Threatened species of the Northern Territory

Plains death adder

Acanthophis hawkei

Conservation status

Australia: Vulnerable
Environment Protection and Biodiversity Conservation Act 1999

Northern Territory: Vulnerable
Territory Parks and Wildlife Conservation Act 1976

Description

The Plains Death Adder is a relatively short (70 cm long on average) stout snake with a triangular head and narrow neck. The body is pale brown to grey with numerous irregular dark transverse bands. The lips are conspicuously patterned with alternating dark and pale bars. The tail tip is slender and cream to black. The dorsal scales are smooth or weakly keeled, which distinguishes it from the similar Rough-scaled Death Adder *Acanthophis rugosus*.

Distribution

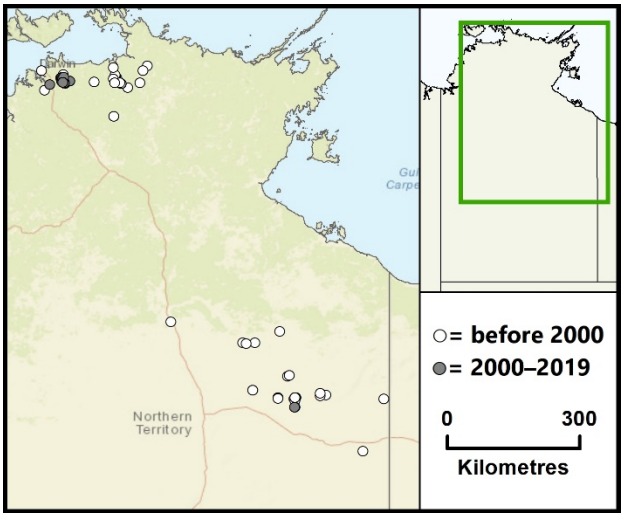
The Plains Death Adder has a disjunct distribution in the Northern Territory (NT) and western Queensland (QLD). In the Top End, the species occurs on cracking soil floodplains of the Adelaide, Mary and Alligator Rivers. It is more widely distributed on the cracking black soils of the Barkly Tableland on the NT/QLD border and the Mitchell Grass Downs of western QLD.

The distribution may be poorly defined and the species could occur more widely on floodplains and cracking soil plains across mainland northern Australia.

Credit: : C. Jolly

Densities of Plains Death Adders on the blacksoil plains of the Barkly Tableland are less than half those on the coastal floodplains of major rivers west of the Arnhem escarpment.

NT conservation reserves where reported: Kakadu National Park, Djukbinj National Park and Fogg Dam Conservation Reserve.



Caption: Known localities of the Plains Death Adder in the NT (nrmaps.nt.gov.au)

Ecology and life-history

The Plains Death Adder occurs on the flat, treeless cracking-soil plains of northern Australia, where it is a major predator of frogs, reptiles and

rodents. When young, the diet almost exclusively comprises frogs and lizards, but by the time individuals have grown to a large size (often attained only by females) the diet consists of rodents and other small to medium-sized mammals[1].

The Plains Death Adder is a highly venomous ambush predator that lays in wait for prey, relying on its cryptic camouflage. To attract prey to within striking distance, this species undulates its specially modified tail-tip to imitate a defenseless insect. Unfortunately, Cane Toads *Rhinella marina* respond more strongly to this lure than do native prey species. Plains Death Adders are more sedentary during the dry season than in the wet season.

Male Plains Death Adders reach sexual maturity in their first year, whereas females typically take longer (18-24 months). Individuals in the wild (in the absence of Cane Toads) are unlikely to live for much more than ten years, so the generation length is likely to be between three and five years.

Threatening processes

The advance of Cane Toads in the NT presents the most acute threat facing this snake species. Death adders are naïve to toads and their toxins, but because of their specialised ambush foraging tactics they successfully attract and catch toads[2]. As a consequence of their poor ability to discriminate between toads and native frogs, and because toads are extremely toxic, death adders die in large numbers when toads arrive in an area[3].

There is no evidence that death adder numbers recover following the arrival of toads. Cane Toads exert strong selection pressure on adders to evolve avoidance behaviours and change morphology[3], but whether the Plains Death Adder can evolve toad avoidance strategies before going extinct is unknown.

Conservation objectives and management

It is unlikely the spread of Cane Toads across the NT will be stopped. Given our inability to prevent localised declines once Cane Toads arrive, conservation and management effort is best aimed at monitoring depleted subpopulations to examine for evidence of recovery. If the Plains Death Adder occurs on any offshore islands, actions should be implemented to prevent colonisation by Cane Toads.

References

[1] Webb, J.K., Shine, R., Christian, K.A., 2005. Does intraspecific niche partitioning in a native predator influence its response to an invasion. Austral Ecol. 30, 201–209.

[2] Hagman, M., B. L. Phillips, Shine R., 2009. Fatal attraction: adaptations to prey on native frogs imperil snakes after invasion of toxic prey. Proc. Royal Soc. B 276, 2813-2818.

[3] Phillips, B. L., Greenlees, M. J., Brown, G. P., Shine, R., 2010. Predator behaviour and morphology mediates the impact of an invasive species: cane toads and death adders in Australia. Anim. Conserv. 13, 53-59.

[4] Threatened Species Scientific Committee, 2012. Commonwealth Listing Advice on *Acanthophis hawkei* (Plains Death Adder). Department of Sustainability, Environment, Water, Population and Communities, Canberra.