POLICY AND PROCEDURES FOR THE IMPORT, MOVEMENT AND KEEPING OF VERTEBRATE WILDLIFE IN TASMANIA

Department of Primary Industries, Parks, Water and Environment
Resource Management and Conservation Division

Tasmania
Explore the possibilities

Wildlife Import Policy and Procedures Tasmania – April 2011

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SUMMARY

Introduced animals pose one of the most significant threats to biodiversity. In Australia vertebrate pests have had major environmental, economic and social impacts. Introduced species can impact on native fauna and flora through competition, habitat destruction, predation, by spreading diseases and have lead to the extinction of several species. Tasmania has unique flora and fauna that has evolved with a high degree of isolation, resulting in many endemic species. This means that Tasmania's native communities are particularly vulnerable to the impact of introduced species.

Despite a long history of strong quarantine controls, there are thirty-five terrestrial vertebrate pests in Tasmania that have impacted on the environmental, economic and social values of the State such as the feral cat, rabbit, kookaburra and starling. The Tasmanian government places great importance on sound biosecurity practices to prevent the introduction of new pests and diseases. The Tasmanian Biosecurity Policy does not advocate a zero risk approach to biosecurity, which would see the prohibition of imports and strict restrictions on travel. Rather Tasmania adopts an appropriate level of protection of a very low level of risk. This means that risk assessments are conducted on the importation of animals and plants and their products to ensure that Tasmania's appropriate level of protection is not exceeded.

This policy document provides details of the arrangements that will apply to the importation of vertebrate wildlife into Tasmania. A risk analysis approach is used to ensure that the imports do not represent an unacceptable level of risk to the State and the policy requires that each species must be risk assessed before it will be included on the list of species that can be imported into the State. Risk assessment will be used to categorise species as either an extreme, serious, moderate or low threat to Tasmania and to identify management controls that are commensurate with the level of threat. The risk assessment methodology used has been developed nationally, and applied by other Australian states.

The procedures for people wishing to have the list of species that can be imported into Tasmania amended are also outlined in this policy. The Department requires that information to conduct the risk assessment is supplied by the applicant seeking to have the list amended. This information must be in the form of a species profile. The species profile must be developed by people that have tertiary qualifications in biological sciences and experience conducting risk assessment to ensure that the information is reliable. Stakeholder comments on the proposed importation will be sought before DPIPWE determines whether the species should be imported, and the conditions that should apply. These procedures have been put in place to ensure that the new arrangements for wildlife imports are efficient, transparent, provide for public consultation and protect Tasmania's favourable biosecurity status.

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DEFINITIONS, ABBREVIATIONS AND ACRONYMS

Appropriate Level of Protection (ALOP)	For Tasmania, this is defined as a high or very conservative level of protection that does not demand zero risk, but only accepts risk at or below a 'very low' level.
AQIS	Australian Quarantine and Inspection Service, within the Australian Government Department of Agriculture, Fisheries and Forestry.
Authority	An authority to import an animal issued by the Chief Veterinary Officer under Part 4 of the *Animal Health Act 1995*. An authority can be a **General Authority** or **Special Authority**
BA	Biosecurity Australia, an operating group within the Department of Agriculture, Fisheries and Forestry
Biodiversity	The variability among living organisms from all sources such as terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. It encompasses diversity within species, between species and of ecosystems. It is derived from the term 'biological diversity'.
Biosecurity	The protection of industries, the environment and public well-being, health, amenity and safety from the negative impacts of pests, diseases, and weeds.
Browser	A herbivore that feeds on shoots and leaves of trees and/or shrubs, as opposed to herbaceous vegetation (compare with **grazer**).
CBD	International Convention on Biological Diversity.
CITES	Convention on the International Trade in Endangered Species of Wild Fauna and Flora.
CLIMATCH	CLIMATCH is computer software developed by the Bureau of Rural Sciences. CLIMATCH provides an interface for comparing climate characteristics between regions. It is used for predicting the likelihood of establishment of live animal imports.
Climate change	A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural variability observed over comparable time periods.
Consequence	The impact of an event. There can be more than one consequence for an event and it can be expressed qualitatively or quantitatively.
Controlled Animal	Controlled animals are defined under the *Nature Conservation Act 2002* to include any mammal, bird, amphibian and reptile; and any other animal prescribed by the regulations to be a controlled animal but does not include any **restricted animal**, dog, cat or **domestic stock**. Controlled animals can not be imported into Tasmania without a **permit** to import under the *Nature Conservation Act 2002*.
CVO	Chief Veterinary Officer
DAFF	Australian Government Department of Agriculture, Fisheries and Forestry
Domestic stock	Domestic stock are defined under the *Nature Conservation Act 2002* to mean the animals, or species of animals prescribed by the regulations to be domestic stock.
DPIPWE	Department of Primary Industries, Parks, Water and Environment, Tasmania
Entry (of a pest)	Movement of a pest into an area where it is not yet present, or present but not widely distributed and being officially controlled (FAO 2007)
Eradication	Application of phytosanitary measures to eliminate a pest from an area.

