






The Devils in Danger Foundation Inc. (DIDF) is coordinating the construction of a 'No Injury Breeding and Education Centre' for Tasmanian devils to be constructed in Tasmania. This project will provide the first centre of its kind in the world to sustainably breed disease free Tasmanian devils. This will maintain and preserve the genetics available in the captive population of devils, thereby making a major contribution to the prevention of the extinction of the species.

### **Mission Statement**

To work in partnership with Federal and State Governments and all other key stakeholders to increase awareness of the plight of the Tasmanian devil. We intend to facilitate or implement the appropriate steps to guard against extinction of the species

### **The goals of the Devils in Danger Foundation Inc. are:**

-  To raise awareness in Australia and worldwide about the plight our Tassie devils face with DFTD in Tasmania and to inform people on what they can do to help.
-  To assist the research teams working on DFTD. Funds raised are utilised to purchase remote surveillance equipment for researching the progress and onslaught of DFTD in wild devil populations.
-  To be able to breed Tasmanian devils in captivity humanely, eliminating the unacceptable injuries currently being experienced by devils in captive breeding programs throughout Australia. Something Wild Wildlife Sanctuary at National Park has developed a revolutionary new breeding program with the assistance of industry partners, for breeding devils that minimises and in most cases, eliminates injury while mating captive Tasmanian devils.

### **How has Devil Facial Tumour Disease affected wild devil numbers?**

The importance of this facility grows daily with the constant downhill spiral of wild devil populations. Current DPIW evaluations show an 89% drop in wild populations.

The latest projected modelling on the decline of wild devil populations indicates a massive 50% decrease every year. Latest projections indicate extinction is likely in as little as five years.



**Devils In Danger Foundation Inc.**

<http://www.devilsindanger.com.au>

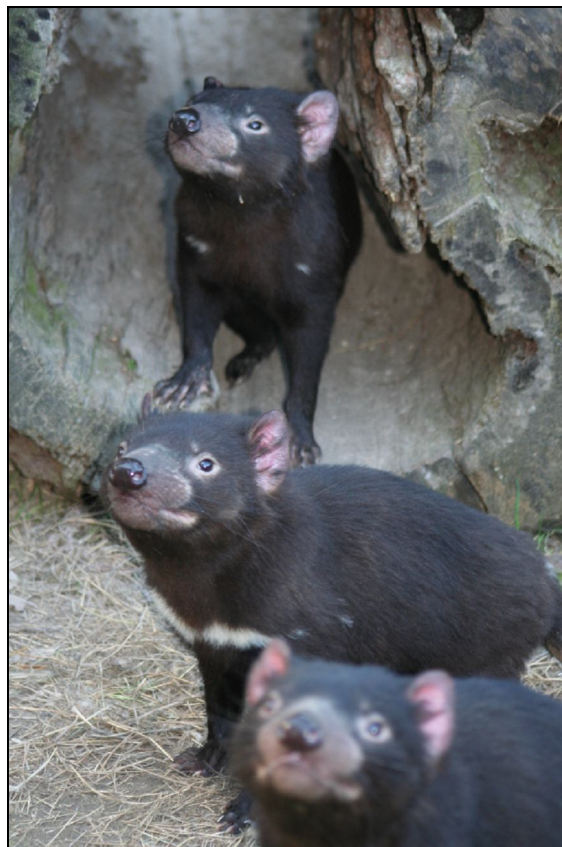
Information Pack

## The Committee

DIDF has a board of directors that make all decisions on the direction, activities and policies of DIDF. The Committee brings a wide range of skills and resources to the No Injury Breeding Program, research and day-to-day activities of the foundation. Members of our committee have diverse and highly regarded skills and experience in the zoological and captive animal arena both in Australia and around the world. These professionals have a range of 10 to 30 years practical and academic experience in wildlife management and related programs.

Other members of our committee bring other qualities to our board to assist in the success of the foundation. This includes:

- Directors with over 30 years experience in charity organisation management
- Media representation from the most awarded wildlife documentary producer in Australia
- Extensive small business management and tourism marketing
- Indigenous elders of Tasmania for cultural input to highlight the cultural significance of Tasmanian devils
- Extensive wildlife camera surveillance experience in stealth camera technology and
- Wide ranging medical expertise





### What are we doing to help?



Traditional methods used for captive breeding have involved leaving male and female devils together in the same enclosure for days and sometimes even weeks to achieve a successful mating. By using traditional techniques the result is that the devils often fight and some captive devils have received horrific injuries, including large sections of skin being ripped from their necks and major teeth breakage, during mating. In breeding trials over the past four years, Something Wild's 'No Injury Breeding Program' has successfully mated Tasmanian devils with *no injury* to either partner. This has resulted in each female raising a maximum four young in all trials conducted to this time.



