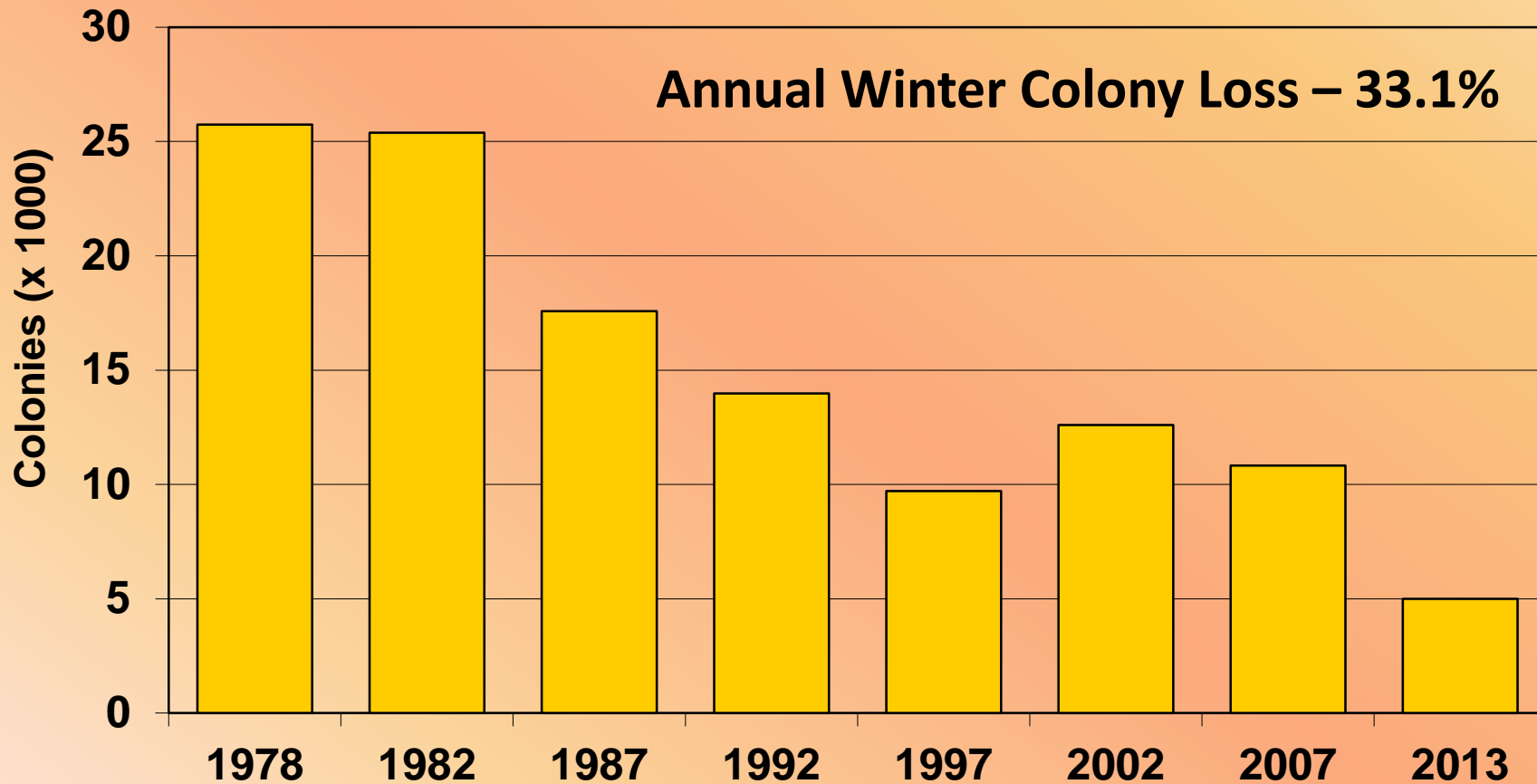


Virginia State Managed Pollinator Protection Plan

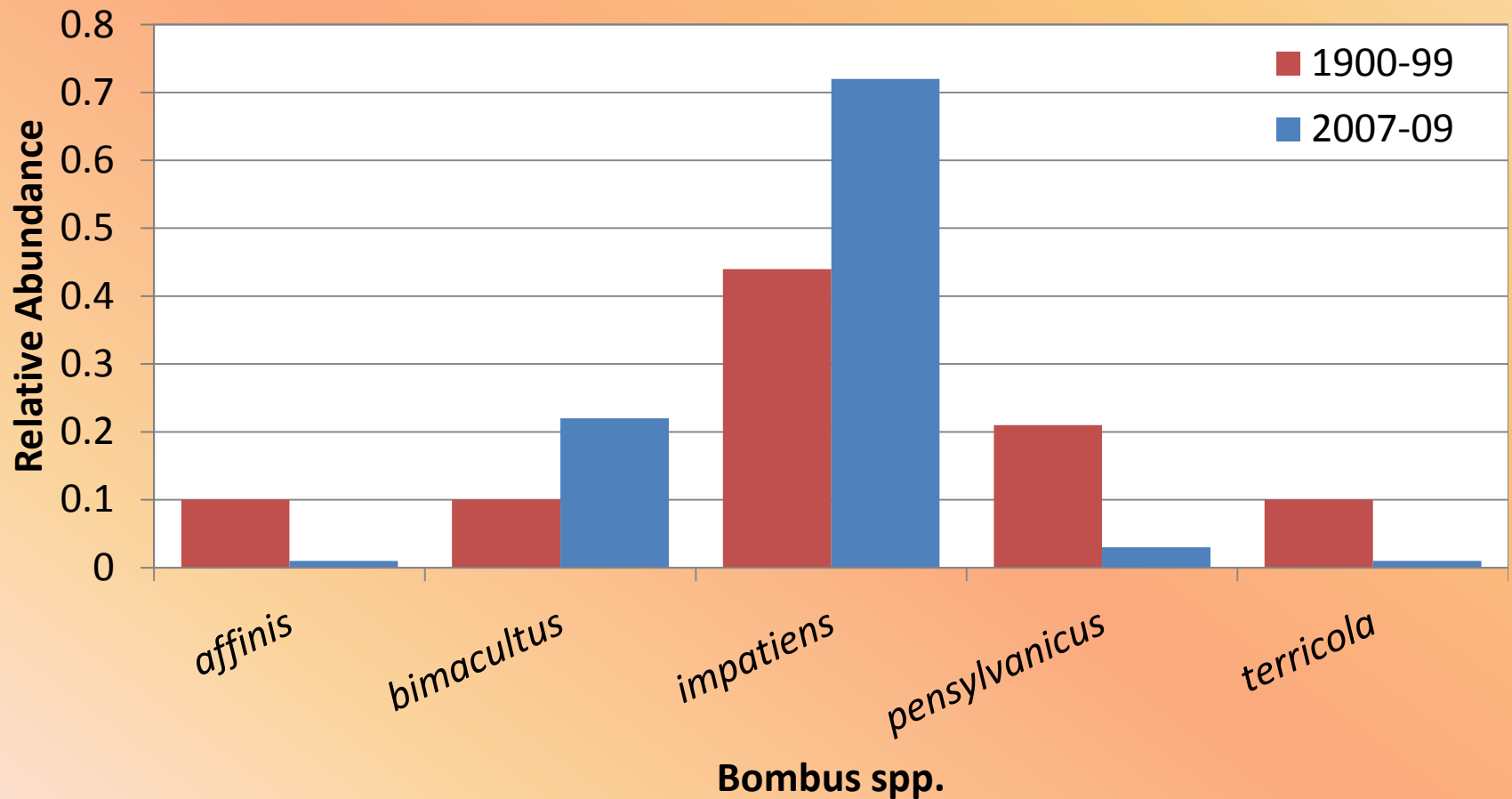
Virginia Department of Agriculture and Consumer Services
102 Governor Street
Richmond Virginia 23219