Establishment	Perpetuation, for the foreseeable future, of a pest within an area after entry.
Grazer	A herbivore that feeds on herbaceous vegetation (compare with **browser**).
General Authority	An **authority** issued by the Chief Veterinary Officer under the *Animal Health Act 1995* that authorises the importation of an animal and specifies any conditions that apply.
Introduced Species	Non-indigenous plant or animal deliberately or accidentally introduced into a new habitat that is outside its natural geographical distribution. Non-indigenous species is an alternative term.
Invasive Species	An exotic species that establishes a wild population and spreads beyond the place of introduction and becomes abundant (Richardson et al 2000).
IPPC	International Plant Protection Convention
IUCN	International Union for Conservation of Nature
Keeping	The containment (maintenance and holding) of species for a number of reasons including but not limited to keeping as pets, fancying, food, medicine, agricultural or recreational purposes, conservation, exhibition or research.
Licence	A licence issued under the *Wildlife* (*Exhibited Animals*) *Regulations 2010* that authorises the holder to keep the wildlife specified in the licence.
Likelihood	The chance or probability of something happening. Likelihood can be expressed quantitatively or qualitatively.
Movement	Movement of an animal between jurisdictions. Interstate or intrastate movement of a species within Australia is primarily regulated under State legislation unless there are specific conditions relating to the movement of a specimen under the *Environment Protection and Biodiversity Conservation Act 1999* or *Quarantine Act 1908*.
NRMMC	Natural Resource Management Ministerial Council.
NRMSC	Natural Resource Management Standing Committee.
Pathway	Any means that allows the entry or spread of a pest
Permit	A permit issued under Section 32 of the *Nature Conservation Act 2002* to import a **controlled animal** and specifies any conditions that apply.
Precautionary Approach	Where there is a threat, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimise such a threat.
Propagule Pressure	A measure of the number of individuals of a species introduced to an area and the number of discrete release events: the higher the numbers, the greater the pressure.
RAF	Risk Analysis Framework. The Tasmanian Risk Analysis Framework outlines how import risk analysis is conducted by DPIPWE.
Restricted Animal	Restricted animals are defined under the *Nature Conservation Act 2002* to include a fox, wolf, dingo and mink; and any other animal prescribed by the regulations to be a restricted animal; and a hybrid of a restricted animal.
Risk Analysis	Assessment of the level of biosecurity risk associated with the importation, or proposed importation of animals, plants or goods and, if necessary, identification of risk management options to limit the level of quarantine risk to achieve Tasmania's appropriate level of protection (ALOP). Risk analysis includes risk assessment, risk management and risk communication.

Risk Assessment	Risk assessment involves identifying hazardous events (in this case the establishment of imported wildlife in Tasmania), estimating the likelihood that such an event will occur, and assessing the probable consequences if it does. Risk assessment should be scientifically sound, rigorous and independent of the applicant.
Risk Communication	The final stage of risk analysis includes communicating the information, opinions and processes used during risk assessment and management to the stakeholders that will be affected by the decisions taken.
Risk Management	If the risk assessment concludes that a proposed import represents an unacceptable level of risk, measures that can be applied to reduce the level of risk are then investigated. Where the risk is extreme it is likely that the only effective management option is to prohibit the import.
SEWPaC	The Australian Government Department of Sustainability, Environment, Water, Population and Communities.
Special Authority	An **authority** issued by the Chief Veterinary Officer under the *Animal Health Act 1995* that authorises the importation of an animal and specifies any conditions that apply.
SPS Agreement	World Trade Organization Agreement on the application of Sanitary and Phytosanitary measures.
Vector	Any living or non-living carrier that transports living organisms intentionally or unintentionally.
Vertebrate	Animal with a skull surrounding a brain and a skeleton of cartilage or bone, including a backbone of vertebrae.
VPC	The Vertebrate Pests Committee, a technical sub-committee of the National Biosecurity Committee and the Natural Resource Management Standing Committee.
VPC Threat Category	Risk ranking assigned to a vertebrate based on the outcome of a pest risk assessment. There are four VPC threat categories: Extreme, Serious, Moderate and Low Threat.
WTO	World Trade Organization
ZAA	Zoo and Aquarium Association (formerly known as ARAZPA).
Zoo	The containment (maintenance and holding) of species within facilities for a number of reasons including for conservation, exhibition, education or research. Facilities may be owned or run by relevant authorities or by private individuals or corporations.

1. INTRODUCTION

1.1 GENERAL

Introduced animals are recognised as one of the most significant threats to biodiversity and are noted for their impact on natural ecosystems, primary industries and public amenity (IUCN 2000; NRMMC 2007; Simons and De Poorter 2009). Introduced species can impact on native flora and fauna through competition, habitat destruction and predation and can impact primary industries by damaging crops, preying on stock, competing for pasture, causing land degradation and spreading weeds (NRMMC 2007). They may also act as reservoirs for diseases which affect native wildlife, domestic stock and people, resulting in high costs. The combined financial impact of eleven of Australia's worst pest animals has been conservatively estimated at more than $720 million a year (McLeod 2004). In addition, introduced animals pose a particular threat to Tasmania's environment because, as a small island, Tasmanian flora and fauna have evolved with a high degree of isolation and therefore have a heightened vulnerability to the impact of introduced species.

Prevention and early intervention provide the most cost-effective means of managing introduced species. In managing the associated risks of introduced animals, Tasmania does not adopt a zero-risk approach to biosecurity, which would see all live imports of animals prohibited. Rather, Tasmania's Appropriate Level of Protection (ALOP) is stated as "a high or very conservative level of protection aimed at reducing risk to very low levels, while not based on a zero risk approach" (DPIW 2006). This risk management approach requires analysis of both the risks involved and the application of management measures that are commensurate with the level of risk.

This policy is based on the *Guidelines for the Import Movement and Keeping of Exotic Vertebrates in Australia* that were produced by the national Vertebrate Pest Committee (VPC) and endorsed by the Natural Resource Management Standing Committee (NRMSC 2004). This policy has been developed following a review of Tasmania's wildlife import legislation, regulations and processes that made a number of recommendations to reform Tasmania's wildlife import arrangements (Eco Logical 2010). The arrangements outlined in this policy will implement the key recommendations of the Eco Logical (2010) review, while remaining consistent with the national guidelines.

