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PARLIAMENT OF TASMANIA

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**PARLIAMENTARY STANDING COMMITTEE OF PUBLIC  
ACCOUNTS**

**REPORT ON**

**INQUIRY INTO THE EFFICIENCY AND  
EFFECTIVENESS OF THE FOX ERADICATION  
PROGRAM IN TASMANIA**

*Laid upon the Tables of both Houses of Parliament*

*The Committee was appointed under the provisions of Section 2 of the Public Accounts Committee Act 1979 (No. 54)*

**MEMBERS OF THE COMMITTEE**

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## RECOMMENDATIONS

The Committee recommends that:-

- 1. The Government needs to proceed on the basis that the fox has established a presence in Tasmania. Public policy must reflect that position and therefore the Government must do all that is reasonably possible to ensure the eradication of foxes and prevent any further foxes entering Tasmania.**
- 2. The primary focus of the Fox Eradication Program must be to locate, bait and eradicate foxes. The precautionary principle should apply and as such this primary focus should not be unreasonably distracted by an on-going need to substantiate the presence of foxes.**
- 3. The Commonwealth Government be urged to commit funding to enable the Taskforce to concentrate on the eradication of foxes already in Tasmania.**
- 4. Regular peer review of the work and activities must continue and be supported.**
- 5. The Government consider the need to develop a legal requirement for the public and the Taskforce to report to Tasmania Police for investigation, any evidence of fraud, misconduct, illegal activity and/or any other activity designed to hamper the work of the Taskforce in relation to the presence of foxes.**
- 6. The appropriate allocation of funding be provided for the continuation of research and investigation into other forms of an effective poison for baiting purposes.**
- 7. The current program for the monitoring of at-risk, vulnerable and endangered species should be strengthened.**
- 8. The Taskforce focus more effort on informing and engaging the media to assist them with their work particularly for the dissemination of information and public education.**
- 9. The Management Committee enlist the cooperation and assistance of members of the public through organisations such as the Tasmanian Farmers and Graziers Association, the Tasmanian Landcare Association, The Tasmanian**

**Field and Game Association, The Understorey Network and walking clubs throughout the State.**

**10. Steps be taken to ensure that appropriate statutory powers relating to access to all land, be enacted to allow the Taskforce to carry out the activities of the Fox Eradication Program.**

**11. The Taskforce continue to question, examine and review all the available data to inform and improve the eradication effort.**

**12. The Management Committee develop a clear strategy for making decisions about moving to scale back the Program if success is determined or to move to containment, if the evidence points to successful colonisation of foxes in Tasmania.**

**13. The Government move to establish an on-going unit or single body to respond to the threat of all or any invasive species.**

**14. Barrier security be reviewed and strategies devised with the intent of preventing foxes entering Tasmania at the identified potential points of entry.**

## **SUMMARY OF FINDINGS**

### **THE OPERATIONS OF THE FOX TASKFORCE**

#### **The Committee Finds That:-**

- 1. The evidence before the Committee demonstrates that for the purpose of public policy the fox has established a presence in Tasmania.**
- 2. There is sufficient evidence to suggest that there are foxes in Tasmania in limited numbers and at low density.**
- 3. Foxes are capable of successful colonisation through breeding, however the Committee was not presented with evidence that this was occurring.**
- 4. Foxes pose one of the greatest known threats to Tasmania's endangered, vulnerable and rare wildlife species and if foxes colonise in Tasmania the cost to the State's biodiversity and economy would be catastrophic.**
- 5. The future of at least 24 native species is threatened and at-risk, if foxes were to become established.**
- 6. Failure to implement an effective eradication program will require the reversion to a containment program which has the inherent risk of failure. The risks associated with a containment program are obvious and are therefore unacceptable.**
- 7. The Government is committed to the Fox Eradication Program but the Program has suffered significant funding and budget cuts.**
- 8. The organisation of the Fox Eradication Program allows for optimum input from a variety of dedicated professional and community stakeholders.**
- 9. Nothing presented to the Committee suggested that the officers of the Department and members of the Taskforce, who have a complex role, undertake their duties and responsibilities with anything other than due care and professionalism.**
- 10. Regular reviews of the Fox Eradication Program provide valuable professional advice and future directions.**
- 11. Procedures for responding to reported fox sightings have been refined and improved since the commencement of the Fox Eradication Program.**
- 12. One focus of the Fox Eradication Program has included substantiating a fox presence.**

- 13. Critics and sceptics who solely base their comments on hearsay and conspiracy are a serious distraction and impediment to the work of the Fox Eradication Program.**
- 14. Public confidence in the efforts of the Fox Eradication Program has not been enhanced by apparent factual discrepancies relating to some fox carcass discoveries.**
- 15. The scientific evidence reveals that fox scats have been found in various locations around Tasmania and this should be considered as persuasive evidence of foxes in Tasmania as it is highly improbable that a person or persons are importing and spreading fox scats throughout Tasmania.**
- 16. The techniques and scientific procedures for testing of scats and the subsequent DNA analysis of positive scats are subject to robust academic oversight and approval by the Technical Committee which reports to the Management Committee.**
- 17. The use of 1080 for fox baiting is supported but there is a need to investigate other forms of poisoning.**
- 18. Different strategies will be required if baiting becomes necessary in urban areas.**
- 19. There are robust strategies for the choice of baiting practices and baiting products which are used to minimise any adverse consequences for native wildlife.**
- 20. The on going development of comprehensive data bases about ‘at-risk, endangered and vulnerable species’ is an added benefit resulting from the investigations and scat surveys by the Taskforce.**
- 21. The cost and issues involved in the training of volunteers has resulted in limited use of volunteers.**
- 22. Problems relating to access to some land has restricted the work of the Taskforce. The Fox Eradication Program requires reasonable access to all public and private land in Tasmania to carry out its work in the best possible way.**
- 23. Whatever biosecurity measures are put in place there will always be ways to circumvent and flout controls if there is an intent to do so. Penalties must reflect the seriousness of any breaches.**
- 24. The Committee supports the work of the Taskforce and Quarantine Tasmania to minimise the risk of fox entry into Tasmania.**

## **THE COSTS OF THE FOX ERADICATION PROGRAM**

### **The Committee Finds That:-**

- 1. The current annual cost of the Fox Eradication Program is insignificant compared to the cost should a full incursion of foxes occur.**
- 2. The uncertainty of any future assurance and commitment of Commonwealth funds limits the ability of the Taskforce to undertake forward strategic planning.**
- 3. The potential cost of biodiversity loss to Tasmania is incalculable and irreversible and therefore, the fox threat to Tasmania's biodiversity is a national issue demanding Commonwealth budgetary support.**

## **THE COST EFFECTIVENESS OF THE FOX ERADICATION PROGRAM**

### **The Committee Finds That:-**

- 1. Given the value of Tasmania's natural heritage, it is difficult to measure or quantify the cost effectiveness of the Tasmanian Fox Eradication Program.**
- 2. The Fox Eradication Program is unique and therefore unable to be compared with other programmes. The usual methods of assessing cost effectiveness cannot be readily applied.**
- 3. There is regular peer review of the program to ensure the Taskforce uses best practice.**

## **THE METHODOLOGY USED TO DETERMINE ALLOCATION OF FINANCIAL RESOURCES**

### **The Committee Finds That:-**

- 1. The funds provided for the Fox Eradication Program are allocated by the Management Committee with assistance from experts in the field.**
- 2. It is important to continue to review, assess, refine and look at what is contemporary in order to discover other novel and improved techniques which may be incorporated into the Fox Eradication Program.**

## **MEASURES USED TO DETERMINE THE SUCCESS OF FOX ERADICATION**

### **The Committee Finds that:-**

- 1. Regular review by external professional consultants and periodic scrutiny by Parliament is an essential component of the Fox Eradication Program.**

## **THE PUBLIC ACCOUNTS COMMITTEE**

The Public Accounts Committee Act 1970<sup>1</sup> provides for the establishment of a joint committee, comprising three members from the Legislative Council and three from the House of Assembly.

The relevant excerpt from the legislation proscribes the functions of Committee as follows—

- (1) The Committee must inquire into, consider and report to the Parliament on any matter referred to the Committee by either House relating to—
  - (a) the management, administration or use of public sector finances; or
  - (b) the accounts of any public authority or other organisation controlled by the State or in which the State has an interest.
- (2) The Committee may inquire into, consider and report to the Parliament on—
  - (a) any matter arising in connection with public sector finances that the Committee considers appropriate; and
  - (b) any matter referred to the Committee by the Auditor-General.

## **THE TERMS OF REFERENCE**

The Committee received correspondence on 14 November 2007 requesting the Committee investigate the program and activities of the Fox Taskforce. On 21 November the Committee Resolved to adopt the following Terms of Reference for an:-

Inquiry into the Efficiency and Effectiveness of Fox Eradication Programs in Tasmania.

Terms of Reference

The Operations of the Fox Eradication Taskforce;

The Costs for the Fox Eradication Program in each Financial Year of Operation;

The Cost Effectiveness of the Fox Eradication Program;

The Methodology used to Determine Allocation of Financial Resources;

Measures used to Determine the Success of Fox Eradication; and

Any other Relevant Issues.

At that time the Committee also requested an Issues Paper from the Parliamentary Research Service and a Government submission addressing the Terms of Reference. The Committee were also inquiring into two other matters one of which had been received by the Committee as a reference from the Legislative Council. The Public Accounts Committee Act requires that a reference from either House of Parliament takes precedence over other inquiries and so therefore the commencement of the Inquiry into the Effectiveness and Efficiency of the Fox Eradication Taskforce was deferred, by a Resolution of the Committee on 12 March 2008, until the completion of the Inquiry into Television Advertisements by the Tasmanian Greens and an Inquiry into the Administration of the Crown Lands (Shack Sites) Act 1997.

<sup>1</sup> The Public Accounts Committee Act 1970, No.55 of 1970

Even though the Inquiry was deferred the Committee determined that the Terms of Reference should be immediately available on the Internet.<sup>2</sup>

In November 2008 the Committee was in a position to consider a timetable and schedule for the Inquiry into the Efficiency and Effectiveness of Fox Eradication Programs in Tasmania and advertisements calling for submissions were placed in the three daily newspapers on 21 February 2009. The closing date for submissions was 31 March 2009.

## THE SUBMISSIONS

The Committee received a total of twenty submissions from interested persons and parties. Some submissions or parts thereof were received ‘in confidence’. The initial Government submission received in March 2008 was updated by a further submission in March 2009 correspondence dated 3 April 2009 and by further correspondence dated 27 April 2009. For the purpose of footnote references in this Report any reference to the Submission from the Government should be taken to mean the Submission from the Department of Primary Industries and Water updated to include the above mentioned amendments and updates unless otherwise noted.

All the submissions acknowledged that foxes had entered Tasmania at some time in the past. Many expressed the belief that foxes were probably breeding and that the risk of foxes becoming established was very high and if this was the case the effect would be disastrous both economically and just as important environmentally.

The following short excerpts from some submissions highlight just some of the concerns of those submitting papers.

*With the disastrous consequences of Devil Facial Tumour Disease on the Tasmanian devil population we find our ecology in the regrettable position of facing the probable forced food chain juxtaposition of a much celebrated indigenous carnivorous marsupial (the devil) with an exotic eutherian predator (the red fox) that has a proven reputation for driving the engine of extinction. If we fail to eradicate, or at least forever radically control this introduced pest we run the very real risk of presenting to future Tasmanians an island state severely depleted of the natural assets which are a great portion of our attraction to the international tourism industry. Any change to the present effort to control foxes in Tasmania should be by way of an escalation both of funding and on-ground expertise.<sup>3</sup>*

*The problem of invasion biology (the ecology of species when first introduced into a novel environment) has been the subject of much ecological research in the past few years. One phenomenon of critical importance to the fox eradication program is that, for most introduced species which ultimately become well established as pests, there is an initial “lag phase” in which the population expands extremely slowly (Vermeij 1996; Mack et al. 2000; Sakai et al. 2001). Thereafter, the population begins to increase exponentially until eventually a plateau is reached once the species has*

<sup>2</sup> [www.parliament.tas.gov.au/ctee/pac.htm](http://www.parliament.tas.gov.au/ctee/pac.htm)

<sup>3</sup> Spencer, C P. Submission p 2

*occupied all available habitat and has reached a carrying capacity. In southern mainland Australia, foxes have clearly reached this third-stage plateau level.<sup>4</sup>*

*Australia currently has the highest level of extinction anywhere in the world of small to medium sized mammals over the last 220 years, and the fox has played a major role in this. Based on mainland experiences, many ground-based threatened species (or those relying on ground-based species) in Tasmania would very likely become extinct (eg bandicoots, quolls). .....Agricultural activities would be faced with immediate impacts.<sup>5</sup>*

There was general support in the submissions for a program to eradicate foxes but there was some divergence of opinion over particular aspects of the planning, implementation and cost of the project which the Government has embarked upon in Tasmania. Particular note was made of the collection and analysis of the evidence, the scat and DNA analysis, the eradication strategies and the extent of biosecurity measures.

Two particular submissions were notable for the claims they made. Both authors have been and are active participants in the public debate on the presence of foxes and the activities of the Taskforce.

One of these submissions asserted that the incidence of foxes is greatly exaggerated. Mr Ian Rist claimed that most of the evidence used to support the presence of foxes is either unreliable and or hoaxes. He said:-

*I believe the evidence so far provided is what is known as easily transportable evidence.....Over fifteen hundred "fox" sightings have been recorded in Tasmania. Not one of these sightings have been substantiated.<sup>6</sup>*

Mr Rist cited hoaxing and fabrication in relation to the reported sightings and the recovery of fox carcasses and claimed to know a lot more about the matter which he promised to provide if called to give oral evidence.

Dr David Obendorf was previously employed as a veterinarian by the Department of Primary Industries and Water. Dr Obendorf is well known and respected for his research and work in a number of areas but particularly in Tasmania's biosecurity and preparedness for animal disease outbreaks. His submission was accompanied by several documents supporting his concerns about the assumptions used by the Government to support the activities of the Fox Eradication program. He noted his scepticism about the veracity of the physical evidence used to reach the conclusion of the presence and location of foxes and recorded that his own scientific analysis questions a number of assumptions, discounts the assumption that foxes are breeding in Tasmania; that forensic evidence links the presence of foxes to specific locations in Tasmania and that they can be eradicated by the use of buried 1080 baits. Despite his concerns Dr Obendorf acknowledges that foxes have existed in Tasmania; in very low densities; that they have been controlled by compound 1080 poison

Ms Cassy O'Connor writing on behalf of the Tasmanian Greens commented that:-

<sup>4</sup> McCallum, H. Submission p 1

<sup>5</sup> Doran, Dr N. Submission p 1

<sup>6</sup> Rist, I. Submission p 4

*While healthy scepticism in areas of scientific endeavour is positive; scepticism or cynicism that unnecessarily inhibits or delays the eradication effort is counter-productive. The Tasmanian Greens believe that foxes exist at a low density in Tasmania. Unfortunately, the dispersal of the fox population across the island means that some members of the Tasmanian community will never be entirely convinced of the presence of foxes in Tasmania, as the likelihood of ever seeing a fox is very slim. Such a low density does not disprove the existence of foxes in Tasmania, and doubt or uncertainty should not be used as a reason for inaction or the postponement of measures for fox eradication.....*

*Instead the Precautionary Principle should be adopted to minimise the impact of the fox on Tasmania's biodiversity.<sup>7</sup>*

Mr Tim Bloomfield's submission was supported by a number of attachments including a copy of the Report he prepared for the Government when he was seconded to advise on foxes in 2001 – 02. The Bloomfield report was also included with the Government's submission.

In his submission Mr Bloomfield included the preamble to his 2002 Report which said:-

*Foxes are the greatest known threat to Tasmania's wildlife in our time and the eradication of foxes from Tasmania will only occur by the application of a thorough, comprehensive and extensive program. The control measures selected must be applied at sufficient distribution and frequency that here can be confidence that all animals will have been treated.<sup>8</sup>*

It should also be noted that there were a number of submissions from persons and parties who are, or who were, either professionally or financially interested or involved in the Fox Eradication Program or who have an interest in the products which are being used or an interest in some alternative products which could potentially be used for analysis and eradication purposes to support the Program.

## **THE EVIDENCE**

In addition to submissions, the Committee heard oral evidence from the Department of Primary Industries and Water, staff members of the Fox Eradication Taskforce as well as a selection of persons who had made submissions. Transcripts of the evidence are available at [www.parliament.tas.gov.au/ctee/pac.html](http://www.parliament.tas.gov.au/ctee/pac.html).

A field visit to the Tom Gibson Reserve near Epping enabled the Committee to gain first hand experience of the activities of the Taskforce. There was an introductory talk about investigations and Members were shown carcass examination; camera traps including bait-take monitoring and a range of olfactory, visual and auditory attractants; scat searching and rationale; collection labelling and recording of scat; detector dogs scat search; baiting; predator calling; trapping – rationale, lures, techniques and demonstration; and den fumigation. The Committee appreciated the efforts of all the staff involved in the practical demonstrations and descriptions of Taskforce activities.

<sup>7</sup> Tasmanian Greens, Submission p 2, 3

<sup>8</sup> Bloomfield, T. Submission p 1

## HISTORY

Since European settlement there have been a number of reports that foxes had been imported and released in the state. Despite these intermittent reports Tasmania was considered to be relatively fox free and had not suffered the environmental damage and agricultural losses which were widespread following the establishment of the European Red Fox (*Vulpes vulpes*) on mainland Australia

From the 1970's there were a number of credible fox sightings around the state which were investigated by the Parks and Wildlife Service. In 1998 a fox was sighted leaving a ship in Burnie and this incident was followed by a marked increase in public reports of fox sightings. There were also allegations and rumour of foxes being smuggled in and released in the state. Up until 2001 there were further reported sightings and more allegations of litters being smuggled in and then released. In that year some fox photos were published and a fox was reported escaping from a shipping container at Agfest. There was also a highly credible sighting by Mr Chris Spencer an experienced wildlife expert in the Longford Carrick area.

