

Threatened Species of the Northern Territory

MERTENS WATER MONITOR

Varanus mertensi

Conservation status

Australia: Not listed

Northern Territory: Vulnerable



Photo: Simon Ward

Description

Mertens water monitor is a medium- to large-sized (total length up to 1 m) semi-aquatic monitor, dark brown to black on the back with numerous small dark-edged cream or yellow spots. The lower lip is yellowish, speckled or barred with grey. The undersurface is white to yellowish with some grey patterning on the throat and chest. The tail is very strongly compressed laterally, to provide power when swimming, has a strong 2-keeled crest along the top and is about 1.5 times as long as the head and body.

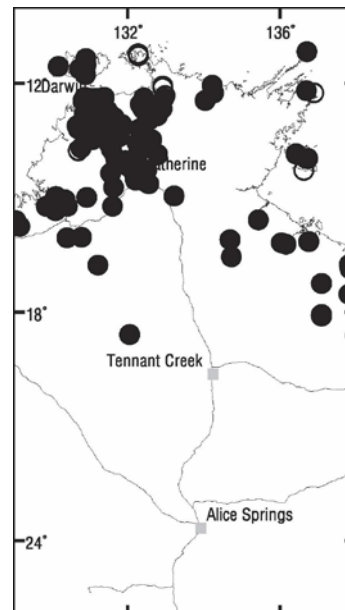
Distribution

Varanus mertensi has a broad geographic range, occupying coastal and inland waters across the far north of Australia from the Kimberley to the west side of Cape York Peninsula. In the NT it has been recorded across most of the Top End and the Gulf Region.

Conservation reserves where reported:

Black Jungle/Lambells Lagoon Conservation Reserve, Cutta Cutta Caves Nature Park, Djukbinj NP, Eley NP, Flora River Nature Park, Fogg Dam Conservation Reserve, Garig Gunak Barlu NP, Gregory NP, Howard Springs Nature Park, Kakadu NP, Keep River NP,

Litchfield NP, Manton Dam, Mary River NP, Nitmiluk NP, Territory Wildlife Park-Berry Springs Nature Park, Umbrawara Gorge NP.



Distribution of Mertens water monitor
o = pre 1970; ● = post 1970.

Ecology

Varanus mertensi is a semi-aquatic monitor seldom seen far from water. A strong swimmer, it mostly feeds on fish, frogs and carrion, but will also eat insects and small terrestrial vertebrates. It has an excellent sense of smell and may dig up prey when foraging, including freshwater turtle eggs

(Doody *et al.* 2006). It is an accomplished climber and can be seen climbing on rocks or trees near water, often basking on branches overhanging the water or on rocks mid-stream. It lays eggs in a burrow constructed in the ground, with egg-laying usually in the early dry season.

Conservation assessment

Varanus mertensi is widespread in the NT, occupying all of the Top End river systems. The most important conservation issue it faces is its propensity to eat cane toads and to die from the ingested toxins.

Tests of the effects of ingesting cane toad toxins have found that *V. mertensi* is very susceptible. Comparison of the size of the mouth and the toxin load per cane toad shows that these monitors are easily able to eat a cane toad large enough to kill them (Smith and Phillips 2006).

Burnett (1997) documented anecdotal reports of declines of several species of monitors (including *V. mertensi*) on Cape York Peninsula, Queensland following the arrival of cane toads. van Dam *et al.* (2002) considered it highly likely that the population of *V. mertensi* in Kakadu National Park would be affected by cane toads.

Griffiths and McKay (2005) showed a decline in the number of sites occupied by *V. mertensi* at Manton Dam in the Northern Territory following the arrival of cane toads. The decline in site occupancy took 12 months after the arrival of cane toads to occur and when cane toad abundance increased. This suggests *V. mertensi* may not consume cane toads as readily as other monitors (i.e. *V. panoptes*).

Smith and Phillips (2006) estimate that 86% of the Australian range of *V. mertensi* will be encompassed by the predicted range of the

cane toad. Local populations will suffer crashes then slowly increase as cane toads move across the NT, but the impact on the NT-wide population will not be as severe as at individual locations.

Based on this information, *V. mertensi* is considered **Vulnerable** (under criterion A4e) due to:

- a population size reduction of >30%, occurring and projected to be met within the next 10 years or three generations due to the effects of an introduced species.

Threatening processes

As described above, the advance of cane toads across the NT presents the most acute threat facing this monitor. The species is highly susceptible to cane toad toxin and monitors can easily eat a cane toad large enough to kill them (Smith and Phillips 2006). Cane toads may also deplete areas of potential prey for monitors, especially foods eaten by juveniles. This will slow the recovery of populations after the initial crash.

Conservation objectives and management

The likelihood of stopping the spread of cane toads across the NT is very small. Efforts are being made to slow their progress westwards and into Darwin City and, if successful, these will ameliorate the impact on the Territory-wide population of *V. mertensi*.

Given our inability to prevent localized population crashes once cane toads arrive, conservation and management effort is best aimed at:

- i. trying to maintain surviving depleted populations in toad-invaded areas; and

- ii. preventing cane toads from spreading to offshore islands with populations of monitors. However, of islands recently sampled in the NT, *Varanus mertensi* is known only from three of 60 sampled islands in the English Company and Wessel Islands group off NE Arnhem Land, Groote Eylandt, Bathurst and Melville Islands (Webb 1992; Woinarski *et al.* 1999, 2003). It was not recorded on any island during a series of surveys of the Pellew Islands group (Johnson and Kerle 1991).

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