1.2 WHO WILL USE THIS POLICY?

This policy will be used by the Department of Primary Industries, Parks, Water and Environment which has legislative responsibility to control the import, movement and keeping of animals under the provisions of the *Nature Conservation Act 2002* and the associated regulations. This policy will also be publicly available to provide stakeholders with information about how the new import arrangements are administered by DPIPWE. The procedures outlined in this document are to be used by stakeholders wishing to apply to amend the list of controlled animals that can be imported into the State. The policy framework provides stakeholders with the opportunity to comment on new import proposals and their associated risk assessments.

1.3 SCOPE

This policy covers the importation of all controlled animals (including species that are native to Australia and Tasmania) under the *Nature Conservation Act 2002*. Controlled animals include any mammal, bird, reptile or amphibian, except for dogs, cats, restricted animals and domestic stock. The policy does not cover restricted

animals, which include any fox, wolf, dingo, mink, any animal prescribed by the regulations to be a restricted animal, and any hybrid of a species that is a restricted animal. Domestic stock, that are listed under Schedule 7 of the *Wildlife* (*General*) *Regulations 2010,* are also not covered by this policy. The scope of this policy does not include the importation of fish and invertebrates.

1.4 Need

Over the last five years there has been a significant increase in requests to import new species into Tasmania. It has not been possible to effectively manage the variety and volume of permit requests within the existing policy framework. On 19 August 2009, the then Minister authorised a moratorium on the processing of permits for the importation of wildlife (with prescribed exceptions) until a review of the import arrangements could take place. This policy takes into account the recommendations of that review (Eco Logical 2010) and provides a framework to manage the importation of introduced animals.

1.5 Immediate outcomes

The immediate outcomes of applying this policy to the importation, keeping and movement of wildlife in Tasmania will be as follows:

- a robust, comprehensive and publicly accessible risk assessment methodology will be used to inform wildlife import arrangements; and
- the risk posed by introduced animals will be managed in accordance with the clear and publicly accessible principles and procedures.

1.6 Ongoing expected outcomes

The ongoing outcomes of applying this policy to the importation, keeping and movement of wildlife in Tasmania will be as follows:

- people seeking to import a species into Tasmania that has not been risk assessed will be required to submit an application which includes sufficient information upon which a risk assessment can be made;
- risk assessments will include a thorough and comprehensive examination of available information, with consultation and incorporation of reviewer's comments by risk assessors with appropriate expertise;
- applications to import controlled animals into Tasmania, or to review previous assessments, will be handled through a timely, scientific and transparent process based on the procedures documented in this policy;
- a formal process will be available to appeal decisions made by DPIPWE in administering this policy (including examination of new information as it becomes available); and
- future legislation and policy development and/or amendments will be informed by this policy.

1.7 Legal and policy framework

1.7.1 International context

There are several international treaties and agreements to which Australia is a party that inform the international legal and policy framework for wildlife trade. Significant conventions for the purposes of this

policy are the Convention on Biological Diversity, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the arrangements established under the World Trade Organization.

International organisations, such as the International Union for Conservation of Nature (IUCN), also have a number of programs and guidelines relevant to the management of introduced species.

Convention on Biological Diversity 1992

The objectives of the Convention on Biological Diversity (CBD) are the conservation of biodiversity, sustainable use of biodiversity, and fair and equitable sharing of the benefits arising from the use of genetic resources. Article 8h of the convention requires parties to the convention to "prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species" as far as possible and as appropriate.

Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973

Australia is one of more than 150 parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Each member is obliged to control the import and export of species that are listed as endangered or at risk of becoming endangered due to inadequate controls over trade. Member countries enforce CITES regulations through management and scientific authorities. Under the convention, species are placed on one of three appendices depending on their conservation status and risk from trade. Trade in CITES listed species may occur subject to a number of strict conditions, e.g. being limited to non-commercial purposes such as conservation breeding.

General Agreement on Tariffs and Trade 1994

The objective of the General Agreement on Tariffs and Trade (GATT) is to remove protectionist trade barriers and prevent discrimination in the application of biosecurity measures between the party States. The principles developed through GATT provided the foundation for the Marrakesh Agreement Establishing the World Trade Organization (WTO). The Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement) and the Agreement on Technical Barriers to Trade (the TBT Agreement) are the most significant measure under the WTO in terms of Australia's rights and obligations in relation to biosecurity. Biosecurity measures that Australia has in place must be consistent with Australia's international obligations under the World Trade Organisation and not impose unnecessary barriers to trade.

The level of risk that a country is willing to accept is known as the country's Appropriate Level of Protection (ALOP). The SPS Agreement defines ALOP as "the level of protection deemed appropriate by the Member establishing a sanitary or phytosanitary measure to protect human, animal or plant life or health within its territory". The SPS Agreement requires countries to determine an Appropriate Level of Protection (ALOP) and ensure that sanitary and phytosanitary measures are not more trade restrictive than necessary to achieve the ALOP.

International Union for Conservation of Nature

The International Union for Conservation of Nature (IUCN) is a global environmental network. The IUCN supports scientific research, including the IUCN Red List of Threatened Species that categorises species based on the risk of extinction, and provides information about the biology and ecology of many species globally (www.iucn.org). The IUCN Guidelines for the Prevention of Biodiversity Loss Caused by Alien Invasive Species also provide high level principles relevant to the import, keeping and movement of introduced wildlife (IUCN

2000). The IUCN is one of four international organisations that established the Global Invasive Species Programme.