In light of the reports Mr Tim Bloomfield was seconded from the Victorian Department of Natural Resources and Environment to review all the material collected to date, report on the evidence and make recommendations which could be used as the basis for the formulation Government policy.

An excerpt from the Bloomfield report notes that:-

*Foxes are widespread across the Australian mainland, since their introduction to Victoria 130+ years ago. (Saunders et al 1995). The original successful introduction was of two perhaps four adult animals that spread at a rate of 160 kilometres per year across the Australian mainland from grassland to Alpine, from coast to arid interior, cool climate to Mediterranean and sub-tropical, and from rural to wilderness and to urban areas.....*

*Foxes are listed as a threatening process at the Commonwealth level through the Environment Protection and Biodiversity Conservation Act 1999.<sup>9</sup>*

By this time a National Abatement Plan had been developed for the European red fox. The plan, under the authority of the Commonwealth Environment Protection and Biodiversity Conservation Act 1999, included, as one of the objectives, the prevention of foxes becoming established in new areas. Predation by the fox is listed as a key threatening process under the Act.

In 2001 the Tasmanian Government considered there was sufficient evidence to support an application to the Federal Government for funding a state government initiative to establish a program to eradicate the fox. The state's response to the Bloomfield report was to allocate funding of \$1.2 million for each year in 2002-03 and 2003-04. Following an agreement reached with the Tasmanian Government, the Australian Government also contributed and provided \$400,000. This was considered quite significant because the objective for Tasmania was eradication whereas other programs had focussed on containment of the species.

A Fox Free Tasmania Taskforce was officially announced in January 2002. The Program began with a small group of Parks and Wildlife staff officers who were assisted by input from the Nature Conservation Branch.

<sup>9</sup> Bloomfield, T. Fox Free Tasmania Review, 2002

A second major Report to Government was the 'Fox Free Action Plan' (Bryant Report 2002) which recommended three broad strategies – prevention, state-wide monitoring and local response. A Fox Free Tasmanian Steering Committee was established with the Committee given the responsibility for monitoring, evaluation and planning changes and improvements to the Action Plan.

A further report in 2003 'Eradicating the Fox in Tasmania' (Kinnear 2003) was initiated to provide an independent review of the program to date and determine whether the strategy was likely to eradicate foxes in Tasmania and to recommend any changes. One of the major recommendations in the Kinnear Report was:-

*.....the Tasmanian and the Commonwealth Governments and their relevant agencies should recognise the fox threat for what it is — an impending disaster comparable in magnitude to an outbreak of a calamitous disease such as Foot and Mouth. The key word here is magnitude in reference to damage to the economy, and very much more so to Tasmania's biodiversity. Accordingly, while the response scenarios would be different ..... the eradication of the fox nonetheless, should be given the highest priority within the relevant agencies in relation to staffing, funding, and the allocation of resources needed to complete the task. Should failure be the result, anything less would be seen, both currently and historically, as a gross example of government irresponsibility.<sup>10</sup>*

It is clear from these reports that the authors all accepted without reservation that the authenticity of reports and the physical evidence was sufficient to warrant continuation of the activities and the task of eradication.

In the following years the Taskforce continued to collect physical evidence of fox activity in the state. Appendix 1 of the Government submission lists all the dates and details of sightings, scats, blood and three fox carcasses.

There was confirmed scat DNA from the Conara area in 2005 and there was a carcass collected and confirmed to be a juvenile fox in 2006. This evidence was considered to confirm the value and importance of the Fox Eradication Program. It was also understood to be important to examine, review and evaluate the activities, and obtain external expert advice. Mr Nick Mooney who was involved with the Taskforce from the beginning noted that the program was endeavouring to break new ground and external advice and expertise from a variety of sources was important:-

*What many people have not realised, and most Tasmanians do not, is that we are actually trying to get rid of an animal that is rare. It would be a critically endangered species if it were a native animal. There is an extraordinary lack of experience in trying to deal with that and what we are doing has not been done anywhere in the world.<sup>11</sup>*

Australia's Innovation Agenda provides funding for world class collaborative research and innovation – specifically to build critical mass in research ventures between end users and researchers. The Invasive Animals Cooperative Research Centre based in Canberra sponsored an expert panel to conduct a further review and provide recommendations for future monitoring and management. This report entitled – 'Foxes in Tasmania - A Report on an Incursion by an Invasive Species 2006' by Saunders et al- made the following conclusion:-

<sup>10</sup> Tasmania, Government Submission March 2008, p 8

<sup>11</sup> Mooney, N. Hansard, 2 June 2009, p 17

*After examining all of the available evidence on foxes we conclude that an unknown number of foxes have been deliberately and/or accidentally introduced to Tasmania since 1998 and that some of these and possibly their progeny are still living in the wild in Tasmania. This should be the starting premise for the way forward; not debating the merits of past actions or the veracity of all reports.*

*The likely density of these foxes is still at a stage where eradication is achievable provided the necessary resources are made available.*

*On reviewing the situation elsewhere, particularly on mainland Australia, there is absolutely no doubt that foxes are capable of successfully colonising Tasmania. Were this to occur, the cost to Tasmania's economy and more importantly, its biodiversity, would be catastrophic.<sup>12</sup>*

After a further carcass was collected from Glen Esk Road in the Northern Midlands and in light of the recommendations in the above report the State Government announced it was committed to the eradication of foxes and would fund a ten year program \$56 million plan to continue the program. This initiative to promise funding for a period of ten years has been widely commended particularly because government funding is usually based and limited to the Budget cycle. In late 2006 the program was formally renamed and reorganised to become a branch of the Resource Management and Conservation Division of the Department of Primary Industries and Water.

<sup>12</sup> Saunders et al, Foxes in Tasmania: A Report on an incursion by an Invasive Species, June 2006, p9

## **THE OPERATIONS OF THE TASKFORCE - CURRENT PROGRAM – KEY ACTIVITIES**

The Management Committee endorsed the following key activities to address the objectives of the program. The activities are Strategic Baiting; Investigations; Tactical Response; Strategic Monitoring; Research and Development; Community Engagement; Project Management; and Biosecurity.

State Government funds have been allocated to each of these activities in accordance with need as determined by the Management Committee. In addition to State Government funds the Australian Government has provided funding for strategic baiting, tactical response, research and development, communications and project management. The IACRC also provides assistance and some funding to support the Taskforce activities.

The following is a brief description of the work, some information about the allocation of staff and of the funding allocations (State and Australian Governments) for each activity.

Further information is available in detail in the Government submissions.

### **PROJECT MANAGEMENT AND ADMINISTRATION**

The Management Committee was established with a widely representative membership which comprised Charlie Zammit from the Department of Environment, Water Heritage and the Arts (Australian Government); Professor Tony Peacock from the Invasive Animals Cooperative Research Centre; Peter Volker, Forestry Tasmania; Mark Bryce, Parks and Wildlife Service (Tasmania); Alex Schaap, Biosecurity and Product Integrity, Department of Primary Industries and Water (DPIW) (Tasmania); and chaired by Penny Wells, Resource Management and Conservation (DPIW). The Management Committee is supported by several professional bodies.

The Technical Advisory Panel has direct input into the process of determining priorities for research and development activities and conducts reviews of specific projects. The Terms of Reference for the Technical Advisory Panel are to review evidence collected as part of the program; oversee decisions about the response to evidence; provide advice on monitoring and eradication methods; provide advice on research and development needs and projects; facilitate and encourage the sharing of information critical to the success of the project; and respond to issues arising from, and make recommendations to the Management Committee. The membership of the Technical Advisory Panel is Glen Saunders, Chair (NSW Department of Primary Industries); Stephen Sarre (Institute for Applied Ecology, University of Canberra); Steve Lapidge (Invasive Animals Cooperative Research Centre); Dave Ramsey (Arthur Rylah Institute); Andrew Murray (Victorian Department of Sustainability and Environment); Hamish McCallum (University of Tasmania); and Quentin Hart (Bureau of Rural Sciences)

The Stakeholder Reference Committee also has direct input into the Management Committee. The Terms of Reference for the Stakeholder Reference Committee are the implementation of effective communications and community engagement; advice on

baiting and monitoring; and advice on potential research and extension activities. The Committee membership is comprised of representatives from the Tasmanian Farmers and Graziers Association (TFGA); the Tasmanian Field and Game Association; the RSPCA; Tasmanian Women in Agriculture; NRM Committees; the Queen Victoria Museum and Art Gallery; the Tasmanian Museum and Art Gallery; and Wildcare Inc.

The Government submission advised that:-

*The work of the FEB is predicated on three points:-*

*There is substantial material evidence to indicate that there are foxes in Tasmania;*

*An established fox population would have a devastating impact on Tasmanian wildlife (with flow on impacts to tourism and the Tasmanian image) and agriculture (particularly the sheep industry). As a result of these impacts, it is clear the local economy would also suffer; and*

*Eradication is feasible only while foxes are at low numbers.*

*It is recognised that many eradication programs have failed due to insufficient economic resources being allocated to allow programs to be seen through to completion (Simberloff 2002).*

*The Tasmanian situation with foxes is unusual in that the impacts of this animal are not yet realised in the environment and eradication is being attempted before the situation deteriorates to this point. This poses some unique challenges for the Tasmanian fox eradication effort but it is important to recognise that the expense of eradication increases rapidly as the area of invasion (or establishment) increases.<sup>13</sup>*

The Fox Eradication Branch is made up of five Sections to deliver the activities: Operations (carries out eradication actions); Monitor and Investigations (gathers, manages and interprets data on fox presence); Research and Development (researches new survey and data interpretation methods, refines eradication methods through monitoring their impacts and monitors wildlife at-risk from foxes); Community Engagement (raising community awareness and gaining community cooperation); and Management (oversight of the program, administration, biosecurity issues).

In 2007 a Project Plan<sup>14</sup> for the first two years of the Fox Eradication Program Stage One (2007 – 2009) was endorsed by the Program's Management Committee with the following objectives:-

*-To eradicate foxes from Tasmania by developing a coordinated strategic response, building on the work of the Fox Task Force.*

*-To prevent incursions of foxes into Tasmania.*

*-To gain broad community cooperation and support and to develop a community attitude which actively opposes the presence of foxes in Tasmania.*

*-To gain a better understanding of population trends of at risk species.<sup>15</sup>*

The Project Plan gives the stated target outcomes and descriptions of the activities to achieve the outcomes. It includes details of budgets, schedules, staffing, a risk management plan, performance indicators and reporting requirements. The Project

<sup>13</sup> Tasmania, Government Submission March 2009 p 3

<sup>14</sup> Eradication of Foxes from Tasmania, Project Business Plan Stage 1, July 2007 – June 2009

<sup>15</sup> Tasmanian Government, Submission March 2008, Attachment 6

Plan also provided for an external review which would focus on identifying changes or improvements to achieve the objective of eradicating foxes.

The Government also provided a Draft forward Project Business Plan for Stage 2 July 2009 – June 2013 which lists the status and progress to date but because of the uncertainty with respect to funding and possible recommendations arising from the planned external review will probably need to be amended and refocused.

Subsequent to the Public Accounts Committee receiving submissions with attachments, reports and additional information from the Government, including the Draft Project Plan 2009-2013, the funding contribution from the Commonwealth Government has been reduced and the external review of the Fox Eradication program has been received by the Department. Changes have been made to the funding and any decisions about the recommendations in the external review had not yet been confirmed or incorporated into the forward planning.

The Department said:-

*We are working through that at the moment but we are going to have to scale back and set priorities.*<sup>16</sup>

and:-

*Ultimately it will mean that we cannot deliver the plans that we want to put in place to implement that review at the rate that it is talked about...*<sup>17</sup>

Both the issue of Commonwealth funding and the external review will be addressed later in this Report.

There is strong support for the program activities and a belief that the program is conducted professionally. Both the Tasmanian Conservation Trust and the Tasmanian Farmers and Graziers Association are represented on the Fox Eradication Program's Stakeholder Reference group and representatives of both organisations emphasised that fox eradication is a high priority for members and noted general approval of the management, governance and administration of the project.

Professor Peacock of the Invasive Animals Cooperative Research Centre (IACRC) and a member of the Management Committee said:-

*DPIW has adopted an excellent governance model for FEB. The Department has established a Steering Committee that oversees expenditure and operations; a Technical Advisory Panel to which it can refer technical questions and a Stakeholder Group to enhance communications and receive community feedback. ....*<sup>18</sup>

and:-

*We have rarely been involved in a program that has had a higher level of public scrutiny.*<sup>19</sup>

Dr Sarre, a member of the Technical Advisory Committee said in his submission:-

<sup>16</sup> Evans, K. Hansard, 16 September 2009, p 1

<sup>17</sup> Johnston, A. Hansard, 16 September 2009 p 2

<sup>18</sup> Invasive Animals Cooperative Research Centre, Submission, p 2

<sup>19</sup> Ibid, p 3

*My long-term involvement with the Taskforce has provided me with a clear perspective on its development. The Taskforce has a well organised and strategic approach to what is a very complex and difficult problem.*

*It is an enormous task and one that, to my knowledge, has no parallel for scale anywhere else in the world. It is thus important to realise that many of the operations necessary to undertake the task will be developmental and will take time to mature.*

and:-

*.....the Fox Eradication Branch has taken a rigorous and highly evidential approach to the task of finding and eradicating foxes in Tasmania.<sup>20</sup>*

The Department is acutely aware that what is being attempted in Tasmania with the program is difficult but is endeavouring to develop practices and procedures which are best practice, thoroughly researched and will culminate in a positive outcome.

*Our agency, I think it is fair to say, would consider that it doesn't have all the answers, all the expertise or all the resources when it comes to ensuring that Tasmania is free of the impacts of foxes. Over the years we have worked closely with a range of stakeholders, external reviewers and other institutions, in terms of their advice, input and cooperation. Along the way, we have obviously had a good degree of constructive criticism, and that has really helped us to refine and enhance our efforts and increase our chance of success.<sup>21</sup>*

### **External Review**

The conduct of an external review towards the end of Stage one of the 10 year plan has always been part of the planning of the Fox Eradication Taskforce.

Over the period of this Inquiry the Taskforce were expecting to get the results of the review so any forward planning was contingent on any recommendations which may arise from the external review as well as confirmation or otherwise of future Commonwealth funding.

The Committee questioned the Taskforce about the choice of the organisation to conduct the external review and were informed that there were not many organisations world wide which had the appropriate and extensive experience in eradication programs in order to review them. The Department received advice from consultants and the overwhelming conclusion was that the New Zealand Landcare group would be the best choice.

In April 2009, the Department of Primary Industries, Parks, Water and Environment (DPIPWE) commissioned Landcare Research, New Zealand to review the program to assess whether eradication was still a feasible goal and to identify what might be required. The Terms of Reference for the review were to:-

*Evaluate progress towards the program's goals and objectives, including use of cost-benefit analysis and appropriate assessment tools to determine whether the current program design and expenditure profile are the most cost effective for achieving eradication.*

*Review current investment and effort in detection/monitoring, research/analysis and reporting/communication activities, consider other approaches and techniques and recommend changes and improvements required to cost-effectively achieve the program objective of eradication.*

<sup>20</sup> Sarre, Dr. S. Submission, p 2

<sup>21</sup> Evans, K. Hansard 25 May 2009, p 10

*Input into the development of an exit strategy – identifying possible decision points for deciding whether eradication has been achieved or that eradication is not possible.*

*Identify risks with the eradication strategy and exit strategy.*<sup>22</sup>

The review commented on considerable progress and said key successes include the technical ability to detect foxes with increasing certainty using scat searches and DNA tests, improvements in the interpretation of public reports of foxes, more certainty about the extent of non-target risks from the 1080 baiting, and in the collection of operational data.

The Main Recommendations include the following section on the progress to date and recommended a move to a significant change to the program structure in the future:-

*Progress towards goals*

*Eradication is of course an absolute goal – any survivors capable of breeding represent failure. Thus, the project has not yet succeeded.*

*On the positive side, the program has developed some of the tools (e.g. scat detection, scat dogs), infrastructures (e.g. trained staff), and knowledge (e.g. non-target mitigation) required to realistically make the attempt.*

*Program structure*

*We recommend changing toward the precautionary strategy with consequent reallocation of resources within the program. This is mainly because there are such large uncertainties, irresolvable in the urgent time frame required to achieve success, in managers' abilities to delimit fox range in Tasmania, and to locate individual foxes within that range. The reactive approach to initial control does not allow for easy risk management, target time frames, or thus exit strategies.*<sup>23</sup>

The Management Committee considered that the review had a fair approach and welcomed the recommendations which they say did not “radically change the direction of the Program.”<sup>24</sup>

## **MONITORING AND INVESTIGATIONS**

*(Scat collection, Testing DNA Analysis and Genotyping)*

The objective of this activity is to strategically determine and map distribution with a view to informing eradication, monitoring numbers and providing feedback. The activities will also determine distribution of feral cats, dogs, Tasmanian devils, quolls and other native species so that baseline data can be established to inform on possible ecological effects of foxes and changes that may be taking place due to loss of devils from facial tumour disease. The systematic scientific collection of carnivore scats is one of the few ways that distribution can be accurately quantified. Outcomes of the activity will be extensive data and provide some measures to determine the success of the program.

### **Sightings and Response**

There have been over 1900 reported fox sightings from the general public between 2002 to March 2009. As reports are received through the FOX OUT hotline they are

<sup>22</sup> Landcare Research, Review of the Program to Eradicate Foxes from Tasmania

<sup>23</sup> Ibid

<sup>24</sup> Wells, P Hansard, 16 September 2009, p 7

assessed according to strict protocols and credibility criteria before resources are allocated to respond to the situation. The level of response depends on the quality, timing and credibility of the information. The abundance of native mammals, cats and dogs means that it is easy to be mistaken and therefore unreliable. The Committee were informed that great care is taken with interpretation and sightings. When information is provided by multiple independent witnesses or located in clusters or hotspots it is particularly useful to guide the search to areas and sites for physical evidence and the targeting of eradication efforts.

