-packed lines under tall trees that have shaded out the brambles, making it easier to walk through the area. There are many seedling Elders in the understorey with Traveller's Joy *Clematis vitalba* growing through them.
In the northwest corner, just east of the Bamboo hedge is a Raspberry, possibly Stone Bramble *Rubus saxatilis*, which fruits at the end of June, struggling to survive. It is not very productive and is dying out under the shade of self-sown Willows, which are shading out the Brambles below them.
Through the Alder windbreak to the east is the Nursery area, where there is a thriving patch of Perennial buckwheat *Fagopyrum dibotrys* with edible leaves and flowers, which is very vigorous but does not set seed; it may be self-sterile. Close by is a patch of Red-veined dock *Rumex sanguineus* and a Lilly-like plant. To the north is a Grapevine climbing through the trees. The Northeast corner of the area is very overgrown, with a large *Rheum*, possibly *palmatum*, in flower at the time of surveying (June 2009), and self-seeded Hawthorns and Oaks on the border with the Ornamental Area. Dwarf Elder is invading the area from the east but is being shaded or competed out. In the southeastern corner some Gooseberries and Blackcurrants survive, along with a few Loganberry *Rubus loganobaccus* and Raspberry canes; they are, however, overrun by Brambles, Nettles, Cleavers *Gallium aparine* and Dwarf Elder. Just west of the Ramanas rose hedge bordering the Ornamental Area, are two *var*. 'Concorde' Pear trees in moderate condition, planted in the mid–1990s in memory of Ruth Howard, who pioneered Vegfam (a vegan variant of Oxfam) by her son, and another Pear, planted in the early 2000s by Trevor, which is in poor condition, bent over and swamped by weeds. None of these are checked for fruit or harvested. To the east of the Pear trees are two unidentified Thorn trees and a red-stemmed Willow.

In the northwestern corner of the Old Veg and Nursery Area, a self-sown Sycamore *Acer pseudoplatanus* has taken the place of a post once set there to support a Hop vine *Humulus lupulus*, which now grows up the Sycamore. Around and under this is an understorey of Mints *Mentha* species, Docks, Nettles and grasses, with a few Marshmallow *Althaea officinalis* and Figwort *Scrophularia nodosa* plants.

## The New Veg and Nursery area

This area, immediately to the north of the Old Veg and Nursery area, is larger and less overgrown, although there are still almost impenetrable patches. It is bordered to the north by the trees along the Track, and the compost toilet is in the northeastern corner. The western windbreak (W3) is the boundary with Addy's Orchard and mainly of Wych Elm, Lime and Beech, and the eastern one is of very tall Leyland cypress to the north and unidentified Escallonia to the south.

In the southwest of this area is a fenced-in bed, which was planted with Raspberries. These have failed to thrive and very few are left. Beyond this, near the southern end of the western windbreak, are four apple trees, running in a north-south line, planted in the early or mid-2000s and not yet bearing fruit; three are *var*. 'Hambleden Deux Ans' and the northernmost one may be a *var*. 'Tresillian Late Red'; all are on vigorous rootstock. The three *var*. 'Hambleden Deux Ans' are in very good health but no data was recorded on the *var*. 'Tresillian Late Red'; it has a red-flowered Ramanas rose growing close by. To the east of the apples are Willow, Poplar and Sycamore trees, and a male Willow-Leaved Seabuckthorn. Further east is an Actinidia growing through a tree, a female Willow-Leaved Seabuckthorn, and an unidentified Pyracantha; the understorey includes Nettles and Comfrey, some Ragwort *Senecio jacobaea* and Docks. To the south there is an area of black, woven plastic mulch with low green-netted shade tunnels for propagation, overgrown by Brambles.

To the north of the Apple trees is a hedge of Rose Of Sharon *Hibiscus syriacus*, with a patch of Perennial buckwheat to their west. Further North is a dead Plum tree, and then a line of Seabuckthorn, planted in the early 1990s. Some are in good condition, some not; they bear prolifically from August on. Running south of the Seabuckthorns is a hedge of Elaeagnus, either *E. angustifolia* or *E. parvifolia*. To north and west of the *var*. 'Tresillian Late Red' Apple tree are two Cherry trees, bought and planted by Phil James in the mid 1990s; one has Gooseberry bushes around it, is labelled *var*. 'Stella', and is in good condition, and the other is in poor condition. Nearby is a Rowan grafted onto a different *Sorbus*, in order to improve the fruit quality; however, the rootstock has also grown and now bears better-tasting berries than the grafted Rowan branches.

A triangular area in the northeastern corner, around the compost toilet, is effectively isolated from the rest of the New Veg and Nursery Area by trees and scrub. It is mainly covered in long grass and weeds, with one or two Willow-leaved seabuckthorns.

## The Honeylands and Eastern Rabbit

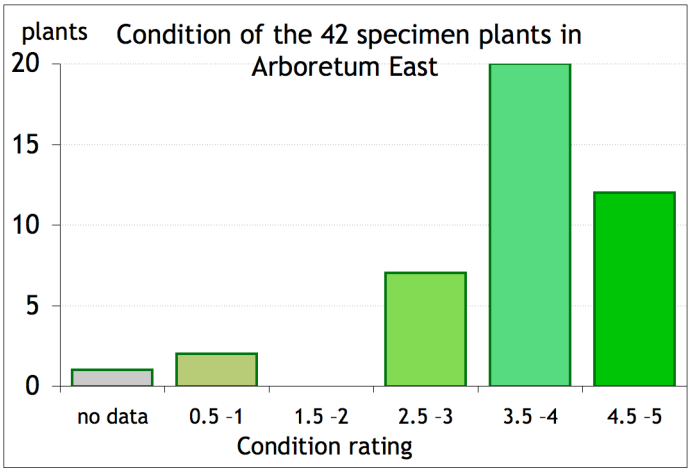
These areas were not surveyed because they are very overgrown and Addy Fern was positive that they no longer contain any significant plants.

## The Arboreta

These areas run north of the east-west Track from the Coppice to the eastern boundary. They are under the stewardship of people other than the Ferns, and so there is very little information on fruit yields there.

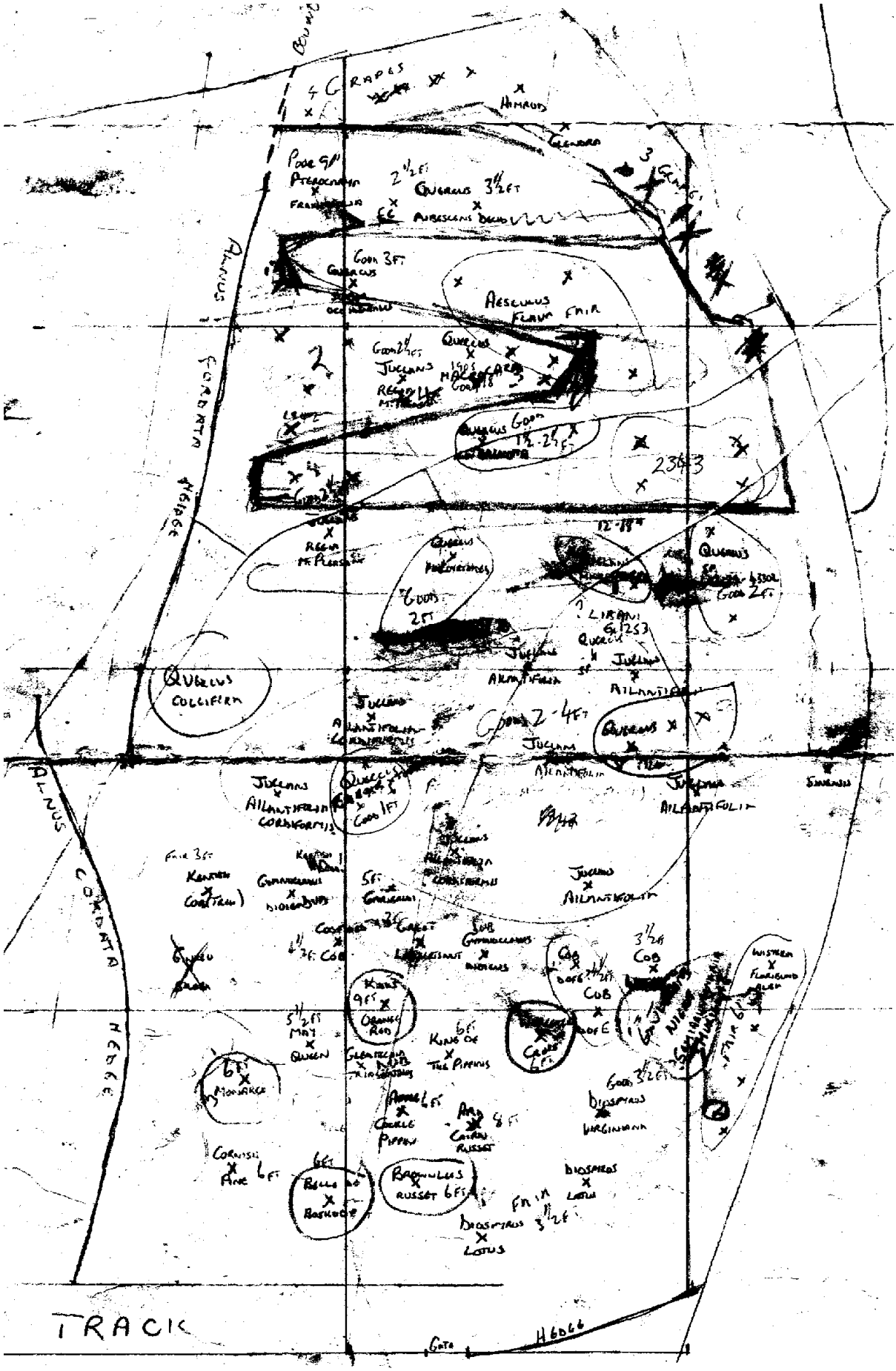
## Arboretum East (ARE)

