

# Integrated Pest Management Program

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CU Boulder Facilities Management



# Integrated Pest Management

- Focuses on long term prevention of pests.
- Minimizing the impact on human health and the environment.
  - Use of least toxic controls: Biological, Mechanical, Cultural, and Chemical.
  - Utilizing extensive knowledge about the pests.
  - Monitoring through regular and careful inspections.
  - Record keeping to track and evaluate
- Most cost effective.

# History

- Pre 1998:
  - No campus pest control staff, program or policy
  - Gen. Fund pest control conducted by FM maintenance staff
  - Auxiliaries called private pest control providers
  - 1000's of gallons of liquid pesticides used in certain years
  - Little to no IPM
- Since 1998:
  - Campus wide policy
  - In-house structural IPM and wildlife management team
  - All pesticide applications reviewed in advance
  - All applicators licensed / under license by State
  - FM & HDS Grounds practicing IPM

# Policy Overview

- Policy is campus-wide
- “Threshold Action Levels” determined
- Based on Threshold Action Levels, select a treatment that is:
  - Least hazardous to human health;
  - Least damaging to the environment;
  - Effective in controlling the pest;
  - Has minimal negative impacts to non-target organisms
  - Within available resources
- All proposed pesticide applications reviewed by coordinator.
- Only “Qualified Supervisors” have authority to purchase pesticides.

# Services provided

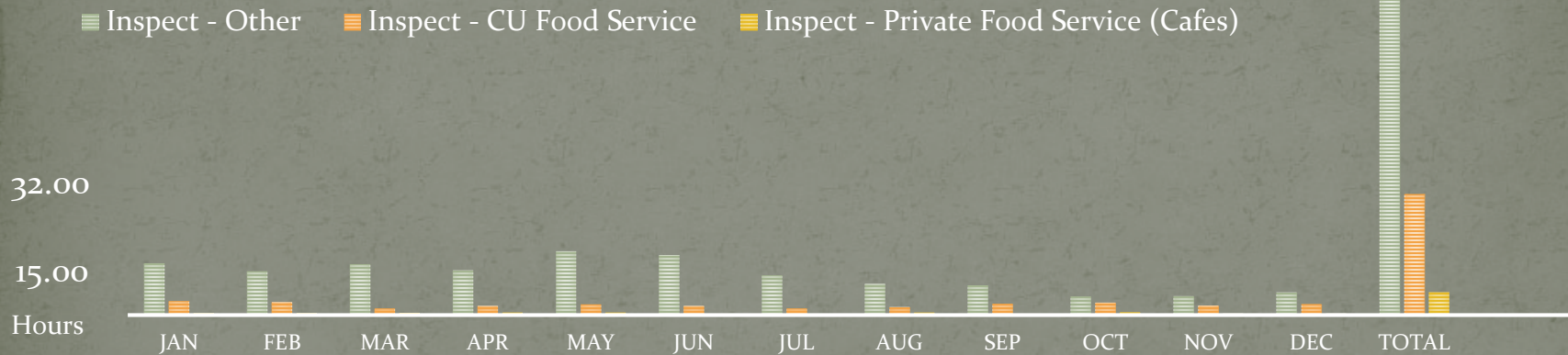
- All structural/indoor pests controlled including:
  - Research & Animal Labs
  - Residential areas
  - Food Service areas
  - Greenhouses
  - Child Care centers
  - Recreational facilities
  - Museums / Collections
  - Bed and Bat bugs
- Outdoor pests:
  - Mosquito control program
  - Yellow Jacket traps (~300 traps every 3 months)
  - Rodent bait stations (~700 stations/month)
- Wildlife management
  - Bird control
  - Marmots, coyotes, foxes, p-dogs, deer, bears, mtn. lions, sasquatch

# IPM is about Inspection

Cy 2017 Commercial Kitchens

## INSPECTIONS AFTER APPLYING BAIT

518.00 year



Integrated Pest Management is inspections and monitoring.



