

nhulunbuy corporation

CROCODILE MANAGEMENT PLAN TOWN LAGOON AND SEWAGE PONDS



Title	Crocodile Management Plan
Type	Infrastructure
Owner	Chief Executive Officer
Responsible Officer	Animal Control Officer
Approval date	May 2018
Review date	May 2020

1. Overview

North East Arnhem Land is home to the saltwater crocodile (*Crocodilus porosus*) or “Baru” in local languages. Crocodiles are very dangerous animals and are protected, native, and important to our regions ecology. From the local Yolngu point of view, they are a clan totem, and belong to the Yirritja moiety, and are powerful representatives of Yolngu mythology. Because of this, Nhulunbuy Corporation (NCL) and any authorised stake holders must respect local Yolngu traditions when handling crocodiles. They are a large predator capable of attacking people and pets and as such they are a significant threat in the Nhulunbuy Crocodile Management Zones.

Saltwater crocodiles occur in water ways and water bodies across the entire Top End of Northern Australia. Any body of water in the Top End has always had the potential to contain large and potentially dangerous saltwater crocodiles. Despite their common name, saltwater crocodiles can, and have been found in freshwater systems hundreds of kilometres inland.

Crocodile management can reduce the risk of attack in strategic locations but *cannot* eliminate the risk of crocodile attack and therefore public education concerning the very real danger that crocodiles pose, is a critical element of the Nhulunbuy Corporation’s Crocodile Management Strategy. This plan sets out a comprehensive and coordinated framework for managing the risks crocodiles pose to people.

The plan responds to the public’s support for a balanced approach between crocodile conservation and public safety by setting out how the Nhulunbuy Corporation Animal Control (NCAC) will manage crocodiles in the Town Lagoon and Sewer Ponds, including removal in certain circumstances, in accordance with the level of risk posed. The plan also highlights the key safety messages that everyone needs to keep in mind when in crocodile country.

2. Objective

The overarching objective of the Nhulunbuy Crocodile Management Plan, is to reduce the risk to the public of crocodile attack.

Crocodiles located within *management zones* will be monitored regularly and those considered to be a *problem will be targeted* and Nhulunbuy Corporation’s Animal Control Officer (NCACO) or approved stake holders will endeavour to trap and remove them. Continual monitoring, and if required full time trapping, of the Nhulunbuy Town Lagoon is a constant and integral part of the Crocodile Management Plan.

3. Purpose

The *Nhulunbuy Crocodile Management Plan* has been prepared by the Nhulunbuy Corporation, using advice from the Northern Territory, Parks and Wildlife Service (NTPWS), Territory Parks and Wildlife Conservation (TPWC) Act, and authorisations under the Dhimurru Indigenous Protected Area (IPA). This is the overarching framework for the Nhulunbuy Town

Lagoon and Sewer Ponds, and the management of public safety risks associated with crocodiles.

This management plan requires endorsement by the Nhulunbuy Corporation Board of Directors. The purpose of this management plan is to outline a consistent approach to crocodile management for Nhulunbuy and outlines:

- The risks posed by crocodiles in all of the crocodile management zones
- A collaborative and consistent approach to crocodile management
- How the Nhulunbuy Corporation responds to and manages crocodiles in each crocodile management zone
- The knowledge and behaviours that can help minimise risks of crocodile attack
- *Estuarine crocodiles (Crocodylus porosus)* are a protected species in the Northern Territory and are also protected nationally under Commonwealth legislation and internationally under the Convention on the International Trade of Endangered Species (CITES). These arrangements effect how crocodiles are managed, farmed and traded. All crocodile management must be carried out in accordance with N.T Parks and Wildlife regulations

4. Stakeholders & Responsibilities

Stakeholder	Responsibility
NCL	<ul style="list-style-type: none"> • Responsible for animal management within the Town Lease
Rio Tinto	<ul style="list-style-type: none"> • Board of Directors authorisations
Dhimurru	<ul style="list-style-type: none"> • Participation in ceremonies • Authorisation to euthanise • Additional support as a group from time to time
NT Parks and Wildlife	<ul style="list-style-type: none"> • Authorisation to remove problem crocodiles

5. Dhimurru Indigenous Protected Area

The Dhimurru IPA was declared in December 2000 covering 8,500sqkm of land in North-east Arnhem Land. The area is managed by the Dhimurru Land Management Aboriginal Corporation on behalf of the Yolngu who are recognised as the traditional owners, under the Aboriginal Land Rights (Northern Territory) Act of 1976, of approximately 100,000 hectares of land in the region. This includes enclosed islands and rocks to the low water mark but excludes existing lease areas and the community areas of Yirrkala township and the Marrngarr Community Government Council area in the vicinity of Gunyanara.

