



BEEKEEPING

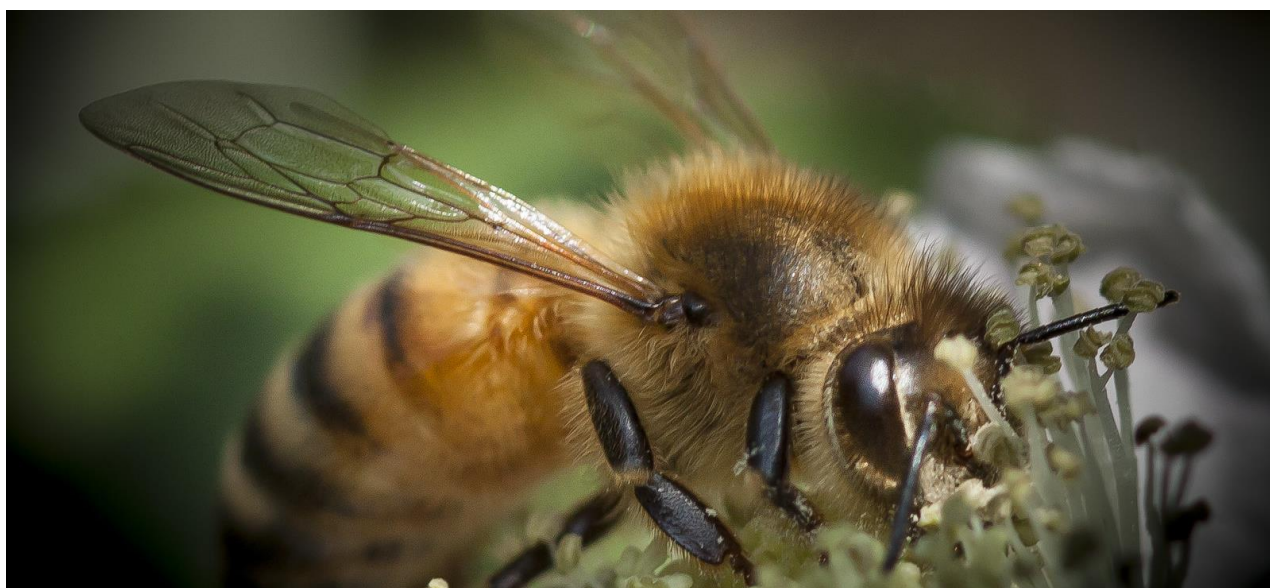
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Table of Contents

WHY ARE BEES SO IMPORTANT?	4
Bees pollinating a squash flower.....	4
WHY ARE BEES UNDER THREAT?	5
Habitat Destruction	5
Mono-crop agriculture can harm our bees.	5
Poisonous Pesticides	5
The Varroa Mite	6
Colony Collapse Disorder	6
HELPING BEES IN YOUR GARDEN	7
A bee and bug hotel.....	7
WHY KEEP BEES?	9
NATURAL BEEKEEPING	10
GETTING STARTED: BEEKEEPING FOR BEGINNERS	11
Choosing Your Hives.....	11
Situating Your Hives	12
Sourcing Bees.....	12
A natural swarm.	12
Caring For Bees – Naturally.....	13

In an organic garden, we do not grow food alone. We human gardeners should always remember that we are only a small part of a larger ecosystem. We are aided by a wide range of different creatures. Bees are one of the most important garden helpers. Beekeeping could be one way to work more effectively with these beneficial pollinators to grow food where we live. Natural beekeeping can help bees and help people.

