



DEVILS OF THE ALPINE

Field Monitoring Project – June 2011

A remote camera based study into Tasmanian devils at Cradle Mountain has provided over 5000 photographs and some very interesting and positive information into to the survival of the species in the Tasmanian wilderness. Project Director Wade Anthony – Devils @ Cradle.



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5 YEARS OF TASMANIAN DEVIL DATA RECORDED AT CRADLE MOUNTAIN

June 22 2011

DEVILS OF THE ALPINE – Field Monitoring Project (FMP)

Devils @ Cradle is a Tasmanian devil sanctuary located on the edge of the World Heritage Wilderness of the spectacular alpine Cradle Mountain / Lake St. Clair National Park. The sanctuary opened its doors in January 2006, ironically just a few months after the first case of Devil Facial Tumour Disease had been found at Cradle Mountain.

This finding sparked the official 'Devils of the Alpine' – Field Monitoring Project which was established by Devils @ Cradle Managing Director Wade Anthony in June 2006 following the opening of the sanctuary just months earlier.

Five years on - June 2011 marked a 5 year milestone of the Field Monitoring Project and its recording of Tasmanian devil data within the Cradle Mountain area, the collection of data has provided some very interesting and positive results for the survival of this species in the wilds of Tasmania.

Since landowner Wade Anthony purchased the property back in 1999 he has observed devils happily coming and going year round, while working as a local Cradle Mountain Parks and Wildlife employee for over 5 years in various roles, allowed for keeping a close eye on devil movements within the area also.

The official establishment of the FMP and the recording of data (commenced in June 2006) used the same basic but reliable monitoring techniques that had been used for 5 years prior to this - spotlighting, road kill observation and general observation. General observations were almost daily and made easier by living permanently on the property, devils are attracted to the captive animals at the sanctuary and visited my cabin well before the sanctuary was built - it would be an odd night not to see a devil or two heading across the grasslands to the sanctuary or scratching at my front door. This proved the easiest way to get to know repeat visitors quite quickly.

However the big addition which greatly assisted our data collection were a number of remote sensor cameras, eight of these were funded by the local PWS and the Cradle Mountain Tourism Association and additional cameras were loaned through DPIPW, in total we had up to 12-15 cameras running at certain times. The cameras proved to be a great success even in the middle of winter taking more than 5000 photographs over the 5 years. This data has given us a great insight into the Cradle Valley Tasmanian devil population.

The project has gained much local support during this time, the many local tourism staff including the PWS have and are greatly assisting in passing on news about any injured or road kill devils. UTAS researchers working in the area keep in contact with us, which is pleasing and we work closely with the STTDP and DPIPW on various issues.

In 2008 a paper was published on our data from the 2007/2008 Devils @ Cradle Field Monitoring Project by the Field Naturalists Magazine.

In 2008 and 2009 after consulting with DPIPW the sanctuary released a number of orphaned and captive bred young (surplus to breeding requirements) on the property, the release was done under a managed process and the animals were able to be monitored within our study area. This proved to be a very successful exercise and is one that is still being monitored.

Devil Facial Tumour Disease (DFTD)

In late 2005 a road kill DFTD devil was picked up by a PWS Ranger on the Cradle Mountain Road, not unexpected, probably inevitable given what we knew - but coincidentally - just months before opening the Devils @ Cradle Tasmanian devil sanctuary.

I guess people who had been following DFTD, just like I did may have thought that it would continue on its ravaging path. I certainly hoped not as I didn't want to see the healthy bunch of devils that I had been watching for 5 years be wiped out to DFTD. From that point on the monitoring project became much more important and soon after the construction of the devils @ cradle sanctuary the monitoring project was conducted on an *official* basis.

Given what we had been told to date about DFTD up to that point and looking at their (the devil) options back then their future looked bleak however there were a few things that could potentially assist the devil in the wilderness of the Cradle Mountain National Park and beyond.

Cradle Mountain sits on what is known as Tylers line - a natural geographic line of Mountains running and natural barriers north to south through the island of Tasmania separating the dry, flat east from the wetter, colder west. Either side of this line the landscape is really quite diverse, the East is more open, flat, warm and dry whilst the West is dense, mountainous, cold and wet a less habitable place for most animals including Tasmanian devils.

We have been told by experts that possibly East and West gene pools of animals exist within the island and that the west is potentially a stronger genetic line of animals. You would expect however that Cradle Mountain and other centralised areas may have somewhat transient populations.

We do know from other species that lack of genetic diversity can lead to a lack of resistance or the species becoming susceptible to disease.

We have heard of 'Cedric' the male devil which came from the Cradle Mt. area that showed some laboratory resistance but eventually died from the injection of a certain strain of the disease. Cedric was an AC5 animal, Ancestral Chromosome 5 is believed to relate to a chromosome make up which is more similar to their ancestors and therefore may have potential resistance to disease.

UTAS Research in the West Pencil Pine area just 20km West of Cradle Mountain has also indicated resistance or a different disease response to other areas of Tasmania, similarly to Cradle Mountain, DFTD whilst present is not having a great impact on the population.

A Summary of our FMP findings

During the five years of recording data on devil numbers (along with a bi-catch of both quoll species) the FMP has photographically recorded a data set approximately 150 identified individual devils of all age structures from juvenile to 5 years old, dating back to June 2006 - indicating a healthy population dynamic whilst DFTD has been present. This finding has been found consistently every year and our continual monitoring shows this currently remains the same - we see a healthy population of devils year round and very little sign of DFTD.

The results show more activity at certain times of the year as you would expect we have noticed trends in activity around breeding, pregnancy and dispersal times.

