



Issue 131 - Version 3

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# MAY 2020

## MISSOURI STATE BEEKEEPERS ASSOCIATION

# THE BROOD

## The 2020 Spring Conference That Almost Wasn't.



*Getting setup before the conference starts at Grace United Methodist Church. Clayton Lee, Bruce Snavelly, Kyle Day, Jeania Schmalhorst and Beverly Frieze. Clayton Lee and Hannah Gebhardt calling out a door prize.*

March seems so long ago. It was the beginning of sporting events being canceled and college campuses closing down due to the COVID-19 pandemic spreading throughout the world. The 2020 Spring Conference, that was scheduled to be held at a college in Longview, MO, was

in jeopardy of being canceled the night before it was to be held. With some phone calls to local friends of Bruce Snavelly and emailing members and registered conference attendees, we were able to hold the conference, with a few minor adjustments to locations.

## Letter from our President - Cory Stevens



So far it has been quite an interesting spring here in Missouri. We were still able to have our Spring conference, after narrowly averting a shut down. The university hosting our conference decided to shut down the evening before our conference due to the evolving COVID situation. Bruce Snively connected with friends he had met in seminary and explained our seemingly hopeless situation. His contacts relayed our situation to a local church network. By the grace of God working through two local Methodist churches, we were able to have the conference. Grace United Methodist Church, and Wood's Chapel United Methodist Church in Lee's Summit deserve some serious recognition. They willingly let us invade their churches for our conference, and to serve a lot of people lunch. We are grateful for them being completely open to helping us out in a time of need. Despite the last minute relocation, the conference turned out great. I enjoyed Tammy Potter's honest approach to beekeeping and the information she presented. It was interesting to hear the trials and tribulations they had overcome with the Kentucky Certified Honey, and her practical approaches to managing bees. Grant Gillard did a phenomenal job with his presentations. His manner of delivering wise perspectives on beekeeping wrapped in humor never disappoint. Grant gave several excellent talks. As an accomplished author, he is an inspiration to me to get off my can and write some of my experiences down. Jerry Brown's presentation on honey adulteration was also eye opening. That is something we will undoubtedly hear about for a while in our industry with all the cases of laundering Chinese honey, and adulteration to lower the cost. His study on HMF levels in honey in relation to age and heat applied was quite interesting as well, since we all want to keep our honey in as pristine shape as possible. Our vendors deserve a hand as well. They had

to jump through a lot of fiery hoops with the university not allowing them in early to set up, and then canceling the venue. Luckily the end result was more room, and good vendor presentation as you enter the conference. I'm so glad they stuck with us, and offered great beekeeping equipment and supplies. If you missed the evening banquet, you will have to make a point to catch the next one. The food was great and the company greater. Bernie Andrews made the auction a complete success. Hannah did a phenomenal job showcasing items, and Kyle was superb at heckling people to buy stuff. It was really fun and we had a lot of laughs. The fun didn't stop at the auction though. We had open mic night and took turns sharing funny beekeeping stories. There were several tales that probably should be added to a beekeeping bloopers book. The banquet was a success.

Looking forward through our current situation, we decided to go ahead and cancel the MSBA field day. With it being in the first part of May, we knew it wasn't looking good with tightening distancing recommendations. The Fall conference is far enough out that we should be good. After being cooped up for so long, this will be just what is needed. We are very excited to announce that Dr Samuel Ramsey will be our keynote speaker! He is the one that discovered varroa mites feed on bees fat bodies rather than exclusively hemolymph, as previously thought. He has also been doing research on the tropilaelaps mite, and I'm sure we'll be able to hear the latest and greatest news on that front. Stay tuned as we work through this, and keep you and your family safe. I hope you have a great and productive spring with your bees.

## MSBA Membership

Membership dues are \$10 per individual. To sign up, or to renew a membership, go to the MSBA website at [www.mostatebeekeepers.org](http://www.mostatebeekeepers.org) by utilizing PayPal or you can mail a check with your first and last names, address, telephone number, and email address. We gladly accept batch memberships if given the information on a typewritten list and either a check from the local club's treasurer or secretary. Notices for

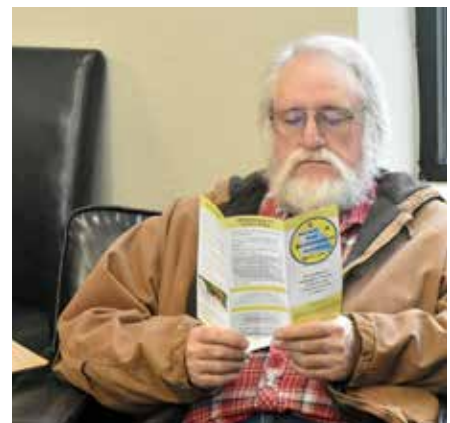
renewal are sent out the month preceding your membership expiration.

Thank you for supporting MSBA!

**Wanda Johnston**  
**MSBA Membership**  
**401 NW Hedy Avenue**  
**Ferrelview, MO 64163**  
**email: [bees@kc.rr.com](mailto:bees@kc.rr.com)**



## Candid Shots





## Presenters



Tammy Horn Potter,  
Kentucky State  
Apiarist & Author



Grant Gillard, MO  
Beekeeper & Author



Dr. Michael Brown,  
OD



Gregg Hitchings,  
MO Beekeeper



Jerry Brown, former  
Exec Director  
American Honey  
Producers Assoc.

