

Report: Surrey Small Blue Stepping Stones Project 2017 to 2019



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Butterfly Conservation's Surrey Small Blue Project Officer



Small Blue on Kidney Vetch by Martin D'arcy

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Acknowledgements

The Project Officer would like to thank all of the volunteers for their contributions to this project (and to Martin D'arcy, Gillian Elsom, Ken Elsom, Dom Greves and Jonathan Mitchell for the use of their photos in this report). Many thanks especially to Gail Jeffcoate, Bill Downey, Simon Saville and Harry Clarke for their invaluable input and support. Thank you to all of the organisations, landowners and land managers that have been part of this project and who continue to deliver good stewardship of the chalk Downs habitats.

Butterfly Conservation would also like to thank all of our funders and partners for making this project possible:

Veolia Environmental Trust

Surrey Community Foundation

Surrey Hills AONB

Surrey and South West London Branch of Butterfly Conservation

Individual donations from members and legacies

The Lower Mole Project

West Surrey Natural History Society

Parish Councils of Shere, Abinger and West Horsley

Project Summary

Butterfly Conservations' Surrey Small Blue Project started in July 2017 and finished in July 2019. This report focusses on the management work that has been carried out, volunteer involvement and lessons learnt from the process, as well as plans and recommendations going forward.

The project was made possible through funding provided by the Veolia Environmental Trust, the Surrey Community Foundation, Surrey Hills AONB, Surrey and SW London branch of Butterfly Conservation, individual donations and legacies from members, the Lower Mole Project, the West Surrey Natural History Society, and the parish councils of Abinger, Shere and West Horsley.

Butterfly Conservation have worked closely with project partners and landowners in the project area - the National Trust, the Surrey Wildlife Trust and Guildford Borough Council in particular, as well as the Surrey Hills AONB, the Lower Mole Partnership, the Pewley Down Conservation Volunteers, the Albury Estate, Denbies Wine Estate, Juniper Hall FSC Centre and the Rosamund Trust Community Garden. The project focussed habitat work mainly on the scarp slope of the North Downs between Guildford and Betchworth, on over 20 project sites.

A previous Small Blue Project run by Butterfly Conservation in 2013 focussed on sites close to Guildford including The Mount, Newlands Corner and Pewley Down. Some of the habitat patches proved successful in encouraging Small Blue - at Pewley Down and The Mount in particular. The lessons learned from this earlier project helped to inform the development and delivery of the 2017-19 project.

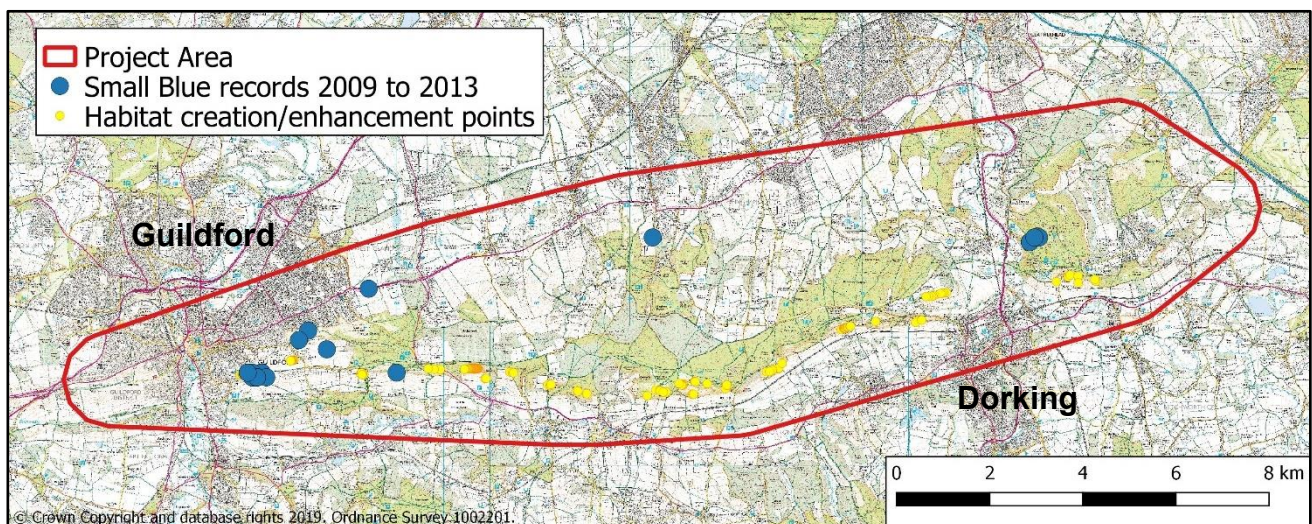
This main project aimed to link populations around Guildford with the population further East at Box Hill. Close to Box Hill, there had also been sporadic sightings of Small Blues at Denbies Hillside where the National Trust Ranger and volunteers had been encouraging Kidney Vetch for a number of years. It is well documented that the Small Blue is quite capable of dispersal and populations can establish reasonably quickly as long as there is enough of the foodplant and the surrounding habitat is suitable (Phil Sterling, pers. comm.)

Project Outputs

- Over 18.5 hectares of land managed to create Small Blue habitat and remove invasive scrub, Buddleia and Cotoneaster from chalk grassland;
- 81 habitat management tasks have been delivered by volunteers (totalling 1,191 volunteer days contributed by more than 60 volunteers);
- Three work party leaders have been trained and equipped to continue to deliver, work parties, supported by our Surrey & South West London Branch and by BC staff, through a newly established Conservation Oversight Group;

- £3730 was used for tools and equipment for volunteers. These will continue to be used within this landscape.
- The project delivered £37,000 of habitat creation and enhancement work delivered by specialist contractors;
- Over 180 small bare ground 'scrapes' were created across the project area. These have been seeded with Kidney Vetch, using seed collected locally. 15 Scrape stewards have been recruited and trained to oversee the maintenance and monitoring of these.
- We undertook 8 survey days to gather records (including egg searches, habitat assessments and adult butterfly counts) and train volunteers. The data collected will be shared with the Surrey Biodiversity Information Centre (SBIC) and will contribute to the national Butterflies for the New Millennium (BNM) database.
- The Surrey and SW London Branch of Butterfly Conservation now has many more volunteering events happening, a more active volunteer force on the North Downs, and a more complete set of tools.
- We have produced a Guide to Habitat Management for the Small Blue to be shared with our partner conservation organisations and other BC Branches.

The map below shows how habitat creation and enhancement will link Small Blue colonies previously separated by large distances. These new habitat patches will continue to be maintained and monitored for evidence of Small Blue colonisation. Small Blue distribution will be a key metric as we continue to measure the impact of this project.



Long-term Outcomes of the Project

- Small Blue distribution and abundance will be increased and colonies will be better linked across the Surrey Downs to form a healthy, functioning meta-population with individuals moving between sites. We have been observing some early signs of success in summer 2019 with eggs and adults being found at previously unoccupied sites.
- Volunteers will continue the work of habitat management, maintenance, survey and monitoring for Small Blue, supporting the work of land-managers. Small Blue populations and other butterfly populations in Surrey are better monitored and protected
- This project has provided a successful template that can be applied to other parts of the UK where the Small Blue needs help, and also applied to the conservation of other species (especially on chalk grassland) that require a network of accessible habitat patches across a landscape. In particular, this work can be continued along the North Downs and into the London boroughs.
- Close working, especially with the National Trust, Surrey Wildlife Trust and Guildford Borough Council, has demonstrated how Butterfly Conservation can work very effectively in partnership with other conservation organisations and with local authorities to deliver shared goals.

The Small Blue *Cupido minimus* and Kidney Vetch *Anthyllis vulneraria*

The Small Blue is the UK's smallest resident butterfly. It is included as a Section 41 species under the Natural Environment and Rural Communities (NERC) Act 2006 (formerly listed as a UKBAP species). Its' UK distribution has declined by 38% since the 1970s. In Surrey the Small Blue's distribution declined by 19% between 1994 and 2013. Small Blues were once described as 'Common' in Surrey, but they have been lost from many areas and remain on just **26 sites**. In the five years before the commencement of this project Small Blue was recorded in **25 1km squares** in the Surrey Vice County.

The plight of the Small Blue highlights the issue that many species face with habitat loss and fragmentation, scrub encroachment, lack of food plants and lack of bare ground habitat.

The Small Blue is a species of butterfly that is entirely reliant on a sole foodplant - Kidney Vetch. The butterfly lays its' eggs amongst the flowerheads and the larvae then live within the calyx of the flower, feeding on the developing seeds and anthers. The plant is short-lived and a poor competitor against grasses and more robust vegetation, and it therefore requires early-successional habitat and sparsely vegetated ground in order to persist on a site. Retention of the flowerheads over the winter is essential for the butterfly to complete its life-cycle.

Many other plants and invertebrates benefit from the creation of bare ground as well as the management of scrub species that encroach on open chalk grassland. Although the Small Blue is the main focal species of the project, this is far from single-species management.

Other Butterflies & Moths

The project has benefitted a wide range of species that rely on chalk grassland and sparsely-vegetated or bare ground. This includes the following Lepidoptera (but also includes many bees, wasps and chalk grassland plants):

Species	Foodplants
Adonis Blue	Horseshoe Vetch
Silver-spotted Skipper	Sheep's Fescue
Grizzled Skipper	Salad Burnet, Creeping Cinquefoil, Wild and Barren Strawberry, Agrimony
Dingy Skipper	Bird's Foot Trefoil, Horseshoe vetch
Chalk Carpet	Clovers and Trefoils
Lace Border	Marjoram, Thyme
Straw Belle	Cinquefoil, Thyme
Brown Argus	Common Rock-rose
Chalk Hill Blue	Horseshoe Vetch
Dark Green Fritillary	Violet sp.

Project Process

We delivered a planned programme of conservation on the identified sites and brought other suitable sites and landowners aboard during the project. Prior to commencing these works, there was a period of site meetings with the land managers, Surrey Branch committee

members, Gail Jeffcoate, and communication with Natural England. Locations for scrapes and scrub removal were carefully considered so as not to negatively impact any of the species already present. Most of the management on SSSIs needed formal consent prior to works starting.

Scrape Creation

Over 180 ‘scrapes’ were created during the project across 15 sites, varying in size from 0.5 square metres to 50 square metres (see Figure 4 – scrape locations). The approach was to try and make them look ‘natural’ in the landscape and we therefore tried to avoid straight edges. We usually sited these scrapes in locations where the chalk layer was close to the surface, usually along the top of the scarp slope. On some sites this wasn’t possible due to the topography and ease of accessing steep slopes in winter with a mini-digger. We aimed to dig down to the bare chalk layer where possible but on some sites this would have generated so much spoil that we had to compromise and leave a deeper layer of topsoil than we would have liked.

Kidney Vetch grows well even on very nutrient-poor bare chalk, although it takes longer to establish than it does when the nutrient level is higher. The advantage of getting down to bare chalk is that very few of the main competitors (coarse grasses, brambles and young trees) will colonise the chalk for a while. Therefore, chalk scrapes will provide suitable habitat for Kidney Vetch for far longer than scrapes where the more nutrient-rich topsoil is still present.

All of these scrapes have been sown with Kidney Vetch seed and BC Surrey volunteers and project partners will continue to sow more seed into them when it is available. Over time these scrapes will vegetate over with Kidney Vetch and other ‘desirable’ plant species as the ‘undesirable’ plant species continue to be weeded out of them. They will need to be maintained for a few years to ensure success of the project.

Important: Bare chalk habitat provides essential niches for many plants and invertebrates. We recommend that site managers in this landscape continue to create bare chalk patches and banks in appropriate locations so that there is always a bare ground resource available on these sites. This should be carried out in consultation with Natural England and ideally the Surrey Botanical Society. If the Surrey Branch of Butterfly Conservation is notified, we might be able to provide extra advice, resources, seeds and can potentially help to monitor the area for signs of success.

