

The dung ecosystem.

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Current Research : Dung beetles of West Virginia Pastures

Due to limited sampling and lack of good baseline data, there is a dearth in understanding trends of dung beetle populations in the state.

We are trying to understand the assemblages of the dung beetles in WV to see if they are able to sustain the needs of dung decomposition and other ecological activities in West Virginia pastures.

Who do we find in dung?

Organisms are either attracted to dung or are dung feeders or both.

450 species of arthropods are reported from cattle dung in North America. The majority of them are insects.

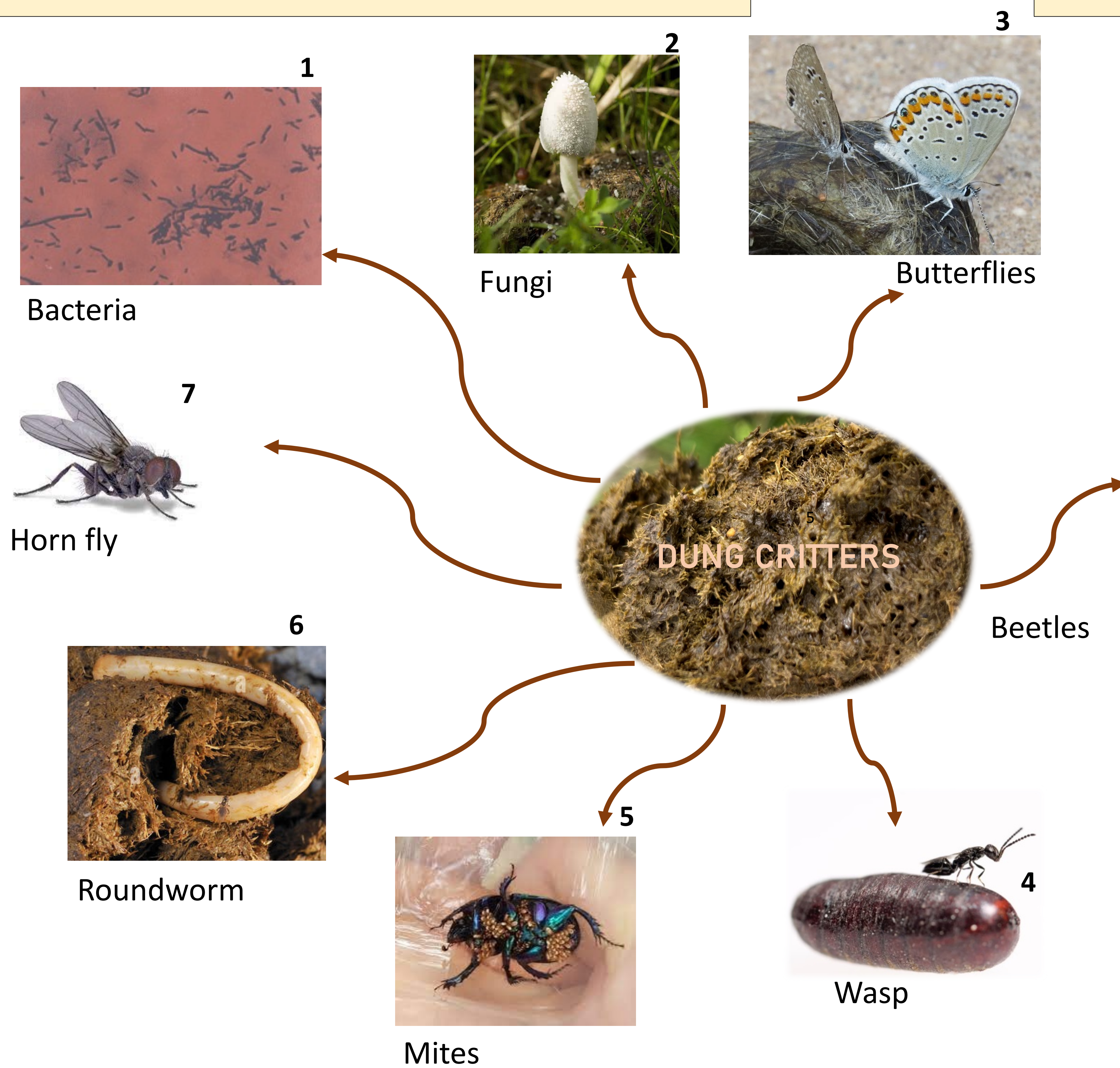
Dung pats are also associated with just nutrition seeking visitors like butterflies and late colonizers like detritivores.

Economic parasites of livestock like flies and nematodes also breed in dung.

Significance in Pastures

Undegraded dung left on pastures makes forage unappealing for livestock, promotes breeding of pests and parasites and decreases nitrogen availability to pasture soils.

Dung beetles are excellent accelerators of dung degradation, hence they can suppress the breeding of livestock pests and parasites and also increase availability of nutrients and air into soil.

