

BEEKEEPERS ASSOCIATION OF SOUTHERN CALIFORNIA

BEST MANAGEMENT PRACTICES

BY

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With the decline of the honey bee population there has been a tremendous increase in interest in both rural and urban beekeeping in recent years. The Beekeepers Association of Southern California (BASC) would like to educate the public and promote responsible beekeeping by putting forth a set of Best Management Practices (BMP). If these BMPs are followed bees can be kept in almost any location with no impact on neighbors or the public. These BMPs will safeguard neighbors and the public in close proximity to where the bees are kept.

Those who are not familiar with bees and beekeeping typically find even the thought of bees to be scary. However after a little education those same people will realize just how docile and necessary these amazing creatures can be.

We encourage anyone interested in bees, anyone wanting to be a beekeeper, current beekeepers or anyone who will be writing legislation to read through this entire document to educate themselves. Those wishing to take up beekeeping should review the BMPs to see if they can conform to these practices before starting this endeavor. By conforming to these practices you can be a beekeeper others can emulate.

BASC would encourage City and County legislators to copy or link these BMPs and post them on their City and County websites. Unfortunately there are those who will not be responsible beekeepers, not follow Best Management Practices and as such will be asked typically by City or County Code Enforcement to correct problems resulting from their bees or if severe enough will be asked to remove the bees from the property. BASC would encourage City and County legislators to use the portion under Code Enforcement to act as a guideline to enact municipal regulations to deal with those who do not follow the BMP described below. This will allow beekeeping yet at the same time safeguard neighbors and the public by giving code enforcement tools for making corrections or the option to have hives removed.

WHY DO WE NEED MORE BEES?

Southern California can be a wonderful location to raise bees for honey, wax and other bee products.

Bee pollination is directly responsible for approximately 1/3 or more of the produce we eat. Indirectly bees are also responsible for products like alfalfa pollination to produce alfalfa seed which gives us meat

and dairy products. By having bees, plants of all types will benefit, and agricultural crops will have much higher yields.

Bees are also responsible for pollinating cotton for much of the clothes we wear.

Bees have been declining in great numbers for decades and threatened with Colony Collapse Disorder (CCD). There are a number of factors contributing to this decline, changing weather patterns, loss of forage, bee pests (specifically the Varroa mite), pesticides use to name a few. Those practicing beekeeping in the Southern California will help bring back up the bee population.

The various Best Management Practices have been summarized below with a more detailed explanation even further down.

BEST MANAGEMENT PRACTICES SUMMARY

1. Make sure you have enough time to manage your bee hives before taking on beekeeping
2. Keep bees with docile genetics
3. Hives should be of the removable frame type to allow inspection of the hive.
4. Inspections should be done on a sunny day when possible when the fewest number of people are around and when machinery is not being operated.
5. Permission should be obtained by the land owner before placing hives
6. Placement of the bee hive should be in a manner which will keep bees from infringing on neighbor's properties or the public at large.
7. Apiary area should be cleared of flammable material to prevent fires
8. Apiary should be away from lights to prevent bees from being attracted to lights at night
9. It is preferable to paint bee hives a light color to keep the hive cool during the summer and reduce swarming tendencies.
10. A constant water source should be provided for the bees for hydrating and cooling their hive
11. Hives should be managed by splitting, frame manipulation and/or requeening to significantly reduce or eliminate swarming
12. Number of hives allowed should not be limited provided your bees do not become a nuisance to others or infringe on your neighbor's ability to use their property or the public at large.
13. Varroa mite inspection should be done and treated when necessary to prevent spreading this insidious pest to other hives in the area.
14. Disease control – Any hive found to be diseased should be dealt with in the appropriate manner.
15. BASC encourages beekeepers to register their hives with their County Department of Agriculture to keep bees safe from pesticide spraying by getting notified ahead of time of any planned spray.
16. BASC encourages continued education through clubs, mentors, videos, magazines and books to be better beekeepers.

STING INFORMATION

17. How does one keep from getting stung in the first place?
18. Stings and allergies
19. What should you do if you do get stung?

