

## Care guide

### Bess Beetles, Passalidae



Bess Beetles belong to the family Passalidae and are found throughout eastern Australia as well as within other parts of the world, particularly in the tropics. There are around 600 species worldwide, and despite ranging from black to brown in colour and varying in size, most species look quite similar.

Bess Beetles live within rotting wood and play very important roles as decomposers. They break down the fallen timber as they eat their way through, and recycle it into nutrients which return to the soil. These beetles also eat their own frass (poo) in order to gain and retain important micro-organisms which help them to digest the wood.

They are relatively unusual within the beetle world due to the fact that they live in family groups. Multiple adults (often a pair and older offspring) can be found together in pockets of rotting wood. They also live with their larvae (grubs) - the tough adult beetles provide protection for the vulnerable larvae as they develop. The larvae start out on a diet of frass and chewed up wood provided by the adults to suit their weaker mandibles. When the larvae are sufficiently developed and ready to pupate, the adults will assist them to construct a cocoon made of frass.

One remarkable thing about this group of beetles is that they communicate using sound. The adult beetles create sound by rubbing their abdomens against their elytra (wing covers), while the larvae rub their third pair of legs together. Some species can produce 14 different sounds using these methods. Their defensive sound is a loud hiss that sounds very much like 'bess, bess, bess...' which is where their name originates.

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**Food:** Moist rotting wood – soft enough that it able to be broken or crumble in your hands. If you do not have access to suitable wood, Minibeast Wildlife has it available online <http://shop.minibeastwildlife.com.au/pulpy-wood-mix/>

**Water:** Mist spray the enclosure daily or as required to maintain a moist environment. The habitat should be moist but not wet or sodden.

**Enclosure:** A small terrarium or ventilated plastic tub is suitable. The substrate can be a bed of coco-peat with pieces of rotting wood on the surface or simply a layer (several centimetres) of broken up decomposing wood. Whether using large soft piece of wood or a layer of fragments, it is important that your beetle/s can completely get under or within the wood to be happy.

**Temperature/humidity:** This species will do best at 16 – 24° C, but will tolerate much cooler conditions for short periods. They will also cope with brief periods of warmer temperature, but avoid prolonged exposure to temperatures above 28°C. Temperatures above 30°C may result in heat stress and death.

**Life span:** 2 -3 years.

**Handling:** Despite being shy, these insects are hardy and can be handled easily. The adults will usually stridulate (create a 'bess-bess' sound) when handled, but a quite docile otherwise. They do have powerful mandibles for eating the wood, but generally do not bite. They can be picked up using a thumb and forefinger each side of the beetle and gently sat upon your palm. They can then be walked from hand to hand.

**Common issues:** These beetle required a moist environment so take care not to let the enclosure (substrate/wood) dry out. They also eat their own frass (droppings), so if cleaning out the enclosure prior to adding new wood ensure plenty of droppings remain. (The droppings do not smell and do not lead to unsanitary conditions for the beetles).

**NOTE:** These animals are captive bred, and should not be released into the wild.