



Nest to Ocean Turtle Protection Program

2014 – 2026
Improving turtle nest success
through predator control



Australian Government



Queensland
Government

Cover image: 'Turtle 3' courtesy of Tourism and Events Queensland

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Feral pig stomach contents, including numerous flatback turtles, Jardine River, CYP.

Image courtesy of Tim Kerlin and J Lee, AQIS, 2006.

Background

The Queensland coast is home to some of the most important marine turtle nesting and feeding sites in the world. Six species of threatened turtles nest along our idyllic beaches. Even in settled areas, many beaches are regularly used by nesting turtles. Despite the integrity of our nesting beaches there has been a severe global decline of sea turtle populations, and of the seven species found in the world, three are classified by the United Nations as Endangered, and three as Endangered under both Commonwealth and State threatened species listing.

Since 2014, the Nest to Ocean Turtle Protection Program has focused on the commitment made by the Commonwealth and Queensland governments to protect marine turtle eggs and hatchlings from predation by feral pigs and other predators. The Department of Environment and Science's Queensland Parks and Wildlife Service (QPWS) deliver the program in close collaboration with the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) and other partner agencies.

The Queensland Parks and Wildlife Service manages over 13 million hectares of land and seven million hectares of marine park. Many areas support active nesting of turtles and the Service carries out active predator control in a number of key turtle nesting areas along the east coast. A range of other groups and organisations is also engaged in turtle conservation works around the state and this program will supplement and complement existing projects to deliver improved turtle conservation outcomes.

This program will also aim to encourage and support collaborative partnerships across governments and the community to enhance the incubation success of turtle eggs in Queensland through active predator control and other nest protection measures.

Issues

Australia supports globally significant breeding populations of green, loggerhead, hawksbill, flatback and Olive Ridley turtles. Unfortunately, many of these populations are in decline.

From the time they are laid as eggs, turtles face many threats including:

- predation of eggs and hatchlings by feral and native animals
- marine debris
- environmental factors and nest disturbance
- fisheries by-catch
- harvesting for subsistence use across their range
- hatchling disorientation through altered light horizons at nesting beaches
- deteriorating water quality
- loss of habitat.

Feral animal predation of turtle eggs and hatchlings is one of the main threats facing marine turtle populations in Queensland and is the main focus of the Nest to Ocean Turtle Protection Program. Data on egg predation is limited. However, two studies conducted on western Cape York showed feral pigs were responsible for the loss of up to 70% of clutches of eggs on many beaches.

A number of existing community group and government entities fund on-ground pest management focused on the conservation of ecosystems, including state agencies, such as the Queensland Parks and Wildlife Service and the Department of Environment and Science and community groups such as natural resource management organisations and Indigenous organisations.

In North Queensland, feral pig control activities are targeting green, hawksbill, Olive Ridley and flatback turtle rookeries on Eastern and Western Cape York Peninsula. On the southern coast, fox control activities are helping marine turtle nesting success on the mainland along the Burnett Coast from Agnes Water to the Queensland border where loggerhead, green, flatback and leatherback turtles nest.