*Off display breeding habitats* – each year more females are introduced to the breeding program so extra off display habitats are required. Also, display habitats are required off site so that all our captive population are not housed together. This is a preventative measure in case of a potential problem with any member of the population, which may extend into the other animals present.



*Research cameras* – In order to continue to collect and catalogue the specialised footage obtained from stealth cameras we need to facilitate the use of this information into research. Extra camera units are constantly being sourced and activated to further continue the research in this unique field and are budgeted for each year.



*Awareness* – An ongoing public awareness program is required to continue to raise awareness and funds for this program. This can take many forms including website promotion, external promotions and partnerships to name a few.



## The Charity

The Devils in Danger Foundation Inc. is the only charity on the Register of Environmental Organisations with the Australian Federal Government registered specifically to save the Tasmanian devil. The DIDF is a Not for Profit Charity Organization. All donations over two dollars to the foundation are tax deductible. The DIDF is an Incorporated Association.

## Where do the profits go?

All income and profits of the DIDF go directly to the care and welfare of the Tasmanian devils within the No Injury Breeding Program at the facility. This funding will also be used to run the centre and to fulfill the other goals of the foundation including:


- To assist the private and government research teams working on DFTD. Funds raised are also utilised to purchase remote surveillance equipment for researching the progress and onslaught of DFTD in wild devil populations.
- To raise awareness in Australia and worldwide, about the plight our Tassie devils face with DFTD in Tasmania and to inform people on what they can do to help.


## Why support Devils in Danger Foundation Inc.?


- DIDF is the *only tax deductible charity* specifically set up to save the Tasmanian Devil, listed on the Register for Environmental Organisations with the Federal Government.
- DIDF has full Transparency and accountability for all money donated and used within the foundation. DIDF is the only charity organisation with checks and balances in place to prevent fraud and misuse of funds.
- DIDF is not a private business





## How are the day-to-day funds spent?


 **Housing** – The devils that are part of the 'No Injury Breeding Program' have a breeding season every year. As every female devil is likely to produce four devils the housing required for the devils increases exponentially. As a result, we continually require additional housing for quarantine breeding and housing pens for the devils in the program. Each pen needs to be 220 square metres in size and this can house up to one adult devil and four young up to one year of age. After this point we need to build extra habitats.

 **Feeding** – Tasmanian devils eat enormous amounts of meat daily and this is supplied from a number of sources. Devils need a variety of meat, bone and hair on the carcasses and so we need to source a variety of meat to satisfy the nutritional needs of the devils. We use beef and sheep which is sourced locally but the devils also need an amount of native carcass to satisfy their needs for hair and bone in their diet (as they would have in the wild). A devil eats approx 1kg of meat every day. Meat for the devils can only be sourced from 'clean' disease free areas (such as Bruny Island) which incurs extra costs.

 **Staffing** – As the devils require constant care and attention we have staffing costs to address. Our staff take care of the day-to-day husbandry of the devils. They check and maintain daily health, feeding requirements, clean enclosures, assist with the vet examinations, and participate with university study groups. These staff are obviously highly qualified in this field and need a background and training in devil handling.

 **Cameras** – Extra funds are also put towards the purchase of movement activated stealth cameras to monitor the activity of wild devils in the wild. This unique footage enables us to have film footage of affected devils to use in research and provides a unique film diary of the progress of the disease in a wild population. These cameras are integral to learn more about the natural behaviours of the devils and this knowledge helps us to improve the quality of life of captive devils. The Devils in Danger Foundation is the only group learning from infrared technology to improve knowledge about the devils. All other research bodies are basing their research on 'white light studies' and we know from our research that this changes the behaviour of the devils.

 **Veterinary and husbandry costs** – As with all animals, these costs are ongoing and cannot be estimated. If devils require medical attention it is provided without delay and this also applies to the day-to-day needs of the devils. This may include any health checks, medications, quarantine enforcement costs, coveralls etc. Each habitat is supplied with its own cleaning and feeding receptacles and these need to be replaced regularly as needed. Also, parts of the outgoings include tools used in devils enrichment.

 **General day to day expenses** – At this stage all staffing for marketing, education and general administration is donated through Something Wild Wildlife Sanctuary. A part of funds raised are allocated to awareness of the general public of the DFTD, motor vehicle costs and other day-to-day expenses.



## No Injury Breeding Program

An intensive study of Tasmanian devil reproductive biology has uncovered a method that reduces animal injuries during captive breeding. Something Wild has been implementing a program using recommendations by Heather Hesterman, a reproductive biologist studying captive breeding of Tasmanian devils and Spotted-tailed quoll. Heather has completed her PhD through the University of Tasmania's School of Zoology on reproductive endocrinology and behaviour. The research includes hormone monitoring of reproductive cycles that can be matched to mating behaviours and physical changes in the female when she is in heat. This has assisted in developing a method to correctly identify the critical period when a female devil is ready to mate.

