

# Sustainable Beekeeping – An Introduction

by Robin Morris



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## ***Is it easy?***

Absolutely, yes! Sustainable beekeeping is more or less just providing a suitable home for honeybees, probably in your garden, and letting them get on with it, doing what they do best. They know far more about honey production than man ever will! At its most simple you only have to ‘work’ on your hives twice a year, though you can choose to become more involved overseeing and handling them if you wish. Don’t forget that the bees are wild creatures that you are providing a home for. They are free to come and go as they please and you have no real control over them. Sustainable beekeeping is more akin to having wild birds in a nest box than ‘keeping’ animals such as dogs, hamsters, chickens, etc. Sustainable Beekeeping is NOT the intensive management style of beekeeping practiced by conventional beekeepers which involves considerable time and money. Rather it is a modern take on older practices developed by those with an interest in our planet, the honeybee and a more sustainable agenda.

And don’t be put off if you’re a ‘townie’. With the decimation of the countryside through agricultural pesticides, monoculture, etc. you’ve probably more chance of keeping bees successfully in an urban situation; gardens and parks not only provide sufficient nectar and pollen but do so over a longer season.

## ***So why keep bees in a sustainable way?***

As you may already know the honeybee is in serious trouble. In many parts of the world including the UK the wild bee has more or less disappeared. And those kept by beekeepers are suffering. The impact has only really been evident on a global scale in the last few years.

Whilst the reasons for this recent plight are not yet scientifically proven it has become obvious to most that, rather than there being a single cause, the problem has resulted from a combination of factors that have in effect broken the camels, or in this case bees, back:

- Loss of habitat
- Poison build up -Insecticides and now GM
- Pollution
- Introduction of parasites and disease
- Monoculture
- Beekeeping methods/husbandry

These problems all stem from the impact of mankind. As beekeeping has progressed, more problems have presented and man has reacted to these further problems by intervening further, inventing a new cure, method or practice. As with many things in nature, when man intervenes we mostly seem to come up with short term solutions, often leading to longer term problems. <sup>1</sup>



Mankind's interest in the bee has primarily been as a resource, to make money out of their pollination, honey or other by-products. Therefore the standard beekeeping methods that have evolved and are now used more or less universal throughout the western world have been to make life easier for the beekeeper, not the bee.

As a consequence many have come to question mankind's role. We are questioning our past interventions and are looking for ways to reverse man's meddling as far as possible. We are looking to put the bee's requirements back into beekeeping. Bees have survived millions of years more evolution than man's. They are therefore clearly capable of looking after themselves without our interference, provided we give them the space they need to do this.

It is out of this more environmentally aware thinking that Sustainable Beekeeping has arisen.

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<sup>1</sup> For example mans movement of different strains of bees around the planet has lead to the uncontrolled spread of a parasitic mite destructive to bees. Man responds with chemical solutions to kill the mite. In the short term mites die but not all of them. Those that don't become resistant to man's treatment and a super parasite evolves which the now weakened bee has no defences against!

## ***How is Sustainable Beekeeping different?***

Sustainable beekeepers are trying to put the needs of the bee first. They are therefore looking at what of the bee stressors, introduced by mankind, can be taken out of beekeeping.

Clearly in the short term we have little direct control over many of them. For example we cannot stop our farmers using pesticide coated seeds, though we can do our bit by lobbying and evangelising. However, when we look at our beekeeping husbandry we can actually do a quite lot. So called 'modern' beekeeping has evolved over only the last 150 years, it was developed in the Victorian era when mankind believed he ruled the world. All the so called 'advances' made have been for the benefit of the beekeeper and to maximise honey production - most of these at the expense of the bees needs and requirements.

These developments include:

- Use of frames - to ease inspection, removal and reorganisation by the beekeeper, but which make the hives draughty for the bees
- Use of foundation - a manufactured comb template used as an artificial building block to force bees to build comb to a standard size determined by man rather than in a variety of sizes they build in nature
- Culling of unwanted bees - the slaughter of males and 'less productive' queens in a belief that they are of little use in bulk honey production
- Large capacity hives - based on what was available to the inventor at the time rather than on the size chosen naturally by wild bee colonies
- Treatment regimes - adding chemicals, gasses and antibiotics to 'treat' for possible ailments
- Supering - adding honey collecting boxes above the colony forcing the bees to build comb upwards which is unnatural to them
- Use of a queen excluder – a man-made screen to keep the queen in the part of the hive where the beekeeper wants her
- Swarm suppression - wing clipping of queens and other invasive methods to prevent colonies from swarming – nature's way of hive reproduction
- Importing and moving bees around - to try and get a more 'efficient' foreign stock by bringing in foreign, un-acclimatised stock along with their disease and parasites and consequently diluting the local natural gene pool
- Artificial feeding - removing too much of their honey which they need for over-wintering and replacing it with unnatural alternatives.

