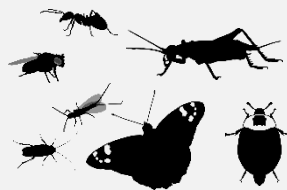
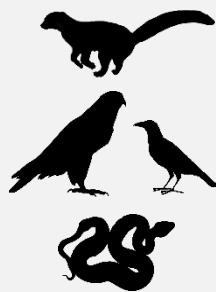




Carrion-associated
predatory arthropods



Carrion-decomposing
arthropods



Vertebrate
scavengers



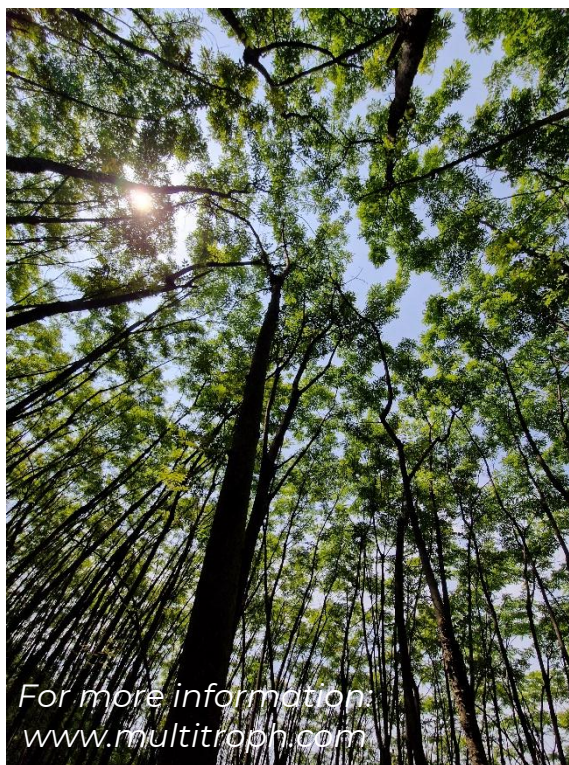
Dead animal (carrion)

The living dead – carrion as local activity hotspots

Only about 1% of the world's biomass comes from dead animals. However, animal carrion have a disproportionately large impact on ecosystem functioning because they are far richer in nutrients than plant-based organic matter. When an animal dies, it quickly attracts a diverse community of specialized scavengers from across the food web. Timing is crucial — it's a matter of first come, first served, and only a select few will benefit. We found >100 animal species associated with carrion in BEF-China.

BEF China

Spanning 50 ha with over 300,000 planted trees, BEF-China is the world's largest biodiversity-ecosystem functioning (BEF) experiment. It is located near Xingangshan, Dexing, Jiangxi Province in southeast China. MultiTroph is a collaborative project uniting researchers from China and Germany to explore how, why and when species loss impacts ecosystem stability across trophic levels.



For more information:
www.multitroph.com

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The great diversity of Xingangshan



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Blowflies & flesh flies

Flies are among the first to colonize the carrion, often within minutes after death. Females lay 150-300 eggs in openings of the carrion, from which larvae hatch within 8-24 hours. In some species, the larvae secrete digestive enzymes onto the tissue of the carrion in order to break it down into a nutrient-rich liquid, which the larvae then take up. As a consequence, the carrion gradually 'melts' into the ground. Worldwide 1900 species of blowflies and 2500 species of flesh flies exist. We found at least 16 carrion fly species in BEF-China.



A mouse (*Mus musculus*) can be fully decomposed within 2-6 days in BEF-China.

Forensic entomology

In forensic science, the species of flies, the developmental stage of their larvae, and the order in which they appear help to estimate the time of death of a human. It further reveals clues about the death scene, whether a body was moved, injuries and toxins.

Ants

To capture the carrion, ants disturb fly females when they lay their eggs, and predate their larvae. They may even bury the carrion in the ground to prevent fly access. Thereby, ants slow down carrion decomposition.



Other

Although they are less numerous, other decomposers can be of similar importance for the decomposition of carrion, including beetles, butterflies and crickets. Some are so specialized that they only occur on very large carrion (≥ 2 kg).

