

The Almond Observer

A publication of the Community Alliance with Family Farmers

Issue #2

CASHING IN ON HABITAT:

Welcoming the Blue Orchard Bee to your Orchard

Everyone knows the old saying that “time is money” but with the cost of bees up to \$135 per hive in 2007, maybe it’s time to consider a new adage: “habitat is insurance.”

The US is home to over 4,000 species of native bees, 1,500 of which live in California. Of those native to California, 51 are already known to provide valuable pollination services to watermelons, sunflowers, and tomatoes.

Prominent University of California researchers and a consortium of non-profits are investigating whether almond growers who plant native plants as bee habitat can cash in on the potential of native bee and fly pollination. While there is no definitive answer yet, the results look promising. Native insects may provide at least a portion of the needed pollination services required by California almond growers.

At least 10 native bees and a number of native flies regularly visit almond trees. One of the most promising, the Blue Orchard Bee, is about 2/3 the size of a honey bee, and has an amazing capacity to pollinate large numbers of blossoms. It takes a hive with 10,000-25,000 honey bees to match the pollination capacity of 250 Blue Orchard Bees.

No one advocates dismissing your current honey bee contracts in favor of relying entirely on native bees, but some local farmers are beginning to think about the benefits of attracting native bees to their orchard in case of honey bee shortages, or as “pollination insurance” in case the hired honey bees refuse to fly because of poor weather.

The Blue Orchard Bees continue to work even during weather which sends their domesticated cousins swarming back to their warm, cozy hives—which can be a real benefit for growers. Further, the Blue Orchard Bee



This Colusa County hedgerow provides food and shelter for native pollinators, and helps reduce dust drift during harvest. Photo: Jack Alderson.

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prefers tree fruit flowers to other available blossoms.

Arbuckle almond grower Drew Scofield knows about the inconsistent “customer service” honey bees provide. “We hire the bees for a block of time. If the weather is poor during that time and the bees do not fly, we still have to pay full price—and our almonds don’t get pollinated.”

Scofield has begun keeping his own hives, and plants a variety of other native and ornamental plants along the margins of his orchards to provide food and

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THE BURNING QUESTION

When Shannon Ausmus of Woodland Tractor warned the crowd at the Colusa Chip Off, “You all might want to back up,” no one dallied. As his tractor-powered brush chipper roared through almond prunings, the chipper’s internal hammers sent small pieces of wood sailing out behind it.

Three different types of brush chippers were demonstrated at the November 19th field day: Echo Bear Cat, Vismo, and Flory. The machines ranged from a hand-fed chipper which created small chips, to a large self-propelled machine that chipped the brush as the machine drove down the orchard middle.

Chipping or shredding orchard brush is common in the San Joaquin Valley, but has not been widely adopted in the Sacramento Valley—mostly due to the current ease of burning orchard brush. Because wood chips provide a multitude of benefits to air and soil quality (and thus almond production), this event focused on regulations which could impact growers’ freedom to burn, the alternatives to burning, and a demonstration of different machines.

The Flory machine wowed the crowd with its size and power, particularly its self-propelling tank-like track system. The tracks put only seven pounds per square inch on the orchard floor, allowing the massive machine to enter the orchard soon after a rain event.

In addition to the ever-popular machine demonstrations, the morning’s activities included talks from local and regional experts on air and soil quality.

With the crowd gathered round—muffins and coffee in hand—TJ Gomez, Colusa County Air Pollution Control Officer, kicked off the day by detailing upcoming changes to Colusa air quality regulations, and financial

incentives available to help with transitions.

As of January 1, 2008, Colusa County growers will have to pay 75 cents per acre to burn brush, though there are no local cost-share opportunities available for chipping or shredding. However, there are other local programs to help growers with the cost of upgrading pumping systems to more environmentally-friendly options.

One local almond grower recently received \$18,000 of the \$20,000 cost to upgrade his pumping system to a less-polluting model. If you would like more information on either of these two initiatives, please contact Gomez directly (530) 458-0583.

Brent Holtz followed Gomez’s talk. Holtz, a University of California Cooperative Extension Farm Advisor in Madera County is one of the State’s experts on the benefits of chipping almond brush, a practice he helped pioneer after decades of growing almonds in

San Joaquin Valley. Holtz and his father were forced to come up with a way to deal with orchard brush which didn’t involve burning.