At the risk of generalisation, all Sustainable Beekeepers are against using foundation, frames and large capacity hives used by the modern beekeeper<sup>2</sup>. In the main therefore they tend to use **Top Bar Hives**. Basically these are empty boxes in which the bees are allowed to build their own comb without any 'control' from the beekeeper other than adding a guide line of bees wax on bars in the top of the hive. In nature bees find an empty cavity and naturally build comb downwards from the roof.

There are many variations of Top Bar Hives but they fall into two basic types and share the same principles. They are the Horizontal Top Bar Hive and the Vertical Top Bar Hive.

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<sup>2</sup> The standard modern hive is the National in the UK and Langstroth in the USA, or their variants

As its name suggests the Horizontal Top Bar Hive is a horizontal box with bars in the roof. These hives replicate the cavity bees might find in a fallen tree. Being horizontal it requires no lifting of bee boxes, unlike in vertical hives, and so is particularly suitable to the disabled or elderly and those who are uncomfortable moving heavy objects. Although of a fixed size, the internal cavity in a horizontal hive is kept to a size suitable for the bees by the beekeeper moving a sliding 'follower board' as the colony expands and contracts.

A Vertical Top Bar Hive consists of a series of small boxes that the beekeeper stacks vertically on top of each other. This provides an empty cavity as would be found in a standing tree. Again they are empty boxes with just bars on the top with a guide line of bees wax. Vertical hives are expanded by adding extra boxes below those already occupied by the bees, so some lifting is required. They have the general look of a 'traditional' beehive.

Both are very easy to build yourself from plans freely available on the internet using basic woodworking skills - after all they are just empty boxes! The timber can either be bought from a yard at around £10 to £25 depending on the wood used or they can be easily made at no cost using recycled timber from pallets for example.

The difference between the two types is not just in construction style. They also reflect different approaches. The horizontal hive suits those who prefer to actively manage their bees - a more hands-on method which arguably gives more control for the beekeeper, but this is at the cost of interfering more. The vertical hive on the other hand goes much further along the route of leaving it to the bees and consequently disturbs them least.



It's a question of looking at both types of beekeeping, deciding how far you want to take sustainability and which hive most suits you best then choosing that route.

Basically, "you pays your money and takes your choice". If you are interested,

my personal preference is for the vertical hive. Whilst it is a little less 'fun', in that you don't get to actually play with (that is disturb) the bees, it is far more bee-friendly and therefore, in my view, much more sustainable. But then what do I know.....? Both are bee-friendly so make up your own mind.

Whichever route you choose, in order to take your first step on the road to Sustainable Beekeeping you need to find out more. There is a wealth of good information and support on the internet. The next part of this introduction aims to help you start finding your way around.

## ***A little about Sustainable Beekeeping in general***

Perhaps the first thing to do is to take the advice of others which can be easily done by using an online forum. The best in this field, in my view, is the [Top Bar Beekeeping Forum](#). This friendly forum has members all around the globe and is a great place to learn. You can just go there and browse, soaking up all the information that is freely available. Maybe start by reading the [Frequently Asked Questions](#)?

Why not [register](#)? It's free and once registered you can post entries and ask questions - start by just saying hello and see what a warm welcome you get. You'll need to register using a username which can be anything you like, maybe your nickname or why not use your real name? You can even stay totally anonymous if you prefer.