Production Honey Bee Colonies in the Virginia from 1978-2013¹

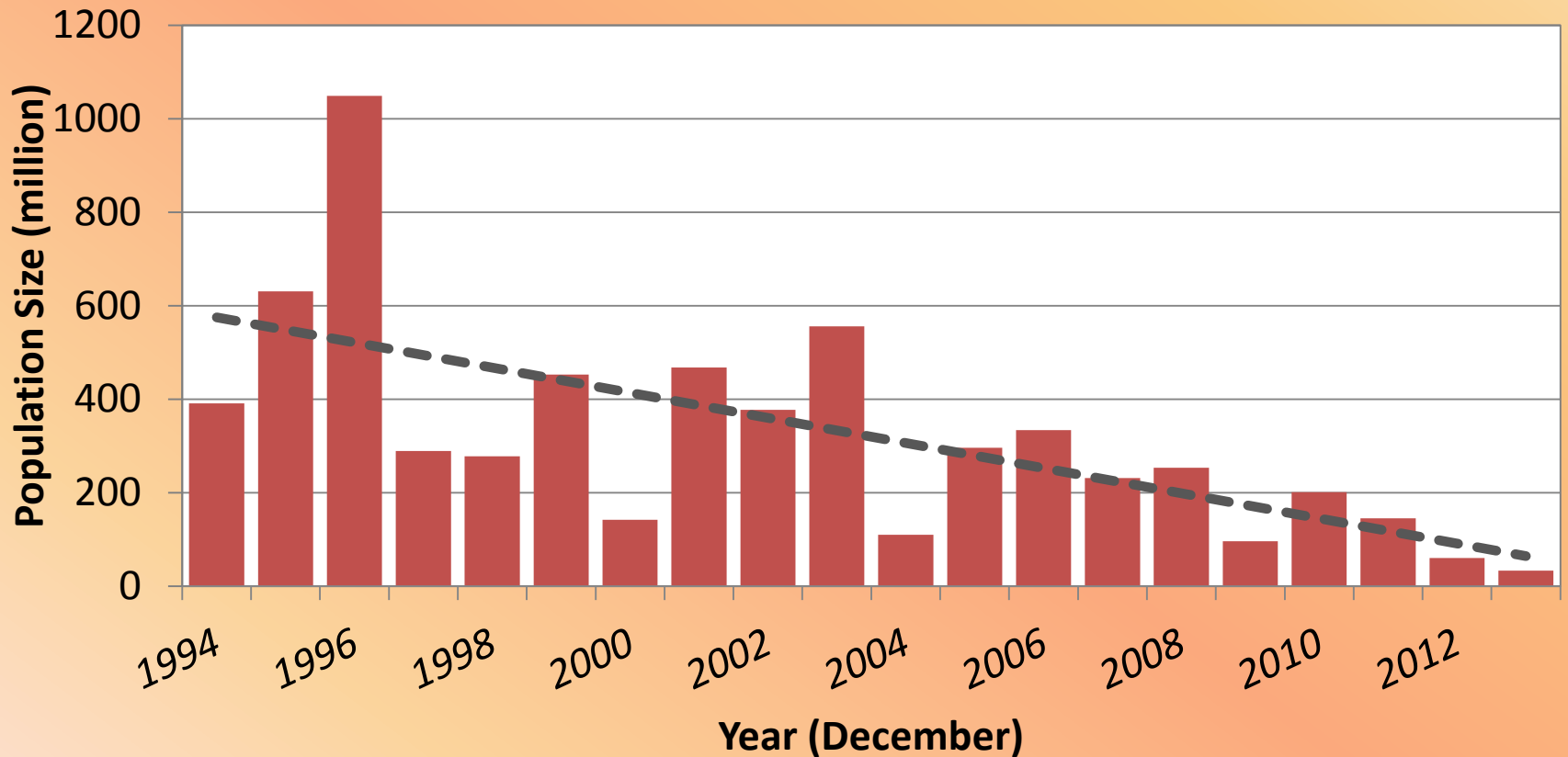


¹Data from USDA-NASS Census

Status of Bumble Bee Populations in Northern and Coastal Eastern States of the U.S.



Status of Eastern Monarch Butterfly Populations in Mexico





Factors Affecting Pollinator Population Stability

- **Environment**
 - Temperature extremes
 - Drought/Flooding
- **Nutrition**
 - Habitat loss
 - Food resources
 - Forage variety
- **Pathogens**
 - Pest
 - Viral
- **Genetics**
 - Diversity
 - Isolation
 - Integrity
- **Toxicants/pollutants**
 - Point source
 - Non-point source

Virginia Managed Pollinator Protection Plan

- In June of 2014, a Presidential Memorandum was issued which directed a federal Interagency Task Force to create a “*Strategy to Promote the Health of Honey Bees and Other Pollinators.*”
- EPA directed to engage states in *developing state managed pollinator protection plans* as a means of mitigating the risk of pesticides to bees and other managed pollinators.