## Auction





## Story Tellers



## Honey Tasting





## The Sweetest Job of all...A Honey Judge

- Cathy Misko, MSBA Honey Judge, [cathymisko@earthlink.net](mailto:cathymisko@earthlink.net)



It was a treat to serve as the MSBA 2020 Spring Conference Honey Judge for their 1st "Show-Me the Gold"- Black Jar Honey Taste Contest! Why, no one had to even "twist" this honey connoisseur's arm"! The honey jars were not really "black jars" but the containers were not to be part of the contest. Honestly, it would have been an insult to hide the precious honey in a black jar therefore preventing the beautiful liquid gold from mesmerize the beholder! Honey was judged on "taste only". It is true that taste is unique to each individual! Adults are known to have between 2,000 - 4,000 taste buds located on the tongue, throat, on your epiglottis, nose and sinuses, and esophagus; all of which are constantly being renewed. Taste along with "smell" allows for our interpretation of "flavor". Flavor is as unique as each individual that is tasting. "Taste is on the tongue of the taster"!

To add an educational component to the tasting contest, notes were jotted down on the back of each score card. Honey clarity was observed via a polariscope for evidence of crystals, debris, bubbles, and or imperfections on the container. (None of the honey submitted were observed with debris.) Lids were removed and honey aroma was breathed in like fresh air! Notes were taken on appearance of foam floating on the honey. Filling level was checked for honey should be filled to the top of the lower ring on neck so air is not noted when the lid is secured. Aroma was breathed in again as a sample was taken and checked for density/moisture via a refractometer. After my palate was cleansed with water, a long tooth pick was used to taste the honey...patience and calmness is needed to savor the bouquet and enjoy the moment! If uncertain of taste, there was no hesitation to taste and smell aroma again. Tallies were given next to the flavor ...stars were

given when the flavor or aroma appeared quite strong and distinctive. After scores were counted and compared, any entries with ties or mild scores...were retested with joy until decisions were finalized!

### Show-Me the Gold - Black Jar Honey Taste Contest Honey Taste Categories and Known Nectar Sources:

- \* Aromatic - Aster/Horsemint/Rosemary
- \* Buttery - Sourwood/Snowberry
- \* Citrus - Saw Palmetto/
- \* Fruity - Alfalfa Black Locust/Wildflower/  
Milkweed/Fruits/Berries
- \* Delicately Light - Clover
- \* Nutty - Chestnut/Iron bark
- \* Spicy - Alfalfa/Horsemint/Linden/Milkweed/  
Sourwood/Star Thistle
- \* Sweetness-Black Locust
- \* Tangy - Dandelion/Wildflower/Black Locust/  
Knapweed/Milkweed
- \* Wholesome/ Full-Bodied - Aster/Buckwheat/  
Pine/Honey dew/Boneset/Huckleberry
- \* Can't Quite Place my finger on it!
- \* #1 Taster's Choice Award

Of all the awards...I would say the most coveted would be the #1 Taster's Choice Award!

### Congratulations to the 2020 "Show-Me the Gold"- Black Jar Honey Taste Awards

Buttery Award: **Ron Russell**

Fruity Award: **Stormie Burr**

Nutty Award: **Erin Mullins**

Spicy Award: **Jeania Schmalhorst**

Sweetness Award: **Bruce Snavelly**

Tangy Award: **Teresa Campbell**

Wholesome/ Full-Bodied Award: **Mark Burr**

#1 Taster's Choice Award: **Ron Russell**





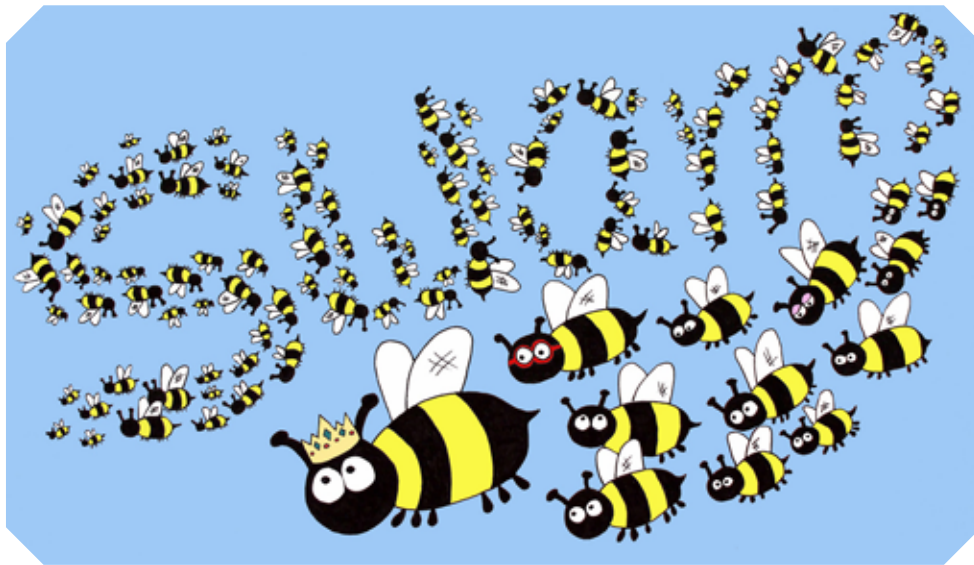


*Submitted by  
Tim Young*

The 2020 Spring has been a very busy season for swarms. Photos were submitted through the MSBA's Facebook Group and can be seen on the next few pages with beekeeper name and locations.