CODE ENFORCEMENT

20. Bees or hives will be considered a public nuisance when any of the following occurs:
 - a. Colonies of bees exhibit defensive or objectionable behavior or interfere with the normal use of neighboring properties.
 - b. Bees or hives kept in anything other than a removable frame hive.
 - c. Hives that are abandoned or not maintained on a regular basis.

BEST MANAGEMENT PRACTICES

1. Time requirement – Like any other type of livestock bees require time of a beekeeper to inspect and manage a hive properly, keep it healthy and keep it at an optimum size for honey production without swarming. For those new to beekeeping hives should be inspected generally once a week to see if they have enough food, to determine if the hive is queen-rite, inspect for disease and pests and if there is adequate space for the hive to grow or if the hive needs to be condensed. Depending on the extent of the inspection, the size of the hive and necessary management tasks one should expect to take anywhere from 5 minutes to 1 hour per hive per week. As with all other activities the more experienced you get the quicker the inspections will be. Before you take up this wonderful hobby make sure you will have adequate time to responsibly take care of your hives.
2. Temperament and behavior of the bees - Bees can have varying degrees of defensiveness. Note: Bees are defensive not offensive. Bees are protecting their hive, brood and food. If they feel threatened they will sting to drive you away and in doing so die in the process. So it is their last resort.

Some factors which can influence the hives behavior are queen genetics, whether the hive is queen-rite, weather, availability of food, health of the hive and exterior activities. Solving one or more of these issues and the defensive hive may have dramatically different temperament.

There are two types of bees commonly kept commercial bees which have been bred for decades by commercial queen breeders and feral or wild bees. Commercial queen breeders have selected in their genetics for gentleness. Beekeepers can go through hives in t-shirt and shorts with no veil, gloves or any other protection. If you are new to beekeeping or in close proximity to your neighbors, these bees will be an excellent choice as they are the least likely to create problems for those around you. Some beekeepers prefer feral bees which are hardier, brood up better and produce more honey. Unfortunately, with the introduction of the Africanized bees in

the late 1980s, about 70% of the feral hives in Southern California have some degree of Africanization. If the bees are 1% Africanized they can be very docile if they are 100% Africanized they will sting from some distance from the hive. Feral hives should only be kept by more experienced beekeepers with some buffer zone from their neighbors just in case they become defensive. A hive will not show its true temperament until it is larger in size. Being able to recognize Africanized genetics when the hive is small and docile is critical. There are three signs: 1. The bees run on the frame instead of sitting still. 2. The bees fly off the frames. 3. The bees start singing the beekeeper. Only more experienced beekeepers will be able to recognize these signs and take the appropriate measures to requeen the hive with a non Africanized queen. Since the queen determines the genetics for the entire hive, by requeening, in approximately 60 days (the life span of a bee from egg to death) the entire genetic makeup of the hive can be changed. If caught early, the hive can be made docile before it gets large enough to be defensive. If you are not an experienced beekeeper do not take a chance on getting someone stung and losing your apiary, by keeping bees which are not gentle. NO good comes from keeping defensive bees. You will not only get in trouble but it will make it more difficult for others to keep bees when you give the beekeeping industry a black eye. So if a hive of yours becomes too defensive, move it to a non urban area or exterminate it. It is just not worth keeping a defensive hive in an urban setting.