Mr Chris Spencer an experienced naturalist and ecologist, following what was considered a highly authentic reported sighting in 2001 was disappointed with the Taskforce response. He believed that despite the usual government constraints and often lengthy procedures they:-

*.....should have acted with a far more vigorous and inclusive approach from the beginning utilizing the observational skills of the many very experienced individuals who hunt on and manage the Tasmanian landscape, these people are an asset to the State's primary industry and have excellent knowledge of the habits of the Tasmanian fauna.*<sup>25</sup>

Mr Spencer believed that the implementation of a baiting program at the outset would have provided a more effective response.

The Committee have been informed that since that time the operating procedures for response to sightings has been reviewed and revised.

### **Physical Evidence**

The collection of data including reported sightings and anecdotal reports prior to 1998 was not very well recorded. Credible physical evidence dating from then until the Saunders Report in 2006 includes the Burnie footprints 1998; Longford footprint cast 2001; Symmons Plains carcass (male, shot) 2001; Burnie scat 2002; Burnie carcass (female, road-kill )2003; Conara scat 2005; Lilloco carcass sex indeterminate possible road-kill ( 2006); and Old Beach blood 2006. Unresolved evidence includes Longford fox skin 2001 and Wynyard photos 2001.

Since 2006 the material evidence collected comprises 37 scats from various locations and the Cleveland carcass 2006.

All the figures above relate to the information provided in Government submissions. There have been some more recent updates and sightings with further confirmations of scat which has been collected from a number of different locations. The most recent data is available from the pages on the activities of the Fox Eradication Taskforce on the DPIPWE website at [dpiw.tas.gov.au](http://dpiw.tas.gov.au).

It is a continuing theme by critics and people who doubt the presence of foxes that if there are foxes 'why hasn't one been shot or a poisoned carcass found by the Task force team'. The search for physical evidence is particularly problematical and challenging in an area the size of Tasmania. There are large areas which are unpopulated and this combined with extensive tracts of wilderness, the elusive nature of the fox and the belief of very low fox density means that the likelihood of discovery is remote.

<sup>25</sup> Spencer, C. Submission p 2

The Committee questioned Mr Mooney about the density of foxes in Melbourne and other interstate areas to which he replied:-

*There are quite common sightings, almost like possums here. That population is continuous pretty well through Melbourne and holds a density of about 15 per square kilometre right through Melbourne.....It depends on the quality of the habitat.....A working figure is up to seven square kilometres being normal for foxes. Where foxes do not have neighbours, such as we are suggesting here, who knows. No-one has ever studied them in that situation. That is one of our major problems.<sup>26</sup>*

When questioned further about the lack of evidence of breeding or establishment in the physical evidence recorded to date he replied:-

*You can only establish that genetically if you have reference DNA from the parents. You cannot just do it on speculation as you must work back from the parents, so it is hard to do genetically unless you are lucky enough to have parental DNA and then identify an offspring or a sibling. It is a bit difficult with foxes because Australia's 30 or 40 million foxes came from six or seven animals, so they are all related. This complicates things. There is no proof of establishment and the only adjunct evidence of establishment is the juvenile fox retrieved from the side of the road at Lillico in 2005. That was a young fox, so unless it had arrived shortly before it is hard to avoid thinking that it was a result of breeding.....We have no evidence of establishment.<sup>27</sup>*

And then later:-

*I watch these genotypes with trepidation because it is possible that we will get lucky or unlucky depending on your point of view and get that evidence or someone will find a den.<sup>28</sup>*

Dr Oliver Berry who is responsible for DNA Genotyping said:-

*I believe there is a wild fox population in Tasmania and my data says there are both males and females and that there is a minimum of 10 of them.<sup>29</sup>*

Despite proof or lack of it, most people involved in the Program and other interested persons who gave submissions firmly believe there is a serious threat to Tasmania and Tasmanians and as such it needs to be actively and vigorously countered.

Chris Oldfield representing the Tasmanian Farmers and Graziers Association said:-

*The TFGA wishes to reiterate its strong position that we believe there are foxes present in Tasmania. We base this on the logic that you either have to accept that there is an organised conspiracy or that there are foxes. We do not think there is much in the middle. With the evidence of scats that have been found and continue to be found they are either genuine or they form part of a conspiracy and quite frankly we find that difficult to believe. So using that logic we accept that there are foxes present in Tasmania.....<sup>30</sup>*

Tammy Gordon summarised her submission with:-

<sup>26</sup> Mooney, N. Hansard 25 May 2009, p 13

<sup>27</sup> Ibid, p 14

<sup>28</sup> Ibid, p 15

<sup>29</sup> Berry, Dr O. Hansard, 14 August 2009, p 20

<sup>30</sup> Oldfield, C Hansard, 2 June 2009, p 1

*Rather than waiting for more 'proof' that foxes are in Tasmania, it would be wise to accept the evidence for a small number of foxes now. If we wait until we are seeing them in our back yards it will be too late.<sup>31</sup>*

On the question of obtaining what can be referred to as concrete evidence Dr Obendorf was quite emphatic. He stated that:-

*If we had two fox scats from the same location from the same animal by DNA, I would say that is compelling evidence that it is likely to have been an animal that lived in that environment. If Barbara Triggs takes that scat away and she teases out the hairs and shows definitely that the fox scat contains the hair of Tasmanian bettong or Tasmanian pademelon in substantial quantities, in other words the animal has eaten an animal then it says you have an endemic species in a fox scat and it is highly unlikely that somebody has taken covert action of taking a pademelon, feeding it to a fox allowing it to defecate twice bringing those scats to Tasmania and depositing them covertly.<sup>32</sup>*

But Mr Johnston said:-

*While, on the surface, finding a body might seem a very positive step forward, in the strategy of achieving what we are trying to achieve, it may well not be a significant event.<sup>33</sup>*

If the observation of Professor Peacock is a guide then the chances of finding a body may be almost impossible with a very low density. He said:-

*In Canberra, with our density, there are probably 1 300 foxes living in this city but if they were at the same density of this city in Tasmania it would have to be in excess of 3 million foxes down there. People in this city are not seeing them and we have one of the highest fox densities in the world.<sup>34</sup>*

### **Scepticism, Hoaxing and Fabrication**

Public criticism and scepticism on the veracity and authenticity of reported sightings is of great concern to members of the Taskforce and is seen as:-

*..... the biggest problem. Public derision makes people keep their heads down. We Tasmanians are fairly conservative, so people usually do not want to get up and be chipped at in public, so we end up with a lot of anonymous reports. Often we know the person but they insist on public anonymity and that itself at times feeds scuttlebutt because you end up in this loop. We are just stuck with that.<sup>35</sup>*

Dr Obendorf, a long time critic of some of the work of the Taskforce also spoke of public reaction and attitude.

*If you have no public confidence in dealing with an issue as important as an emergent, invasive, feral species then you really lose momentum quickly, and I see it as both a top-down process and a bottom-up process. The top-down one is the directive of leadership and the sort of authenticity, validation that comes from government. The bottom-up is really about saying there is a broad spectrum of agreement across the community that this is real, it is tangible, people know about it and they recognise it; they're talking about it and they want to do something about it.*

*.....I want to be robust and feel confident that the people who are undertaking this program know what they are doing. They have been pussyfooting, and I use that word*

<sup>31</sup> Gordon, T Submission, p 2

<sup>32</sup> Obendorf, Dr. D. Hansard, 2 November, 2009, p 5

<sup>33</sup> Johnston, A. Hansard, 2 June 2009, p 33

<sup>34</sup> Peacock, Professor T. Hansard, 14 August 2009, p 16

<sup>35</sup> Mooney, N. Hansard, 2 June 2009, p 15

*pussyfooting, for a long time about the difference between fox presence and fox establishment. It is one thing to have incidents where foxes are seen in the landscape versus the establishment of foxes, in other words breeding, and to me that is a very important, critical factor.*<sup>36</sup>

The Committee questioned that assertion commenting:-

*You say, 'In order to gain universal public acceptance and confidence that foxes are free-ranging and breeding in all areas, further efforts are required to obtain compelling, repeatable and conclusive field evidence of fox presence'. Is that not a massive distraction to that task of killing the ones that are here?*<sup>37</sup>

Dr Obendorf made it clear that he questions certain assumptions forming the basis of the Eradication program but this is not a view shared by many others who are willing to accept what they believe are well founded assumptions and so actively support the eradication program.

Critics, if measured and responsible, can play a valid role in public debate but the Taskforce has also been the target of hoaxing and deliberate fabrication. An extract from the Saunders et al (2006) report noted that “*not one person was prepared to match their conviction with the risk of doing nothing and foxes becoming permanently established in Tasmania.*”<sup>38</sup>

The Submission from the Invasive Animals Cooperation Research Centre commented that “*baseless serious allegations have been made that members of the FEB themselves have ‘planted’ evidence, with a motivation to retain employment and that the ‘Invasive Animals CRC has no knowledge of any incidents of hoaxing or fabrication of evidence.*”<sup>39</sup>

One such particular incident about the validity of evidence including the manner of collection of the evidence, possible contamination and information provided to media sources concerned what is now known as the Glen Esk fox. This incident was quite controversial with widespread public debate, conspiracy theories, multiple investigation efforts and media speculation.

Dr Obendorf stated:-

*To me the one at Glen Esk Road was a clear case of flagrant fabrication.....it should have been realised that this case as it was being reported was not a bona fide incident of a fox killed on a road.*<sup>40</sup>

In the case of this particular episode it has emerged there was some misinformed reporting which involved the media and possible witnesses wished to remain anonymous. Mr Mooney commented about the attitude of some people saying:-

*One of the problems with public vilification of this program is that it makes witnesses want to be anonymous. They commonly say they do not want to be part of that. We seem to be stuck in a catch 22 position with a lot of our witnesses; even if they give us their name they want to remain anonymous.*<sup>41</sup>

<sup>36</sup> Obendorf, Dr. D. Hansard, 2 November 2009, p 2,3

<sup>37</sup> Hidding, R. Hansard, 2 November 2009 p 3

<sup>38</sup> Saunders et al, Foxes in Tasmania: A Report on an Incursion by an Invasive Species, June 2006, p33

<sup>39</sup> Invasive Animals Cooperative Research Centre, Submission, p 6

<sup>40</sup> Obendorf, Dr. D. Hansard, 25 May 2009, p 7

<sup>41</sup> Mooney, N. Hansard, 25 May 2009, p 23

When questioned by the Committee on the allegation of fabrication Mr Mooney replied that he had no doubt about the authenticity of the Glen Esk Report and the evidence and said:-

*It was typically road kill – it ended up with a broken hip and all sorts of things – and then a large tyre going over it twisted it and further mangled it.*

*..... I am very happy to put my name to that report I have on the web. It was written fresh at the time. The only reason it was not immediately after the incident was that I updated it to add in Tony Ross's comments from Dave Obendorf's prompting to revisit the time of death. That was an improved report.<sup>42</sup>*

On the same subject the Department observed:-

*That is one event in a long history of the program. All the other events and all the other evidence and observations provide the entire context for where we are today and I do not think we should misrepresent the significance of that one investigation.<sup>43</sup>*

The Committee asked Dr Obendorf about possible motivation for people to participate in building stories, fabrication and false reporting to which Dr Obendorf cited an Auditor-General's report on Endangered Species<sup>44</sup> which he quoted the Auditor-General reporting:-

*..... that 76 per cent of the revenue stream that is required for the Resource Management and Conservation branch of DPIW is derived from two particular areas. One is the Fox Task Force and the other is for devil facial tumour disease.<sup>45</sup>*

Dr Obendorf said:-

*So, to me, qui bono – who benefits? The beneficiaries are the people who are in charge of doing the work.<sup>46</sup>*

This theory was also the principal concern of Dr Robert Mesibov who opined:-

*Committee members may be aware that many members of the public, such as myself are unhappy that the fox eradication program has cost so much and yielded so little. We have begun to suspect that the program's major public benefit has been to employ task force personnel and to provision supervising agencies with cash.<sup>47</sup>*

Mr Rist also questioned the accuracy relating to the recovery of scat evidence and postulated a possible motivation for fabrication. He said that:-

*Yes. Well, I mean, we are talking about \$5.5 million a year at the moment, aren't we?<sup>48</sup>*

*.....money is the main motivator here. I do not know whether you people are aware or not but the IACRC Invasive Animals in Canberra has little commercial offshoots. One is the Institute of Applied Ecology at the Canberra University that does all the DNA testing.....In fact in the last couple of years it has recovered half a million dollars from Tasmania for DNA testing of scats et cetera. The other offshoot company is Pestat which supplies all the pheromones, the bait attractants, the additives and the other commercial offshoot is Animal Control Technologies. That supplies all the baits – millions of dollars worth. That is a pretty good motivation for me, Rene.....I have no doubt they are fox scats, I just have a doubt where they*

<sup>42</sup> Ibid, p 40,41

<sup>43</sup> Evans, K. Hansard, 2 June 2009, p 42

<sup>44</sup> Tasmanian Audit Office, Special Report No. 78, Management of Threatened Species, 2009

<sup>45</sup> Auditor-General, Management of Threatened Species, Special Report No 78

<sup>46</sup> Obendorf, Dr. D. Hansard, 25 May 2009, p 9

<sup>47</sup> Mesibov, Dr R. Submission

<sup>48</sup> Rist, I Hansard, 25 May 2009, p 31

*were recovered. My bush sense and everything about it tells me, if we have foxes across the length and breadth of Tasmania, why aren't they being shot?<sup>49</sup>*

The Committee questioned Professor Peacock on the substance of the allegations of Mr Rist. Professor Peacock responded saying :-

*I am fairly dismissive of claims that somebody is planting scats; in fact I'm extremely dismissive of it because evidence was never presented to me that this is the case.....I can't see how it could happen without many people becoming aware of it.<sup>50</sup>*

and:-

*I know evidence has been given to you that our IACRC has built commercial offshoots one of which is the Institute of Applied Ecology..... that is simply not true. The Institute of Applied Ecology is an independent part of the University of Canberra. It has millions and millions of dollars through it and the idea that I could influence what academics in that department are doing through a single project worth tens of thousands of dollars is absolutely ridiculous.....the other offshoot company is Pestat – that is an offshoot of the previous IACRC. The IACRC owns no shares in Pestat. It (the transcript) says it supplies all the pheromones, the bait attractants. Perhaps those pheromones account for \$1000 worth of sales and that would be the absolute most. So it is extremely offensive to a small company based in Canberra. The other commercial offshoot is Animal Control Technologies and again that is completely wrong. Animal Control Technologies is a company in Melbourne owned by Dr Linton Staples and his family. They are an important member of this IACRC but I have no ownership nor does the IACRC.<sup>51</sup>*

Later in his evidence Professor Peacock said of the allegation:-

*Obviously it gets me annoyed but it does bring down the members of the taskforce – just ordinary Tasmanians doing their job.<sup>52</sup>*

The negative public perception has had an effect on the Taskforce. Mr Johnston said:-

*.....in the early times it was relatively easy to cope with all the criticism and acknowledge it happens but the impact on staff was dramatic.*

*To pick up the newspaper and see criticism suggesting they were involved in fraud and so forth had quite an emotional impact on them.....it does become pretty draining to have to bear that..... The other aspect of course is what impact it is having on our ability to successfully do the job. If we go to Agfest or any of the shows you can be sure that several times a day someone will come up to you and say, 'I saw a fox on such and such a day.' You will say 'Did you report it?' 'No I did not want to be subject to the criticism and abuse I have seen in the papers.'<sup>53</sup>*

Tim Bloomfield even questioned whether:-

*.....sceptics are possibly welcomed by some senior public servants or Minister's advisors as they give solace to them and to those who wish to find excuses for inactions and reasons not to make real commitment.<sup>54</sup>*

## **DETECTION**

Detection of an invasive pest species especially when numbers are considered to be quite low is the key to developing successful management strategies for eradication.

<sup>49</sup> Ibid, p 33

<sup>50</sup> Peacock, Professor P. 14 August 2009, p 8

<sup>51</sup> Ibid, p 14

<sup>52</sup> Ibid, p14

<sup>53</sup> Johnston, A Transcript, 2 June 2009, p 10

<sup>54</sup> Bloomfield, T. Submission p 2

The Committee were informed that there is little experience both nationally and internationally in detecting foxes as most published work is based on high density populations. The Taskforce has employed a number of different methods of detection. Sighting reports as mentioned previously are useful; stalking has been tried but without any positive visual confirmation; sand-pads sometimes with added lures using visual, smell or sound have been deployed as a detection device but the success is limited and, to date, there have not been any positive footprints recorded; the use of cameras is relatively new and with the newer technology and equipment the Taskforce is hopeful of positive results but there have been none to date; and spotlighting and spotlight surveys are cost effective for abundant species but the chances of good sightings is considered to be minimal at low densities. The Fox Eradication Branch have reported sightings but circumstances have prevented further action (attempted shot) The presence of animal scats can be a reliable indicator and this is considered to be the most effective method to us in Tasmania.

### **Scats**

Scat detection is conducted in several different ways. The three principal methods used are organised scat searches-using specially trained scat detector dogs; the systematic carnivore scat collection and during human investigations following credible sightings.

Scat detector dogs are used to do follow up following credible sightings and support investigations and to undertake landscape searches. For scat testing purposes priority is given to scats detected by dogs as it is believed that there is a higher chance of those scats being positive.

The Systematic Collection Survey is a study of all areas of highly suitable fox habitat. It commenced in 2008 and is being carried out in three stages over three years in Autumn to cover the whole state geographically. It is considered particularly important as there is little possibility of bias due to other factors such as sightings. It also covers remote and less populated areas from which public sightings are unlikely.

*We are doing stuff in series when we should be doing it in parallel..... Not only should we ideally do this state-wide survey in one year but we should also be doing it at a higher density in one year, a more thorough survey.<sup>55</sup>*

Mr Whittington also expressed the view that it would be desirable to undertake a state wide survey rather than doing it in stages.

Den searches are also undertaken during investigations but to date none have been positively identified. In their submissions the Government provided the Committee with the detailed procedures and protocols for all detection activities and summary reports of all successful detection.