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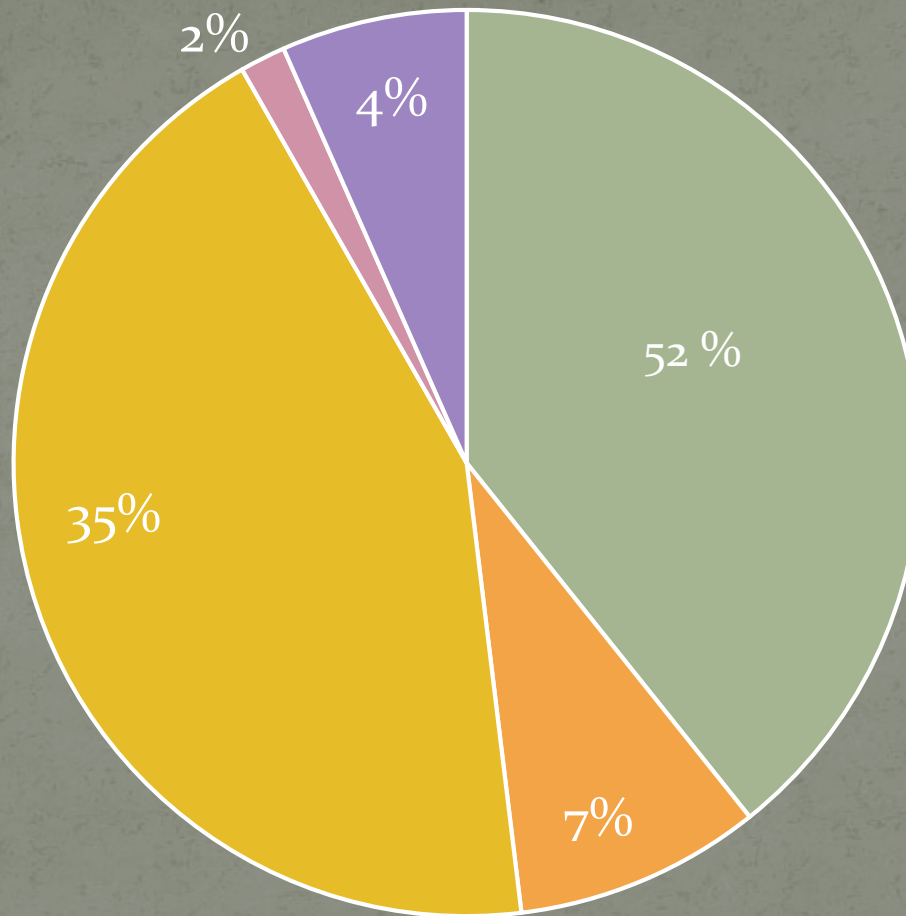
# Current Resources

- Environmental Manager (.17 FTE)
- IPM Manager(1.0 FTE)
- IPM technicians (3.0 FTE)
- IPM Structural Trades Apprentice (1.0 FTE)
- Program support (.15 FTE)
- 2-3 students (.68 FTE)
  - Depends on season
- ~48% recharge

Responsible for close to 13 million sq. ft.  
throughout more than 250 structures  
across ~1200 acres

