

NEW BEEKEEPER TRAINING
MANAGED MENTORING

Sunshine Hill FARM LLC

Sunshine Hill Farm, LLC

Bees Gone Bad | Nov 8, 2026

PSBA Fall Beekeepers Conference
Pennsylvania State Beekeepers Association



November 8, 2026

Bees Gone Bad

Tactics for Managing Aggressive Colonies



15+ year hobbyist beekeeper – 15 to 20 hives

EAS Master Beekeeper

Past President – NWNJBA

Day Job > IT Administrator, PSI Inc.

INTRODUCTION – Kevin Inglin

Our Home Yard

www.bkcorner.com
THE Beekeeper's CORNER PODCAST













Maryland State Beekeepers Association
Dedicated to beekeeping since 1908



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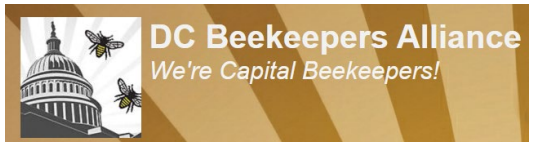






























JAN >
2027



MANAGED MENTORING PROGRAM

FOR GETTING STARTED IN BEEKEEPING

A free program for getting started in beekeeping. For clubs and new beekeepers.



Teaching beekeepers from scratch….
- I want bees, to bees in the box
- Bees in the box to box full grown
- Full grown to overwinter
- Start of season two and all that follows

Self-Serve Succinct Video Lessons
Supported with Online Meetings

Clubs can organize period in-person visits

www.managedmentoring.com

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THE VIBE IS TWO BEEKEEPERS MEET AT THE CORNER COFFEE PLACE



First episode – April 2010
305 Episodes and still going strong

Focus on hobby beekeeping topics, colony management and industry news coverage

Many interviews with prominent beekeepers over the years in the back catalog

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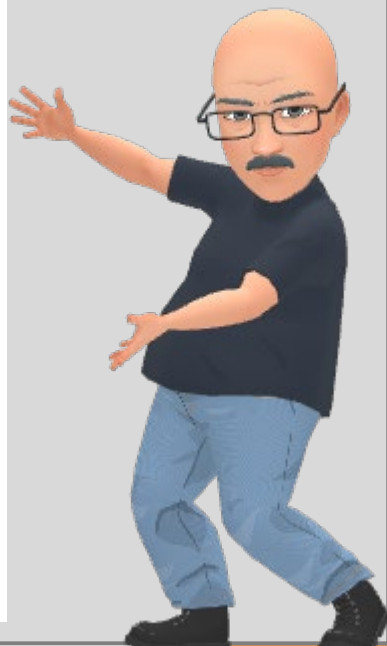
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DANGEROUS COLONY

DEFENSE FACTORS

TEMPERMENT ASSESSMENT

MITIGATION TACTICS

HOT HIVE TACTICS

CLOSING THOUGHTS

DANGEROUS COLONY

Think Back to…

MAY 2020

MAY2020

EXECUTIVE ORDER 103

“I hereby declare that a State of Emergency and a Public Health Emergency exist in the State of New Jersey.” *Governor Phil Murphy*

MAY 2020

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COVID 19

MAY 2020

EXECUTIVE ORDER 103

"I hereby declare that a State of Emergency and a Public Health Emergency exist in the State of New Jersey." *Governor Phil Murphy*

EO 107 (March 21, 2020) — Stay-at-home order

"All New Jersey residents shall remain home unless performing essential activities."

"Non-essential travel is prohibited."

MAY 2020

Work from *home*

Some of us were working from home, *a new and novel concept at the time*

And we were **not permitted to travel** – *we were sequestered at home*

COVID 19

I was at home *and had this going on*



COW THEMED HIVE: GATEWAY COMPUTER COMPANY



*How many remember the **Gateway Computer Company**?*

IT DID NOT HAPPEN OVERNIGHT

I shot a video and saw signs

- I did an inspection of the offensive **“Gateway”** hive
- I noticed they were ‘**not happy**’
  - I made remarks of the defensiveness on my inspection form, and in the video
  - I wondered if it was a bad day for the hive;
    - I made a note to come back to it next time and gauge temperament
    - It was a cool day- limited flight



THE PROGRESSION CONTINUED

Second Inspection: Early April

I shot a video and saw signs

- Checking if bees were alive
  - I went inside this hive, while wearing a T-Shirt and a veil
  - The further I got into the hive, the more I got stung – I closed the hive and moved on
- After closing the hive, the bees followed me from hive to hive to hive

The month of April was mostly cold
Warmish days came at the end of the month



Hive Inspection: Late April

Quick task on *another hive*

- I went through a different hive to fix a spacing problem
  - Only opened this one hive to fix a spacer problem at the top of the hive
- While in the yard I was followed by bees from another hive
  - **Stung multiple times** – but seemingly *not from the colony I was working*
  - Several bees were buzzing me menacingly during the work



THE PROGRESSION CONTINUED

FULL FLIGHT DAY – MENANCING BEGAN IN EARNEST

Hive Inspection: Cinco De Mayo

MAY 5th

59°F
Full Sun
Light Winds

From Testy to Bad

Going Down the Line

- It was a warm enough day to inspect
  - I decided to check on hives for next actions
  - Everything went well, until I got to the Gateway Hive

Hot Hive – The Gateway Hive was *out of control*

- From April to May
  - Population Doubled
  - Aggression level increased 10-fold
  - **Incurred several stings; Swarmed…**
  - Remediation Recognition

Original Plan:
PINCH THE QUEEN

I decided during the next inspection that I would pinch the queen

THE PROGRESSION CONTINUED

FULL FLIGHT DAY – MENANCING BEGAN IN EARNEST

Remediation Attempt #1

The video earlier was from this day

MAY 10th

63°F
Partly Cloudy
Slightly Breeze

Find Queen > Pinch Her

- I was stung over 30 times
  - I was fully suited, head to toe with gloves on and a long sleeve shirt under my bee jacket….
- I could not find her; Exasperated, I gave up
  - With the season progressing, I needed to find a solution
- I put a queen excluder between the brood boxes and closed the hive and retreated

From Bad to Nasty

New Plan:
QUEEN EXCLUDER

Put a queen excluder between the boxes to isolate queen

THE PROGRESSION CONTINUED

FULL FLIGHT DAY – MENANCING BEGAN IN EARNEST

Remediation Attempt #2

MAY 15th

82°F
Full sun
Slightly Windy

Find Queen > Pinch Her (Take 2)

- Fewer Stings, but **dangerous**
  - Full onslaught colony defensiveness
  - I was fully suited with several layers
- **I found the queen and dropped her on the ground**
  - Subsequently - I never found her again
  - Hot Hive Queens are notoriously hard to find
- Revised Plan
  - Exasperated, I split the colony
  - I moved the queenless part to PAD 1

From Nasty to Vicious

Revised Plan:
SPLIT COLONY

I moved the colony box without a queen to a split and added a box

MAY 20th ▶ MAY 25th

Unchecked Aggression

Danger Mounting

- Bees patrolling the property
  - **They were stinging us when we were in front of the house or in the yard**
  - The distance from the colony to the front door is around 170ft
- Bees were stinging the **dog** and our **cats**
- I was aggressively swarmed when entering the bee yard
- Bees attacked the farmer plowing the field in his tractor
  - He had a fully closed cab and called me to let me know what happened
- Neighbor kids were home, playing in the property nearby