This was the easternmost area surveyed, extending north from the Track to the northern and eastern and boundary hedges, with Arboretum Central to its west. The main significant plants are Apple trees, some of which are on vigorous rootstock, in the open southern part of the area, with a belt of various Hazel trees running east-west, immediately to their north, and various Walnut and then Oak trees creating a relatively uncrowded canopy north of them. Brambles, Creeping buttercup *Ranunculus repens*, Thistles, Hartstongue fern, Campion *Silene* species and Wood avens *Geum urbanum* dominate the ground cover at the southern end of the area, Ferns, Nettles, Herb Robert and a few native Elder trees in the middle, and Moss, Brambles, Wood avens and Ferns at its northern end. All the trees tagged there were planted in the early 1990s. The area is managed by Ian Beavis and Jenny Bell, who were not available for the survey, so there is little information on fruiting for the trees there. It is particularly well-maintained, with recent mulch around the Apple trees and relatively little growth of weeds. Of the the 42 labelled plants in this Area, 76% are in reasonable to excellent health.




In the southeastern corner, close by the eastern boundary hedge, is a clump of unidentified Bamboo, in very good condition despite being rather shaded to their east. Just west of this is a twin-stemmed American Persimmon *Diospyros virginiana*, in good condition despite some shading, and, just to the southwest, a Date Plum tree *Diospyros lotus*, in no more than reasonable health, as it is somewhat more shaded by the hedge south of the Track. Northwest of these is the group of Apple trees, with five young oaks, one of which is pollarded, growing amongst them.

**Ken Fern's map of Arboretum East**



Nearest is a *var*. 'Brownlees Russet', which produces fairly early, thick-skinned, apples but never many. To its west is a *var*. 'Belle de Boskoop', in very good condition, although it would benefit if the hedges on the Track and the western windbreak of the area were cut back or pollarded, which would give the tree more sun, allowing its fruit to ripen better; it is a late fruiter and quite prolific but produces acid fruit that do not sweeten much on keeping, so are used as cooking apples. West again is a *var*. 'Cornish pine', in good health although it is slightly shaded to its south and very shaded to its west; it is a fairly early fruiter, producing variable amounts of very large, pleasant, striped, red apples that do not keep. Just north is a *var*. 'Monarch', in good condition; it is a mid-season fruiter, producing good-sized red and yellow fruit that are a little acid but sweeten in store, although those grown at Penpol have not kept anything like as well as those grown in Surrey. To the northeast is a *var*. 'May Queen', in reasonably good health despite the shade of a tall oak just to the north of it; the fruit do not ripen fully or keep well. Northeast again is a *var*. 'Kidd's Orange Red', in rather poor condition although it was quite productive in 2009; it bears reddish apples in mid-season, which will keep for a while. Just south is a *var*. 'Cockle Pippin', in excellent condition, and an *var*. 'Ardcairn Russet' to its east, in moderate health with its trunk leaning at about 60º and many dense branches; early to mid-season, it bears variable amounts of fairly sweet fruit that become mealy in storage. Just to the north is a *var*. 'King of the Pippins' in good condition, and a *var*. 'Worcester cross' in very good health; it bears fairly early and is usually quite productive of quite sweet fruit that do not keep but are good for juicing.

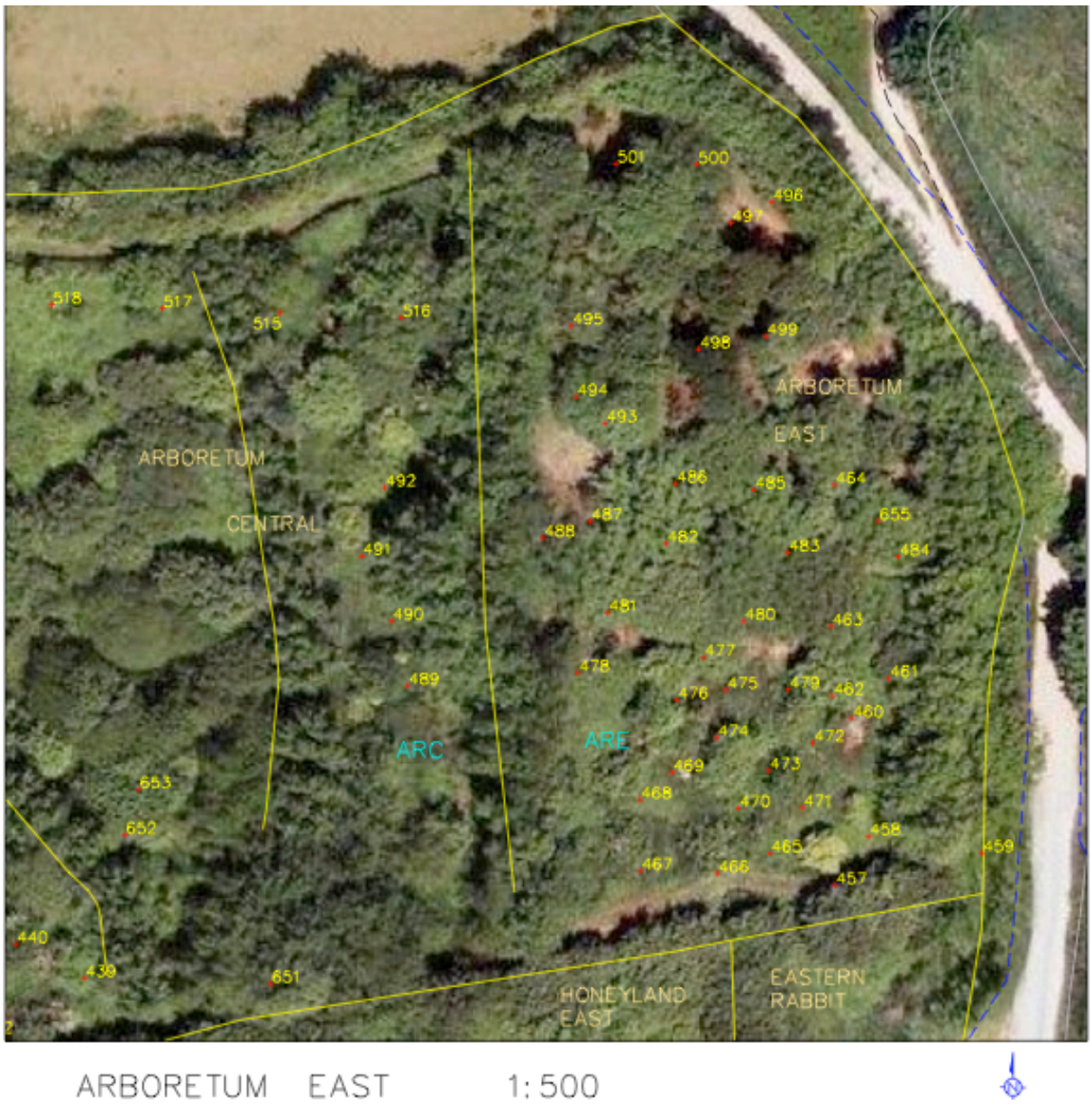
The westernmost tree in the belt of Hazels is a twin-stemmed Hazel tree *var*. 'Kentish Cob', in good condition, which has produced good crops. To its east is a group of two Hazels, a multi-stemmed *var*. 'Cosford Cob' and a *var*. 'Great Lambert's nut', both in good health, and, just to their north, a Filbert *Corylus maxima var*. 'Garibaldi', in reasonable condition, although somewhat shaded out by a large Japanese walnut growing too close to it, and browsed by deer. Under this group are two very small young currant bushes. Between this group of Hazel trees and the next is a Kentucky Coffee tree *Gymnocladus dioica*, in dire condition, although it does have some live shoots at the top of its trunk.