3. Hive type – Beekeeping and hive maintenance can only be done with a removable frame hive. Bees should only be kept in removable frame hives to allow inspection for size, brood, food, disease and queen. Two common examples of removable frame hives are the Langstroth hive and a Top Bar hive. Hives should not be kept in trees, walls, attics or meter boxes where they cannot be managed. Hives in those places can be removed live or exterminated by a bee removal company.
4. When should you inspect a hive? – The best time to inspect a hive is on a nice sunny day when no one else is around if possible. Some bees will be flying around while you are inspecting. Use common sense. If your neighbors are in the backyard having a BBQ or their little kids are playing on the opposite side of the fence don't open up a hive. When it is sunny a good fraction of the hive will be out foraging for food and water verses all crowded in the hive. There will be fewer bees in the hive to disturb and less chance of the hive getting excited. Bees can also be sensitive to vibrations and exhaust so when machinery is being operated nearby such as lawn mowers avoid opening up the hive. When opening and manipulating frames use smoke to keep the bees as calm as possible. Work as quickly as possible to have the hive opened the least amount of time. Open hives can entice robbing thus stirring up the hive. Be a thoughtful conscientious neighbor.
5. If you are going to keep bees on a property not owned by yourself get permission from the property owner before placing any hive.
6. Placement of the bee hives – Hives should be placed in a location where they will not become a public nuisance. Be a good neighbor and be cognitive as to where the bees will be flying and avoid locations where people will walk into their flight path. Hives should not be placed where the bees will cross sidewalks, roads or other public right of ways. Bees need just a short distance in front of their hive to go in and out. Having a hedge or wall that is 6' or more high that the

bees will have to go over gets them up and into the sky almost unnoticed. If hives are placed in an elevated location 8' or higher above the adjacent grade bees also disappear unnoticed. Hives are best placed in the full sun and pointing east to south if possible. However if other constraints require the hive be pointed another direction or in the shade that will be okay too just not optimal. For those keeping feral hives a larger buffer zone from the neighbor as explained above should be kept. The quickest way to lose your ability to keep bees is by having them in an undesirable location where neighbors are getting stung. Keep this in mind as you select a location.

7. Fire – Beekeepers use a smoker to calm bees before and while going through a bee hive. Occasionally a spark will come out of a smoker (particularly if there is not enough fuel in the smoker). The apiary area should be cleared of flammable material such as weeds, leaves or pine needles to ward off the possibility of starting a fire.
8. Lights and bees – Like many other insects bees are attracted to lights. Your hive location should be in a dark location when the sun goes down. Avoid placing a hive where a light will attract the bees creating a nuisance and a pile of dead bees in the morning.
9. Color of hive – Hives can be painted any color however if the hive is in the sun lighter colors work best as the hive will absorb less heat and the bees will be able to keep the hive cool in the summer months thus reducing the tendency to swarm.
10. Water – All living creatures require water and this includes bees. Bees use water to hydrate themselves and bring water into the hive to evaporate it and cool the hive with a swamp cooler effect. A water source should be placed on the property a little distance from the hive so the bees can navigate to it. This can be something as simple as a bucket or wash tub with corks spread across the top to a small fountain to something more complex as a small pond with water plants floating in them. It is best to have something that the bees can land on otherwise the bees may drown. By not having water the bees will search elsewhere such as pet water bowls, sprinkler heads, and swimming pools. This creates a nuisance for your neighbors and will lead to complaints to the city or county code enforcement. Note: If you are going to have a water source that will not be changed out weekly Mosquito fish should be placed within the water source so you do not create a breeding ground for Mosquitoes. These fish can be obtained from Vector Control generally for free!
11. Swarming is a natural process which occurs and allows bees to propagate their species. Swarming occurs when a hive is either overcrowded or overheated (which can be from being overcrowded). The hive will create one or more new queens and just before the new queens are ready to hatch out of their cells $\frac{1}{2}$ to $\frac{2}{3}$ of the hive's worker bees will exit with the current queen. These bees numbering in size from a couple thousand to many thousands will swirl around in a large mass in the air till the queen, typically but not always, lands on a branch near the original hive. For those not familiar with bees this can be a frightening experience seeing thousands of bees in the air. However it should be noted that when bees are swarming they are at their most docile as there is no hive, brood or food to protect. Beekeepers will stand in the middle of these swarms with no protection just to see where they are going so they can get a bee box and catch the swarm and not get stung. The swarm will typically form a cone of bees on the limb. From this cone of bees scout bees are sent out to find a new home. In the wild this