The IPA is a way of managing land that recognises indigenous customary management and sustainable use as an effective approach to biodiversity conservation.

While NCL has responsibility for crocodile management within the town lease, this management plan has been written with respect to the Yolngu traditions and customs.

6. Crocodile Habitat and Behaviour

Estuarine crocodiles range from India to Northern Australia, and across to Vanuatu and the Solomon Islands. Crocodiles most commonly live in the tidal reaches of rivers and associated

inlets and wetlands. However, they also occur along beaches and offshore islands and in freshwater lagoons, rivers, and swamps up to hundreds of kilometres inland from the coast.

As a result, there is a possibility that a crocodile may be present in or near almost any water body along the coastline of the Northern Territory. Juvenile estuarine crocodiles feed on small insects, crabs, prawns and shrimps.

As they grow, so does their range of potential food items. At sizes of around 2 meters they begin to take an increasing number of vertebrates such as fish, frogs, birds, and rats.

An adult crocodile's prey may include sea turtles, goannas, wallabies, cats, pigs, dogs, kangaroos, cattle, horses, buffalo, other crocodiles, and very occasionally, people.

To capture prey, estuarine crocodiles typically wait in ambush at the water's edge and lunge or snap sideways at animals which come to feed or drink. Their well-developed sense of smell will also lead them some distance in search of prey.



7. Risks Associated with Crocodiles in Nhulunbuy

Crocodiles are opportunistic feeders that can feed on any sized animal they can overpower. They can also be highly territorial, particularly during breeding seasons, and will attack anything in their habitat that they perceive is a threat.

Furthermore, since the cessation of crocodile hunting in the 1970's, and the continuing growth of the human population in the Northern Territory communities, there is an ever-increasing likelihood of contact between people and crocodiles.

It is imperative that each person is aware of the risks and takes accountability for staying safe in crocodile country. A common misconception is that it's safe to swim if no crocodiles have been sighted recently in an area and if someone is 'on lookout' for crocodiles.

8. Crocodile Removal

Saltwater Crocodiles can pose an extreme risk to human safety (Fukuda et al. 2014 & 2015) and can also be a significant risk to livestock and domestic animals.

"Problem crocodiles" are defined as those individuals where one or more of the following applies:

- The crocodile has attacked or is about to attack a person or persons
- The crocodile is behaving aggressively towards a person or persons
- The location of the crocodile makes it a threat or potential threat to human safety or wellbeing
- The activity of the crocodile is affecting the productivity of industry or commercial enterprises

This Crocodile Management Plan allows for problem crocodiles to be removed from the wild (harvested). Because crocodiles released back to the wild tend to return quite rapidly to sites of capture (Walsh & Whitehead 1993) and transport and handling is stressful, problem crocodiles are not relocated.

Recent reviews (Fukuda et al. 2014 & 2015) of saltwater crocodile attacks and problem crocodile management indicate that intensive localised removal of crocodiles can reduce the risk of crocodile attack, but targeted removal of large individuals does not substantially decrease risk.

This Crocodile Management Plan provides detailed guidance in Appendix C – Problem Crocodile Determination Flowchart, on when the authorised officer may consider a crocodile as a problem crocodile under these circumstances. Problem crocodiles in specific settings, such as the Sewer Ponds, are targeted and removed.

9. Dangerous Crocodile Behaviour

While all crocodiles can be dangerous, some crocodiles display particular dangerous behaviours around or towards humans. A crocodile displaying dangerous behaviour can pose a significant risk to public safety as once a crocodile has learned a dangerous behaviour, the behaviour is likely to be repeated, and this represents a much higher threat or potential threat to human's safety and wellbeing.