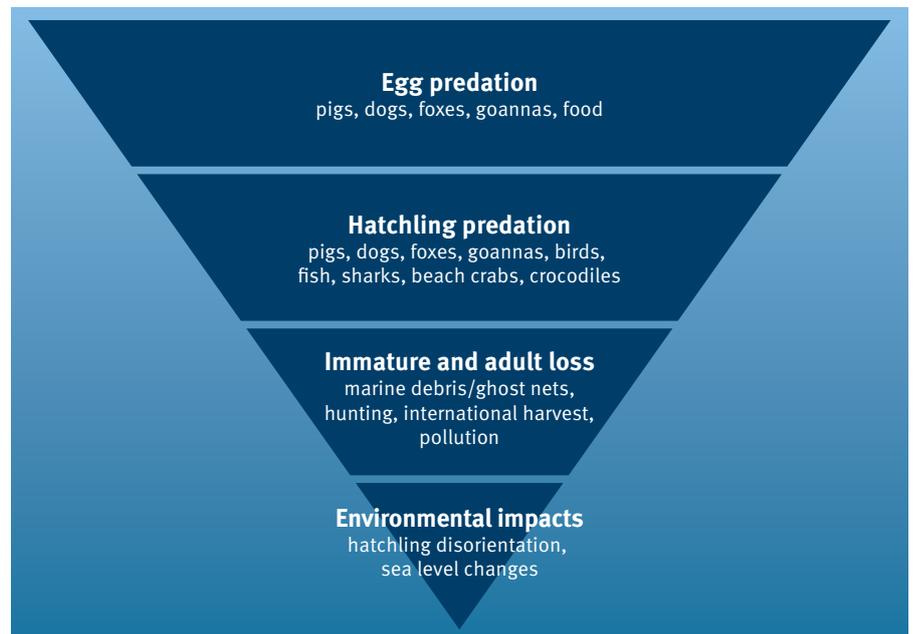


Figure 1: interrelated impacts on turtle populations.



Turtle hatchlings heading to the sea.

Image courtesy of Tourism and Events Queensland

Objectives

This program is aimed at increasing the survivability of marine turtle clutches of eggs and hatchlings by enhancing existing programs and exploring innovative ideas for feral pig and other predator controls. The overall program objectives are to:

- Increase survivability of marine turtle clutches of eggs and hatchlings.
- Reduce feral predation impacts on marine turtle rookeries.
- Provide proactive nest protection and feral animal control actions at all identified priority rookeries during nesting seasons.
- Enhance and augment existing Traditional Owner and local community engagement and participation in turtle nest protection and predator control.
- Explore innovative ideas for predator control.
- Ensure strategic investments and enduring legacy outcomes are derived from the investment.

Scope

Key marine turtle rookeries along the coast and on offshore islands have been identified and prioritised for active nest protection and predator control efforts. Annual implementation plans and monitoring programs will be developed for the priority sites.

Some priority sites may include urban areas and some may be quite remote from other nearby towns and cities, some will be on existing national parks and other protected areas and of these are on range of other tenures. The location and type of threats in the area will determine the kind of treatments to be deployed. Identification of strategic investments and lasting legacy outcomes are also in the scope of the program.

The Recovery Plan for Marine Turtles in Australia (Commonwealth of Australia 2017), the and the Queensland Marine Turtle Conservation Strategy (2021-2031) will inform the scope of the program, including identification of existing or easy-start programs that can be enhanced and augmented. Due to the geographic scale of this program, the state has been divided into a series of four zones or program areas to focus delivery of outcomes and methods according to the factors and characteristics of the individual zone.

Within each zone or priority area it is expected that a number of discrete projects may be implemented.