*Submitted by  
Travis Hardesty,  
Hardesty Apiary,  
Eldon, MO*



*Submitted by  
Trevor Angle Lathrop,  
Clinton County, MO*



*Submitted by Grant Gillard,  
Cape Girardeau, MO at Lowes*



*Submitted by  
A&W Honeybee Farm,  
Shelby County, MO*





*Submitted by Dan Dorey  
Northern Stone County, MO*



*Submitted by  
Mark Brandt, Jr.  
Saline County, MO*



*Submitted by  
Jeremy Bradshaw  
Butler County, MO*



*Submitted by  
Mike Coffman  
Laclede County, MO*







*Submitted by Carter Fawkes,  
photo by Monte Holder  
Saline County, MO*



*Submitted by Dan West  
Macon County, MO*



*Submitted by Jeff Lorenz  
Cooper County, MO*



*Submitted by Lisa Apel  
Randolph County, MO (May 2019)*



*Submitted by Curt Draper  
Washington County, MO*



*Submitted by Cory Stevens  
Stoddard County, MO*



*Submitted by Larry Thomas  
Jefferson County, MO*





*Submitted by Amy Griffin  
Saline County, MO*



*Submitted by Wayland Stacy  
Bollinger County, MO*



*Submitted by  
Raymond Connolly, Jr.*



*Submitted by Brenda Fisher  
Polachek, St Joseph, MO*



*Submitted by  
Jeania Schmalhorst  
Laclede County, MO*



*Submitted by Larry Olson  
Jasper County, MO*



*Submitted by  
Nicholas Rozier*



*Submitted by  
Jeania Schmalhorst  
Webster County, MO*



# Bah Humbug to so-called murder hornets

University of Missouri Extension

Published: Wednesday, May 6, 2020

Writer: Linda Geist

**COLUMBIA, Mo.** – Missourians need not worry about insects dubbed “murder hornets” in social media, says University of Missouri Extension entomologist Kevin Rice.



Asian giant hornet (*Vespa mandarinia*).

Photo by Yasunori Koide / CC BY-SA.

He hopes to put a halt to hysteria about the Asian giant hornet.

“The name circulating on social media is misleading,” Rice says. “Scientists do not use the term

murderous to describe this interesting insect. These headlines sound like something from a Stephen King story and instill unnecessary fear.”

“The Asian giant hornet is not typically aggressive and only attacks people when its nest is threatened,” says MU Extension horticulturist Tamra Reall.

In Japan, fewer than 50 people per year die from the hornet’s potent venom. To put this in perspective, more than 200 people die in the U.S. each year from vehicle accidents involving deer, Reall says.

The hornet is not present in the Midwest now. “It is also extremely unlikely it will ever move here,” says Rice, with emphasis on “extremely.” In 2019, entomologists found and eradicated one nest in Vancouver, Canada. One dead wasp was found in the state of Washington.

The hornet prefers mountains and lowlands. It dislikes plains, especially areas where humans live. A native of eastern Asia and Japan, the hornet can adapt to new environments, but Rice still says it presents “minimal, if any” danger to humans in the United States.

Measuring about 2 inches long, the Asian giant hornet is the world’s largest hornet. It is about three or four times larger than other wasps in the United States. Reall and Rice are concerned that people worried about “murder hornets” will spray native wasps and hornets that pollinate plants and provide important biological controls for agriculture.

The real danger of Asian giant hornets is to bees. The hornets can kill entire hives.

Asian honeybees have found two ways to fight back. In a technique called “heat balling,” bees surround the hornet, flap their wings rapidly and generate heat that kills it. Some honeybees make a paste of flowers and smear it around their hives. The floral pheromones deter the hornets from entering. However, honeybees in North America are unlikely to express these behavioral defenses.



*Sphecus sp.*  
cicada killer



*Spheg ichneumoneus*  
great golden digger wasp



*Vespa crabro*  
European hornet  
(does not occur in WA)



*Cimbex americana*  
elm sawfly



*Vespa mandarinia*  
Asian giant hornet



*Vespa pensylvanica*  
western yellowjacket



*Polistes dominula*  
European paper wasp



*Apis mellifera*  
western honey bee



*Dolichovespula maculata*  
bald-faced hornet



*Tremex columba*  
pigeon tremex



*Bombus flavifrons*  
yellow head bumble bee

Comparison chart of bees, wasps and hornets.  
Washington State Department of Agriculture.



# Vespa Mandarinina a.k.a. Asian Giant Hornet

*Vespa mandarinia* Smith, 1852

- Asian giant hornet
- Japanese hornet
- yak-killer hornet
- giant sparrow bee



One of ~23 species of "true" hornet, genus *Vespa*

Paleartic - only *Vespa* known from NA before is *V. crabro*, established in the east

Eusocial – cooperative broodcare and nesting

Haplo-diploid: females have 2 sets chromosomes, males only 1

- Native range is Asia, most observations in Japan and Korea
- Generally subtropic to warm or moderate temperate zones
- In 1977 *V. mandarinia* was limited to southern/central Hokkaido
- by 2016 colonies were common ~80 miles/128 km north
- Four wasp sightings in the Pacific Northwest in 2019
- One nest located and destroyed in Nanaimo, BC
- Possible bee kill in Custer, WA
- Report of attacks at hives in Bellingham, WA



www.cbc.ca

## Nesting Habits

- Usually underground nests in hollows formed by rotting pine roots, hollow trunks, and rodent burrows (Matsuura & Sakagami 1973)
- **Very rarely** recorded above ground in hollow trees (Yamane & Makino 1977) and human structures (Matsuura & Koike 2002)
- Nests can be more than 2 feet/61 cm wide and contain hundreds of adult hornets
- Prefer forested habitats



Photo: Kim, Hyun-tae



Photo: still from Bugs the film

## Foraging Habits

- Emerged queens feed on carbohydrates, mostly sap
- Workers acquire protein from insects, feed to larvae
- Attack scarab and longhorn beetles, other large insects, and honey bees
- Workers forage nearly 5 miles/8 km from their nests (average 1 mile/ 2km)



