



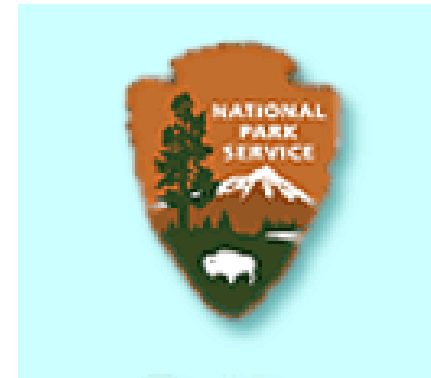
# Beetle Workshop “Cool Coleoptera”

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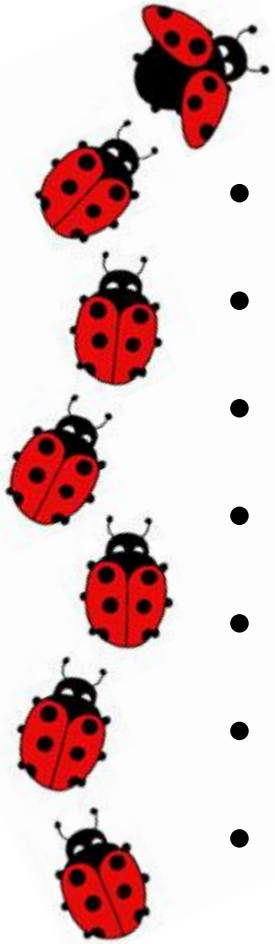
# Acknowledgements

- Louisiana State University
- Great Smoky Mountains NP



# Why Beetles?

- Pest insect control
- Decomposer
- Prey item
- Pollinator
- Agricultural pest
- Abundant insect
- Still much to learn



# What are they?

Kingdom: Animalia

Phylum: Arthropoda

Class: Insecta

Subclass: Pterygota

Infraclass: Neoptera

Superorder: Endopterygota

Order: **Coleoptera**

Coleo = shield      ptera = wing



# How Many?

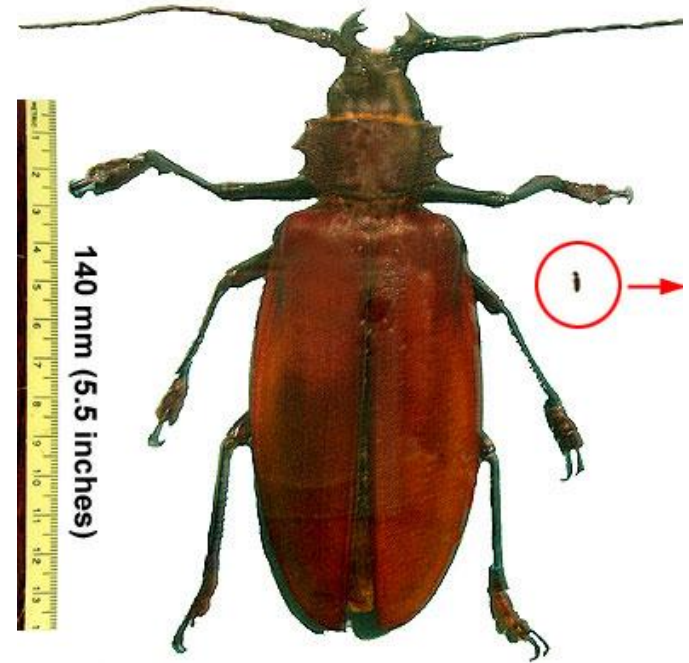
- More than 350,000 species
- 25% of all living things
- More than all other insects combined
- With many undescribed species they could total over 5 million





