

## Breeding Common Wombats

by

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Planned matings of Common Wombats in captivity are extremely rare. In Catriona Maccallums thesis, *The Reproductive Biology of the Common Wombat, *Vombatus ursinus**: Studies towards the development of an artificial insemination protocol she noted that to date, approximately 43 Common Wombats have actually been born in captivity world wide and less than 20 are from planned matings.

In June of 2005 we tried introducing our 2 Southern Hairy-nosed Wombats for breeding purposes without any success, so we started looking at our breeding options with our Common Wombats.

Currently at Dreamworld we have 7 Common Wombats, 3 males and 4 females with only 2 of these at breeding age.

The two lucky candidates chosen were Bart and Milly. Milly is our 4½ year old female that was captive born and parent raised at Western Plains Zoo and has now lived at Dreamworld for 3 years and has always been housed by herself.

Her potential suitor was Bart a 15 year old wild born animal that was hand-raised at Western Plains Zoo. Bart has previously been housed either alone or with a female. Bart successfully sired one offspring in 1996 at Dreamworld; however due to his age we were uncertain as to whether he would still be a viable option.

Due to the lack of information on the planned breeding of Common Wombats in captivity we decided to document everything on video in the slim chance we were going to successfully breed them.



Milly - Female



Bart - Male

## Problems with Breeding in Captivity

It is thought that the successful breeding of wombats in captivity is limited by many things including, small enclosure size, incorrect housing, lack of enrichment and unsuitable diet and not having a suitable area for the male to trap or corner the female in.

## Enclosures

At Dreamworld we have 7 off exhibit enclosures for holding wombats, 3 of our older enclosures are 4m x 8m with a chain link wire fence, the substrate is dirt with grass growing in it, and the furniture consists of 1 hollow log and a scratching log.

These are the same enclosures that Bart bred in back in 1996.



## Enrichment



Most of our wombats are handled for education purposes and an easy way for us to enrich them is to walk them on a harness. These walks are their time and they can walk where they want or stop and graze, it's their choice.

## Nutrition

Adult wombats at Dreamworld are fed the following diet daily:

- 1½ cups Macropod Pellets
- 3 Native grass clumps
- 1 Handful Lucerne

Twice Weekly

- 20g Maize

## Considerations

Common Wombats are naturally solitary and incompatible animals can inflict a lot of damage to each other and can even result in death.

## First Encounter

Bart and Milly were housed separately and had no visual contact with each other prior to the 16th June 2005. We decided we would test the waters by putting the female into the males' territory.

As soon as he realised she was there he instantly starting chasing her and she ran straight into the log where he started biting into her back. She consistently vocalised and would throw her rump up at him. After lots of knocks to the head, he worked out to go around and enter the log the other way approaching her head on. He would either push her out of the log backwards or push past her and would come out the other end.

Once he got her out of the log he would chase her around and whenever she stopped he would jump on her back and start biting into her. He would then roll onto his side behind her and try pulling her over with his forelimbs. This continued several times before she appeared to let him penetrate her. In total they were in together for approximately half an hour, but only appeared to be mating for 5-10 minutes. After Bart appeared to have finished we separated them by moving the male into the adjoining enclosure and left the female in his enclosure.

As this encounter was quite intense we checked the female over to find that the male had inflicted 7-8 superficial wounds to her back.

## Second Encounter

Later that same day we put the female into the adjoining enclosure with the male again. It didn't take him long to realise what he was there for and he was straight onto her again. This time there was very little of her in the log with him biting her compared to the mornings encounter; there was lots of chasing and him trying to flip her on her side.

They were not really worried about us so we were able to get fairly close and were able to see that he was penetrating her. She didn't entirely flip on her side, she cocked her bum but the top ½ of her was almost upright. It was amazing to see him using his hind limbs to help guide his penis into place.

Throughout the process the male would lay for a little then give a few thrusts then relax again. Both were breathing rapidly and the female would relax and close her eyes, this continued in the same position for over 40mins.

Once the pair separated we removed the male and observed that he had lots of semen over his feet and legs, the female also had semen around her cloaca.



## Evidence of Successful Copulation

The following day we were extremely encouraged when we found a 5cm long semen plug with what appeared to be faeces in it in the females' enclosure.



5cm Semen Plug

## Third Encounter

On the 21st June 2005 we tried putting them together again, the male tried to mate her approximately 3 times with no success. She was very defensive towards him and was continually trying to get away from him and stayed in the log for long periods of time. The male was much more aggressive this time and she ended up with at least 10 wounds from her neck down to her rump and some were quite deep. Due to both of their behaviour we decided to remove the female.

## Fourth Encounter

On the 12th July 2005 we attempted putting them together again; however we removed them due to the same behaviour we saw with the last attempt.

With both the third and fourth encounters the females' behaviour towards the male appeared to be very different to the first day.

## Gestation Period

Most resources we referenced stated that the gestation period for Common Wombats was 20 - 22 days and one stated approximately 30 days. We decided to leave her pouch check until 27 days after mating. Unfortunately when we checked, the pouch was empty; however we decided that since there were no accurate records for the gestation period we would re-check the pouch in 2 weeks time to double check.