Global Invasive Species Programme

The Global Invasive Species Programme (GISP) aims to conserve biodiversity and sustain livelihoods by minimising the spread and impact of invasive species. GISP provides support to implement the Convention on Biological Diversity. The organisation has contributed to the knowledge and awareness of invasive species through the development of a range of products including guidelines, toolkits and databases. The GISP and the IUCN manage the Global Invasive Species Database (www.issg.org/database).

1.7.2 National context

The importation of wildlife into Australia is regulated by the Australian Government Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) and the Australian Quarantine and Inspection Service (AQIS) of the Department of Agriculture, Fisheries and Forestry (DAFF). SEWPaC regulate the importation of wildlife under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBCA) and AQIS impose import conditions under the *Quarantine Act 1908.* The most significant elements of the national management arrangements are outlined below. The Vertebrate Pest Committee, which provides a forum for national policy development in relation to pest animals, is also discussed.

Environment Protection and Biodiversity Conservation Act 1999

The EPBCA regulates the import of live animals that, if they became established in Australia, could adversely affect native species or their habitats. Under the EPBCA, the importation of species into Australia is prohibited unless they are on a permitted species list. SEWPaC maintains the list of species that can be imported into Australia. Applicants can apply to SEWPaC to have the list of species suitable for live import amended. The process for new animal imports into Australia is outlined on the SEWPaC website (www.environment.gov.au/biodiversity). The CITES convention is also enforced domestically under provisions within the EPBCA.

Quarantine Act 1908

Animal imports into Australia are also regulated under the *Quarantine Act 1908* by AQIS. There are a range of quarantine procedures that apply to the importation of all animals to prevent the introduction of pests and diseases. All imports of wildlife into Tasmania must have met these requirements and be on the list of species suitable for live import (outlined above).

Vertebrate Pest Committee

The Vertebrate Pest Committee (VPC) is a committee established under the Natural Resources Management Standing Committee (NRMSC). The VPC includes all Australian jurisdictions and coordinates national policy in relation to pest animals. They have developed the *Guidelines for the Import, Movement and Keeping of Exotic Vertebrates in Australia* (NRMSC 2004). The guidelines provide a national framework for pest risk assessment and management. The VPC assesses species as posing either an extreme, serious, moderate or low threat, and risk management measures are recommended for each class of animal, commensurate with the level of risk. The VPC is also responsible for implementing the Australian Pest Animal Strategy (NRMMC 2007).

1.7.3 TASMANIAN CONTEXT

Nature Conservation Act 2002

The objective of the *Nature Conservation Act 2002* is to conserve and protect the fauna and flora in Tasmania. The Act prohibits the importation of any mammal, bird, reptile or amphibian (excluding dogs, cats, and domestic stock) without a permit. The *Wildlife* (*Exhibited Animals*) *Regulations 2010* and the *Wildlife* (*General*) *Regulations 2010* provide for additional controls over the import, possession and sale of wildlife in Tasmania.

Animal Health Act 1995

The purpose of the *Animal Health Act 1995* is for the prevention, detection and control of animal diseases and to provide for the maintenance and improvement of animal health. Under the *Animal Health Act 1995* a person must not import an animal unless authorised by a general or special authority; the importation must be done in accordance with any conditions specified in the general or special authority. Animals include any mammal, bird, fish, shellfish and insect.

Animal Welfare Act 1993

The purpose of the *Animal Welfare Act 1993* is to prevent neglect of, and cruelty to, animals and to ensure the welfare of animals in Tasmania. This Act requires that a person who has the care or charge of an animal has a duty to take all reasonable measures to ensure the welfare of that animal. The keeping of wildlife in Tasmania must comply with these requirements.

Public Health Act 1997

The *Public Health Act 1997* aims to protect and promote the health of communities in the State and reduce the incidence of preventable illness. A number of notifiable diseases can also be spread by animals. The Director of Public Health may require specified action to stop, limit or prevent the spread of any notifiable disease to humans.

Tasmanian Biosecurity Strategy

The Tasmanian Biosecurity Strategy aims to "protect and enhance Tasmania's biosecurity status for the benefit of Tasmania's industries, environment and public well-being, health, amenity and safety" (DPIW 2006). The strategy sets out Tasmania's Appropriate Level of Protection (ALOP) as "a high or very conservative level of protection aimed at reducing risk to very low levels, while not based on a zero risk approach" (DPIW 2006). The strategy promotes a risk analysis approach to manage biosecurity threats and highlights the need for effective border protection and communication.

2. Policy Principles

The outcome of the policy on the import, movement and keeping of wildlife is to achieve the Tasmanian Biosecurity policy objective (DPIW 2006), while remaining consistent with the International and National legal and policy framework. Importantly the principles applied in Tasmania are broadly consistent with the guidelines produced by the Vertebrate Pest Committee (VPC), which outline a nationally agreed approach (NRMSC 2004). This section outlines the policy principles underpinning the Tasmanian policy for importing, keeping and moving wildlife.

2.1 Decisions are taken in the public interest

Decisions on importing, keeping and moving wildlife are made in the public interest. The private benefit of importing wildlife into Tasmania will not be promoted over the potential negative impact on the Tasmanian environment.

2.2 Transparent and equitable process

Decisions regarding the importation, keeping, and movement of wildlife in Tasmania will be fair, transparent and well communicated. These decisions will comply with relevant legislation and be consistent with international agreements and conventions to which Australia is a signatory.