THE PROGRESSION CONTINUED

FULL FLIGHT DAY – MENANCING ON FULL DISPLAY

Remediation Attempt #3

MAY 25th

68°F
Overcast
Slightly Windy

One More Failed Attempt

- I came out with a full intent to find queen once again, no matter what it took
  - I opened the hive and **it felt like the entire colony came out** in defense – **it was quickly untenable**
  - Bees were so thick on the veil it made it hard to see
    - They were so out of control, I immediately ceased what I was doing, and decided then and there that I had to euthanize the hive
  - In that moment **I was afraid for anyone in the vicinity** as it was truly a dangerous situation

From Vicious to Ferocious

FINAL Plan:
EUTHANIZE

I determined I had no choice but to put this colony down

MAY 25th

DECISION MADE

Unacceptable Danger

- It could not be left to persist in that state
  - I decided then and there that *remediation would have taken too long*
- Being stung when exiting the house was not an acceptable existence
- The danger to neighbors could have risked keeping bees on the property
- I could not work the rest of the hives without taking a massive number of stings
  - I did not want the genetics in the area
  - I had to attend to my other bees and I could not
  - **I was demoralized,** and experienced helplessness with the situation

Let’s Revisit The Situation



- Protective Envelope
  - Top
    - Long Sleeve T-shirt
    - Canvas Bee Jacket
    - 3-Layer Bee Jacket
  - Bottom
    - Long Underwear
    - Levi's Jeans
    - Insulated Jeans
  - Hands
    - Nitrile Gloves
    - Mechanic Gloves
    - Heavy Leather Gloves
  - Two Pairs Of Socks



MAY 25th

I still took several stings that day

TRUE DANGER

Imagine if someone without a bee suit came into the Apiary

Note that bees accosted you before you entered in the apiary

Bees were pinging off the house windows

TRUE DANGER

Imagine if someone without a bee suit came into the Apiary

Note that bees accosted you before you entered in the apiary

Bees were pinging off the house windows

What would you do in this situation?

Euthanization Process & Execution

Euthanizing Deliberations – How does one do it?

Remember – it was STATE OF EMERGENCY / LOCKDOWN

- I could not call State Apiarist for guidance
  - State offices were closed due to the emergency
- No one could visit and consult with me; *I did call a friend*
- I had never had to put down a colony before and didn't know how

Triage how to Euthanize

- I went to the *Internet* for guidance
  - Options Found: Dry Ice, Smother, Burn, Gas, and Soapy Water
    - These were instructions found – mostly for killing colonies with AFB
- Process Selected: **SOAPY WATER**
  - I had these materials available and on paper it seemed the quickest and simplest method

Euthanization Process & Execution

Planned and Executed

Pre-Prep: Colony Closure and Preparations

- Put screened cover over top of the hive so when I was to take off the roof no bees could get out
- Closed off hive in the dark, when all of the foragers were home
  - With a plan to euthanize early the following morning

MAY 29th

Euthanizing

- Far simpler than you might think
  - Filled gallon containers with soapy water and simply took the roof off and poured them through the hive boxes
  - After two gallons poured, all the bees were dead
  - Some foragers returned and it was ‘feisty’ for a few days but in time it dissipated

MAY 30th

Post Execution



Clean up, Reset, and rebuild

Post Execution

Euthanized Colony: Cleanup and Reset / Rebuild

Equipment Teardown and Recovery

- I pulled the equipment apart and discarded the dead bees
  - I thought about trying to save some of the bees for testing, but it was COVID time and keeping wet dead bees in limbo didn't seem like a sound plan
- I discarded each of the brood frames where bees were being reared
  - Cut the brood out (wax foundation) and replaced it with fresh foundation for reuse
- Honey Stores and Other Frames
  - I simply rinsed them with a garden hose and fresh water
    - Some of the overwintered capped honey went straight into future springtime splits
  - Then I set everything out to dry
  - Every piece of comb was repurposed in the splits that went into the equipment post euthanization

What of the COLONY from the Split?

Perfectly Normal, In time…

Walkaway Split colony

- Initially difficult too
- The walkaway split requeened itself
  - In a few weeks time the new population **replaced the nasty bees** via attrition
    - Initially bees the transplants were aggressive, but they were not a problem if you did not interact with the hive due to the smaller population
- Drone Culling
  - I place a queen excluder over the bottom board and keep the drones from leaving
  - Every few days I would take it off and destroy the drones trapped on the excluder
- In time: Full working colony
  - This colony developed into a normal colony – no lingering issues
  - I gave this colony the resources of the euthanized colony and it did really well

THE TAKEAWAY

It was not the cleanest operation. **To this day I still think I made the right decision.** I shared what I learned and it has helped others.

DEFENSE FACTORS

AN EXTEME SITUATION

THERE ARE LEVELS OF DEFENSIVENESS

WHAT OCCURRED IS NOT A COMMON EXPERIENCE

IT IS QUITE RARE

Chances are you will not see it in your lifetime

Defensiveness of that magnitude is odd

Vicious bees are uncommon

- Africanized bees? *Maybe, hard to say*
- I had been keeping bees for 12 years before that happened
- I have been keeping bees for near 18 years now; This is the only time I have had a dangerous colony
  - It should be noted that I have had my share of defensive colonies where were not pleasant to work
  - Testy colonies are ones that can be remediated

HONEYBEE DEFENSIVENESS

BEES DO NOT EXPERIENCE EMOTION

- **Opening Analogy: Humans Have Moods — Bees Do Not**
  - Human moods
    - Irritation, stress, fatigue, grumpy, happy, satisfied
- **Using Human Terms**
  - We might describe a colony as 'not happy today'…
    - The term for using human descriptors to impart characteristics on non-human things is **anthropomorphized**
    - Technically we are not right in expressing that bees have emotions, or using emotional descriptors to express how are bees are behaving
  - Bee behavior — *it is not emotional*; it is purely stimulus-response

We use the descriptors, ***and we can have a pass***, as we are using descriptors for communication of relatable observed behaviors

HONEYBEE DEFENSIVENESS

BEES DO NOT SEEK CONFRONTATION

- **Distinction: Bees are Defensive, *Not Angry***
  - Honeybees do not experience anger as humans do
    - Bees react to stimuli; they do not seek confrontation
  - Their behavior is driven by sensory cues, pheromones, instinct, and colony feedback mechanisms
    - Defensive actions are physiological responses to perceived threats
    - Bees can be physiologically stressed - which can exacerbate the need for defensiveness in some situations
  - European honeybees are generally reluctant to sting
    - Aggressive Colonies have a lower threshold for triggering defensive behavior

It doesn't feel that way sometimes, does it!

