Botany Bay Conservancy Newsletter 2023

We can hardly believe that it's 9 years since we started our project to restore the site after its use as a fish farm. After some requests from visitors and with the help of our member Jonathan Simons, we have now developed a website and put our database online [www.botanybayCIG.co.uk.](http://www.botanybayCIG.co.uk)

Public Pages on our Website: Jonathan Simons

Our website was originally built to allow members password protected access to our records of plants, animals and fungi. However, in response to several comments from people looking for information on-line about Botany Bay we have now added pages accessible to the public while keeping the biological records accessible to our members only.

Home: an introduction to Botany Bay from Anne Dennig
Habitats: descriptions and photos of nine different habitats that can be found on the site
History: the connection with Samuel Wilberforce
News: access to the library of our annual newsletters going back to 2014
Gallery: display of photographs to illustrate the different species that we have recorded. The slide-show option gives visitors and members alike a chance to test themselves on what they recognise
Volunteers: how we use volunteers at Botany Bay
Visits: contact mail and information about visiting the site
Links: hyperlinks to organisations that we have worked with
Credits: the roles of the management team
Try it now! www.botanybayCIG.co.uk

As webmaster Jonathan Simons will add the data from new surveys and records from Sussex Biodiversity Records Centre which are sent in through Irecord https://irecord.org.uk/app

Work in the Woodland: Anne

We are lucky to have some excellent help with the woodland. John Bentley and his team have continued to help us to take down the dangerous ash affected by dieback. Thanks to support from The Woodland Trust (Ancient Woodland Restoration Fund) Graham West (aka Weald Woodsman) has been able to clear the cherry laurel and some grey poplar from the northern side of the lake. The fund also enabled us to take out 2 areas of bamboo using a digger. Our own volunteers planted 3 disease resistant elm and 13 black poplar trees provided by SDNPT Trees for The Downs Project. The elms were planted in our entrance copse in addition to several hazels; the black poplars have been planted along both sides of the lake. This autumn we also planted 420 saplings provided by The Woodland Trust Community Fund to create a hedge line along The Drive and to fill in any gaps in the existing hedges. We are gradually creating a good mix of young native trees and shrubs throughout the site.

Surveys and Work on the Stream: Anne

We have continued to survey the invertebrates in the stream for the Riverfly Partnership but until now have not done any specific water quality testing. Arun and Rother Rivers Trust have started a citizen science project to check the water quality of our streams and rivers. Tests will be on indicators of water quality: phosphates, turbidity, total dissolved solids, temperature and nitrates. Members of our group are attending the training, and we will be monitoring the water quality in Botany Bay and other sites.

Robin Bray (PSFFA) and Clive have been working on improving the flow of the stream after two large oaks fell in the storms. They have also created berms in the stream to reinstate the natural course of the stream where it had been widened to form part of the fish farm. The increased flow will help to lessen the silt deposits and create a better gravel stream bed.

Fishing: Portsmouth Services Fly Fishing Association (PSFFA): Robin Bray

The figures for Lavington Lake of 143 rainbow and 48 wild trout (browns) caught by members are particularly rewarding as they show how an impounded waterway/ecosystem can be managed as a successful fishery for members, and can tick all the environmental credentials. The development of the stream as part of the Botany Bay Project has provided a wonderful breeding area for the

population of native, diploid brown trout. PSFFA use and manage the lake for Botany Bay Conservancy but on Monday afternoons PSFFA allows students from Seaford to fish, taught by PSFFA member Steve Batten. Steve is also running a Fly-Tying activity during the winter.

Visitors and Talks: Anne

Matthew Sennitt and Anne gave talks on our conservation work at the Empire Hall Graffham, and we have had many local groups visiting this year including and one from Lodsworth Heritage Society. One much anticipated visit was by the Graffham Thursday Club, a visit planned before the pandemic was finally possible after various weather-related postponements! We were delighted to host them and Graffham Parish News (August edition) kindly covered the visit. https://stgilesgraffham.org/graffham-parish-news/ .

