



January

The bees stay clustered for warmth and protection in the hive during cold cloudy weather, but they will enthusiastically venture out during warm, sunny days to forage on eucalyptus and other early weeds and wild flowers.

Hive Structure

- Two brood boxes
- Second brood box at least partially full of bees
- Second brood box has 3 - 5 frames filled with honey or sugar syrup but must not be allowed to become honey bound
- Hive has 4+ frames of brood
- If bottom box is nearly empty, bottom box may be moved to the top by the beekeeper to provide space for the bees to move upwards

What the Bees are Doing

- Queen rapidly increases egg-laying rate
- Expanding the brood nest during warm weather
- Raising the first drone brood
- Maintaining a tight cluster during cold days and nights
- Foraging on early nectar and pollen sources between rain events
- Rapidly consuming stored honey

Opposite page: A forager on a willow blossom, an early season forage source.

What the Beekeeper is Doing

- Not disturbing hives while clustered during cold weather
- Feeding pollen supplement if needed
- Monitoring hive weight, and feeding sugar syrup if hives are light on stored honey
- Feeding sugar syrup if hives are stressed from mites or viruses
- Testing for *Nosema* and treating if necessary
- Observing brood for signs of disease, mites, or stress
- Observing emerging brood and hive entrance for deformed-wing bees, which indicate a *Varroa* mite problem
- Inserting empty drone brood frames for first round of drone brood removal
- Equalizing hive strength if bees will be moved to pollinate almonds

Common Problems

- *Varroa* mites cause parasitic mite syndrome
- Starvation
- Condensed water dripping on bee cluster from underside of the lid

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Important Floral Sources Used by Bees During January

Common Name	Latin Name	Importance and Food Source	Pic. (pg)
Acacia	<i>Acacia spp.</i>	Moderate (nectar/pollen)	146
Black Mustard	<i>Brassica nigra</i>	Moderate (pollen)	148
Blue Gum Eucalyptus	<i>Eucalyptus globulus</i>	Major (nectar/pollen)	150
Blueberry (commercial)	<i>Vaccinium spp.</i>	Moderate (nectar/pollen)	150
Buckbrush	<i>Ceanothus cuneatus</i>	Moderate (nectar/pollen)	151
California Pepper Tree	<i>Schinus molle</i>	Major (nectar)	153
Cape Ivy	<i>Delairea odorata</i>	Moderate (nectar/pollen)	154
Citrus	<i>Citrus spp.</i>	Moderate (nectar)	155
Manzanita	<i>Arctostaphylos spp.</i>	Major (nectar/pollen)	163
Ornamental Pear	<i>Pyrus calleryana</i>	Moderate (nectar/pollen)	165

January can be a very exciting month for the beekeeper because the hives begin to respond to increasing day length and greater forage availability. On the central and southern coasts, beekeepers are lucky to be in an area where there is an abundance of nectar- and pollen-producing forage that comes into bloom. Warm sunny weather is the norm in central and southern California, but it rains regularly in the north.

Hives on the central and southern California coasts can be opened

during January during periods of mild weather, but hives in northern California should be left alone for at least another month.

There are two common scenarios for bee hives on the coast in January. The first and much preferred possibility is that the queen will rapidly lay eggs and the hive will double in population, allowing the hive to outgrow damage to the bee population that was done by *Varroa* mites and associated virus infections during the months of October, Novem-

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Above: Hives can sometimes collect surprising amounts of honey during the winter. This hive was being fed syrup, and when manzanita began blooming it filled up with honey and built burr-comb in the space used to feed pollen patties. This hive is now honey bound, and the beekeeper must remove some frames of honey and replace them with empty frames so that there is space for brood rearing in the top box.

ber, and December. Strong hives in some locations can produce surplus honey from manzanita, buckbrush, and blue gum eucalyptus.

The second, and very real, possibility is that the hives will dwindle, be reduced by 50% or more in bee population, and possibly die completely. This represents the end of a slow decline that began last August or September when mite populations were too high, or during late

October or November when there was a rapid influx of mites that was not immediately treated or abated by feeding sugar syrup and pollen supplement to the bees. Of course dwindling cannot be automatically attributed to mites and viruses, and the beekeeper should inspect the hive looking for queenlessness, American foulbrood, starvation, or symptoms of *Nosema*.

It may be impossible to cor-

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rect hives that are dwindling during January, and when to consider a hive as a lost cause can only be determined with experience. However, in many cases, January dwindling can be minimized or reversed. Place division board feeders with thick sugar syrup as close to the cluster in dwindling hives as possible. Alternatively, uncap frames of stored honey with a hive tool and place this directly on the edge of the cluster where bees can access it even during cold weather. Feed dwindling hives small pollen patties placed carefully directly on the top of the cluster near brood. Mark these problematic hives for requeening in the spring.

Observe frames of emerging brood for deformed wing virus infections and adult *Varroa* mites emerging with the bees. If *Varroa* is present and hives were not treated with anything during December, a chemical mite treatment (typically Api-guard) can be applied, noting that dwindling hives should be combined before treating. If *Varroa* are present but hives are strong, do not treat the hives but give them plenty of sugar syrup; they are likely outgrow the *Varroa* infestation, and residual mites can be removed by trapping them in drone brood. Hives smaller than three frames probably need to be combined in order to survive upcoming periods of stormy weather.

Do not allow hives to die of starvation. Hives will eat stored honey rapidly as they build up or try to out-compete *Varroa* mites. Hives should all be at least double-deeps (two brood boxes) at this time of year, with at least 4 to 5 frames full of capped honey in the top box. Hives can be tilted to assess the weight of stored honey without opening the hive (it is hard on the bees to open the lids during cold weather). Any hives that are singles must be carefully monitored and given frames of honey as necessary. Bees can sense when their hives are getting low on honey reserves even before they completely run out, and will stop or greatly slow down the important buildup activity that should be occurring during mid- to late January.

Hives need to be properly ventilated during the winter because they

Below: There should be a large quantity of eggs present in hives as queens increase egg laying rate during winter.



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release moisture when consuming stored honey. Open-screened bottoms and a small screened vent cut on one end of the lid are usually sufficient.

If hives will be moved to pollinate almonds in February, they should be equalized in strength. The beekeeper can move frames of brood and honey from strong hives to bring the weak hives up to pollinating strength. The beekeeper can also switch hive positions in the apiary between weak and strong hives. Move a weak hive to the position of a strong one, and move the strong one to place from which the weak hive was taken. The foraging force of the strong hive will enter the weak one. Equalizing hives during the winter will make management much easier in the spring, since most hives will be at the same stage of development.

The healthiest hives in January will consist of two or more full boxes of bees, brood, and honey. They can rapidly become overcrowded or honey bound and may initiate swarming or become queenless. The beekeeper must provide sufficient empty honeycomb space for the queen to lay. The best way to decrease the size of large hives in January is to remove frames of capped brood and capped honey and distribute them among weaker hives that need some help. Of course, be



Above: Drone comb freshly built between brood boxes with newly laid eggs. Most healthy hives will begin raising drone brood in January.

sure that the capped brood is free of mites, and that hives are free of American foulbrood.

In January, hives in mild areas are ready to increase in hive population and will be capable of raising drones. Drone brood in January is a sign of healthy hives. Check patches of capped drone brood for *Varroa* mites by uncapping developing drone pupae that are at the “purple-eye” stage. In mid to late January, prepare for the winter and springtime drone brood removal method for mite control by placing an empty drone trapping frame into the fourth position in the top (second) brood chamber. Remember to remove the drone brood raised in the frame in three to four weeks. Removing a frame of early drone brood will greatly reduce the mite load of the hive.