SEQUENCE OF DEFENSIVE RESPONSE

1 ALERTING
INITIAL THREAT DETECTION

- Guard bees detect unusual stimuli
- Colony shifts to heightened awareness
- Information gathering phase

2 ACTIVATING
PHEROMONE RELEASE & RECRUITMENT

- Alarm pheromones are released
- Nearby workers become more responsive
- Additional defenders are recruited

3 ATTRACTING
ORIENTATION TO STIMULUS

- Bees visually and chemically locate the threat
- Defenders concentrate around the disturbance
- Flight behavior becomes focused and directed

4 CULMINATION
DEPLOY, PURSUIT AND STINGING

- Physical defense is initiated; Stinging may occur
- Pursuit can continue after the initial disturbance moves away

HONEYBEE DEFENSIVENESS

DRIVERS THAT AFFECT DEFENSIVENESS

Colony-Level Conditions

- High population density
  - More bees to guard the resources: Can result in a faster escalation by the guard force
  - Large populations also provide more bees to muster a defense when called upon
- Sick Hives | Colony inhabitants that are irritable due to affects of illness
  - Brood diseases raise stress levels and contribute to negative pheromone emissions
    - Stressed bees are more apt to produce additional alarm pheromones, spend more time guarding, and Escalate faster when disturbed
- Queen Age / Pheromone
  - Weak queen pheromone distribution destabilizes colony cohesion

HONEYBEE DEFENSIVENESS

DRIVERS THAT AFFECT DEFENSIVENESS

Genetic Factors

- Recessive defensive genes
- Drone influence — 50% genetics
- Africanized genetics — heritable, dominant traits

Environmental Factors

- Weather — storms, humidity
- Nectar dearth
- Predators — skunks, wasps, robbing

Beekeeping Errors

- Poor timing — late-day inspections
- Rough handling — crushing bees
- Queenlessness
- Equipment issues — banging boxes, hot smoke
- Working front of hive

HONEYBEE DEFENSIVENESS

DRIVERS THAT AFFECT DEFENSIVENESS

Environmental Factors

- High Temps, low humidity
  Weather — storms
- Nectar dearth
- Competition for resources
- Disturbances, high traffic areas, farm animals

Beekeeping Errors

- Poor timing — late-day inspections
- Rough handling — crushing bees
- Queenlessness
- Equipment issues — banging boxes, hot smoke
- Working front of hive

Seasonal Factors

- Late summer / early fall
  - Robbing pressure is high; colonies are naturally more defensive
- Spring build-up
  - Colonies with booming brood can be touchy

HONEYBEE DEFENSIVENESS

DRIVERS THAT AFFECT DEFENSIVENESS

Beekeeping Errors

- Poor timing — early/late-day inspections
- Rough handling — crushing bees
- Queenlessness
- Equipment issues — banging boxes, hot smoke
- Working front of hive
- Looking in over top bars

Seasonal Factors

- Late summer / early fall
  - Robbing pressure is high; colonies are naturally more defensive
- Spring build-up
  - Colonies with booming brood can be touchy

Human Fact (Beyond Hand

- Scent triggers
  - Strong perfume deodorants, or scent
- Clothing color
  - Dark colors rese predators
- Carbon dioxide
  - Can trigger gua

HONEYBEE DEFENSIVENESS

DRIVERS THAT AFFECT DEFENSIVENESS

Seasonal Factors

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  - Colonies with booming growth can be touchy

Human Factors (Beyond Handling)

- Scent triggers
  - Strong perfumes, deodorants, or banana scent
- Clothing color
  - Dark colors resemble predators
- Carbon dioxide
  - Can trigger guard bees

Apiary Conditions

- Hives close together
  - Drift overlap, alarm pheromone overlap
- Robbing Events
- Equipment/Vibrations
- Predator Pressures
  - Predators in the apiary

HONEYBEE DEFENSIVENESS

DRIVERS THAT AFFECT DEFENSIVENESS

Human Factors (Beyond Handling)

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HONEYBEE DEFENSIVENESS

DRIVERS THAT AFFECT DEFENSIVENESS

Apiary Conditions

- Hives close together
  - Drift overlap, alarm pheromone overlap
- Robbing Events
- Open Feeding
- Equipment/Vibrations
- Predator Pressures
  - Predators in the apiary

A prudent beekeeper understands what influences colony defensiveness

- They stays attentive to the conditions that elevate defensiveness
- Recognition helps to maintain safer apiaries, calmer colonies, and better outcomes for both bees and beekeepers

HONEYBEE DEFENSIVENESS

WHAT DO THEY HAVE TO DEFEND?

What Bees Are Defending

- The colony — brood, queen, food stores
- The entrance — guarding behavior
- The foraging territory — aerial perimeter
- The nest cavity — intruder response

Do bees sting you when they are out foraging?

Usually Not…

Colony Level Resources – Ratcheting Up Defense

- Brood-heavy colonies
  - Colonies defend brood more aggressively than honey-only supers
- Resource-rich hives
  - Heavy stores increase guarding intensity

Nucs vs. Full Size Colonies

HONEYBEE DEFENSIVENESS

DEFENSIVE TACTICS

- **Menace Before Sting**
  - Bees often perish after administering a sting to humans
  - There are many tactics a bee might employ before they actually sting you
  - There are also sting related triggers for defense

Head Butting

Probing

Buzzing

Pinging Veil

Pulling Hair

Biting

Erratic Flight Paths

Alarm Pheromone

Sting Marking

Guard Recruitment

Flying Straight On

HAVE YOU SEEN THESE BEHAVIORS?

EVALUATING DEFENSIVENESS

JUDGING A COLONIES LEVEL OF DEFENSIVENESS

- **Limited Defense**
  - Do not launch when visited
  - Do not patrol; no pursuit
  - Little to no guarding
  - No response from interaction
  - Calm on the comb, when opened and inspected
  - Smoke has a gentle, predicable effect
  - Not prone to sting



Mildly Defensive

- Slight guarding increase
- Short flight radius
- Bees bump but rarely sting
  - Might follow you or buzz you
- Quick to settle once smoke is applied
- Often seasonal or situational
- Stings are infrequent but intentional

EVALUATING DEFENSIVENESS

JUDGING A COLONIES LEVEL OF DEFENSIVENESS

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- Do not patrol; no pursuit
- Little to no guarding
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- Smoke has a gentle, predicable effect
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Calm as a kitten

Mildly Defensive

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  - Might follow you or buzz you
- Quick to settle once smoke is applied
- Often seasonal or situational
- Stings are infrequent but intentional

EVALUATING DEFENSIVENESS

JUDGING A COLONIES LEVEL OF DEFENSIVENESS

Moderately Defensive

- Noticeable guard presence at the entrance and top bars
- Bees begin to fly up as soon as the lid is cracked
- Multiple bees ping the veil
- Running on the comb becomes more pronounced
- Smoke has limited effect
- Bees may follow 10–20 feet
- Stings are possible during normal inspections
- Defensive behavior increases when brood frames are exposed

Highly Defensi

Immediate sur
Heavy pinging
Bees climb an
Loud, high-fre
response
Smoke has mi
Bees follow 50
Multiple sting
Defensive beh

EVALUATING DEFENSIVENESS

JUDGING A COLONIES LEVEL OF DEFENSIVENESS

- **Highly Defensive**
  - Immediate surge of bees upon opening
  - Heavy pinging and direct targeting of the veil
  - Bees climb and attack gloves, sleeves, and clothing
  - Loud, high-frequency buzzing indicating alarm response
  - Smoke has minimal or no calming effect
  - Bees follow 50–100+ feet
  - Multiple stings occur rapidly
  - Defensive behavior persists even after hive is closed