We were contacted by Sussex Wildlife Trust who encouraged us to exchange ideas on conservation with Bianca Pitt, who visited Botany Bay in April. We then visited Hoyle Farm to see the conservation work there and have been inspired by this visit and by the plans for regenerative farming and restoration of the habitats in Lavington Stud which will help to create a wildlife corridor between our sites.

Education: **BTEC Work Experience and School Groups: Anne**

We were very happy to have Gabriel Sullivan working with us during the summer as part of his BTEC Countryside Management Course, helping us with general management of the site and surveys in the stream, still ponds, and the meadow. The BTEC Countryside Management students also surveyed the bats in Botany Bay, this is very helpful as it provides us with annual data. Results this year showed 12 different bat species with a total 1299 recordings on 21st September. Pipistrel (Common and Soprano), Daubenton's, Whiskered and Serotine were the most recorded. The Prep School John Muir Award students also came in to do some pond dipping and to help us with horsetail control. It is great to see the engagement and interest of the students in conservation.

The Wildflower Meadow in 2023: Matthew Sennitt

The wildflower meadow showed some similarity to previous years in that the two dominant wildflowers species were Ox-eye Daisy and Wild Carrot, though the latter was perhaps less abundant than in previous summers. Nevertheless, it was evident early on that other species were beginning to increase in number compared to 2022, so that by the end of the season over fifty species had been recorded. The first to show promise were Cowslips, present in far greater number than before, and though most were in the area sown in 2018, there was also an increase in the areas sown in 2019 and 2020. Field Scabious, Small Scabious, Marjoram, Ladies Bedstraw, Common Centaury, and Birdsfoot Trefoil were all increased in number. Lesser Stitchwort appeared for the first time, while Medic appeared in profusion in many areas of the meadow. Yellow Rattle had a good year throughout the site, possibly because of the cold spell in early spring. Common Spotted Orchid numbers increased to 18, and a single pioneer Pyramidal Orchid appeared in the area sown in 2018. Betony, Wild Basil,

Harebell, Dropwort and many other species persisted in small numbers, but Yarrow occupied a large area in the part sown in 2018 by the end of August.
Butterfly numbers seemed similar to those of previous years with small numbers of Marbled White, Meadow Brown and Common Blue, but the value of the meadow to assist in the spread of insect species was emphasized by the appearance of a male Dark-green Fritillary that spent an hour or so on the lookout for a female from the height of a Marsh Thistle.

Common Spotted Orchid

Pyramidal Orchid

Lady's Bedstraw

Marbled White

Male dark-green Fritillary

The Meadow in the Future

Our long-term plans for the meadow are to revert it completely to native wildflower and grass sward. To confirm the importance of removing top soil, we took soil cores from just below the surface in eight different places in the meadow and combined them to make one representative sample. This was analysed to see whether the soil was suitable for sowing wildflowers. We needed to see low nutrient levels, so that the smaller less vigorous species of wildflower and grass could survive competition from coarse vigorous species already dominating the meadow. Nitrogen, Phosphorous and Potassium are the elements largely responsible for vigorous plant growth so we hoped for low levels of these.

Sample Ref BOTANT BAY **Date Received** 05/05/2023 (Date Issued: 11/05/2023)

Sample No SO202985464

Crop GRAZED GRASS (CATTLE)

Soil Characteristics	Result	Low	Normal	High
pH	8.0			

Major Nutrients	Result	0	1	2-	2+	3	4+
Phosphorus (ppm)	7						
Potassium (ppm)	112						
Magnesium (ppm)	69						

Nitrates are labile substances in the soil, so nitrogen is not a reliable indicator of soil fertility and not usually included in soil analysis. Instead, Phosphorus and Potassium are measured.

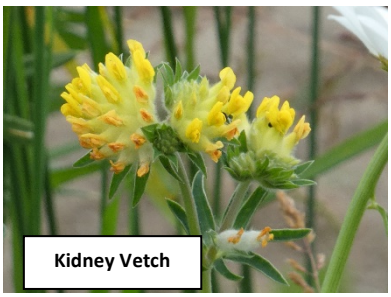
The results above showed that the soil fertility just below the surface is indeed sufficiently low to consider sowing wildflower seeds across the remaining areas of the meadow. However, we can readily see from this by comparing the 2019 wildflower seed sowing area with those of 2018 and 2020. The area sown in 2019 had less of the topsoil removed so that a poorer wildflower success resulted than in the hand dug areas of 2018 and 2020 where most of the rich topsoil was removed. To retain its wildflowers the 2019 seeded area has required far more frequent management to constrain the coarse species and lower the nutrient level of the soil. This will need to continue until the wildflowers are no longer threatened by the coarse species, which will be many years.