The easternmost group of Hazels contains two multi-stemmed Cob trees *var*. 'Duke of Edinburgh', both in very good health, despite some damage to the bark at the base of their trunks, and a small, recently coppiced stool of unidentified Hazel, in very poor condition, crowded by willow and elder trees close by.

North of the Hazels is a widely-spaced group of six Japanese walnut trees *Juglans ailanthifolia*, most in good to excellent condition, although the northernmost two are slightly less healthy; most of their trunks fork within a metre of the ground. Some have been fruiting for years but the nuts are small and their flesh difficult to extract. To their west are three Heartseed walnut trees *Juglans ailanthifolia cordiformis*, in good or reasonable health, also

with forked trunks; the nuts they bear are smaller than those of some named cultivars. The ground under the walnut trees is mainly bare, with a few nettles struggling through the leaf litter, some moss and Ground ivy. Just west of the northermost Heartseed walnut tree is a small Caucasian Wingnut tree *Pterocarya fraxinifolia*, and, north of it, a clump of unidentified Bamboo, in very good condition, with Rocky Mountain Raspberry growing through it but not thriving; there is more Rocky Mountain Raspberry to the east, in a large, somewhat healthier, patch.

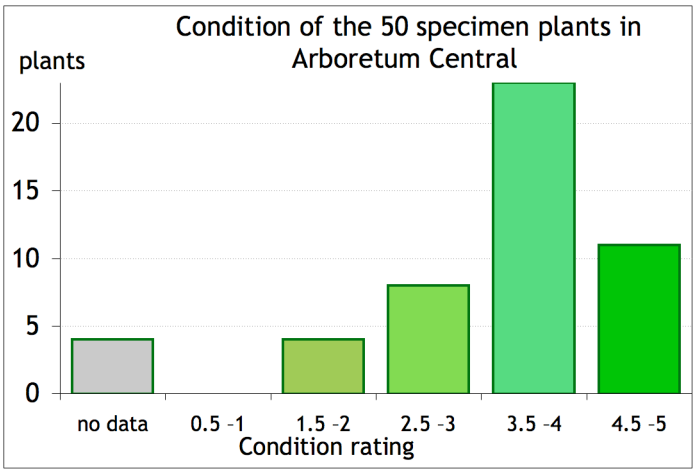
Survey map of Arboretum East, with transects and mapping numbers of tagged specimens




Around and north of the diverse walnut trees are various species of Oak. There are three unidentified Oak trees planted across the middle of the area. The easternmost is in good health, despite being overshadowed by the Japanese walnut trees on either side of it; the middle oak is in reasonable condition but leaning away from the Heartseed Walnut tree

directly south of it, and, west of it, the third Oak tree is in mediocre health, overshadowed by the Walnut trees around it. Between that and the western windbreak is a group of Cork oak trees *Quercus suber*, overshadowed by the Walnuts and Alders of the windbreak; the two westernmost trees bend eastwards away from the windbreak. North of the Walnuts and east of the Bamboo are two Holm oak trees *Quercus ilex ballota*, both in good condition, and a few walnut saplings nearby. North is a small Sweet Buckeye tree *Aesculus flava*, in moderate health, that has had a few fruit, and east of it, one or more Grapevines, climbing through and along the boundary hedge; it is in excellent health but may not be fruiting much and, if it does, the grapes are unlikely to ripen in such shady conditions. At the northern end of the area are two Barberry bushes, probably Darwin's barberry, both in excellent health.

## Arboretum Central (ARC)




Arboretum Central, between Arboreta West and East, covers the area north from the Track to the northern boundary hedge which is an original hedge with Western red cedar trees planted in it. The Austrian Pine and Red Alder windbreak divides it from Arboretum West, and one of Italian alder separates it from Arboretum East. Most of the significant plants labelled are in the southwest of the area, and a good part of the centre of the area is so overgrown as to be impassable. The taller trees, including quite a few Pines, create a fairly dense canopy in places. Of the 50 tagged plants in the Area, 68% are in reasonable to excellent condition.

### First compartment (ARC/T1)

The first, and only differentiated compartment (ARC/T1) is in the southwesternmost corner, and includes Hawthorn, Barberry, Pear and Walnut trees. There are two Thorns, both of unidentified species, one close by the Track, which may well have sown itself in the early 2000s, and the second, which was planted in the early 1990s at the northern edge of the compartment; both are in good condition although there is no information on any fruit yield. There are three Barberry trees, probably Darwin's barberry, planted in the early or mid-1990s; one is by the northeastern corner of the compartment, one southwest of it, still close to the northern edge of the compartment, and one in the centre of it. The northern two are in reasonable health and the one in the centre is in good condition despite being shaded. Just to the north of this last is a clump of tall, green-stemmed Bamboo, of unidentified species,

planted in the late 1990s and in excellent health. To the northwest is an unidentified Walnut, planted in the early 1990s; it is in reasonable condition but, even at some six metres tall, etiolated and struggling for light. At the eastern edge of the compartment is a pair of Pear trees, seedlings of *Pyrus communis sativa var*. 'Southfields', an ornamental pear growing in Addy Fern's mother's garden in London, which Ken Fern wanted to grow. They were planted in the early 1990s, and are both in good condition, although the trunk of the southerly tree is leaning at its base, which is netted to prevent bark damage. Just west is another seedling Pear tree, possibly *Pyrus elaeagnifolia* from Kew, planted in the early 1990s and in poor condition, with fungus fruiting on its trunk; it is very shaded by many large Willow trees growing nearby. Further west is a unidentified Maple tree, known as Cheryl's Tree, brought in as a named cultivar in the early 1990s, and planted by her in memoriam; it still has the original black plastic mulch fabric around it and is in good condition despite squirrel damage.

Survey map of Arboretum Central, with transects and mapping numbers of tagged specimens

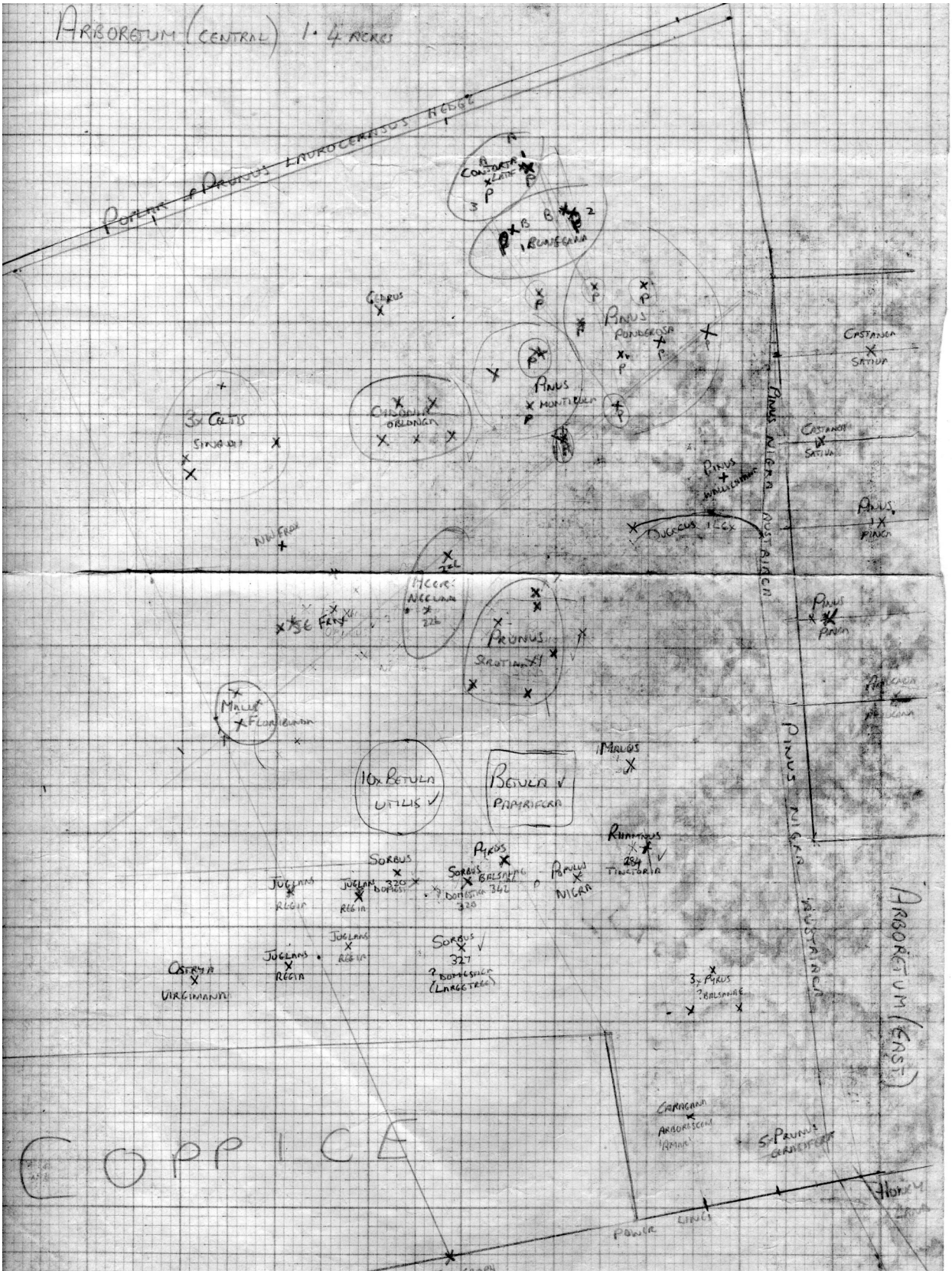
Immediately to the north of this compartment is a group of a dozen or so Monkey Puzzle trees, spread across the centre of the western section of the area. Grown from seed and planted in