Photo: unknown



Photo: T. McFall

- Honey bee attacks have three distinct stages
  - Hunting phase: Individual hornets catch bees, form a "meat ball" from the bee thorax, and return it to their nest
  - Slaughter phase: One hive is the focus. Hornets capture adult bees, kill them, and dump the bodies. Hornets will vigorously defend attacked hives during this phase.
  - Occupation phase: Hornets wander the hive at will, select pupae and larvae, and return them to their own nest for food

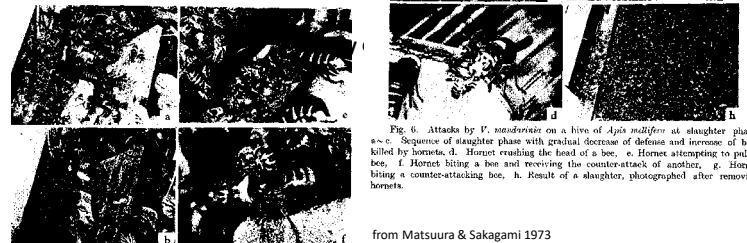


Fig. 6. Attacks by *V. mandarinia* on a hive of *Apis mellifera* at slaughter phase. a-f. Sequence of slaughter phase with gradual decrease of defense and increase of bees killed by hornets. a. Hornet crushing the head of a bee. b. Hornet attempting to pull a bee. c. Hornet biting a bee and receiving the counter-attack of another. d. Hornet biting a counter-attacking bee. e. Result of a slaughter, photographed after removing hornets.

from Matsuura & Sakagami 1973

## Human Health

- Venom impacts are similar to other Hymenoptera - but can be a little worse
  - Localized tissue necrosis and massive pain are the most likely outcomes of a sting
- Anaphylactic shock is always a risk from stinging Hymenoptera
- *V. mandarinia* delivers large doses, but typically sting only when handled, defending the nest, or defending a hive they are attacking
- Mass attacks are very rare, but in extreme cases can cripple or even kill victims
- Treat stings with cold to slow venom spread, and seek medical attention if you are stung multiple times or have signs of an allergic reaction

## What will we do?

- Washington State and British Columbia are exploring response options
- Washington State will conduct various types of trapping this spring
- Our shared hope is to work with stakeholders in both countries and eradicate this species

You can also follow our hornet activities on facebook:

[www.facebook.com/groups/hornets](https://www.facebook.com/groups/hornets)



## It's Time for the 2020 MSBA Awards Nominations!

- Kyle Day, *MSBA Interim Secretary*, [kyle.day.1999@gmail.com](mailto:kyle.day.1999@gmail.com)



Every year the MSBA Awards Nominations committee sends out the request for nominations of MSBA members for the following awards. Beekeeper of the Year, Junior Beekeeper of the Year, Mentor of the Year, and Lifetime Achievement Award. We need your help by finding top notch beekeepers from across Missouri whose volunteerism benefits Missouri Beekeepers and promotes beekeeping to the public. Nominate beekeepers on our website. <https://mostatebeekeepers.org/award-nomination/> then click on each nomination category to fill out the on-line form.

Nominations must identify the MSBA member or association making the nomination, the person being nominated and provide adequate information to demonstrate that the nominee meets the award criteria listed. It is recommended that the description of qualifications be sufficiently extensive to permit an informed comparison against other nominees for the award. Winners will be announced, and the awards presented during the MSBA Fall Conference in October, location (TBD) will be in Warrensburg.

The MSBA Executive Committee will also consider other possible awards this year, such as the MSBA Volunteer of the Year and State Fair Volunteer of the Year. Decisions are made by the Awards Committee and awards will be presented at the Fall Conference.

We ask that you communicate this information to your local clubs and submit nominations. Nominations can be submitted at <https://mostatebeekeepers.org/award-nomination/>.

**Nominations deadline is September 1st.**

If you have any questions feel free to contact Kyle Day at [kyle.day.1999@gmail.com](mailto:kyle.day.1999@gmail.com) or (816) 654-5287.

### Beekeeper of the Year

- Did the most to promote the art of beekeeping
- Promoted membership in MSBA
- Promoted the MSBA
- Publicized beekeeping and introduced the art of beekeeping to prospective future beekeepers.

### Junior Beekeeper of the Year

- 18 years of age or younger
- Enthusiastic Beekeeper
- Promotes beekeeping
- Has been a beekeeper for at least 1 year (second year beekeeper)
- Good peer-group role model

### Mentor of the Year

- Actively promoted beekeeping by teaching and guiding new beekeepers in the art of beekeeping
- Is an active MSBA member in good standing
- Nominated by a local association or MSBA member
- Not an MSBA Executive Committee member

### Lifetime Achievement Award

- Active MSBA member who has given many years of service in promoting the art of beekeeping, promoting the MSBA, mentoring beginning beekeepers, assisting other beekeepers, and actively volunteering in support of MSBA activities.
- Nominated by Executive Committee, a local association or an MSBA member.



# Beekeeping in the Time of COVID-19

- Charlotte Ekker Wiggins, *MSBA Partnership Liaison*,  
*msbacharlotte@gmail.com*



There are beekeeping lessons we can all apply to the current coronavirus pandemic according to Dr. Marla Spivak, University of Minnesota Bee Lab. During an online Zoom session April 14, 2020 Dr. Spivak said beekeepers should have a better understanding of the current guidance to slow down and prevent the spread of COVID 19. She addressed more than 90 online conference attendees from around the country sponsored by the Nebraska Beekeeping Association.

Dense populations become disease hot spots. Just as highly populated honey bee colonies can be breeding grounds for varroa mite-vector diseases, the same applies to having a lot of people in a small area. Social and physical distancing a minimum of 6 feet is similar to the recommended best hive distance placement, which is their flight distance or 2 miles apart. Although this distance is not realistic, the concept of keeping bees farther apart is. Monitoring and managing mites helps prevent mites from transmitting diseases to neighboring honey bee colonies.