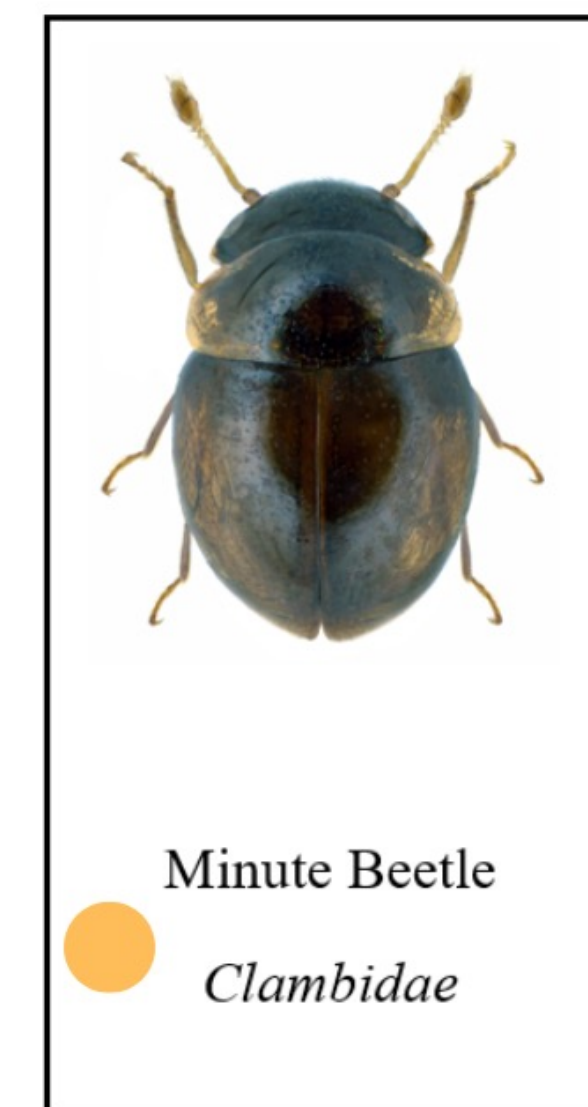
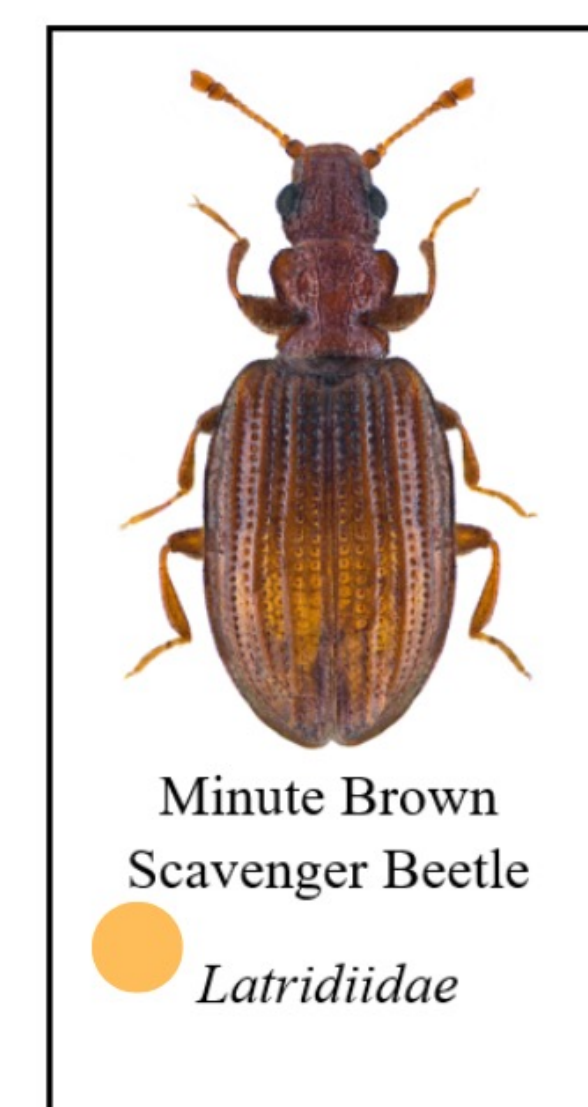


Dung Beetles of North America

9 different families of beetles can be found in dung.

They are all directly or indirectly dependent on dung for their survival.

- Dung Feeder
- Fungi Feeder
- Predator



1. *Clostridium septicum* – a **bacteria** isolated from sheep dung.

2. *Coprinopsis nivea* – a **fungi** growing in dung.

Bacteria and fungi both support the food web of insect feeding guilds in dung

3. A Mellissa blue **butterfly** gaining nutrition from a mineral rich dung pat.

4. *Spalangia endius* – a parasitoid **wasp** laying eggs in an immature fly pupae. Several wasps can be used as natural enemies of pests of livestock.

5. Mites taking a ride on a dung beetle. Several dung-loving **mites** are free living predators found in dung.

6. A **roundworm** – the immature stages of these GI tract parasites are found in dung.

7. A **horn fly** – a dung breeder that is a danger to cattle and horse health.

In the absence of rapid dung degradation immature stages of the harmful parasites and flies can affect livestock health and overall pasture productivity.

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