Dangerously D

Bees boil out
they patrol the

Large number

Pursuit distan

Bees attack ve

Stings occur i

Colony remain

Neighboring
pheromone d

EVALUATING DEFENSIVENESS

JUDGING A COLONIES LEVEL OF DEFENSIVENESS

- **Dangerously Defensive**
  - Bees boil out of the entrance before you touch the hive – they patrol the apiary and beyond
  - Large numbers of bees target the face and upper body
  - Pursuit distances exceed 100+ feet
  - Bees attack vehicles, animals, and nearby hives
  - Stings occur in clusters
  - Colony remains agitated for hours
  - Neighboring colonies may also escalate due to pheromone drift

This is just like The colony that was euthanized

TESTING DEFENSIVENESS

QUANTITATIVE FIELD ASSAYS

- **There are standard field tests for research evaluation**
  - Flag/suede patch assay:
    - Dark leather or suede presented/jiggled at entrance; count stings in fixed time (e.g., 60 s) and/or pursuit distance/time
  - Alarm pheromone assay:
    - Present synthetic IAA or full alarm blend; measure recruitment/outflying bees
  - Mechanical stimuli:
    - Marble drop, hive vibration/jiggling; combine with visual/chemical
  - Ratings assays & Composite Scores
    - Measure elements of behavior scoring such as: time to first sting, number of stings, number of bees recruited, pursuit behavior

THE TAKEAWAY

Bees are defensive by nature. **There are levels of defensiveness.** Understanding what is normal is an important skill

TEMPERMENT ASSESSMENT

IS IT A HOT HIVE?

EVERY BEEKEEPER HAS A LEVEL OF TOLERANCE

- **What exactly qualifies a colony defense as problematic?**
  - This differs by beekeeper
  - We each have our levels of tolerance
- **Some defensiveness is to be expected**
  - Bees are far less defensive during nectar flows
  - When nature is stingy, colonies do defend more vigorously
- **Gauging Defensiveness**
  - Behaviors upon being present – are they acceptable?
  - Behaviors upon working bees – are they acceptable?

LET'S EXPLORE THIS FURTHER

LET'S PROPOSE: 5 LEVEL SCALE OF AGGRESSION

BREAKING DOWN TEMPERMENT ASSESSMENTS

1	2	3	4	5
NOT DEFENSIVE	**OCCASIONAL DEFENSIVENESS**	**MODERATELY DEFENSIVE**	**HIGHLY DEFENSIVE**	**EXTERME DEFENSIVENSS**
Docile, minimal guard activity. Ideal colony behavior.	Assertive during inspections. Some undesired behaviors	May patrol the yard. Defensive upon inspection, some stings	Defensive in your presence and in apiary. Untenable when open – *frequent stings*	Dangerous- Extreme agitation. Patrols apiary and beyond. Guaranteed stings

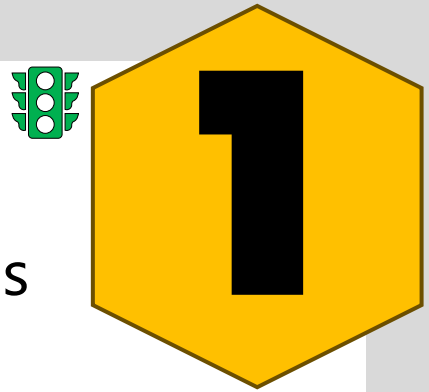






ASSESSING DEFENSIVENESS LEVELS

LEVEL 1: CALM | WHAT GOOD LOOKS LIKE



- **Front Entrance Behavior**
  - Smoke at the entrance dissuades the guards from defensiveness
- **Behavior on Entry | Behavior Open Hive**
  - Bees stay put when taking off the roof and when removing inner cover
  - They stay resident in the box
- **Behavior on the Comb**
  - Calm on the comb, as you inspect the bees
- **Colony Patrol | Defensive Posture**
  - Even during periods of dearth bees are not aggressive



ASSESSING DEFENSIVENESS LEVELS

LEVEL 2: OCCASIONAL DEFENSIENESS | SOMETIMES TESTY



- **Front Entrance Behavior**
  - Guarding entrance if you intrude, will stand down if smoked
- **Behavior on Entry | Behavior Open Hive**
  - Curious on Inspection, bees look at you through the seams
  - Sometimes come up if startled; could buzz you or warn you
- **Behavior on the Comb**
  - Can be a little runny on the comb; Colony Patrol / Defensive Posture
- **Colony Patrol | Defensive Posture**
  - Occasionally; will respond when agitated/bumped

ASSESSING DEFENSIVENESS LEVELS

LEVEL 3: MODERATELY DEFENSIVE | TESTY WHEN PROVOKED



- **Front Entrance Behavior**
  - Guarding entrance with vigor
- **Behavior on Entry | Behavior Open Hive**
  - Guarding when roof comes off; could guard upon opening
  - Defensive when startled or alarmed; buzzing, occasional stings
- **Behavior on the Comb**
  - May defend upon pulling frames; testy, buzzing, some stings
- **Colony Patrol | Defensive Posture**
  - More apt to Patrol; Defensive when provoked; sometimes just because

ASSESSING DEFENSIVENESS LEVELS

LEVEL 3: HIGHLY DEFENSIVE | ALWAYS ON GUARD



- **Front Entrance Behavior**
  - Guarding entrance full time
- **Behavior on Entry | Behavior Open Hive**
  - Defensive upon entry; come to defense when frames are extracted
  - Bumping, menacing buzzing, errant stings
- **Behavior on the Comb – Behavior Open Hive**
  - Leaping off comb
- **Colony Patrol | Defensive Posture**
  - More apt to Patrol; Defensive when provoked; sometimes just because

ASSESSING DEFENSIVENESS LEVELS

LEVEL 5: EXTREME DEFENSE | OVER THE TOP



- **Front Entrance Behavior**
  - Full on defense with your presence
- **Behavior on Entry | Behavior Open Hive**
  - Large response on entry – many bees come to defense
  - Bees swarm the beekeeper – multiple stings are realistic
- **Behavior on the Comb – Behavior Open Hive**
  - Leaping off comb to colony defense
- **Colony Patrol | Defensive Posture**
  - Patrol apiary and more; Aggressive defense, following, pursuit, onslaught

TAILORING THE APPROACH: MIND THE BASICS

LEVEL 1 and LEVEL 2 MANAGEMENT TACTICS

- **Use sound practices**
  - Use a Good Touch
    - Do not stand in front of the hive
    - Smoke entrance and wait a beat
    - Smoke under roof, work slowly with an appropriate amount of work
    - Do not crush bees
    - Employ good hive tool techniques and avoid jostling the equipment
  - Mind the weather & resources
    - Work in the middle of the day
    - Be aware of resource availability

1

2

- **Use sound practices**
  - Keep healthy colonies
    - Colony problems lead to problematic bees
    - Maintain good queens
  - Mind Appearance & H
    - Wear light colors
    - Avoid offensive, over bea
  - Select Gentle Bees
    - Keep gentle bees

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- **Use sound practices**
  - Keep healthy colonies
    - Colony problems lead to problematic bees
    - Maintain good queens
  - Mind Appearance & Hygiene
    - Wear light colors
    - Avoid offensive, over bearing odors
  - Select Gentle Bees
    - Keep gentle bees