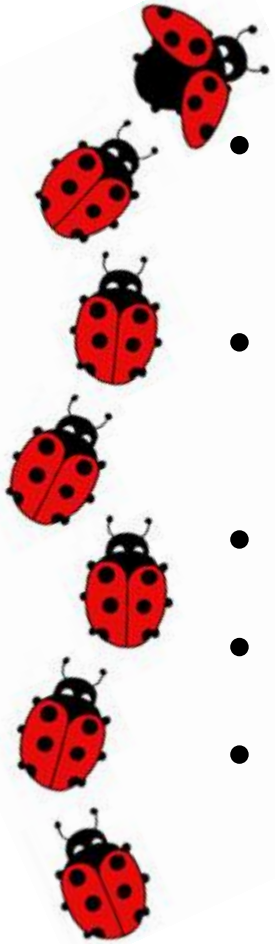
# Beetle Distribution

- Occur in all habitats except the ocean and polar regions
- Smallest beetle is  $\frac{1}{2}$  -  $1 \frac{1}{2}$  mm Feather wing beetle
- Largest is 6" wood borer *Titanus giganteus*

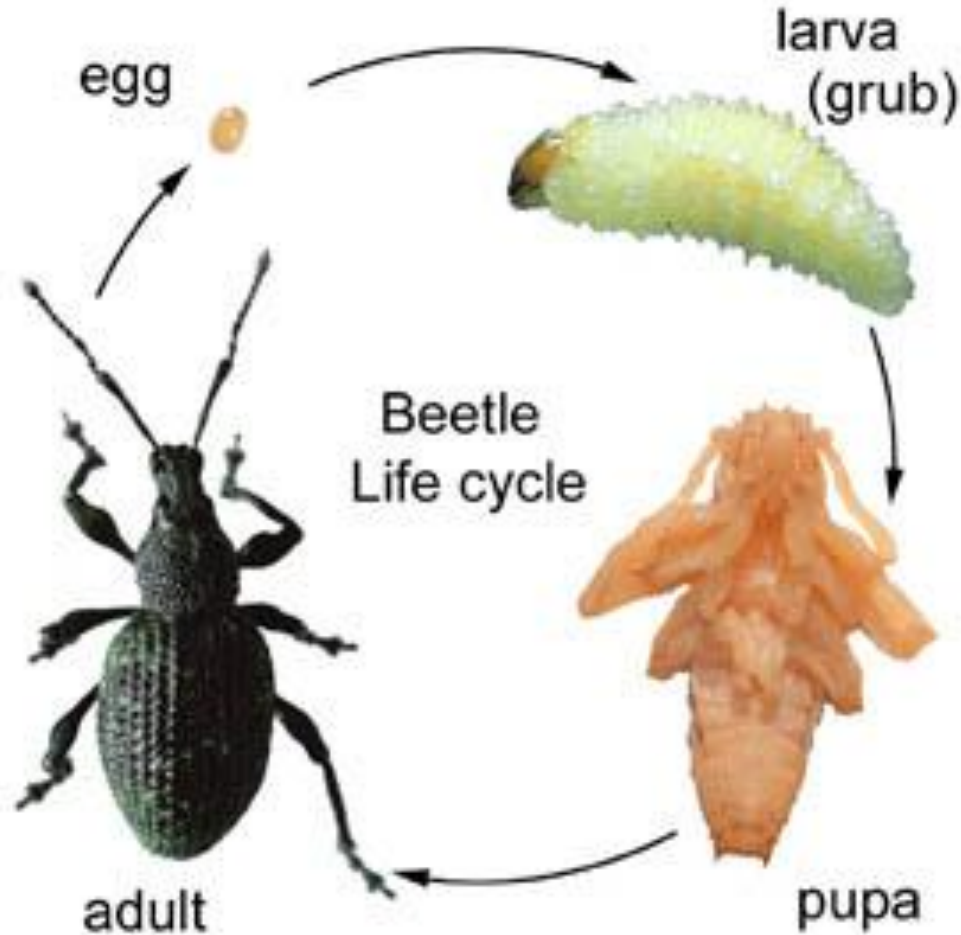


# Life Span

- Larva can live for several years
- Most adults a couple months
- Predators live longer
- Females live longer
- Conditions can dictate longevity
  - Weather
  - Reproduction