## ***I want to know more about Horizontal Top Bar Hives***

There are several great web sources on these:

- [The Barefoot Beekeeper](#) is an English site which also hosts the Top Bar Beekeeping Forum. Here you can download free [plans to build your own horizontal hive](#). The author also sells his own horizontal hive book "[The Barefoot Beekeeper](#)" which I personally consider to be **the best Sustainable Beekeeping book available**<sup>3</sup>. I can thoroughly recommend it as it started me on my Sustainable Beekeeping voyage. You can even [download the introduction](#) free of charge to test whether you'll like it. If you only buy one beekeeping book make it this one.
- [Top Bar Beekeeping at Hirschbach Apiary](#) is an excellent site run by an American, based in Germany which similarly has great information on all aspects of horizontal hives.
- [Top Bar Hive Beekeeping](#) is James Satterfield's Top Bar Hive site
- [BWangler.com](#) a Wyoming based TBH beekeeper
- You can also download BackYardHive's excellent [Getting Started Manual](#) (20 MB download)



## ***I want to know more about Vertical Top Bar Hives***

Probably the best way into this style of beekeeping can be found via the [Warré Beekeeping](#) website. Emile Warré was a French abbot whose experiments with beekeeping resulted in possibly the most sustainable vertical hive and also style of beekeeping. This type of hive is not only different in structure but its use takes sustainability to the next level, leaving the bees more freedom to run their own hive. From the Warré Beekeeping website you can download free [plans to make a vertical hive](#), Warré's book [Beekeeping for All](#) plus other downloads about the principles behind this style of beekeeping.

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<sup>3</sup> "[The Barefoot Beekeeper](#)" by Phil Chandler. To order = <http://www.biobees.com/index.php> £7.50 download or £12.95 paperback - ISBN 978-1-4092-7114-7

The Top Bar Beekeeping Forum also has a dedicated [Warre thread](#) and there is also a separate dedicated [Yahoo e-group](#).

Other excellent sources of information on Warre hives are:

- David Heaf's [My Garden](#) website - David is one of the UK's best respected Warré beekeepers.
- Bernhard Heuvel's '[On my way to Sustainable Beekeeping](#)' - Bernhard is a true Warre expert and operates sustainable hives in Germany.
- Johann Thür's '[Beekeeping: natural, simple and successful](#)', a 'must-read' for all sustainable beekeepers which outlines why hives should not be frequently opened as they need to retain their internal scent and heat.
- Michael Thiele's '[Honoring the Bien](#)' interview where he describes how we also need to treat the hive as a single being if we are to become truly sustainable in our beekeeping - again a 'must read' in my view.
- An excellent on-line illustrated guide to building your own hive can be found at [The BeeSpace.net](#)



### ***It's hard to choose!***

Your choice of hive will also depend on the amount of time you have available as well as how 'hands-on' you want to be. If you want to be as involved as possible and relish the thought of handling the bees then a horizontal hive is probably for you. However, if you have little time for inspections and are wary of handling the bees on a regular basis then the vertical hive will suit you best. You only need to work on your hive twice a year if you run a Warré hive as he suggests.

If you're really not sure which hive type to choose then why not start with the easier to manage Warré? Alternatively, you could consider keeping one of each? In these worrying times for the honeybee, Sustainable Beekeepers are no more immune to having their bees die off than anyone else. Having two hives doubles your chances plus it will allow you to take less honey from each to meet your needs. After all, the bees spent many an hour making that honey for their own use, not yours.

### ***The Big question - Why do you want to keep bees?***

There are many reasons you may have to want to keep bees. Amongst these I would include:

- a liking for honey
- concern for the future of the honeybee
- a general love of wildlife
- a desire to increase plant pollination in your garden
- education, especially for children
- interest in allergy relief and other forms of apitherapy i.e. using bees and their products to naturally treat ailments

- plans to sell honey as a home industry

All of these reasons and more are perfectly valid in themselves. Sustainable Beekeeping in top bar hives is suitable, in most cases preferable, for all of these except the last. By its very nature Sustainable Beekeeping means you are prioritising the bees need over and above any desire you may have to profit from them. Certainly, in most years, you should return a sufficient crop to suit your own needs, maybe even pass a few jars onto friends and relatives. However, the crop maximisation of commercial or quasi-commercial beekeeping is NOT suited to top bar hive beekeeping.

Further, in these times of crisis for the bees even 'traditional' beekeepers agree that going into beekeeping for home profit is currently a non-starter. The high cost and heavy work loads of traditional beekeeping plus the high mortality rates of hives today means that profiting from bees is no longer a viable option.



