Cane toads in Great Artesian Basin springs – what are they eating?


GAB spring wetlands

Wetlands fed by groundwater springs support diverse and unique communities of flora and fauna. A complex of spring wetlands fed by groundwater from the Great Artesian Basin (GAB) is found within Edgbaston Reserve, located in the Lake Eyre Basin. This complex contains the highest number of endemic macroinvertebrate species of all such complexes in Australia, and is also home to three endemic fish species.

Threats

Aquifer drawdown, excavation, grazing and introduced species all pose a threat to spring wetland communities. The exotic cane toad (*Rhinella marina*) has recently been identified as a potential threat as it has a broad diet, is voracious and is toxic to most predators. These traits have enabled cane toads to spread throughout north and north-eastern Australia where they significantly affect many ecosystems.

Cane toad impacts on Edgbaston springs

Cane toads were observed at springs within Edgbaston, raising concerns that they were affecting spring communities by eating aquatic fauna. To determine what they were eating, thirteen cane toads were collected from a spring within Edgbaston and their gut contents removed and identified. Aquatic macroinvertebrates were also collected to determine which of the available spring fauna, including endemic species, were being consumed by toads.

What we found...

- The majority of the invertebrates eaten were aquatic fauna. This included endemic spring invertebrates.
- Cane toads were consuming eight of the eleven orders of aquatic invertebrates found in the corresponding macroinvertebrate sample.
- A dominance of aquatic fauna has not previously been found in toad diets.

More research needed...

Having established that cane toads are consuming spring fauna, further research is required to better establish the level of threat to spring communities. Control of cane toads in the Lake Eyre Basin, as well as research to inform ongoing management of cane toads, and other threats, is required to ensure the conservation of these unique ecosystems. This should include distribution mapping of toads at GAB springs, and determining if the cane toads are breeding within the springs.