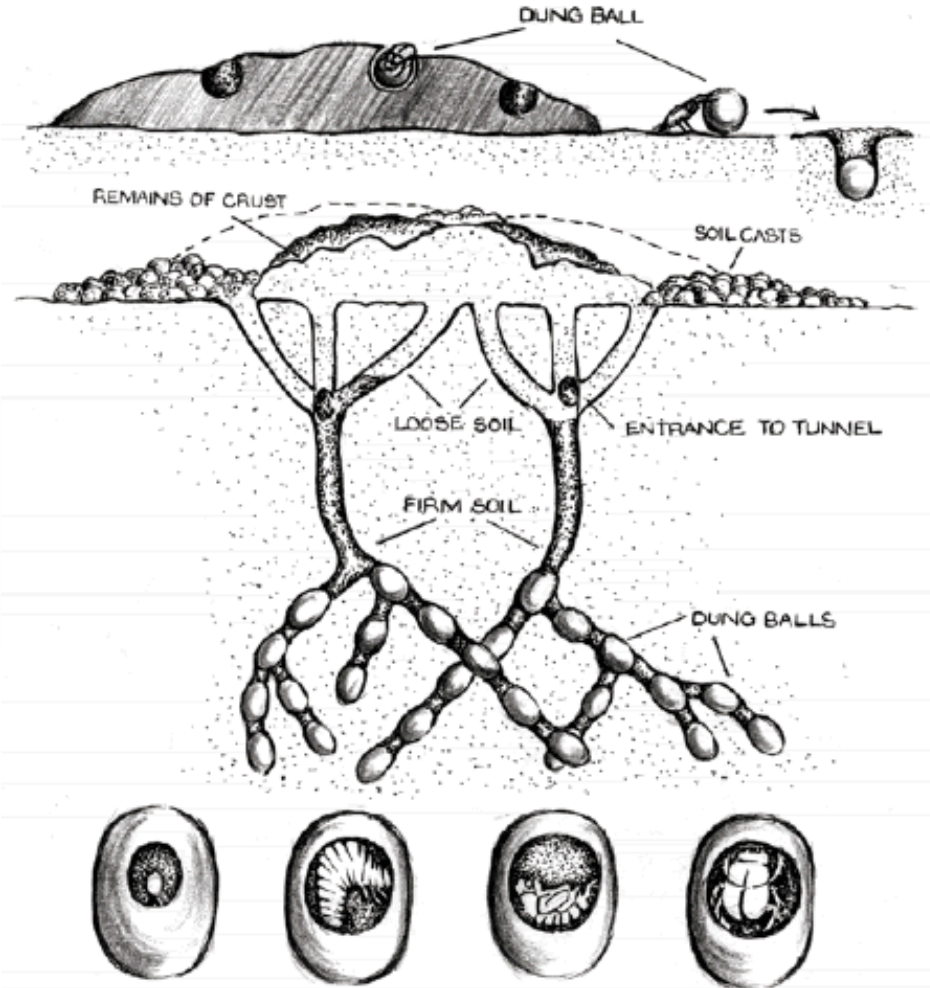


# Beetle life cycle



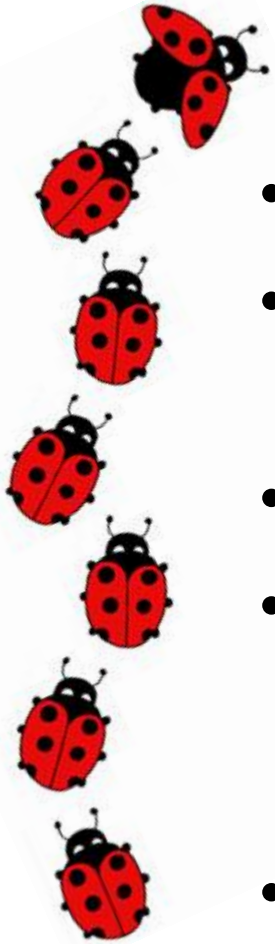


# Beetle life cycle



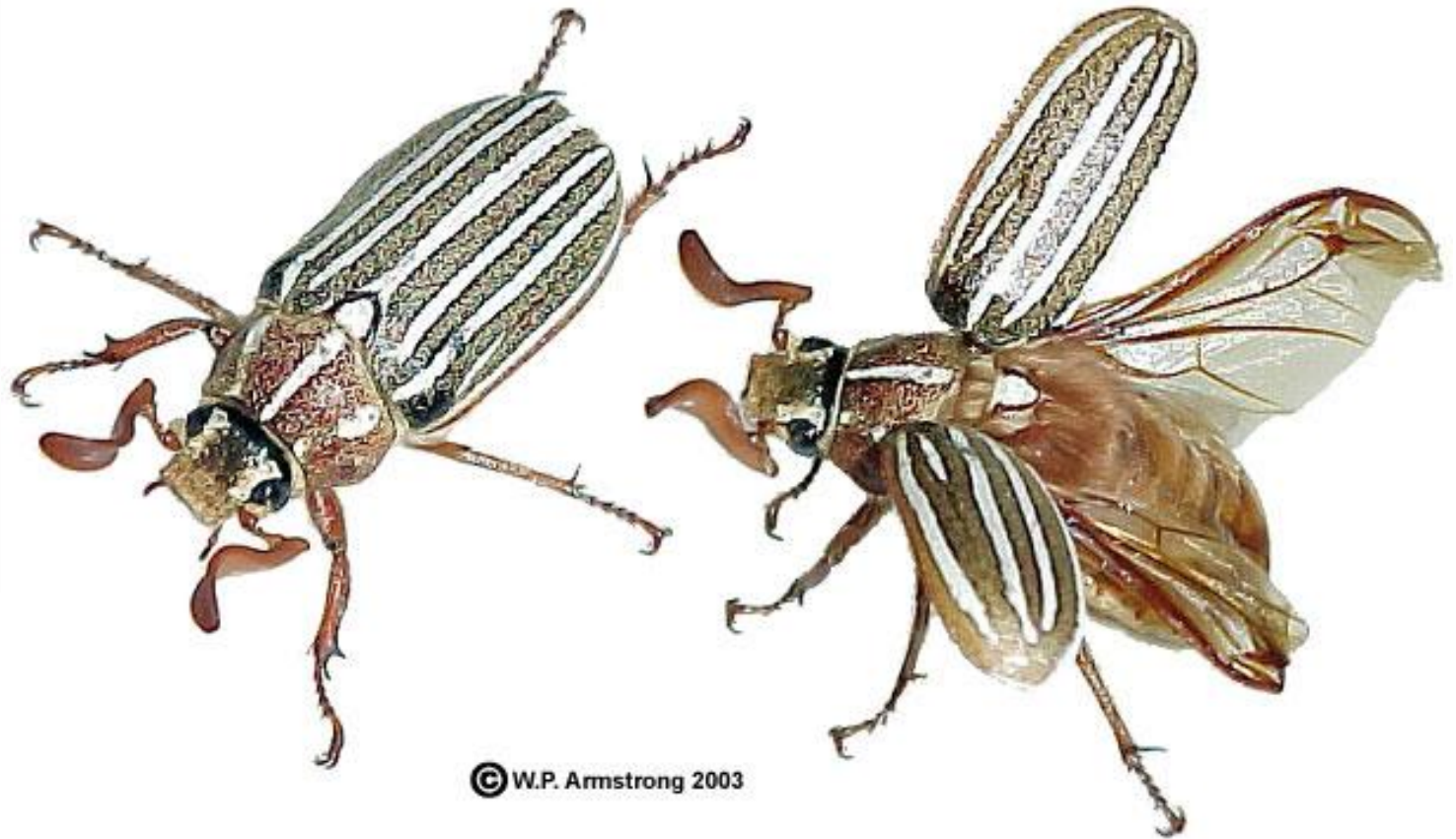
# Courtship & mating

- Everything!
- Sight, sound, smell, taste and touch
- Food offerings
- Mating is typically amplexous or missionary
- Sperm competition!