### ***Are we all agreed?***

In my ideal world everyone would subscribe to keeping bees in a sustainable way. However, not everyone shares my view on life - after all we all come from different backgrounds and experiences and have varying concerns. You might think that at least all beekeepers agree on the way forward, but I'm afraid you'd be wrong!

This isn't as crazy as it at first sounds. You must bear in mind that the majority of beekeepers for about the last 150 years all came through the same, rather conservative, system of mentoring and training. Traditions have been built and an order established. They have also made a considerable investment in both time and money with the cost of buying and running a conventional hive<sup>4</sup>. Add to this the worry of seeing so many of their hives die off over the last few years and you can see why they feel so exposed and defensive about the threat to their established status quo. Although there has been a steady decline in bee health over this period it is only very recently that it has suddenly become so stark and critical causing people to investigate other options.

Obviously not all conventional beekeepers are negative when it comes to Sustainable Beekeeping; the light is beginning to shine for all. However, you can expect to hear some negative reactions from their ranks, especially from those with more vested interests in the status quo - there is a lot of money to be made selling treatments and equipment to conventional beekeepers not to mention the multi-million pound interests the agro-chemical companies have in modern agriculture's reliance in their products to make crops grow in dead soil.

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<sup>4</sup> Around £200 per hive and around £25 pa running costs.

But we DO all agree really. There is one thing that **all** beekeepers agree on and that is the old beekeeping saying “ask three beekeepers a question and you’ll get four answers!” It’s absolutely true and in reality this reflects the fact that in beekeeping we are caring for a wild and complex life form. Even experienced beekeepers who have spent a lifetime in the craft will admit that bees can and do the most surprising, unpredictable and unexpected things. There are no absolute rights and wrongs, only opinions and viewpoints - avoid anyone who tells you otherwise!

It is for this reason that you might consider joining your local beekeepers association. Admittedly the majority will probably know little about sustainable methods but they do know a lot about bees and will have detailed knowledge on your local conditions. You can choose to ignore their beekeeping methods and treatment regimes but pick up on their wealth of knowledge and enthusiasm in areas that will benefit you. Who knows, you might even make converts of them - there’s many a conventional beekeeper anxious about their bees.

They will probably ask you to join their national organisation the BBKA. Whilst this may have historically been a worthy body, Sustainable beekeepers will need to give this very careful consideration as the BBKA have compromised themselves and chosen to get into bed with the pesticide industry and sell endorsements for very dubious insect poisons, not very sustainable at all! Perhaps your best option is to sign up with your local association but only on the condition that BBKA membership is not a condition. If they won’t budge then you can shop around for other groups. Failing that you can get all the help and support you need on the [Sustainable Beekeeping forum](#) mentioned above.

### ***Be prepared for criticism***

Consequently you may wish to be prepared for some of the arguments you are likely to hear to allow you to have both points of view, reach your own conclusions and respond appropriately when questioned - after all, even newcomers can exert influence!

### ***Objection 1. “Not treating bees against Varroa infection is irresponsible, it will spread the mite to other colonies”***

The varroa mite, a bee parasite from the Far East which swept the world thanks to the practice of moving around and importing bees, is a very serious problem which is probably the main killer of hives in the UK so it is understandable that modern beekeepers trained in their one-size-fits-all approach are concerned.

In response to this mite mankind has developed several chemical and other aggressive interventions to ‘treat’ their bees and try and maintain maximum productivity. Whilst initially very successful, none of the treatments approached 100% effectiveness. Enter Darwin with his ‘survival of the fittest’ theories and what have we got? A new generation of super mite that has evolved resistant to the original treatments plus a hive full of bees weakened by the same treatment, after all mites and bees are both insects and we all know there is no such thing as a free lunch - the bees have suffered side effects as well as the mites. After 50 years of varroa infection in the western world have we cured the problem? Of course not.

As stated above, orthodox beekeeping is expensive. One can understand that conventional beekeepers are going to throw treatments and money at the problem to try

desperately to save a failing hive - after all that's how the agro-chemical multi-nationals profit.

Sustainable beekeepers however with their hands-off approach look at what nature can teach us. Isn't it curious that feral (wild) bees have not all been killed off by this infection? Non-intervention practices allows the bees to keep their ambient hive temperature at their preferred 35°C. The varroa mite cannot reproduce above 33°C, a temperature bees in a standard hive cannot maintain due to the constant manipulations of their husbandry practices<sup>5</sup>. Sustainable bees find it easier to resist the mite - let nature do her job and Darwin is happy! Because of the low cost, Sustainable beekeepers can also afford to loose weaker hives and breed from survivor stock. From our viewpoint it is the modern beekeeper who is responsible for sustaining weaker colonies and hence diluting the resistant gene pool.