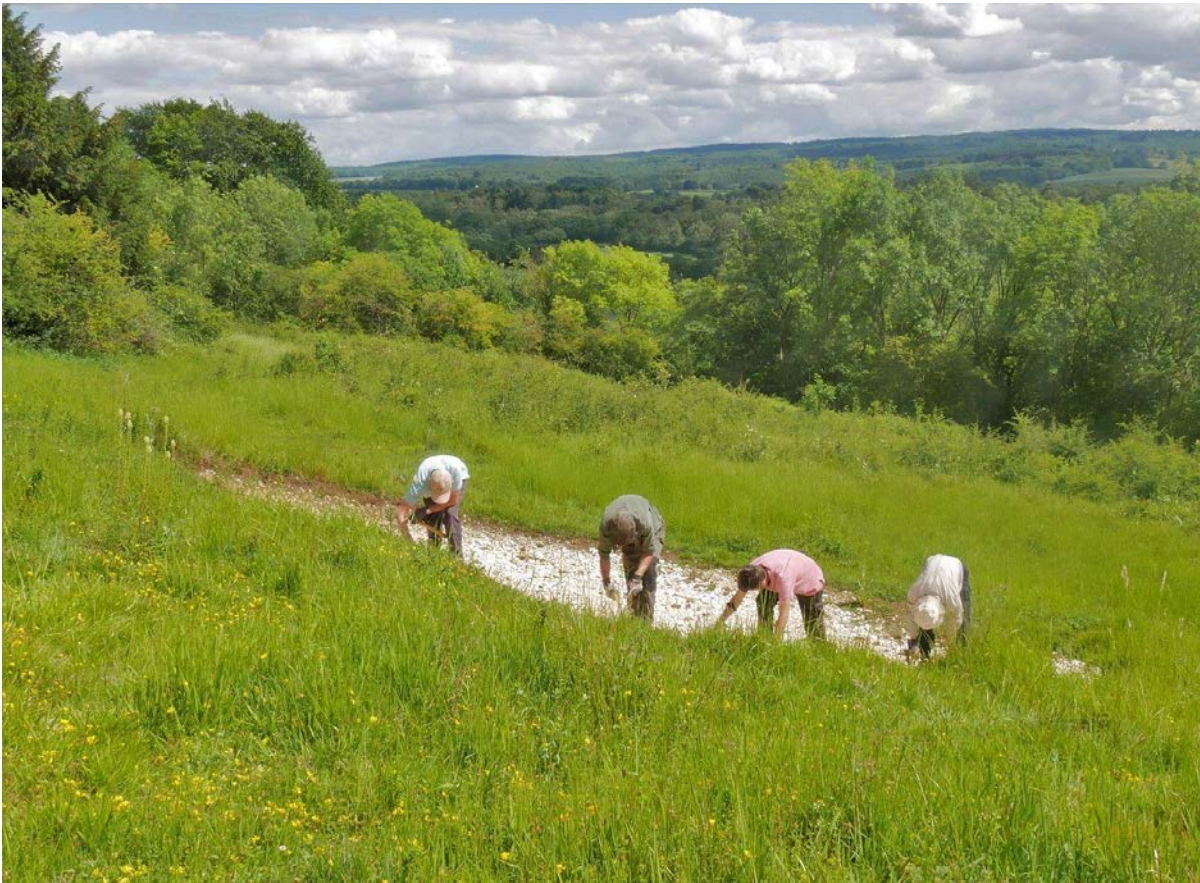
Scrape Stewards

Fifteen ‘Scrape Stewards’ have been recruited and trained, largely from the existing BC volunteer workforce. These volunteers will visit sites at least a few times a year, but as often as they would like, to maintain them and remove undesirable plant species, build up a plant species list, and note down how the Kidney Vetch is faring. They will count seedlings and flowering plants, undertake egg searches and seed their scrapes with more seed when it is available. They can feed back any important information regarding effects from livestock grazing or rabbits to the various site managers. This element of the project is key to the success of these scrapes in the long-term and therefore the legacy of the project. Scrape steward

recording forms and information are in the Appendix. Scrape stewards are in contact with the associated land managers.

Kidney Vetch provenance

The project used locally sourced Kidney Vetch seed throughout the project area in scrapes and bare areas. On some of the SSSIs, including Denbies Hillside and Box Hill, we have used seed collected on the same site to sow into new bare ground areas. It has been stipulated as a condition in the SSSI consent that we use this very locally sourced seed. Specifically for our project, Surrey Wildlife Trust issued a licence for BC to collect Kidney Vetch seed from their Priest Hill reserve at Epsom, and this proved invaluable for seeding many of the new sites outside of SSSIs, as well as SSSIs such as West Hanger and Netley Plantation. Pewley Down was used as a seed source for some sites in the west such as Newlands Corner and the Rosamund Trust Community Garden.



Scrape maintenance at Hackhurst Down - Martin D'arcy



Scrape at Blatchford Down – F Haynes



Scrape at Hackhurst Down - F Haynes



Scrape creation at Netley Park - F Haynes

Dealing with the Topsoil

When removing topsoil to expose bare chalk there is the issue of what to do with the arisings.

1. **Create a butterfly bank** – this is by far the best option as it creates more valuable bare ground habitat. Banks can be created in sunny positions and provide valuable nesting habitat for many invertebrates, and can be colonised with important nectar sources and foodplants, introducing more diversity to the habitat.
2. **Spread the topsoil** – on some sites material was spread as banks would have restricted mowing operations or access. Care was taken to spread the soil in pre-agreed areas with site managers, and surveys were undertaken beforehand so that we didn't cover up important features.

On some sites we were unable to find suitable locations for the topsoil and due to the distance for a digger to continually track over prime chalk grassland to create a bank, we had to move initial planned scrape locations so that they were closer to the edge of the habitat.

Important: Check botanical records as well as reptile records before creating banks, scrapes, or spreading topsoil in a location. Otherwise important populations or hibernacula could be impacted.

These new butterfly banks and areas of spread topsoil were created in locations slightly away from the scrapes so that nutrients wouldn't leach from them back into the scrape. It is also important to remember that banked material around a scrape will only encourage scrub in the long-term as it is nutrient-rich, and therefore it is better removed from the vicinity of the scrape and placed in a location where any nutrient run-off won't reach the scrape.



Bank at Hackhurst Down SWT site – F Haynes

These new banks and areas of spread spoil are now encouraging a greater diversity of vegetation on sites and species are appearing that aren't in the general sward as their seedbanks have been disturbed. Some of the species are proving to be valuable nectar sources, such as these Nodding Thistles at Hackhurst Down.



Nodding Thistles at Hackhurst Down SWT site on area of spread topsoil– Martin D'arcy

Fencing Exclosures

The young plants in scrapes often benefit from being fenced to prevent the grazing pressure and disturbance potentially caused by livestock and rabbits. Rabbits and sheep in particular are renowned for nibbling off the flower-heads. Some grazing of these areas can be beneficial though in helping to ensure scrapes are kept open for longer and denser vegetation at the scrape edges isn't allowed to dominate.

Rabbit grazing pressure will vary at different times; at the start of the project rabbit pressure in this landscape was low (likely due to Rabbit Viral Haemorrhagic Disease). Both Natural England and many of the landowners we worked with weren't keen on the idea of fencing out scrapes due to the potential visual impact. At Newlands Corner fencing was not an option due to its' Common Land status. Therefore, fencing was not a frequently used option. Just four areas were fenced by contractors.

As of 2019, rabbit numbers appear to be increasing across the North Downs, and we observed more nibbling of our new Kidney Vetch plants in the scrapes on some sites. In response, with volunteers we fenced several other scrapes, where we felt they were needed the most. These new fences are more temporary, and are designed so that they can easily be removed in a few years' time. By then the plants will be well established and the scrapes should hopefully start to benefit from the disturbance by animals.



Rabbit-proof fence - Martin D'arcy



Digging the fence in - Martin D'arcy

With hindsight... it would be a good idea to ensure that each project site has a fenced scrape. It is far more cost-effective for conservation volunteers to install these fences, than pay for contractors, so this could be programmed in by volunteer groups as and when it is needed on project sites. This is a job that can be undertaken during the summer months. Although the fences installed by contractors are extremely well-constructed and will withstand being used as scratching posts by heavy cattle, it may be sufficient to create more temporary fences with volunteers on tasks.

Scrub Control

The project was very busy with scrub control across the project area. Scrub is an essential part of the chalk grassland habitat for nesting birds and many invertebrates and other species will benefit from the scrub element of the habitat. Small Blues also benefit from areas with young scrub and taller vegetation such as grasses, for roosting. However, young tree saplings, along with Bramble, Clematis and Black Bryony, spread easily across open chalk grassland and can easily out-compete the more delicate plants if not managed. Once spiny species such as Hawthorn and Bramble get into the sward, any grazing by cattle will be less effective as they will avoid areas with thorns and these areas will then become more overgrown with scrub and coarse grasses. It is a constant battle for a site manager to keep the open chalk grassland open. In addition, many sites are affected by invasive non-native species such as Buddleia and Cotoneaster - Brockham Quarry, Netley Plantation and Hatchlands Quarry being obvious examples. Through a mixture of using contractors and the volunteer taskforce, the project has helped to reset the balance of scrub to open grassland on most of the project sites. With ongoing joint tasks into the future with BC Surrey volunteers and volunteer groups from our project partners, we should be able to contribute to the task of scrub control, although the over-riding majority of this will likely need to be delivered through other mechanisms (including effective grazing).

Contractor Works

The project contributed £37,000 to professional contract works across the Project Area. The focus of this was digger work (scrape creation, scrub control, quarry restoration), motor-manual cutting and herbicide treatment (scrub control) and fencing (creating exclosures). These contracts were delivered over the winters 2017 and 2018, with some limited spraying work in summer 2018.

- **Scrapes** - £7,620 was spent on scrape creation with a mini-digger. A mini digger was chosen due to its' manoeuvrability on slopes. The weather conditions were sometimes challenging, with heavy rain causing the chalk to be treacherous in places and then a period of snow in winter 2017.



- **Scrub Works** - scrub clearance work to the value of £22,000 was carried out at Box Hill, Brockham Quarry, Denbies Hillside, Hackhurst Down SWT site, and Blatchford Down.
- **Tree-popping Scrub** - Roughly £1,600 was spent on scrub control using tree poppers at Wholecomb Down. It was decided to use this method at Wholecomb as there was a lot of medium size scrub that could be brought out with the roots for a more thorough job. It was also a difficult site to get to regularly for volunteer work parties.
- **Fencing** - Exclosures were erected at Wholecomb Down and Hackhurst Down.

The table below shows how the budget was spent.

Site	Manager	Work	Cost
Pewley Down	GBC	Creation of 7 new scrapes by GBC	£220
West Hanger	SWT	Creation of 3 scrapes	£540
Netley Plantation	SWT	Creation of 3 new scrapes, removal of large buddleia roots	£540
Netley Park	NT	Creation of 3 scrapes	£660
Hackhurst	SWT	Creation of 7 scrapes, Bramble and scrub clearance from grassland over 2 winters with a summer spray of regrowth in 2018. Erection of 2 fenced exclosures	£7957.80
Blatchford Down	NT	Creation of 16 scrapes, clearance of scrub in old ditch-line plus follow-up spray in summer 2018	£4140
Wholecomb Down	NT	Creation of 7 scrapes. 8 days of additional scrub popping by Nature Conservation Services contractor.	£3944.40
Denbies Hillside	NT	Creation of 4 scrapes. Scrub clearance winter 2017, follow-up spray in summer 2018, further scrub clearance winter 2018.	£6300
Box Hill	NT	Large scrape creation in quarry and scallops cut into side of track. Scrub clearance, tree work, buddleia control winter 2017 and winter 2018.	£6780
Brockham Quarry	SWT	Scrub and invasive species control both winters, follow up spraying summer 2018.	£5400

Conservation Volunteer Tasks

A particular success of the Project has been that it has attracted a brilliant group of dedicated, hard-working and knowledgeable volunteers. We had a really strong focus on habitat creation and enhancement, delivering **81** volunteer tasks, equivalent to **1,191 days of habitat management**. Over **60** volunteers attended tasks directly through BC, **25** of them regularly, and others have attended when tasks have been joint tasks with the National Trust, Surrey Wildlife Trust, Guildford Borough Council or with the Lower Mole Project.