TOLERANCE OF A LEVEL 3

LEVEL 3 DECISION PROCESS



Many beekeepers would not proceed with a 3

- **Personal Preference**
  - Testy colonies can be tolerated
    - Some testy colonies are not bad enough to take drastic measures
    - Some beekeepers will tolerate difficult hive as 'good producers'
    - Working colonies that are defensive during inspects, but not a problem otherwise might be acceptable to some
  - Protection and Vigilance
    - If you choose to keep one of these colonies around, use an abundance of caution
      - Consider the risks and if there are some dangers due to the situation error on the side of caution and mitigate the colony
  - Consider the genetics being spread into the space

DEALING WITH OUTLIERS

LEVEL 3, 4, and 5 MANAGEMENT TACTICS

3

4

5

- **When colonies are not behaving**
  - If inspections go sideways
    - Consider the circumstances
      - Assess if there are legitimate reasons behind the defensiveness
    - Three strike rule
      - Consider three different encounters where bees are misbehaving
        - Sometimes colonies have a bad day, even with good handling
    - Build protective measures
      - Put stakeholders on notice – be transparent
  - Build a plan for mitigation
    - Devise the plan according to the level of the problem

THE TAKEAWAY

The amount of aggression you live with is personal preference. Levels 4 and 5 are beyond the norms.

MITIGATION TACTICS

WORKING A PROBLEM RESOLUTION

VARIOUS FACTORS COME INTO PLAY FOR DECISION MAKING

- **Consideration for techniques to employ**
  - There are several techniques to help resolve problems
- **The timing for resolution**
  - Timing is a factor when danger and harm are a possibility
- **Gauging the risks involved with solution chosen**
  - Risks to you and others must be considered and prioritized

As you assess the situation, devise the right plan to resolve the situation you are facing

PROBLEM RESOLUTION MANAGEMENT TECHNIQUES

OPTIONS YOU CAN CONSIDER WHILE BUILDING A PLAN

The following suggested tactics will be used alone, *or in combination*, with one or more activities

TACTIC: REQUEEN

MOST SUGGESTED ADVICE FOR HOT HIVE RESOLUTION

Colony Requeening

- REQUEENING replaces the reigning queen to change colony temperament
  - You can opt to allow the colony to raise a new queen
  - You can replace her with an altogether new queen
- You pinch the queen and pick a path to put a new queen in place
  - Option 1: Let them raise a replacement
  - Option 2: Supply a replacement queen
  - Option 3: Combine with another queenright colony



TACTIC: COLONY RAISED QUEENS

MOST SUGGESTED ADVICE FOR HOT HIVE RESOLUTION

- **#1 Colony Raised Queens**
  - Allow the colony to replace
    - The bees will choose suitable larvae
      - A virgin will emerge and upon getting mated head the colony
    - A CAVEAT about using this tactic
      - Colony raised queens might repeat the aggression problem
      - Consider that 50% of the genetics come from the queen and the other 50% come from the drones a queen is mated with
      - If the colony adopts the bad genetics from the queen's side, it could happen all over again



TACTIC: REPLACEMENT QUEEN

INSTALLING REPLACEMENT QUEENS - GUIDANCE

- **#2 Replacement Queen**
  - Install a spare or purchased queen
    - Can have some unintended problems
      - Queen introduction can be tricky
        - Experience indicates that 'hot hives' tend to be choosy with replacements
        - Speculation is that the genetics are not a match in most rejection cases
    - Start a Nuc?
      - Consider starting a replacement queen with a smaller group of bees in a nuc before full installation
        - Let the replacement get established with her own brood and adult bees
      - Once she is a working queen, then perform a merger with the queenless colony to drive better acceptance



TACTIC: REPLACEMENT QUEEN

INSTALLING REPLACEMENT QUEENS - GUIDANCE

#3: Colony Combine

- Combine now queenless colony with another
  - This can be done – but it also comes with a caveat
- Potential for conflict
  - Aggressive colonies tend to be hostile toward bees from a different superorganism
  - If you combine this colony with another colony you might have an all out war on your hands
  - The bad news is, the aggressive bees will likely dominate
  - They could go as far as killing the queen in the colony they combined with



TACTIC: REPLACE QUEEN & WORKFORCE

MOST SUGGESTED ADVICE FOR HOT HIVE RESOLUTION

Timing and Attrition

- Consider the timing
  - It takes time for the transformation to occur
- Workforce Attrition
  - Genetic turnover means the old workforce needs to age out
  - In the height of the season, the worker lifespan is estimated to be around 6-Weeks

New Queen Timing

- New queen timeline
  - A new queen must mate and begin laying before temperament shifts
  - It takes somewhere around 45 to 50 days for the new queen's offspring to emerge (Next Slide)



QUEEN TURNOVER TIMING

HOT HIVE RESOLUTION

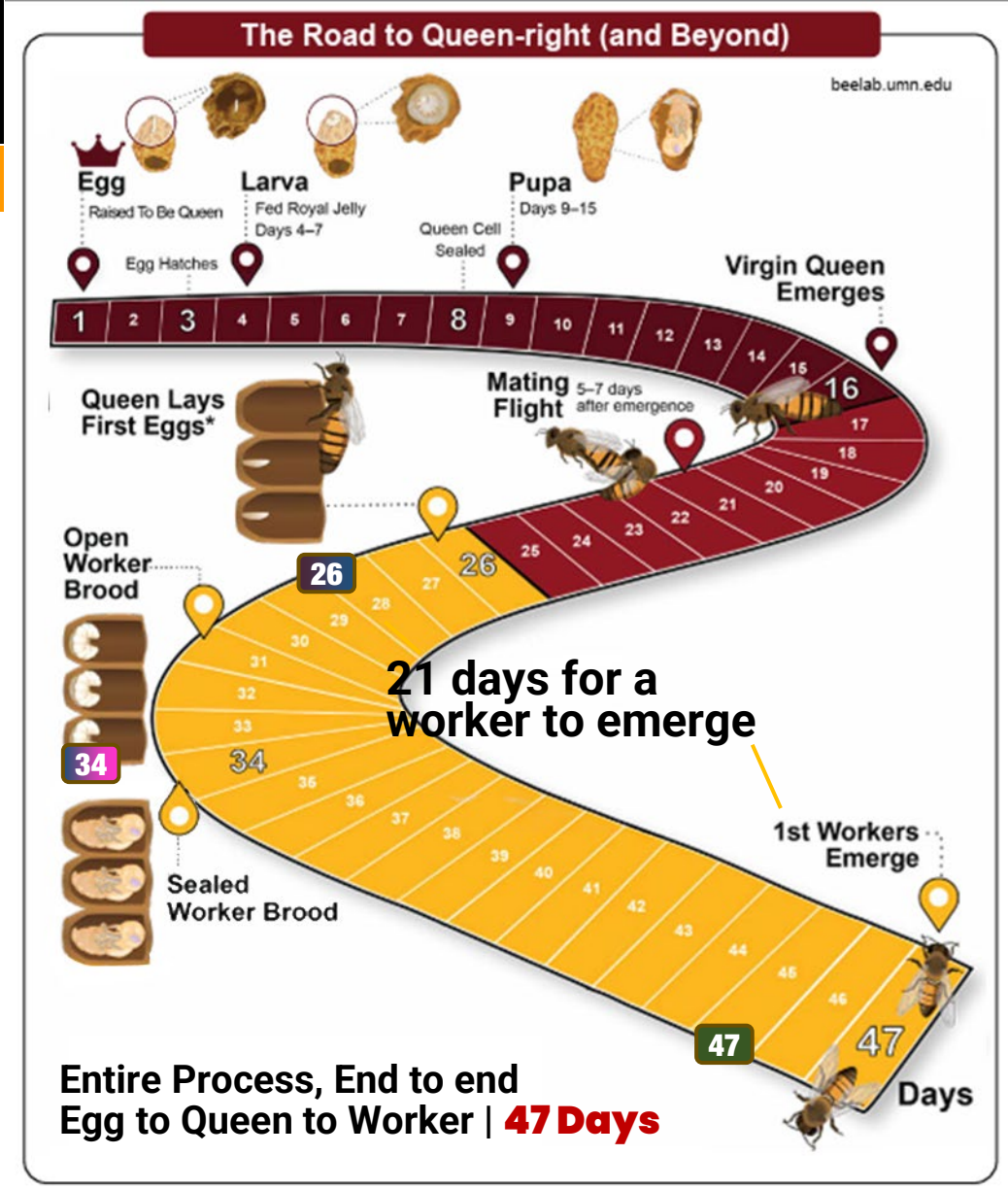
- ☐ **Queen lays eggs around day 26**
- ☐ **Day 34 worker cells sealed**
- ☐ **Day 47 first worker emerges**
  - 21 days to make a worker
  - Day 47 first generation of workers emerge from the new queen