**Objection 2. *"Non-intervention will result in hives swarming!"***

Absolutely yes, we fully agree it will! But where's the problem in that? To a traditional beekeeper this may be seen as a problem as it means a proportion of their honey-producing workforce have absconded, no more to toil for their profit. But wait a minute, swarming is what bees do - it's nature's way of hive reproducing. Despite its rather aggressive looking appearance a swarm is temporary and harmless. Bees swarm when looking for a new home. They knew in advance that they were off so gorged themselves on honey in preparation. A gorged bee finds it near impossible to sting as the extended abdomen prevents the mechanics of the sting from firing. Anyway, they only have one thing on their mind - a new home so they have no will to sting. Despite it's misleading looks and sound a swarm is actually a collection of bees at their most content, a wonder of nature to be enjoyed. If a desire for maximum honey production is the least of your worries then let them swarm. Anyway, there is much evidence to suggest that they swarm only when there are temporary dearth's in the pollen and nectar flows so little production is lost. A hive that has swarmed is more content and happier bees work harder and soon build up their numbers to the pre-swarm level. Also, as if by magic, somewhere else the absconded bees have formed a new colony - ain't nature great?

**Objection 3. *"If bees have no artificial foundation and have to make their own comb, it will take 3 pounds of lost honey for every pound of wax they have to produce"***

It's possible; they do use time and energy to produce wax. But then we're not in it to maximise our crop but for the good of the bees. Anyway, observations show that there is very little difference as happy bees, doing their own thing, seem to work more efficiently. If you put a window in your hive there's nothing more fascinating than seeing how they start to fill an empty space with their own natural, snow white honey comb in just a few days.

**Objection 4. *"Failing to regularly inspect your bees is irresponsible, who knows what problems you may spread?"***

This statement is correct, I couldn't agree more. In fact, as a sustainable beekeeper I would argue that we actually care more for our bee's welfare. It's our responsibility to know about potential threats and diseases and act accordingly should we suspect anything wrong. However, it is the method of inspection that's the issue. A conventional beekeeper is trained to take their hive completely apart every few days throughout the

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<sup>5</sup> They are encouraged to go through their hives every 9 days to prevent swarming (see below). This constant opening eposes the bees en mass to the outside air and its ambient temperature.

season to inspect for signs of problems, though some of the 'problems' they look for are not relevant to us, for example the need to cull drone cells. To make an analogy when you go to the vet with a poorly pet does he/she take a scalpel and open it up to find out what's wrong? Of course not - they use observation, deduction and knowledge to diagnose the problem; an exploratory operation is the very last resort should all else fail. It's the same with beekeeping. There are many things you should do regularly to check that your colony is healthy - spend time observing them coming and going, watch their internal activity through a viewing window, get used to their aromas and smells, learn to listen to them - a cheap stethoscope off eBay is a useful tool. There is a responsibility on us to learn these skills so we can practice real beekeeping, not the rip apart and damage type.



The abbot Emile Warré

### **Closing remarks**

I hope this introduction has given you a pointer on the road to Sustainable Beekeeping. There is a wealth of information and sources of friendly advice out there on the World Wide Web. From my own experience not only have I learned a tremendous amount but I have made many 'virtual' friends around the globe - ah, the wonders of the internet.

If you decide to take up beekeeping don't forget your local associations; folk you can meet in the flesh and blood. You will probably find they look upon us Sustainable Beekeepers as strange animals - don't forget beekeeping was a very conservative pastime until recently. However, they tend to be very friendly and have a vast local knowledge which will prove useful if you start - they may even help you source your first bees, a local swarm is the best start you can have if you're going the sustainable route.

I hope you choose to start - it really is a fascinating pastime. If you do you'll be helping the bees on their road to global recovery and they will provide you with endless hours of fascination just watching your charges. However you choose to keep bees, I wish you the best of fortune. Above all look after your bees, have fun and **bee happy!**

©Robin Morris (aka FollowMeChaps on several beekeeping fora)  
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