The Project Officer started up these tasks early in the Project, with the support of Surrey Branch volunteers Bill Downey and Harry Clarke. Tasks have been advertised through social media, Butterfly Conservation website, articles, emails to BC members, posters on sites, and through our project partners. The tasks initially focussed on the pre-planned project sites, but other sites were brought on board as the project progressed. The table below shows where the project has worked, the tasks carried out and numbers of volunteers.

The Project Officer would like to thank the partner organisations and all the volunteers involved for their incredible hard work and support.

Site	Land manager	Management	Number of tasks	Number of volunteer days
The Mount	Guildford Borough Council	Removal of hawthorn, clematis, bramble and dogwood from grassland with tree poppers, particularly around scrapes.	2	18
Pewley Down	Guildford Borough Council and Pewley Down Conservation Volunteers	Scrub removal (with tree poppers and mattocks), extension of scrapes. Scrape maintenance and weeding, sowing seed.	4	52
Rosamund Trust	Rosamund Trust	Scrape creation in grassland	1	12
Merrow Downs	Guildford Borough Council	Restoration work in old chalk quarry – removal of scrub, plug planting and seeding with Kidney Vetch, removal of invasive plants	3	50
Tyting Farm	Guildford Borough Council	Scrape creation	1	14
Newlands Corner	Albury Estates	Scrub clearance on bank valuable for Silver spotted Skipper, seeding scrape, scrub popping	2	26
Albury Vineyard	Albury Estates	Scrape creation in suitable areas (36 scrapes)	1	16
West Hanger	Surrey Wildlife Trust	Buddleia removal from quarries and grassland, bramble clearance to restore chalk grassland, scrape weeding.	5	76
Netley Plantation	Surrey Wildlife Trust	Quarry restoration (large scale clearance of invasive Buddleia, bramble and scrub removal, scrape weeding, erecting fenced exclosures around scrapes, clematis removal)	6	101
Hatchlands Park	National Trust	Quarry restoration - large scale removal of Sycamore, Birch and Buddleia to restore open quarry conditions. Seeding with Kidney Vetch.	3	42
Netley Park	National Trust	Ride widening, bare ground works, buddleia removal and scrub popping, scrape maintenance	4	63

Hackhurst Down	Surrey Wildlife Trust	Scrape maintenance, seeding and weeding, creating stiles.	2	19
Blatchford Down	National Trust	Scrape weeding and scrub popping on grassland, erecting fenced exclosures.	3	41
Wholecomb Down	National Trust	Scrub clearance with poppers and mattocks, bramble clearance and raking, scrape maintenance and clearance of scrub around scrapes.	4	50
The Ranges	National Trust	Scrub popping and bramble clearance, complete removal from scrub from inside fenced exclosures, repair of exclosures, seeding.	8	125
Polesden Lacey	National Trust	Quarry restoration – removal of scrub and hemp agrimony.	1	18
Denbies Hillside	National Trust	Scrub popping all over the site, raking off dead grass to expose bare ground, scrape creation, scrape maintenance, fencing exclosures around scrapes.	16	225
Denbies Vineyard	Denbies Wine Estates	Scrape creation	1	16
Juniper Hall	Field Studies Council	Scrape creation	1	6
Box Hill	National Trust	Scrub popping, scrape creation, scrape weeding and seeding, removal of hemp agrimony, black bryony and clematis along bank Brodies Drive. Maintenance of chalk pits along Zigzag Road.	9	115
Brockham Quarry	Surrey Wildlife Trust	Scrub removal to restore chalk grassland at various locations. Buddleia and Cotoneaster control. Brushcutting and raking glades.	7	98
Betchworth Quarry	Surrey Wildlife Trust	Scrub removal and scrape creation	1	8
Total			81	1191

The Surrey & South West London Branch of Butterfly Conservation was a strong supporter of the project, and now has many more volunteer tasks running as a result of this project. During the project tasks went from being monthly to weekly (occasionally there were two tasks per week). Post-project the volunteer group is continuing to deliver at least 2 tasks each month, led by the newly appointed Work Party Leaders.

Tools - 11 Tree poppers and 3 mattocks were purchased with the tool budget and these proved to be invaluable tools throughout the project. The project has also bought ear defenders and safety glasses, first aid kits, rakes, pitchforks, saws and smaller mini mattocks and hand forks for the Small Blue volunteers too. We also received a donation of tools from the Surrey Hills Conservation Volunteers, these included spades, mattocks, loppers and tea kit essentials.



End of a day tree-popping at Box Hill - F Haynes

Additional Volunteer Activities

In addition to attending practical tasks, looking after and maintaining scrapes, and surveying sites, the project also encouraged people to grow Kidney Vetch at home and in local gardens. Local growers have been provided with seed collected during the project. There are known to be two gardens in the project area that currently support Small Blues – one in West Horsley and one in Merrow that has recently been colonised. Growers who live outside of the area have been able to take seed home to grow in pots or tubs, in the hope that that they will be able to provide extra seed back to the sites from where the seed originated. Growing the plant at home in compost should mean that it flowers quickly and most importantly is unlikely to be nibbled by rabbits. In this way a few initial seeds can hopefully provide a lot more locally sourced seed back to the area.

The Project Officer was given some seed from Dorset and has offered it to staff and volunteers of partner organisations so that they can grow it in their gardens if they live locally to the project

area. This seed can't be used on our project sites as it isn't local enough, but is fine to be used in a garden setting.

Surveys on Project Sites

Another important element of the project and its outcomes is the undertaking of species and habitat surveys. Some of the main project sites are not monitored by butterfly transects, e.g. Netley Plantation, Netley Park and Wholecomb Down. As a result there are fewer butterfly records for these sites. The volunteer group and Project Officer actively visited sites not being monitored by transects. Resulting records were entered onto the IRecord app. We have encouraged volunteers (including Scrape Stewards) to enter records on site using IRecord.

As a result of the project, both Dingy skipper and Grizzled Skipper were recorded at Netley Plantation and Netley Park. Both of these are Section 41 (formerly UKBAP) species.

Egg searches

The Project Officer and project volunteers have assisted Gail Jeffcoate with Small Blue egg searches at Box Hill. As well as these surveys benefitting from many more pairs of eyes, this provided an opportunity for more volunteers to get guidance and practice looking for Small Blue eggs.



We have undertaken several surveys at Pewley Down including surveys for adult butterflies, egg searches and a habitat assessment.

We also undertook a thorough survey at Newlands Corner in summer 2018 as eggs had been found there in 2017. Despite a thorough search we didn't find any eggs, but completed a habitat assessment.

We have adapted a Habitat Assessment form to assess suitability of an area for the range of target species for the project, not just Small Blue. This form is found in the Appendix.

Our Scrape Stewards are now visiting sites regularly (at least several times each year). In 2019 some of the new scrapes had flowering Kidney Vetch. Volunteers are sending in results.

Early signs of success

As a result of our surveys in summer 2019, we have discovered eggs and already recorded increases in populations at some the project sites:-

- Rosamund Trust Community Garden – Small Blue observed around large flowering Kidney Vetch in a scrape created and seeded in 2018. 5 eggs found.
- Netley Park National Trust site – 98 flowering stalks of Kidney Vetch in the sward and on a bank which was seeded at the start of the project in 2017; 19 eggs counted. This is extremely significant as it is in the middle of the project area. It is 5 km east of the sporadic sightings at Newlands Corner, 5 km west of the newly establishing population at Denbies Hillside, and roughly 9 km west of the population at Box Hill.
- The Ranges National Trust site – 4 of the 8 fenced exclosures had flowering Kidney Vetch in them in 2019, 203 eggs found. Egg-laying was also observed in 2018.
- Denbies Hillside – 6 Small Blues found at the Fingers at one time in 2019 – over 200 eggs found during a search but many more suspected as not all Kidney Vetch could be checked without trampling.

These new sites are highlighted on the map back in the Appendix.

Legacy of the Project

The Conservation Oversight Group & New Task Leaders - three of our regular volunteers have been recruited to the newly created Surrey Branch Conservation Oversight Group (COG) and will attend regular meetings with committee members to assess ongoing progress and decide on conservation priorities. They have also been trained up to lead regular work parties to carry on the work of the project on our project sites with the support of partner organisations. Rather than running tasks independently, they can hopefully gain assistance in the transport of tools and tea kits to project sites, and we hope that most of the tasks will be joint work parties with volunteers from multiple organisations working together.

The volunteers are fully equipped with a set of essential tools. The National Trust have very kindly made space in their tool shed at Landbarn Farm for Butterfly Conservation to store tools there, even putting up shelves and racks for us!

We ultimately hope that Small Blue distribution and abundance is increased and better linked across the Surrey Downs – leading to an example of best practice species habitat restoration. We also hope that Small Blue populations and other butterfly populations in Surrey are better monitored and protected. As volunteers observe colonisation of new sites by Small Blue we may learn important information about the dispersal capabilities of the species. We hope that our partner organisations will continue to work more closely and adopt the multi-organisational approach adopted by the project.

Appendix 1: Volunteer Testimonials

The Project built up an incredible team of hard-working and dedicated volunteers to whom BC and the partner organisations are indebted. Here is some feedback showing what some of them have gained from the project.

Steve Nevard – “The Small Blue project has provided a wonderful opportunity to volunteer on this valuable work to improve the habitat for this lovely butterfly. It’s been very interesting getting to know this beautiful area of the North Downs in more detail and to work with such an enthusiastic and knowledgeable group of volunteers. The work parties were always well planned and it was very gratifying to see the transformation of some badly neglected sites to areas ideal for the Small Blue and other chalk downland butterflies. It was also very interesting in springtime to carry out monitoring of these sites to assess the establishment of Kidney Vetch and to search for the eggs of the Small Blue.”

Harry Eve – “Thank you for your excellent leadership of this project. It attracted an enthusiastic following of volunteers showing strong community involvement in looking after our local biodiversity. The engagement of volunteers in ongoing monitoring was also important and I would expect this to link in well with SWT's plans for future work on the North Downs. Use of Facebook as a communication tool also worked well - as a very accessible means of notifying dates for work and encouraging posting of photos of sightings.”

Helen Middlemas – “Fiona has led this project with huge enthusiasm and knowledge and most importantly, shared it with the volunteers. My new-found skills include mattocking, tree-popping, seed sowing, identifying the plants of the chalk, erecting exclosures, and learning how to find the eggs and larvae of the small blue butterfly. We have also watched the fragility of the life cycle of the small blue when a parasitic fly laid its eggs on a caterpillar. I can also spot a kidney vetch seedling from quite a distance too! It's great that we have formed a team of volunteers willing to take this project forward as there is still much work to be done, but Fiona's expert guidance and professionalism will be sorely missed.”

Ken Elsom – “Butterfly Conservation's Small Blues in Surrey Project has surely demonstrated the effectiveness that a dedicated band of volunteers can have on the environmental well-being of the North Downs. While primarily focused on improving the number and interconnectivity of viable small blue sites, the work has enhanced these habitats for many of the other diverse and often-rare chalk-grassland species. For the volunteers, this has proved a terrific educational experience with their mix of talents used to the full with Fiona maintaining the necessary stakeholder liaison while proving to be an inspirational motivator through hot and cold, wet and dry. This effort clearly needs to be continued if the ever-invasive scrub is to be contained so that our unique flora and fauna can flourish.”