Take personal action that protects more vulnerable populations. Just as COVID 19 is thought to have

originated in other animal species then jumped over to humans, honey bee viruses can spill over to other pollinator species. Keeping our honey bees healthy can prevent spillover to vulnerable wild bee populations such as bumble bees.

Community health care measures are key to managing disease outbreaks. We are being asked to practice social and physical distancing not only for ourselves but on behalf of our communities. We can look to our honey bees for inspiration. Each bee not only has an individual immune system but also uses "social healthcare" to keep themselves healthy. Bees collect tree resin and make an antimicrobial, antibacterial "propolis envelope" around the colony. They also prioritize the health of the colony above the health of individual bees. Colonies practicing these measures are more successful fighting off diseases.

*Dr. Marla Spivak, University of Minnesota Bee Lab, addressing more than 90 beekeepers online April 14, 2020 in a lecture sponsored by Nebraska Beekeeping Association. (Photo by Charlotte Ekker Wiggins)*



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## Missouri State Fair August 13-23, 2020

- Erin Mullins, MSBA State Fair Coordinator, [emullins93@gmail.com](mailto:emullins93@gmail.com)



Hello everyone, this year has sure been one I know none of us could have ever expected. So many things are being canceled and we still have so many questions about what will happen next. As of May 13, 2020, we were notified that the Missouri State fair is still going to happen. We keep getting updates that seem encouraging, but I know a lot could



happen and change in the next 4 months. They have said that they will make a final decision the early to mid-part of June.

I get approached at events or get emails from people asking what all volunteering at the Missouri State Fair entails. So I thought I would take a moment to let you know so that you have some time to decide whether volunteering is for you! First off this year's state fair is August 13th-23rd in Sedalia, Missouri. We offer 2 shifts 10:30 am-2:30 pm and 2:30 PM- 6:30 PM. You can work 1 shift or work the entire day. It's all up to what your schedule allows. You can also work multiple days if we have the spots to fill. We have some clubs who pick a day to staff the booth with their club members. If that's something your club would like to do we can work together on picking which day.

Often I hear that people are afraid to come volunteer because they don't think they are knowledgeable enough to answer questions or don't think there will be a job for them. I'm here to say we have a job for everyone. If you're comfortable answering questions you can sit at the

observation hive or stand at the honey display where many of the questions arise. If you are comfortable taking money you can sit at the cash box. If you don't like talking to people we always need people to pass ice cream or restock the tables. If someone has a question you don't know the answer to, there will always be another beekeeper around to help.

Working at the fair is such a fun experience and a great opportunity to share genuine information with the public. We are a popular booth with people of all ages who love our honey ice cream and seeing live bees in the observation hive. It's also a great opportunity to network with other beekeepers. I always learn so much just through conversations I have with other volunteers.

The state fair is also a great place to show off your honey and products from the hive in the competition. This is run by the Missouri State Fair and is open for anyone who lives in Missouri. They have several categories including extracted honey, cut comb, beeswax candles, observation hive and more. For more information on how to enter and to view categories and rules please go to: <http://www.mostatefair.com/how-to-enter-premium-guide/>

If you have more questions or want to sign up to volunteer, you can email me at [emullins93@gmail.com](mailto:emullins93@gmail.com). I hope to see you at the fair this year!!





# Scoring More Bee Food

- Charlotte Ekker Wiggins, *MSBA Partnership Liaison*,  
*msbacharlotte@gmail.com*



Missouri's solar site score card is final and posted to the Missouri Master Pollinator Steward website. Missouri now joins 8 other states with pollinator-friendly solar scorecards. This evaluation and planning tool has been created to assist in the establishment and management of habitat beneficial to Missouri native pollinators at solar energy systems. Score card users check the boxes and add up points to determine whether their habitat planting plans add to pollinator habitat:

<https://extensiondata.missouri.edu/Pro/MasterPollinatorSteward/Docs/pollinator-habitat-planning-tool-solar-sites.pdf>

According to the law, "An owner of a solar site implementing site management practices specified in the bill may claim that the site is pollinator friendly or provides benefits to pollinators if the site and its vegetation management plan adhere to the criteria set out in the scorecard. An owner making a claim that it is pollinator-friendly or provides benefits to pollinators must make available to the public and provide to the University of Missouri extension service and a nonprofit solar industry trade association a copy of its completed score."

The score card was developed by University of Missouri's Robert A. Pierce, II, Associate Extension Professor

and Wildlife Specialist; James Quinn and Tamra Reall, MU Extension Field Specialists in Horticulture. This planning tool has been reviewed by the Missouri Master Pollinator Steward Steering Committee and Missourians for Monarchs Collaborative.

The Collaborative represents more than 100 state and federal agencies, including Missouri State Beekeepers Association (MSBA), working together to develop more Missouri pollinator habitat. The goal is to add 385,000 acres within the next 15 years.

The solar site score card is the latest step to help increase pollinator habitat, which is one of three goals set in the 2016 science-based US Pollinator Research Action Plan:

Reducing annual honey bee losses to less than 15 percent over the next 10 years;

Increasing monarch populations to at least 225 million at wintering grounds in Mexico by 2020 and restoring or enhancing 7 million acres of pollinator habitat across the country via public-private landholder relationships.

In Missouri, more than 90% of the land is privately-owned so landowners play an important part in providing more pollinator habitat.