QUEEN LAYS FIRST EGG

WORKER LARVA CAPPED

WORKER PUPA STAGE

DAY 47 FIRST WORKER EMERGES



RUNNING TIMELINE | ~47 Days: **Time from queen first lays to worker emerging from cells**

26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47

TACTIC: ISOLATION

CLOSE, RELOCATE, QUARANTINE

- **Sequester: Move to Isolation**
  - Physically close the hive and move it to an isolated spot
  - Put it in an isolated location
    - Remediate it in a place where it will not pose a risk to others
  - Isolation has benefits
    - Bees patrolling the area will not errantly sting others
    - Moving it out of the apiary makes it more comfortable to work your other colonies



TACTIC: TWEAK/CHANGE PLACEMENT

REPOSITION THE HIVE

- **Shift to a more tactical spot**
  - Sometimes testy hives can be temporarily relocated in the apiary
    - Remediating moderately aggressive hives by moving them to a quiet spot
      - Sometimes you can simply adjust the colony to be away from others
        - Place it off in a quiet corner somewhere
    - Change the entrance direction
      - Set it up to fly away to a less traveled space
      - Make it so the bees would not be alarmed with you walking through the apiary
        - In a quiet corner, they may fly off in a direction that is more isolated and operate autonomously
    - This buys time to rectify the situation



TACTIC: EMPLOY QUEEN EXCLUDERS

SEQUESTER THE QUEEN TO LOWER NEW POPULATION

- **Consider a Queen Excluder**
  - Isolate the queen's workspace
    - Lessen the ability for the queen to produce a large workforce
      - Slowing the queen production will stifle the colony population curve during remediation
  - Stop Drones from Exiting
    - Place a queen excluder under the bottom box



TACTIC: EMPLOY ENTRANCE CHANGES

MODIFY THE ENTRANCE / LANDING BOARD

- **Negate direct flight**
  - Place a device that reroutes the bees when leaving the hive
    - Making it harder for guard bees to exit will slow down the defense force when alarmed
  - Temporary Closures
    - It can also provide a means to close off the entrance while you are working in the apiary



TACTIC: SOUTH AFRICA BEE WORK: KAI HECHERT





TACTIC: CONSIDER YOUR EXIT



We hopped in his car when we were done – fully suited

TACTIC: CONSIDER YOUR EXIT

TAKE THE RISK ELSEWHERE



TACTIC: CONSIDER YOUR EXIT

TAKE THE RISK ELSEWHERE



- **Drive to isolation**
  - Take your cloud of bees and get in a car
    - Keep your suit on
    - Run the air conditioner
  - Drive to a quiet place
    - Open the windows and doors
      - Don't forget the sunroof if you have one
    - Let the bees out
    - Step out of the vehicle
  - Do it again
    - Go a little further and repeat
  - Take your suit off

TACTIC: PLANT SCREENINGS

WALKING THROUGH THE CORN, A KNOWN TACTIC: MALAWI



TACTIC: PLANT SCREENINGS

WALKING THROUGH THE CORN AFTER INSPECTION: MALAWI



TACTIC: PLANT SCREENINGS | DARK SPOTS

PLANT LEAVES STRIP AWAY THE BEES AS YOU MOVE THROUGH



- **Used the corn to screen**
  - We walked through a corn field to strip off the bees
- **Walk through trees or underbrush**
  - Walking through plants flick the flying bees away
    - Its sort of a sweeping motion
- **Move to Shade**
  - Bees often leave you when you move to shade or dark areas like inside a building

TACTIC: WORK BEES IN THE DARK

REMEDIATE BEES AT NIGHT WITH RED LIGHTS



- **Work the bees at night**
  - They will be aggressive, but no one will be around
  - Work with a flashlight with a red filter
    - Bees *can* get riled up in the dark, but it is less intense
      - They do not fly as well with no day light
      - Keep sleeves and pants closed
  - Post Session: They settle down by daylight
    - They will quiet down after disturbance quicker when it is dark

TACTIC: ISOLATE THE QUEEN

A TACTIC TO SLOW THINGS DOWN



- **If you have a 'testy' colony that you want to requeen, with no replacement available, *buy some time***
  - You could find the queen and isolate how much she can lay while you secure a replacement for requeening
    - Using a frame queen cage would limit her to laying on only one frame for a time
    - This lowers the number of her progeny and starts your recovery
    - When you secure a new queen, pinch the offensive one and let the new queen take the helm

TACTIC: MOVE COLONY: LESSEN FORAGER POPULATION

OLDER BEES ARE THE DEFENSE FORCE



TACTIC: SPLIT THE POPULATION

DIVIDE THE COLONY TO TAKE AWAY SOME OF ITS ENERGY

- **Split the colony – *take away bees***
  - Split the colony into two hives
    - This divides the workforce
    - It lowers the total number of older bees
    - Less older bees often means fewer guards
  - Move the queen away
    - Move the queen away so any older bees are not in league with the queen
    - The queenless split, if kept in the old location, will hold the foragers
      - Without a queen, sometimes colonies go through a period of low activity while they await the new queen replacement to take hold
    - Note: You could make many splits, keeping the divides to small populations



TACTIC: MOVE THE HIVE & ORIGIN COLONY

REDUCE THE DEFENSIVE FORCE: BLEED OFF FLYING BEES



- **Move the offensive colony to another spot in the apiary**
  - Put a different colony in its place
    - Returning foragers will go in the supplied alternate colony
  - *Different than a split*
    - **This tactic bleeds off the older workforce reduces defensive bees**
  - Results in fewer older bees
    - Older bees make up the defense force of a colony
    - Nets out to fewer older bees to come to alarm when the bees are defensive