The process for assessing the risks associated with importing, keeping and moving wildlife in Tasmania are outlined in this policy and the risk assessment methodology is based on a publicly available document. The risk assessment for the importation of new species of wildlife into Tasmania will include public consultation during the process to determine whether a species is suitable for import into Tasmania, and the conditions, if any under which the import can occur. The results of the risk assessment in relation to the import, keeping and movement of wildlife within Tasmania will be made available on the Department's internet site and through direct consultation with stakeholders.

2.3 Consistency with international obligations

The arrangements will be broadly consistent with Australia's obligations under international treaties that relate to the environment and trade. Some of the key policy principles are outlined below.

2.3.1 Maintenance of biological diversity

One of the major threats to biological diversity is the impact of introduced species. In order to conserve biological diversity, the Convention on Biological Diversity requires that as far possible and as appropriate parties "prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats and species". The IUCN has developed guidelines to prevent further losses of biological diversity due to introduced species, and to assist governments to meet the obligations of the convention (IUCN 2000). Consistent with these guidelines, Tasmania prioritises preventing the introduction of invasive species because it is the most effective, most preferred and cheapest management option.

When importing threatened species the importing institution should have clear links to, and support from a government mandated recovery program (for Australian species) or international conservation programs run under the auspices of the Zoo and Aquarium Association (ZAA). The programs will typically be run by state

governments, statutory zoos (for example Zoos Victoria, Taronga Zoo) or bodies such as ZAA, that administer managed programs such as the Australasian Species Management Program (ASMP).

2.3.2 Precautionary principle

The Convention on Biological Diversity also promotes the application of the precautionary principle to protect biodiversity. Under the precautionary principle where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat.

2.3.3 Prevention of restrictions on trade

Consistent with the Sanitary and Phytosanitary Agreement and the Technical Barriers to Trade Agreement (the SPS Agreement), the application of this policy will not involve unjustified or disguised trade barriers. Any measures that restrict the importation of wildlife into Tasmania will be applied to protect Tasmania's biodiversity and primary industries and prevent the establishment of pests and diseases that can impact on the State's favourable biosecurity status.

2.3.4 Burden of proof

The intending importer will bear the burden of proof that a proposed introduction will not adversely affect biological diversity. This principle is consistent with the IUCN Guidelines for the Prevention of Biodiversity Loss Caused by Alien Invasive Species (IUCN 2000).

2.4 Risk analysis approach

The IUCN guidelines (IUCN 2000) highlight the need for effective evaluation and decision making processes in assessing whether species should be imported. In-keeping with these guidelines, an import risk analysis will be conducted to assess whether wildlife imports should be permitted into Tasmania, and any conditions that should apply. The risk analysis approach that Tasmania adopts is broadly consistent with the Tasmanian Import Risk Analysis framework (DPIPWE 2010). The methodology has been developed by the Vertebrate Pest Committee (VPC) (Bomford 2008). This approach, known as the 'Bomford model', is a numerical risk assessment model and is widely applied in Australia to assess the level of risk posed by exotic vertebrates.

2.4.1 Risk Assessment, Risk Management and Risk Communication

Risk analysis is the process used to assess, manage and communicate the threat from wildlife imports and has three steps:

- **Risk Assessment**: Risk assessment involves identifying hazardous events (in this case the establishment of wildlife in Tasmania), estimating the likelihood that such an event will occur, and assessing the probable consequences if it does. Risk assessment should be scientifically sound, rigorous and independent of the applicant.
- **Risk Management**: If the risk assessment concludes that a proposed import represents an unacceptable level of risk, measures that can be applied to reduce the level of risk are then investigated. Where the risk is extreme it is likely that the only effective management option is to prohibit the import.
- **Risk Communication**: The final stage of risk analysis includes communicating the information, opinions and processes used during risk assessment and management to the stakeholders that will be affected by the decisions taken.

2.4.2 Dealing with uncertainty

There is a high degree of uncertainty inherent in assessing the risks associated with importing wildlife into Tasmania. This is because there is seldom a complete body of biological and ecological knowledge about a species, and scientific predictions about the probability of establishment and the extent of damage caused by a species are imprecise. The areas and degree of uncertainty should be documented in risk assessments, and the assessment should indicate when judgment, rather than data, is used. If the level of uncertainty is high, and there is a threat to biological diversity, the precautionary principle will be applied.

2.4.3 Considering climate change

In considering the risk associated with a wildlife import to Tasmania the potential implications of climate change will be taken into account. If a risk assessment concludes that the Tasmanian environment is marginally unsuitable for a species to establish, the effect of climate change on the likelihood of establishment and potential consequences will be considered.

2.4.4 Risk analysis for wildlife proposed for import into Australia

Imports will not be permitted into Tasmania from overseas unless they meet national requirements. The requirements of both the *Environment Protection and Biodiversity Conservation Act (1999)* and the *Quarantine Act (1908)* must be met before the importation of wildlife into Tasmania is permitted. The Australian government has developed an integrated process to assess applications for the importation of exotic vertebrates into Australia. This assessment process is consistent with the *Guidelines for the Import, Movement and Keeping of Exotic Vertebrates in Australia* (NRMMC 2004) and uses the risk assessment methodology developed by the Vertebrate Pest Committee (VPC) (Bomford 2008).

Under the national arrangements all species that are assessed as representing an extreme threat to Australia will not be permitted entry into Australia[1], and therefore these species will not be permitted into Tasmania. Despite this, there are some species that are categorised by the VPC as an extreme threat that are already present in Australia, and being traded. The level of threat that these species pose to Tasmania will be determined by a risk assessment specific to Tasmania. Therefore some extreme threat species that are already in Australia may be permitted import into Tasmania, provided the risk posed to Tasmania is acceptable and the conditions outlined below are met. People importing these species into Tasmania should be aware that other jurisdictions may place restrictions on the export of these species and their progeny from Tasmania to the mainland.

