Bees of Tennessee and the TSP Honey Project

David Sutton
TOPICS

• Types of Honeybees/ Roles
• Benefits of Honeybees
• Native Bees
• Other Pollinators
• TSP Honey Project
Queen

- One queen per hive
- Will live between 1 - 4 years
- Lays 1000 – 2000 eggs daily
- Has a non-barbed stinger
- Hive will die w/o queen
- Produces pheromone
Worker

- Workers are all females
- 40-60,000 in a strong hive
- Barbed stinger, will die when used
- Will live 6-8 wks. in the summer
- Will live 4-6 mos. in winter
- Performs many jobs
**Worker’s Life**

Days 1 – 2  Cleans cells and warm the brood nest

Days 3 – 5  Feeds older larvae with honey and pollen

Days 6 – 11 Feeds young larvae with royal jelly

Days 12 – 17 Produces wax and constructs comb, ripens honey

Days 18 – 21 Guard the hive entrance and ventilate the hive

Days 22+  Forage for nectar, pollen, propolis and water
Drone

- Sole responsibility is fertilization
- Leaves hive for 2-3 hours each day
- They would die of starvation, if not fed
- After reproduction, drone will die
- Has no stinger
- In late fall, tossed out
## Honeybee Life Cycle

<table>
<thead>
<tr>
<th>Type</th>
<th>Egg</th>
<th>Larva</th>
<th>Pupa</th>
<th>Total</th>
<th>Fertile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queen</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td>Worker</td>
<td>3</td>
<td>6</td>
<td>12</td>
<td>21</td>
<td>N/A</td>
</tr>
<tr>
<td>Drone</td>
<td>3</td>
<td>7</td>
<td>14</td>
<td>24</td>
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</table>

### The Life cycle of a Bee

- **Egg**
- **Larva**
- **Pupa**
- **Adult**
Types of Honeybees

- German
- Russian
- Italian
- Carnolian
<table>
<thead>
<tr>
<th></th>
<th>Italian</th>
<th>German</th>
<th>Carnolian</th>
<th>Russian</th>
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<tr>
<td>Attitude</td>
<td>OK</td>
<td>Bad</td>
<td>Nice</td>
<td>Fair</td>
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<tr>
<td>Honey</td>
<td>Very Good</td>
<td>OK</td>
<td>Good</td>
<td>OK</td>
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<tr>
<td>Spring</td>
<td>Good</td>
<td>Low</td>
<td>Very Good</td>
<td>Ok</td>
</tr>
<tr>
<td>Winter</td>
<td>Good</td>
<td>Very Good</td>
<td>Good</td>
<td>Very Good</td>
</tr>
<tr>
<td>Swarming</td>
<td>OK</td>
<td>OK</td>
<td>High</td>
<td>OK</td>
</tr>
<tr>
<td>Propolis</td>
<td>Low</td>
<td>OK</td>
<td>Low</td>
<td>OK</td>
</tr>
<tr>
<td>Disease</td>
<td>OK</td>
<td>Worse</td>
<td>Good</td>
<td>Best</td>
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</table>
Pollination

• Honeybees pollinate about 16% of the world's flowering plant species

• Honeybees pollinate 30% of all flowering fruits and vegetables in the US

• Annual US agricultural value of honey bee pollination is over 15 billion dollars/year
Native Bees

- Bumble Bee
- Leafcutter Bee
- Mason Bee
Bumble Bee

- Bumble bees do not produce honey and are a social bee
- They have colonies between 50 to 500 bees
- Stinger and it is not barbed
- Not aggressive
- Bumble bees are a ground dwelling bee
Mason Bee

- Mason bees nest in reed tubes
- Will not fly over 300m
- Can Pollinate 20,000 Cherrie blossoms in one day
- 6 to 12 weeks nesting
- Solitary bee
Leafcutter Bee

- Summer bee hatching at 72 degrees
- Nest in reed tubes
- 300m flight radius
- 100 to 1
- Most commonly pollinate melons, strawberries, and alfalfa
- Life cycle 4-6 weeks
Other Pollinators

- Birds
- Mammals
- Humans
- Wind
TSP Honey Project
Project Vision

Promote and sell honey produced from apiaries located in our Tennessee state parks resulting in the benefits to our state parks, agriculture, and community education.
Project Benefits

- Promote community education
- Benefits to local pollination
- Promote community partnerships
- Promote healthy living
- Potential profits reinvested into the parks
Strategy

Year One – Pilot - 2018
• Setup one apiary in each region of the state

Year Three
• Setup an additional 4 apiaries in each region totaling 15 apiaries

Year Five
• Setup an apiary in all approved parks
## Current Parks with Hives

<table>
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<td>David Crockett</td>
<td>Roan Mountain</td>
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<td>Frozen Head</td>
<td>Standing Stone</td>
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<td>Henry Horton</td>
<td>Warrior’s Path</td>
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</tbody>
</table>
Community Support

Volunteer hours or Donations:

• Maintaining hives
• Beekeeping
• Creating pollination gardens or fields
• Education programs
Getting Started

• Join a local club (www.tnbeekeepers.org)
• Take an intro to beekeeping course
• Find a good location for your hive(s)
• Find a local bee supply vendor
• Purchase your equipment
• Order your bees
Don’t miss an issue!

Subscribe today at tnconservationist.org or call us at 615-532-0060.

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Honeybee Facts

- One worker bee makes only 1/12th of a teaspoon of honey in its lifetime.
- To make a pound of honey, honeybees need to visit 2,000,000 flowers.
- One ounce of honey would power a bee for a flight completely around the earth.
- A honeybee’s wings beat 200 times per second, creating their infamous buzzing sound.