might be a hollow log. In the city it can be a wall, attic, meter box or somewhere else they are not desired. With proper hive management swarming can be eliminated or reduced to an absolute minimum. During the beekeepers weekly inspection space should be added for brood and honey when approximately 80% of the current box is full so the bees will have room to grow. If the hive is packed with bees or if the hive is bearding out (large cluster of bees on the front of the hive) the frames should be inspected for swarm cells (cell used to raise a queen when the hive wants to swarm) indicating that they are getting ready to swarm. If swarm cells are found the hive should be either be split or the swarm cells cut off and additional space added along with some frame manipulation to prevent it from swarming. If swam cells are found and cut off the hive should be completely re-inspected every week to confirm that the swarming urge is no longer there. As queen bees age their queen pheromone (queen smell) weakens and they can start laying fewer eggs. This can create tendency to swarm. It is recommended that queens be changed every year to two years with a fresh new queen. This has the added benefit of keeping up brood production which means more bees and more honey. So a small investment in a new queen will pay off tenfold in the long run. Even with the best management though every beekeeper may lose a hive to a swarm on occasion. If you the beekeeper see the swarm leaving your hive or you get a call from your neighbor that they have a swarm in their tree be a good neighbor and try and capture the swarm. It is always a wise idea to keep an extra hive box around for just this purpose. If you do not know how to do this contact someone that does. Note to the public: Bees are attracted to the smell of other bees and swarms can come from a distance. Just because there is a swarm in your yard it does not mean that it comes from your neighbors hive. There are hundreds of wild hives throughout the city and it could be any one of them as well. Having experienced beekeepers in the city that are willing to collect these swarms is the best defense against the bees getting into somewhere they do not belong. Placing a swarm trap in an elevated position with a swarm lure to catch a swarm from your hive or from a wild hive in the neighborhood will be the neighborhoods best defense for not getting bees into somewhere they do not belong.

12. The number of hives – The number of hives you should keep on a property will depend greatly on the size of the property, the buffer space you have between you and your neighbor, the size of hives that you have and the types of bees that you keep. Beekeepers using proper management skills will split hives to prevent swarming and combine hives when they naturally shrink over the course of a year varying the number of hives they have in an apiary. Having a limit on the number of hives that you have will force poor beekeeping practices and increase the likelihood that a swarm will ensue. As long as your bees do not become a nuisance to others or infringe on your neighbors ability to use their property or the public at large the number should not be limited. Be a good neighbor and limit the number of hives that you keep to a reasonable amount. Doing so will ensure that you will be able to continue keeping that apiary well into the future.
13. The Varroa mite is a parasitic mite that gets on the breast of the bee and sucks in essence the bee's blood. It is like a flea or tick on your dog. To equate the relative size of a mite to a bee to a human it would be like having a rat sucking your blood through a 3/4" hole in your chest. The Varroa mite at this point in time is the beekeeper's greatest pest. A hive with only 3% of the

bees having mites will very likely die completely as the hive shrinks during a dearth of nectar or going into winter. It is strongly encouraged that Varroa mite counts should be checked on a regular basis and the bees should be treated for Varroa mites before they become a problem. Hives that are left to die become Varroa bombs as neighboring hives rob out the honey left after the hive dies thus spreading this pest to neighboring hives.

14. Disease control – Any hive found to be diseased should be dealt with in the appropriate manner. There are a number of bee diseases and pests. A disease like American Foulbrood has spores which can remain viable for three or more decades and is very contagious. The only recourse with this disease is burning the equipment or placing it in a sealed bag to be taken to a landfill. If the beekeeper finds evidence of disease he or she should treat the hive and or remove the equipment promptly to avoid spreading the disease to neighboring hives.
15. The beekeeper is encouraged to register their hives with the County Department of Agriculture. By doing so if there is going to be any Vector Control spraying of other pests in the vicinity the beekeeper will be notified in advance allowing them to move or take protective measures to prevent their bees from getting into the pesticides.
16. BASC strongly encourages anyone taking up beekeeping that you continue educating yourself and those around you to the wonders of bees and beekeeping. Consider joining a bee club. Find a mentor. Subscribe to American Bee Journal or Bee Culture magazines. Watch videos online. There are also many good quality beekeeping books on the market. A good beekeeper never stops learning.