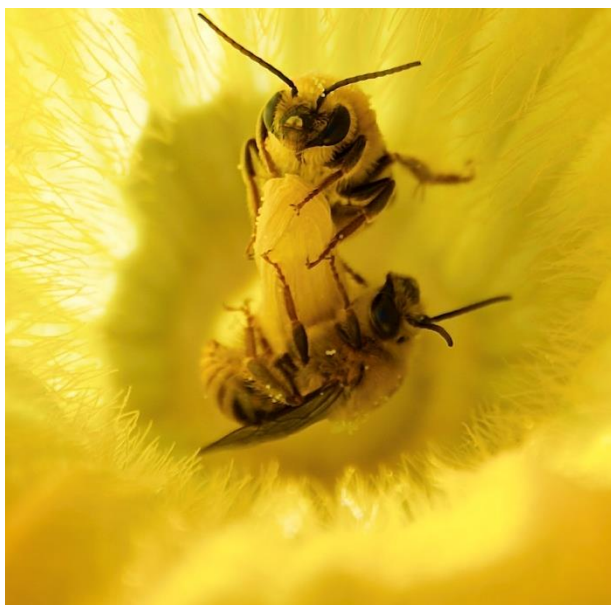


In this guide, you can learn a little more about bees and the problems they face, and discover what you can do in your garden to help them (and yourself). You will learn about why natural beekeeping could be part of the solution for our honey bees, and some of the basics to help you get started with this useful and sustainable garden activity.

Why Are Bees So Important?

Before we look at natural beekeeping, let's consider why taking care of bees is so important in an organic garden. It would *bee* impossible to overstate the importance of pollinators to humanity. While many people are vaguely aware that bees are important, few people truly give much thought to the vital role that pollinators play in gardening and agriculture – and to the wider ecological picture.

The truth of the matter is that without pollinators, it would be very difficult, if not impossible, for human beings to grow the food that we need to survive on this planet. Some estimates suggest that if bees were to go extinct, humanity would have just 4 years left. Certainly, there would be widespread famine and our planet's capacity for food generation would be severely curtailed.



Bees pollinating a squash flower.

Bees (and other pollinators) move pollen from one part of a plant's flower to another, fertilizing that plant. This agency is essential for certain plants in order to be able to form fruit and/or seed and to reproduce. While some plants are pollinated by the wind, others require pollinators in order for fertilization to take place. Globally, around 87.5% of flowering plant species require animal agency for pollination. The volume of agricultural production that is dependent on animal pollination has increased by 300% over the past 50 years. Bees are one of most important pollinators.

Why Are Bees Under Threat?

Bee numbers are dropping globally at an alarming rate. Tragically, in the last 100 years, we have already lost more than half the world's bee species. Man-made global temperature changes and other human impacts are causing a mass-extinction and bees are just one of many species affected. A U.N. Report released in 2016 stated that 40% of pollinators are currently facing extinction. The causes of this are varied, though it is widely agreed that human beings are to blame.

Habitat Destruction



Mono-crop agriculture can harm our bees.

Changing land use, growing cities, and intensive, mono-crop agriculture are all significant threats to a range of different bees. Wilderness areas, meadows and hedgerows are being lost and this has had a huge impact on all wildlife – including bees. Habitat loss makes it harder for bees to find food and shelter.

Poisonous Pesticides

The use of harmful pesticides and other pollutants in non-organic farming and gardening is one of the key issues for bees. Pesticides such as neonicotinoids are applied to crops to control and kill the pests that plague them.

These harmful chemicals act on a bee's central nervous system – making them confused and unable to feed and eventually killing them. Seeds coated in these substances grow into plants that will continue to poison bees and other pollinators as they grow.

These poisons remain toxic in the environment for a long time – harming wildlife and also contaminating soil and waterways and air nearby. While some of the most harmful substances have now been banned in some parts of the world, sadly, many are still in use.

The Varroa Mite

Honey bees also face another threat: the varroa mite. The Varroa mite attaches itself to a honey bee and sucks its blood. These pests can spread through a hive, bringing with them viruses and disease. Once they get into a hive, varroa mites can kill a whole colony in just a couple of years. They have been found to be one of the leading causes of colony collapse disorder in North America. Sadly, an infestation can also make honey bees more susceptible to the toxic effects of the pesticides and other pollutants mentioned above.

Colony Collapse Disorder

Colony Collapse Disorder (CCD) is the name given to a phenomenon that occurs when the majority of the worker bees in a honey bee colony disappear, leaving behind a queen, plenty of food, and a few nurse bees to look after the remaining, immature inhabitants of the hive. This phenomenon has been more widespread in recent decades and is a cause of concern for beekeepers and agricultural producers, who rely on bees to pollinate their crops.