the early 1990s, most of these trees are well-grown and in good condition, although a few are suffering from the shade of the many tall Willows growing around them. These Willows have been cut back in the past, and the regrowth could be cut back again to improve conditions for the Monkey Puzzle trees. Just to the northeast of the Monkey Puzzle trees is an untagged Darwin's barberry.

To the east of the first compartment is a mixed group of trees, mainly *Sorbus* species with a Darwin's Barberry immediately east of the two *var*. 'Southfields' Pear trees, and another to its northeast, in the centre of the *Sorbus* trees; both were planted in the early 1990s and are in moderately good health, although one has brambles growing through it. To the north of the southerly Barberry, is an unidentified Plum tree, planted in the early 1990s and in reasonably good health. Close by is a deciduous *Elaeagnus*, possibly *Elaeagnus parvifolia*, planted in the mid–1990s; it is in reasonable condition, growing vigorously but suffering from shading, with most leaves growing from the top of the tree. Just north of these is a multi-stemmed Thorn *Crataegus ellwangeriana*, possibly a seedling and rather thorny; it was planted in the early 1990s and is in reasonably good health but struggling somewhat. East of the *Elaeagnus* is a Finnish whitebeam *Sorbus hybrida*, planted in the early 1990s and in reasonably good condition. Directly south of it, close to the Track, is a tall seedling Harbin pear tree *Pyrus ussuriensis*, planted in the early 1990s and in good condition; it bears small, hard and sour fruit in October. Around it are a large number of dead and dying brambles underfoot, shaded out by the taller trees nearby. To its east is an unidentified Apple tree, planted in the late 1990s and in reasonable health, although the bark at the base of the trunk has been damaged. To the northeast of the Thorns are two Mougeot's Whitebeam trees *Sorbus mougeotii*, planted in the mid–1990s and in fairly good health. East again is a Swedish Whitebeam tree *Sorbus intermedia*, planted in the early 1990s and in good health despite the shade of large Willows around it. Just to north of it is a small patch of Japanese knotweed, very shaded and spreading very slowly. East of the Whitebeam is a twin–stemmed Kansas Hawthorn *Crataegus coccinoides*, planted in the early 1990s and suffering from substantial die–back on the lower part of its trunk. To the southeast is a triple–stemmed Japanese rowan *Sorbus commixta*, planted in the early 1990s and in fairly good condition although there is some die–back on the branches. To the southeast again is a Tulip Tree *Liriodendron tulipifera*, planted in the early 1990s and in good health despite some bark damage at the base of the trunk, which is now healing. Just to the east of it is a hedge of Willow and Alder trees, running northwards. Running eastwards from the Tulip tree, along the Track, is a line of Willow-leaved Seabuckthorn, planted in 1989 or 1990, with most of the male trees at the eastern end of the group. These are the original Willow-leaved Seabuckthorn plantings, from which seedlings and suckers were taken to the Meadow; the originals may have been seedlings themselves. They are in good condition overall, although some are falling over, and the lower branches are

dying back because of shade from branches above. They have an abundance of suckers, now very shaded; most will be female, as the male trees tend not to sucker, making it difficult to find new male suckers for transplanting.

**Ken Fern's map of Arboretum Central**

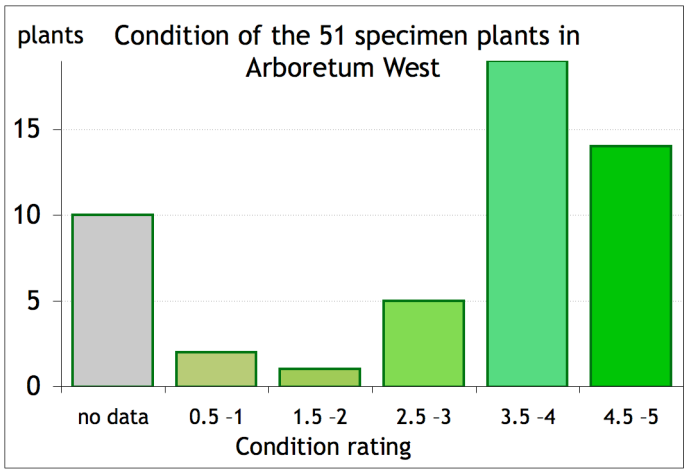


To the north of the Willow-leaved Seabuckthorn trees, in the southern central part of the area, is a large patch of multi-stemmed Dogwood shrubs *Cornus sanguinea* or *C. sericea*, planted in the 1990s, with a Chinese elm tree *Ulmus parvifolia* growing through it. This tree was planted in the early 1990s and is in poor health; it had fallen over, so the trunk is horizontal just above the ground for two metres and then vertical to eight metres. Close to the eastern windbreak, and about fifteen metres northeast of the Tulip tree, are two *Sorbus* trees of unknown species but labelled 'Yunnan' on the original planting map; they were planted in the early 1990s and are in reasonably good condition, although there is a large Willow tree too close for them to thrive. North of these is a Chinese juniper tree *Juniperus sinensis*, one of two planted in the early 1990s; it is in reasonably good health although there are thick brambles around the base of the trunk. North again, and still close the eastern windbreak, are two groups of Giant dogwood trees *Cornus controversa*, planted in the mid-1990s and fruiting; they are in good condition. There is an unidentified Spruce tree *Picea* species in the hedge at the northeastern corner of the area. Fairly close by are two Chestnut trees *var.* 'Marron de Lyons', planted in the early 1990s and in very good health; the easterly one is twin-stemmed. To the west and near the northern boundary hedge is another Chestnut tree, probably a different cultivar, also planted in the early 1990s, and in good condition despite some die-back on its northeast-facing branches; it is bearing nuts. West again are two Walnut trees, one close to the northern boundary and one to the south of it; these were sourced from Mount Pleasant Trees, planted in the early 1990s and are in very good health. Close to the northern boundary hedge and further west is a group of four Chestnut trees, planted in the early 1990s, and in good condition. South of these and north of the Monkey puzzle trees are several Pine trees of various species, including Italian stone pine *Pinus pinea*, Mexican pine *P. cembroides* and Chilghoza pine *P. gerardiana*.

## Arboretum West (AW)

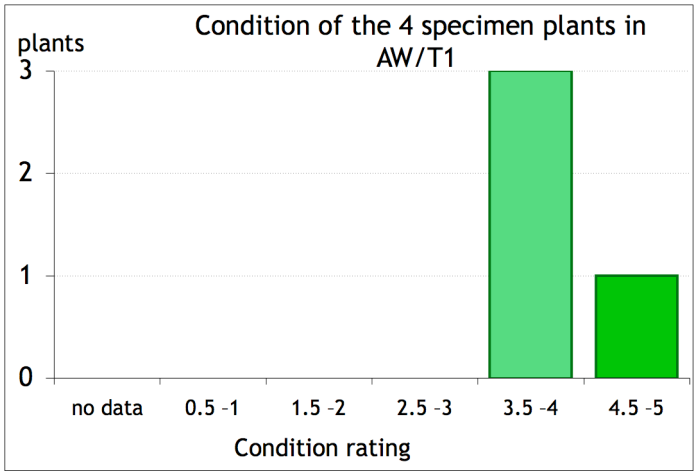
Arboretum West runs northwards from the Track and Central Orchard, around the southernmost part of the Coppice, to the southern edge of the Native Woodland Area.
The trees there were originally planted in the early 1990s, in islands of three to six specimens; some have been added later, so that many of the trees in this area are of unknown age and planting time. Frank Schuurmans took responsibility for this Arboretum a few years ago, and has managed it somewhat more intensely than many other areas. This has entailed some strimming of the forest floor layer and felling of willows that were self-sown or planted as gap-fillers and windbreaks. They were cut down to ground level and the stumps covered with the cut branches to prevent regrowth. The canopy cover is thus variable, with alternating clear and shaded areas. Of the 51 labelled plants in this Area, 65% are in reasonable to excellent health, although there is considerabel variation between compartments, although

the percentages vary considerably between compartments, as shown by the bar charts for each. There are several successfully grafted Thorns there, some unidentified, which need regular maintenance as they can be outgrown by the rootstock tree. They include *Crataegus schraderiana* and *C. ellwangeriana*. Frank Schuurmans observed that the order of succession in this area appears to be Bramble, then Nettle, Dock and Dog's mercury *Mercurialis perenni*. The various Buckthorns *Rhamnus* species were highly populated by bees during the survey in June. The survey divided the area into four compartments.