### **Collection**

With advice and collaboration from the Institute of Applied Ecology a set of protocols for the collection and preparation for testing has been developed. Dr Sarre:-

*The rigour of our approach is far in excess of most comparable wildlife management uses of such DNA technology.*

<sup>55</sup> Mooney, N. Hansard, 2 June 2009, p 44

*We've worked long and hard with the departmental field collectors to develop appropriate strategies for dealing with scats from the very first time they pick them up. There is no human handling, no exposure to outside elements. They are dried in specific and locked circumstances and then posted to us here at the University of Canberra. We treat them in a very strict protocol to make sure that the risk of contamination is minimised.<sup>56</sup>*

The following information was supplied by Dr Sarre in his submission to the Committee

- (1) All scats are bagged and sealed at the point of collection, dried in a dehumidified drying room for 2-3 days, and then mailed for DNA analysis. This approach minimises the loss of DNA from each sample.*
- (2) Scats are picked up using one-use disposable latex gloves or 'chopsticks' improvised from vegetation and are not allowed to touch personnel, clothing or any equipment. Once bagged, scats are never removed from their bag and go directly to the drying room. This approach minimises the risk of sample contamination from collection to analysis.*
- (3) A one-way movement of samples and laboratory technicians from DNA extraction stations to the analytical laboratory is maintained as well as the spatial separation of DNA extraction, amplification and post-amplification processes, and the inclusion of negative controls at all stages of preparation. In addition, we have included the precaution of operating in DNA-free biohazard safety cabinets and DNA sequencing of all putative positives to ensure maximum confidence around an identification of fox DNA.<sup>57</sup>*

The Committee asked Dr Piggott about how collection is best done:-

*I have not been asked and I think that is a very important consideration because in all the research I have done I have found that collecting and storing samples is also a really important issue in terms of getting the best DNA from your samples.<sup>58</sup>*

In relation to all the investigations, the discovery and collection of evidence, the Taskforce acknowledged they had improved their standards of operating procedures and indicated that in terms of collection there had not been significant widespread opposition with respect to land access in rural or semi-rural areas but that:-

*..... the urban ones are a bit of a problem, not necessarily because people don't welcome us but just because of the physical problem. We are finding that the scat-detector dogs aren't very effective in the urban environment simply because there are too many distractions...<sup>59</sup>*

### **Testing and Analysis**

After collection, scats are sent to the University of Canberra where they are sectioned into three parts. A third gets analysed for DNA and sexing, a third goes for likely prey, animal and dietary information and a third is retained for any advances in technology, techniques and science.

The Committee had some evidence about the various techniques for assessing DNA, follow-up genotyping and the relative cost of two particular methods.

<sup>56</sup> Sarre, Dr. S. Hansard, 14 August 2009, p 10

<sup>57</sup> Sarre, Dr. S Submission p 3

<sup>58</sup> Piggott, Dr. M. Hansard, 2 June 2009, p 30

<sup>59</sup> Johnston, A. Hansard, 2 June 2009, p 30

Dr Berry analyses positive scats after the initial DNA testing and he told the Committee:-

*There are many ways to extract DNA from faecal samples. Faecal samples are particularly difficult because they contain a lot of things that can interfere with the downstream analysis of DNA. Regarding the two we are talking about ... the Chelex method. .... The DNA that comes out is relatively impure. Contrast that with what we are calling the Banks et al method which is really just a laboratory version of a commercial kit that is produced by a manufacturer call Qiagen. That is probably the most commonly used method to extract faecal DNA for genotyping and individual identification.*

*The Banks et al method is the method that I use in my laboratory for individual identification of foxes. I estimate that that probably costs about \$6 to \$7 per sample, just in terms of the consumables. It is probably just a few cents for the Chelex method.<sup>60</sup>*

The Committee asked Dr Berry if he thought that using the Chelex method for the initial testing to confirm fox scat and then go on to the more expensive Banks et al to determine genotype was the most suitable to which Dr Berry agreed

*Yes, that seems the logical, cost-effective and practical approach and that is what is being done in this case.<sup>61</sup>*

Dr Piggott also commented in the same manner in relation to the Chelex method:-

*The Chelex method is a good method for species ID in terms of probably what the program wanted, which was a quick, easy and cheap method to identify foxes.<sup>62</sup>*

Dr Berry later confirmed that:-

*We use Chelex for species identification because it is the only practical way to process several thousand samples ... This is by far the largest study conducted anywhere in the world.<sup>63</sup>*

Dr Stephen Sarre was asked about the use of DNA to identify prey and he told the Committee that at this stage they had not done any testing for different prey. He went on to say:

*The identification of prey has come from analysis of the scats themselves, by people chopping the scats apart and then looking for fragments of bone or hair and being able to identify species from those fragments. We do not do that; we send the scat back to the department in Tasmania and they independently organise those analyses.<sup>64</sup>*

He described the reason for dietary analysis of scats:-

*The idea there is that in doing a strategic survey and in the way we are doing it we have unique resource for those scats because you identify not just whether they are fox or not but potentially what carnivore laid the scat. You can also eventually identify what those carnivores have been eating and get a map of distribution of Tasmanian fauna across the State. That is an independent project funded by the IACRC.<sup>65</sup>*

<sup>60</sup> Berry, Dr. O. Hansard, 14 August 2009, p 17

<sup>61</sup> Ibid

<sup>62</sup> Piggott, Dr. M. Hansard, 2 June 2009, p 51

<sup>63</sup> Government, Correspondence, 9 July 2009, Attachment 4

<sup>64</sup> Sarre, Dr. S. Hansard, 14 August 2009, p 11

<sup>65</sup> Ibid

The scat is analysed for prey identification by Barbara Triggs, a nationally recognised authority on the identification of mammalian traces. The Committee discussed the Tasmanian Program and because of some speculation asked her about the presence of Rufus wallaby in any of the scat analysis that she had tested.

Ms Triggs said:-

*Apparently not and that has been publicised quite a bit, that there have not been any pademelons. I do not find that terribly surprising because foxes are opportunists; ..... Pademelons are pretty zippy, they are hard to catch and they would not be the easiest prey. Rabbits are much easier; a dead sheep is much easier still and any sort of road kill, of which there is plenty of in Tasmania. I would not think pademelons would be high on their probability list. I have absolutely no doubt that if enough fox scats were found you would eventually find pademelon but there has just been so few that it is not really very surprising.<sup>66</sup>*

There has been a certain amount of publicity about the presence of Rufus wallaby and it was also raised previously by Mr Rist. He said:-

*Well we have had 38 scats supposedly recovered from Tasmania at the moment. Eight of them have been identified genotype ..... Those eight scats, ..... were sent to this hair expert, ..... Barbara Triggs who has all this mammal hair expertise..... What I find amazing is that all the carnivore scats that they tested – cat, quoll, devil, supposedly fox – except the eight fox scats revealed the hair of our most common little wallaby here in Tasmania, the little red Rufus wallaby. I find it absolutely amazing that it was in the carnivore scats recovered in Tasmania but there was not a trace of this Rufus wallaby here in any of the fox scats, supposedly recovered in Tasmania.<sup>67</sup>*

Ms Triggs explained her beliefs based on her work and experience:-

*I have been doing work for the fox eradication people for quite a while now and they seem to be efficient and doing a fairly comprehensive job of trying to track down these foxes. I have absolutely no doubt that there are foxes in Tasmania. I think there are some people who think that it is a possibility that it is all a conspiracy theory, but I think that is rubbish.*

*I base it on the fact that something like 33 scats have been found that have been positively tested for DNA to show that they came from a fox and I can't see how anybody could possibly transport fox scats from the mainland if that is what the theory is and spread them around so that somebody happened to find them. It just doesn't work, it just couldn't happen.<sup>68</sup>*

## **DNA Genotyping**

DNA which is isolated from positive scats is sent to Dr Oliver Berry in Western Australia for further additional work and analysis in order to discover a genetic profile to identify individual animals. Dr Sarre in describing Dr Berry and his work said

*Dr Berry is uniquely qualified for the genotyping because he is currently conducting a nationwide genetic survey of foxes using a comprehensive suite of DNA markers. That ongoing work by Dr Berry provides essential background data for the interpretation of genotypes identified from the Tasmanian foxes.<sup>69</sup>*

<sup>66</sup> Triggs, B. Hansard, 14 August 2009, p 2

<sup>67</sup> Rist, I. Hansard, 25 May 2009, p 32

<sup>68</sup> Triggs, B. Hansard, 14 August 2009, p 1

<sup>69</sup> Government, Correspondence, 9 July 2009, Attachment 4

At the time the Public Accounts Committee took evidence 25 positive scats including six collected as part of the strategic survey have had microsatellite DNA profiling. This procedure is also sometimes called DNA fingerprinting. Dr Sarre reported:-

*.....five produced genotypes sufficient to distinguish individuals at most levels of relatedness. Each scat produced a unique individual genotype, indicating the presence of at least five different foxes in the sample.<sup>70</sup>*

At the time of his evidence Mr Johnston, Project Manager of the Taskforce gave more recent results of DNA testing and genotyping:-

*.....36 of our fox-positives have now been analysed.....Out of those 36 he has been able to identify eight individual foxes of which there are five males, two females and one that he was not actually able to determine the gender of. The scats for those foxes were actually collected between February and December 2008.<sup>71</sup>*

It was suggested to the Committee that by using the Chelex extraction method to identify species followed by genotyping was not as accurate or robust as it could be when compared to alternative methods which had been developed for use elsewhere. Dr Piggott questioned some of the techniques she had read about and understood were being used for genotyping.

*I wanted to suggest that a review of the methods and results we are getting might be worth undertaking particularly to improve the public's perception of what work was going on. ....In terms of identifying the species I don't have any problems with the methods they have been using but once they start doing individual identification and want to know what particular animal left the scat, it is very important to have the very best method possible used.<sup>72</sup>*

Dr Piggott went on to discuss the methods she believed were used and spoke of her own research and suggested some comparative testing regimes to verify the work and results obtained. She said:-

*At Monash University we had a big group of researchers and we were doing a lot of non-invasive research on scats and hairs. The Banks et al method was the method we found worked the very best to get the best DNA extraction from scats, particularly for microsatellites<sup>73</sup>*

Dr Piggott told the Committee that the kit used in her work was a Qiagen kit which:-

*.....really helped to remove all the inhibitors and to clean up the DNA but that kit costs quite a bit of money. It would be nice I think to maybe have two particular methods where you can use maybe the more expensive method if you get a positive ID for the species.<sup>74</sup>*

The Department, Dr Sarre and Dr Berry were given an opportunity to respond to the professional views of Dr Piggott. Both Dr Sarre and Dr Berry noted that they welcomed input from other specialists and respected the views of Dr Piggott. Dr Berry suggested that there was some misunderstanding regarding the protocols employed to identify foxes from scat samples:-

*... our protocols were developed from a combination of the cumulative experience of many non-invasive DNA researchers, including Maxine Piggott, who have published their work over the past decade, and our own experiments conducted over the past*

<sup>70</sup> Sarre, Dr. S. Submission, p 3

<sup>71</sup> Johnston, A Hansard, 25 May 2009, p 11

<sup>72</sup> Piggott, Dr. M. Hansard, 2 June 2009, p 48

<sup>73</sup> Ibid, p 49

<sup>74</sup> Ibid, p 50

*five years. I'm sure Maxine would agree with me that there is rarely ever one technique that is best for all situations, and often there may be several optimal approaches. Each new situation brings new technical challenges, and will require experimentation before it is introduced to the analysis phase.*<sup>75</sup>

Dr Sarre responded in a similar manner and said:-

*I would like to point out that the approaches developed at the University of Canberra that relate directly to this fox project were developed, and continue to be developed, through discussion and involvement of researchers at a number of institutions including Dr Piggott (then at Monash University), the Victorian Museum, the South Australian Museum, and the Australian Federal Police. In addition, we have subjected our approaches to rigorous scientific scrutiny through peer review in publication (Berry et Al 2007; Berry and Sarre 2007) and through presentations of our work at numerous scientific institutions.....*<sup>76</sup>

In replying to comments about a strategy to divide scat for analysis Dr Sarre said:-

*Dr Piggott is correct in suggesting that a good strategy would be to cut the scat in half for separate analyses if appropriate (P50). That is in fact what we do. We take a small portion of the scat for the initial screening for fox and extract DNA from that portion using a modification of the Berry et al 2007 approach. DNA from that scat is then tested for fox using our established protocol. If the scat is found to contain fox DNA, then the DNA is re-processed and sent to Dr Berry for analysis. We retain a portion of each fox scat, should re-extraction of DNA for further analysis be required, and return the remainder to the Fox Eradication Program. Any decision about whether extra effort, such as the re-extraction of DNA from the scat, should be expended to obtain genotypes rests with the Fox Eradication Program with advice from the Technical Advisory Panel. Given that the genotyping information is only relatively recent, this topic is still for discussion.*<sup>77</sup>

The Taskforce as yet haven't had scats found and identified at different times or from different locations and do acknowledge that if that happens there will be an opportunity for measuring numbers.

Dr Brothers in his submission had observed that:-

*Currently used DNA scat analyses for fox recognition may prove to be the most reliable strategy to ascertain presence, suggest population size through difference in DNA between individual scats recovered and subjecting fox DNA positive scats to prey content species identification that will assist to dispel scepticism in relation to the locality.*<sup>78</sup>

## **ERADICATION**

The Saunders Report (2006) found that the likely density of foxes in Tasmania was still at a stage where establishment was not verified and that eradication was achievable if sufficient resources were available and on the subject of eradication noted that:-

*No single control is effective against 100% of a population.....yet total effectiveness is an obvious pre-requisite for eradication..... this is not an issue in Tasmania at the*

<sup>75</sup> Government, Correspondence, 9 July 2009 Attachment 4

<sup>76</sup> Ibid, Attachment 3

<sup>77</sup> Ibid, Attachment 3

<sup>78</sup> Brothers, N Submission p 5

*moment assuming fox numbers are extremely low, are widely dispersed and hence don't constitute a breeding problem..... However if foxes are present and breeding the clock is ticking..... And the fox population will become permanently established as it did on mainland Australia within 20 years of introduction.*

A number of methods of control (and eradication) have been suggested and examined for the Tasmanian Program but most have been rejected on the basis of unsuitability for Tasmania, cost effectiveness or they are inefficient in the circumstances. Trapping is not considered especially efficient and is labour intensive although it may have some application in urban areas where 1080 cannot be used; professional shooters have reported seeing foxes but have been unable to shoot them; and fumigation of dens is not cost effective and fumigants are highly dangerous even if dens can be located.

Mr Rose addressing the subject of eradication said:-

*By active means I suggest using wildlife personnel with trained dogs to investigate areas in which foxes have been sighted and then to use any of several means to locate and remove the foxes.....I have long believed that wildlife personnel with trained dogs (to find fox scats) can produce (known) results whereas we can only hope that 1080 kills a few foxes. We can never know how effective this poison bait method really is.<sup>79</sup>*

When asked about the possibility of having a bounty scheme officially introduced, noting that Dr Obendorf has widely advertised a reward (or bounty) for a genuine Tasmanian fox shot in the State introduced, Mr Mooney considered such a scheme was unlikely to succeed. Mr Johnston said:-

*It is a valid thing for us to consider and keep considering. At this point we would say we are not in favour of it, but it's not something we can ignore for ever and a day.<sup>80</sup>*

### **Bait Program**

Sustained lethal baiting is the principal method chosen and used by the Taskforce on the basis that it is considered to be the most effective method of fox eradication for Tasmania. Since the late 1960's the poison used in baits has been sodium monofluoracetate (compound 1080) and it is used in a form usually with a meat substrate.

A carefully designed baiting program to target the fox in the Tasmanian landscape is a core activity in the Fox Eradication Program and a major portion of the funding is spent on baiting activities. The Taskforce effectively baits an area of 600,000 ha per annum. The measures and protocols which apply to the 1080 fox baiting program are as follows:-

*All 1080 import, storage, use and disposal for fox eradication purposes is strictly controlled.*

*Baits are only laid on properties with prior permission from the owners.*

*Prior warning of baiting is provided through public notification and letters to all neighbouring properties.*

*During baiting, signs are used to alert people of the specific location of baiting activities.*

<sup>79</sup> Rose, R. Submission p 2

<sup>80</sup> Johnston, A. Hansard 2 June 2009, p 33

*Bait material is a 40g piece of dried meat or a commercially prepared fox bait.*

*A standard, low dose of 1080 is used in each bait – 3 mg per bait.*

*Bait station density is approx. 10-15 per km<sup>2</sup>.*

*Baits that are not taken after 14-28 days are retrieved and disposed of under strict controls.*

*All bait station locations are recorded with a GPS and marked.*

*Baits are buried 5 – 10 cm deep to limit exposure to native carnivores and wildlife.*

*Baiting timing usually targets key periods in the fox life cycle; before mating in winter (lowest fox population); before and after whelping in spring (high food requirement for female foxes); and during dispersal in autumn (when juvenile foxes are more likely to encounter baits).*

*Baiting and its effects (especially on non-target species) are closely monitored.*

*Bait stations are excluded from buffer zones around specific landscape features, e.g. baits are not laid within 500 metres of any recreational sites.<sup>81</sup>*

When the Committee queried an unsubstantiated report of baits costing over \$1 million in 2006-07 Mr Johnston said:-

*In 2007-08, we laid 46 000 baits and they cost roughly \$1 each. In 2008-09 we laid 27 000 baits, so the figure is in the \$30-50 000 range rather than the number suggested.<sup>82</sup>*

In relation to the cost of baits Mr Mooney added:-

*I believe several times there has been an effort to assess the cost of laying a bait and retrieving it. That might add up to something more like that because that includes vehicles wages and so on, but that figure seems an awful long way from anything I have seen.<sup>83</sup>*

The Public Accounts Committee, aware there has been some criticism of slow reaction times and sluggish response in getting to an area and baiting following a credible sighting asked about the allegations. Mr Johnston noted that it was fair criticism and explained some of the delays were due to timing of scat collection and the receipt of a result, the location of the report and the resources which were available in a particular area.