2.4.5 Risk analysis for wildlife already in Australia

In addition to any national requirements that may apply, all wildlife imports into Tasmania must meet Tasmanian import requirements. The policy and methodology for assessing whether species that are already in Australia should be imported into Tasmania is the same as the national approach outlined above. This ensures that decisions made on the importation of wildlife into Tasmania are consistent, irrespective of whether the species is an exotic species or an Australian native species.

[1] In a limited number of situations the Australian Government may permit the importation of extreme threat species that are already present in the country. For example zebras have been assessed as an extreme threat species and are imported into mainland Australia.

2.5 Beneficiary pays

Biosecurity is a shared responsibility of Government, the Tasmanian community, the corporate sector and visitors to Tasmania (DPIW 2006). All stakeholders have a role in managing the risks posed by species imported into Tasmania. To the extent that it is possible and practicable the cost of managing those risks will be borne by the beneficiaries of the arrangements. Consistent with this principle, stakeholders that benefit from wildlife being introduced into Tasmania will pay for the costs associated with managing the risks, along with those who benefit from the risks being minimised.

2.6 Ability to appeal decisions

Administrative arrangements will provide for stakeholders to appeal the recommendations of an import risk assessment. The wildlife import arrangements will provide for an appeal to the Secretary of the Department of Primary Industries, Parks, Water and Environment on the grounds that the process did not reasonably provide for stakeholder participation, or that the assessment did not consider key scientific or technical information. The Secretary will ensure that DPIPWE staff conducting the review are independent of the process.

Additionally some administrative decisions under the *Wildlife (Exhibited Animals) Regulations 2010* are open to review under the *Magistrates Court (Administrative Appeals Division) Act 2001*. The reviewable decisions include:

- refusal to renew, cancellation or suspension of a wildlife exhibition licence;
- cancellation of a travelling wildlife exhibition permit; and
- refusal to renew or cancellation of a wildlife display permit.

The decision of the Secretary not to grant a permit to import under the *Nature Conservation Act 2002* is not a reviewable decision.

2.7 Animal health and welfare

This policy does not make specific recommendations in relation to animal health or welfare. Animal health and welfare is regulated in Tasmania under the *Animal Health Act (1995)* and the *Animal Welfare Act (1993)*. However, permits for importing, keeping and moving wildlife will include conditions that all appropriate controls, standards, guidelines, codes of practice and/or management plans that relate to animal health and welfare are met.

2.8 Limiting Crown liability

The importation of wildlife into Tasmania should limit Crown liability as far as practicable and appropriate. The principal Crown liabilities from the importation of wildlife could arise from the escape of animals or the cost of support for animals following closure of the receiving institution. Where there are potentially significant consequences for the Crown, conditions will be placed on permits to import wildlife to limit Crown liability or the import will not be permitted.

2.9 MANAGING POST-IMPORTATION ISSUES (KEEPING, BREEDING AND TRADE)

The wildlife import arrangements will specify the conditions in relation to the keeping of wildlife, breeding, and the ownership of progeny of wildlife imports. Conditions on the importation of wildlife will also specify whether the imported individuals, or the progeny of imported wildlife, can be traded and any conditions that may apply. These requirements will be imposed in situations where an import risk analysis recommends that such requirements are appropriate and necessary to reduce the level of risk associated with an import and if the subject animals are part of a managed conservation program.

3. Risk Assessment

3.1 Process

Risk assessments are used to underpin decisions by the Tasmanian government on whether wildlife can be imported into Tasmania and the conditions, if any, that will apply. These assessments are designed to ensure that any wildlife import does not represent an unacceptable level of risk to Tasmania. Risk assessment involves:

- identifying hazards;
- estimating the likelihood that a hazardous event will occur; and
- assessing the probable consequences if the event does occur (DPIPWE 2010).

The risk assessment methodology that Tasmania adopts to assess the risk of wildlife imports into the State was developed by the Bureau of Rural Sciences (Bomford 2003, 2006, 2008) and is applied by several Australian jurisdictions (for example see Massam *et al.* 2010) and has been endorsed internationally (Simons and De Poorter 2009). The model is known as the 'Bomford model'. The Bomford model is based on an analysis of the historical outcome of biological introductions (Bomford 2008; Bomford *et al.* 2009).

The Bomford model assesses the risk of an exotic species to Australia as a whole, and has been adapted to consider the risk of wildlife imports to Tasmania specifically, rather than Australia as a whole, and to enable an assessment of the risk of Australian native species being imported into the State.

3.2 Assessment factors

The Bomford model considers three factors to assess the level of risk posed by a species (Bomford 2008). They are the:

A. danger posed by individual animals;
B. likelihood of establishment; and
C. consequence of establishment.

The way in which these factors are taken into consideration in the risk assessment is outlined in the following sections. First the way in which the danger posed to humans by individual animals, including mammals, birds, reptiles and amphibians is described in section 3.3. Then the method for determining the likelihood of establishment, and consequence of establishment is described in sections 3.4 and 3.5, respectively. These sections are divided into the method for mammals and birds, and then the method for reptiles and amphibians. Finally the way in which the three factors are combined to allocate a threat category to each species, using the VPC categorisation rules is shown in section 3.6, and in section 3.7 the underlying assumptions and limitations of the method are discussed.

