Trade-Offs in White-Footed Mouse Foraging Behavior

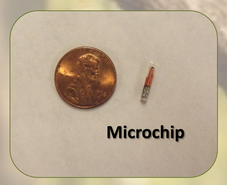
Ecologists from the Ostfeld Lab are investigating the impact of predation risk, parasite load, and other energy-draining factors on how mice forage for food.

How do we study this?

What do we do in the field?

We place trays out in the forest filled with a mix of seeds and sand that mice look through for food.

We can see how much time each mouse spends searching for food in the tray because they have a microchip that is read by a scanner.

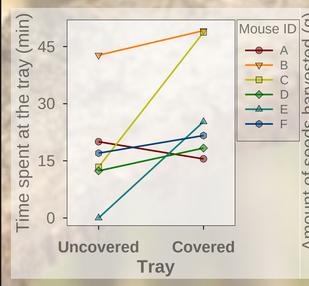


What do the data tell us?

Field experiments and measurements provide opportunity for interesting comparisons.

VS

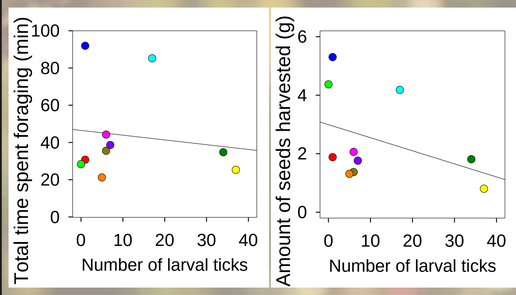
Adding covers allows us to measure the cost of predation risk.



Mice spend more time and gather more seeds at the covered trays.

VS

Differences in tick burden allow us to measure costs of ticks.



Mice with large numbers of ticks spend the same time foraging but tend to gather fewer seeds.

Why are mice important?

They play many important roles in their ecosystem

- Seed dispersal for plants
- Competition with other animals
- Food for vertebrate predators
- Hosts of infectious diseases
- Killers of songbirds & gypsy moths

Mice are faced with decisions every moment about how to use their energy to ensure their survival, growth, and reproduction.

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