Something Wild has used this innovative new technique to successfully produce four baby devils for each consecutive breeding season. When the female Tasmanian devil is ready to mate, she becomes submissive to the male. However, in the period prior to and after mating, the female rejects the advancing males. The male will use biting to try to subdue the female and she can become seriously injured by the males at this time. In the wild females are able to escape and only relatively minor injuries are seen.



Traditional methods used for captive breeding of devils have involved leaving male and female devils together in the same enclosure for days and sometimes even weeks to achieve a successful mating. The result is that the devils often fight. The male will drag the female around to try to stop her from escaping. Miss Hesterman said some captive devils had received horrific injuries during mating using traditional techniques, including large sections of skin being ripped from their necks and major teeth breakage.

Miss Hesterman's work has developed the new technique being used at Something Wild after working with captive breeding and monitoring of both wild and captive populations of Tasmanian devils and Spotted-tailed quolls. Her work focused on identifying when the female devil was ready to mate by using non-invasive techniques. Faecal samples are collected and the sex hormones are extracted from them with no handling stress caused to the animal. 'However, while blood and faecal samples can be used to monitor the reproductive cycle, these techniques, time taken for processing samples means these methods are costly and slow,' Miss Hesterman said.

Miss Hesterman also looked for the relationship between physical indicators and the stage of the female oestrous cycle as it is well documented that changes in the pouch condition such as swelling and redness occur in carnivorous marsupials during the breeding season. Miss Hesterman was able to match pouch condition to the period the female was ready to mate, using confirmation from vaginal smears and hormone levels. Ray Green, of Something Wild, used the pouch condition method to identify when it is the safest time to introduce the male and female devils, based on this information. Raylene, the female devil who produced the four young the first season using these techniques, was monitored daily during the breeding season through a quick no-invasive pouch examination by Ray. This has validated the breeding technique showing that captive Tasmanian devils can be mated successfully and humanely in captivity.



## Stealth camera Technology

The Devils In Danger Foundation Inc. has been compiling film and still photo footage illustrating the full progression of the disease in individual animals for approximately three years.

This footage is the only archived compilation of its type in the world and is a priceless research tool to observe all stages of the disease on an animal from all angles.

This footage is taken of wild animals without human interaction, giving completely natural wild behavioural indicators.

This resource is the only application to illustrate true *wild* behaviours without white lighting as this is known to affect behaviours in wild devils, thereby compromising research.





## Devils in Danger Foundation Inc. Devil Breeding Facility

Devils in Danger Foundation Inc. has obtained major private sponsors to build the breeding facility required to run the No Injury Breeding Program. This will be a first class facility, which will be recognised as the leader in No Injury Breeding of Tasmanian devil, currently facing extinction.

This facility will be the only Quarantine Breeding Facility for Tasmanian devils in the world.

The sponsor will build Stage One of the project and will comprise the following details:

1. Ten quarantine devil enclosures
2. Two devil breeding enclosures
3. Main operations building
4. Vet clinic and animal holding area
5. Food preparation area
6. Food storage area
7. Office
8. Toilet and shower facilities (for maximum quarantine)
9. Breeding surveillance observation and training area
10. Quarantine viewing area.
11. Interpretation and public display area

The development also incorporates the Devils Education and Husbandry training facility. Training will be provided here to wildlife facilities in devil husbandry and care of captive Tasmanian devils.

This will be the **primary facility** to train animal handlers to breed Tasmanian devils humanely with No Injury, currently not being done anywhere else in the world. This program has the highest success rate ever for successive captive breeding of Tasmanian devils

## Funding


Ongoing fundraising through sponsorship will contribute to running costs of the facility. Visitor entrance fees will contribute to expenses associated with day-to-day expenses. Grants and additional sponsorship sources will be applied for on an ongoing basis to supplement funds available to the program for expansion. Tax-deductible donations from the general public are also a source of fundraising.


## Exit Strategy


In the event that we are successful in finding a cure for the Tasmanian devil the facility would be managed as a Threatened Species Centre.





### Information on DFTD on Tasmanian Devils


 The Latin name for the Tasmanian devil is *Sarcophilus harrisii*. *Sarco* means flesh; *philus* means lover; and Harris is the name of the man who described them in scientific terms.

 Healthy Tasmanian devils in the wild live up to five years, although in captivity they may live slightly longer.

 A typical adult male weighs between 10 - 12kg, while the female is slightly smaller at 6 - 8kg. Adult size is reached at three years of age.

 Tasmanian devils run with an awkward loping gait, covering around 8km a night (although individuals have occasionally been observed to move up to 50km in a single night). The species is not territorial. Each individual can occupy a home range of 8 - 20 square kilometres that may overlap extensively with others and would include several different dens.