We have paid particular attention to any DFTD animals after the original road kill sighting in late 2005. Following this the next DFTD devil within the area was caught on our cameras on the property in August 2006 almost 12 months later. It had seemed a long time when you were looking for it. Since that point we have photographed both on our remote cameras and road kill animals a total of 13 DFTD animals which includes the sanctuary property (camera data) and both the Cradle Mountain and Belvoir Roads between Post Office tree and the top of the Black Bluff Range (road kill data).

On an annual percentage of prevalence based on the individuals photographed we consistently saw less than 10%. This was surprisingly low based on elsewhere in Tasmania where disease was present.

To add to this interestingly we have not seen a diseased devil in close to two years.

It appears like the disease arrived, moved through and is having little impact (in comparison) the prevalence is still uniquely low. I have not heard of the disease moving beyond the Murchison Hwy which is less than 50Km west of Cradle Mountain. It appears that since arriving at Cradle Mountain the disease is far less prevalent and much slower in its rate of spread.

Is there a change in the disease or a change in the animal, is the environment a factor? Any potential resistance is the devils best chance of survival I believe what we are seeing is a sign that our iconic little devil is fighting back – this is great news indeed.

Released animals

In 2008 and 2009 following communication with the STTDP we released a small number of both captive bred and orphaned animals into our study area, since this time we have made a concerted effort to monitor these individual animals through our various techniques.

These animals were micro-chipped housed off display during weaning and released soon after weaning age, their natural dispersal time. We are relieved to say that a number of these animals have been sighted since their release indicating a successful integration into the wild.

One particular animal R2 (a 10 month old female at the time of release) has been seen on the property on many occasions through our various monitoring techniques which indicated to us that she was denning somewhere nearby. R2 was in fact trapped by UTAS researcher Bronwyn Fancourt last winter within the National Park carrying four furless young in the pouch. Our camera data also showed R2 in the spring with a bulging pouch. We are keeping a keen eye out for any of these released individuals as they provide a valuable insight into the success of captive bred released young.

Another individual - Penguin at the time of release was a 10 month old male devil, he was the orphan of a diseased mother from the Cradle Mt. area (West pencil Pine) who was taken into STTDP captivity for research purposes. I was approached by the STTDP regarding releasing Penguin on my property, this was something I was more than happy to do and it gave recognition from the STTDP to the monitoring and release work we had done to date.

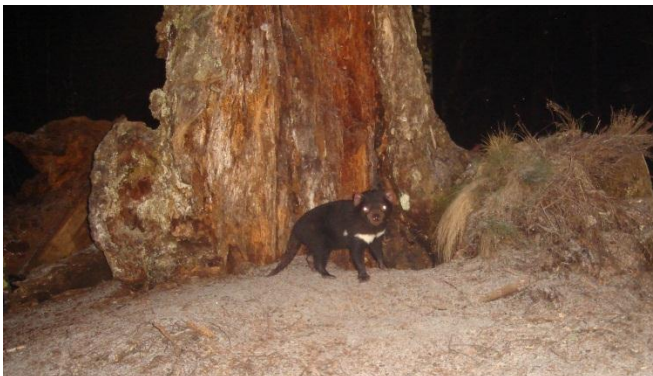
Penguin had quite distinguishable markings (two dots) on his left flank which made him quite unique and easy to identify on camera. Since release we have seen Penguin on a few occasions and he recently was caught on camera showing was resembled mating scars, indicating another successful integration.

Free Range Enclosures (FRE's) are a concept that been designed (1) as another means of insuring against extinction, (2) to hold a number of devils in a large are whereby management (or cost effectiveness) can be limited or reduced, (3) as a place to conduct research and (4) possibly most importantly to maintain wild behaviours within the species. If captive devils are to be reintroduced into the Tasmanian landscape on a large scale to replenish wild populations then it is believed that these animals will be sourced from these FRE's.

Whilst I generally agree with concept of FRE's I believe R2 provides evidence that an intensively managed captive devil can be released and successfully integrate into the wild. Importantly R2 was released at her natural dispersing age following weaning at approx. 10 months old and I believe that at this age all juvenile devils naturally possess these wild instincts which enable them to survive in the wild.

There is no doubt that certain captive situations can manipulate these natural instincts within juvenile animals but in a suitably managed process I believe that the success of intensively managed captive bred released animals would be similar to that of juveniles bred in FRE's. One could argue that hand weaned devils within the Carer's network (who are able to release) cannot provide the same preparation for release or monitoring of these releases that Devils @ Cradle or other professional institutions can.

No further releases have occurred since 2009, the Tasmanian devil population at the sanctuary is now held within ZAA's Insurance Population breeding Program for the species. Devils @ Cradle are applying for Full Institutional Membership of the Association in August 2011.



The photographs above are of R2 - a juvenile female when released in Jan 2009 captured here in winter 2009 on a remote sensing camera and the following year in the winter of 2010 photographed carrying 4 pouch young by a U-TAS researcher trapping at Cradle Mountain.

In conclusion

The 'Devils of the Alpine' Field Monitoring Project is continuing to gather data through our various techniques. We will continue to work with the local parks and Wildlife service and the tourism community.

Over the 5 years we estimate Devils @ Cradle keeper staff have spent close to 2000 hours out in the field and in the office collating the data and reports to conduct this monitoring and we feel we have some very important information which can aid the research of Tasmanian Devils currently conducted by the STTDP.

We hope to gain financial support for the continuation of this project through the Save the Tasmanian Devil Program or the U-TAS Save the Tassie Devil Appeal.

For further information please contact;

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