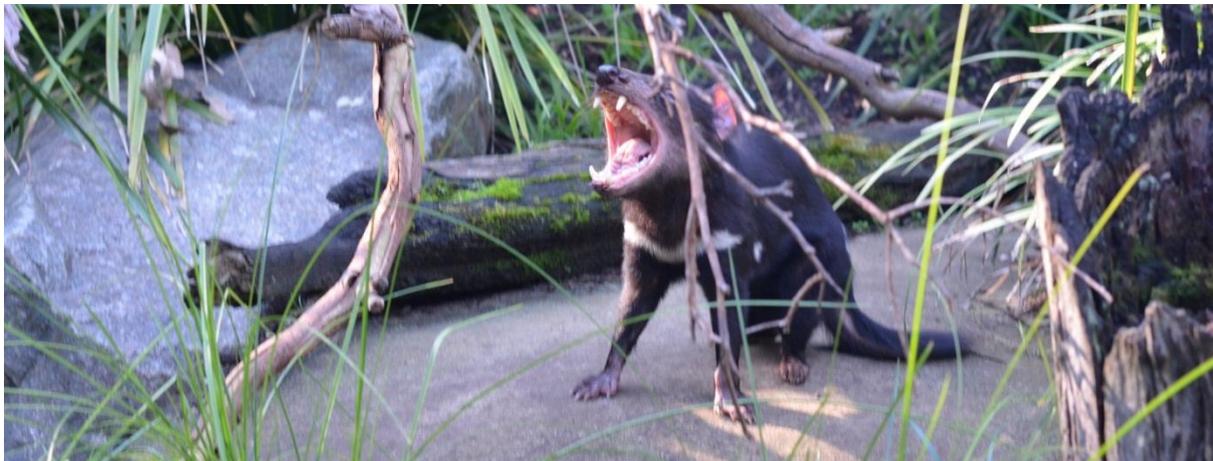


# DEVIL CANCER: WHAT IS IT

Charlotte Year 5

23/06/2015

**With no cure, Australia's critically endangered Tasmanian Devils are suffering from a truly hideous and contagious cancer.**

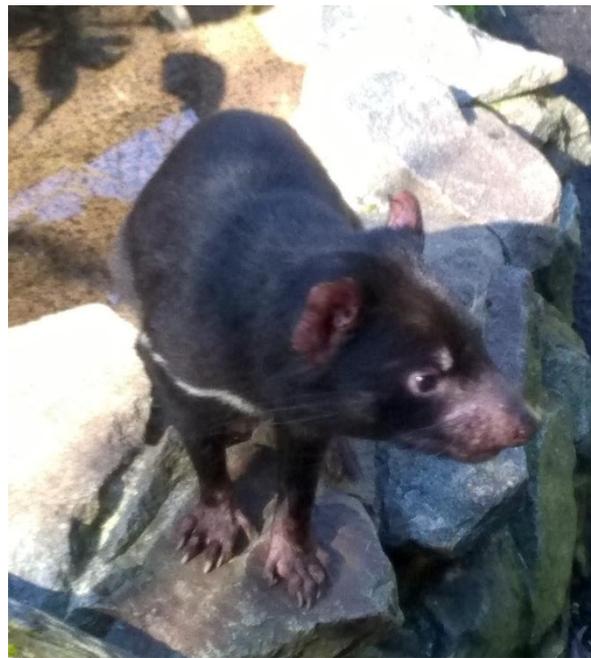


**A young Devil gives a classic scream, displaying its incredible jaws.**

The Devil Facial Tumour Disease (DFTD) is a recent epidemic, first noticed in 1996 in a female along the eastern tip of Tasmania. Experts were puzzled at this shocking new disease with unknown origins. At first, it was believed that European dogs with distemper disease were to blame for the outbreak in Tasmanian Devils. However, according to Katrina Morris 'Nothing like the DFTD has occurred in the last 200 years or we would have noticed that,' diminishing the idea that European settlers were to cause. It was not until 2003 that it was taken seriously. Now, a mere eight years later, it has destroyed 84% of the devil population.

With no cure, the cancer is fatal in all cases. However, there have been several near or successful breakthroughs, especially recently, though no vaccine or cure has been discovered. The latest being the knowledge of how the cancer cells disguise themselves. It was previously thought that the Devils were so closely interbred that their DNA formulas were so similar that the Devil could not recognise the cancer from itself. The real answer is even sadder. The cancer clusters around the organs of the animal and replicates the cell formula. It takes on the appearance and shape of the organ cells. It does it so well that the immune system cannot tell the difference and thus cannot fight it.

With the help of a rat kangaroo in a Queensland forest, a possible vaccine or cure for the Devil sickness has been discovered. The drug, known as EBC-46 is providing promising results towards curing the disease. EBC-46 prolongs the life of sick Devils and acts as a temporary vaccine. Scientific research has found that the drug either shrinks the tumours or strips the disguise. 'What has been tested in a lab is promising, but what the scientists test in the lab without the live animals in front of them can be very different to what happens when they actually test it... but hopefully we will have it [a vaccine or cure] soon...' Says Taronga



**A curious Tasmanian devil sniffs for food in its enclosure.**

Zookeeper Becky. The drug comes from a plant called Blush-wood. EBC-46 also works on a large range of cats, dogs, and horses.

