THE CANE TOAD MENACE

AT EAST POINT RESERVE

Presence of cane toads at East Point Reserve impacts on local fauna species, in particular reptiles and small mammals. City of Darwin is exploring control and elimination of cane toads in an effort to preserve the biodiversity and recreational amenity of the area.

The Problem: Cane toads are accessing water sources throughout the dry season, making East Point Reserve a haven for these feral animals. Water points such as the one shown here provide the only permanent fresh water source for many local species. The isolated Agile Wallaby (*Macropus* agilis) population, Common Brushtail Possum (*Trichosurus vulpecula)*, threatened shorebirds species and the threatened Floodplain Monitor (*Varanus panotpes)* could be many of the species utilising these water sources. Anecdotal evidence suggests that water points are also supporting cane toad population within the reserve and potentially allowing toad reproduction

A short project was undertaken in June 2015 with the objectives to:

1. Assess the extent of cane toads at East Point Reserve
2. Exclude cane toads from wallaby water points
3. Review cane toad control devices at East Point Reserve

Assess the extent of cane toads

Water points were inspected for presence of toads and tadpoles. Infrared digital scanning cameras (UV565HD) were set up at two water points, based on initial inspections, to detect movement, with 3 photo bursts within 12m of each water point or set to take images every 10 minutes in 3 photo bursts. Cameras were set up at least 1 hour before dusk and retrieved at least one hour after dawn. Images were reviewed and toad usage of water points quantified. Each water point was surveyed for at least two nights to improve estimates of toad utilisation of water points.

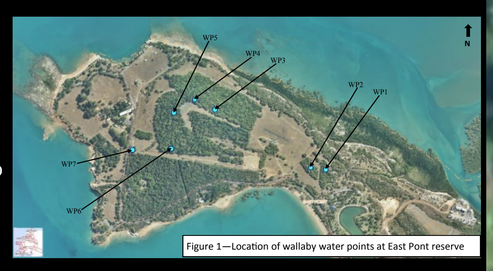

Figure 1—Location of wallaby water points at East Pont reserve

Figure 2— Wallaby water point being accessed by cane toads

Nocturnal field surveys were undertaken to determine toad presence, excluding the two water points that were being monitored by cameras.

Leased areas (Fannie Bay Equestrian Club, the Darwin Military Museum and Pee Wees Restaurant) were surveyed to determine possible cane toad attractants and populations within each property. Permanent water bodies available for toad reproduction, irrigation regimes, other possible water sources, food availability, overnight lighting and current cane toad management plans noted.

Exclude cane toads from water points

Water Point 2 was modified by increasing the height of water access to 69cm. Bricks were used to raise the water trough, a metal reinforced table was placed on one end of the trough with two wire ladders, one secured at an angle of 30°, the other at 45°. A Poly Riser and elbow were fitted to enable auto filling of trough. This design ensured accessibility for juvenile wallabies, small mammals or reptiles.

The initial modification still enabled cane toads to enter the trough. Adjustment of the angled wire ladders to sit at a 90 ° angle on one side of the table in the second trial excluded cane toads from the trough. Camera footage wallabies and possums drinking from the modified trough. No reptiles were observed attempting to access any water point, however this could be due to the lack of sensitivity for infra red cameras to reptiles. Initially wallabies seemed wary of the modified trough, however after seven days of surveillance, wallabies frequented the trough regularly

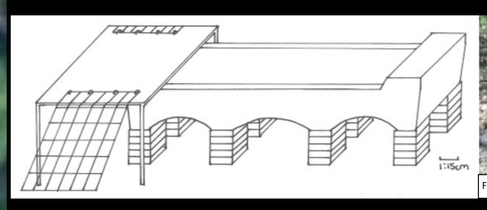


Figure 3 —Modified water point design (left) and in the field

Raising the troughs 30cm increased the jump height required for toad entry to 65cm, well beyond their capabilities but still allowed small female wallabies and possums to access water.


Figure 4—Wallaby accessing modified water point

Review cane toad control devices

Current and potential fencing for cane toad exclusion in East Point Reserve and Lake Alexander were surveyed and mapped to show holes in fences due to drainage, fence damage, current mesh/rubber boundaries including holes within the border and the location of gates.


Figure 5—Various damage to fencing in and around the Resrve

Fencing in and around the Reserve and Lake Alexander could provide better barrier to cane toads with improved application of mesh.

There is very little adequately maintained cane toad prevention fencing in place to protect cane toad migration into East Point reserve. Five gates and five drains on the eastern end near Lake Alexander create large entry points for cane toads, and fencing does not isolate the reserve from toads entering via Lake Alexander. Fencing between Fannie Bay Equestrian Club, Pee Wees restaurant and the Darwin Military Museum allow cane toad entry into the reserve.

Figure 6—Improved fencing options at East Point Reserve

Additional Issues for Consideration

Impact of Irrigation

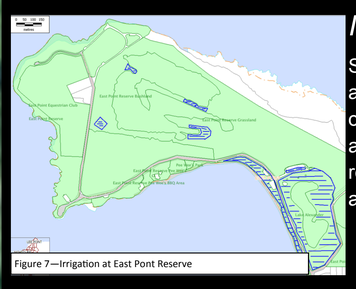
Figure 7—Irrigation at East Pont Reserve

Significant irrigation occurs around Lake Alexander and at revegetation sites, see figure left. High numbers of toads in this area suggests that this is providing additional refuge for toads. Any management response should include strategies for minimising toad access to irrigation.

Use of Cane Toad Traps

Cane toad traps were used to supplement toad busting activities and also at the modified water point. The figure below (left) provides suggested sites for ongoing installation of cane toad traps at the reserve and Lake Alexander, and appropriate trap placement (right) under shade and easily accessed. .

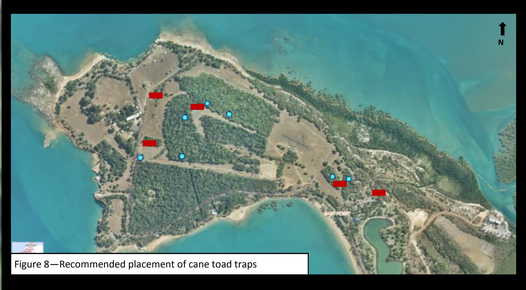
Figure 8—Recommended placement of cane toad traps


Figure 9—Cane toad trap in the field

Recommendations

1. Modify and raise all wallaby water points to above 60cm
2. Implement cane toad traps
3. Scheduled irrigation shut down
4. Fence repairs and mesh application
5. Regular cane toad manual capture to monitor cane toad population
6. Change leaseholders agreements to implement cane toad control strategies

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