

“Saving Species”

Dr Rupert Baker

In 2009 Zoo Victoria and the Australasian Bat Society sent staff to Christmas Island to attempt to capture the remaining population of a microbat the Christmas Island Pipsitrelle. When we arrived in August 2009 there was only one bat left and on the 26th of August it was recorded for the last time and thought to have gone extinct.

This small and tiny bat had a population that was studied and documented over the preceding three decades. The population was thought to be widespread on the island in 1984, the population was in decline and the distribution of the species was noted to have reduced in 1994 and 1998. The species went listed as Endangered in 2001.

From 2004 the population was intensively monitored and by 2006 considered critically endangered. From 2005 onwards the Federal minister was lobbied to undertake radical conservation action. Four years later when an estimated 20 individuals were left the Minister established an expert working group on biodiversity threats on Christmas Island, a captive husbandry trial of a similar microbat species despite existing knowledge. Finally almost seven months after this date the rescue attempt came.

These events and decisions have been widely documented and are now used as case studies on decision making in conservation [Martin, T. G., Nally, S., Burbidge, A. A., Arnall, S., Garnett, S. T., Hayward, M. W., Lumsden, L. F., Menkhorst, P., McDonald-Madden, E. and Possingham, H. P. (2012), Acting fast helps avoid extinction. *Conservation Letters*, 5: 274–280. doi: 10.1111/j.1755-263X.2012.00239.x].

This event was a seminal moment for Zoos Victoria. Since then our organisation has redefined its purpose, organisational structure, governance, accountability, planning, budget and funding models to avoid extinction of Victorian wildlife.

In 2009 Zoos Victoria employed a Threatened species biologist who had appropriate skills and experience working with state environmental government departments and in threatened species research to lead a wide review with external partner to determine the species in Southern Australia that was most at risk of extinction.

Each species was assessed to review their

- Population size (how big?)
- Population trend (decreasing, unknown, stable, increasing?)
- Distribution (restricted, limited to part of state/area, across state & environments)
- Key threatening processes (unknown, known hard to fix, known easy to fix.)

The species that were selected were 16 Victorian species and 4 regional species. The species selected were:

- Orange Bellied Parrot
- Baw Baw Frog
- Tasmanian Devil
- Helmeted Honeyeater
- Stuttering Barred Frog
- Brush Tailed Rock Wallaby
- Regent Honeyeater
- Smokey Mouse Southern Bent Wing Bat
- Southern Corroboree Frog
- Eastern Barred Bandicoot
- Lord Howe Island Stick Insect
- Spotted Tree Frog
- Mountain Pygmy Possum
- Grassland Earless Dragon
- Northern Corroboree Frog
- Leadbeater's Possum
- Alpine She Oak Skink
- New Holland Mouse
- Guthega Skink

Zoos Victoria then made a commitment that No Victorian Terrestrial Vertebrate Species will go extinct. The organisation then defined the two ways in which a zoo based conservation organisation can secure wildlife populations in the wild. Direct breeding and release of threatened species and through changing attitudes and behaviours of our community that will impact wildlife populations.

An assessment was made with each species through consultation with external partners and Recovery teams to determine and how a threatened species breeding program could and/or should be established for these programs. These were refined into agreed 20 and 5 year wild population objectives for each species. From these 20 and 5 year captive population objectives were determined and key knowledge gaps were identified.

These objectives were further broken down into key priority actions along with which organisation would likely to be responsible for these actions along with a timeline for these actions. These actions are reviewed yearly. Information on the specific endangered species biological breeding and release programs will be delivered during the lecture depending on audience preference and to highlight the range of actions currently taken to support a range of these species.

It was reviewing these plans that informed the level of investment required by Zoos Victoria in direct conservation programs. In 2014 it was recognised that more actions were required if Zoos Victoria wanted to reach its organisational goal. At that stage \$3.5M was invested annually across the 20 priority species.

A Conservation Master Plan was written at this point listing significant improvements in facilities, equipment, human resource expertise & capacity required to meet the conservation goals. These improvements include (but not limited to) appointment of field biologists, restoration of habitat, upgrading captive facilities to increase capacity, predator proof fencing of private land, trial release of animals on off shore islands, guardian dogs, biological surveys to determine presence of species, field monitoring of known species, restoration of caves, maintain in situ enclosures, construction of facilities at other zoological institutions, developing assisted reproduction and husbandry techniques in new species, rodent removal and developing genetic tests to assess specific populations. This plan estimated that expenditure over the following five years would need to increase to \$20M per annum. In 2017/18 expenditure on conservation is budgeted for \$6.9M per annum.

To make this happen revenue and business systems within zoos Victoria have developed and met ambitious plans to support this. Further a LEAN transformation was initiated to adapt Toyota Production System principles to operating a zoo efficiently so that animal welfare, environmental sustainability and human safety could be improved through the introduction of efficient systems. In 2013 Zoos Victoria was certified as the world's first carbon neutral zoo with an Environmental Management System to ISO 14001; 2004 standard.

In 2015 a plan was written to document how Zoos Victoria could influence the values, attitudes and behaviours of the Victoria community towards pro-wildlife behaviours. These actions were created using a range of behavioural theories including Community based social marketing (McKenzie-Mohr, D. (2013) *Fostering sustainable behaviour: An introduction to community based social marketing*. www.cbsm.com) and Planned Behaviour theory (Ajzen, I. (1999) *The theory of planned behaviour*. *Organizational behaviour and human decision processes* 50:179-211), as well as Values Theory (Holmes, T., Blackmore, E., Hawkins, R. and Wakeford, Dr T. (2012) *The Common Cause Handbook: a guide to values and frames for campaigners, community organisers, civil servants, fundraisers, educators, social entrepreneurs, activists, funders, politicians and everyone in between*. Public Interest Research Centre, UK. www.valuesandframes.org).