Natural Surroundings

Natural Surroundings is a small business based in North Norfolk, owned and run by Anne & Simon Harrap. We lease around 4 hectares from the Bayfield Estate, which lies in the valley of the River Glaven just south of Blakeney.

Our aim is simple – to promote wildlife-friendly gardening, and to inspire love and appreciation of the natural world, especially plants.

It is a cliché to describe Norfolk as 'flat', but North Norfolk is far from flat. We lie in a rolling landscape of glacial moraines and eskers.

Local soils are a mixture of sands and gravels with some chalk – basically a mass of debris scraped from the North Sea basin by the ice sheets and then sorted, in some places at least, by the action of water. In the narrow valley bottom, however, the soils are peaty. Much of the estate is farmed, with crops of sugar beet and barley and, increasingly, also outdoor pigs.

The River Glaven runs through the Bayfield Estate and forms our western boundary. It has cut down through the Holt-Cromer ridge, a moraine of uncertain age, to reach the coast at Cley.

The estate is managed sensitively and the beet fields and autumn stubbles are great hunting grounds for arable weeds, with Night-flowering Catchfly relatively frequent. The variety of arable weeds helps us to amass good totals in the 'New Year Plant Hunt' (74 species in January 2000).

In our 4 hectares we have informal gardens, woodland and meadows. Our nursery specialises in native wild flowers and cottage garden plants (as well as anything else that we find interesting!). We also have a small shop and a café.

Our fifteen 'demonstration gardens' are complemented by a small area of wet woodland, river frontage, and meadows.

The gardens are divided up into 'demonstration gardens', each with a theme, either an aspect of wildlife-friendly gardening, or a particular habitat.

The Estate was landscaped in the late 19th century. Our backdrop is a line of limes, beech and copper beech that looks stunning in the spring afternoon sunshine.

Our meadows are 'semi-natural' – the narrow floodplain of the river was probably cropped for hay for generations, but this stopped decades ago. Along the Glaven some areas are grazed, while others are now abandoned.

In our grounds we have two magnificent Large-leaved Limes that approach 30 metres in height, while to the west the River Glaven is bordered by Grey Poplars that again, look superb in spring and autumn.

After some years of neglect we actively mange our small area of meadow with an annual cut and rake-off. Notably, the meadows are kept damp by ground water, and we try to prevent river water from flooding over onto them, as in spate the Glaven carries a large sediment load as well as high levels of phosphates etc.

Our wet woodland is dominated by Alder, Ash and Sycamore. The ground is so wet due to flushing that many of the trees are dead or dying, and are easily blown over. The ground flora is limited, but does include Ramsons and both Opposite-leaved and Alternate-leaved Golden Saxifrages.

We have a superb setting, lovely gardens, and lots and lots of plants – both wild and cultivated. Our problem is, however, how do we persuade our visitors to actually look at them?

We use sign boards: we have a large, general introduction to wildlife-friendly gardening.

The Moth Garden

Britain is home to a great variety of moths – over 2,500 species – from tiny 'micro-moths' to giant hawk-moths. In fact, the *Lepidoptera*, the great order of insects that includes butterflies and moths, is one of the largest, with over 180,000 species worldwide. It is also one of the most economically important: many moths are pollinators, but others have caterpillars that can be pests.

At Natural Surroundings, regular moth trapping over many years has produced a list of over 700 species of moth (compared with just 28 species of butterfly), including many that are strikingly beautiful.

Oak Eggar | Lobster Moth | Lime Hawk-moth | Hummingbird Hawk-moth

You can encourage moths to live and breed in your garden. A wide variety of plants, including trees and shrubs, with a good selection of British natives, will provide food for the caterpillars. Leaf mould, compost heaps, habitat piles, and undisturbed out-of the way corners will provide safe places for caterpillars to pupate (the astonishing process in which the caterpillar's body is broken down into a liquid 'soup' and then rebuilt as the adult moth). A good variety of flowers will provide nectar for the adults. In fact, many plants have specifically evolved to attract moths. *White, night-scented flowers* are a clue that their pollinator will be a moth, as are *long, tubular flowers*. Finally, don't forget that quite a few moths are day-flying, and these often have their favourite flowers too.

Evening Primrose
The petals are rolled up during the day, but the flowers pop open in the evening when their pale colours and scent helps to attract moths.

Honeysuckle
The classic evening-scented flower, with tubular flowers that have evolved to be accessible to the long proboscis of moths.

Chilean Box-thorn
A native of Chile, it has a rather pungent, unpleasant smell. The tubular, fuchsia-like flowers are adaptations for pollination by moths.