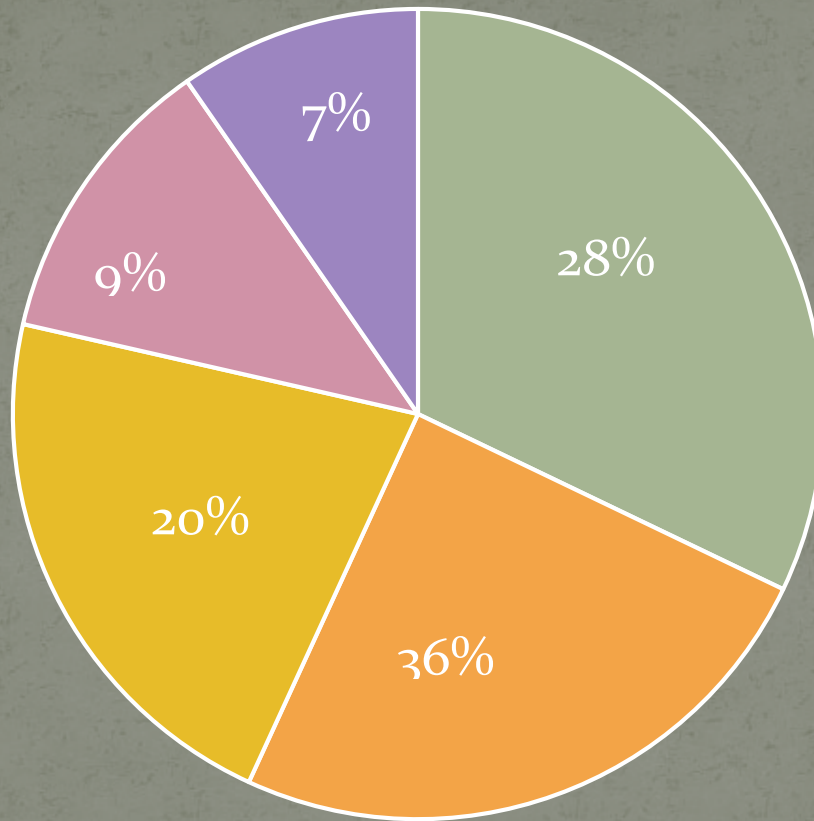


## Labor Hours - CY 2017 by Fund



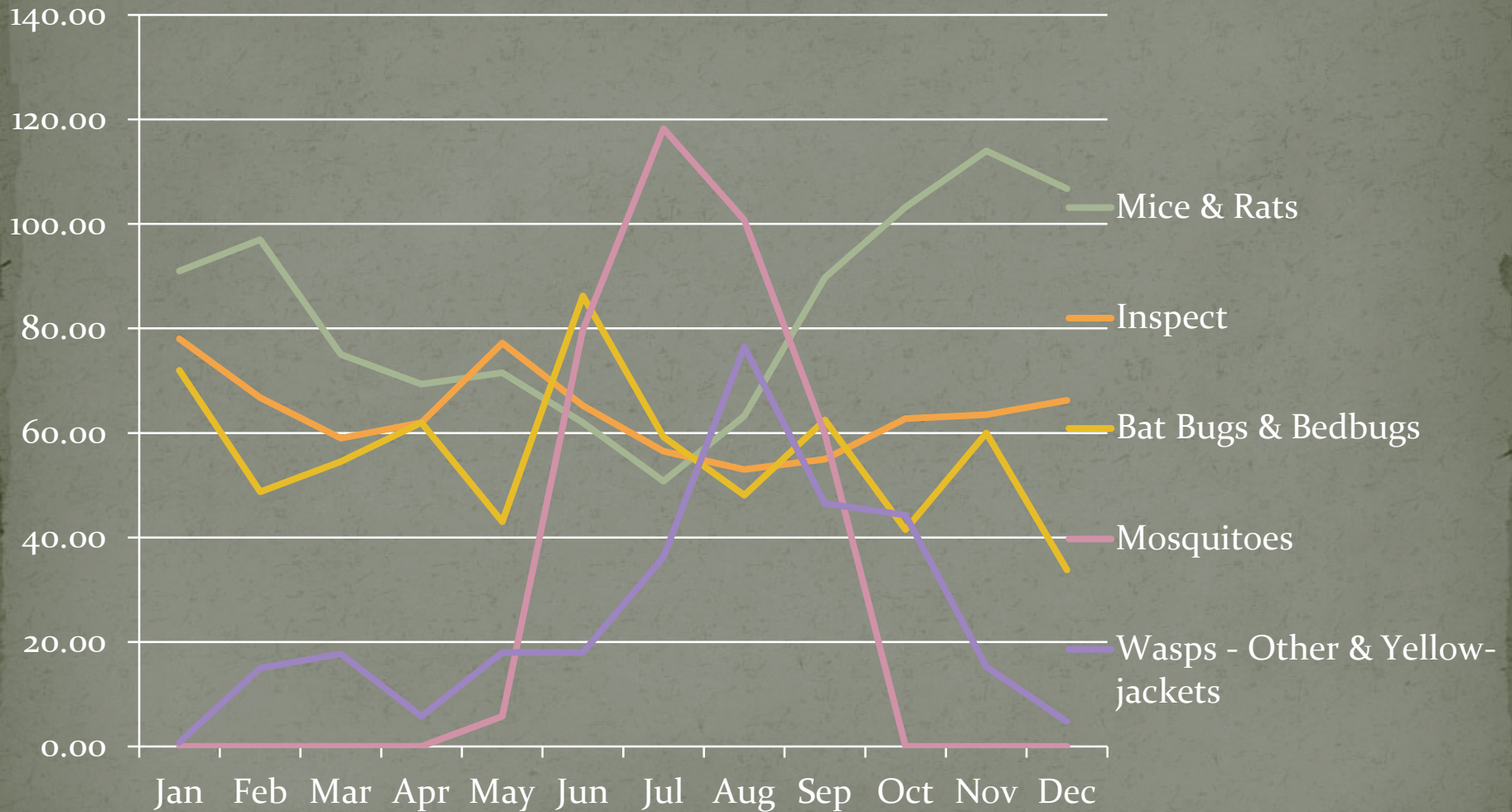
General Fund Research Property Housing and Dining Services CUSG Athletics