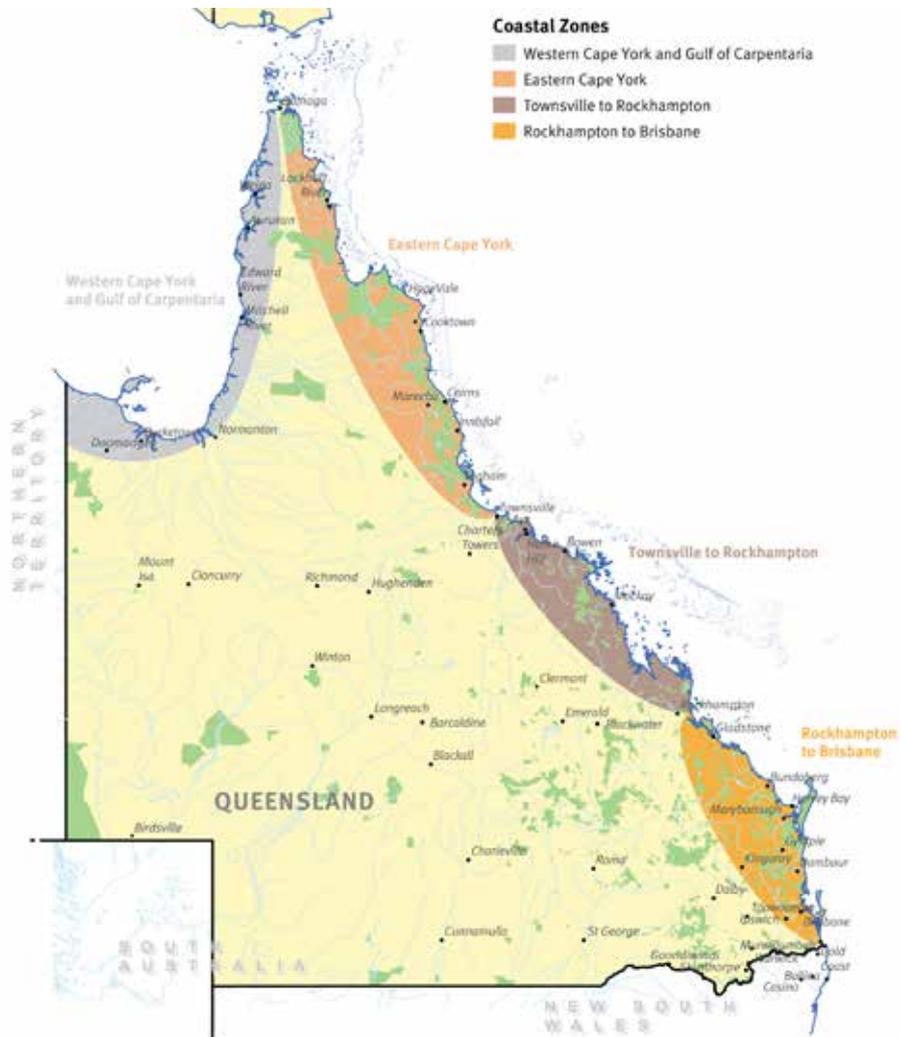


Figure 2: Turtle protection program implementation zones

What types of projects will be supported?

The types of projects the program will consider include control options that use a combination of ground and aerial shooting, ground and aerial baiting and installation of nest protection devices at strategic locations. The focus of all operations will be on critical egg-laying and hatching times. Protection and control methods will usually be determined by the location and proximity to population centres and will be integrated to achieve the most effective predator reduction:

Projects and activities that enhance or augment existing work undertaken or underway where appropriate

Projects will ideally be based on work that has established information on nature and extent of impact of predators on turtles and the stakeholders involved in addressing the problem.

Ideally, projects must leave an enduring legacy in the impact area rather than replace existing projects. Projects must identify how they add value to existing or previous work that has been undertaken to manage feral pigs and other predators of turtles.

Projects and activities that do not undermine or replace existing activity

Routine feral pig and other predator controls are not supported. Projects should clearly identify the types of existing activities that are being undertaken, as well as approaches that will prevent a reduction in existing activity to manage feral animals. In other words the program aims to augment and enhance existing projects and activities in controlling feral pig predation on turtles.

New projects and activities that identify priority areas

While projects should build on existing work, if some priority areas are identified that are currently not being actively managed, project proposals will be accepted. New projects must provide clear detail on how they would meet the program objectives.

Projects that have flexibility to amend actions depending on seasonal condition

In certain seasonal conditions certain control techniques may have to be modified or deferred. Projects must include a contingency plan for use in the event of seasonal impacts.

Projects that reflect adaptive best-practice management

Projects will need to identify the combination of techniques, target specificity, areas of application, and time of year and build on available information for actions to achieve cost effective control.

Projects and activities that reflect group management rather than individual management are preferred

To maximise investment and to help facilitate coordination and integration of complementary feral animal management programs, it is preferred that, where possible, landscape-scale projects will be undertaken.

Organisations such as regional natural resource management groups and local Indigenous land and sea management groups will develop projects through consultation with affected stakeholders. This can include state and local government levels, regional natural resource management groups, land and sea management groups and private sector project proponent or proponents. It will be necessary that consent of land owners is obtained before any on-ground works are undertaken.

Projects and activities that identify the entity with the capacity to deliver

Projects that are developed on a zone basis with identified activities are encouraged. One entity may oversee the project but delivery may be by a variety of entities. It is important that the project clearly identifies the on-ground delivery activities and funding allocations to respective entities.

Projects that incorporate monitoring of results

Priority areas will be identified using existing knowledge and, where gaps are identified, surveys can be conducted to evaluate priority areas. In all cases monitoring of activity and project results must be included.

Partners

A Steering Committee comprising representatives of State and Commonwealth departments has been formed to provide executive decision-making and governance guidance to the program. In conjunction with this committee, turtle, pig and predator experts will provide advice on a range of detailed technical matters.