Mr Whittington added:-

*It is also part of the program design. Decisions were made where we would get the most bang for buck in baiting. They are planned six to twelve months ahead to get landowner consent, organise baiting teams and mobilise staff to that part of the state. The program was designed to put considerable effort into targeted areas for baiting. The question becomes: how much you divert that planning to a reactive program?<sup>84</sup>*

Clive Marks, in his submission, questioned the validity of the bait types and the efficiency of the methods selected and used for the Program. He maintained that:-

*Repetitive control with a low diversity of approaches (i.e. using one bait type and method) is a poor strategy for attempting eradication.*

<sup>81</sup> Tasmania, Government, Submission, march 2009, p 12

<sup>82</sup> Johnston, A. Hansard, 16 September 2009, p 12

<sup>83</sup> Mooney, N. Hansard, 16 September 2009, p 12

<sup>84</sup> Whittington, J. Hansard, 16 September 2009, p 11

..... number of different bait types and dissemination techniques are essential if eradication is to be achieved. For instance, it is likely that surface baiting (opposed to buried baiting) is a far more effective method for bait disseminating.....The most viable strategy to increase baiting efficacy towards the levels required to achieve eradication is to use multiple baits of high palatability and disseminate them in different ways. Debates that focus upon promoting or justifying the use of a single bait type distract from a clear need to innovate and improve fox control technologies.

Past studies do not support the use of Foxoff alone, especially disseminated from bait stations, as a method with good potential to eradicate an established fox population.<sup>85</sup>

and:-

*The ongoing promotion of a single bait delivery system (Foxoff) is a questionable policy that I do not believe has a scientifically compelling basis.*

*An independent review and an analysis of competition policy should ensure that public investment is driven by public interest – and that science is not held captive by parochial and short-term interests.<sup>86</sup>*

The Strategic Survey of the State described earlier is expected to provide more effective targeting of the eradication effort but until the survey is completed, results collated and studied then any evidence of eradication is difficult to estimate.

Mr Mooney made the observation that:-

*Where and when we have baited we have driven a number of evidence indices down. If we relate our material evidence to the amount of baiting we are doing, there a good inverse relationship. I have graphs that can show that.<sup>87</sup>*

Mr Oldfield told the Committee:-

*...I only know of two farmers who have expressed concerns and one of those was really saying, 'I think aerial baiting would be better than burying 1080 baits.....Farmers still maintain the position that 1080 is effective in a range of controls. So we do support the use of 1080, but clearly under controlled circumstances. But, in the main, those farmers who have been approached have been happy to have their properties used for 1080 baiting.'<sup>88</sup>*

### **Effect on Other Animals**

There is concern in the community about the use of 1080 and the detrimental effect it may have on non-target species and animal welfare generally. Tasmania has abundant and widespread native fauna but the possibility of fox establishment and the impact of devil facial tumour disease is already very damaging.

The Taskforce reported that the targeted use of 1080 poison is very different to damaging broad-scale baiting programs. The delivery strategy is designed to maximise risk to foxes but minimise risk to other animals. Strategies adopted by the Taskforce include:

*.....consideration of placement of baits so non-target are less likely to discover them; the use of tough dried meat baits; the use of large baits containing precisely determined low but lethal doses of 1080 for foxes (3mg per bait); wide dispersal of*

<sup>85</sup> Marks, C. Submission p 2, 3

<sup>86</sup> Ibid, p 4

<sup>87</sup> Mooney, N. Hansard, 2 June 2009, p 33

<sup>88</sup> Oldfield, C Hansard, 2 June 2009, p 2

*baits to minimise caching by foxes; the burying of baits to reduce exposure to non-target species; and the removal of uneaten baits.*<sup>89</sup>

The Committee asked if there had been any other native animals found near baiting stations and if there was any evidence that baiting has killed other animals to which Mr Mooney responded:-

*No, there is no evidence of it. What I have done is study populations before and after baiting at baited sites and controlled sites of the obvious suspects and we could find no difference whatsoever between control sites and baited sites.*<sup>90</sup>

He later noted that there was some evidence of baits being eaten and:-

*There are some species that have an oddly high susceptibility – almost an aberration – to 1080 and if they take baits they could be killed, but that is different to an impact on a population.*<sup>91</sup>

Ms O'Connor in her submission spoke of the concern for native animals and potential devastation if foxes were to become established. With reference to the baiting program she said:-

*The Tasmanian Greens do not support the use of 1080 in forestry and agricultural practices ..... However, in the absence of an effective alternative, the Tasmanian Greens support the use of 1080 for the eradication of foxes.*<sup>92</sup>

## **COMMUNITY ENGAGEMENT**

As reported earlier the support and confidence of the community is crucial and the Taskforce is aware that successful communication to engender understanding and support is a vital and necessary element to the success of their work. Community engagement and the participation of the public in the Fox Eradication Program is paramount to its ongoing success. With such a serious issue it is very important to have a fully supportive community. A number of submissions commented on the negative divisive effect of a doubting public and negative media reporting.

The Tasmanian Greens noted that it is an:-

*.... ongoing requirement for the Program to ensure that members of the community understand the impact of foxes on Tasmania's biodiversity, industries and image; ....*<sup>93</sup>

The Committee heard comments like 'community engagement needs to be overhauled'; 'a major public rift has developed between the Taskforce and some elements of the community;'; 'there is a communication breakdown;'; 'public education is ineffective;'; and so on.

Dr Doran commented on the fact that:-

*There is poor public recognition of the operational constraints and challenges faced by the Taskforce, .....*<sup>94</sup>

The Tasmanian Conservation Trust expressed their concerns over public perception and Tim Bloomfield also said:-

<sup>89</sup> Tasmania. Government, Submission March 2009, p 44

<sup>90</sup> Mooney, N. Hansard, 2 June 2009, p 36

<sup>91</sup> Ibid

<sup>92</sup> Tasmanian Greens, Submission p 4

<sup>93</sup> Ibid, p 5

<sup>94</sup> Doran, Dr N Submission p 3

the waste of taxpayers dollars comes from the negative impact they have on community debate and understanding. The hardened fox sceptics simplify what are complex interactions of an invasive species in a new ecosystem.<sup>95</sup>

The Government Submission stated:-

*in planning for the project it was clearly recognised that success of the program would rely on effective community engagement and communication with the objective of raising awareness and gaining access to land for baiting and monitoring. ....The Management Committee and Stakeholder Reference Committee have endorsed a separate Communications Plan.*<sup>96</sup>

The Government advised that the following activities that had been undertaken by the Taskforce to develop a better understanding and appreciation of the extent of the Program, its importance and scope include:-

*Attendance and information displays at key community events; Website revised and regularly updated; Regular program updates newspapers etc; Presentations to community and stakeholder groups; Brochures note sheets promotional resources; Experiential learning opportunities provided – viewing of program field operations; Brochures note-sheets and promotional resources produced and distributed.*<sup>97</sup>

The Public Accounts Committee, mindful of the impact negative media and false reporting has on resources and staff, asked the Secretary whether additional legal enforcement measures was need to deal with deliberate public misinformation and tomfoolery?

Mr Evans considered that he thought the situation could be addressed without legislative reform, that such measures would be inappropriate and counter productive to the program. He said:-

*We put an enormous amount of effort into education, public awareness, working with landowners and so on to ensure that the community and particularly the stakeholders, landowners and the like, take the program seriously.*<sup>98</sup>

Mr Johnston later commented that:-

*We probably do not want to overplay this issue of community support. We get fantastic community support, both in terms of landowner access and also in terms of information to us. We actually believe that we have made giant strides in terms of community support.*<sup>99</sup>

When the Tasmanian Farmers and Graziers Association were asked about their interaction and contact with the Taskforce and what efforts were made to assist the Taskforce Mr Oldfield said:-

*We were encouraged by the department a few weeks ago to make some public statements. Whilst we have had the Fox Task Force coming to see the board and our Game Management Committee, they do keep in touch with me on a regular basis.....I do not think they really have received a lot of credit for what they have done. .... We do want to be seen to be supporting them so we would actively*

<sup>95</sup> Bloomfield, T. Submission p 2

<sup>96</sup> Tasmania, Government, Submission p

<sup>97</sup> Ibid, p 22

<sup>98</sup> Evans, K Hansard, 25 May 2009, p 24

<sup>99</sup> Johnston, A. Hansard, 2 June 2009, p 16

*encourage our members to support them. I would be disappointed if someone was not.*<sup>100</sup>

Mr Oldfield thought that the Taskforce needed to communicate better with a broader constituency, that he thought there was a degree of scepticism and that his organisation was experienced in communication.

He suggested that:-

*You either have to accept there is an organised conspiracy or that there are foxes: to me that is quite a compelling argument. I have not seen that argument run publicly. It has to be one or the other. I would like to see that message put a little bit more strongly, not just talking about the fact they have found scats or whatever but making people think that there are one or two things going on here.*

*Get the message right first of all and then get that message out there - .....<sup>101</sup>*

Two surveys have been conducted to assess stakeholder and community attitudes to the Program and the performance of the Taskforce. The findings of the most recent survey initiated by the IACRC showed:-

*.....that public opinion among Tasmanians surveyed was overwhelmingly and vehemently opposed to the presence of foxes and identified a high public expectation that there will be action by the authorities, scientists and others to remove them and prevent future immigration into the state.*<sup>102</sup>

The survey also found that:-

*.....there is strong interest among Tasmanians in the issue.....there is likely to be strong support for measures taken to exclude or remove foxes.....there is firm support for an increase in resources..... and to be kept informed on the activities of the program.*

## **ROLE OF VOLUNTEERS**

Mr Tim Bloomfield, the fox consultant who wrote the 2002 Fox Free Tasmania Program Review suggested in his submission that community participation and the assistance of community volunteers should be part of the direction for the future. In the 2002 Report his recommendations included the following:-

*Private landholders would apply for, lay and check the 1080 poison baits....*

*.....The Task Force alone and with special interest groups (hunters/naturalist) would apply integrated control activities (monitoring/hunting/sentinel trapping/den destruction etc.) once freed up from the demands of physically baiting every property in the hotspots and adjoining areas.*

*.....Proactively seek involvement of all landholders in being fox aware and playing an active role in achieving a fox free Tasmania<sup>103</sup>*

Dr Obendorf also commented on the use of volunteers:-

*There are a number of examples where I have been approached by members of the public saying, 'I have come with expertise with foxes in Victoria and I have offered myself as a paid contractor or as a volunteer and I have been told, "Don't call us, we'll call you"', and this sort of fob-off is a sense of saying if you can't use the*

<sup>100</sup> Oldfield, C. Hansard, 2 June 2009 p 4

<sup>101</sup> Ibid, p 5

<sup>102</sup> Tasmania. Government, Submission March 09 p 39

<sup>103</sup> Bloomfield, T Fox Free Tasmania Program Review, 2002, p 12, 15

*expertise that people might have to assist you, then what are you going on to assist this program?*<sup>104</sup>

The Committee were interested in the views of the Department and were informed of some of the drawbacks and difficulties in recruiting and managing volunteers. Mr Mooney offered one explanation of the dilemma when designing and managing this type of program:-

*If you have the resources – and it is not always money - I would offer the opinion that resources are an enthusiastic, trusting community. If you don't have a trusting community – with our scat surveys we think, 'We could probably use hundreds of volunteers but who can we trust?' We are already distrusted ourselves, so it doesn't encourage you to take a chance with an unknown person saying, 'look what I've found'. The reality of using volunteers for evidence that you may have to argue on some sort of forensic level is obvious.....I would love to be in a situation where we had an enthusiastic, trusting community that said, 'We really want to find out what's going on so let's get on with it'. We have the oddest situation – and it is not out of school for me to discuss it – we have a landowner with fox-positive scats from his property and he won't let us on to bait. That is essentially setting yourselves up for failure. It is like having a fox reserve in the middle of the baited area.*<sup>105</sup>

Mr Whittington made the following observation about the difficulties encountered in using volunteers:-

*Whilst we are very grateful for volunteer effort it comes at quite a cost in managing OH&S for volunteers. There are certain tasks that are not well suited to volunteers for all sorts of reasons – like training and competency required. It is a difficult balancing act to find attractive tasks for volunteers but not to spend more money managing the volunteers than it would cost to implement the program itself. This is the bind we find ourselves in”.....*<sup>106</sup>

Mr Johnston, Manager of the Fox Eradication Branch added:-

*We have used volunteers as part of the scats survey. It has not been enormously successful in getting large numbers involved. There is a range of reasons for that, such as finding people who can give a reasonable amount of time to be away at remote places. Last year we had about 10 people for varying periods from a few days to a few weeks.....One of the things we need to do better is accessing that pool of volunteers to enable us to do some of those things. At this point I do not have the answers.....*<sup>107</sup>

## **ACCESS TO LAND**

From the inception of the program the Government have sought and generally gained the voluntary cooperation and support of land owners and up to the present time have considered that approach to be quite successful.

The current legislative provisions which apply to the activities of the Taskforce include authority to access land<sup>108</sup> if there is reason to believe that a fox is present and permission to destroy<sup>109</sup> but only after a notice of intent had been served.

<sup>104</sup> Obendorf, Dr D. Hansard, 2 November 2009 p 10

<sup>105</sup> Mooney, N. Hansard, 2 June 2009, p 44

<sup>106</sup> Whittington, J. Hansard, 16 September 2009, p 5

<sup>107</sup> Johnston, A. Hansard, 16 September 2009, p 7

<sup>108</sup> Nature Conservation Act S32

<sup>109</sup> Vermin Control Act 2000

The Committee asked the TFGA about the number of occasions the Taskforce had not been welcomed into a farming property and the number of knock-backs they were aware of. It became evident that access to property and the attitude of landowners was dependent to a large degree on the activity the Taskforce was proposing. The TFGA said:-

*Issues of access to private land are always going to be complicated issues. Our basic position as a starting point, on all these occasions, is that we like to have the landowner in agreement that someone is working on his land..... I am not aware, perhaps with one possible exception, of anyone who has not had access because I think the understanding is the devastation that foxes cause.<sup>110</sup>*

The Government noted the following in their submission:-

When the need to enter private land is for the purpose of searching for evidence there are few problems and land owners are, in the main, cooperative. When the request is 'to bait' the response from some landowners has been less enthusiastic and less cooperative. It was reported in the submission that:-

*There have been many situations where baiting programs have been undertaken in a region but access to particular properties has been denied or delayed. The effects of these situations have been minimised wherever possible by gaining permission to bait on adjoining and surrounding properties or postponing baiting programs. The effectiveness of such situations is not optimal in an already difficult eradication task because it results in non-baited areas throughout the landscape where foxes may exist but not be exposed to baits and/or baiting activities being undertaken when the chances of a fox consuming a bait are reduced.*

*The reasons for landowners refusing permission or delaying permission include not wanting 1080 laid on their land; not wanting government employees on their property; disbelief that there is a fox issue; baiting will disturb lambing; and deer shooters have access to the property.<sup>111</sup>*

Mr Johnston elaborated saying that it would only be in the range of 5-10% of land owners who would not allow access for baiting purposes. For monitoring purposes, he indicated that subject to confirmation he believed that there had not been any or possibly only one or two rejections and he considered that it wasn't a significant issue in rural areas. In the case of baiting he said "baiting is the slightly more contentious bit because it involves the use of 1080."<sup>112</sup>

The Committee were told that there could be a time in the future when it will be necessary to access land in urban areas as scat evidence suggests a fox presence in some urban environments, notably the Burnie area. In such areas there are special safety issues including baiting distance requirements with the use of 1080 poison.

When asked whether the Government and the Taskforce believed that there are inadequacies in our laws, where, for example, officers might need to go on to properties without permission the Committee were told they often debated the issue. The Manager of the Taskforce expressed the view that as long as baiting was possible around a property then it would probably be adequate for access to most foxes.

<sup>110</sup> Oldfield, C. Hansard, 2 June 2009, p 3

<sup>111</sup> Tasmania. Government, Submission, March 2009 p 50

<sup>112</sup> Johnston, A Hansard, 2 June 2009, p 29

Professor Peacock highlighted the same issue in relation to targeting a fox sighting, collecting evidence and then baiting in the urban environment. To ensure access without permission increased statutory powers are required and that is a policy matter for Government.

The Committee queried the Taskforce further:-

*If we are serious about this whole thing, why have not approaches been made to give the Fox Eradication Branch the right to enter any property where it is believed foxes could be living or could be seen? Why haven't we moved in that direction? It seems to me that this is a serious matter. Why should a farmer in this State have the right to stop you coming onto his or her property if there are foxes on it?*<sup>113</sup>

Mr Johnston replied:-

*I guess our response at this stage would be that the cooperation from landowners has been excellent..... One is that one of the problems we are going to confront is that while we have tremendous landowner support, we need that landowner support to continue on into the future and that will probably get harder and harder to do..... We potentially have an issue in more urban areas..... That creates a different set of circumstances in terms of dealing with landowners and so forth.*<sup>114</sup>

Mr Brothers in his submission was supportive of the necessity for increased statutory powers:-

*Unless eradication campaigns have unrestricted land access in Tasmania efforts will be highly inefficient and potentially never successful. Avenues must be explored to prevent there being any land access impediments. This may take the form of specific legislation.....*<sup>115</sup>

Dr Obendorf also stressed that:-

*Finally, absolutely necessary is enacting special legislation to support the eradication of foxes across all of Tasmanian land tenures..... If this was a major animal health disease – a list A disease – there would be statute that said, irrespective of land tenure, we have the capacity to come in, inspect, monitor, set up exclusion control areas, define a measure of control, impound animals, slaughter animals, vaccinate animals or whatever. With foxes it is arbitrary at the present moment.*<sup>116</sup>

The matter of access to all land particularly for baiting programs is one that was also addressed by Landcare, New Zealand in their review.