The cancer is passed from Devil to Devil through playing and fighting. If road kill is around, the road becomes a party venue, fighting arena and a play room. Sometimes, when Devils fight and play, they can puncture the other Devil's skin. If a sick Devil punctures the skin of a healthy Devil, the cancer is passed into the other Devil's blood stream, deforms the face and burns through the animal's skin. 'Initially, at the beginning stages of the disease, it [the cancer] is just in the tumour... but it does spread through the entire body,' says Becky, a zoo-keeper from Taronga zoo.

The cancer can also be transmitted between Devils during mating season. Sometimes, when the female is going to have her pups, the male Devil does not want to leave her den. As a result, the female Devil is forced to bite her partner in order to get him to leave. This can be problematic if she has the cancer and she transfers it to her mate's bottom.

A solution of desperation has been suggested if scientists cannot turn EBC-46 into a successful cure or vaccine. This would involve killing every single wild Devil, healthy or not in Tasmania. Meanwhile, some zoos across Australia are breeding an insurance population of Devils to release into a disease in case this horrible solution has to proceed whilst others do not support this solution and are breeding Tasmanian Devils for releasing into unoccupied areas and nearby islands of Tasmania. Whilst this is far from a permanent or good solution there is the issue

that no one knows how an insurance population would act in the wild, let alone survive.

Taronga zoo has found an ideal way to test how the insurance population would act in the wild. They have sent 4 devils off to Maria Island. But before this, the devils had to undergo several tests. To test their reaction to strange objects they were exposed to a beach ball. To assess their reaction to strange devils, a mirror was introduced and a keeper with a camera tested the reactions to tourists with cameras. It was important to choose Devils that would not hurt the excited tourists by attacking them. The chosen animals also had to have the right genetics. Taronga zoo operates a program called Studbook. It records the birthdates, pups, parents and the animals they mate with.

*Hopefully we will have it [a vaccine or cure] soon...*

Another problem with this solution is the current Tasmanian eco-system. In the absence of Tasmanian Devils, the possum community have become overly populated and aggressive. As Tasmanian Devils do not hunt and kill, only scavenge, the massive



The devils future looks shadowy as the cancer looms above.

numbers of the possum community could become a major problem. The devils would not be able to gain access to food and bodies so would starve. Also, possums carry diseases that could infect and kill devils, starting DFTD all over. The possums have become overconfident and would not hesitate to attack and destroy a devil. There is no known way to destroy the possums without disrupting the already imbalanced Tasmanian eco-system.

Tasmanian Devils are fascinating creatures. They are about thirty centimetres high and live from 4 to 6 years and are incredibly social animals. In the wild, they are only found in Tasmania, but fossils indicate that the Devil used to be common mainland Australia. The Devil can be found around farms, where they are able to scavenge for the carcasses of dead livestock and animals.

The Devil has a large head to support the most powerful muscle in the body: its jaw. The Devil may not eat for many days between meals. They have adapted to eat the entire body of the dead animal, so it can and will crunch up the entire carcass, bones, meat, fat and skull. This means that the Devil must have a very powerful jaw. 'Their head actually weighs 40% of their body weight... The reason they have such a large head is to support the most powerful jaw-force of any mammal in the world... for their size.' Quotes Becky; Taronga zoo keeper.

When a boy named Nick visited Tasmania, he was distraught by the enormity of the plight of the Tasmanian devil. He decided to help them and invented a day called Black and White Day. The objective of the day, held once a year, was to raise money for research and raise awareness levels for the cancer. The aim was for everyone to wear

Black and White and give a donation to cancer research. After a few years, the date died out. Nature Nick no longer had the time for the organization. Taronga zoo is still raising consciousness for the day.



Donation boxes have been successful in raising money for the stricken devil, but more help is needed

Donation boxes have been set up in many zoos across Australia, especially the ones supporting the breeding program. They have been very successful: the Taronga Zoo box making thousands of dollars. But to continue research is expensive, costing an amazing two million dollars. This is needed for buying equipment, captive breeding, housing the devils and sending scientists out to the field. Becky of Taronga Zoo says: 'The save the devil fund just...needs as much money as can be raised.' This is more than donation boxes alone can raise.

Under normal circumstances, Tasmanian Devils are not kept in zoos. The reason: expense. An average healthy Devil at Devil Ark costs \$900 a year for its feed, healthcare and housing. The Devils suffer from human emotions such as boredom, which is another cost the zoos need to think about. They must have new and interesting toy changes regularly. The most common system for housing Devils is the 'one pen per Devil' system. This means that there is the equivalent space of one Devil pen per animal. This means that there cannot be too many Devils per zoo, as Devils need regular monitoring, especially during mating and reproduction, where often hourly monitoring is required. Devil Ark provides this spacing area for its Devils, and gives a large amount of space no matter what.

The devils are fighting back, and all the female devils on Maria Island are expecting joeys. If you wish to join the cause to save this iconic animal, you can hold a Black and White Day at your school club or in your community with proceeds going to places such as Devils Ark, Save the Devil Fund, Taronga Zoo, W.I.R.E.S or the Australian Reptile Park. With luck, a cure will be produced soon.■