Gillian Elsom – “Being part of the Surrey Small Blues Project since last September has been a special experience in many ways. We have worked in some of the most beautiful and rare chalk grassland habitat in the country. Fiona always looked after her team ensuring that everyone had a task that they could do, so if you couldn't do mattocking, you could do tree popping, lopping, or use hand tools to do weeding, or rake and pick up cleared scrub. It was inspiring to work with others who all had a passion for conserving our rare chalk grassland

habitat and we shared varied expertise. It was good to see Butterfly Conservation work with other organizations such as The National Trust, Guildford Borough Council and Surrey Wildlife Trust, towards a common goal. I was especially grateful to Fiona for organising two work parties to clear invasive scrub in a chalk pit (a SNCI on a golf course) on my butterfly transect. She also had a work party to clear Perfoliate Alexanders, an invasive alien plant, also on my butterfly transect and within the Small Blue Area. I shall miss working with Fiona and her lovely dogs, who were very much a part of the team.”

John Tallon – “After nearly forty years working behind a desk I was looking for something different, but fulfilling, to occupy my retirement. The Small Blue Project has provided this in spades. Your clear sense of purpose, expert knowledge and dedication to the task made it easy to understand what we were trying to do, and why. Your unobtrusive shepherding of your sometimes wayward flock (and I mean the volunteers, not the dogs) kept us all on the straight and narrow and made working with you a real pleasure. I was also impressed by your ability to conjure up the best summer in forty years to make every day on the downs (I’ve deleted The Mount from my memory) an absolute delight. My life has been enriched by my experiences working on the project, and I’m sure that applies to all the volunteers.”

Libby Ralph – “We’re all increasingly aware of the need to look at conservation work on a landscape scale, but sometimes the structure of funding grants can get in the way of involving multiple organisations and sites, or divert too much towards sometimes tenuous public activities without measured results. It’s therefore been really satisfying to be involved in this project, which has struck a great balance over the past two years. The project has improved sites all the way across from east of Dorking to west of Guildford, and involved Butterfly Conservation, Surrey Wildlife Trust, the National Trust, Guildford Borough Council, the Albury estate, and engaged/inspired some private landowners. Some sites will take time to establish but we’ve been really excited by the results we’ve seen this year – butterflies, eggs and larvae on the plants that we have seeded into scrapes – and even egg-laying onto seed-stock plants in volunteers gardens! The wide range of volunteers and staff from the various organisations have become a great team, and we have all learnt a huge amount collectively and from each other, not just about small blues, but a range of butterflies, their host plants, and many other invertebrates found in the habitat. It was great to find my first silver-spotted skipper egg on sheep’s fescue, to encounter my first snail hunter beetle face-to-face, and to enjoy roman snails mating (at their own pace!) We hope to carry on some of the work and see the long-term results of this great project. There are lots of good things to be taken forward as a model for other projects.”

Simon Riley – “This was an immensely rewarding project to be involved in for a number of reasons:

1) Project leader was knowledgeable, passionate and had excellent experience of engaging with and working with volunteers. It was immediately obvious that she really enjoyed what she was doing and that she considered what she was doing to be important

2) Although the Project was conducted across a large number of sites the scale didn’t feel too big. The site connections (i.e. the stepping stones) could be easily appreciated and were very obvious particularly when seen on a map, hence objectives felt more achievable. (i.e. the Project didn’t “think” too big)

3) Volunteer involvement was integral to the success of this Project and will leave a lasting legacy of local engagement. In particular

a) The Project brought together a passionate group of volunteers who all now know more about many of Surrey's important chalk grassland sites, their plant communities, their issues, management etc.

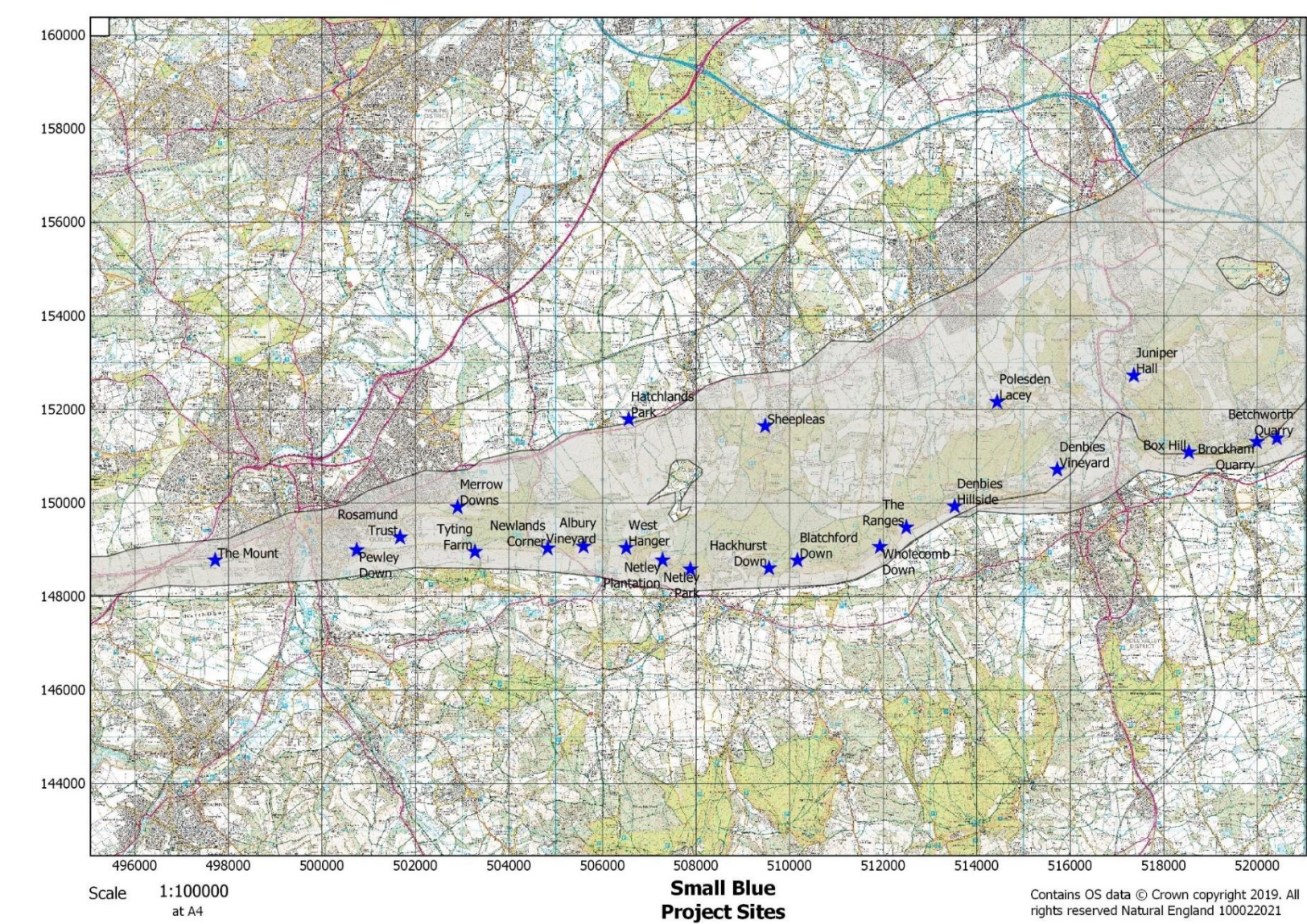
b) The Project resulted in significantly more connectivity with other (mostly) conservation organisations, including the National Trust and Surrey Wildlife Trust.

c) Specific knowledge learned re small blues, their life cycle, and their kidney vetch food plant. Volunteers have now become advocates for these sites, their wildlife and in particular the small blue.

d) Volunteer community will now continue to monitor the sites (in particular through the ongoing scrape steward arrangements). In addition conservation work parties will now take place using volunteer leaders.

So in conclusion, great leader, great bunch of volunteers, great hosts, great cake, fantastic sites and of course great fun!!"

Appendix 2: Map of Project Sites



Appendix 3: Project Sites and Recommendations

1. The Mount

- Guildford Borough Council site.
- The 2013 project created some scrapes. These now have Kidney Vetch in them and in places it is spreading into the sward.
- Small Blue and Grizzled Skipper are present. Scrape steward has been appointed.

Management – Scrub colonising the grassland. It is a problematic level of scrub to deal with. If it is cut and treated with herbicide, many of the stumps would regrow as they are too small for the herbicide to be 100% effective. The roots get very large in this instance and are more difficult to remove, and that is clearly what has happened in some areas. If a foliar spray is applied, it would be an expensive operation over such a large area and there would be concerns over whether this might be potentially damaging to the sensitive flower-rich sward. The Project had two volunteer tasks here in winter 2018-19, with the support of staff from GBC. Both were in bad weather and the turn-out was lower than normal. We used tree poppers to remove Hawthorn, Dogwood, Clematis and Bramble primarily from the grassland around the scrapes, and then in areas of Kidney Vetch. This was extremely effective – the ground was softer than usual due to the rain and the plants came out of the ground with their large root systems very well.

Recommendations - BC and GBC continue to advertise joint work parties and set up a site-specific volunteer group if possible. Continue tree-popping and mattocking out the roots on the grassland heading out from the scrapes. Continue with winter cattle grazing and consider further bare ground works at the top of the slope in the future once the scrub issues are more under control.



Scrub popping and mattocking at the Mount - Ken Elsom

2. Pewley Down

- Guildford Borough Council site, managed with the Pewley Down Conservation Volunteers.
- Small Blue present in good numbers and Lace Border and Chalk Carpet also present. Scrape stewards appointed.

This is another site which benefitted from scrapes in the 2013 project but it is also extremely well-managed through the combination of work by GBC and the Pewley Conservation Volunteers. The Small Blue population appears to be doing well here and volunteers have been creating scrapes across the site since around 2009. Kidney Vetch is widespread across the site and is growing in the sward in many places. Pewley has been a good source of seed for the project for local sites.

Management - we hired a digger for a GBC staff member to create a series of 7 new scrapes across the site. The banks at the back of three of the 2013 scrapes were removed as they had been serving as nutrient stores, encouraging scrub and longer vegetation to build up around the scrapes. The material was spread along an existing bank. We have had five volunteer tasks here, two of which have been joint tasks with the Pewley Down Conservation Volunteers. We have worked on removing scrub from the grazing field and around scrape edges with tree poppers, extending a scrape, removing brambles from around scrapes, collecting and spreading seed, and maintaining the old and new scrapes.

Recommendations – continue on with scrub management and seed sowing, BC and PDCV to liaise over future tasks.



Joint task with Pewley Down Conservation Volunteers and Butterfly Conservation - Jonathan Mitchell

3. Merrow Downs

- Guildford Borough Council site, managed also by Guildford Golf Club.
- Small Blue present as well as a diverse range of species, including Bastard Toadflax, Lizard Orchid, Frog Orchid, Horseshoe Vetch, Chalkhill Blue, Brown Argus, Adonis Blue amongst others.
- Transect walkers keep an eye on Small Blue areas.

Management - we have had 3 volunteer tasks in Small Blue areas with help from GBC, the last of which was a joint work party with the Surrey Botanical Society. We have focussed on restoration of a former chalk quarry which was becoming choked with scrub. Dogwood, Cotoneaster and Gorse were removed from the scree slopes to help the Kidney Vetch, Horseshoe Vetch and Common Rock-rose. Roots were removed where possible and stumps were treated by GBC. Buddleia, Birch, Gorse and Pine were removed from the quarry base. Kidney Vetch plug plants grown from seed collected on site by the transect walker were planted on the slopes and additional seed was sown.