Mullein Moth
Gardeners will recognise the damage Mullein Moth can inflict on Verbascums. The caterpillar's bright colours are a warning to birds: don't eat me, because I contain nasty toxins!

The Vapourer
Some caterpillars are downright weird. The Vapourer is a mixture of warning colours and irritating hairs. Keep away!

The Butterfly Garden

Everyone loves butterflies, and to attract adult butterflies to the garden you need to provide food in the form of nectar – the sugar-rich liquid produced by flowers to reward pollinators. Different species of butterfly are on the wing at different times of the year, from the first Orange Tip of spring to the last lingering Red Admiral of autumn, so plant a wide range of nectar-producing flowers and aim to have plants in bloom from early spring to late autumn.

Comma

The adult butterfly that we all love is, however, only part of the story. A butterfly starts life as an egg, which hatches into a caterpillar, and at this stage each species of butterfly needs an appropriate food plant: some caterpillars feed on a wide range of plants (e.g. Large, Small and Green-veined Whites), others are specialists and will only use one or two species (e.g. Brimstone, White Admiral).

Speckled Wood

Once fully-grown the caterpillar seeks out a safe place to pupate and become a chrysalis. It looks for somewhere dry and safe from predators. Eventually, in an astonishing transformation, an adult butterfly emerges to start the cycle over again. Each species of butterfly has it's own annual rhythm; some overwinter as adults, others as caterpillars, chrysalises or as eggs. Providing shelter therefore includes not only sunny hotspots for the adults to bask in summer, but also nooks and crannies such as tangles of ivy where adults can spend the winter. And don't be too tidy: long grass and dead vegetation are all places where caterpillars, chrysalises and eggs can over-winter.

Green-veined White

Silver-washed Fritillary

Shrubs & Hedges
Garden hedges provide shelter and help to create hotspots. We have used Beech and Privet as well as flowering shrubs such as the Buddleia and roses. Our apples and pears, trained as espaliers, have been here for many years and the fallen ripe fruits are a favorite for many late summer butterflies.

Grassland
Some butterflies, such as the skippers and Meadow Brown, lay their eggs on grasses. We have planted an area with native grasses and included the food plants of the caterpillars of Common Blue (Birdsfoot Trefoil), and Small Copper (Sorrel) to create a mini butterfly meadow.

Overwintering Butterflies
Under the fruit trees we have ground cover for butterflies that overwinter as adults or caterpillars, with large-leaved *Pholomis* and tufted grasses to provide sheltered places to hide.

The Wildlife-friendly Garden

With around 23 million gardens in the UK, covering 435,000 ha, gardens have great potential as wildlife habitats. And, with a bit of planning and a few tweaks, they can indeed be wonderful places for a whole host of creatures, from birds to bees, butterflies, frogs and toads, as well as many less obvious creatures. Wildlife-friendly gardens can be beautiful too, and a colourful garden full of life can lift the spirits and give immense pleasure, and can also help to connect people, both young and old, with our wonderful wildlife.

EIGHT PRINCIPLES of WILDLIFE-FRIENDLY GARDENING

1. Plants, Plants, Plants
The greater the variety of plants in a garden, and the more plants there are, the more wildlife you will attract. Try to have something in bloom from earliest spring to late autumn (not a hardship for a gardener). Develop a varied structure, as far as the size and shape of your garden allows, with trees, shrubs, perennials, annuals and bare ground.

2. Don't Just Plant Anything!
According to recent studies by the RHS, British natives attract the greatest variety of wildlife, closely followed by species from temperate regions of Europe, Asia and North America. Plants from elsewhere (e.g. South Africa, South America) can extend your flowering season, but are significantly poorer in attracting wildlife.

3. Add Water
A pond of any size will boost the variety of creatures in your garden. Ponds don't have to be large or very deep to attract frogs and toads, dragonflies and water beetles, and provide a place for birds to drink and bathe.

4. Dead Matters
Dead and decaying vegetation is a vital resource for many creatures. Make compost and leaf mould – always good gardening practice – build log piles and leave piles of sticks in shady corners. You can be as neat as you like, but leave some of the logs and sticks to rot down into nothingness.

5. Build a Home
Put up bird boxes, including boxes for larger birds, such as owls, because large mature trees with big holes are rare in gardens. Bee boxes, bat boxes and hedgehog houses can also help, and try placing sheeting such as old carpet-tiles in a quiet sunny corner to provide shelter for reptiles and amphibians. Remember also that compost heaps and log and stick piles double up as homes for many creatures.

6. Feed the Birds (and Other Creatures Too)
Feed the birds, but practice good hygiene: feeders should be kept clean, and if possible feeding areas can be rotated around the garden to prevent the build-up of bugs. If you are lucky enough to have Hedgehogs or other mammalian visitors, these may benefit from extra food too.