## Top 5 Pests - CY 2017 Hours - Consolidated

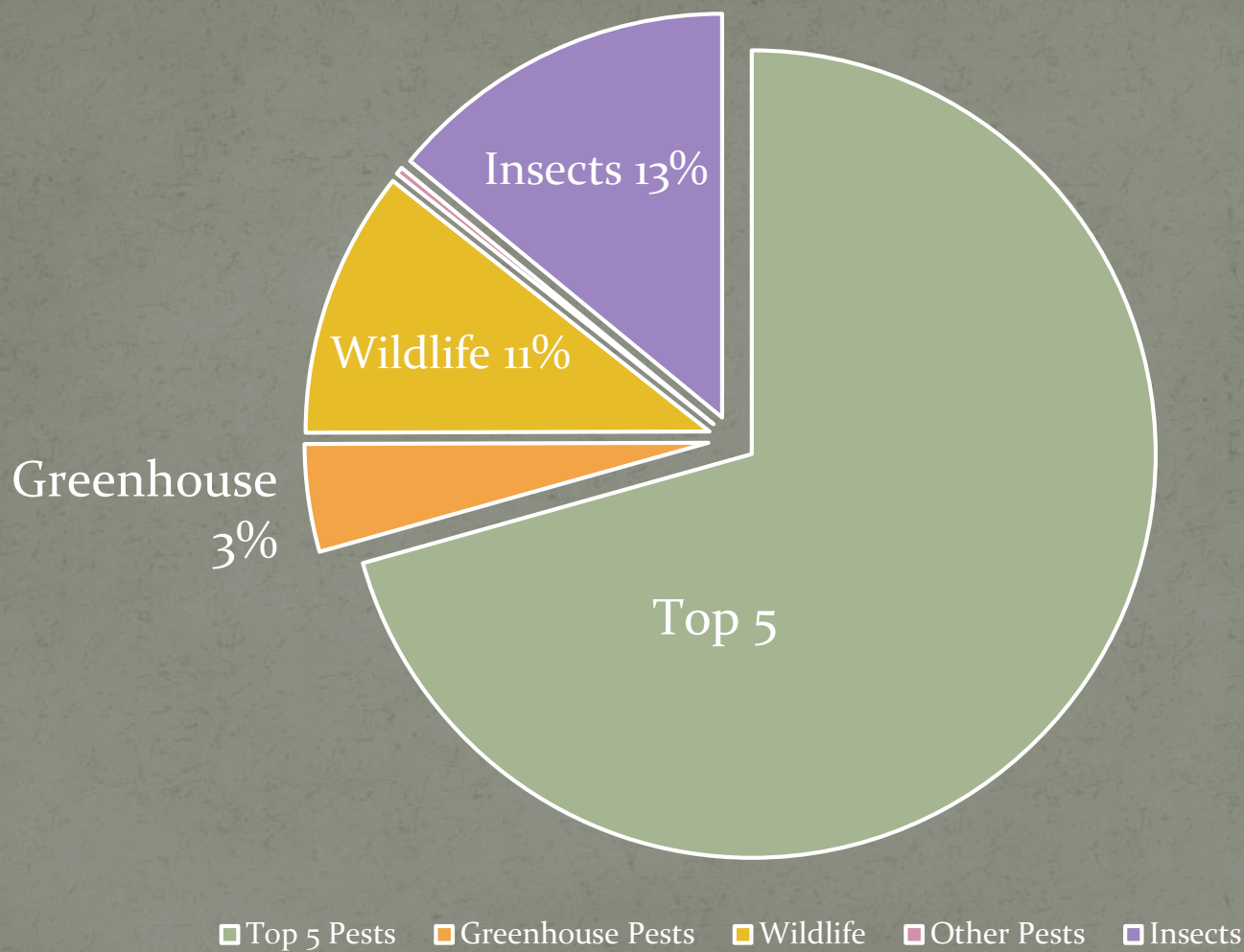


■ Mice & Rats ■ Inspect ■ Bat Bugs & Bedbugs ■ Mosquitoes ■ Wasps - Other & Yellow-jackets

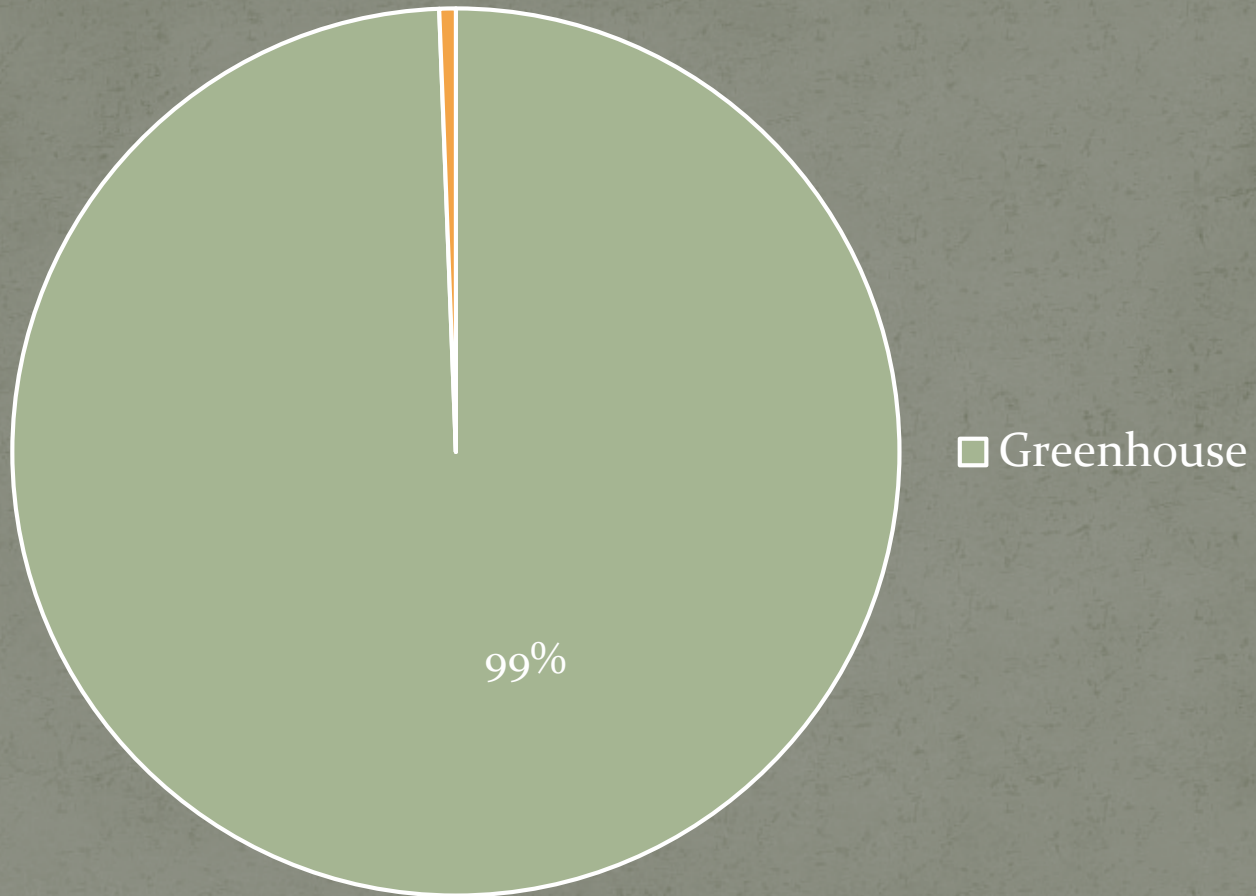
## Top 5 Pests - CY 2017 Total Hours Consolidated Pests – by Month