The Queensland Parks and Wildlife Service will measure and review the effectiveness and outcomes of the program and help identify significant turtle rookeries likely to be impacted by feral animals, to guide priorities and coordinate the distribution of funding.

Effective communication and coordination between this program and existing programs and initiatives in Indigenous land and sea management will be important.

The engagement of contractors and commercial providers can be accommodated in project proposals for the program.

Timing

There will be times of active nest protection through predator exclusion devices and on-ground baiting and shooting of feral animals. These times will be based on turtle nesting and feral animal breeding cycles (where known) to ensure number of surviving nesting sites is maximised.

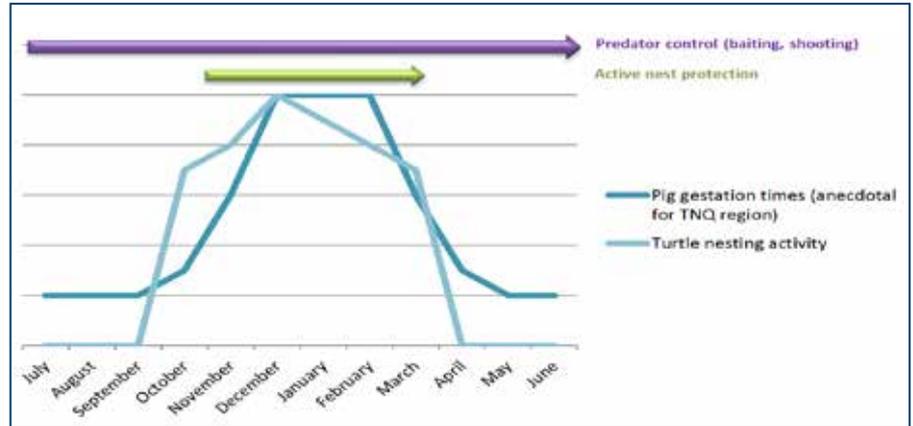


Figure 3: Graph showing known turtle nesting season East Coast (Limpus, 1985) and anecdotal evidence of seasonal feral pig breeding times in Central and North Queensland.

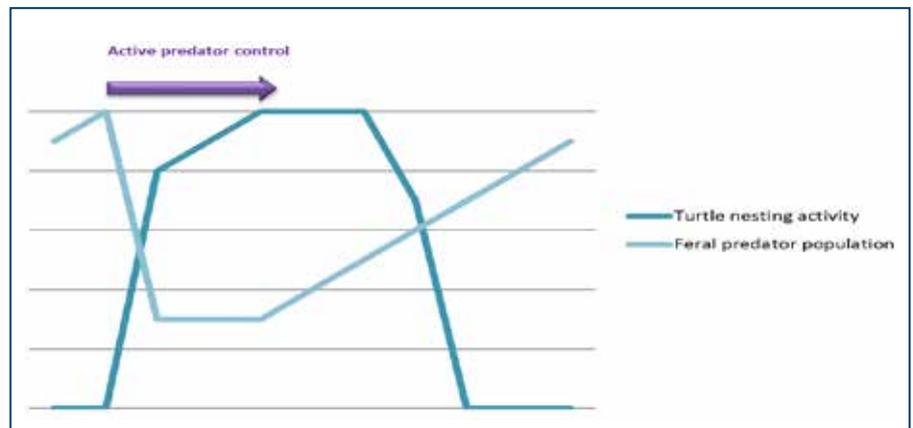


Figure 4: Graph showing impacts of culling feral predators leading up to turtle nesting season that increases hatchling survivability (Limpus, 1985).



*A feral pig digging up a turtle nest.
Image courtesy of Jim Mitchell, DNRM, 2004.*



New turtle hatchling

Image courtesy of Tourism and Events Queensland

Funding available

Round Eight funding availability will be announced late in 2023 for new projects, including turtle rookeries on the east coast of Cape York, the Torres Strait and coastal catchments of the Great Barrier Reef. Coastal islands within these areas will also be considered eligible. Applications will be invited for project proposals targeting high priority turtle rookeries in these locations along with other eligible activities.

Please refer to the Round Eight Guidelines will be announced later this year.

References

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