## First compartment (AW/T1)

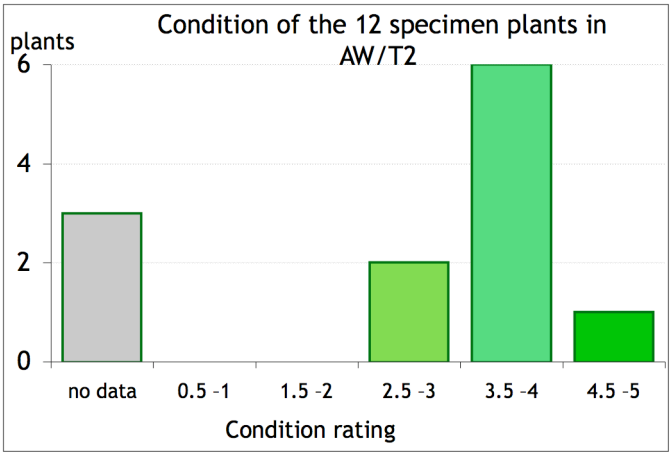
The first compartment (AW/T1) runs eastwards along the Track to the hedge of Cherry plums north of the Central Orchard. All of the four four labelled trees in this compartment are in reasonable to excellent health. At the western end are four Dawn Redwood trees *Metasequoia glyptostroboides*, one ten metres tall and three smaller ones, planted in the 1990s and in good health. Nearby are six Eucalyptus trees of different species, all in good condition, growing mainly along the Track.




Behind them is a small grove of Sweet chestnut, and a clump of unidentified Bamboo; there is a small clump of Black bamboo, *Phyllostachys nigra*, behind the caravan. Immediately north of the Central Orchard and west of the hedge of Cherry plums, are a Walnut, planted in the 1990s and in excellent condition, which bore its first flowers in 2009, and a Plum *var.* 'Boddinick', in good health and spreading by suckers since the early 2000s, although it has not yet fruited. At the southeastern end of this compartment is a Cherry plum in good condition, which started bearing fruit in the mid-2000s, although it is not at all prolific. Nearby is a group of ten unidentified Poplars, planted for coppicing, along with various unidentified trees, some up to fifteen metres tall, and many self-sown Willows.

## Second compartment (AW/T2)

The second compartment (AW/T2) is bounded on the south by the hedge of Cherry plums bordering the Central orchard, on the west by the path running northwards from the Track, to the north by a hedge of Holly oak *Quercus ilex*, which bears acorns that do not mature; to the east is a windbreak of Red Alder, with a second windbreak running parallel to and immediately east of the Alders, of Austrian pine, which is suffering severely from dieback. Of the 12 tagged plants in this compartment, 58% are in reasonable to excellent condition.

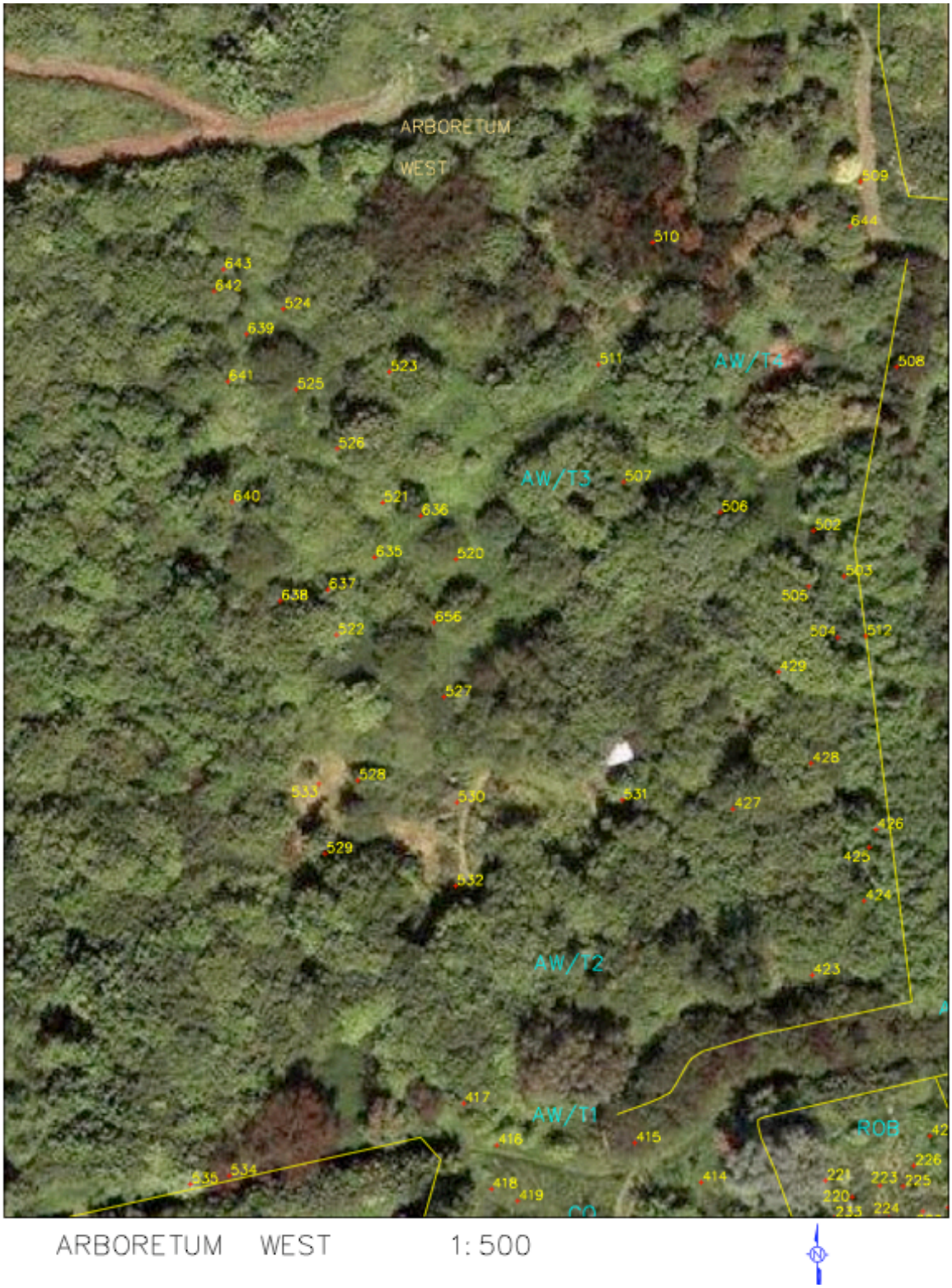



Near the southeast corner of the compartment, just north of an unidentified Plum yew, is a group of three Pear trees, which may be of the wild or domestic subspecies, in good condition, although one has fallen over; like most of the Pear trees planted as experiments in the area, they have produced blossom but no useful fruit. North of this group, and close by the eastern boundary of the area, is an Elaeagnus *E.* x *ebbingei*, planted in 2007, which has suffered some rabbit damage. Just behind this is a small Alder Buckthorn tree, with more in a small group just to the west. To their north and west is a small Monkey Puzzle Tree, in good condition despite having been left in a pot for some time before planting out.

North and slightly west again is a Juneberry, bought at a Duchy of Cornwall Nursery plant sale and planted in the 1990s; it is in good health and fruits in July, although the fruit is all taken by birds. Nearby are two Buddleia trees *Buddleja globosa* or *B.* x *weyeriana* that bear yellow flowers in pompoms, grown from cutting donated by the Field's neighbours, Pam and Dave. To the northeast is an Oak that is recovering from being overrun by Willow trees and is in reasonable condition now they have been cut back.