Managed Pollinator Protection Plan

- Focus on communication and coordination
 - Beekeepers
 - Agricultural producers
 - Pesticide applicators
 - Landowners
- Use of Best Management Practices
- Voluntary, proactive approach
- Includes managed pollinators not under contracted pollination services at the site of application
- It does not include pesticide applications where bees are the target pest, for example, bees infesting a structure
- Not intended to prohibit, eliminate, or further restrict the application of pesticides

Beekeeper Considerations

What - When - Where - How

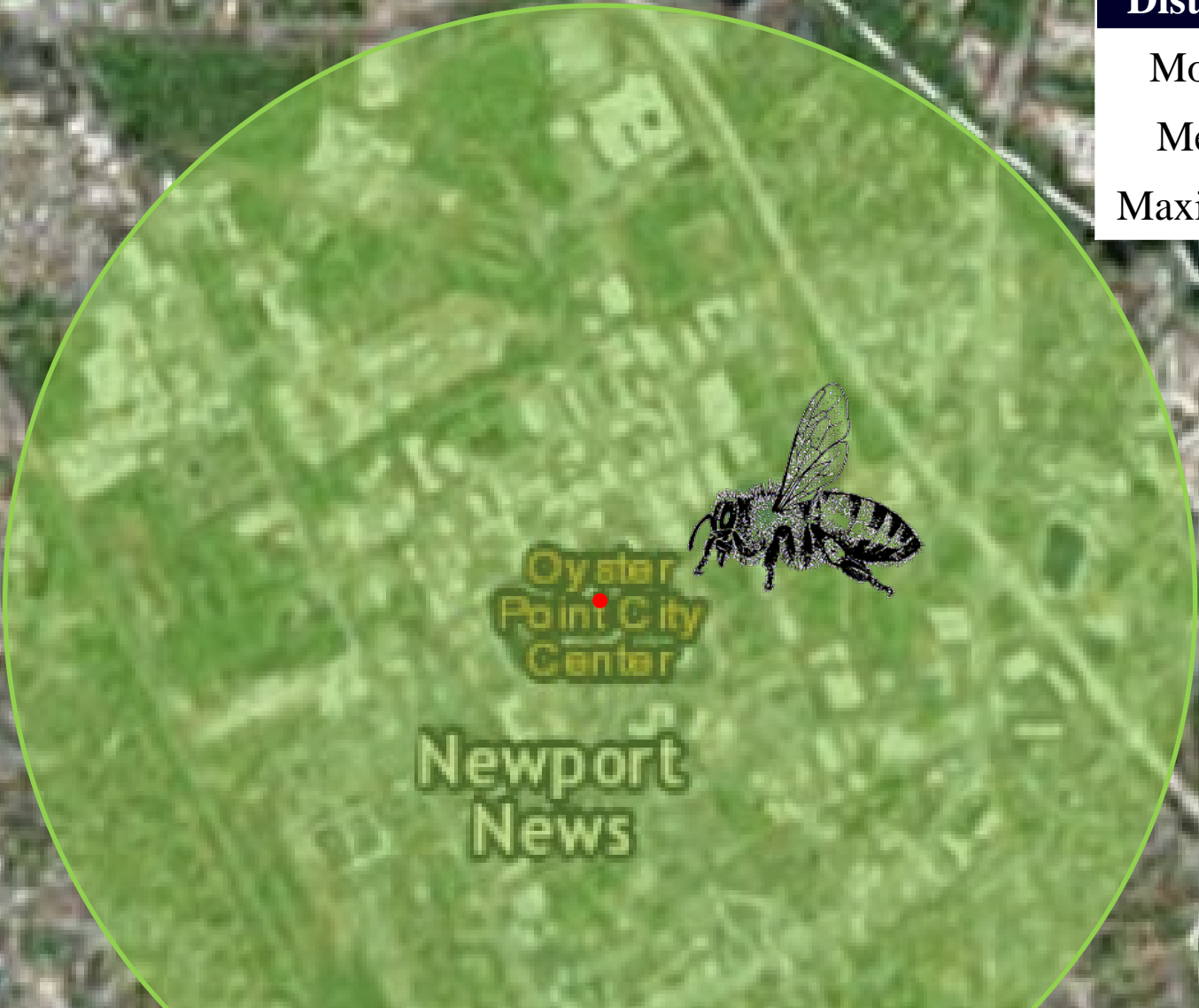
- No Action
- Cover Hive
- Close Hive
- Move Hive



Pesticide Considerations

- Active Ingredient
 - Toxicity
 - Lethal
 - Sublethal
 - Residual
- Formulation
 - Dust
 - Liquid
 - Granular
- Proximity
 - Hive
 - Forage
 - Route
- Timing
 - Flight
 - Weather