## The Missouri Pollinator Habitat Planning Tool for Solar Sites

This evaluation and planning tool has been created to assist in the establishment and management of vegetation at solar installations in Missouri for enhanced habitat beneficial to native pollinators. Check the boxes and add up the points to determine whether the plan meets or exceeds the minimum requirements. For more information on pollinators and habitat refer to: <https://extension2.missouri.edu/programs/master-pollinator-steward>

| PROJECT DETAILS             | TOTAL SCORE (from page 2):                    |
|-----------------------------|---|
| Solar developer: _____      | The site provides exceptional habitat 90+ pts |
| Project location: _____     | Meets pollinator standards 76 - 89 pts        |
| Project size (acres): _____ | Does not meet standards 75 pts or less        |
| Date of evaluation: _____   |   |

| SITE SCORES   | Points possible | Points awarded |
|---|-----------------|----------------|
| <b>1. SITE PLANNING AND MANAGEMENT</b> (Check all that apply)   |                 |                |
| A plant establishment and management plan has been developed. Plants selected should be short enough to not cast a shadow on solar panels   | + 5             |                |
| A site plan has been developed in consultation with natural resource professionals  | + 3             |                |
| Mowing regimes are limited, only mowing 1/3 of site each year during the dormant season to prevent damage to blossoms and provide refugia for bees and other pollinators during the winter    | + 10            |                |
| Mowing occurs on more than 1/3 of site each year  | - 1             |                |
| Mowing is conducted frequently and/or during the summer (not during dormancy)   | - 1             |                |
| Signage is developed promoting the area to be pollinator friendly habitat   | + 3             |                |
| <b>2. HABITAT PREPARATION PRIOR TO PLANTING</b> (Check all that apply)  |                 |                |
| Measures were taken to control existing vegetation prior to seeding such as herbicide treatments and multiple tillage operations according to the plan developed by the resource professional | + 7             |                |
| Conservation plan created for existing native flowering plants  | + 3             |                |
| A soil test was performed and required amendments were applied  | + 3             |                |
| No practices were implemented to control existing vegetation  | - 20            |                |
| <b>3. INSECTICIDE RISK</b> (Check all that apply)   |                 |                |
| Plan to use insecticide and/or pre-planting seed treatment (excluding building/electrical boxes, etc.)  | - 40            |                |
| Communication with local chemical applicators and site registered on <a href="https://mo.driftrwatch.org/">https://mo.driftrwatch.org/</a>  | + 20            |                |

|  |      |
|--|------|
| <b>4. AVAILABLE HABITAT COMPONENTS WITHIN 0.25 MILES</b> (Check all that apply)  |      |
| Native warm-season grasses for bee nesting   | + 1  |
| Open sandy soil areas for bee nesting  | + 1  |
| Trees/shrubs for bee nesting   | + 1  |
| Water sources available throughout the year  | + 1  |
| <b>5. FLOWERING PLANT SPECIES SEEDS IN PERIMETER AREA</b> (native, not introduced; species with more than 1% cover) (Check one)  |      |
| 5 - 10 species   | + 1  |
| 10 - 15 species  | + 3  |
| 16 - 20 species  | + 8  |
| > 20 species   | + 10 |
| Exclude invasive plant species from total  |      |
| <b>6. PLANT DIVERSITY UNDER SOLAR ARRAY</b> (Check one)  |      |
| Grass monoculture  | + 1  |
| Clover/grass mix   | + 5  |
| Native wildflower mix  | + 10 |
| <b>7. PERCENT OF SITE PLANNED TO BE DOMINATED BY WILDFLOWERS</b> (Check one)   |      |
| 0 - 25 %   | + 1  |
| 26 - 50 %  | + 3  |
| 51 - 75 %  | + 8  |
| More than 75 %   | + 10 |
| Projects may have different species mixes under the solar panels and around the perimeter.   |      |
| <b>8. SEEDS USED FOR WILDFLOWER AREAS</b>  |      |
| Seed mixes follow USDA NRCS standards for native pollinator mixes which includes number of species blooming during various seasons, standards for sourcing seeds, seeds/square foot and standards for eligible species | + 10 |
| <b>9. SEASONS WITH AT LEAST THREE BLOOMING FORB SPECIES PRESENT</b> (Check all that apply)   |      |
| Spring (April - May)   | + 5  |
| Summer (June - August)   | + 5  |
| Fall (September - October)   | + 5  |
| <b>Total points:</b>   |      |

<sup>1</sup> Contact the MU Extension Center located in the county where the site is located for information on collecting soil samples for testing.  
<sup>2</sup> Measurements of percent cover should be based on the percent of the ground surface covered by foliage as viewed from above.  
<sup>3</sup> For seeding within the panel array, utilize a native wildflower mix that is short in stature or clovers and other non-native species beneficial to pollinators. If clovers are used, these should be established in locations separate from the native wildflowers in the perimeter locations.  
<sup>4</sup> Wildflowers in Section 7 refer to native forbs which are flowering plants that are not woody and are not grasses, sedges, etc.

## More information on establishing pollinator habitat in Missouri

Backyard habitat for monarchs: <https://msc.mo.gov/wildlife/attracting-wildlife/backyard-habitat-monarch-butterflies>

Establishing Great Pollinator Habitats: [https://youtu.be/7\\_4VlO9seE](https://youtu.be/7_4VlO9seE)

Farmers for Monarchs: <https://farmersformonarchs.org/>

Missourians for Monarchs: <https://moformonarchs.org/>

Missouri Grow Native Resource Guide (for native wildflower and forb suppliers and additional management recommendations): <https://www.mogrownative.org/GrowNative/Resource-Guide/Resource-Guide.aspx>

Missouri Master Pollinator Steward Program: <https://extension2.missouri.edu/programs/master-pollinator-steward>