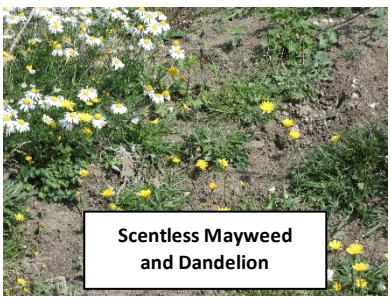
To further demonstrate the principle above and to produce larger areas of some wildflower species favoured by bees, another area was dug by hand and sown with a mix of native grasses and wildflowers, mainly Greater Knapweed, Field Scabious and Meadow Cranesbill. The subsections indicated by bamboo canes show where each of these three species have been sown.

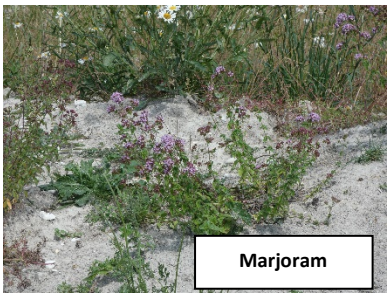
The main contenders for the method with which to achieve a reduction in soil nutrients for the greater part of the meadow are: The removal of the topsoil and its disposal of this along the top of the meadow, or the inversion of the soil by ploughing. The former method would undoubtedly produce a better result with less aftercare being necessary. The removed turf would quickly blend in with the sudden steepening of the slope and the area could be used to plant more shrubs thus widening the existing mature hedge. The latter method would result in much of the coarse vegetation remaining near the surface together with its richer soil so requiring more aftercare. Furthermore, ploughing would be expected to destabilise the soil and might lead to considerable soil erosion.

A Bank for Bees and Others: Matthew Sennitt

A bank to encourage populations of wild bees was built in August 2022 with financial help of a grant from the South Downs National Park Trust. The main purpose of this bank was to provide solitary mining bees, with an area of bare soil for them to construct their underground nests. To this end the bank was built running east to west, and it was intended that the south facing slope being warm would have large areas that remained unvegetated throughout the year. Parts of the south facing slope together with the top and the north slope were sown with grass and wildflower seed so that the resulting vegetation would preserve the bank in the face of harsh weather.


Kidney Vetch


Scentless Mayweed and Dandelion


Marjoram

The wildflowers sown on the bank included many that have been shown to be attractive to wild bees and were largely of short stature, such as Kidney Vetch, Dandelion, Rough Hawkbit, and Hedge Cranesbill. The area around the bee-bank was also sown with wildflowers and included taller species that have also been found to be attractive to wild bees, such as Meadow Cranesbill, Greater Knapweed, Marjoram, Scentless Mayweed, and Field Scabious. Furthermore, instead of mixing these species together with the bulk of the wildflower seed as is the normal practice, these species

particularly attractive to wild bees were often sown in clumps, so that not only do the bees need less energy to fly between flowers but also to make it easier for observers to see the bees. In addition, a number of pot-grown plant were added to the site to encourage flowering in its first summer season.

The harsh spring weather modified the overall plan, with late frosts loosening the soil, followed by heavy rain causing parts of the bank and surrounding area to wash away, carrying seeds with it. To counteract this, four tons of kibbled chalk were bought to fill the rivulets created by the rain, and this was then sown with remnants of the wildflower seed. At this stage it was decided to let most of the grasses and wildflowers that had begun to establish themselves, continue to grow, even though many of them had been washed or blown in from the surrounding meadow.