 Most devils mate during a short but intense season in March, however breeding can continue until July. Births occur three weeks later. Four young stay in the backward-opening pouch for five months, after which the fully-furred young are left in the grass-lined den. They start to roam from the den about six months after birth and are fully weaned and independent by 10 months after birth.

 Tasmanian devils are not dangerous to people, although they will attempt to defend themselves if attacked. Despite their spectacular and aggressive outbursts, Tasmanian devils are actually timid animals with a preference for avoiding fights.

Tasmanian devils with large facial tumours were photographed in northeast Tasmania during 1996. A decade later, we know these characteristics are consistent with Devil Facial Tumour Disease (DFTD) - a fatal condition in Tasmanian devils, characterised by cancers around the mouth and head.

## What we know about the disease

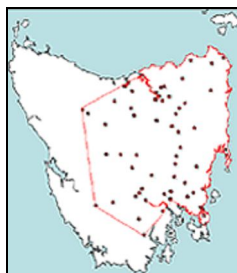
The Tasmanian devil disease appears to be a new condition that is restricted to Tasmanian devils. Once the cancer becomes visible, it always appears to be fatal - usually within several months. Small lesions, or lumps, in and around the mouth quickly develop into large tumours on the face and neck (and sometimes other parts of the body).

Tasmanian devils with facial tumours find it difficult to eat. Death results from starvation and the breakdown of body functions. In diseased areas, nearly all the Tasmanian devils that are sexually mature (older than two years of age) become infected and succumb to the disease. Juveniles as young as one year old can also be infected.



The Devil Facial Tumour disease is a remarkable cancer as it is one of only three recorded cancers that spread like a contagious disease. Under normal circumstances cancer cannot be “caught” as the cancer cells from one host are completely different to the next host and should be rejected by the immune system.

Since DFTD breaks this rule, there are many questions that need to be answered to explain how this cancer can be spread from devil to devil.



**Map showing known distribution of DFTD in Tasmania**

There are concerns that the drastic fall in population may allow introduced predators such as feral cats and foxes to move into the Tasmanian devils niche. If this occurs there could be a wider impact on Tasmania's unique wildlife.

Populations in which the Tasmanian devil disease has been observed for several years have declined by up to 90 per cent, with no evidence to date of either a cessation of decline or a diminution in the prevalence of the disease.



## Frequently asked questions

### **Q: Do you treat the Devil Facial Tumour Disease in individuals?**

**A:** Treatment hasn't yet been trialled for the following reasons: Initially we needed to make the best use of available resources by investing time into the study of the disease.

Most importantly, if a cure for this disease is found, we need to be able to use it from a wildlife management point of view rather than on individual animals - we want to keep the devils wild and in the wild.

Surgery and chemotherapy would be difficult, if not impossible, to implement from a population point of view. Nevertheless, nothing is ruled out that may help to save the devil, and research is proposed to investigate the possibility and feasibility of cancer treatment for devils in some limited situations.

### **Q: Can the devil disease spread to other animals?**

**A:** The Mount Pleasant Laboratories, in Launceston, are the only animal health laboratories in Tasmania, and handle all cases concerning farmed and wild animals. To date, they have found no evidence of the Tasmanian devil disease in other animals.

The field team is running surveillance with many traps and has caught many species that showed no clinical signs of the disease. Species include possums, quolls, cats and even a sausage dog.

### **Q: How do Tasmanian devils catch Devil Facial Tumour Disease (DFTD)?**

**A:** Trials are underway to examine the transmission of the Tasmanian devil disease. Preliminary results support the increasingly accepted hypothesis that we are dealing with a transmissible cancer and that cancerous cells are passed directly between devils as an allograft. Put more simply, we are getting more and more evidence to support the theory that DFTD is spread by the cancer cells themselves being passed from one animal to another. Currently, the only known vector of transmission of DFTD between devils is through biting.

Because of this alarming rate of decline, Tasmanian devils have listed as vulnerable to extinction under the State's *Threatened Species Protection Act 1995*. They have also been included by the Federal Government under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*.

*Don't let our devils become Angels...*



## **Contact Details:**

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#### References

Save the Tasmanian Devil 2007, *FAQ*. Retrieved October 11, 2007, from  
<http://www.tassiedevil.com.au/FAQ.html>

Save the Tasmanian Devil 2007. *Tasmanian Devil Facial Tumour Disease* Retrieved October 11, 2007, from  
<http://www.tassiedevil.com.au/disease.html>

Devils in Danger Foundation Inc. 2007, *Devils in Danger Foundation Inc.* Retrieved October 11, 2007, from  
<http://www.devilsindanger.com.au/>