## **BIOSECURITY**

Biosecurity is a core objective of the Fox Eradication Program. The Government submission described the challenges encountered when designing and managing biosecurity measures to protect the State. Those challenges include size, geography, a distributed population and multiple entry points. It is not hard to imagine the risk - there is an extensive coast line, the population is relatively small, there are multiple destinations for entry pathways – commercial ports, small harbours, large and small airports, manned and unmanned aerodromes and private airstrips – and these, combined with the different types of aircraft activity, recreational and commercial

<sup>113</sup> Dean, Hansard, 25 May 2009, p 26

<sup>114</sup> Johnston, A. Hansard, 25 May 2009 p 26

<sup>115</sup> Brothers, Submission p 3

<sup>116</sup> Obendorf, Dr, D. Hansard 25 May 2009, p 5, 6

sailing and yachting and the variety of commercial shipping all increase the potential for a breach of any quarantine barrier measure that is in place. The Government stated:-

*Tasmania, as Australia's only island state faces the same spectrum of challenges to successfully manage its quarantine barrier as does its much larger mainland counterpart. The principal difference is scale.....<sup>117</sup>*

In 2002 Dr Obendorf was commissioned by the Tasmanian Government to prepare a report on Tasmania's Preparedness & Response to outbreaks of significant animal diseases. Dr Obendorf's submission to this Inquiry said his Report contained 33 recommendations which were all accepted and implemented. The Report:-

*.....covers the operational effectiveness of the current human and capital infrastructure deployed against new and emerging microbiological & pathological threats to Tasmania's animal populations, however, it was, I believe, equally applicable to the processes required to counter a macro-organism threat such as the introduction of the European Red Fox (*Vulpes vulpes*). The Review Report drew heavily in the Import Risk Assessment (IRA) proactive strategies to prevent incursions of unwanted exotic organism – quarantine measures, pre-embarkation procedures and on-ground monitoring & surveillance.<sup>118</sup>*

In his evidence to the Committee Dr Obendorf also noted that in 2005 he had given substantial oral and written evidence relating to the significant incursion risks based on the 'hotspots' to an Inquiry undertaken by the Invasive Animals CRC in conjunction with DPIW.

The Department of Primary Industries and Water conducted a further risk review for foxes in March 2008. The Report titled Import Risk Analysis of Fox Entry Pathways into Tasmania was provided to the Committee. The Government described the Review saying:-

*This Risk review was informed by contemporary Import Risk Analysis method which provides a scientifically credible transparent foundation for policy decisions about quarantine measures. The Review comprehensively examined all potential fox entry pathways, assessed the risk from each and provided risk reduction measures that could be taken to reduce the chance of immigration occurring.<sup>119</sup>*

It is generally acknowledged that biosecurity is extremely important and especially so for possible impact to the Fox Eradication program. Professor Peacock told the Committee:-

*I think one of the things that does not get much publicity or knowledge in the program is that a major review of biosecurity was undertaken. I think there is a 30-page report lodged on the web site, there has been a lot of training of people associated with the biosecurity and that includes the Port of Melbourne which is the most likely place that a fox could inadvertently come to Tasmania from.<sup>120</sup>*

The Taskforce told the Committee that they were continuing to take steps to improve biosecurity and were working to implement the recommendations of the Import Risk Analysis. To date there has been joint Taskforce and Quarantine Tasmania education activities with Port of Melbourne dockworkers including TT staff; highly visible

<sup>117</sup> Tasmania. Government, Submission, p 33

<sup>118</sup> Obendorf, Dr D. Submission p1

<sup>119</sup> Tasmania. Government Submission, P 33

<sup>120</sup> Peacock, Professor T. Hansard, 14 August 2009, p 8

signage promoting fox risk had been installed in the Port of Melbourne area including at Station pier; and there had been targeted education of hunters and shooters including awareness of restrictions on import of foxes and fox products. The Taskforce is also collaborating with Quarantine Tasmania on a regular basis to increase community awareness and education both within the State and at mainland port operations and to reduce the fox incursion risk.

The Committee asked Mr Oldfield representing the Tasmanian Farmers and Graziers Association about biosecurity at the potential entry points and he agreed that it was a critical aspect of the Program and offered the suggestion that in relation to shipping that passengers and freight carters quarantine checks should be done in Melbourne before boarding the boat:-

*You have the vehicle checked in Melbourne. You lift the on-the-spot fines getting off the ferry to something into the thousands, not the hundreds.....<sup>121</sup>*

The Tasmanian Greens stressed that:-

*Measures to eradicate foxes from Tasmania will be in vain if we fail to protect our borders from the future introduction of more foxes. Biosecurity, particularly around Tasmania's major ports, should be a high priority of both the Program and the Tasmanian Government..... Tasmania needs a more strategic approach to biosecurity imperatives.<sup>122</sup>*

Dr Sarah Jennings, School of Economics and Finance, University of Tasmania gave evidence to the Committee in relation to the costs of biosecurity said:-

*If you were to spend an extra \$50,000 a year on border control to prevent another fox entering what would happen to the probability of another fox entry. I do not know the answer..... you would never agree to spending enough on border control to prevent another fox entering because once again you would spend most of the State's product on that. You have to acknowledge that there will always be a positive risk of new incursions however much you spend.<sup>123</sup>*

## **RESEARCH AND DEVELOPMENT**

There is a great need to gain a better understanding of what species are at greatest risk, what the population of the at-risk species are and whether that population is increasing or declining, in which areas any changes are occurring and at what rate. Quality on going research underpins and supports activities of the Fox Program with the funding shared between the State and Australian Governments.

The Bloomfield Report (2002) made a number of recommendations in relation to research some of which were tried and not found to be successful but as with all projects which are new, trial and error is an important part of the learning process.

The Management Committee and Technical Advisory Panel endorsed the current Research Plan and the Program and the activities of the Taskforce are based on the best available information which can for the most part be derived from timely, accurate research and the interpretation of all the data collection.

<sup>121</sup> Oldfield, C. Hansard, 2 June 2009, p9

<sup>122</sup> Tasmanian Greens, Submission, p 7

<sup>123</sup> Jennings, Dr S. Hansard, 7 October 2009 p 8

The Tasmanian Conservation Trust stressed the need for providing more funds for research given the urgent need to assess and trial every possible method of finding and eradicating foxes. Two areas of research which currently rate a high priority are the development of an in-field scat analysis kit and finding an alternative to 1080 poison.

## **REPORTING**

The Taskforce provides Status Reports to the Management Committee at each of their quarterly meetings. The reports give progress updates in the areas of Project Management; Strategic Monitoring; Tactical Response/Investigations; Community Engagement; Research and Development; Biosecurity and Budget. In addition, Fox Program activities and performance measures are reported in the Department's Annual Report and the Government's Budget Papers although it should be noted these reports while giving descriptions of activities do not provide very much detail about revenue and expenditure.

The Fox Eradication Program complies with the reporting requirements and payment prerequisites of its funding bodies and governance structure. Funding Commonwealth Government financial agreements have commonly required quarterly financial reports plus six and twelve monthly progress reports addressing outcomes and identified measurable improvements against each funded segment or activity.

In 2004 the Fox Taskforce also provided a report to the Natural Resource Management Ministerial Council (NRMMC)'s Biodiversity Decline Working Group with an 'Evaluation of Program Effectiveness.' This document described the outcomes sought by the Program, reported against the achievement of outcomes and identified measurable improvements.

The Taskforce also regularly reports to the public by means of the Internet – details are updated regularly and the public kept informed about sightings, evidence and activities.

## **FINDINGS - THE OPERATIONS OF THE FOX TASKFORCE**

### **The Committee Finds That:-**

- 1. The evidence before the Committee demonstrates that for the purpose of public policy the fox has established a presence in Tasmania.**
- 2. There is sufficient evidence to suggest that there are foxes in Tasmania in limited numbers and at low density.**
- 3. Foxes are capable of successful colonisation through breeding, however the Committee was not presented with evidence that this was occurring.**
- 4. Foxes pose one of the greatest known threats to Tasmania's endangered, vulnerable and rare wildlife species and if foxes colonise in Tasmania the cost to the State's biodiversity and economy would be catastrophic.**
- 5. The future of at least 24 native species is threatened and at-risk, if foxes were to become established.**
- 6. Failure to implement an effective eradication program will require the reversion to a containment program which has the inherent risk of failure. The risks associated with a containment program are obvious and are therefore unacceptable.**
- 7. The Government is committed to the Fox Eradication Program but the Program has suffered significant funding and budget cuts.**
- 8. The organisation of the Fox Eradication Program allows for optimum input from a variety of dedicated professional and community stakeholders.**
- 9. Nothing presented to the Committee suggested that the officers of the Department and members of the Taskforce, who have a complex role, undertake their duties and responsibilities with anything other than due care and professionalism.**
- 10. Regular reviews of the Fox Eradication Program provide valuable professional advice and future directions.**
- 11. Procedures for responding to reported fox sightings have been refined and improved since the commencement of the Fox Eradication Program.**
- 12. One focus of the Fox Eradication Program has included substantiating a fox presence.**
- 13. Critics and sceptics who solely base their comments on hearsay and conspiracy are a serious distraction and impediment to the work of the Fox Eradication Program.**
- 14. Public confidence in the efforts of the Fox Eradication Program has not**

been enhanced by apparent factual discrepancies relating to some fox carcass discoveries.

**15. The scientific evidence reveals that fox scats have been found in various locations around Tasmania and this should be considered as persuasive evidence of foxes in Tasmania as it is highly improbable that a person or persons are importing and spreading fox scats throughout Tasmania.**

**16. The techniques and scientific procedures for testing of scats and the subsequent DNA analysis of positive scats are subject to robust academic oversight and approval by the Technical Committee which reports to the Management Committee.**

**17. The use of 1080 for fox baiting is supported but there is a need to investigate other forms of poisoning.**

**18. Different strategies will be required if baiting becomes necessary in urban areas.**

**19. There are robust strategies for the choice of baiting practices and baiting products which are used to minimise any adverse consequences for native wildlife.**

**20. The on going development of comprehensive data bases about ‘at-risk, endangered and vulnerable species’ is an added benefit resulting from the investigations and scat surveys by the Taskforce.**

**21. The cost and issues involved in the training of volunteers has resulted in limited use of volunteers.**

**22. Problems relating to access to some land has restricted the work of the Taskforce. The Fox Eradication Program requires reasonable access to all public and private land in Tasmania to carry out its work in the best possible way.**

**23. Whatever biosecurity measures are put in place there will always be ways to circumvent and flout controls if there is an intent to do so. Penalties must reflect the seriousness of any breaches.**

**24. The Committee supports the work of the Taskforce and Quarantine Tasmania to minimise the risk of fox entry into Tasmania.**

## THE COSTS OF THE FOX ERADICATION PROGRAM

Since 2002-2001 funding for the Fox Task Force (2001/02 to 2006/07) and the Fox Eradication Branch (2007/08 onwards) has been provided by the Tasmanian and Australian Governments.

In 2006, following the finding of the Glen Esk fox and in line with the recommendations of the IACRC Review:-

*...the State Government announced that it was committing to managing a ten year, \$56 million plan to continue attempts to eradicate foxes from the State.....Funding was to be shared by the State and Australian Governments. The State's commitment of \$2.53M per year over ten years (in addition to \$600,000 until end 09/10) has been substantially matched by the Australian Government in 2006/07 and 2007/08.<sup>124</sup>*

The provision of adequate funding for resourcing underpins the progress and success of most initiatives of this type. The Committee were told that if funding was sufficient in the early stages when there is less evidence of damage the impact of eradication and successes are likely to be greater and will prevent a situation developing where the probability of eradication is low and the ultimate cost of containment would come at a much greater cost both economically and environmentally.

The Tasmanian Greens summed up the matter of cost of the Program as a “*financial burden or investment in the future?*”<sup>125</sup>

### FUNDING - TASMANIAN GOVERNMENT

The following tables and excerpts from the Tasmanian Government submission summarise the Budget allocations, the expenditure by the Government.

*Total Tasmanian Government Budget Allocations*

Year	Total Budget Allocation (\$'000)
2001-02	611
2002-03	1 200
2003-04	1 200
2004-05	1 040
2005-06	1 040
2006-07	723
2007-08	3 130
2008-09	3 130

*Note: includes budget adjustments such as requests for additional funds, funds carried forward and internal reallocation of Agency resources.<sup>126</sup>*

The table below shows the annual expenditure by the Tasmanian Government.

*Expenditure of Tasmanian Government funds*

Year	Expenditure (\$'000)
2001-02	696
2002-03	1 195

<sup>124</sup> Tasmania. Government, Correspondence, April 2009.

<sup>125</sup> Tasmanian Greens, Submission, p 5

<sup>126</sup> Tasmania. Government, Submission April 2009

2003-04	1 223
2004-05	1 026
2005-06	887
2006-07	833
2007-08	3 078
2008-09	1 598 (6months July-Dec)

The following table provides details of the breakdown of Tasmanian Government expenditure by categories.

*Breakdown of Expenditure of Tasmanian Government funds (\$'000)*

	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09 (6 months)
Staffing	331	850	732	669	400	455	1359	933
Equipment		2	31	15	9	2	89	41
Vehicle costs	50	148	188	196	134	151	293	170
Consultants/ Contractors		22			144		160	23
Communications/ Computing	2	27	30	27	28	56	198	95
Travel	1	50	49	45	38	55	278	101
Office supplies	<1	2	3	4	9	23	23	26
Field supplies	311	70	158	41	100	59	134	50
Other	<1	24	32	29	25	33	100	94
Assets							444	66
TOTAL	696	1 195	1 223	1 026	887	883	3 078	1 598

*Notes:*

*Staffing: includes salaries, superannuation contributions, payroll tax, long service leave, overtime, and allowances*

*Vehicles: includes lease costs, fuel, maintenance*

*Communications/Computing: includes telephone, fax, computer hardware, network costs*

*Travel: includes intrastate and interstate travel*

*Field supplies: includes uniforms, protective clothing, baits, baiting supplies*

*Other: includes recruitment costs, training, office rental, power, freight, advertising, marketing and printing*

*Assets: includes accommodation facilities<sup>127</sup>*

The budget allocations in the Project Business Plan 2007-09 are listed according to the program activity. The Committee notes however that the breakdown of actual expenditure in the table above is by type of expense and not by Taskforce function so any analysis or measurement of each Taskforce activity or function could not be further assessed.

<sup>127</sup> Tasmania. Government, Submission, March 2009

It is noted that subsequent to the writing of this Report, Questions were asked in the Legislative Council<sup>128</sup> by Mr *Dean* about the quantity of firearms, their storage and the amount of ammunition held by the Taskforce. The Government provided a very detailed response which is available in the Hansard transcripts. The Committee are not in a position to comment on the answers provided by the Government.

## FUNDING - COMMONWEALTH GOVERNMENT

As reported earlier the Commonwealth Government have contributed funding for the Fox Eradication Program. The funds are allocated according to a Commonwealth-State Agreement and unlike the State Government Funding it is not on the basis of long term commitment. The most recent agreement was in February 2009 and the Tasmanian Government reported that they are in negotiation about the future of the Commonwealth Government's contribution. Mr Johnston said:-

*As you know we are partly State and partly Federal Government-funded. We are seeking funding for an additional four years, the time frame of that program and at this stage we are still waiting for feedback from the Commonwealth Minister on what their future funding for the program will be.*<sup>129</sup>

In all the negotiations and discussions Tasmania has:-

*.....tried to stress to the Commonwealth with this program is that it is a national issue, it is not a Tasmanian issue. From a wildlife perspective, the species that we are trying to protect from this threat are species that are put in incredible peril on the mainland.*<sup>130</sup>

The table below provides details of the allocation of funds by the Australian Government to date.

Funding Agreement	Funding Allocation (\$'000)	Date of agreement
Stage 1	400	June 2002
Stage 2	400	March 2004
Stage 3	472	May 2006
Stage 4	1 840	June 2007
Stage 4(a)	1 610	October 2007
Stage 5	980	February 2009

Mr Bloomfield observed that the Commonwealth allocation at \$400,000 when it had been expected that the Commonwealth would match the States budget at the beginning of the Program was an inadequate contribution that compromised the ability and confidence in achieving a fox free Tasmania. In his submission to the Committee in 2009 Bloomfield quoted parts of the preamble his 2002 Report saying:-

*The fox budget was always inadequate after EA/Canberra failed to put in their share.....There is no room for bargaining with the dollars or resources. Future generations, perhaps even this one will not ask how much the program costs but why was it, or why was it not successful. This issue is not about money, it never is, and today's dollar values will look miniscule in 50 years and unimportant in 100 years.*

<sup>128</sup> Legislative Council, Hansard, 10 and 19 November 2009

<sup>129</sup> Johnston, A. Hansard, 25 May 2009, p 12

<sup>130</sup> Whittington, J. Hansard, 2 June 2009, p 23

*What will stand, what will be remembered is the commitment from all levels of government.*

and then:-

*Currently, March 2009, the projections that were made in 2002 have become a stark reality with more evidence of low level fox population that is probably kept in check by human predation efforts (baiting).<sup>131</sup>*

By September 2009 when the Taskforce appeared before the Committee again they were able to provide an update on the matter of the Commonwealth funding contribution:-

*On 7 September Minister Llewellyn received a response from Minister Garrett. It is fair to say we did not get a lot of joy out of that letter.....he was not prepared to review the funding, but he did open the door to a follow-up from the State in light of the Landcare review. So Minister Llewellyn is planning to go back to Minister Garrett.....with a new approach to the question of funding..... The Minister is obviously going to pursue that fairly aggressively.<sup>132</sup>*

When the Committee asked about the reduction in funding Mr Evans replied:-

*We had funds available in 2008-09 of \$2.53 million from the Commonwealth and we have had funding of \$1 million confirmed for the current financial year, so it is \$1.53 million or about 25 per cent of the overall funds available to the program.....*

*...We are working through that at the moment but we are going to have to scale back and set priorities. In terms of implementing the Landcare review, we are not going to be able to implement that at the speed we would have with the increased level of funding.<sup>133</sup>*

Mr Johnston added:-

*We cannot walk away from the fact that it will have an impact if we convert it to staff numbers. ....So quite clearly it does have an impact ..... ultimately it will mean that we cannot deliver the plans that we want to put in place to implement that review at the rate .....<sup>134</sup>*

The Committee noted that in a response to a Question in Federal Parliament Minister Wong said that she had been informed that it was not correct that Australian Government funding had been reduced. The Committee questioned the Tasmanian Government and asked for an explanation about the different versions of the funding issue. Mr Whittington had been closely involved in the discussion and negotiation about funding and explained to the Committee that it was important to look at the history of the funding and agreements. He acknowledged that Minister's Wong's statement was technically correct but, because of a late confirmation of Commonwealth Government funding in 2007 there had been a carry over of funds into 2008-09. The amount that was carried over (unspent) if added to the funds agreed for the current financial year gives the \$2.53 million that was requested for 2008-09. There was no carry over of funds into 2009-10 so the Taskforce have roughly \$1.5m less in the current financial year.

