

Can you help us find Bogong moths in their winter breeding grounds outside of the Alps?

Bogong moths are an ecologically and culturally important species. They undertake a unique migration from the plains of south-east Australia to the alps where they are an essential food source for species like the critically endangered mountain pygmy-possum.

We are hoping to test whether we can detect Bogong moths (*agrotis infusa*) using a method called environmental DNA sampling. Environmental DNA is DNA that is found in the environment. We all leave traces of DNA behind as we move through our environment, and moths are no different!

What you could help with:

We are looking for sites (properties) to test our method at in the following order of preference (see overleaf for identification information)

1. Previously seen Bogong moth larvae (common cutworm)
2. Previously seen Bogong moth adults
3. Previously seen *agrotis* (cutworm) larvae



Image: Ajay Narendra, Macquarie University

What this could involve:

- We would take soil samples and swab vegetation
- If appropriate we may do light trapping for adult moths
- If appropriate we may leave temperature loggers in soil for a few months
- We would keep you updated about the results of the study

Where we think they might be:

Bogong moth larvae are known to preferentially feed on a range of young, broad-leafed weeds, particularly *Medicago* spp. such as clover, and crops like cotton, wheat, and vegetables, including annual dicotyledons. Larvae have also been found in pastures, fruit orchards, and vineyards.

If you are interested in being involved or would like some more information, please contact me, I'm happy to have a chat! Emily McColl-Gausden, emily.mccoll@unimelb.edu.au, **0457048114**

This project is in collaboration with Professor Brendan Wintle (University of Melbourne), Dr Kate Umbers (Western Sydney University) and Dr Andrew Weeks (enviroDNA/cesar).

Identification



Image credit: Andrew Weeks, Cesar Australia

- Larvae grow to a maximum length of 5 cm
- Relatively hairless, with a distinctly plump, greasy appearance and dark head
- Hatchling larvae are cream with faint grey tones
- Older caterpillars are counter-shaded grey to dark grey on top with a dirty cream underside. They characteristically curl tightly when disturbed.

- Adult wingspan of 4–5 cm
- The head-body length is approximately 2–2.5 cm, 2.5–3.5 cm when measured to the wingtip
- It is easily identified from similar dark brown moths by the two conspicuous spots on each wing
- Forewing is dark brown or grey back with dark arrow-mark streaks broken by two light dots
- Hindwing is pale with darker edging



Image credit: Selfwood / Alamy Stock Photo

Identification

CUTWORMS Lepidoptera: Noctuidae

Common cutworm or Bogong moth (*Agrotis infusa*), Brown or Pink cutworm (*Agrotis munda*) and Black cutworm (*Agrotis ipsilon*)

Distinguishing characteristics/description



No distinct lines on sides of body and subtle longitudinal line may be present along midline upper (dorsal) surface

Larva

8th abdominal segment spiracle (breathing hole)

4 abdominal prolegs

Spiracles

Dark head region

Plump, smooth, and greasy appearance with relatively few stout hairs with dark pigmentation at their base

Cervical shield stripe can be present or absent

4 abdominal prolegs

Adult

Pink cutworm



Forewing: brownish with darker markings and streaks. Large inner light mark and darker outer mark. Hindwing: pale with dark edging

Black cutworm



Forewing: brown or grey-black. Dark arrow-mark streak broken by 2 dark ringed dots. Outer margin is streaked. Hindwing: pale with darker edging

Stout bodies covered with dense scales

Bogong moth



Forewing: Dark brown or grey black. Dark arrow-mark streak broken by 2 light dots. Hindwing: pale with darker edging