Distance	Miles
Modal	0.4
Mean	1.4
Maximum	6.8

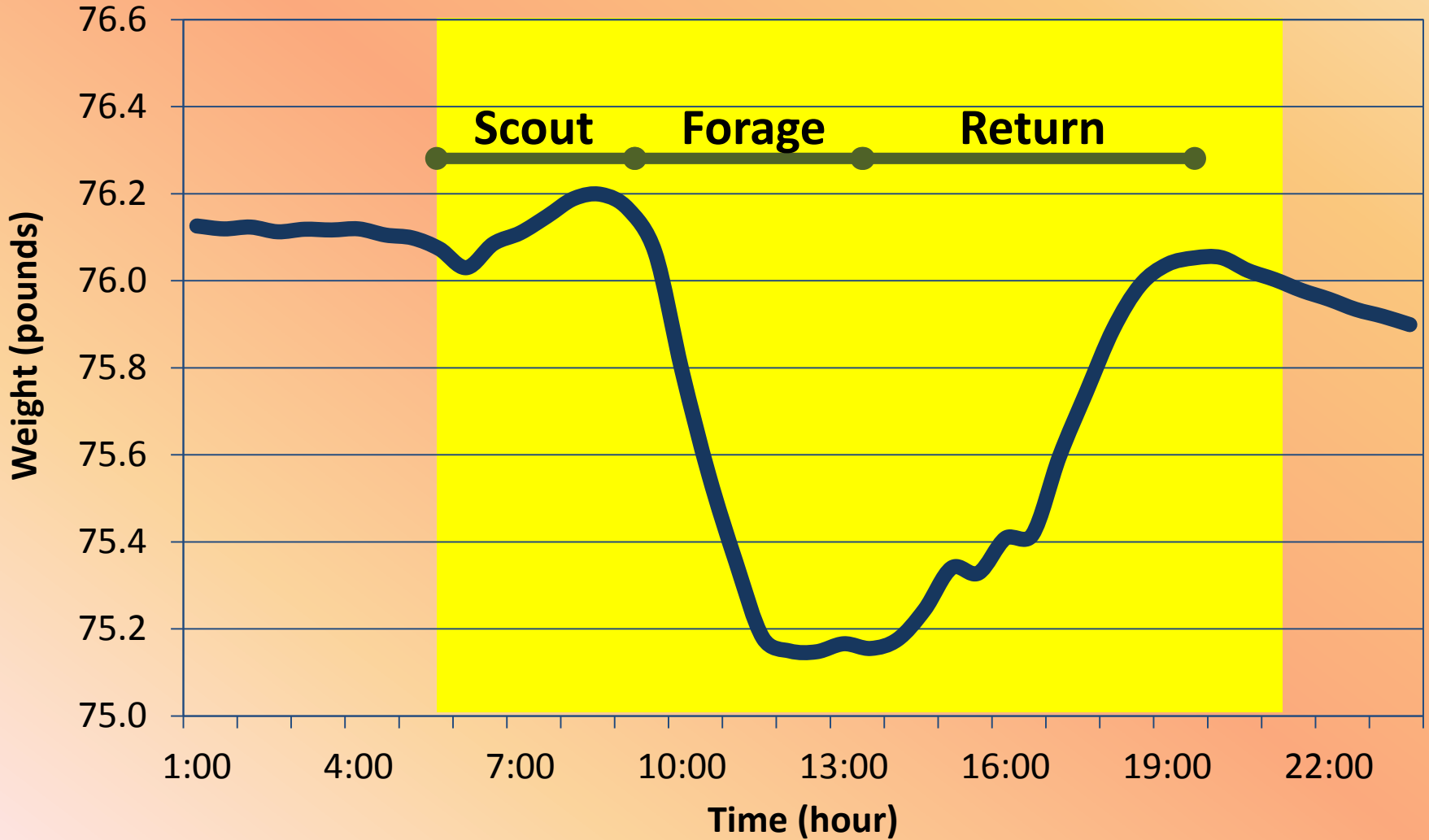


Average Size Foraging Area 5.87 sq. miles

Pesticide Considerations

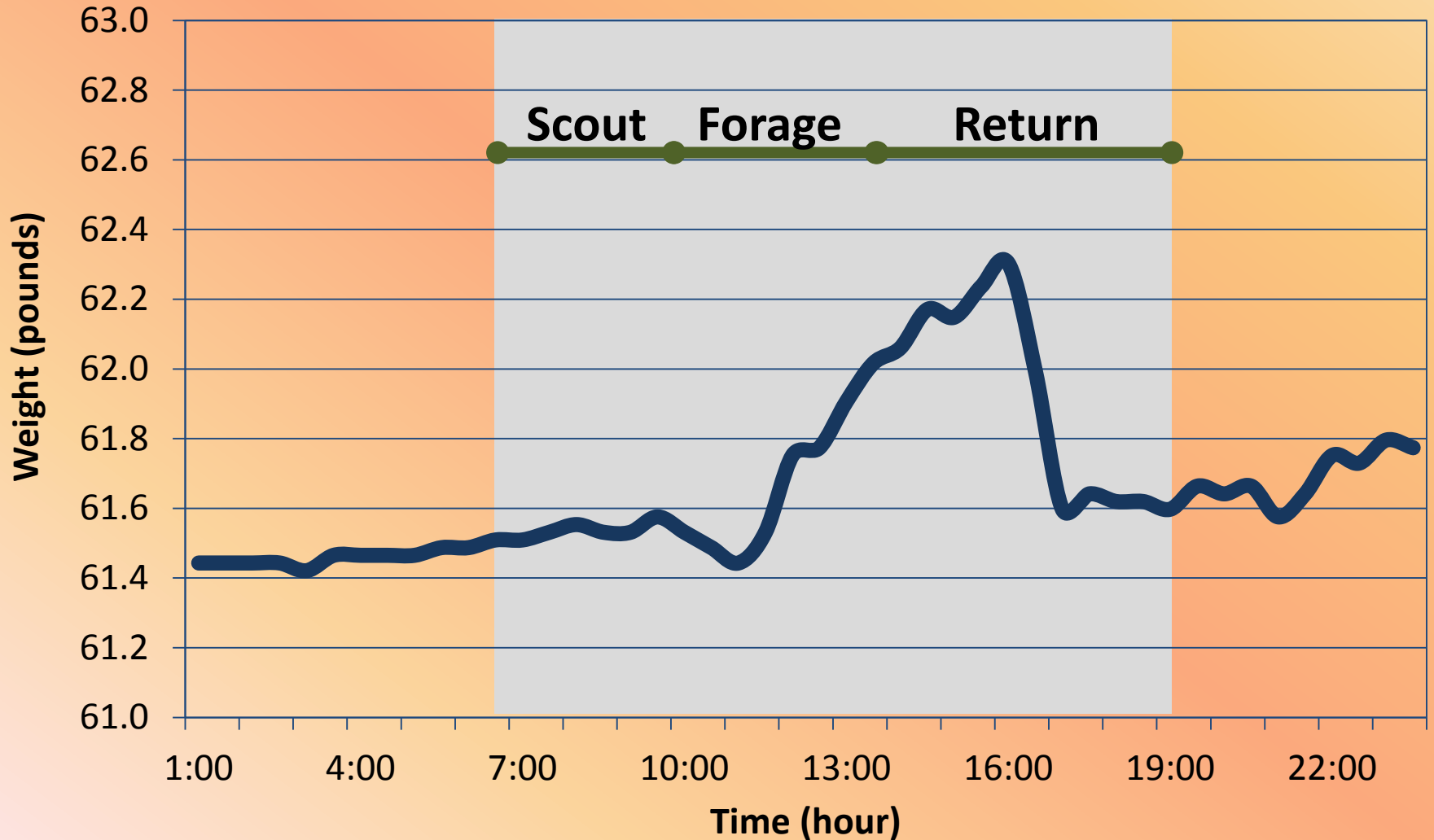
- Active Ingredient
 - Toxicity
 - Lethal
 - Sublethal
 - Residual
- Formulation
 - Dust
 - Liquid
 - Granular
- Proximity
 - Hive
 - Forage
 - Flight path
- Timing
 - Flight
 - Weather

Honey Bee Hourly Activity - Sunny



Twilight at 4:43 am

Honey Bee Hourly Activity - Rain



Twilight at 4:43 am

Pesticide Applicator Considerations

- **When possible, apply pesticides early morning or in the evening.**
 - Pollinators are most active during daylight hours when the temperature is over 55 °F.
 - Apply pesticides in the evening when bees are less active.
 - Applying pesticides in the early evening allows them to decompose during the night.

Pesticide Applicator Considerations

- **Be cognizant of temperature restrictions on pesticides.**
 - The efficacy of some pesticides is reduced at certain temperatures.
 - Unusually low temperatures can increase the time that toxic residual remains on the crop.