Mr Whittington told the Committee that the Commonwealth Government were fully informed of the carry over of funding.

<sup>131</sup> Bloomfield, T. Submission p 2

<sup>132</sup> Evans, K. Hansard, 16 September 2009, p 1

<sup>133</sup> Ibid

<sup>134</sup> Johnston, A. Hansard, 16 September 2009, p 2



*Not all the costs of Project 9.D.s Genotyping facility should be attributed to the fox eradication program in Tasmania. However, the bulk of the work of this facility over the period is involved in the program.<sup>138</sup>*

Professor Peacock made the point that the funding provided by his organisation along with Commonwealth funding has been highly effective in leveraging Tasmanian Government funds.

## **CONSULTANTS AND CONTRACTORS**

The following is a list of contractors and consultants used by the Taskforce.

2002-03:

*Review of Fox Free Tasmania Program, J E Kinnear \$21 798*

2005-06:

*DNA Analysis of samples, University of Canberra \$51 611*

*Baiting, a total of \$138,026 was paid to contract baiters Statewide Forest Services, Woodstock Forest Service and to Bernard do Boer Pty Ltd.*

*During 2005-06 \$92 647 was state funds.*

2007-08:

*Supply of scat detector dogs \$10 000, Pet Resorts Australia (Steve Austin.)*

*DNA Analysis of samples, University of Canberra \$130,216*

*Analysis of detection data, Arthur Rylah Institute, Dept. of Sustainability and Environment Victoria \$5500*

*(Initially a 1 year contract to analyse data but will extend over 2 years – total value of contract \$44 000)*

*Genetic analysis of Eastern Barred Bandicoot & Bettong samples, Cesar Consultants Pty Ltd \$7200*

*Project Management Quality Assurance – Department of Premier and Cabinet \$4580*

2008-09

*Genetic analysis of Eastern Barred Bandicoot & Bettong samples, Cesar Consultants Pty Ltd \$5560*

*Genetic analysis of quoll samples, M Cardoso \$1000*

*Statistical advice for at-risk monitoring project, Proteus Research and Consulting Ltd, \$5000*

*(1 year contract – total value of contract \$15 000)*

*Supply of mounted animals, \$4700, Freeze Drying and Taxidermy Services<sup>139</sup>*

## **STAFFING**

The project is now conducted by a branch operating within the Department of Primary Industries, Parks Water and the Environment (DIPIPWE) and the staff numbers since 2001 have been:-

Year	Average FTEs
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<sup>138</sup> Invasive Animals Research Centre, Submission, p3

<sup>139</sup> Tasmania. Government, Correspondence, April 2009

2001-02	6 *
2002-03	15.4
2003-04	14.8
2004-05	14.5
2005-06	8.9
2006-07	10.2
2007-08 (as at 31 Dec)	39.4
2008-09 (as at 31 Dec)	54

*\*As reported earlier the origin of the Fox Eradication Program was mid 2001. It began as a seconded group of the Parks and Wildlife Service officers with input from the Nature Conservation Branch. The Committee were advised that producing accurate retrospective staff allocation was not possible so an estimation based on a breakdown of expenditure for 2001-02 has been used in the table.<sup>140</sup>*

Recently there have been changes in the administration of Tasmanian Government Departments. These changes have necessitated, by an internal process, a reduction in the Department's staffing levels. The staff of the Fox Eradication Branch have not been protected in this process and combined with less Commonwealth funding than anticipated, a need to adjust or re-locate staff as a result of the administrative changes and necessary planning to implement the recommendations of the Landcare report means there will be changes. With the uncertainty of future Commonwealth funding beyond 2009, State Service rules preventing the immediate renewal or extension of some fixed term contract staff, the contracts of many staff expiring, staff turnover requiring new recruitment and training the capacity of the Taskforce may be reduced in the coming year.

When the planning strategy for the implementation of the recommendations of the Landcare review is completed it may mean that the future mix of staffing is quite different. It was always anticipated that the review would inform the Taskforce about a future mix of staffing which may now be quite different to the current mix.

## **BIODIVERSITY - COST OF NOT TAKING ACTION**

It is difficult to imagine or calculate in any meaningful way what the cost to the State could or might be if foxes were to become established. Many of the submissions noted that they did not have the necessary information to address the issues of cost and cost effectiveness as in the Terms of Reference but they were emphatic about the potential cost if the fox was to become established. The three comments below are representative of the concerns:-

*Unfortunately, invasive animal management is an expensive impost on the taxpayer. However, the costs must be weighed against the impact of not managing incursions.<sup>141</sup>*

*While the total existing State and Commonwealth commitments for the FEP totals \$56 million over ten years (pending on-going Commonwealth commitments), this seems a very small amount of money compared with the possible environmental and economic impacts if foxes established.<sup>142</sup>*

<sup>140</sup> Ibid

<sup>141</sup> Invasive Animals Cooperative Research Centre, Submission p 4

<sup>142</sup> Tasmanian Conservation Trust, Submission p 2

*Economically foxes will cause unimaginable permanent environmental devastation with economic damage of incalculable extent. An annual budget in the millions for prevention would in fact be quite insignificant. But there will only be a small window of opportunity for successful curtailing of foxes before an even greater annual budget simply to contain the magnitude of economic and environmental damage will be required.<sup>143</sup>*

Dr Jennings provided a short informal paper to the Taskforce and to the Committee. Although the paper is not available as evidence Dr Jennings agreed to give oral evidence to the Committee. She informed the Committee that the University had recently appointed a Chair of Natural Resource Economics and was hopeful of more capacity in the future to contribute directly to environmental debates such as the cost of foxes. Dr Jennings contended that it is not necessarily useful to focus a lot of research effort on the cost and whether it is \$10m \$20m or \$30m. She said:-

*...from an economic perspective the more interesting question is what mixture of policy levers do we have in order to optimally manage that species that causes damage..... From an economic perspective and theory it is quite simple that you get the balance of the prevention and control expenditures right but keep on spending so long as the extra benefit of an extra dollar on control and prevention exceeds the extra cost. But in practice, of course, giving an estimate on those marginal benefits and marginal costs is not a trivial exercise and is one that in my mind is the subject of a fairly complex research project.<sup>144</sup>*

Mr Mooney had estimated the biodiversity cost:-

*.....We think it would cost at least \$10m to \$20m year in year out probably forever if you took those values seriously you are trying to protect. You can talk about agricultural loss in lambs, poultry or what ever but that is often exaggerated.....There is a list of species that are survivors in Tasmania because we don't have foxes. Most of that group is extinct on the mainland because they have foxes.....You can list those and put some costs next to them. Wildlife tourism takes a dent because we lose that and lose our special image as a place without things such as foxes.<sup>145</sup>*

Mr Mooney spoke of the at-risk species as those which inhabit the same sorts of places as foxes, those that breed very conservatively such as bettong and those that would be easy targets like the quoll. He said that Tasmania would then be faced with the prospect of having to devise more programs to save endangered species. With programs like the Tasmanian Devil program and the Orange Bellied Parrot there was no guarantee of success and they were of necessity very long and very costly.

Speaking on behalf of the Invasive Animals Research Centre Professor Peacock said:-

*We would see it as one of the vital projects.....We would deem it as probably the most important conservation project in Australia at the moment and of course in world terms because if the species that would be lost get away, they disappear from the entire world of course and so while there is a chance to eradicate we think it should be exercised and we are very, very supportive of the program.<sup>146</sup>*

Professor Peacock compared the cost to a situation in Victoria and said:-

<sup>143</sup> Brothers, Submission p 2

<sup>144</sup> Jennings, Dr. S. Hansard, 7 October 2009, p 2

<sup>145</sup> Mooney, N. Hansard, 25 May 2009, p 16, 18

<sup>146</sup> Peacock, Professor P. Hansard, 14 August 2009, p 6

*I was on Philip Island last week and the penguin colony there was worth \$80m in tourism. There used to be 11 or 12 penguin colonies and now there is only one and they spend a fortune keeping foxes away from it – not entirely successfully. That is the sort of thing that is going to happen.....You would have to do things like Western Australia, which is spending \$4 million a year baiting foxes to recover the tammar wallaby, the woylie and the numbat and a few other species across a project called Western Shield – and that is forever.*

and:-

*Yes, it is expensive. I think the Tasmanian Government has copped it in the neck a lot because they announced a 10-year program. That is actually a brilliant thing where governments announce a 10-year environmental program.<sup>147</sup>*

## **FINDINGS - THE COSTS OF THE FOX ERADICATION PROGRAM**

### **The Committee Finds That:-**

- 1. The current annual cost of the Fox Eradication Program is insignificant compared to the cost should a full incursion of foxes occur.**
- 2. The uncertainty of any future assurance and commitment of Commonwealth funds limits the ability of the Taskforce to undertake forward strategic planning.**
- 3. The potential cost of biodiversity loss to Tasmania is incalculable and irreversible and therefore, the fox threat to Tasmania's biodiversity is a national issue demanding Commonwealth budgetary support.**

<sup>147</sup> Ibid, p 14, 16

## **COST EFFECTIVENESS OF THE FOX ERADICATION PROGRAM**

A definition of cost effectiveness is that it is a form of economic analysis that compares relative costs and effect (outcomes) of two or more courses of action. Cost effectiveness is distinct from cost benefit analysis where the process involves, whether implicitly or explicitly, weighing total expected costs against total expected benefits in order to choose the best course.

There are more questions than there are answers when attempting to make any assessment of the cost effectiveness of the Fox Eradication Program. It is very difficult to measure and to quantify. There is no knowledge of what an extra dollar spent achieves in terms of actual outcomes in terms of eradicating or containing a fox population. Dr Jennings suggested that if there are foxes the question is really how do we most effectively contain them?

Evaluating resource adequacy for a program such as the Fox Eradication program is problematic. It is a unique program in a unique environment. Usual methods of assessing cost effectiveness cannot be readily applied. It is axiomatic that dollars are spent wisely and in a cost effective way but as Dr Obendorf noted “not in an open ended” manner.”

Dr Jennings suggested that maybe the:-

*... ..optimal strategy would be to contain it at a very low level, which perhaps locks us into high-containment expenditures without politically very obvious results because it is not an attractive way to spend money when people are still arguing whether the fox is there. But from a precautionary perspective, on which a lot of environmental policy should be based now, with things like climate change on the horizon, the susceptibility of our native flora and fauna is going to be so much higher to stresses and to me that suggests an even more precautionary approach to this sort of thing. And so while it is a sizeable expenditure with, as I say, no particularly visible results, to me the fact that people are still arguing about whether the fox is here or not maybe suggests that that expenditure has been actually quite worthwhile.<sup>148</sup>*

Mr Holderness-Roddam approached the subject of cost effectiveness by comparing the estimated cost, if foxes were to become established, to the current Program costs and this may be as good a method as any. He said he understood the Program to cost about \$5m annually and:-

*That’s only 25% of the estimated annual cost if foxes were to become established. In other words the current costs of the Taskforce are very cost effective – particularly if in ten years time we can say foxes have been eradicated in Tasmania. If we cut back on expenditure to eliminate the fox from Tasmania it will be a case of pennywise pound foolish.<sup>149</sup>*

In relation to just one of the activities of the program - the effectiveness of baiting - the Committee were told that one means of evaluation is to examine the sequence of reported sightings per region and then assume if baiting is effective the number of

<sup>148</sup> Jennings, Dr S. Hansard, 7 October 2009, p 5

<sup>149</sup> Holderness-Roddam, Submission, p 3

reports will decline and that demonstrates cause and effect but the reality is that the level of reporting may be partly or totally unrelated to the baiting effort.

The Committee asked how the cost of losing something like the spotted quoll could be worked out. Dr Jennings explained that even measuring the cost if no action was taken and foxes became established was not straightforward:-

*From a conceptual point of view the economist's measure of welfare associated with that is how much we would be willing to pay to avoid that happening. That is these non-market valuation surveys. That is the only way we are going to get a handle on it, by constructing very clever survey mechanisms where we can set up hypothetical situations where people reveal to us what the trade off would be of preventing that happening.*<sup>150</sup>

*Dr Jennings considered that the figure of \$20-odd million quoted in the Saunders Report (2006) was a reasonable estimate "based purely on a high level reading of some of the research that has been done at the Australian level and also non-market valuation studies of where species have been lost in other jurisdiction."*<sup>151</sup>

Despite the design difficulties of such surveys and Dr Jennings said there are many, she believes that non-market valuation is still a useful tool.

When the Committee, considering what increasing the prevention budget would do to the probability of success, suggested to Dr Jennings that it could be measure of effectiveness Dr Jennings informed them that:-

*But there is the counter-factual, if you hadn't spent anything. That's the difficult part in how effective it was. Given that you've made a level of expenditure, the effectiveness would be measured against the counter-factual of where we would be had that expenditure not taken place.*<sup>152</sup>

Professor Peacock also emphasised the cost of not taking action and compared some other animal management programs – Cane toads spreading westwards; red imported fire ant in Queensland and starling eradication in WA - and observed that invasive animal management is an expensive cost on the taxpayer but the cost must be weighed against the impact of not managing incursions.

In his submission Dr Brothers put the issue quite succinctly:-

*The only cost effective issue is that the resources allocated are actually adequate in order for eradication to be achieved.*<sup>153</sup>

The review from Landcare New Zealand examined the cost and the effectiveness of the spending and one of their main recommendations was in relation to what they have termed 'Cost Minimisation.' The recommendation is as follows:-

*Cost minimisation*

*The appropriate economic analysis for eradication when the benefits of success accrue to non-market values from zero pests is cost-minimisation – rather than cost-benefit or benefit-maximisation approaches. That is, what is the cheapest way to*

<sup>150</sup> Jennings, Dr S. Hansard, 7 October 2009, p 8

<sup>151</sup> Ibid, p 2

<sup>152</sup> Ibid, p 3

<sup>153</sup> Brothers, N. Submission p 4

*achieve eradication – within a set time frame to limit risks of funder fatigue or being beaten by fox biology?*

*This is simplest to analyse under the precautionary approach. At 2008/09 annual budgets with some reallocation of resources between functions, we think the initial control in all rural areas of likely fox habitat could be achieved within 4 years or within 8 years if the foxes prove to be present over the whole of Tasmania. The major uncertainties on this time frame and cost are the costs to deal with survivors of a single baiting and the ability and costs to deal with urban foxes. We cannot estimate these costs with the current information.<sup>154</sup>*

## **FINDINGS - THE COST EFFECTIVENESS OF THE FOX ERADICATION PROGRAM**

### **The Committee Finds That:-**

- 1. Given the value of Tasmania’s natural heritage, it is difficult to measure or quantify the cost effectiveness of the Tasmanian Fox Eradication Program.**
- 2. The Fox Eradication Program is unique and therefore unable to be compared with other programmes. The usual methods of assessing cost effectiveness cannot be readily applied.**
- 3. There is regular peer review of the program to ensure the Taskforce uses best practice.**

<sup>154</sup> Landcare, New Zealand, Review of the Program to Eradicate Foxes (*Vulpes vulpes*) from Tasmania

## METHODOLOGY USED TO DETERMINE ALLOCATION OF FINANCIAL RESOURCES

Funds are allocated between activities as part of the forward strategic planning and the operational plans. The allocation, distributed in accordance with the Project Business Plan, is endorsed by the Management Committee which relies on input from the Technical Committee and input from stakeholder reference groups where appropriate.

Detail from the Government submission shows that:-

*While each of these Sections is critical to the overall effort it is clearly recognised that the majority of funds must be allocated to the on-ground activities delivered through the Operations and Monitoring and Investigations Sections. As Table 4 shows approximately 75% of total funds and 80% of the staff are allocated to these on-ground activities. The allocation of funds between the Sections in 2008-09 (total State and Australian Governments) is as follows:*

*Program budget allocation by Section in 2008-09<sup>155</sup> was*

Section	\$	%	Staff Numbers as at Feb. 09
Management (incl. biosecurity)	627,000	11.2	4
Community Engagement	395,800	7.1	3.4
R & D	461,800	8.2	3.5
Monitoring & Investigations	1,822,300	32.5	21
Operations	2,296,200	41.0	26
TOTAL	5,603,000	100.0	57.9

## FINDINGS - THE METHODOLOGY USED TO DETERMINE ALLOCATION OF FINANCIAL RESOURCES

### The Committee Finds That:-

- 1. The funds provided for the Fox Eradication Program are allocated by the Management Committee with assistance from experts in the field.**
- 2. It is important to continue to review, assess, refine and look at what is contemporary in order to discover other novel and improved techniques which may be incorporated into the Fox Eradication Program.**

<sup>155</sup> Tasmania. Government, Submission, March 2009, p 26

## MEASURES USED TO DETERMINE THE SUCCESS OF FOX ERADICATION

The determination of either success or failure of the fox eradication effort in Tasmania has occupied considerable time of both the Steering Committee and the Technical Advisory Panel. The Public Accounts Committee were variously informed that the longer the program the more effective the baiting and therefore to expect less scats and a smaller number of foxes and that finding and eradicating the last survivors will be the most expensive and the Taskforce needs to be prepared for that to happen.