While each management zone provides different criteria for determining whether a crocodile is a problem crocodile, in the Nhulunbuy Town Lagoon, crocodiles are targeted for removal where they display certain dangerous behaviours around or towards humans. For the purposes of management, a crocodile may be considered as a crocodile displaying dangerous behaviour when it has attacked, is about to attack, or is behaving aggressively towards, a person; or its location or behaviour, is a threat, or a potential threat, to the safety or wellbeing of humans.

Importantly any crocodile that develops an association between humans and food availability is likely to be considered a crocodile displaying dangerous behaviour. Any crocodile displaying certain territorial behaviours are also likely to be considered a crocodile displaying dangerous behaviour.

10. Large Crocodiles

For the purposes of management, a crocodile that is larger than 2meters in length may be considered a large crocodile. While most crocodiles are highly territorial and can attack humans, large crocodiles are more capable of injuring or killing people. The vast majority of attacks are carried out by crocodiles larger than 2meters.

This criterion is used in the relevant targeted management zone, to determine if a crocodile is a problem crocodile (crocodiles less than 2meters in length are also targeted for removal in the zones) if they display dangerous behaviour or poses a threat, or a potential threat, to the safety or wellbeing of humans.

The NCL's approach to the management of crocodiles is based on crocodile management zones. Different parts of the town lease are located within different management zones. The particular zone is determined by the overall risk to public safety that is present there.

11. Nhulunbuy Corporation's 5 Point Approach to being Proactive

NCL is taking a proactive approach to manage the risks that crocodiles pose to people and to

reduce the likelihood of crocodile - human interaction. The five-key strategies that the Nhulunbuy Corporation have implemented are:

- a. Signage and barriers - Be Crocwise signage has been installed in strategic position around the management zones. Physical barriers will be provided if necessary
- b. Community advertising and awareness - delivery of public awareness programs using various media formats including radio, social media (Facebook), website
- c. Education in schools - presentations in school education programs including Be Crocwise
- d. Trapping and removal - regular monitoring, trapping and removal of crocodiles will be ongoing
- e. Continual monitoring by the Nhulunbuy Corporation staff and by members of the public through the 'Be Crocwise' reporting system

12. Reactive Management Actions

The primary reactive management action that the NCL undertakes is attendance at the site and confirmation of a reported sighting of a problem crocodile. Once the sighting has been confirmed, the most effective removal actions specific to the location are deployed. Often more than one of these reactive management actions will be utilised to reduce the risk as quickly as possible.

13. Being 'Be Crocwise' in Nhulunbuy

The Nhulunbuy Corporation is committed to the safety of the community through sensible management and removal of crocodiles in each management zone.

Regardless of the number of crocodiles that are removed the best way to avoid a crocodile attack is for people to be aware of the risks posed by crocodiles and for individuals to stay safe when they are in and around waterways that may be inhabited by crocodiles.

The Northern Territory Government has developed a campaign to educate people about crocodiles and reduce the risk of attacks. Information can be found on the NT.GOV.AU website under <https://nt.gov.au/emergency/community-safety/crocodile-safety-be-crocwise>

In Nhulunbuy we follow and endorse the Northern Territory Government's Crocwise strategy.



The Key principles of Crocwise are:

- Saltwater crocodiles are common in the NT and pose a significant risk to human life
- People live and recreate in or near areas where saltwater crocodiles occur
- In areas where saltwater crocodiles occur, no amount of management can guarantee that a natural waterway is 100% safe
- Only swim where there are signs recommending swimming; No Sign-No Swim
- It is possible to safely live and recreate in areas where saltwater crocodiles occur
- The NT Government has a strategic approach to saltwater crocodile management
- Personal safety is the concern of the Government but the responsibility of the person
- Know that crocodiles are ambush predators and evidence of their presence may not be obvious
- Pay attention to any warning signs at the locations you visit
- Be aware that crocodiles can attack people in boats and the smaller the boat the greater the risk
- Whenever you see a crocodile in the town lagoon or surrounding town lease area, report it to the Nhulunbuy Corporation by calling 08 8939 2200

Avoid incidental or deliberate feeding, e.g. leaving food scraps near the water, or disposing of bait at boat ramps.

14. Review Process

This policy will be reviewed two years from the date of adoption.

Date	Director (Name)	Signature
23/5/12	SOPHIE SZYLLAKSKI	
Chief Executive Officer (Name)	Signature	
AOAM SEILER		