With being able to watch the female give birth we put the Common Wombats gestation period at 30 days.

## Parturition

On the 16th July 2005 at approximately 4pm, we received word that the female was acting strangely. This is how her behaviour was described in the message.

She's bent over, vocalising, tapping her front paws, shaking, teeth grinding, her butt is doing little thrusting movements her legs are fully spread again, now she's standing, then squatting, her tail is erect, she appears to be in a daze and the floor of wheelie bin is moist.

With the video camera still at work we were able to get them to record what sounded like the female giving birth. This behaviour went on for over an hour.

## Pouch Checks

On the 28th July 2005 we sedated the female and took her to the vets so we could get a good look in the pouch, as she was dropping off the pouch just relaxed and flopped open and there was this tiny little joey. We were ecstatic; we had planned and bred a baby Common Wombat.



12 Days Old

In October 2005 we decided to check the pouch again so we could monitor the joey's progress. The joey was attached to the R teat and was approximately 140mm in length. Its eyes weren't open but the ears were separated from its head and the claws were well formed. The pouch was very moist and the joey was very active and defecating a green moosh.

105 Days old



Towards the end of November 2005 the joey was observed moving around in the pouch while mum was lying on her back

In January 2006 we first noticed the joey sticking its head and arms out of pouch in the afternoon. Its eyes were open, it still appeared pink with a little bit of fur, and its head was approximately 6cm long.



183 Days old

In mid February we observed the 218 day old joey out of the pouch for the first time. Its paws were bright pink and had no dirt or staining on them, so we believe this was the first time it had actually been out of the pouch.



218 Days old

It appeared that mum was trying to coax it to move around & when it was trying to get back into the pouch she used her front & hind legs to discourage it.

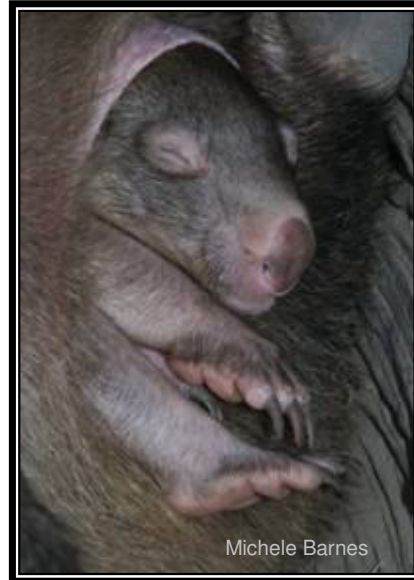
At 221 days the joey was again observed out of the pouch after lunch, it was out exploring in the log & walking all over mum while she was sleeping.

It was then we decided to pick the youngster up to sex it – it was female!! When we went to put it back in with mum, she thought it was us and flicked the joey out of the log with her rump. The joey was fine and we picked it up and placed it in front of her, they both vocalised to each other, mum sniffed the joey and allowed it back under her.

At 222 days the joey was all the way out of the pouch and appeared to be trying to get back in, but mum was preventing her by using her back legs to fend off the joey.



15<sup>th</sup> February 2006



21<sup>st</sup> February 2006



22<sup>nd</sup> February 2006



25<sup>th</sup> February 2006

At 225 days the joey was out in the afternoon crawling all over mum. Mum was lying on her back with her pouch fully inverted and laying exposed with the right teat visible. The joey was climbing across her mothers face and she would gently mouth it and appeared to be playing with it with her paws. The joey would also lie beside mum and chew on her claws and fur. The joey climbed down to the pouch and tried to get in, however because of the pouch being inverted she couldn't get in so she put the teat in her mouth, cuddled up on the inverted pouch and went to sleep. On this occasion the joey was out of the pouch for over an hour.

### 225 Days Old



When we next observed the joey it was out of the log roaming around in the grass. We removed the joey to weigh it, however this time to avoid the joey being flung across the enclosure we put her back beside the log, the joey vocalised to mum and she vocalised back, she smelt it and allowed the joey to scamper back underneath her.

## In Conclusion

Since there was very little data on the planned breeding of Common Wombats in captivity, we were extremely glad we documented the entire process as we feel the hours of footage taken will be a valuable resource for any future planned breedings.

We showed that the age of our male proved to be insignificant as he is still obviously viable at 15 years of age.

Although the limitations listed above for breeding wombats in captivity could still potentially play a significant part when attempting to breed we found that our diet, very basic enclosure and furniture were suitable.

We also found that the behaviour of the female and male when she was not in oestrous was noticeably different to when she was. However, I believe unless you had something to gauge this against, as we did, it would be difficult to know what was normal mating behaviour and what wasn't for your animals.

Although we can not be 100% certain that the female gave birth on the 16<sup>th</sup> July 2005, we are 99% certain she did as she was in a state of trance, the bottom of the wheelie bin was very moist and she showed all the behaviours of giving birth for over an hour. This being the case the actual gestation period for Common Wombats is exactly 30 days.