Recommendations— continued liaison on management of key areas and intervention when necessary by BC Surrey and SBS volunteers. A task is being programmed in for autumn 2019. Particular focus on removal on invasive Cotoneaster and maintaining the areas with Kidney Vetch and Horseshoe Vetch to remove competing scrub.



Scrub management in progress - Gillian Elsom

4. Tyting Farm

- Newly selected SANG
- Site meetings with GBC and BC, plus subsequent surveys and volunteer task have confirmed presence of Grizzled Skipper.
- Grazing plans are underway here, with the prospect of winter grazing.

Management: we have had a volunteer task here in May 2019 where we created a series of 5 scrapes and banks to encourage Small Blue and other species. Volunteers were from BC, Surrey Botanical Society and staff from GBC assisted.

Recommendations: continued liaison and partnership working between BC and GBC. The scrapes are very new and more Kidney Vetch will be sown here in autumn 2019. It would be good to use temporary fencing to protect scrapes when livestock are present, at least for the first few years while plants are becoming established. Move away from mowing the field in order to control Ragwort, and carry out a Ragwort pull with volunteers instead. Winter cattle grazing would then be ideal here. Potential for more scrapes in the future.



Scrape creation at Tyting Farm- Ken Elsom

5. Rosamund Trust Community Garden

- Site owned by the Rosamund Trust but SWT will be taking on the management of the site.
- Small Blue egg laying here in 2019 and adults seen here in the past.

Management - we had a work party here in May 2018 where we created 7 scrapes and banked the material. There was a lot of topsoil and from the length of vigorous grasses in the field, we considered the nutrient level to be too high for Kidney Vetch establishment in the long-term. However as Small Blue had been seen here in the past, and due to the proximity to the strong population at Pewley Down, we thought it was worth trying. There were talks of grazing the site which would be the best management solution as long as it was with the right livestock and density at an appropriate time of year.

Update – The Project Officer visited the site in June 2019 and found flowering Kidney Vetch in one of the scrapes, a Small Blue butterfly and 5 eggs were also found. Most of the scrapes were being overtaken by grasses and Ribwort Plantain but 2 in particular had Kidney Vetch as well as a wealth of desirable species including Scarlet Pimpernel, Yellow Rattle, Black Medick, Birds Foot Trefoil and Dwarf Spurge.

Recommendations – Surrey Wildlife Trust look to be taking on the site in the near future. Winter cattle grazing would be ideal but BC recommend that scrapes are fenced out, at least while stock are present, to avoid trampling and disturbance to the Kidney Vetch. Additional scrapes would be beneficial in the future once the grassland is being managed by grazing. Consider spreading yellow rattle seed to suppress grass growth. SWT, the Rosamund Trust and BC Surrey to continue to liaise over management here for butterflies.



Scrape creation task - Martin D'arcy

6. Newlands Corner

- Owned and managed by Albury Estate. SWT manage an Access Agreement.
- Small Blue have been found in the past and eggs found in 2019.
- Important habitat for Silver-spotted Skipper.
- Scrape steward appointed.

Management – The Albury Estate offered to create three large scrapes in the eastern ‘grazing’ field in winter 2017-18. Material was banked up in bunds. These scrapes are establishing well but as the digger got right down to the chalk layer they are only vegetating slowly. This should mean they will be really good in the long-term though. The banks have vegetated quickly with a range of desirable nectar sources, and the habitat is being used by many hymenoptera. We have had 2 volunteer tasks here on the bank above Water Lane, clearing young scrub from the grassland in an area favoured by Silver-spotted Skippers.

We have undertaken a habitat assessment of the grassland areas where the scrapes from 2013 and 2018 are. They show that the habitat in the 2013 scrapes is far preferable to the habitat outside of the scrapes. Small Blue eggs were found in summer 2019 in the westernmost scrape which contains the largest block of Kidney Vetch found on site. There is definitely potential here for Small Blue and it is already an important habitat for many species including Chalkhill Blue.

Recommendations: As discussed with Albury Estate and SWT, the site is in need of reinstatement of winter cattle grazing, particularly in the eastern grazing field, but the level of scrub and coarse grass in the central block of habitat is also concerning. BC Surrey to continue to provide advice and assist where possible.



Management of the Silver-spotted Skipper bank - F Haynes

7. Albury Vineyard

- Owned by Albury Estate and land managed by Albury Organic Vineyard
- FWAG involved in future management and scrape steward appointed.

Management - the site was already known by BC Surrey Branch and a ditch-line above the vineyard had been seeded by Bill Downey in 2017. Albury Estates and the Vineyard have been very supportive of the project. We had a volunteer task in June 2018 and created 34 scrapes of varying sizes. These now have plenty of Kidney Vetch coming up in them and the prospects seem very good at this site. The chalk layer is just beneath the surface of the vegetation in places and a range of desirable chalk species are already spreading through the scrapes. A recent meeting organised by scrape steward Simon with the Surrey Botanical Society revealed an impressive plant list including a couple of rarities – Narrow-fruited Cornsalad *Valerianella dentata* and Catmint *Nepeta cataria*.

Recommendations - Surveys and further seeding of bare areas. There are prospects for Kidney Vetch seed to be include in a pollinator seed mix due to be seeded lower down in the field, in collaboration with FWAG. Potential for more bare ground creation along the top chalk edge in the future as these new scrapes are vegetating quickly.



Aerial photo of new scrapes - Dominic Greves



New scrape by viewing platform - F Haynes

8. West Hanger

- SSSI site managed by Surrey Wildlife Trust and owned by Surrey County Council.
- Site supports Grizzled and Dingy Skipper. Excellent prospects for Small Blue and many other species with continued management.
- Scrape steward has been appointed.

Management - five volunteer tasks have been carried out here to restore the area of chalk grassland at the westernmost point of the site. This area had become increasingly rank with Bramble spreading throughout the grassland and smothering important food plants and nectar sources. An old chalk quarry was choked with *Buddleia* and this invasive plant had been spreading through the site. Volunteer tasks have gone a long way towards getting the habitat into better condition. A series of three chalk scrapes were created using a digger and these now have Kidney Vetch present as well as a range of desirable plants. The chalk bank created from the arisings is proving to be a valuable habitat for many invertebrates but a full survey is recommended by an entomologist.

Recommendations – SWT and BC to collaborate on future volunteer tasks to continue to manage the invasive Brambles and *Buddleia*. In years when grazing isn't possible, brushcut or use BCS mower to cut brambles, then rake off and burn arisings. The ideal situation would be to have winter cattle grazing here, but the site will continue to need annual Bramble and *Buddleia* control. Goat grazing may be more effective at controlling bramble. SWT to fence out scrapes for protection when livestock are present, potentially in collaboration with BC on future tasks.



Scrape maintenance - Ken Elsom

9. Netley Plantation

- SSSI site managed by SWT and owned by SCC
- Grizzled and Dingy Skipper confirmed on site through the project.
- The site is full of excellent features for many species, having a series of connected glades and rides. As it is full of old quarry workings the chalk layer is at the surface and the soil level is very thin.
- Scrape stewards have been appointed.

Management – Three scrapes created here with a digger and we have had six volunteer tasks. The project has focused on removing the large expanse of *Buddleia* and opening up former quarry areas. The digger was used to remove large *Buddleia* stumps and pile them. *Clematis* and young scrub removal across the glades. Brambles encroaching at glade edges have been cut and raked off. Low fencing recently erected around 2 of the scrapes to protect the Kidney Vetch due to new plants being grazed by rabbits and/or deer.

Recommendations – Continue to have joint work parties with SWT and BC, at least 2 per winter. Control *Buddleia* and re-treat stumps that re-grow, or winch them out. Expand the *Buddleia* control outside of the main glades if possible. Control the *Clematis vitalba* where it is overtaking the grassland as it is still quite young. This may be possible with tree poppers but otherwise mattocks may be the best tool. Retain all open glades and expand where possible, keeping sheltered conditions and longer vegetation at the edges.



Buddleia control in progress - F Haynes

10. Hatchlands Quarry

- National Trust site
- Former quarry close to existing colonies of Small Blue around Clandon

Management – The Project had 2 volunteer tasks here and a day with Surrey Choices – an organisation that works with adults with learning difficulties. We were working with National Trust staff on each occasion. We were removing large amounts of *Buddleia* from this site as well as young trees including Birch and Sycamore. There is an old exposed chalk trackway on the western side of the quarry and it was seeded with Kidney Vetch seed.

Recommendations - BC is keen to continue to work jointly with the National Trust here to create the open conditions favoured by many species. We know there has been a change in staffing here but hope that the NT will continue to prioritise and facilitate these works, especially the continued control of *Buddleia* and Japanese Knotweed.



More Buddleia - F Haynes

11. Netley Park

- National Trust site
- Confirmed Grizzled and Dingy Skipper site
- June 2019 - 98 Kidney Vetch flower-stalks counted here in summer 2019 from seed sown at the beginning of the project and 19 Small Blue eggs found.
- Scrape steward appointed.

Management – we created 3 scrapes here with a mini digger and have had 4 volunteer tasks. This site has a network of rides and glades that are valuable for butterflies but we have focussed on removing *Buddleia* and young scrub that can be popped and mattocked out of the grassland. Rides have been brushcut and raked too. Scrape stewards have been busy maintaining the three scrapes.

Recommendations – Continue joint tasks with the National Trust to ensure the *Buddleia* remains under control and young scrub is removed. Consider fencing around the eastern scrape if the Kidney Vetch is nibbled. Introduce winter grazing if possible and protect scrapes from livestock for the first few years during periods while cattle are on site. Extend *Buddleia* and Bramble control beyond the areas we have been working so far as there are still more areas to tackle.



Scrub popping around one of the three scrapes – Ken Elsom

12. Hackhurst Down

- Site owned by SCC and managed by Surrey Wildlife Trust
- Part of Hackhurst and White Downs SSSI
- Silver-spotted Skipper present.
- Scrape steward appointed.

Management – As Hackhurst is a difficult site to access with a volunteer group the majority of work here has been by contractors. We have paid for 30 man days of scrub clearance, created 7 scrapes and erected 2 fencing exclosures which protect 4 of the scrapes. We have had 2 sessions with volunteers here, both have focussed on maintaining the scrapes. The Kidney Vetch is germinating well in many of the scrapes and the fences are helping to reduce the impact of rabbits. SWT have created additional scrapes to the west of Beggars lane and these are yet to be seeded but will be of great benefit also.

Recommendations – the site was in a poor condition with Bramble scrub dominating the chalk grassland. The contractor work has focussed on clearing this back to restore the chalk grassland and there are improvements. The site needs this ongoing management every year on both sides of Beggars Lane to ensure the scrub level doesn't dominate the grassland. Annual winter grazing is essential here.



Flowering Kidney Vetch Summer 2019 - F Haynes

13. Blatchford Down

- National Trust SSSI, part of the Hackhurst and White Downs SSSI.
- Priority Lepidoptera - Silver-spotted Skipper and Grizzled Skipper.
- Two scrape stewards have been appointed here as it is a large site.

Management – we created 16 scrapes spread across this large expanse of chalk grassland. We also paid for a ditch-line to be cleared of scrub which dissected a block of grassland and was spreading. This is now full of beneficial nectar plants. This is a challenging site to access for volunteer tasks but we have had 3 volunteer tasks here. They have involved scrub popping around scrapes and scrape maintenance. We have also enclosed 5 of the scrapes in the north-western corner where rabbits and livestock had been digging around the edges of the scrapes and the Kidney Vetch plants were being smothered and/or nibbled.

