

FIELD CRAFT LESSON 5

HOW TO FIND SMALL BLUE COLONIES

by Mike Slater and Emmeline Smart



By 2009 the Small Blue was confined to just three sites in Warwickshire; Bishops Bowl (private land, no general public access), Southam Quarry (active quarry, no public access) and Bishops Hill (90% private land, no authorised public access). Fortunately, 10% of Bishops Hill (the Yellow Land) is owned by Bishops Itchington Parish Council and this does have public access but in 2009 most of the area was covered in heavy scrub. In 2010, 90% of the scrub was removed from the Yellow Land and cleared areas were planted with the Small Blue's only known caterpillar food plant, Kidney Vetch (*Anthyllis vulneraria*). In addition, three further sites have been colonised by the Small Blue following restoration - two with public access and one without. The only public access site that appears to have a well established colony is Southam Bypass North.

My top ten tips for finding Small Blue colonies are as follows:

1. My first tip is to choose a site with public access and a strong colony. In the West Midlands Region (Warwickshire) there are only two current choices; Bishops Hill Yellow Land and Southam Bypass North. In the future it is hoped that more sites with public access will be restored and post 2010 it may well be worth searching other target sites currently being restored which include Ufton Fields, Harbury Spoilbank South and Stockton Cutting.

2. The Small Blue can persist as tiny colonies. Historically in Warwickshire, finding eggs of one colony at Ufton Fields was the only confirmation of its presence for three years. No adults were seen or caterpillars located during this period.

One recently discovered colony at Stockton Cutting was again only discovered following an egg search. It is widely accepted that the easiest stage of the Small Blue lifecycle to find is its eggs. Therefore the second top tip when searching for Small Blue colonies is to look for its eggs.

When searching slowly move around the plant carefully parting the flower head. Be careful not to damage the flower head you are looking at or the ones you may trample on behind you. The eggs are tiny pale blue discs and there will often be two or three on a single flowerhead, laid singly by different females.

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Egg location



3. In Warwickshire, the Small Blue has a second brood in most years. However this second brood is very small. Therefore my third tip if searching for Small Blue eggs is to look for those laid by first brood females.

4. In Warwickshire, the Small Blue flies in most years between mid May to mid June. Peak numbers of adult females are seen at the very end of May and during the first week of June. Peak egg laying occurs during this time. Eggs hatch after one to three weeks and the young caterpillar burrows into the florets and is very difficult to detect. Therefore my fourth tip is to look for eggs during the first and second weeks of June. Though the empty egg shell is left after hatching, they are very difficult to find. I personally have never found an empty shell. After the third and fourth week of June most eggs will have hatched and therefore the chances of finding one will be reduced.

5. You will notice when looking at Kidney Vetch flowers that they differ in maturity. You will find plants that are fully in flower on both sides of the flower head. Some flowers will have one side in full flower and the other side where the florets are tightly packed together. Finally there will be flower heads that have their florets tightly packed together both sides of the head. In recent research 80% of eggs were found on flower heads that were either fully open or with one side just fully open. It appears that the Small Blue selects flower heads just coming into flower (younger inflorescence). Therefore my 5th tip for finding your first Small Blue egg is to concentrate on those flowers with one side in full flower and the other side where the florets are still tightly packed.

6. Patches of Kidney Vetch can be very variable. When examining patches of Kidney Vetch you will find areas that have very high concentrations of flowers. These can create a wall of continuous flower heads. In other areas you will find individual plants that are dotted through areas of light scrub and other herb species. Recent research located a higher density of eggs in patches with isolated plants within a patch area rather than where plants were very tightly grouped together.



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Ideal flower for egg laying

Small Blues have been found at locations where just a few Kidney Vetch plants are present. However ongoing research suggests that permanent Small Blue colonies are only found where the Kidney Vetch patches have at least 50 flowering heads when the butterfly is at peak flight (highest adult numbers). It has also been found that some patches of Kidney Vetch flowers do not come into flower at the same time as when the adult butterflies are flying. Permanent areas of Kidney Vetch can appear more widespread than is actually the case.

Kidney Vetch has been sown on many amenity areas e.g. road verges and fields



Southam Quarry road area

margins. However where other wildflowers may persist long term the Kidney Vetch will more likely disappear within a few year. Kidney Vetch appears to need to be in soils that suffer erosion or frequent or low level disturbance. Though the Small Blue may colonise such patches for one or two years, they are unlikely to persist. Therefore my sixth tip is to search flower heads that are more isolated within an area of permanent Kidney Vetch with over 50 flowering Kidney Vetch plants present at peak flight time.

7. Both Kidney Vetch plants and the Small Blue Butterfly can be detrimentally affected by inappropriate grazing by both domestic and wild animals. Sheep and rabbits find flowering Kidney Vetch flowers very palatable. The eggs of the small Blue have few natural enemies but if the flower heads are eaten they will obviously be destroyed. Virtually any sheep grazing between April and August will destroy a Small Blue colony in the same year. This type of persistent grazing will prevent seeding and will wipe out the Kidney Vetch plants themselves. It should also be noted that Kidney Vetch flowers growing in damper areas or in a more closed sward can be susceptible to slug damage. Areas with light scrub going into heavy scrub often have a high rabbit population. Rabbits are often as damaging to Small Blue colonies as sheep. Presence of high densities of rabbit can quickly be detected by looking for their droppings especially at latrine areas. If droppings are abundant and the sward height is low between light scrub and there is a paucity of wildflower in flower, you have discovered a large population of rabbits. My seventh tip is to check the recent grazing history of a Kidney Vetch patch before commencing any egg search. One restored site in the Small Blue project has over a 1000 Kidney Plants but currently until light scrub recovers, all the flower heads are removed by rabbits.



8. Small Blue females appear to avoid selecting both short and long stemmed Kidney Vetch plants for egg laying. Though the shortest flower head stem found to contain an egg during recent research was 3cms and the longest was 40cms, the majority of eggs found were on stems between 17 and 27cms in height. My eighth tip then is to select flowers between 17 and 27cms for searching in the first instance.

9. Though the caterpillars of the Small Blue can be cannibalistic it is not unusual to find several eggs of the Small Blue on the same flower head. Therefore my ninth tip is, if you find one egg on a flower head don't stop looking because you have a very good chance of finding another one.

10. Small Blue eggs, though very small, can't really be confused with anything else. My final tip and to give you confidence that what you have found is a Small Blue egg, have a 10x magnifying glass with you and a field guide. Good Luck!

Don't forget that long term, many landowners including farmers in the core landscape area around Southam are being encouraged to seed areas with Kidney Vetch. Therefore in the near future it will be worth searching any areas of Kidney Vetch within the Southam area. You may discover a new colony!

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