Close by the eastern windbreak, is a Thorn *C. schraderiana*, grafted in 2006 with budwood from the tree in the Ornamental Area (ORN6/16); it is in good health although the rootstock needs pruning back. Just to the north is another, unidentified Thorn, also grafted in 2006, in excellent condition. To the west is a Dogwood, possibly a Japanese dogwood, which was planted out after being left in a pot for some time, and is in reasonable health. At the northern edge of the compartment is a tall Larch *Larix* species, probably *L. decidua*, planted in the 1990s and in good condition. To its west, just south of the Holly oak hedge, is a small group of Bird cherry trees *Prunus* species, which are in good health and flowered for the first time in 2009.

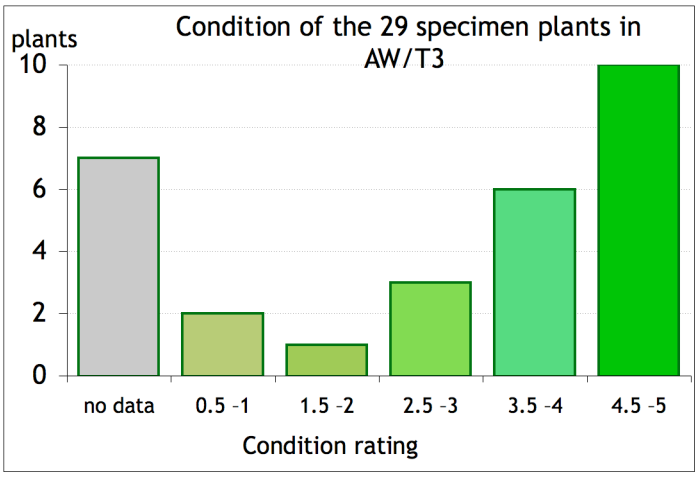
Survey map of Arboretum West, with transects and mapping numbers of tagged specimens




ARBORETUM WEST 1: 500

## Third compartment (AW/T3)

The third compartment (AW/T3) is the largest compartment, covering all that part of the area west of the path running northwards from the Track, and west of the fourth compartment (AW/T4). It is bounded on the northern edge by a Cherry laurel hedge, which is fruiting; there is a risk that birds will spread seed of this invasive tree. Of the 29 tagged plants in this Area, 55% are in reasonable to excellent health.

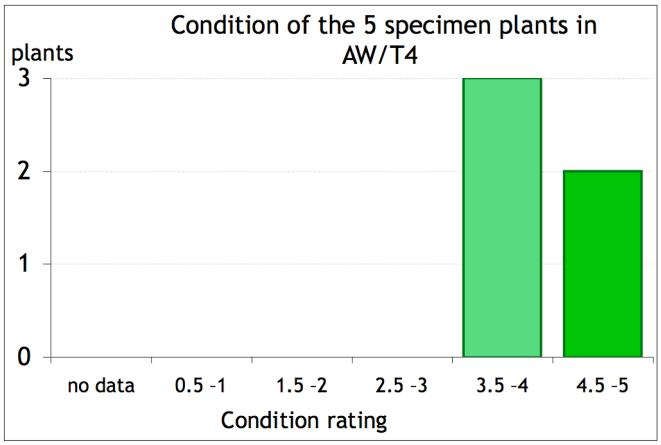



Just west of the path and the Monkey puzzle tree in the second subcompartment (AW/T2) is a tall Black Poplar tree *Populus nigra*, planted in the 1990s and in excellent condition. The understorey in this part of the woodland is planted with Butterbur *Petasites hybridus* and Perrenial buckwheat; there are also some planted Hazel and Elder trees, and two groups of Birch trees, *Betula papyfera* and *B. utilis*. Growing nearby is an umbrella-type Bamboo, brought in from the Ornamental Area, which yields pleasant-tasting shoots that can be eaten raw. A little way to the west is a pair of Service trees *Sorbus domestica*, planted in the 1990s; they are in poor condition, with a lot of damage to their trunks. Further west again is a Buckthorn, probably *Rhamnus frangula*. The area around this has been cleared and cultivated in the past; growing there are Chimney bellflower *Campanula pyramidalis*, Clustered bellflower *Campanula glomerata*, Earthnut Pea *Lathyrus tuberosus*, Wild leek *Allium ampeloprasum*, Rhubarb, Mint, Turkish rocket and Hemlock *Conium maculatum*. To the south of this is a group of four Walnut trees, planted in the 1990s and in good health, with Raspberry growing under. Nearby are a Hop tree *Ptelea trifoliata*, in excellent health and, at ten metres, significantly taller than described in the PFAF database, and an Elaeagnus bush *E.* x *ebbingei*, planted in 2002. To the west is a Sugar maple tree *Acer saccharum*, planted in the 1990s and in reasonable condition despite squirrel damage. Nearby is a multi-stemmed Apple tree *var*. 'Jugoslavian', in excellent health and to the north a Tansy-leaved thorn, planted in the 1990s, in good health and recovering from damage done by a strimmer. To the east is an unknown Apple tree cultivar, planted in 2002 on vigorous rootstock, by which is an invasive Dogwood, probably Silky dogwood *Cornus amomum*, which does not produce edible fruit. North and east is a Plum tree *var*. 'Reine Claude', planted in 2006 and in extremely poor condition. To the northwest is an unidentified Pear tree, probably grown from seed and planted as an experiment; it is in excellent health and has fruited since 2002, although the fruit is borne high up, and whilst edible, not great eating. To the northeast is a Common

Buckthorn tree and an unidentified Dogwood tree, which also does not produce edible fruit; it was planted in the 1990s and is in good condition despite some dieback. To the northeast again is a group of four Thorn trees *C. ellwangeriana*, planted in the 1990s; they are in good to excellent health and have been fruiting in August and September since 2005. To the east is a Juneberry tree, planted in the 1990s; it is in excellent condition and fruiting, although the birds take the fruit. Between this and the Scarlet hawthorn trees are three Manna ash trees *Fraxinus ornuus*, planted in the 1990s for their manna, or sweet sap, which, however, they did not yield when the grown trees were tapped. A little distance to the west, near the boundary of the Arboretum, is a group of three Pear trees, which are fruiting although the fruit are inedible, even when thoroughly cooked. Just to their south are three tall Juneberry bushes, which are only in leaf at canopy height; there are a further three Juneberry bushes to the east and north of the group of Pear trees, probably planted in the 1990s and in good health. To their northwest are a further five Juneberries, in reasonable condition. To the west are another three Pear trees, planted in the 1990s; they are in excellent condition but do not produce edible fruit. Nearby is a post and rope to support a cultivated Blackberry that is getting rather overgrown and is in poor health. To the north and slightly east is another four Juneberry bushes, of the same species as the five to their southeast, with a triple-stemmed Buckthorn, in good condition. To their west is an unidentified Cherry tree, in excellent health. On the eastern edge of the compartment, south of the Cherry laurel hedge and the fourth compartment (AW/T4), are two Box elder trees *Acer negundo*, probably planted in the 1990s; the southern one is in excellent health, the other is half the size and only in reasonable condition.

## Fourth compartment (AW/T4)

The fourth compartment (AW/T4) occupies the northeast corner of the area, and contains mainly pines, although a lot of those originally planted have not survived the encroaching brambles. All of the five labelled trees in this compartment are in reasonable to excellent condition.




Close by the eastern windbreak is a Balsam fir tree *Abies balsamea*, one of two originally planted, in excellent health. North of it, by the gap between the eastern windbreak and the boundary, which runs eastward from there, is a Thorn *C. schraderiana*, grafted onto its rootstock in 2005, and in good condition. Just to the north again is a tall, unidentified Cypress, in excellent health although it has one greener and one yellower side. Some way to their west is