7. Don't Use Pesticides
Whatever their makers claim, pesticides are designed to kill and are usually indiscriminate. They may well kill the creatures that you are trying to attract.

8. Don't Put Wildlife in a Ghetto
Take a whole garden approach. Rather than have a 'wildlife patch', make your entire garden wildlife-friendly and a home for wildlife – it will be worth it!

In addition, many of the demonstration gardens have a particular 'wildlife-friendly' theme. For each we have an interpretation board.

The challenge is to convey meaningful and interesting information without being too 'wordy'.

The Bee Garden

Wildlife Gardening & Wildflower Discovery Centre

Plants do not produce flowers to bring beauty and joy to our lives. Flowers are all about sex - the transmission of DNA from male to female. In flowering plants this involves getting pollen (which contains the sperm) from the male flower structure (the anther) to the female (the ovary). Many plants, such a grasses, use the wind to do this, but the majority use animals – birds, bats, beetles, flies or ... bees.

Teasel | Marjoram

Tawny Mining Bee

Bees belong to the great insect order Hymenoptera, which is dominated by various wasps, ants and sawflies. Bees are essentially wasps that have switched from a predatory, carnivorous lifestyle to one that involves collecting nectar and pollen. 275 species of bee occur in Britain, of which just 27 are bumblebees of the genus *Bombus*. The Honey Bee *Apis mellifera* was probably first brought to Britain by humans and most are still kept by beekeepers in artificial hives (they are domesticated), although they can sometimes form 'wild' colonies.

Viper's Bugloss

Bees and flowering plants have evolved together for millions of years in the best-known example of *co-evolution*. Over time, plants have developed flowers with increasingly specialised features to attract visiting bees who, in turn, have undergone physical and behavioral adaptations to take advantage of the food offered by the plants.

Healthy populations of bees of all shapes and sizes are essential to the pollination of many plants, both cultivated and wild flowers. Our Bee Garden is designed to support bees through all stages of their lives by providing food and shelter: there is a wide variety of nectar-producing plants and lots of places to nest and overwinter, from 'insect hotels', old bird boxes and upturned flower pots to the bare ground needed by species such as the Tawny Mining Bee.

The Bog Garden


Sphagnum mosses

Bogs are fascinating habitats and often wonderful places for plants. They typically get most or all of their water from rainfall – thus bogs are mostly found in the wetter north and west of Britain (although there are several fine bogs in Norfolk) – and they are acidic. The dominant plants in most bogs are *Sphagnum* mosses. These have special adaptations to control their environment, notably large cells that hold a lot water, just like a sponge, helping to keep their surroundings permanently wet and boggy.

When a plant dies, its remains are usually decomposed by fungi and bacteria and all the nutrients locked up during its lifetime in its leaves, stems and roots are returned to the soil and re-cycled. This process of decay requires oxygen, however, and when there is not enough oxygen in the soil due to waterlogging, the plant's remains are only partly decomposed, producing ***peat*** (and when peat is fossilized, it turns into coal).

Our mini-bog grades from a bog pool and very wet area, through a wet but not waterlogged section, to a raised bank suitable for plants typical of drier moorland or heathland, especially 'dwarf shrubs'. It has been made with peat-free compost, as we do not want to destroy the habitat of wild plants to make our gardens.


Bog Rosemary


Cross-leaved Heath


Cowberry


Bilberry


Crowberry


Cranberry

We have similar large, general introductions to the habitat-themed gardens.

We also highlight some of the plants at Natural Surroundings, both wild and cultivated, as they come into flower (or fruit).

Chalk Bank

The bedrock in much of England is chalk, which is the fossilised shells of untold billions of micro-organisms, and it forms one of our most iconic vistas, the White Cliffs of Dover.

England's chalk hills were amongst the first areas to be cleared of trees by Stone Age farmers. Over thousands of years the resulting chalk 'downs' were grazed by sheep, cattle and rabbits, and periodically cultivated. Chalk weathers to form poor, free-draining alkaline soils – a tough environment for plants – and unique communities of wild flowers developed, made up of the species that could survive the harsh conditions. Most do not actually *need* chalky soils, but the harsh conditions help to suppress more vigorous competitors.

Sadly, most chalk downland has been 'improved' and the flowers have gone. The few remaining areas, usually now reserves, are amongst our most beautiful and flower-rich habitats. In Norfolk the chalk bedrock is mostly buried under sands and gravels left by the various Ice Ages and flower-rich chalk grassland is a rarity. To show off some of its riches, however, this bank of excavated chalky soil has been planted with a selection of native wild flowers that are characteristic of chalk grassland.