Unfortunately, the exact causes of CCD are not known. Current consensus is that a number of factors in combination, either additively or synergistically, cause the problem. The mechanisms are still not fully understood, but factors such as pesticides (such as neonicotinoids), mites, fungi (such as the Varroa mite), beekeeping practices such as the use of antibiotics or long-distance transportation of hives, malnutrition, poor quality queens, starvation, habitat loss, pathogens and immunodeficiencies are all potentially implicated. The precise impact of climate change on bees is also unknown, and could be a factor in the rise of CCD.

Being aware of the problems bees face can help us to determine how best to save them. It is vitally important that we all wake up to these issues and work together to tackle them. Choosing organic food (or better yet, growing at least some of your own), working to conserve natural environments, and taking good care of bees and other pollinators is vital if we are to continue to survive and thrive on this planet.

Helping Bees in Your Garden



A bee and bug hotel

As gardeners, we can do our part to help bees. Large or small, you can make your garden into a haven for bees. The first thing, of course, is to make sure that you garden organically and don't use any polluting chemicals that harm honey bees and other pollinators. Before you think about keeping bees yourself, it is important to think about how you can make your garden as bee-friendly as possible. Some of the things you can do include:

- > Allow a wildflower meadow to flourish instead of creating a grass-only, neatly mown lawn.
- > Plant fruiting trees – five blossoming trees could provide the same amount of pollen and nectar as an acre of meadow!
- > Plant or sow a wide range of flowers that bees will love. (Try to provide blooms that will provide nectar for different native bees all year round.) Generally speaking, bees are most attracted to single blooms, and white and blue/ purple flowers. Different bees will appreciate a range of different flower shapes. When choosing annual plants, it is best to aim for as much biodiversity as possible.
- > Make sure there is a water source for bees in your garden. (A garden pond with a shallow, pebble beach area at one side is ideal – the pebbles in shallow water will allow bees to get water safely.)
- > Buy or make a 'bee hotel' for solitary bees to make their home.

(You can buy many models ready made, though you can also simply make your own. Hollow sections of bamboo cane in a waterproof roofed box are a great alternative for those not able to keep their own hives.)
- > Create and maintain habitat for other types of bee. (Find out more about the bees that live in your area, so you can create habitats to attract them, and implement gardening practices to keep them safe.) For example, it will be beneficial to leave plenty of dark fissures and holes for bees to hide in around your garden, and leave lawn areas alone and soil undisturbed to give ground-dwelling bees a chance.

Why Keep Bees?

Honey – not the only reason to keep bees.

Before starting out, it is important to establish your aim in beekeeping quite clearly. Do you wish to keep bees to aid in pollination, for honey and other natural yields, or a bit of both? Do you want to keep bees to help *them*, or to help you as a gardener – or both? Why exactly you wish to keep bees will determine the best way to do so.

The best beekeeping systems help the bees and the gardeners. Keeping bees will of course be one more way to help safeguard these vital creatures in your garden. But keeping bees has many benefits for the gardeners too. For example:



- > Keeping bees increases resilience as it helps ensure pollination for food producing crops.
- > Even where wild pollinators are available to do the job of pollination, keeping bees can help increase pollination rates and therefore increase the yield from fruiting crops.
- > Of course, keeping bees can also allow you to gain additional yields in your garden. You can get some honey, and also, perhaps, other ancillary yields, such as beeswax, royal jelly, propolis and bee venom. All of these are healing products, that can be wonderful for your health.
- > Gardeners can have access to healthy raw honey. Heating honey (as commercial honeys are usually treated) destroys the enzymes within the product, so being able to make your own healthy, raw honey at home is another reason why beekeeping can be good for your health.
- > Natural beeswax, honey and other yields from hives can be used to reduce reliance on damaging products and systems. (For example, they can be used to create a range of health, beauty and cleaning products.) This can also help reduce plastic waste and other forms of waste, and help gardeners move towards a more sustainable way of life.
- > Finally, keeping bees can also help gardeners make money from their outside space. Many beekeepers have successfully managed to earn a living selling produce from home hives.