# Unique anatomy

- Elytra





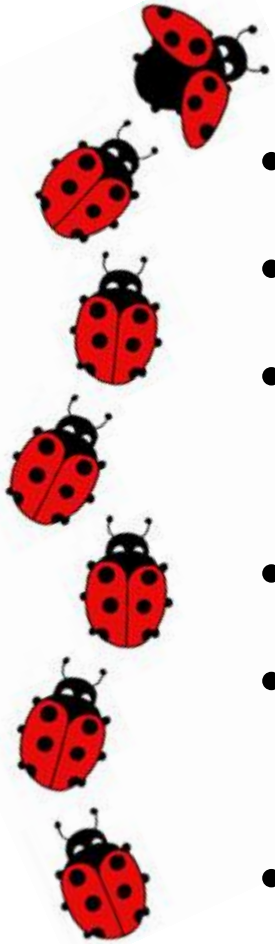
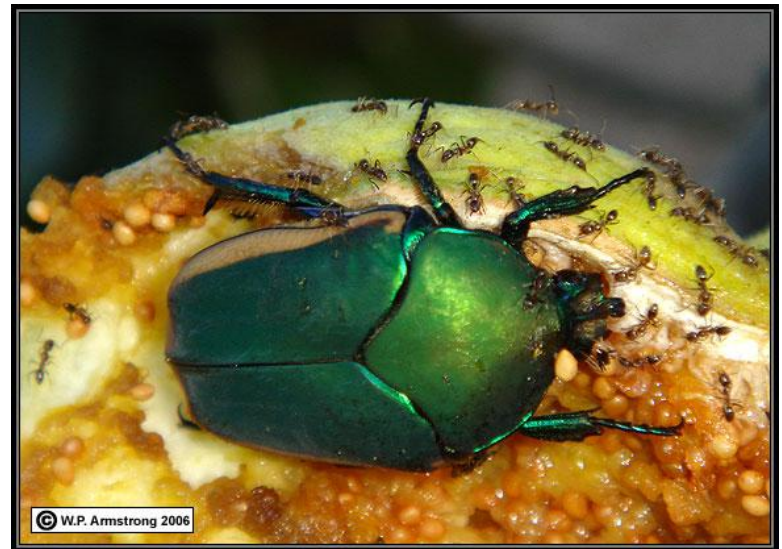
# Unique anatomy

- Chewing mouthparts



# Predation

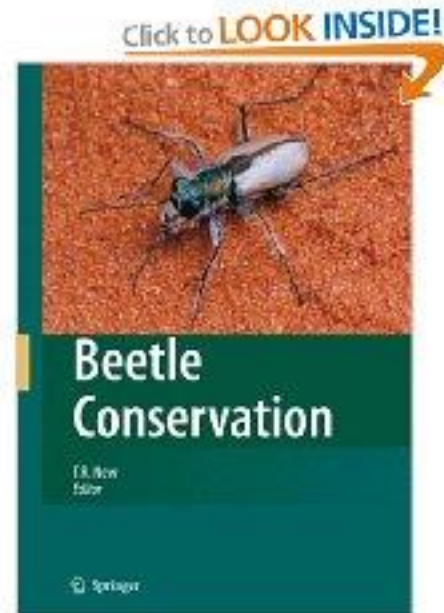
- Numerous insects
- Bats and birds
- Omnivores eat in all stages
- Blister beetles
- Ladybugs bleed from the knees
- \*Warning colors\*
- Tough shell





# Conservation

- Habitat loss
- Open land conversion
- Pesticides
- Invasive exotic species
- Agricultural
- Boston Museum Firefly Watch



