

There is [growing support](#) for the harvesting of crocodile eggs in Queensland. After all, the Northern Territory (where Queensland crocodile-skin farmers currently buy most of their eggs) has upped its quota to [90,000 eggs per year](#), and the NT's research studies have shown that egg harvesting has no measurable effect upon the local crocodile population. So why can't Queensland do the same?

Queensland Liberal National MP Andrew Cripps and his colleague, shadow environment minister Stephen Bennett, have [thrown their weight](#) behind the cause, arguing that "the Northern Territory has sensible, sustainable practices in regards to crocodile egg harvesting and Queensland can follow suit".

However, examination of their justification for crocodile egg harvesting in Queensland, and comparing the historical record of crocodile management in the Northern Territory and Queensland, reveals this argument to be a straw man.

### Monitoring crocodiles in the Northern Territory

The hunting of crocodiles was [banned](#) in the Northern Territory in 1971. At this time, the estuarine crocodile population was estimated to be around 3,000. Since 1975, the Northern Territory's government has carried out annual surveys of over 670 km of river, to assess the extent of the crocodile population's recovery. At the last count the population was estimated to be between [80,000 and 100,000 non-hatchling individuals](#).

Crocodiles are counted at night from a boat, using a powerful spotlight. Every year the same stretches of river are surveyed, at the same time of year, and under the same tide and moon.

The beauty of this technique is that it is not necessary to count every single crocodile to understand how the population is changing. By simply keeping all the survey parameters identical, the probability of counting or not counting an individual is similar from year to year, making relative changes in crocodile abundance apparent over time.

Dedicated staff ensure the surveys are identical each year, and that the data are effectively stored and analysed. Consequently, the authorities can identify where healthy populations of breeding females exist, and estimate the potential number of eggs an area will produce. This information is used to determine the size and location of the egg harvest.

This 40-year investment has ensured that crocodile eggs are not over-harvested in the NT, and that they provide a sustainable natural resource for a thriving and growing industry.

### The Queensland situation

Crocodile hunting was banned in Queensland in 1974. But unlike the NT, there are no estimates of crocodile numbers in Queensland for this time. While the Queensland government has undertaken spotlight surveys of crocodile populations since 1972, the investment has been sporadic and not linked to a well-funded and properly replicated program of monitoring. The [survey effort to date](#) has been concentrated at a regional scale, with resources being directed to different regions in nonconsecutive years rather than a systematic statewide approach to population monitoring.

Consequently, we do not currently know the size of the crocodile population in Queensland. We don't know how the population has changed since the ban on hunting, and we certainly don't know the effects of the current crocodile removal policy on the abundance of nesting females. Consequently, estimating the size of a sustainable egg harvest for Queensland, and where it should occur, would have a high level of uncertainty.

### Sensible economics

The reasons why the NT government was able to monitor the changing crocodile population so effectively over 40 years, when Queensland could not, is perhaps a lesson for future governments.

Effective wildlife population monitoring requires appropriate sample sizes and the replication of survey methodology. It needs to be carried out over a sufficient period of time and area to have statistical power. The collected data also need to be labelled appropriately and stored effectively to allow for future interrogation and comparison. Only by rigorously following these rules over multiple years is it possible to quantify animal populations and estimate how they will respond to harvesting. Achieving this continuity when government departments are centralised and decentralised, amalgamated and split, when staff turnover is high, and computer hardware and

## Queensland's patchy crocodile monitoring makes sustainable egg harvesting a risky venture

Written by The Conversation

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software are repeatedly updated, is no easy task.

Therefore, we should not point the finger at any one person, department, or government for Queensland's shortfall in monitoring its crocodile population. It is a result of an underappreciation of the intricacies of the task, a failure to understand the objective of the monitoring process, and a lack of sustained government investment.

Animal populations change on timescales far longer than political cycles. Crocodile monitoring is expensive and the benefits of investment are not immediately apparent to sitting governments. Consequently, cross-partisan support would be needed to ensure that Queensland's crocodile population is systematically monitored over a long enough time to calculate population abundance and the volume of eggs that could be harvested sustainably.

The NT crocodile industry is predicted to generate A\$50 million a year over the next five years. It is a shining example of the rewards rendered by long-term government investment in wildlife monitoring and protection. Queensland can potentially follow suit, but to suggest initial quotas of [20,000-30,000 eggs per year](#) amid such high levels of uncertainty is reckless.

History is peppered with examples of over-harvested species, usually resulting in the collapse of the industry that depended upon it. Sceptics of the scientific approach to wildlife monitoring should take heed; it is not a case of [leftwing governments pandering to the greenies](#), it is just sensible economics.

*Hamish Campbell does not work for, consult, own shares in or receive funding from any company or organization that would benefit from this article, and has disclosed no relevant affiliations beyond the academic appointment above.*

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