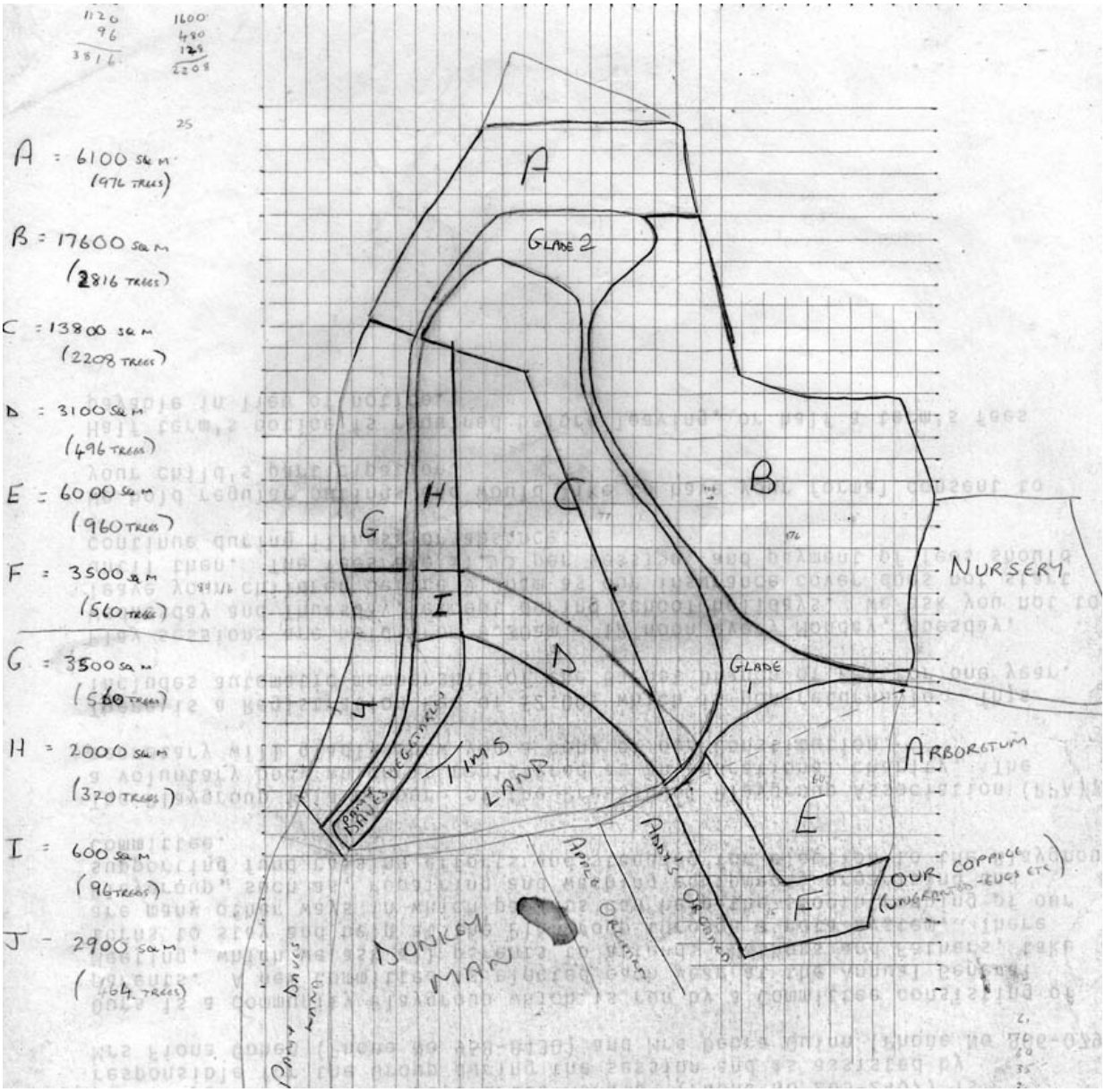
a group of three Monterey Pine trees *Pinus radiata*, planted in the 1990s, and in good condition overall, although one tree lost its top section in around 2005. Some distance to the southwest, and due west of the Balsam fir, is a small unidentified Thorn, grafted onto its rootstock in 2006, and in good health.

**Ken Fern's map of Arboretum West**

## The Native Woodland and Coppice areas

The northern half of the Field was planted with predominantly native trees in the first years of the PFAF project. The westernmost part of this area now belongs to friends of the Ferns and remains wooded. The remaining and far larger part of the area now encompasses the Native Woodland and Coppice areas. These two areas were surveyed by Liz Turner. She did not record every species, especially the more unusual ones of which only a few specimens were originally planted; these are not important food species but grown out of interest, and are hard to find. This section is largely based on her survey spreadsheets and report notes (Appendices 3, 4 and 5), and on Ken Fern's comments on the areas in interviews with him .

Ken Fern's Map of the native Woodland and Coppice Areas



The Coppice runs east from Addy's Orchard to Arboretum West, north of the Track; the Native Woodland runs north of Addy's Orchard and the Coppice area to the Field's northern boundary. A ride runs eastward from the northeast corner of Addy's Orchard to Glade one, just north of the Coppice, where it divides. One ride runs eastward along the southern edge of the Glade to the New Nursery area; the other, main ride turns northwards from the western end of the Glade, through the main body of the woodland towards Glade two, which is close to the northwest corner of the Field. From there the ride turns southwest and leads into the neighbours' woodland area.

The first priority in planting the Native Woodland was the creation of woodland habitat for a nature reserve. The Coppice was intended to provide woodland harvests for humans. Many of the species planted were chosen to meet the requirements of the Forestry Commission, who were providing a grant. If the planting were to be done with hindsight, Ken Fern would use quite different trees, and argue their case far more robustly with the Forestry Commission's representative. He would plant many more Alders and other fast-growing, nitrogen-fixing nurse trees at first, which could later be removed or killed off by the slower growers. The following three paragraphs detail the trees that were planted, with their binomial names, even where they have been given earlier in the text.

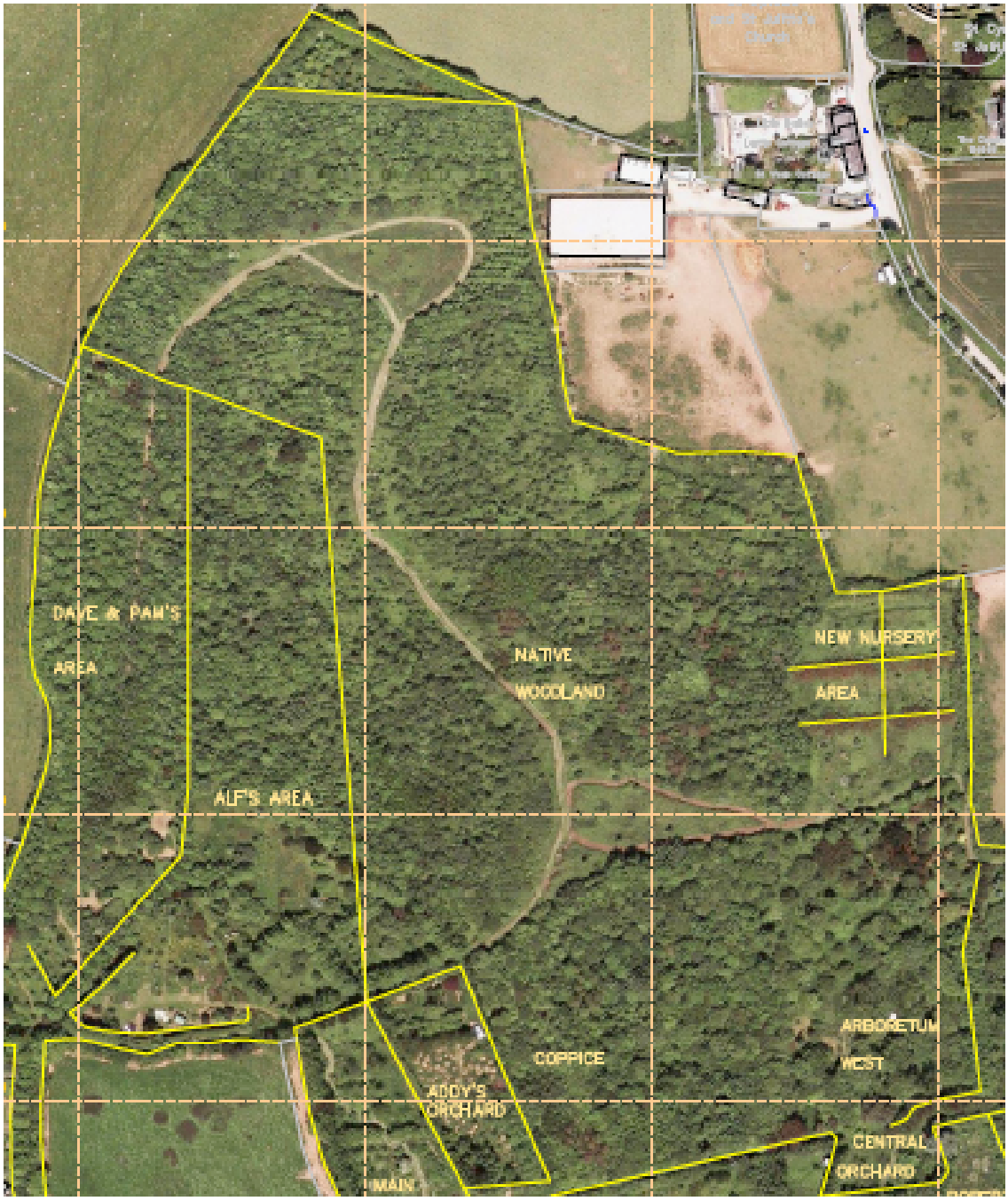
Two thousand and eight hundred Sessile oak trees *Quercus petraea* were planted throughout but less in the north and west of the area; overall, they are in reasonable condition but do not yet appear to be bearing acorns. A thousand Beech trees *Fagus sylvatica* were planted throughout, except in the southern and western part of the Coppice, and are generally in good condition, although no mast was seen.