The Government submission described a number of approaches which could be used to measure success and some of the measures likely to contribute to any assessment including abundance, reported sightings, physical evidence like carcasses, blood and scats; distribution etc but concluded by saying that:-

*With the data available at this time it is not possible or indeed realistic to determine whether fox abundance or distribution is increasing or decreasing. Current methods being employed including the scat collection survey, and DNA genotyping of scats will provide tools to give greater understanding of the fox population in the future.<sup>156</sup>*

The Saunders (2006) Report included the following:-

*A fully documented exit or long term strategy is required cover all contingencies with appropriated actions to protect at-risk species and biodiversity. Clear triggers based on evidence or lack thereof agreed by Technical Committee.<sup>157</sup>*

The IACRC submission also commented:-

*To date, no firm criteria have been set in place to determine success or failure of the program. Discussions have been initiated with the University of Queensland's Applied Environment Decision Analysis group, funded by the Commonwealth Environment Research Facility program.*

*Premature termination of the program will result in loss of all investment to date and incur potentially devastating biodiversity impacts on Tasmania; if termination is delayed beyond the point of eradication, unnecessary costs will be incurred.*

*In our view, the current situation is most likely that the program is succeeding in either keeping fox numbers low or moving toward eradication. This judgement is based on (1) continuing evidence that foxes are present in Tasmania (scat and sightings) and (2) lack of evidence that foxes numbers are growing significantly (scat numbers have risen, but there is a greater ability to find them through improved surveillance using dogs).*

Situation	Consequence
“Success” (foxes eradicated). Known.	Biodiversity and farming protected. Program shut down and the State and Commonwealth and other funding saved.
“Success” (foxes eradicated). Unknown.	Biodiversity and farming protected. Program continues and State, Commonwealth and other funding

<sup>156</sup> Tasmania. Government, Submission, march 2009, p 33

<sup>157</sup> Saunders et al, Foxes in Tasmania, A Report on an Incursion of an Invasive Species. 2006 p 10

	wasted.
“Failure” (foxes established). Known.	Biodiversity and farming at risk. Program will need to shift from “eradication” to “control” focus. Funding still required but likely shift in Commonwealth and outside funding, requiring individual farmers to initiate own fox control programs.
“Failure” (foxes established). Unknown.	Biodiversity and farming at risk. Program continues and State, Commonwealth and other funding potentially wasted. Delay in individual action.

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The Committee posed a number of hypothetical questions to Dr Jennings –

*If there isn't any documented proof and we have been spending that money wisely and effectively but do we just keep going?; or do we say that if by 2020 we haven't found a carcass or full on evidence of an incursion on a widespread basis we stop this and re-focus our attention ? ..... do we set parameters and say that by 2020 if an identifiable population has been found we can make a decision then?*

Dr Jennings responded with “You don't allocate money to anything in perpetuity” and then said in reference to the on-going nature of the program, reviews and a time frame:-

*I agree with that. I think it needs to be constantly reviewed to make sure that the money is being spent in an effective way. ... I guess it is a risky game to play, but I cannot disagree that any public policy measure needs to be subject to continuous and ongoing scrutiny.<sup>159</sup>*

The Landcare Research Review also looked at the exit strategy and considered the development of a model to inform such an exit strategy. They:-

*.....propose a conceptual and quantitative model that incorporates expert opinion and field data to inform high priority areas for surveillance, quantifying probability of local extirpation following control, and a broad scale probability of eradication for Tasmania.<sup>160</sup>*

Their main recommendation included the exit strategy set out below:-

*The positive exit strategy is to set a level of confidence that the eventual absence of definite fox sign means foxes have been eradicated from Tasmania, and utilise the model suggested in this review to determine whether the monitoring (with no evidence of foxes) achieves this level, or whether more monitoring (with no evidence of foxes) is required to achieve the set level.*

*The program should be terminated if access to high-risk areas is not enforceable, or if the tools to kill foxes that survive 1080 baiting or live in urban areas cannot be deployed.*

*The program would need to be reassessed if reliable evidence of foxes is found outside the current habitat-based risk areas.*

<sup>158</sup> Invasive Animals Cooperative research Centre, Submission, p 5

<sup>159</sup> Jennings, Dr S.Hansard, 7 October 2009, p 6

<sup>160</sup> Landcare Research, Review of the Program to Eradicate Foxes (*Vulpes vulpes*) from Tasmania, 2009.

*Otherwise, we think a rearrangement of the program towards the precautionary approach and would allow realistic milestones for the initial baiting to be set.*

*Development of the model suggested in this review would then allow decision-makers to analyse the risks of being wrong as the number of fox reports declined (there may always be false reports) and when fox scats cease to be found in management zones and across the whole of Tasmania.<sup>161</sup>*

## **FINDING - MEASURES USED TO DETERMINE THE SUCCESS OF FOX ERADICATION**

**The Committee Finds that:-**

- 1. Regular review by external professional consultants and periodic scrutiny by Parliament is an essential component of the Fox Eradication Program.**

<sup>161</sup> Ibid.

## OTHER RELEVANT ISSUES

### THE TASMANIAN DEVIL

In their submission the Government raised the question of the possible impact of the Tasmanian devil and if, as has been reported there have been many attempts to introduce foxes to Tasmania in the past, the devil may have played a role in suppressing or preventing the establishment of a fox population.

*It has been hypothesised that Tasmanian devils may have, and would still present competition and predation pressure on foxes at low population densities. However, the recent dramatic decline in devil numbers due to the Devil Facial Tumour Disease (Hawkins et al 2006) may mean this pressure is no longer a significant controlling factor for any foxes in Tasmania.<sup>162</sup>*

and:-

*A further historical factor that may have helped control fox populations in the past is secondary poisoning (through ingestion of poison contained in prey animals).<sup>163</sup>*

Dr Obendorf also commented extensively on the subject of the role of the Devil:-

*..... And what I ask myself as the critical question ..... what was the unique ecological process that might have existed in Tasmania that kept under control whatever foxes that were allowed to escape or did escape – in other words, cryptic and completely under the radar – and it is pretty much accepted, I think, by the department that devils play that role very effectively. So in other words, they are a quasi fox task force, and they have been for many years if we go on that sort of scenario, because they are looking for easy carrion, they have a good nose, they find smelly dens.<sup>164</sup>*

And he later observed:-

*If devils are the critical thing that's been keeping them under control, all the more reason the money for devil facial tumour disease is probably, in my estimation, as critical if not more critical than the money for foxes. The Government is now saying with the cat legislation that there's 150 000 feral cats in Tasmania. Well, that is the number of devils that existed before this facial tumour disease came in. It's a substantial number of predators actively working on the biodiversity in Tasmania every day.*

In comparing fox incursions in other places the Government suggests that Tasmania is not following a similar pattern of expansion of a fox population as happened in other places and the reason for that could be a combination of devil predation and the efforts of the Taskforce with the eradication effort.

When the Committee also asked about the reported explosion of feral cat numbers in the landscape and inquired about the possibility of the Fox Eradication Program being extended to encompass feral cats, Mr Mooney said:-

*Yes, I have had to deal with this and I think it is chalk and cheese. This might sound like an odd claim, but we do not know that cats have exterminated anything in southern Australia. Their impact is on much smaller animals which tend to be much more abundant, whereas, the fox is known to be a key driver in the extinction of a whole list of small to medium-sized marsupials on the mainland. So, somewhat chalk*

<sup>162</sup> Tasmania. Government, Submission March 2009, p 4

<sup>163</sup> Ibid, p 5

<sup>164</sup> Obendorf, Dr D. Hansard, 2 November 2009 p 11

*and cheese, although the equation is changing now with the demise of devils, which complicates matters. We have the devils going down – this beautiful graph – and the cats creeping up in a beautiful inverse relationship and you do not see those coincidences very often in nature. It is probable that the devils were suppressing cats.....So if you are serious about cat control it is a different technique.<sup>165</sup>*

He added that that he thought any attempts to control cats would compromise the fox eradication effort by acting as a diversion and distraction.

Parliament House  
HOBART  
24 December 2009

Hon. J. S Wilkinson M.L.C.  
CHAIRMAN

<sup>165</sup> Mooney, N. Hansard, 2 June 2009 p 11

## APPENDICES

### APPENDIX A - SUBMISSIONS

(FOLDER 1)

1.	Bob Holderness-Roddam, dated 14 March 2009
2.	Chris P Spencer, dated 16 March 2009
3.	Tammy Gordon, dated 23 March 2009.
4.	Ian Rist, dated 23 March 2009.
5.	Professor Hamish McCallum, dated 27 March 2009.
6.	Tim Bloomfield, dated 29 March 2009.
7.	Dr David Obendorf, dated 30 March 2009.
8.	Nigel P Brothers, 30 March 2009.
9.	Robert Rose, Old Dominion University Norfolk Virginia, dated 31 March 2009.
10.	Invasive Animals Cooperative Research Centre, Professor Tony Peacock, Dr Glen Saunders and Dr Steve Lapidge, University of Canberra, dated 31 march 2009. Attachment 1 Confidential Attachment 2 Confidential
11.	Associate Professor Dr Stephen Sarre, University of Canberra, dated 31 March 2009
12.	Dr Niall Doran, dated 31 March 2009.
13.	Tasmanian Conservation Trust Inc., Peter McGlone, dated 31 March 2009
14.	Dr Maxine Piggott Visiting Fellow, The Fenner School of Environment and Society, The Australian National University, Canberra, dated 6 April 2009. Submission Confidential
15.	Clive A Marks Director Nocturnal Wildlife Research Pty Ltd, Dated 3 April 2009. Part of Submission Confidential
16.	Tasmanian Farmers & Graziers Association - Roger Swain, President, dated 6 April 2009.
17.	Tasmanian Greens, Cassy O'Connor MP, dated 17 April 2009
18.	Dr Robert Mesibov Honorary Research Associate Queen Victoria Museum & Art Gallery, dated 16 March 2009

**APPENDIX B - GOVERNMENT SUBMISSIONS AND CORRESPONDENCE**  
(FOLDER 2)

1.	Hon D Llewellyn MP Minister Primary Industries & Water, 7 March 2008	Preliminary submission, associated information and attachments as follows:- Submission Bloomfield, Fox Free Tasmania Program Review, November 2002. Bryant, Fox-Free Tasmania Conservation – Quarantine – Primary Industry Action Plan to Prevent the European Red Fox into Tasmania 2001 – 2003 Kinnear, Eradicating the Fox in Tasmania – A Review of the Fox Free Tasmania Program, March 2003. Saunders, Foxes in Tasmania: A Report on an Incursion by an Invasive Species, June 2006 Eradication of Foxes from Tasmania Project Business Plan Stage One July 2007-June 2009 Recommendations from Import Risk Analysis of Fox Entry Pathways into Tasmania, DPIW Response and Current Status – Keynote Summary of Risk Management Measures Proposed Keynote Summary of Risk Management Measures Proposed for Further Consideration Against Fox Risk Entry Pathways Version 1.1 17/10/07
2.	Hon D Llewellyn MP Minister Primary Industries & Water, 31 March 2009	Submission with Appendices and Additional Information Appendix 1 – Material Evidence of Foxes collected in Tasmania since 1998. Appendix 2 – Risk Assessment for Tasmanian vertebrate fauna perceived to be at risk from red fox predation and competition in Tasmania. Appendix 3 – Relative Sensitivity of various animals in Tasmania and humans to 1080. Attachment 1 – Summary of genotyping analysis of fox scats collected in Tasmania by Dr Oliver Berry ( updated 27 April 2009) Attachment 2 – Fox Sign Search Procedure Version 9 dated 23 February 2009. Attachment 3 – FEB Project Business Plan – Stage 2 (July 2009 – June 2013)
3.	Hon D Llewellyn MP Minister Primary Industries & Water, 3 April 2009	Response to Committee and updated to data in Submission of 31 March 2008.
4.	Department Primary Industries & Water, 27 April 2009	Additional Information and corrections to submission. Attachment 1 – Summary of Genotyping Analysis of Fox Scats collected in Tasmania 6 April 2009. Update on additional genotyping analysis of Fox Scats received since the Submission (March 2009) Attachment 2 – Police Report on Alleged Conspiracy to Import Foxes into Tasmania dated 13 July 2001.

5.	Department of Primary Industries & Water, 25 May 2009	Physical Evidence of Foxes in Tasmania – Map and sites updated 23 April 2009.
6.	Department of Primary Industries & Water, 2 June 2009	Dr Tony Ross, Comments on Timeline – the Glen Esk Road Fox Incident by Dr David Obendorf Veterinarian – 1 February 2007
7.	Department of Primary Industries & Water, 2 June 2009	Import Risk Analysis of Fox Entry Pathways into Tasmania, March 2008.
8.	Department of Primary Industries & Water, 2 June 2009	Updated Report on authenticity of a Red Fox found recently killed on Glen Esk Road – 1 August 2006.
9.	Department of Primary Industries & Water, 2 June 2009	Animal Health Laboratory – Final Report Case ID 03/2299 – Pathology Report.
10.	Department of Primary Industries & Water, 2 June 2009	Breeding cycle of the Red Fox in South Eastern Australia.
11.	Department of Primary Industries & Water, 2 June 2009	Claim of Fox Shooting at Lillico 2005 “In Confidence”
12.	Department of Primary Industries & Water, 10 July 2009	Field Trip Agenda – Tom Gibson Reserve – 10 July 2009) with Basic Flowchart of Eradication Activities on Verso.
13.	Department of Primary Industries & Water, 10 July 2009	Derby, July 2009 – Includes Properties, Safe Work Practice, 1080 Fox Baiting Operational Plan.
14.	Department of Primary Industries & Water, 10 July 2009	Fox Eradication Program – permission to enter and remain on property form.
15.	Department of Primary Industries & Water, 10 July 2009	Notice of Fox Poisoning Program – Using 1080 Fox Baits on Adjoining Property/Properties Form – dated 10 July 2009.
16.	Department of Primary Industries & Water, 10 July 2009	Material Safety Data Sheet:– FOXOFF Fox Bait and FOXOFF Econobait dated 1 June 2008.
17.	Department of Primary Industries & Water, 10 July 2009	Targeted 1080 Baiting – Brochure dated May 2009.
18.	Department of Primary Industries & Water, 10 July 2009	Two Sample Maps.

19.	Department Primary Industries & Water, 9 July 2009	<p>Additional matters and responses to queries – with attachments</p> <p>Attachment 1 – Experimental Bait Selectivity and Effects of 1080 Fox Baiting on Tasmanian Native Wildlife: An Update. (Mooney - dated 1 October 2004)</p> <p>Attachment 2 – Fox Bait Preference Trials in Eastern Australia – Interim Report (Spencer 2000) (Commercial-in-Confidence)</p> <p>Attachment 3 – Letter from Dr Stephen Sarre dated 18 June 2009</p> <p>Attachment 4 –Letter from Dr Oliver Berry, undated</p> <p>Attachment 5 – Animal Health Laboratory Final Report Case ID 03/2299 Revision 2 Wild Fox Burnie Finalised, 30 March 2006</p> <p>Attachment 6 – Animal Health Laboratory Final Report Case ID 06/2128 Wild Fox Nile Finalised 20 November 2006.</p> <p>Attachment 7 – Animal Health Laboratory Section Report (Pathology) Case ID 01/2203 Wild Fox Symmons Plains.</p> <p>Attachment 8 – Barbara Triggs dated 6 February 2006 – Hair Analysis – Lillico Fox.</p> <p>Attachment 9 – Jaw analysis – Lillico Fox dated 3 April 2006</p>
20.	Department of Primary Industries Parks Water & Environment, 7 October 2009	Landcare Research, Review of the Program to Eradicate Foxes ( <i>Vulpes vulpes</i> ) from Tasmania, September 2009.
21.	Hon D Llewellyn MP Minister for Primary Industries & Water, 7 October 2009	Copy of correspondence to the Minister for Environment Heritage and the Arts requesting further funding dated 29 September 2009.

## APPENDIX C – DOCUMENTS

### (FOLDER 1)

19.	Dr David Obendorf Veterinarian	Paper Summarizing Power Point presentation with attached CD, 25 May 2009
20.	Dr Sarah Jennings University of Tasmania	Report on the Economics of the European Fox in Tasmania – An Overview, 7 October 2009 Confidential
21.	Barbara Triggs Victoria	Analysis of Predator Scats for the Fox Eradication Program from 2001-2004. (dated 31 August 2009) 7 October 2009
22.	Dr David Obendorf Veterinarian	Paper “Ideas and proposals to improve or refine the effectiveness and efficiency of any contentious public policy” 2 November 2009.

**APPENDIX D – WITNESSES – HANSARD TRANSCRIPTS**  
(FOLDER 3)

Dr David Obendorf, Veterinarian	25 May 2009
Department of Primary Industries, Water and Environment - Kim Evans, Secretary; John Whittington, Deputy Secretary; Alan Johnston, Manager, Fox Eradication Branch; Nick Mooney, Wildlife Biologist.	25 May 2009
Ian Rist (one part ‘in camera’)	25 May 2009
Tasmanian Farmers and Graziers Association, Christopher Oldfield Chief Executive Officer.	2 June 2009
Department of Primary Industries, Parks, Water and Environment - Kim Evans, Secretary; John Whittington, Deputy Secretary; Alan Johnston, Manager, Fox Eradication Branch; Nick Mooney, Wildlife Biologist.	2 June 2009
Dr Maxine Piggott, Visiting Fellow, The Fenner School of Environment and Society, The Australian National University, Canberra. Telephone Discussion.	2 June 2009
Barbara Triggs. Telephone Discussion.	14 August 2009
Invasive Animals Cooperative Research Centre - Professor Tony Peacock Chief Executive Officer; Dr Stephen Sarre Associate Professor Institute for Applied Technology. Telephone Discussion.	14 August 2009
Dr Oliver Berry, Postdoctoral Research Fellow, Invasive Animals Cooperative Research Centre. Telephone Discussion.	14 August 2009
Department of Primary Industries, Parks, Water and Environment - Kim Evans, Secretary; Alan Johnston, Manager, Fox Eradication Branch; Nick Mooney, Wildlife Biologist; John Whittington, Deputy Secretary; Penny Wells, General Manager Resource Management and Conservation.	16 September 2009
Dr Sarah Jennings, School of Economics and Finance, University of Tasmania.	7 October 2009
Dr David Obendorf – Veterinarian	2 November 2009

## APPENDIX E – ACRONYMS

IACRC	Invasive Animal Cooperative Research Centre
DPIW	Department Primary Industries and Water (February 2004 to July 2009)
DPIWE	Department of Primary Industries, Water and the Environment (1999 – February 2004)
DPIPWE	Department of Primary Industries Parks Water and the Environment (from July 2009)
FEB	Fox Eradication Branch
FFTF	Fox Tree Task Force
FFTT	Fox Free Tasmania Taskforce
NCB	Nature Conservation Branch
RMC	Resource Management and Conservation Branch
PWS	Parks and Wildlife Service