## CY 2017 Total Labor Breakdown by Hours

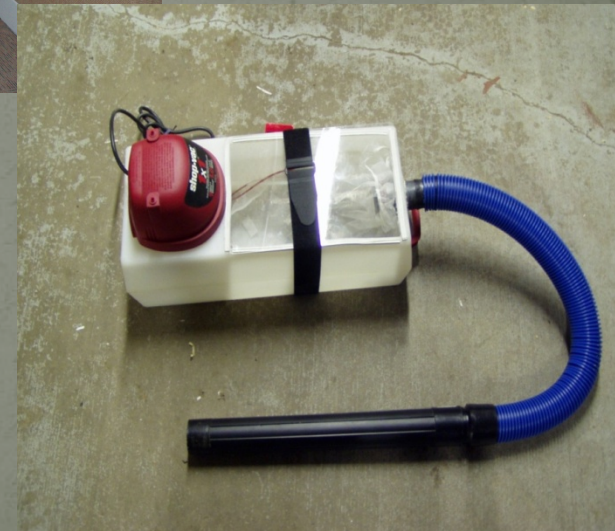


## Cy 17 Insecticidal Products



# Non-Chemical Controls at CU

- Parasitic wasps released in steam tunnels to combat cockroaches.
- Use of bio-controls in greenhouses.
- Vacuum, hair dryer, CO<sub>2</sub>, hand tools.
- Thermal remediation for the control of structural pests