Nine hundred and fifty Ash trees *Fraxinus excelsior* were planted throughout, are producing seed, and are in good health overall. Four hundred Sweet chestnut trees *Castanea sativa* were planted, mainly in the Coppice, and a few in the west and south of the Native Woodland. No fruit was seen during the survey; given the density of the planting, the trees are probably more suitable for coppicing to produce wood.

Three hundred Wild cherry trees *Prunus avium* were planted near the rides from south of Glade two down to the northern half of the Coppice and around Glade one; they are generally in reasonably good condition although some are shaded, and the larger trees are fruiting. One hundred and seventy-five Hazel trees *Corylus Avellana* were planted throughout, except in the northernmost part of the woodland, mainly by rides and glades; they are in good health overall and are producing nuts and poles. One hundred and ten Rowan trees *Sorbus aucuparia* were planted throughout, mainly near the plantation edges, except in the southern and western part of the Coppice; They are generally in good condition and are fruiting well despite some shading. One hundred Alder trees *Alnus glutinosa* were planted from the northern boundary to Glade one in the Native Woodland, and in the south and west of the

Coppice, especially near the edges; they are in good health overall. The (unrecorded number of) Sycamore trees *Acer pseudoplatanus*, planted as stipulated by the Forestry Commission, are thriving and bearing fruit; it is the dominant species in many parts of the woodland. Seventy-five Norway maple trees *Acer platanoides* were planted in the sections either side of the ride between Glades one and two. Seventy-five Hornbeam trees *Carpinus betulus* were planted in the sections either side of the ride between Glades one and two, but none were observed in the survey. Seventy Hawthorn trees *Crataegus monogyna* were planted throughout by the rides and Glades; they are generally in good condition and bearing fruit.

**Survey map of the Native Woodland and Coppice Areas**



Fifty Small leaved lime trees *Tilia cordata* and 50 Large leaved lime trees *Tilia platyphyllos* were planted, mainly by the woodland edges either side of the ride between Glades one and two, and in the Coppice, again mainly by the edges. They are in reasonable health overall but too young and shaded to produce flowers. Fifty Wych elm trees *Ulmus glabra* were planted near the edges of the main ride and around Glade one; they are generally in good condition. Forty Bird cherry trees *Prunus padus* were planted along the eastern side of the Coppice and Native Woodland; they are fruiting and in reasonably good condition although some are noticeably shaded. Forty Whitebeam trees *Sorbus aria* were planted throughout the Native Woodland; they are not fruiting and are shaded but in reasonable health overall. Forty Wild service trees *Sorbus torminalis* were planted throughout most of the Native woodland and in the northern part of the Coppice, mainly by the edges; two other species of Service tree were also planted around Glade two, and identification between them was uncertain. Some of the Service trees are noticeably shaded but they are in generally in reasonable condition. Thirty-five Aspen trees *Populus tremula* were planted in the sections south of Glade two; they were densely planted and have suckered, resulting in poor condition and restricted growth. Eleven Balsam Spire Poplar trees *Populus tacamahacca* × *trichocarpa var*. 'Tacatricho 32' were planted as a hedge in the south and west of the Coppice area; they are in good condition overall.

Trees of six species of Eucalypt *Eucalyptus* species were planted in small groups in the south of the Coppice area, to the north of the Track; some are flowering. Identification of different species was uncertain but there are some beautiful specimens in the Coppice. Trees of six species of Apple, including Crab apple *Malus sylvestris* and three Apple tree cultivars, were planted to the east and north of Glade one, and some of the Crab Apple trees were planted along the ride between the glades. All are in reasonably good health overall and many are fruiting. Some nineteen Pear trees *Pyrus* species were also planted by Glade one; it is not possible to identify their species but they are in reasonably good condition despite some shading. Some are bearing small, hard pears. Trees of four species of Willow *Salix* species were planted throughout most of the Native woodland and in the northern part of the Coppice; only Osier *S. viminalis* and Goat willow *Salix caprea*, which is also often found self-sown throughout the wooded parts of the Field, were seen during the survey. Both are in good condition overall. Six Coastal Redwood trees *Sequoia sempervirens* were planted in the south and west of the Coppice and are in good health although they do not appear to be bearing seed yet. Three Giant sequoia trees *Sequoiadendron giganteum* were planted in the east and northern part of the Coppice but were subsequently transplanted to Eastern Rabbit. Fifteen Guelder rose shrubs *Viburnum opulus* were planted by the rides and edges of the east of the Native Woodland, and in its southwest corner; most are shaded but in reasonable condition, and bearing fruit. Although only five Austrian pine trees were noted as planted, more than

five pines were seen in the survey. Some Dogwoods *Cornus species* and Juneberries, which have fruited, were planted at some time by the ride up to Glade two. Of the 70 or so species originally planted, nineteen are in good condition, including those mentioned above and the various Birch trees *Betula* species planted throughout, the Rum cherry trees *Prunus serotina* in the east of the Native woodland and the Horse chestnut trees *Aesculus hippocastanum* in the Coppice.

The survey indicates that the main tree species in the Native Woodland are Oak, Sycamore, Ash, Goat willow, Beech and some Hawthorn. There is significant natural regeneration of Gorse *Ulex* species, Ash, Hawthorn, Elder and Goat willow, although some Willow trees are now dying off, having been outgrown by larger planted trees. Many Brambles in the understorey are also dying because the light is increasingly excluded from the woodland floor, as part of the process of natural succession. Natural regeneration in and around Glade two is of Sycamore, Ash, Blackthorn and Elm suckers; an English Elm *Ulmus procera* is growing just to the south of Glade two. Brambles, Nettles, Ragwort *Senecio jacobaea*, Spear thistle *Cirsium vulgare*, Marsh thistle *C. palustre* and Creeping thistle *C. arvense*, St John's wort, Field or Corn mint *Mentha arvensis*, Squinancywort *Asperula cynanchica*, Rosebay willow herb *Epilobium angustifolium*, Common Figwort *Scrophularia nodosa*, Wild Forget-me-knot *Myosotis* species, either *arvensis* or *sylvatica*, Mouse-ear chickweed *Cerastium arvense* and Self-heal *Prunella vulgaris* amongst others, make up the ground layer in Glade two. Ground cover in the section south of this Glade and east of the main ride includes Ground ivy *Glechoma hederacea*, Tutsan *Hypericum androsaemum*, Red campion *Silene dioica*, Hart's tongue fern *Asplenium scolopendrium* and other ferns. There is extensive squirrel damage on some Maple and Sycamore trees. Ground cover in the Coppice includes Primroses *Primula vulgaris*, Common Figwort *Scrophularia nodosa*, Hart's tongue *Asplenium scolopendrium* and other ferns, and Pink purslane *Claytonia siberica*, which has invaded from elsewhere on the Field; there are also vines of Black bryony *Tamus communis* and Old man's beard *Clematis vitalba*, which is widespread through the Coppice.

Because so many trees were planted the overall effect is of a young woodland starting to establish itself, despite damage by deer, rabbits, squirrels and other wildlife. However some very close grown areas would benefit from thinning, especially to save interesting specimens. Lime trees will only produce flowers as they mature if the trees around them are cleared to give them more light. Most trees need more light than they get in any woodland in order to produce fruit, so trees grown for fruit would benefit from undergrowth and competing trees being cleared from around them. Fruit from Rowan, Whitebeam and other *Sorbus* species are good for hedgerow jellies and jams, as are Apples, Crab apples, Pears, Cherries and Haws. The Willows would benefit from coppicing for basketry or propagation for willow beds.

There is potential for people interested in wild foods and fruits to harvest in the Native Woodland but it would require a significant investment of time. The Sweet chestnut trees in the Coppice could yield harvests either of chestnuts or coppice poles; they don't seem to be producing any nuts yet and would probably be more productive as coppice for pole wood. Maple and Birch sap could be tapped where trees are in good condition, but not in consecutive years; Horse Chestnuts can be harvested for herbal medicine; the roast leaves of Holly, which is related to the Matte tea plant *Ilex paraguariensis* can be made into a tea substitute. Many of these uses are, however, somewhat obscure.
Although many species are producing seed, and this is noted in the spreadsheets of Appendix 5, under the column headed "propagation", in general tree seeds for propagation should be collected from mature trees.

## New Nursery Area ('Rebel Land')

This area was completely impenetrable in summer 2009, although Phil James has recently made some paths through the brambles, which he likes to leave untouched until access is needed, as it protects the trees growing there from deer damage. It is divided into six areas:

| | | |
|---|---|---|
| Edible Hawthorns | Coppice Hazel & Ash | Quince |
| Cornish | Cherry Plums | Special trees from Phil's friends and family |

In 1997, he walked from St Kevern, Cornwall to London, to commemorate the Cornish Rebellion. He bought the trees for this area with the money he raised on the walk.