Natural Beekeeping



Beehive

Natural beekeeping is a movement that has changed the approach to bee keeping. In this natural approach, natural 'sun' hives like conjoined skeps allow the bees to make honeycombs as they would in the wild, are not smoked and are largely left undisturbed to come and go as they please. While honey can be harvested occasionally (of course making sure to leave enough for the bees), the emphasis is on pollination and is apicentric. The emphasis is on pollination, though honey is gathered when it is truly surplus to the requirements of the bees.

In other words, with such an approach, the bees' needs come first. Natural beekeepers may gain a yield of honey from hives, but always leave plenty of the bees over the winter months, and view the bees mostly as garden helpers, and a valuable part of the garden ecosystem.

You can find plenty more information on natural beekeeping at

<https://www.naturalbeekeepingtrust.org>.

Getting Started: Beekeeping for Beginners

Beekeeping can be a hugely rewarding experience. But it is important to be informed and to do your research before you attempt to get started. Contacting local beekeepers or finding a local beekeeping association can be a good place to begin.

Choosing Your Hives

For many years the Langstroth hive (made from wood) has been the norm for bee keeping. This type of hive has removable frames. Some people, however, believe that opening up the hive to remove frames causes unnecessary stress for the bees, and so turn to alternatives.

The recently developed free flow hive allows a view into the hive and has an external tap that allows for the frame to split and honey to flow into a container without disturbing the bees by smoking them and opening up the hive.

There are a number of hive designs for more natural and bee-centric beekeeping such as the Warre Hive, and the 'sun hive' that are worth considering. You could also consider keeping bees more naturally in trees.

More information on alternative hives for natural beekeeping can be found at:

<https://www.permaculture.co.uk/articles/sun-hives-conservation-honey-bee>

<https://warre.biobees.com/>

<https://www.naturalbeekeepingtrust.org/tree-beekeeping>

Situating Your Hives

Once you have decided on which approach you would like to take, and decided on a beekeeping system, it is time to think about where you will place the hives. Situating beehives is an art that requires consideration.

It is important to find a place that is not too hot or too cold: when temperature conditions are good, the bees are aided in keeping the hive at the optimum temperature and do not have to overwork themselves on this task instead of collecting pollen. Place hive openings facing south or south east (in the northern hemisphere) so the bees will be exposed to as much morning sun as possible. This will help your bees conserve energy.

It is important to consider the needs of the bees when finding a location for hives. However, it is also important to consider the needs of humans in the vicinity. Bees can sting when agitated, and so, of course, safety should be a paramount concern. Take care not to place hives too close to areas where humans congregate, or where there will be a lot of through traffic. If you plan on harvesting honey etc. from the hives, make sure you have access and space to do so safely.

Sourcing Bees



A natural swarm.

The key thing is that bees should not be imported. It is vital to choose native bees that are suited to the climate and conditions where you live. Ideally, natural swarms should be enticed to your garden and your hives, though where this is not possible, bees should be chosen from as locally as possible and introduced sensitively to their new environment, with the aid of local experts if required.

Caring For Bees – Naturally

Natural beekeeping differs from traditional beekeeping in that it advocates interfering with bees as little as possible. Traditional beekeeping usually condones practices which are considered by some to be detrimental to these beautiful, useful creatures.

For example, honey is harvested to a degree that leaves bees with too little food for themselves. They are then fed with nutritionally inferior sugar instead. Rather than doing this, a natural beekeeper will only take surplus honey, and only at a time of year when it will not interfere with the function and health of a bee colony.

Instead of ripping apart hives, smoking bees and harshly controlling queens and swarms, natural beekeepers will work with the bees – to the benefit of both the bees themselves and, in the long term, the gardener and humanity in a wider sense. While traditional beekeeping can yield more honey, natural beekeeping has much larger and more long-lasting longer term rewards.

There is a lot to learn about beekeeping. But whether or not you decide to place some hives in your garden, doing what you can to care for the different bee species where you live will not only benefit the bees themselves, but will also be beneficial to you and your community.