Native Forb Information Sheet for Missouri, USDA NRCS, MDC, MU Extension, Quail Forever: [https://efotsa.sc.epov.usda.gov/references/public/MO/Native\\_Forb\\_Information\\_Sheet\\_12\\_6\\_17.pdf](https://efotsa.sc.epov.usda.gov/references/public/MO/Native_Forb_Information_Sheet_12_6_17.pdf)

Native Pollinator Job Sheet, USDA NRCS, Missouri Department of Conservation and MU Extension School of Natural Resources: [https://prod.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs144a2\\_010606.pdf](https://prod.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144a2_010606.pdf)

Plant Resources for Midwest Farmers and Landowners, Missouri Grow Native: <https://www.mogrownative.org/GrowNative/Resource-Guide/Resource-Guide.aspx?key=4141577-P95e-4e54-8c03-b443984573d2>

Pollinator Conservation, Xerxes Society: <https://xerxes.org/pollinator-conservation>

Developed for Missouri by: Robert A. Pierce, II, Associate Extension Professor and Wildlife Specialist; James Quinn and Tamra Reall, MU Extension Field Specialists in Horticulture

This planning tool has been reviewed by the Missouri Master Pollinator Steward Advisory Committee

Portions of this planning tool have been adapted from the "Michigan Pollinator Habitat Planning Scorecard for Solar Sites", developed by the Michigan State Department of Entomology: <https://pollinators.msu.edu/>





## More Learning Opportunities with Great Plains Master Beekeeping Program

- Gregg Hitchings, MO Task Force GPMB Program, [gregghitchings@gmail.com](mailto:gregghitchings@gmail.com)



Just like virtually all other organizations across the country, Great Plains Master Beekeeping (GPMB) program has seen its activities impacted significantly during this period of restrictions due to covid concerns. In order to provide extra opportunities and support to beekeepers through the summer, GPMB encourages its registered members to participate in live, virtual chats once a week through

the summer. Entomologists Randall Cass, Iowa State University Pollinator Working Group, and Dr. Judy Wu Smart, University of Nebraska Nebraska-Lincoln Bee Lab, will be hosting "Hap-Bee Hour" every Friday from 5-6 pm CST.



This is a great opportunity for beekeepers to share their ideas and seek answers from experienced beekeepers and experts in their field. How do you do this? Check out: <https://unl.zoom.us/j/92576391887> or Dial: +1 301 715 8592 (Meeting ID: 925 7639 1887)

Also, efforts are being made to provide virtual "field days" in the weeks and months ahead. These events will be available in real-time on the web as GPMB personnel and others conduct hive activities at the University of Lincoln apiary as well as other locations throughout the US. These virtual trainings will serve as an instructional opportunity for beekeepers in the program as well as a learning opportunity for the attendees. It's planned that registered GPMB program beekeepers can earn credit for participating. Watch for more information to be made available through <https://gpmbl.unl.edu/> or straight to your inbox if you are a registered GPMB member.



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### CONTACT OUR TEAM TODAY

319.259.9377

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f @eberthoney



## History Tidbit - Clayton Lee, MSBA Past President



Most information taken from: **The ABC of Bee Culture: A Cyclopaedia of Every Thing Pertaining to the Care ...** - Amos Ives Root - Google Books.

Who was Rev. Emerson T. Abbott?

Rev. Abbott was a Missouri beekeeper that made a significant mark in our beekeeping history.

Emerson Abbott was born in Brown County, Ohio in March 1847. As you can see from his title, he entered the ministry. He continued preaching until health and failure with his voice stopped him.

From that point, Abbott entered beekeeping with some friends when they purchased 200 colonies of bees. Two years later, he bought out his partners and gave full attention to beekeeping in northwest Missouri.

Abbott served as President of the National Bee-keepers' Association as well as chairman of the Board of Directors. He also served as a delegate by the association to the National Pure-food Congress.

Reverend Abbott was also a significant contributor to the American Bee Journal. He authored a series of articles on cut comb in 1895 and conducted a regular "Notes and Comments" section that had some lively written debates on several beekeeping issues.

Abbott lived and had his beekeeping business in St. Joseph, Missouri. He was well known for selling his "St. Joe" hive, Dadant foundation and strong belief in dovetail joints on hives.



EMERSON T. ABBOTT.

Source: [https://books.google.com/books?id=p5lAAAAMAAJ&pg=PA444&lpg=PA444&dq=rev.+emerson+t.+abbott+biography&source=bl&ots=FOSMfcEq-H&sig=ACfU3U2g2Lz\\_5yxl6mx5sY20aCNFXM-NIA&hl=en&sa=X&ved=2ahUKEwjO\\_8iG5qno-AhVvhq0KHVzCCcwQ6AEwAHoECAyQAQ#v=onepage&q=rev.%20emerson%20t.%20abbott%20biography&f=false](https://books.google.com/books?id=p5lAAAAMAAJ&pg=PA444&lpg=PA444&dq=rev.+emerson+t.+abbott+biography&source=bl&ots=FOSMfcEq-H&sig=ACfU3U2g2Lz_5yxl6mx5sY20aCNFXM-NIA&hl=en&sa=X&ved=2ahUKEwjO_8iG5qno-AhVvhq0KHVzCCcwQ6AEwAHoECAyQAQ#v=onepage&q=rev.%20emerson%20t.%20abbott%20biography&f=false)