TACTIC: SPRAY SUGAR WATER

SPRAY THE BEES DOWN TO PREOCCUPY THEM

- **Sugar Solution Spray**
  - Something more common for swarm management
  - It can be employed here
- **Spray the bees with sugar water**
  - Spraying them has these benefits:
    - It wets their wings and hampers flight
    - It disrupts communication
    - Bees become preoccupied with grooming
    - It cools their body temps
      - Cool bees sometimes require warming up before they fly

TACTIC: COVER OPEN BOXES

KEEP BEES COVERED AND/OR USE QUIET BOXES



TACTIC: COVER OPEN BOXES

KEEP BEES COVERED AND/OR USE QUIET BOXES



- ☐ **Keep Testy Bees Sequestered**
  - As you take boxes apart for inspection, cover them
    - Use **spare inner covers**
    - Use **real-estate signs**
- ☐ **Use a Quiet Box**
  - Place a spare box to the side and place frames within
    - This keeps frames containing disturbed bees in a calm, sheltered location while you work
    - Storing frames in the box also protects exposed nectar and honey from attracting robbers

TACTIC: SOLVE PREDATOR PROBLEMS

ADDRESS CONDITIONS THAT ARE CAUSING AGGRESSION



- **Predator Problems**
  - If the root cause of defensiveness is predator pressures…
    - Consider which predator it is
      - I have had deer rub against, and turn over a hive
      - The bees were testy when I found them
    - Remediate the problem and/or move the colony to resolve the pressure
      - Once contained, assess if colony remains defensive

TACTIC: GATHER SAMPLE BEES FOR TESTING

OPTIONAL CONSIDERATION: COLLECT BEES FOR TESTING



- ☐ **Consider genetic testing**
  - If you want to know if there is Africanized genetics, collect some bees
    - Find a lab that will do testing and determine their procedures for sending samples (along with costs….)
    - Follow their instructions for submission
  - Await results
    - It will likely be a long turn around
      - ☐ This does not alleviate the issue in any way – but it is something you can explore

THE TAKEAWAY

Various management practices can be used to resolve an encounter. Make a plan and take action to resolve hot hives.

HOT HIVE TACTICS

IMPORTANT! STOP IF YOU TAKE TOO MANY STINGS

BE MINDFUL OF THE NUMBER OF STINGS YOU TAKE



- **Do not ignore taking multiple stings**
  - Even if you are a long-time beekeeper, many stings can be dangerous
  - **Every person's tolerance is different**
  - Even when you are fully suited, it is possible you will be stung several times in these situations
  - Have an **epi-pen** at the ready in case things go sideways

TACTIC: BOOTED AND SUITED

WEAR MULTIPLE LAYERS – HEAD TO TOE SUIT RECOMMENDED



- **Cover for Confidence**
  - A full head to toe three-layer mesh suit is the way to go
    - If you don't have one, and they are not that common, double up the pants and use a 3-Layer Jacket
  - Ensure you close the cuffs on wrists and ankles
    - Wear sturdy shoes and heavy socks
  - Double Glove
    - Nitrile gloves under 3-layer beekeeping gloves

TACTIC: WASH YOUR EQUIPMENT

AFTER YOU ARE DONE, CLEAN YOUR GEAR



- **Veils, Suits, Gloves, etc.**
  - Clean them of alarm pheromone
  - Clean them of body odor
- **Hot Water & Detergents**
  - Dawn Dishwashing Detergent
  - Washing Soda (Sodium Carbonate)
  - Bleach (small amount)
  - Oxy-Clean
- **Soak, Rinse, and Repeat**
  - Let it soak, rub together
  - Rinse and repeat until clean

MIND THE HEAT

DO NOT OVERLOOK BECOMING OVERHEATED





- ☐ **Protect**
  emerge
  - Often
    - Wea
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        s
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    - Blue
    - Nec
    - Coc

MIND THE HEAT

DO NOT OVERLOOK BECOMING OVERHEATED



- **Protect yourself from heat emergencies**
  - Often done in hot conditions
    - Wearing full head to toe protection in stifling heat is a real possibility
    - Make concessions for the conditions
      - Have plenty of hydration/water on hand
      - Take frequent breaks
      - Plan for getting away from bees that are surrounding you
  - Consider Cool Suit Tactics
    - Blue cold packs in your pockets
    - Neck fans
    - Cool damp towels to wipe down with

TACTIC: WORK WITH A PARTNER

REITERATING THAT IF IT IS A POSSIBLE DANGEROUS SITUATION…



- **Work with a second person**
  - Practice safety in numbers
  - Work is done more efficiently
    - Lowers exposure if you and the other person work well, and accomplish the task faster
  - Preplan Activities
    - When working with another person – pre-plan the steps
      - Be more in-tune with getting the operation done in a more efficient manner
    - Have equipment at the ready
      - Limit loss of time by having all equipment needed at hand

TACTIC: PERIMETER DEFENSE

MAINTAIN AT LEAST A 100-FOOT PERMITER

100 Foot, it is the equivalent distance of a 4-lane highway

- **Establish what the affected perimeter could be**
  - Perimeter Risk
    - Hot Hives will fly in the apiary
    - They will also patrol and defend on occasion **beyond and into surrounding properties**
  - Assess any risk to people and pets
    - Not to be an alarmist, but the danger could be real
    - Before you commence with an operation - **You must assess what the risk is to others** – and that includes pets and livestock
- **Protect errant bystanders**
  - Post perimeter guards
    - In some situations, it warrants posting sentries to actively patrol the perimeter for unintended incursions
      - Have them ready to limit pedestrians who might inadvertently come into the danger zone

TACTIC: ZONE DEFENSE: NOTIFICATION

WHERE NOTIFICATIONS ARE REQUIRED, PUT OTHERS ON NOTICE



TACTIC: ZONE DEFENSE: NOTIFICATION

WHERE NOTIFICATIONS ARE REQUIRED, PUT OTHERS ON NOTICE



- **Notify impacted stakeholders**
  - If you will put others at risk, let them know in advance
    - Sometimes the conditions occur on a small property
      - You have no choice but to rectify it
      - Bees might patrol / menace the space of the apiary and beyond
  - Notifications and Postings
    - Proactively notify people in the 'harm circle' to stay inside – and limit movement
    - Post someone to patrol the perimeter for unintended incursions
      - Have them ready to limit pedestrians who might inadvertently come into the danger zone

TACTIC: AVOID STIMULATIONS

SUPRESS USE OF NOISY EQUIPMENT, LAWN MOWERS, Etc.



