



## **Certified Best Practices for Sustainably Sourcing and Managing Orchard Bees**

### **Harvesting/Propagation Guidelines**

#### **Wild-Trapping/Propagating in Native Bee Environments – Public and Private Open Lands**

---

##### **Overview**

Policy driving bee conservation continues to evolve with further understanding of natural and human caused impacts on the environment. The Certified Best Practices (CBPs) by the Orchard Bee Association (OBA) are intended to mitigate the potential impacts of localized bee propagation and harvesting from natural landscapes, working with current knowledge. We provide guidance for the responsible conservation of all species of native bees. As the orchard bee industry evolves and individual producers provide more “lessons learned” from experience, we will update these CBPs.

##### **Permission for private open lands**

Be sure to gain written permission for accessing private open lands (large acreage similar to public lands, i.e., utility company land, large acreage ranches) and establish terms for any fees and/or services. Use common sense and do not trespass.

##### **Permission for public lands**

Various city, county, state, and federal agencies own forested lands suitable for trap-nesting, some with existing appropriate ordinances. If you are interested in gaining access to an area, it is important to determine who owns the land and the relevant regulations regarding it. Then, after determining your ability to comply, approach the appropriate entity for permission. For examples, see <http://www.law.cornell.edu/cfr/text/36/part-251/subpart-B> for laws pertaining to Forest service land and <https://wildlife.ca.gov/Notices/Regulations/SCP> for collecting on lands controlled by California fish and game.

Since policy regarding the taking of bees from public lands is sparse or under consideration, it is possible that there is not yet a functional arrangement for harvesting bees from the area in question. See Appendix 1 for suggestions on creating partnerships with agencies who do not have existing policies. After successfully navigating this process, gain written permission from the proper governmental agency. Also, report those who have not, since that indicates they are not following sustainable practices, negatively impacting, and potentially depopulating the bees, affecting your success.

## **Sustainability**

Relying totally on wild-caught populations on open lands is not a sustainable way to develop large enough populations for the scale of pollination needed in crops such as almond without negatively impacting native species. However, you can trap enough bees for small operations, and wild-caught populations can provide supplemental and seed populations for other propagation methods, some of which are covered in other sections of these guidelines.

To manage populations sustainably without re-releasing (see below), the number of nest hole across the total traps deployed should be kept low to avoid trapping too many bees from a single area. Although bee densities no doubt vary by habitat type, a general protocol of deploying 1,000 nest holes across about 20 acres (80,000 square meters) gives a good bee catch ("return") without major depletion of a local population.

Releasing previously trapped bees back to the same area is a strategy for continuing to build up a local population from which you can trap annually. If approved by the governing agency, the protocol is to clean trapped bees so that they are free of disease and parasites (see the Pest Management section), and then return 10-50% of the bees as a re-released population at the beginning of the next season. By returning bees to their home area, the local population will not be depleted (overharvested) and the site remains productive over many years. It is also then possible to increase the catch by building up the local population. Careful monitoring of the number of filled tunnels each year (fill rate) will reveal whether there is an overall maintenance, increasing, or decrease in nests. If the fill rate increases, only then add additional nest holes for trapping.

For private lands, re-releases are a decision made by the land owner. As such, you will need to work with them (provided you are not the owner) to develop an acceptable plan of work to assure this activity will do no environmental harm (see Appendix 1).

Keeping track of and maintaining the bees in their area of origin retains the bee population's unique gene pool. The (minor) challenge with this approach is to make sure cocoons from one area aren't mixed into another, which can spread diseases and possibly other reproductive issues.

Bycatch (collecting non-target species) occurs sometimes, but the nest material is not optimum for many other species, so it is not likely to impact the populations of many other species. Non-target species that are collected should be cleaned from the trap nesting materials and properly overwintered (similar to the natural environment where collected) and, if allowed by property owner/managers, returned to the same area the next year.

When placing your trap nests in any area, do not alter the land or habitat.

As mentioned previously, selecting an environment with adequate resources such as moist soil and bloom for forage is key to ongoing success. It is best if the environment has plentiful native plants attractive to the target species, rich in pollen and nectar within 300 feet of the nest.

Be sure to harvest all of your nests to prevent nest damage or loss and clean all nests, including those you might re-release the following year to prevent pest buildup. More about removing pests from nests can be found in the Pest Management section.

#### **References:**

**Tepedino, V.J. and Nielson, Dale. 2017.** Bee-Rustling on the Range: Trap-nesting for Pollinators on Public Lands. *Natural Areas Journal* 37(2):265-269.

**Bosch, J., and W. P. Kemp. 2001.** How to manage the blue orchard bee as an orchard pollinator. Handbook Series, Book 5, Sustainable Agriculture Network, National Agricultural Library, Beltsville, MD.

Pollinating Orchards Successfully

ORCHARDBEE.ORG