Recommendations - manage scrub around the scrapes and consider fencing out livestock from the scrapes with temporary fencing for the first few years while Kidney Vetch is getting established. Potential for future tasks with support from the NT to manage scrub species around and in scrapes.



Bramble control and Kidney Vetch seeding - Ken Elsom

14. Wholecomb Down

- National Trust SSSI, part of the Hackhurst and White Downs SSSI.
- Priority Butterflies: Grizzled Skipper and Silver-spotted Skipper.
- Scrape steward appointed.

Management – We have created 7 scrapes on Wholecomb Down, 2 of which have been fenced. We have paid for 8 days of tree popping here to help manage the Hawthorn and Bramble that is encroaching on the grassland. We have also had 4 volunteer tasks here and have been tree-popping mainly around the new scrapes and maintaining them, as well as working with the National Trust to manage the dense Bramble and Hawthorn on the western slopes of the site.

Recommendations – consider temporary fencing around the scrapes if cattle dig over them and destroy new Kidney Vetch plants. Continue to manage the scrub around scrapes, potential for many volunteer tasks here.



More scrape maintenance and tree-popping the adjacent grassland - G Elsom

15. The Ranges

- Site owned and managed by National Trust, part of Hackhurst and White Downs SSSI
- Priority Lepidoptera – Grizzled Skipper, Silver-spotted Skipper
- Small Blue egg-laying observed in summer 2018 and 203 eggs found in 2019, inside fenced exclosures.

Management – We have had 7 work parties at The Ranges, mostly in partnership with the National Trust. One of the work parties was a large joint work party with BC and NT volunteers and another was a large joint work party with the Lower Mole Project and their volunteers. There are 7 fenced exclosures that were in varying states of repair. We repaired those that needed it and spent a lot of time removing the scrub from inside these fences. Some already had Kidney Vetch in them but they have all been weeded and seeded. We also popped and matted out scrub over the slopes and spent a lot of time with the NT Ranger and volunteers brushcutting and raking up treated Bramble scrub to clear the open slopes. The site is looking much improved and it was excellent to find 203 Small Blue eggs in the fenced exclosures in summer 2019.

Recommendations - BC and NT to continue to work together here to control scrub in the exclosures and on the open slopes. More seeding across open areas when seed is available and more seed to be sown in the exclosures and the old chalk pit.



Repairs to exclosures and scrub control with Lower Mole Project and NT

16. Denbies Hillside

- National Trust SSSI, part of Hackhurst and White Downs SSSI
- Priority Lepidoptera: Adonis Blue, Grizzled Skipper, Dingy Skipper, Silver-spotted Skipper, Lace Border, Chalk Carpet.
- Small Blue have become established here during the lifetime of the Small Blue Project and there had been sporadic records in previous years.

Management – We have had 4 large scrapes created by a mini-digger here and have created around 19 further scrapes by hand on volunteer tasks. We have paid for 30 contractor days of scrub clearance in key areas across the site and have had 15 volunteer tasks. Some of these have been independent but we have mainly been working with NT staff and volunteers here, and have had a large joint task with the Lower Mole Project too. We have been scrub clearing with loppers and saws, have cleared large areas of the grassland of small scrub with tree-poppers and mattocks and have been helping to clear dead Tor-grass and seeding any available bare areas with Kidney Vetch. We have maintained our new scrapes.

Recommendations - NT and BC to continue to collaborate here and continue the excellent work. Small Blues are establishing well at The Fingers and it will be excellent when they start to spread from there into the new scrapes and bare areas across the site. Scrub popping tasks help to ensure that the grassland can be grazed more effectively by cattle. Fenced exclosures around the new scrapes at The Allotments would be beneficial and help Kidney Vetch plants to establish as they are currently being nibbled by rabbits.



Scrape creation at an angle - Martin D'arcy

17. Denbies Vineyard

- Owned by Denbies Wine Estates
- Excellent potential stepping stone between Denbies Hillside and Box Hill
- Many important butterfly foodplants already present including Horseshoe Vetch (for Adonis Blue and Chalkhill Blue) and Common Rock-rose (for Brown Argus).

Management – we had a volunteer task here where we created over 50 small scrapes alongside the vehicular access track. There is an existing bank of chalk grassland plants. These scrapes have all been seeded with Kidney Vetch.

Recommendations – Don't cut the vegetation on the bank. BC to check on progress of Kidney Vetch. These scrapes are likely to vegetate over quickly as they are small so it would be good to create more bare ground here in the future. BC to programme in future work here as necessary.



Scrape creation on the North Downs Way - Ken Elsom

18. Box Hill

- National Trust SSSI, part of the Mole Gap to Reigate Escarpment SSSI.
- Part of site at Boxhurst is leased to SWT who have a grazing agreement.
- Priority Target Species present - Small Blue, Adonis Blue, Grizzled Skipper, Dingy Skipper, Silver-spotted Skipper, Chalk Carpet, Lace Border, Straw Belle.
- Small Blue already present here but restricted to certain areas at the moment.

Management – All of our contractor work has been at the eastern part of Box Hill at Dukes and Boxhurst- we have created 3 large chalk scallops in the side of a bank, and created 4 large scrapes in the field below. We have also paid for 25 days of scrub clearance and tree work here, clearing scrub from the chalk grassland and reducing shading on the bank with the new chalk scallops and chalk turning circle. We have had 9 volunteer tasks and have mainly worked with the NT Ranger and his volunteers and trainees. We have created an additional scrape at Boxhurst by hand, used tree-poppers and mattocks to remove scrub from the slopes at Dukes, cleared scrub from the chalk pits along ZigZag Road, cleared scrub from the grassland at Upper Zigzag to benefit Straw Belle moth. We have also cleared Brambles, Black Bryony, *Clematis* and Hemp Agrimony from the enriched trackway at Dukes where these plants were smothering an important bank for Man Orchid, Horseshoe Vetch and potentially Kidney Vetch.

Recommendations - BC and NT to work together to continue managing these important parts of the site for Small Blue. The large scrape we created in the quarry is being trampled by SWT cattle, who are uprooting and burying young Kidney Vetch plants due to the loose scree. BC to discuss a way forward here with SWT and NT. The new scrapes at the top of the field below Dukes are likely to need some ongoing maintenance.



One of three new scallops along Brodie's Drive, now sown with Kidney Vetch - F Haynes

19. Brockham Quarry

- SSSI managed by Surrey Wildlife Trust and Owned by SCC
- Priority Lepidoptera – Silver-spotted Skipper, Adonis Blue, Grizzled Skipper, former site for Straw Belle.

Management – this site had been suffering from a lack of management in the previous couple of years due to a problematic access issue. SWT had been unable to access the main quarry area for essential habitat management such as grazing and scrub management. In winter 2017/18 we therefore concentrated our management on the slope above the quarry, accessed from Box Hill Road. We restored the slope that had supported Straw Belle moth, an extremely restricted species in Surrey. This slope is also extremely important for the Silver-spotted Skipper. We removed a lot of scrub here through 3 volunteer tasks in total. We also paid for 15 days of scrub clearance by contractors along this slope and a follow-up spray of regrowth in summer 2018. In winter 2018 we were able to access the quarry with the SWT for 3 joint tasks which were very successful. We concentrated on the most important areas for our priority species and cleared a lot of invasive scrub, mainly with tree poppers. We also paid for 10 man days of clearance of invasive Tree Cotoneaster from one of the steepest slopes on site, as well as *Buddleia* clearance on the quarry floor.

Recommendations - this site is extremely important for many species and boasts an impressive plant list. BC to continue to support SWT in their management here as we have made a good start towards restoring this site to its' former glory. The slope above the quarry should also be managed to keep invading scrub at bay. Some significant patches of Wild Liquorice *Astragalus glycyphyllos* have come up in an area which had been overtaken with Birch and Bramble scrub. This plant is extremely rare and the scrub will need to be at bay here to ensure its' survival. It also has an associated moth species, the Liquorice Piercer Moth *Grapholita pallifrontana* - although this hasn't been seen in Surrey in recent years it may yet turn up here. Brockham Quarry was already known to support Wild liquorice but this has popped up in a previously unknown locations. The main quarry area needs to be grazed, ideally by sheep. We hope that the access issues can be resolved.



Tree popping and Cotoneaster control on the Straw Belle and Wild Liquorice slope – Gillian Elsom

20. Betchworth Quarry

- SWT managed SSSI
- Adonis Blue present.

Management – We had one volunteer task near the start of the project, but it was extremely hard work getting equipment to and from site, even with some vehicular assistance from SWT. The site has a lot of invasive scrub and it would be really good to get this under control. Betchworth has huge potential for Small Blue and already supports Adonis Blue and Horseshoe Vetch. It was decided though that the main focus of the project area was the stretch between Guildford and Dorking, and this site and Brockham Quarry really need their own project to get the scrub back under control.

Recommendations – A lot of resources need to be put into the management of Betchworth to keep the scrub under control. SWT graze the site with goats which will hopefully help the scrub issues. BC found the site difficult to work at due to their lack of a 4 wheel drive vehicle, but BC Surrey volunteers would be likely to assist SWT in tasks there if they had the assistance in terms of transporting equipment to and from sites. There is a lot of *Cotoneaster horizontalis* in particular that needs to be controlled and is colonising the steep slopes. It is challenging but possible to work on these slopes!



View of the volunteers from the steepest slopes – F Haynes

Additional Sites in the Project Area...

21. Sheepleas

Management - Seed was sown in the field at Lark Rise and another patch of Kidney Vetch was found in summer 2019 in flower in this field. It was decided not to create scrapes at Sheepleas due to the sensitivity of the existing vegetation, with important populations of Horseshoe Vetch and White Helleborine in areas suitable for scrapes. However, if the surrounding habitat becomes suitable in future years this idea could be revisited and small scrapes could be created with volunteers.

Recommendations - continue to monitor Kidney Vetch at Lark Rise, spread more seed, and liaise with local resident Harry Eve who has the closest population of Small Blues in his garden.

22. Polesden Lacey

Management – The Small Blue Project helped NT staff clear out the vegetation in an old quarry to encourage Small Blue and Grizzled Skipper. NT staff have been creating scrapes on their grassland and seeding them with Kidney Vetch, with advice from Bill Downey. They are also growing Kidney Vetch in their greenhouses.

23. Pippbrook Council Offices, Dorking

The green roof of the Council Offices in the centre of Dorking is covered in Kidney Vetch from a seed mix. Areas such as this provide valuable stepping stones in the Dorking gap between the chalk Downs. Gardens in Dorking could also be prepared and seeded to provide additional habitat stepping stones.



24. Toyota in Epsom

Surrey Wildlife Trust recently put BC in touch with Toyota as they have amazing grounds for wildlife, including a lot of Kidney Vetch. Their on-site ecologist is encouraging staff to take seed home and plant it in their gardens for Small Blue. This site should be searched for eggs in 2020 or earlier if possible.

25. Beaverbrook Golf Course

Eggs were found here in 2019 by Bill Downey and Gail Jeffcoate. BC to continue to advise and assist where possible.

Other sites are frequently becoming available as more people become aware of the project, and we have a long list of sites to seed at the end of the summer, so there are many possibilities.

26. Juniper Hall Field Studies Centre, Mickleham.

3 scrapes were created in the garden. Seed has been supplied to staff for seeding these areas. The issue will be keeping on top of competing vegetation but if this can be achieved by garden volunteers it could be another important stepping stone. Seed could also be sown into flowerbeds around the site.