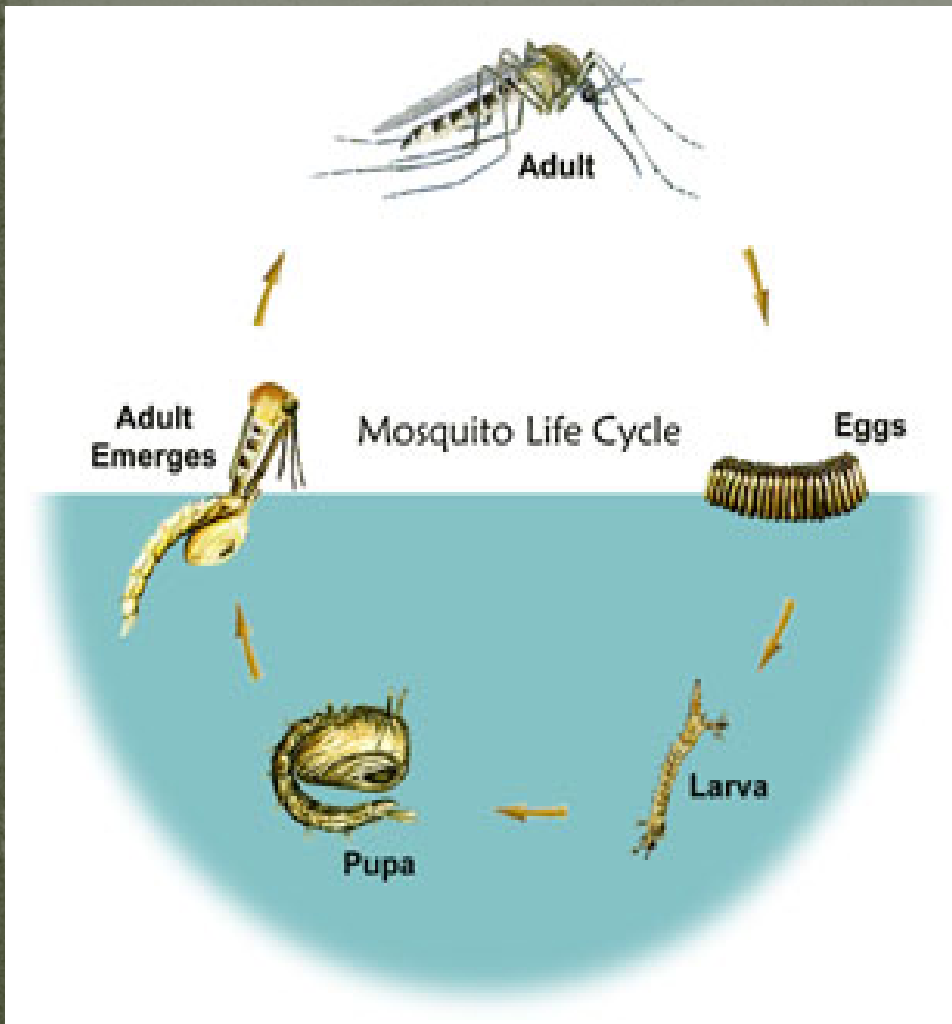


# Mosquito Monitoring & Control

- FTE & 3 students trap adults and control larvae
  - Season is roughly 4 months long (June to Oct.)
  - Set 28 traps per week for 4 months – report #'s to County
  - Check roughly 300 potential breeding sites per week – treat as needed
    - Also release minnows
  - No adulticides/fogging needed in 14 years of control



# Treat The Source



## Mosquitoes Grow Quickly

- 11-14 days at 70 degrees
- 7-10 days at 80 degrees
- As few as 4 or 5 days above 90 degrees

# Non-Chemical Controls at CU

- Cashmere goats used to graze noxious weeds.
- Use of seed- and root-feeding weevils for knapweed control
- Sanitation pruning of elm trees to discourage elm bark beetles.





# Wildlife





## Prairie Dog Relocation Project 2017-2018

We have a designated area for Prairie dogs on our East Campus to roam freely.

In 2017 we humanely moved them slightly South on East Campus using a closed burrow technique.

We maintain the area continuously, where they are fenced inside the area.







# Recent Collaborations w/in Fac. Ops.

- Trades
  - Bats & Bees in Old Main
  - Bird exclusion – sheet metal work, netting
  - Henderson - IAQ & moisture issues
  - U-Club - Elevators
  - ARCE – structural shop – bldg. envelope
  - Roofers – cupalo exclusion, yellow jackets

# Other Collaborations

- Grounds
  - Use of Cashmere goats for grazing noxious weeds
  - Release of root- and seed- feeding weevils for knapweed control
  - 'Beaver Deceivers'
  - Herbicide reduction initiatives (turf)
  - Honey bee relocations
  - Tree maintenance program
    - Sanitation pruning of elms to discourage elm bark beetles
    - Broadcast sprays predominantly oils
    - Use of soil & trunk injections

# Priority Pollinator Protection



# Careful Honey Bee colony removal





# Next project





# Trunk & Soil Injections



Questions?