

## PREDATORS AND MORTALITY

- » Being small and unable to run fast, harvest mice are eaten by a wide range of predators. Their main anti-predator strategy is to hide in dense vegetation.
- » Skulls are frequently found in the pellets of barn owls, which hunt areas of rough grassland favoured by harvest mice.
- » Skulls are occasionally found in short-eared owl and kestrel pellets.
- » They are also preyed by weasels and pheasants, while young are even eaten by blackbirds and toads.
- » Their fine fur is good insulation against cold, but is easily soaked, making them vulnerable in wet weather. Summer downpours often kill recently emerged nestlings and even adults.

A weasel catches a young harvest mouse.



A nest hangs between stems of tall grasses. Once abandoned they turn brown and are easy to find.



Neil Lucas/naturepl.com

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Aaron M Ellison (below) is fascinated by pitcher plants, such as this sweet pitcher plant. But then he isn't an ant.

## Study carnivorous plants

» Aaron M Ellison of Harvard University has spent almost 10 years in New England's bogs studying carnivorous pitcher plants. His research topics include their ant prey and the three species of moth larvae that eat various parts of the plants. By Dan Eatherley.

### WHY STUDY CARNIVOROUS PLANTS?

The pitchers of a pitcher plant provide a convenient way to study an entire food web. Not only do they represent a complete, tiny, aquatic ecosystem in their own right, but they can also be experimentally manipulated without the ethical problems involved with, say, dumping acid in entire lakes. The public should care about carnivorous plants because they are botanically interesting, evolutionary curiosities. They are also cool – the star of the Hollywood film *Little Shop of Horrors* was a carnivorous plant.

### DESCRIBE A TYPICAL DAY

At the moment, along with Nicholas Gotelli of the University of Vermont, I measure pitcher plants as they emerge from dormancy in the spring, and lay out arrays of the

plants to attract ants and moths. Back at the laboratory we analyse data, prepare papers for publication and apply for permits for our field work. Bogs are environments of special concern and some moths are on threatened or endangered species lists.

### WHAT'S YOUR GREATEST DISCOVERY SO FAR?

In 2001, we discovered that when exposed to the nitrogen in acid rain, northern pitcher plants become less dependent on carnivorous behaviour to meet their nutritional needs and they produce flattened leaves instead of pitchers. So pitcher plants are an inexpensive and convenient indicator of the impact of acid rain on bogs – a botanical canary in a coal-mine.

### ALL IN A DAY'S WORK

Perhaps the riskiest thing I did was back in 1994. My long-time collaborator and spouse Elizabeth Farnsworth and I were working in the mangrove forests of the Sundarbans in India, which are also home to Bengal tigers. We had an armed guard with us at all times and our lodge was fenced to keep the tigers away. That said, it's



probably just as dangerous to go bushwhacking in New Hampshire bogs: you either run into a bull moose in rut or an irritated landowner with a gun.

### ANY TIPS FOR READERS?

There are lots of books on growing carnivorous plants, but not too many on their ecology. The only answer is to get outdoors and look around at all the interactions going on among non-human organisms.

### FURTHER INFORMATION

- » Look for our native carnivorous plants – sundew, butterwort and bladderwort – around open peat bogs across the UK.
- » Carnivorous Plant Society [www.thecps.org.uk](http://www.thecps.org.uk)
- » International Carnivorous Plant Society [www.carnivorousplants.org](http://www.carnivorousplants.org)
- » Aaron M Ellison [harvardforest.fas.harvard.edu/personnel/web/aellison](http://harvardforest.fas.harvard.edu/personnel/web/aellison)