Quaking Grass


Dropwort


Common Spotted Orchid


Rockrose


Lady's Bedstraw


Small Scabious


Bee Orchid

WOAD

Isatis tinctoria


Woad seed heads

Woad is a member of the cabbage family (the Brassicaceae or 'crucifers' – due to their four petals arranged in a cross). It is not native to Britain, but an ancient introduction from Europe, once cultivated for the blue dye obtained by fermenting the first-year leaves – a practice that died out in the 1920s as artificial chemical dyes were developed.

Woad may have been used to produce dye as long ago as the Neolithic. In AD 54 Julius Caesar referred to the Britons staining themselves with a blue dye, giving them a wild look in battle. Indeed, the very name 'Britain' may derive from a Celtic word meaning 'the painted ones'.

Biennial to perennial, 40-150cm tall, well-branched, with numerous small yellow flowers. The seed pods are 10-25mm long, drop-shaped, and are held drooping; they ripen through purple-brown to blackish.

Wild Liquorice

Astragalus glycphyllos

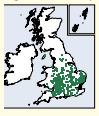
A native perennial with straggling stems that can reach 100cm. More-or-less confined to England, this stocky, shrub-like member of the pea family is a very localised plant that is always a pleasure to find. Despite the name, it is not the source of the confection known as 'liquorice', which is made from an extract of another member of the family, *Glycyrrhiza glabra*, a native of SE Europe/Asia – we have a small specimen in 'The Cage'.

Small Teasel

Dipsacus pilosus

A British native, closely related to Wild Teasel but much scarcer. Like its bigger cousin, Small Teasel is a biennial. Seeds germinate in the first year and the plant forms a rosette of leaves that overwinters. It then flowers in its second year, sets seed and dies.

Small Teasel grows in lightly shaded spots on damp, alkaline soils, and Natural Surroundings has plenty of suitable habitat. The plants that you see are 'wild', having seeded themselves here. We let them get on with it as they are statuesque and the flower heads, though small, are very attractive, even when they have died off in autumn.



Small Teasel is confined to the southern half of Britain and in Norfolk is and in a few river valleys, mostly south d west of Norwich, but including the wen Valley at Bayfield.

Orange Balsam

Impatiens capensis

A native of North America that was introduced to British gardens around the beginning of the 19th century and which then 'escaped' into the countryside, where it was first recorded by 1822.

An annual, Orange Balsam grows in wet ground along river and streams and in wet woodland, and has been slowly spreading across the southern half of Britain. It is a close relative of Indian Balsam (aka Himalayan Balsam) but thus far has escaped the label of 'invasive alien' and thus attempts to eradicate it. Take a moment to look at the elaborate structure of the flowers and enjoy their superb 'burn orange' colouration.

Lesser Burdock

Arctium minus

Closely related to thistles and knapweeds, burdocks are biennials – a rosette of leaves in the first year is followed by flowers in the second, after which they die. The flowers are very attractive to pollinators.

Burdocks produce deep tap-roots, making them hard to dig out. These roots were once eaten as a root vegetable, while *Dandelion and Burdock* (now a factory-produced soft drink), has its origins in a 'hedgerow mead' of the medieval period, brewed from fermented dandelion and burdock roots.

The prickly heads – the burrs – easily catch on to fur and clothing and provide an excellent mechanism for seed dispersal. After taking his dog for a walk one day in the late 1940s, George de Mestral, a Swiss inventor, was fascinated by the burrs that had attached themselves to his clothes and to his the dog's fur. He examined them under a microscope and saw the hooks that the seeds use to cling onto passing animals. He realised that the same approach could be used to join other things together. The result was *Velcro*.

Most recently, we produced a 'Wildlife Gardening Trail' guide, a 20 page colour booklet that we sold for £1. Despite the price (half the price of a cup of coffee!) only a relatively small minority of people visiting the gardens and grounds will buy a copy.

CONCLUSIONS

Despite our best efforts, we still feel that we are falling short of our goal of inspiring our visitors to really look at plants. Indeed, we have come up with a general rule of thumb:

75% of visitors come for a stroll and a chat in lovely surroundings. They don't want a guidebook, and don't look at many signs, however attractive and informative.

20% of visitors are interested in plants and gardens, and/or wildlife. They will take a guidebook around with them and will read many of the signs.

5% of visitors a really interested and keen to learn. They will study everything, appreciate every piece of information, ask questions and tell us that they have picked up lots of ideas to take home with them to their own garden.

No one size fits all. We are working to provide more information and interpretation, in various formats and at various levels of detail. We then come up against another issue: too many signs and information boards can be visually intrusive.
We would love to have some suggestions as to how we can improve, or examples of 'good practice' that really work!

www.naturalsurroundings.info