“We were right on the city limits, so whenever we’d burn our brush, we’d send smoke into a town of two hundred thousand people.” He and his father devised some of the earliest brush chippers.

Holtz has long-since traded farming for helping other almond growers with their operations. Much of his research concentrates on the soil benefits of adding the brush back to the orchard floor. In the San Joaquin Valley, the soil averages less than 1% organic matter. Chipped or shredded brush not only increases the organic matter thus improving water infiltration, it provides a source of nitrogen.



The Martinez Ranches’ Flory machines wowed the crowd with its agility and size. Photo: Marica Gibbs.

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Holtz recommends leaving the chips or shreds on the orchard floor, but acknowledges that some growers use the chips or wood shreds on their dirt roads to reduce dust.

Chipping or shredding rather than burning also benefits water quality. Because the wood chips and other organic matter help bind chemicals on the orchard floor, those who chip or shred orchard brush have cleaner run off.

If growers already disk their orchard, Holtz recommends timing the disking to coincide with chipping so the

material gets well-incorporated into the soil. He emphasized that diseased wood should be burned and not re-introduced to the orchard.

Though growers are still allowed to burn brush in the Sacramento Valley, local growers worry they will not be able to for many years longer. As Carol Rush, USDA, Quincy, warned, “Like it or not, California is growing and we have to address these Valley air conditions.”

See list at right if you would like more information about local chipping or shredding machines. 

Local chipping and shredding machine operators:

DIANNA SHREDALL

Ruben Reynoso, Jr. (Colusa):
(530) 682-9299

REARS

Jim Goddard (Chico):
(530) 521-5115

VRISMO CHIPPER

Shannon Ausmus (Woodland):
(530) 666-1944

FLORY

Joe Martinez (Winters):
(530) 795-2957

ECHOBEAR CAT

Mike Allensworth (S. Oregon):
(916) 645-6600

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shelter for resident native insects which live on his property throughout the year.

Local interest in providing habitat for native insects seems to be growing. Scofield and over 20 other almond growers, land managers, and researchers attended an October 25th workshop in Williams, CA on attracting native insects to almond orchards and other crops. (Presentation given by Mace Vaughn, Conservation Director of the Xerces Society).

Vaughn described a major problem native bees have establishing themselves in Sacramento Valley almond orchards: as growers pulled out resident vegetation and replaced it with almonds, they inadvertently took away plants which bloom at different times throughout the year, thus eliminating year-round food sources.

Bees are rational creatures—they want to live and eat in close proximity. Just as humans design their homes

to have the kitchen and bedrooms within the same building, bees look for a place where they find both food and shelter near one another. Many native bees cannot find enough food in Colusa County outside the time of almond bloom.

While researchers continue to uncover the best ways almond growers can maximize native bee pollination in almond orchards, there are a number of steps individuals can take to maximize the presence of these free, effective pollinators (see insert).

In the aftermath of colony collapse disorder, Vaughn urges growers to protect both native and managed bees by sourcing pollination services as locally as possible—and no further than the Rocky Mountains. “When we move our bees around for crop pollination, it’s a great way to spread disease.” 



About 1/3 of the 4,000 species of native bees found in North America are tunnel nesting bees - they can often be found nesting in dead tree branches, shown at right. Photo: Katharina Ullman



COMMUNITY ALLIANCE
WITH FAMILY FARMERS

PO Box 363

Davis, CA 95617

COME TO A FREE LUNCH, AND LEARN HOW TO GET FREE PCA SERVICES FOR 2008!

If you are interested in using environmentally sensitive practices on your almond orchard during the 2008 season, please come to an informative meeting on January 9, 2008. The meeting will be at 11AM in the Granzella's Banquet Room, Williams, CA.

We are currently recruiting growers who are willing to implement proven, effective almond growing practices that rely on reduced-risk inputs which emphasize improving local water quality.

Program participants will receive free to low-cost:
PCA services during 2008
Reduced-risk chemicals
Cover crop seeds
Technical advice



Please call Libby Earthman for more information: (530) 756-8518 x12

Did you know?

The Colusa Resource Conservation District has a no-till drill available for rent. Contact Jennifer Masters for details: 530-458-2931 x117

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Insert:

* Welcoming native pollinators
* UC Integrated Pest Management Schedule for fall/ winter.