# NC Endangered

1. *Cicindela lepida* Ghost Tiger Beetle  
SR - S1? G3G4 T: sand dunes along  
northern coast (Dare+)
2. *Cicindela patruela* Northern Barrens  
Tiger Beetle SR - S2? G3 MP: sandy  
soil in open pine or pineoak woods  
(records not yet entered)
3. *Lordithon niger* Black Lordithon Rove  
Beetle SR - SH GU
4. *Nicrophorus americanus* American  
Burying Beetle SR E SH  
G2G3(Buncombe\*, Yancey\*)
5. *Stenelmis gammoni* Gammon's  
Stenelmis Riffle Beetle SR FSC SH  
G1G3 M: South Fork New River  
(Ashe\*)



# Beetle education

- Crime scene insects activities
- Numerous crafts and storybooks
- Easy to rear and keep
- Integral part of the food web

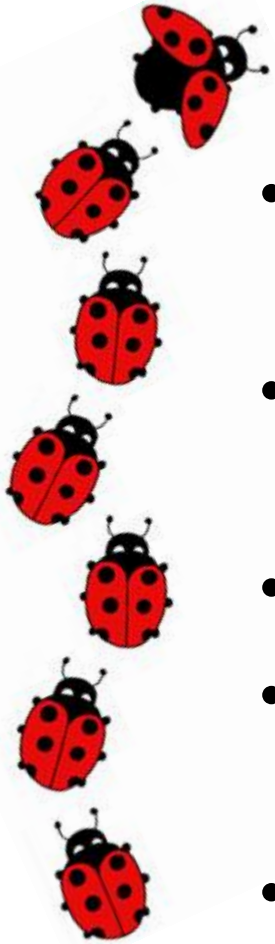
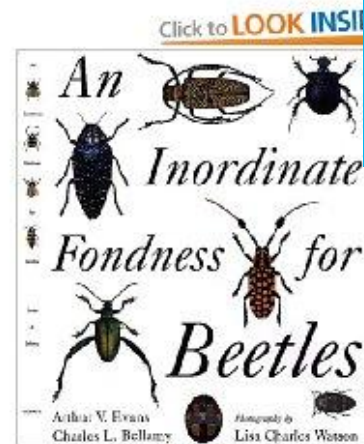
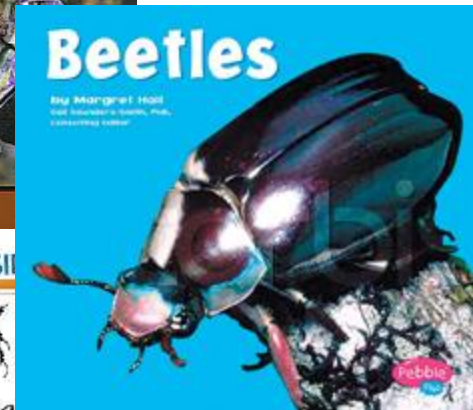
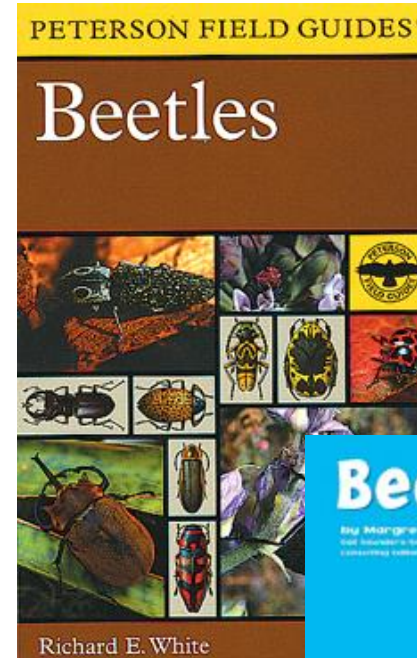


**CSI: CRIME SCENE INSECTS**



# Beetle resources

- Scientific journals and publications
- Standard picture books and DVD
- Petersons
- State or group specific guides
- Numerous toys and plastics





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