3.3 A: Danger posed by individual animals to humans

The danger posed to humans by captive or released individuals is used to estimate the public safety risk score and the public safety risk ranking. The public safety risk score is determined by two factors: the risk posed from individual escaped animals (A1); and the risk posed to public safety from individual captive animals (A2), as outlined below.

A1: Risk posed from individual escapees to humans (0-2)

The species is assessed to determine whether individuals could harm people. Factors that are taken into consideration are aggressive behaviour, size, the possession of organs capable of inflicting harm such as sharp teeth, claws, spines, a sharp bill, or toxin-delivering apparatus (including toxic skin). Additionally any known history of the species attacking, injuring or killing people should be taken into account. It is assumed that the species is not protecting a nest or young. The species is put in one of the following categories:

- The animal sometimes attacks when unprovoked and/or is capable of causing serious injury (requiring hospitalisation) or fatality (A1 = 2).
- The animal can make unprovoked attacks causing moderate injury (requiring medical attention) or severe discomfort but is highly unlikely (few if any records) to cause serious injury (requiring hospitalisation) if unprovoked OR the animal is unlikely to make an unprovoked attack but can cause serious injury (requiring hospitalisation) or fatality if cornered or handled (A1 = 1).
- All other animals posing a lower risk of harm to people (i.e. animals that will not make unprovoked attacks causing injury requiring medical attention, and which, even if cornered or handled, are unlikely to cause injury requiring hospitalisation) (A1 = 0).

Note: This section does not include impacts to native species. It is also assumed that animal health risks are managed under the *Animal Health Act 1995* prior to the species being imported into Tasmania and that human health disease risks are managed under the *Public Health Act 1997*.

A2: Risk to public safety from individual captive animals (0-2)

The public safety issues that may arise from the irresponsible use of product obtained from captive individuals (such as toxins) is then assessed. This does not include the safety of anyone entering the animal's cage/enclosure or otherwise coming within reach of the captive animals. The risk that irresponsible use could pose a public safety issue is categorised in the following way:

- High risk (feasible and consequences could be fatal) (A2 = 2).
- Moderate risk (few records and consequences unlikely to be fatal) (A2 = 1).
- Nil or low risk (highly unlikely or not possible) (A2 = 0).

Public Safety Risk Score

A species' Public Safety Risk Score (A) is then determined as the sum of A1 and A2.

Public Safety Risk Rank

Based on the Public Safety Risk Score, the species is assigned a public safety risk ranking according to the following rules:

Public Safety Risk Rank	Public Safety Risk Score
Highly dangerous	A ≥ 2
Moderately dangerous	A = 1
Not dangerous	A = 0

3.4 B: LIKELIHOOD OF ESTABLISHMENT

3.4.1 LIKELIHOOD OF ESTABLISHMENT: MAMMALS AND BIRDS

The four factor model for estimating the likelihood of escaped or released birds and mammals establishing a population in Tasmania that was developed by Bomford (2008) is used. The four factors are calculated as outlined below.

B1: Climate Match Score (1-6)

CLIMATCH is a climate-matching tool, which uses long-term temperature and rainfall patterns of a species' existing distribution to determine its likely distribution, and potential to become a pest if introduced to a new continent or region. It is produced by the Bureau of Rural Sciences, Department of Agriculture, Fisheries and Forestry. The model freely available and is accessed at (http://adl.brs.gov.au:8080/Climatch/climatch.jsp).

Map the mammal or bird species' overseas and Australian mainland distribution using the web version of CLIMATCH. The entire native and exotic range over the past 1000 years is required.

Running a CLIMATCH model includes four steps as follows:

1. Once the species' distribution is obtained through a literature review[2], select the relevant sites which correspond with the species' range using the 'select stations' tool. Zoom in/out as required using the map navigation tools. When all relevant sites are selected, click the 'save map' icon in the bottom left corner and save as a .clm file. Once saved, click the 'save map' icon again and save as a .png image.

2. Before running the match, hold the mouse over the word 'source' in the 'selected stations' toolbar at the base of the screen and note the area provided. This figure is useful in other areas of the risk assessment.

3. Run the CLIMATCH, using the 'run match' icon. A map of Australia will be produced. Click the 'save map' icon in the bottom left corner and save as a .png image.

4. At the completion of modelling, you should have saved:

    - a .clm file of the species distribution
    - a .png file of the species distribution
    - a .png file of the Climate match with Australia.

Further information can be obtained in the CLIMATCH tutorial link at the top right corner of the software window, or in the CLIMATCH user manual (available via the tutorial link).

To determine the CLIMATE Euclidian Sum count the number of squares in Tasmania that are in the top five climate match classes 10, 9, 8, 7 and 6 = (Value X). The Climate Match Score is determined according to the total number of squares that are in these climate match classes as shown below.

[2] A thorough literature review is required to determine the species' range. The references used to determine the species' distribution should be clearly referred to in the risk assessment. Some useful general references for the literature review are provided in Appendix 3. Specific references for individual species will be required.

CLIMATE Euclidian Sum Level 6 (Value x)	Climate Match Score (B1)
≥ 29	6 (Extreme)
19 – 28	5 (Very High)
10 – 18	4 (High)
6 – 9	3 (Moderate)
1 – 5	2 (Low)
<1	1 (Very Low)

Note: If the input range for a species has 12 or fewer meteorological stations, it is likely to underestimate the climate match to Tasmania. In this situation the climate match score will be increased by one increment.