STING INFORMATION

17. How does one avoid getting stung in the first place? There are just some general rules which will aid the beekeeper and those around the hives from getting stung.
 - a. Avoid walking in front of or blocking the bee's flight path into the hive.
 - b. Never swat at a bee. This puts the bee on the defensive and she will release alarm pheromone which will put other bees on the defensive.
 - c. If a bee is buzzing around you the best thing to do is quickly move away. If you can go around a corner or duck under a branch most of the time the bee will just lose interest and move on.
 - d. Bees on flowers or water are just grocery shopping or getting water. If you leave them alone they will leave you alone. The bee sacrifices their life when they sting you so it does so as a last resort.
18. Stings and allergies – No one likes being stung (including beekeepers). Bees sting to drive away those they see as a threat and it is pretty effective. A normal reaction to a sting is pain and swelling depending on how much venom gets into your skin. Note: This is not an allergic reaction but rather a normal reaction. The severity of the reaction can range from something similar to a mosquito bite to a lot of pain and swelling. Very few people are actually allergic to bee stings. Those that are go into anaphylactic shock which can lead to the person not being able to breathe. Those that are allergic to bee/wasp and other insect bites in this manner should

carry with them an Epinephrine pen. Luckily you are 71 times more likely to die from a lightning strike than you are from a bee sting allergic reaction so the odds are in your favor.

19. What should you do if you do get stung? – When a bee stings you the stinger has a barb on it like a fish hook. When the bee pulls away it tears a venom sack out of its body and falls dead to the ground. That venom sack has muscles on it which continue to pump venom into you. The quicker you get it out of you the less venom, less pain and swelling you will have. To get a stinger out of your skin you should never grab hold and pull the stinger as this is like pushing on the end of a hypodermic needle and you will get the maximum pain and swelling as all the venom will be pushed into your skin. The best way to get a stinger out is to scrape it out as quickly as possible from the side with your finger nail or something like a credit card. In this way the stinger comes out with the venom sac full of venom and not in your skin. Doing this you may have little to no pain or swelling. Educating those around you may help in the event someone does get stung.

CODE ENFORCEMENT

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 - b. Bees or hives kept in anything other than a removable frame hive.
 - c. Hives that are abandoned or not maintained on a regular basis.

Code enforcement depending on the severity of the infraction will ask that corrective measures be taken to resolve the problem or may determine that bees need to be removed from the property entirely.

By following the Best Management Practices as stated above and using a little common sense the beekeeper will be able to avoid seeing Code Enforcement all together.

BEE GLOSSARY

Apiary – Location where bees are kept

Bee – The common domestic honey bee

Beekeeper – One who manages bee hives

Beekeeping – The keeping and maintaining of an apiary

Honeycomb – Beeswax cells where honey, pollen and brood are stored

Brood – The eggs, larvae and pupa of the honey bee prior to emerging as an adult bee

Bee hive – location where bees live

Frame – A hive component where bees build their honeycomb

Hive – A collection of bees with one queen. This can be anywhere from a few hundred bees to many thousand bees.

Langstroth hive – A type of hive which was designed to be expandable or contractible with frames that can be removed for inspection

Pollination – The process of collecting pollen from one flower and depositing it on another flower.

Removable frame – A frame designed to be removed from a hive for inspection purposes.

Requeen – A process of removing a queen bee and replacing her with a new queen

Robbing – Bees trying to steal honey from a hive that is not their own.

Smoker – A tool used by a beekeeper to produce smoke to calm the bees

Swarm - A group of bees in a transitional state leaving their original hive, clustering and then leaving again to establish a new hive in a new cavity.

Top bar hive – A trapezoidal box with slats of wood which the bees will make comb along. These slats can be pulled out with the comb for inspection.

Bee box, brood box or honey supers – Boxes typically used in a Langstroth hive with removable frames that have no top or bottom which allow the beekeeper to expand or condense the hive depending on the strength of the hive.