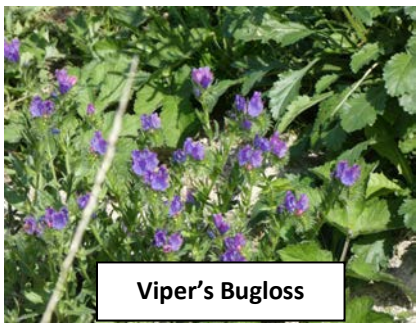
Bee-bank with chalk filling the

Bee-bank with wildflowers blooming in July.

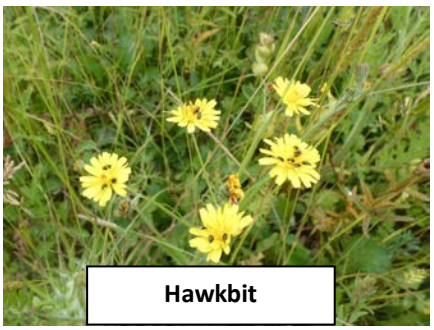
This was to discourage further erosion of the bank, which appeared to work, but the resulting growth, spurred by warm wet weather, has caused much of the bank including the south face to be covered in vegetation leaving little space for bare area of soil for mining bees. Future management of the bank will be aimed at maintaining the vegetation to preserve the bare areas on the south facing slope, but ensuring the top and north face remain well vegetated.

The bank provided a wealth of flowers throughout the year that attracted a great variety of insects, not only bumblebees and solitary bees but others such as *Nowickia ferox* a parasitoid fly whose

Scentless Mayweed



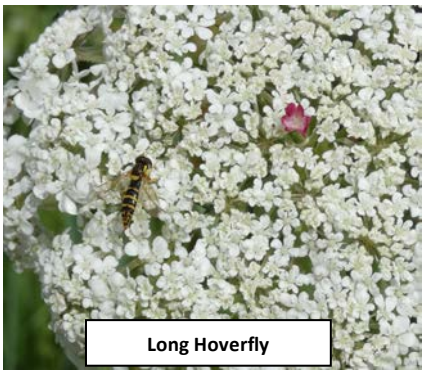
Viper's Bugloss



Hawkbit

maggot eats the caterpillars of the Dark Arches moth. A flesh fly, Sarcophaga spp. was found in September. Long Hoverflies, were plentiful in August and one is shown here on a Wild Carrot flower that shows a well-formed dark red central floret. A less common species the Two-banded Hoverfly, also found on Wild Carrot, is very distinctive with its two broad yellow bands and chocolate wing

Solitary bee

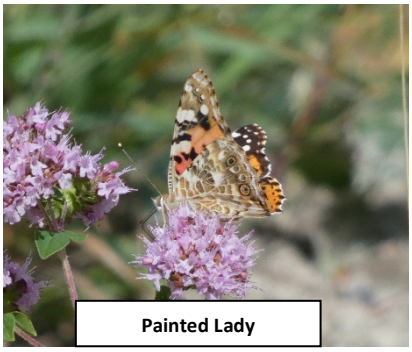


Long Hoverfly

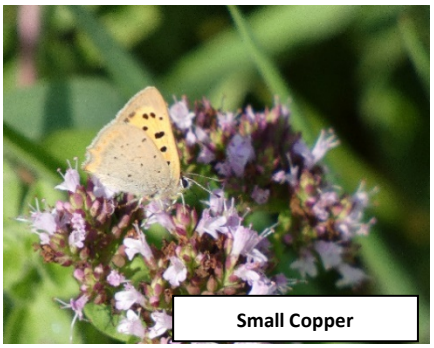
Two-banded Hoverfly

patches.

Butterflies attracted to the bee-bank flowers included Meadow Brown, Gatekeeper, Painted Lady, and Silver-washed Fritillary. Common Blue and Small Copper were seen in September.
The warm soil of the bee-bank provided a good place for butterflies and other insects to raise their temperatures on cool mornings. Three Spider wasps were busy hunting in May, while two Black Skimmers were found on the bank in June. Butterflies included Small Tortoiseshell, Red Admiral and Peacock.


Painted Lady


Silver-washed Fritillary


Small Copper


Spider Wasp


Peacock Butterfly


Black-tailed Skimmer

We would like to thank all our members, volunteers and supporters.

We look forward to another busy year in Botany Bay and to seeing you all again in 2024.

For further details please contact annedennig@icloud.com