Appendix 4 – Main sites and Priority Target Species

Site	Small Blue	Adonis Blue	Grizzled Skipper	Dingy Skipper	Silver-spotted Skipper	Chalk Carpet	Lace Border	Straw Belle
The Mount	Y		Y					
Pewley Down	Y			Y		Y	Y	
Merrow Downs	Y							
Tyting Farm			Y					
Newlands Corner	Eggs 2019		Y	Y	Y			
West Hanger			Y	Y				
Netley Plantation			Y	Y				
Netley Park	Y - 2019		Y	Y				
Hackhurst SWT					Y			
Blatchford Down			Y		Y			
Wholecomb Down			Y		Y			
Ranges	Eggs 2018 and 2019		Y		Y			
Denbies Hillside	Y	Y	Y	Y	Y	Y	Y	
Box Hill	Y	Y	Y	Y	Y	Y	Y	Y
Brockham Quarry		Y	Y		Y			
Betchworth Quarry		Y	Y		Y			

HABITAT CONDITION SURVEY FORM SMALL BLUE PROJECT

SITE NAME		COUNTY	
OS GRID REF. (e.g. NN123456)			

BUTTERFLY DISTRIBUTION AND ABUNDANCE

MAP OF EXTENT OF FLIGHT AREA: Please provide a 1:10 000 or 1:25 000 scale map, based on an OS map, and showing scale, 1km gridlines and colony boundary marked in thick black waterproof ink (use a separate sheet)

SURVEY METHOD:	Tick one
Transect	
Timed count	
Casual/other	

HABITAT CONDITION SURVEY

DATE OF SURVEY:		Vegetation height method	Tick one
RECORDER		Drop disk	
		Ruler	

Assessment of attributes for the whole flight area (complete at end of structured and casual walk)

ATTRIBUTE	% ESTIMATE (for the whole flight area)
Tall (>1.5m) scrub cover	
Grass cover	
Herb (wildflower) cover	

Food-plant	Butterfly/ moth
Kidney Vetch	Small Blue
Horseshoe Vetch	Adonis Blue, Dingy Skipper
Bird's Foot Trefoil	Dingy Skipper, Chalk Carpet, Straw Belle
Salad Burnet, Agrimony, Wild Strawberry, Barren Strawberry, Creeping Cinquefoil	Grizzled Skipper
Sheep's Fescue	Silver spotted Skipper
Marjoram, Thyme	Lace Border, Straw Belle
Clovers	Chalk Carpet

Surrey Small Blue Scrape Stewardship Scheme

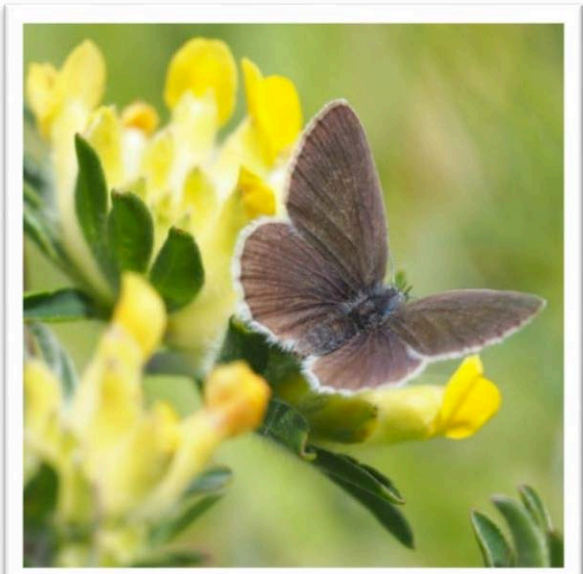
Looking after your scrapes

- Visit site at least a few times a year to maintain scrapes, but as often as you like!
- Remove species such as brambles, buddleia, clematis, thistles, and young trees – anything woody.
- Count kidney vetch seedlings and keep a record.
- Sow fresh locally sourced kidney vetch seed into scrapes when it is available – you will hear from BC Surrey. This must be done with all permissions in place so wait to hear from Bill Downey.
- Record effects of grazing on the scrapes, eg. is there any evidence of rabbits using the scrapes and are they nibbling the kidney vetch? Or are they leaving it alone? Are there any livestock on site and are they grazing vegetation in the scrapes, digging them up or dunging in them? Record the time of year and whether they are having an impact on the scrapes or the kidney vetch. This can be reported back to site managers through BC Surrey.
- Record any usage of the scrapes by invertebrates. Of particular interest are our target species for the project - Small Blue, Adonis Blue, Silver-spotted Skipper, Grizzled Skipper, Dingy Skipper, Chalk Carpet, Lace Border, Chalkhill Blue. Any other records are extremely useful though such as records of solitary wasps/ nesting bees.
- Consider keeping a scrape diary or a photographic record of how scrapes are progressing. Let BC Surrey know if you are concerned about a site or particular scrape.
- Once you have flowering Kidney Vetch in your scrapes, inspect and report back Small Blue eggs and egg-laying!
- Keep in touch with BC Surrey over all scrape-related matters!



Kidney Vetch seedling

**Main Target Butterfly and Moth Species and their Larval Foodplants –
record these plants**



Kidney Vetch for Small Blue



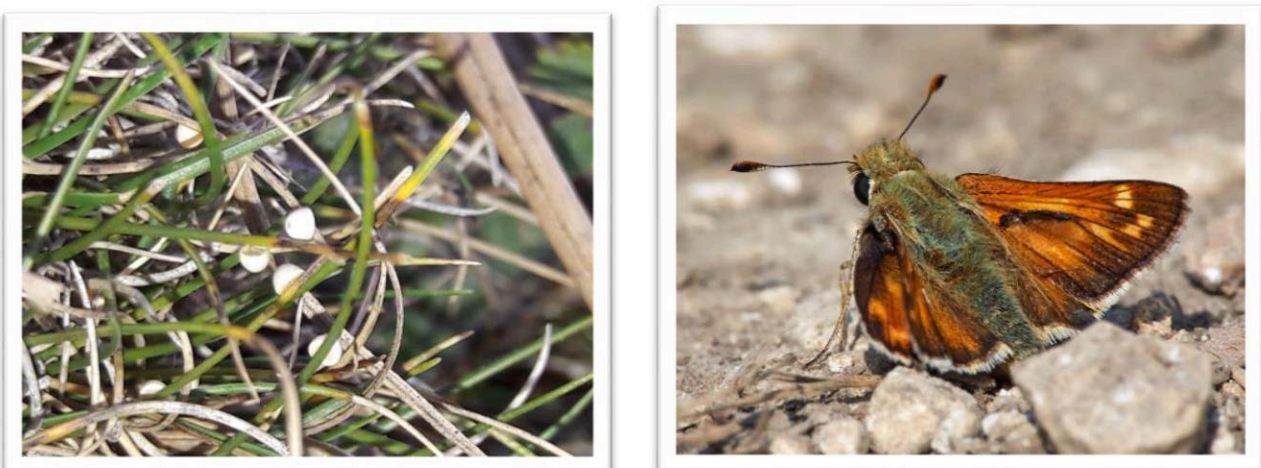
Horseshoe Vetch Hippocrepis comosa for Adonis Blue and Dingy Skipper, also Chalk Hill Blue



Bird's Foot Trefoil Lotus corniculatus for Dingy Skipper, Chalk Carpet, also Common Blue



Marjoram Oreganum vulgare for Lace Border



Sheep's Fescue for the Silver-spotted Skipper

Grizzled Skipper Foodplants



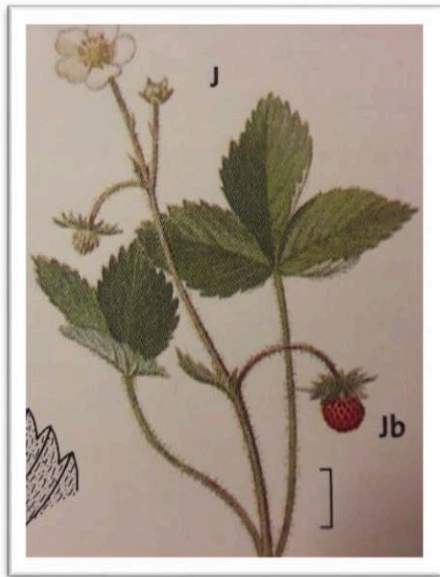
Salad Burnet Sanguisorba minor



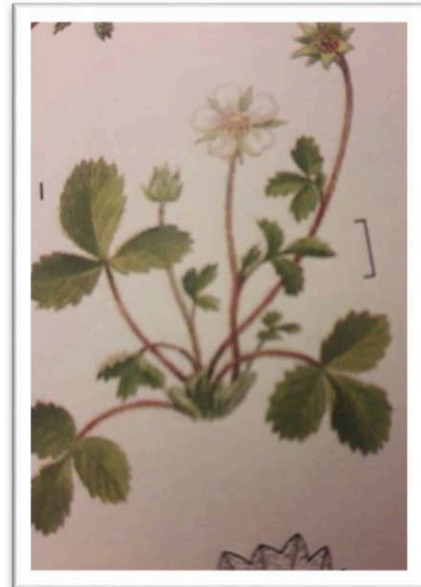
Agrimony - Agrimonia eupatoria



Creeping Cinquefoil Potentilla reptans



Wild Strawberry *Fragaria vesca*
terminal tooth on leaf longer than side teeth



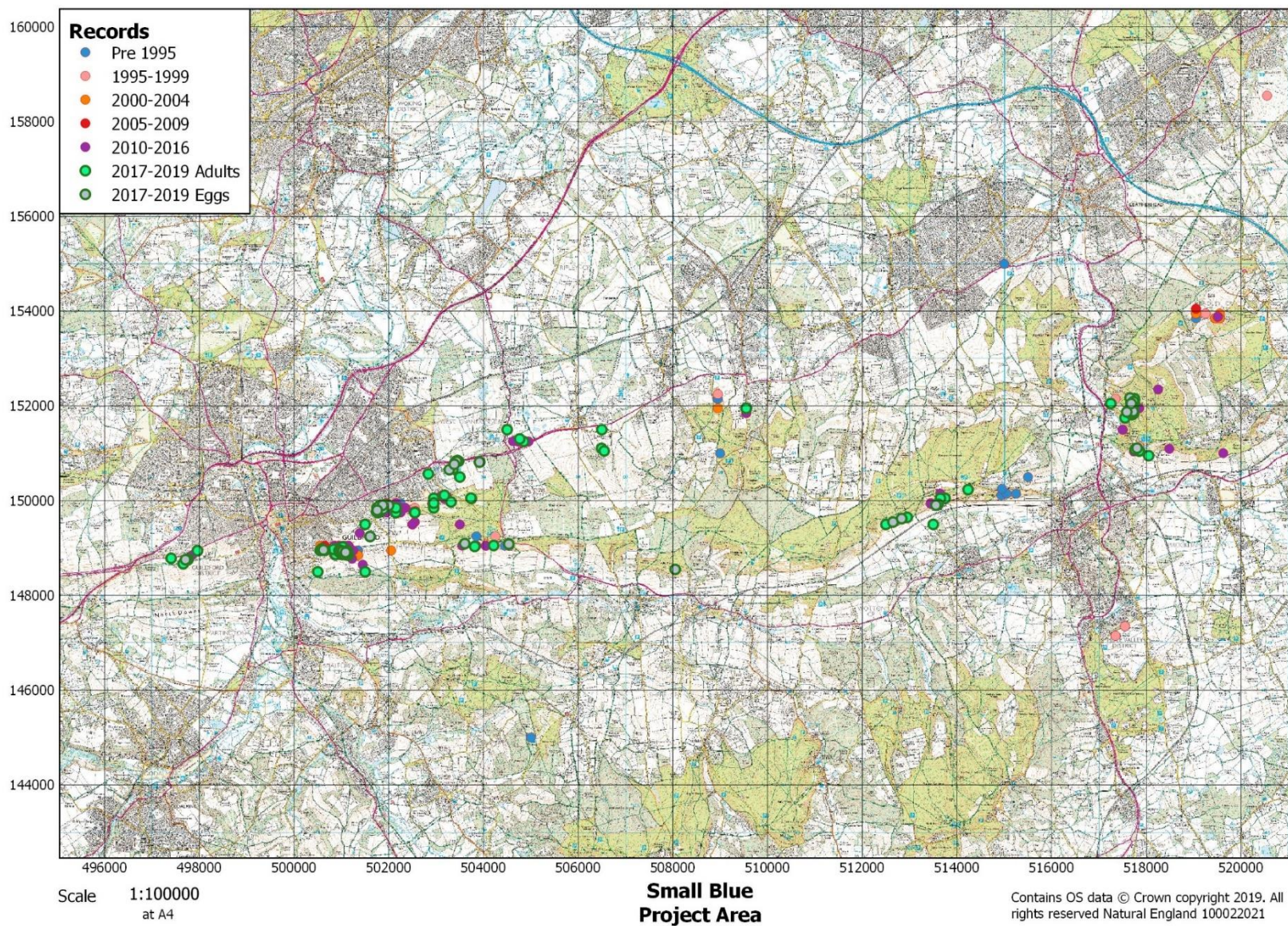
Barren Strawberry *Potentilla sterilis*
terminal tooth shorter than side teeth



Other plant species of interest are Common Rock-rose *Helianthemum nummularium* for Brown Argus, Thyme *Thymus polytrichus* for the Lace Border moth, plus various Clovers and Trefoils for the Chalk Carpet moth. Also, many species provide important nectar for our Lepidoptera and the scrapes will support these too. You are welcome to list these but the species above are the main ones to look out for and keep a note of.