## WANTED: BEEKEEPING RELATED PHOTOS FOR USE IN MSBA'S MARKETING MATERIAL

Do you have a great photo of your beehives, equipment or apiary? As an active member of the Missouri State Beekeepers Association you can submit your photos (with full credit given) for use in any communications/marketing material. List of shots wanted are listed below, but not limited. Photos will be used in the Newsletter, Event Flyer's, Email Campaigns, Facebook Announcements, etc. When submitting photos please provide your name and location (city, town, or county) to make sure credit is given properly. To submit photos or for more information email [MSBAnewsletter@gmail.com](mailto:MSBAnewsletter@gmail.com)

|                      |                             |
|----------------------|-----------------------------|
| Queen Spotting       | Varroa Mite                 |
| Honey Bee Closeup    | Small Hive Beetles          |
| Beekeeping Equipment | Honeycomb                   |
| Beehives             | Honey Jars                  |
| Bee Yard             | Extracting Processes        |
| Bee on Flower        | Keeper looking into hives   |
| Snow on Bee Hives    | Any other shots of interest |
| Bee in Flight        |                             |



*Photos should be of good quality, not blurry/fuzzy, no less than 150 dpi (for best printing quality use 300 dpi). MSBA reserves the right to reject photos not of printable quality or if subject matter is not appropriate or beekeeping related.*

## Want to get the word out about your local honey?

The **Missouri State Beekeepers Association** can now help you do just that!

The **MSBA** has created a list, and a map, where **MSBA members** can post honey and honey products for sale to help people in your area find your 'local honey' via the MSBA website ([www.mostatebeekeepers.org](http://www.mostatebeekeepers.org)).

If you would like to get on the **Local Honey** list go to <http://mostatebeekeepers.org/local-honey-form/> and fill out the form to apply. Once your form is submitted, we will verify your membership and add you to the list and map. We will be sharing the link to the local honey map on social media and other outlets and suggest all members do the same so we all can help bring local honey to the public!

You will be asked multiple questions and will need to 'educate' your customers. Please be patient and understanding at the same time and remember you are representing your association when working with the public. Just think back to the time when you were a new 'bee'.

If you have any questions, please contact **Kyle Day** at [westcentraldir@mostatebeekeepers.org](mailto:westcentraldir@mostatebeekeepers.org)

**MSBA Benefits Committee** Just another great benefit for the members of the MSBA

**Local  
HONEY**





## Advertising Opportunity

The Missouri State Beekeepers Association wants to give our members the best information and resources available for their beekeeping operations. This includes access to equipment and supplies. Starting in January 2020 you will be able to advertise in the MSBA Newsletter and reach members all across the state. With four ad sizes and very reasonable rates this will fit anyone's advertising budget.

### Sizes and rates available

|                                      |       |
|--------------------------------------|-------|
| Full page..... (8.5" x 10") .....    | \$100 |
| Half page .....(8.5" x 5") .....     | \$60  |
| Quarter page .....(4.25" x 5") ..... | \$35  |
| Thumbnail .....(2.5" square) .....   | \$20  |

### Artwork specifications

Full color - 300 dpi  
Saved as Print Quality/High Resolution  
Outlined fonts and embedded images.

### File formats acceptable;

PDF, PNG, JPG, TIFF, Adobe CC

*Advertising that is not beekeeping related will not be allowed. Publication dates are within the first 15 days of issue month. Ads must be paid for before the issue month. Listed prices are per issue. Receive a 15% discount on half page or full page ad size when you prepay for all 6 issues. There are 6 issues per year; January, March, May, July, September, and November. A contract is available, if needed.*

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**Half Page**  
8.5" w X 5" h  
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**Thumbnail**  
2.5" square  
**\$20.00**

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on the MSBA's website!*

For more information, please contact the Newsletter Editor at [MSBAnewsletter@gmail.com](mailto:MSBAnewsletter@gmail.com)  
or send a message through our website to the Communication & Marketing Chair at



## Know Your Board

The Missouri State Beekeepers Association is managed by an all volunteer force of passionate beekeepers from across the state. The diverse experiences and knowledge is evident when each work together within the Executive Committee and Board Members as a team. Together they work to bring the latest and greatest information out there to our MSBA membership.

To contact a committee/board member go to [mostatebeekeepers.org/executive-committee/](http://mostatebeekeepers.org/executive-committee/)

### Executive Committee\* and Board Members

|  |                    |
|--|--------------------|
| President *                                | Cory Stevens       |
| Vice President *                           | Randy Ewart        |
| Past President *                           | Clayton Lee        |
| Secretary* ( <i>interim</i> )              | Kyle Day           |
| Treasurer *                                | Wes Johnston       |
| Membership Chair                           | Wanda Johnston     |
| Comm/Marketing Chair and Newsletter Editor | Jeania Schmalhorst |
| Program Chair                              | Bruce Snavelly     |
| State Fair Coordinator                     | Erin Mullins       |
| Queen/Ambassador Chair                     | Amy Giffen         |

### Regional Directors

|              |               |
|--------------|---------------|
| East Central | Mike Wagner   |
| Northeast    | Bob Brammer   |
| Northwest    | Roger Nichols |
| Southeast    | Jeff Mayfield |
| Southwest    | Maxwell Helm  |
| West Central | Kyle Day      |

### The Missouri State Beekeepers Association's Liaisons and Ambassador

MSBA Partnership Liaison  
Charlotte Ekker Wiggins

MSBA Legislative Liaison and Heartland Beekeeping Partnership  
Cathy Misko

Missouri Task Force Great Plains Master Beekeeping Program  
Randy Ewart  
Gregg Hitching  
Charlotte Ekker Wiggins

Missouri Honey Youth Ambassador  
Hannah Gebhardt



**Executive Committee and Board members** (left to right) (Seated) Mike Wagner, (Standing L-R) Wes Johnson, Amy Giffen, Kyle Day, Jeania Schmalhorst, Randy Ewart, Erin Mullins, Cory Stevens, Maxwell Helm, Jeff Mayfield, Roger Nichols, and Clayton Lee (not present) Cathy Misko, Charlotte Ekkor Wiggins, Bob Brammer, Wanda Johnston, Hannah Gebhardt and Gregg Hitchings