- **Avoid unwanted stimulation**
  - If you have a problem colony…
    - Check the area for anything that could serve as a catalyst for defense
    - Avoid mowing and yardwork during remediation work
  - Keep pets in control
    - Avoid allowing pets to roam free
      - Monitor pets (chickens, cats, dogs) and ensure they are not entering into areas where encounters are possible

TACTIC: KILL AN OVERLY AGGRESSIVE COLONY

REMEDIATE, WHEN POSSIBLE, EUTHANIZE WHEN NECESSARY

- **Recommendation: Soapy Water**
  - Mix 1 Cup for each Gallon of Water
  - Seal the colony in the equipment at night
    - Close the entrance so no bees can get out
    - Place a screen over the top hive body so you can pour liquid through it
  - Pour the solution
    - Remove the roof and pour the soap/water solution between every frame and over the cluster
      - 1 to 2 gallons will likely do the job - Repeat as needed



TACTIC: ADDRESS THE STRAYS

CLEAN UP

- **Why this works**
  - Soap acts as a surfactant that disrupts the waxy coating of the bees
  - The solution also clogs the spiracles (breathing pores), leading to rapid suffocation.
- **Errant Bees**
  - Foragers that were out for the night will return
    - They will and hang out at the entrance
  - Spray Bottle with soapy water
    - If there is enough bees causing a problem, you could spray them down at the entrance



TACTIC: ALTERNATIVE APPROACH

COLD KILL

- **Alternative to consider**
  - Cleaner alternative
    - If you wanted to study the bees and maintain the colony setup, ***use cold***
    - Seal the hive in the field > Place the hive stack into a commercial freezer
  - Outcome
    - This leaves everything intact – and has no impact to the comb
    - Bees chill and subsequently perish
    - Considered one of the more human ways to euthanize a colony
  - Preservation
    - This method leaves the bees in a good state for subsequent testing
  - Research Forward
    - This method is often used for research situations with smaller colonies
    - Doing it this way, with a full colony, would be an unusual use case, but it is a valid approach

UNACCEPTABLE TACTICS

COLD KILL

- **Methods that are NOT acceptable**
  - Pouring Gasoline or petroleum products
  - Drowning without soap
  - Spraying pesticides directly into the hive
  - Abandonment (letting colony starve or freeze)
  - “Shaking out” aggressive colonies near neighbors

These are unsafe, inhumane, and illegal in many states

THE TAKEAWAY

Use good management practices while diffusing a situation. **Protect yourself and others** while conducting the operation

CLOSING THOUGHTS

SUMMING UP THE EXPERIENCE

16 YEARS LATER

- **Learning / Sharing Experience**
  - The video about that encounter has millions of views
  - Dozens of beekeepers have reached out to me for guidance
    - They saw the video and contacted me for consultation on their situations
  - Many have stopped me and expressed gratitude for sharing the process
- **The Comments**
  - I can’t end this without a reference to the comments in the video
    - ASMR, Jokes, Insults, Gratitude, and some genuinely funny takes on the situation

THINK OF YOUR TACTICS

PREPLAN YOUR MANAGEMENT FOR ENCOUNTERS

- **Management Responses**
  - For Mild Defensiveness
    - Improve handling, Adjust timing, Reduce stressors
  - For Moderate Defensiveness
    - Requeen, Split colony, Evaluate forage conditions
  - For Overly Defensive Colonies
    - Immediate requeening, Genetic isolation, Public safety considerations
  - For Out of Control Colonies
    - Isolate, Requeen, Protect the public (and yourself) – Euthanize when warranted

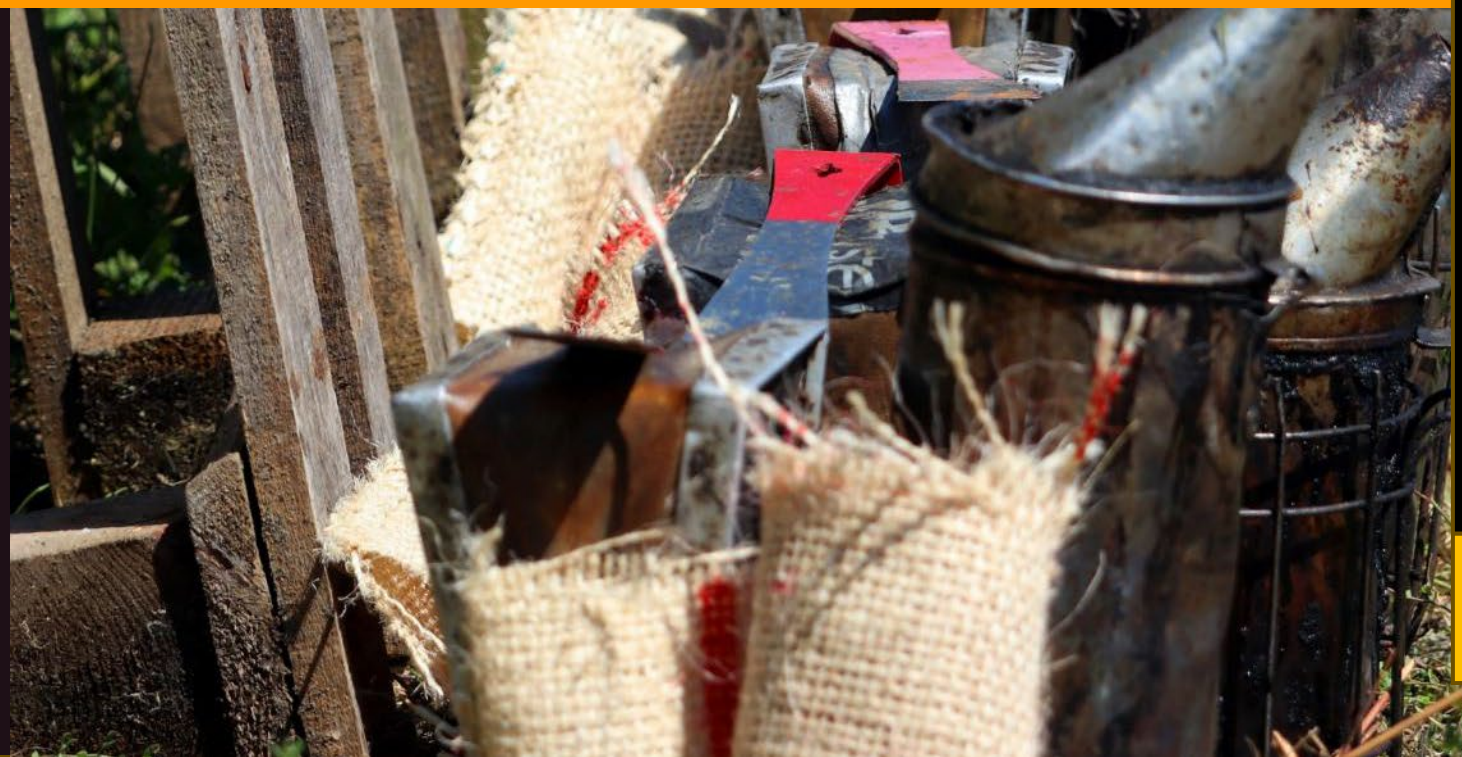
ADDITIONAL RESOURCES

FUTHER INFORMATION ON COLONY HANDLING

- **Sources found for euthanizing colonies**
  - USDA Honey Bee Technical Note No. 2 — AFB management and colony destruction
  - State Apiary Inspection Manuals (NJ, PA, MD, TX) — euthanasia procedures for disease and aggression
  - Goodwin & Van Eaton, *Control of Varroa* (NZ) — colony destruction guidance
  - Canadian Honey Council AFB Protocols — soapy water euthanasia and burning
  - FAO Honey Bee Health Guidelines — humane destruction for disease control



QUESTIONS



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THANK YOU FOR YOUR TIME

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