Throughout this report and habitat assessment forms, 'desirable' and 'undesirable' plants are mentioned. The 'desirable' plants include the range of chalk grassland flowers that are important foodplants and nectar sources such as Bird's Foot Trefoil, Horseshoe Vetch, Clovers, Marjoram, Sheep's Fescue, Creeping Cinquefoil, Salad Burnet, Wild Strawberry, Barren Strawberry, Thyme, Knapweeds, Field Scabious, Wild Mignonette, Hawkweeds, St John's Wort, Fairy Flax, Speedwells, Bugle, Forget-me-nots, Selfheal etc. The removal of the topsoil and coarse grasses will benefit these plants too. The 'undesirable' species are those that easily out-compete these flowers and that can colonise chalk grassland habitat or bare ground quickly and dominate the sward. These 'undesirables' include Buddleia, Cotoneaster, Bramble, Clematis, woody tree saplings, Tor-grass, Black Bryony, Creeping Thistles and Nettles. It is recognised that many of these species can be very valuable in the wider habitat, but this project is concerned with restoring and creating early-successional habitat for the range of target species. In the areas we are working we may treat these species as undesirable and remove them, but in the wider habitat away from scrapes they can be a valuable component of the habitat for many species. An exception to this are the non-native invasive species – *Buddleia davidii*, and the various species of Cotoneaster and Perfoliate Alexanders that we have been trying to control. Every effort should be made to keep these species at bay as they are highly invasive.

Map of Historical and More Recent Records



Summary of Scrapes

Site	Grid Ref	Seeded from - winter 2017	Seeded from - summer 2018	seeded from - winter 2018	Seeded from - summer 2019
Pewley Down	TQ0063448943	Box Hill	Pewley Down	Pewley Down	
Pewley Down	TQ0068248952	Box Hill	Pewley Down	Pewley Down	
Pewley Down	TQ0069548950	Box Hill	Pewley Down	Pewley Down	
Pewley Down	TQ0087648979	Box Hill	Pewley Down	Pewley Down	
Pewley Down	TQ0089048976	Box Hill	Pewley Down	Pewley Down	
Pewley Down	TQ0090048975	Box Hill	Pewley Down	Pewley Down	
Pewley Down	TQ0090248968	Box Hill	Pewley Down	Pewley Down	
Rosamund Trust	TQ0179649265		Priest Hill		
Rosamund Trust	TQ0177949261		Priest Hill		
Rosamund Trust	TQ0176749259		Priest Hill		
Rosamund Trust	TQ0175649257		Priest Hill		
Rosamund Trust	TQ0174449253		Priest Hill		
Rosamund Trust	TQ0173149257		Priest Hill		
Rosamund Trust	TQ0172349248		Priest Hill		
Tyting Farm	TQ0329848963				Priest Hill
Tyting Farm	TQ0326748961				Priest Hill
Tyting Farm	TQ0324148956				Priest Hill
Tyting Farm	TQ0322848964				Priest Hill
Tyting Farm	TQ0324748986				Priest Hill
Tyting Farm	TQ0325848949				Priest Hill
Newlands Corner	TQ0493749056	Box Hill	Newlands		
Newlands Corner	TQ0480749064	Box Hill	Newlands		
Newlands Corner	TQ0468149079	Box Hill	Newlands		
Albury Vineyard	TQ0575949080		Priest Hill	Priest Hill	
Albury Vineyard	TQ0574849081		Priest Hill	Priest Hill	
Albury Vineyard	TQ0573749081		Priest Hill	Priest Hill	
Albury Vineyard	TQ0572949081		Priest Hill	Priest Hill	
Albury Vineyard	TQ0572549082		Priest Hill	Priest Hill	
Albury Vineyard	TQ0571649080		Priest Hill	Priest Hill	
Albury Vineyard	TQ0571249080		Priest Hill	Priest Hill	

Albury Vineyard	TQ0570649078		Priest Hill	Priest Hill
Albury Vineyard	TQ0569649080		Priest Hill	Priest Hill
Albury Vineyard	TQ0569149078		Priest Hill	Priest Hill
Albury Vineyard	TQ0568749079		Priest Hill	Priest Hill
Albury Vineyard	TQ0567549079		Priest Hill	Priest Hill
Albury Vineyard	TQ0566749080		Priest Hill	Priest Hill
Albury Vineyard	TQ0565949080		Priest Hill	Priest Hill
Albury Vineyard	TQ0565149081		Priest Hill	Priest Hill
Albury Vineyard	TQ0564249080		Priest Hill	Priest Hill
Albury Vineyard	TQ0562949079		Priest Hill	Priest Hill
Albury Vineyard	TQ0561649078		Priest Hill	Priest Hill
Albury Vineyard	TQ0561049077		Priest Hill	Priest Hill
Albury Vineyard	TQ0560549078		Priest Hill	Priest Hill
Albury Vineyard	TQ0559449078		Priest Hill	Priest Hill
Albury Vineyard	TQ0558249078		Priest Hill	Priest Hill
Albury Vineyard	TQ0557249078		Priest Hill	Priest Hill
Albury Vineyard	TQ0556249077		Priest Hill	Priest Hill
Albury Vineyard	TQ0555049076		Priest Hill	Priest Hill
Albury Vineyard	TQ0554449075		Priest Hill	Priest Hill
Albury Vineyard	TQ0553349073		Priest Hill	Priest Hill
Albury Vineyard	TQ0551649073		Priest Hill	Priest Hill
Albury Vineyard	TQ0550149071		Priest Hill	Priest Hill
Albury Vineyard	TQ0547549067		Priest Hill	Priest Hill
Albury Vineyard	TQ0546549066		Priest Hill	Priest Hill
Albury Vineyard	TQ0545949067		Priest Hill	Priest Hill
Albury Vineyard	TQ0590348868		Priest Hill	Priest Hill
Albury Vineyard	TQ0592348869		Priest Hill	Priest Hill
West Hanger	TQ0643249010	Epsom Downs	Pewley Down	Priest Hill
West Hanger	TQ0648948995	Epsom Downs	Pewley Down	Priest Hill
West Hanger	TQ0651348992	Epsom Downs	Pewley Down	Priest Hill
Netley Plantation	TQ0724748731	Epsom Downs	Pewley Down	Priest Hill
Netley Plantation	TQ0730248719	Epsom Downs	Pewley Down	Priest Hill
Netley Plantation	TQ0731848743	Epsom Downs	Pewley Down	Priest Hill
Netley Park	TQ0787448609	Denbies Hillside		Denbies Hillside

Netley Park	TQ0789648597	Denbies Hillside	Denbies Hillside
Netley Park	TQ0808648542	Denbies Hillside	Denbies Hillside
Hackhurst SWT site	TQ0963948626	Denbies Hillside	Denbies Hillside
Hackhurst SWT site	TQ0979548581	Denbies Hillside	Denbies Hillside
Hackhurst SWT site	TQ0956748621	Denbies Hillside	Denbies Hillside
Hackhurst SWT site	TQ0965448612	Denbies Hillside	Denbies Hillside
Hackhurst SWT site	TQ0965448609	Denbies Hillside	Denbies Hillside
Hackhurst SWT site	TQ0966048605	Denbies Hillside	Denbies Hillside
Hackhurst SWT site	TQ0972848576	Denbies Hillside	Denbies Hillside
Hackhurst SWT site - quarry	TQ0938448498		Denbies Hillside
Blatchford Down	TQ1016648752	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1015948735	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1015048728	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1013348727	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1011848727	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1006948759	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1039848808	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1040748800	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1041348796	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1067348758	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1034448528	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1036448524	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1037948530	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1106448650	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1110348717	Denbies Hillside	Denbies Hillside
Blatchford Down	TQ1109248729	Denbies Hillside	Denbies Hillside
Wholecomb Down	TQ1220649076	Denbies Hillside (AB, GJ)	Denbies Hillside
Wholecomb Down	TQ1221049090	Denbies Hillside (AB, GJ)	Denbies Hillside
Wholecomb Down	TQ1228049191	Denbies Hillside (AB, GJ)	Denbies Hillside
Wholecomb Down	TQ1208149060	Denbies Hillside (AB, GJ)	Denbies Hillside
Wholecomb Down	TQ1194649014	Denbies Hillside (AB, GJ)	Denbies Hillside
Wholecomb Down	TQ1206849040	Denbies Hillside (AB, GJ)	Denbies Hillside
Wholecomb Down	TQ1201149018	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1359649930	Denbies Hillside (AB, GJ)	Denbies Hillside

Denbies Hillside	TQ1358749930	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1357449926	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1356449921	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1355249916	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1360749944	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1361149945	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1361649947	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1362449949	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1362949943	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1364549945	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1366249963	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1367349967	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1369449973	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1370149974	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1374049986	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1374549988	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ1375149989	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ15185010	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ15155007	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ15285012	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ15285012	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Hillside	TQ14295009	Denbies Hillside (AB, GJ)	Denbies Hillside
Denbies Vineyard	Over 50 scrapes, not all listed as close together.		Priest Hill
Denbies Vineyard	TQ1575450705		Priest Hill
Denbies Vineyard	TQ1571650698		Priest Hill
Denbies Vineyard	TQ1568550689		Priest Hill
Denbies Vineyard	TQ1555250652		Priest Hill
Denbies Vineyard	TQ1552050638		Priest Hill
Denbies Vineyard	TQ1549150632		Priest Hill
Denbies Vineyard	TQ1542850628		Priest Hill
Denbies Vineyard	TQ1537550626		Priest Hill
Denbies Vineyard	TQ1581350708		Priest Hill
Denbies Vineyard			Priest Hill

Denbies Vineyard			Priest Hill
Denbies Vineyard			Priest Hill
Box Hill Dukes -boxhurst field	TQ1817650944	Box Hill	
Box Hill Dukes	TQ1841651048	Box Hill	
Box Hill Dukes	TQ1843051044	Box Hill	
Box Hill Dukes	TQ1902050954	Box Hill	
Box Hill Dukes	TQ1846651084	Box Hill	
Box Hill Dukes	TQ1864151060	Box Hill	
Box Hill Dukes	TQ1900050993	Box Hill	
Box Hill Dukes	TQ1864050921	Box Hill	
Hatchlands Quarry	no scrape	Priest Hill	
Sheepleas Lark Rise field	no scrape	Priest Hill	
Bocketts Farm	no scrape		Priest Hill