B2: Exotic Population Established Overseas Score (0-4)

An assessment is then made on the number of exotic populations that the species has established. Establishment includes maintaining a viable population, even if these populations only persist in highly modified environments with no natural food supplies or shelter. If the species is only maintained via captive breeding populations or populations that are intentionally fed or sheltered, they are not considered established. If a species persisted for at least 20 years, before being eradicated, the event also counts as an establishment event. The exotic population establishment score is calculated on the following basis:

- Exotic populations have been established on a large island (> 50 000 km^2)[3] or anywhere on a continent, including the Australian mainland. This includes populations that have been established due to human introduction on continents within the natural range of the animal, provided the population is geographically separate from the natural population (B2 = 4)
- Exotic populations have only established on small islands (<50 000 km^2) (B2 = 2)
- No exotic populations have been established (B2 = 0).

B3: Overseas Range Size Score (0-2)

The Bomford model then calculates the overseas range score. For the purposes of estimating the overseas range in Tasmanian risk assessments, populations of species on the Australian mainland are also included in the calculation. The overseas range size, including both natural and introduced populations, is categorised as follows:

Overseas Range Size (million km^2)	Overseas Range Size Score (B3)
> 70 million km^2	2
1 – 70 million km^2	1
< 1 million km^2	0

[3] Tasmania's land area is 67 800 km^2.

B4: Taxonomic Class Score (0-1)

This score is calculated on the following basis:

- Mammal (B4 = 1)
- Bird (B4 = 0)

Establishment Risk Score

A species' establishment risk score is then calculated as the sum of B1 to B4.

Establishment Risk Rank

The species' establishment risk score is then converted to an establishment risk ranking using the following rules:

Establishment Risk Rank	Establishment Risk Score
Extreme	11 - 13
High	9 – 10
Moderate	6 – 8
Low	≤ 5

3.4.2 Likelihood of establishment: reptiles and amphibians

The following instructions for using the Reptile and Amphibian Model to rank establishment risk for exotic reptiles is adapted from Bomford (2008 pp 55-61). The Bomford model is based on an analysis of the historical outcome of biological introductions (Bomford 2008; Bomford *et al.* 2009). The model uses Kraus' database of reptiles and amphibians (Kraus 2009) to determine the proportion of introduction events worldwide that were successful for a given Family, Genus and Species. Three factors are used to estimate the likelihood of establishment in these models: the Family Random Effect Value; Prop.species Value; and S(Climate 6 value). The method for determining each of these parameters is discussed below.

B1. Family Random Effect Value

Family Random Effect values are provided in Table 3.2 of Bomford (2008). These values are only available for species that were introduced into Britain, California, and Florida and assessed by Bomford (2008). If a Family Random Effect value is not available the average value used in Bomford *et al*. (2009) of -0.61 is used. To determine the sensitivity of the assessment to this parameter the maximum value (1.69) and minimum (-1.3) can be used to determine whether it has a significant effect on the outcome of the risk assessment. Where there is uncertainty about this value a precautionary approach (i.e. assuming a maximum value of the family random effect value) is recommended.

B2. Proportion of Introduction Events that Led to Species Establishment (Prop.species value)

The Prop.species Value is the proportion of introduction events for a species that resulted in successful establishment. The database developed by Kraus (2009), which includes the outcome of more than 2000 introduction events, is used as the source of this data. Where there are fewer than three introduction events with known outcomes for a species, introduction events for all other species in that Genus with three or more introduction events are combined into a single success rate. This value is known as the Prop.genus Value.

Likewise, where there are fewer than three introduction events for a Genus, a Prop.family Value is calculated using the same process at the Family level, and that value is used in the model.

B3. S(Climate 6 value)
As for the Climate Match Score for mammals and birds, the species' overseas and Australian mainland distribution is mapped using the web version of CLIMATCH, including the entire native and exotic range over the past 1000 years. Running a CLIMATCH model includes four steps as follows:

1. Once the species' distribution is obtained through a literature review, select the relevant sites which correspond with the species' range using the 'select stations' tool. Zoom in/out as required using the map navigation tools. When all relevant sites are selected, click the 'save map' icon in the bottom left corner and save as a .clm file. Once saved, click the 'save map' icon again and save as a .png image.

2. Before running the match, hold the mouse over the word 'source' in the 'selected stations' toolbar at the base of the screen and note the area provided. This figure is useful in other areas of the risk assessment.

3. Run the CLIMATCH, using the 'run match' icon. A map of Australia will be produced. Click the 'save map' icon in the bottom left corner and save as a .png image.

4. At the completion of modelling, you should have saved:

    - a .clm file of the species distribution
    - a .png file of the species distribution
    - a .png file of the Climate match with Australia.

Further information can be obtained in the CLIMATCH tutorial link at the top right corner of the software window, or in the CLIMATCH user manual (available via the tutorial link).

The Climate 6 Score is the sum of the number of squares in Tasmania in the top five CLIMATCH classes (10, 9, 8, 7 and 6) divided by 30.

The Bomford (2008) method then determines the S(Climate 6) Score from the following equation:

S(Climate 6) = 4.25 * (Climate 6 Score) -1.88.

Establishment Risk Score
The Establishment Risk Score is then determined using the following equation:

Establishment Risk Score = 1/ (1 + exp * (0.80 – 2.90 (Prop.species) – S(Climate6) – Family Random Effect)).

Note: If Prop.genus or Prop.family is the only value available, it is used in place of Prop.species in the equation.

Establishment Risk Rank
The Establishment Risk Rank is then determined as follows:

Establishment Risk Rank	Establishment Risk Score
Extreme	≥ 0.86
High	0.40 – 0.85
Moderate	0.17 – 0.39
Low	≤ 0.16

3.5 C:Consequence of establishment in Tasmania

3.5.1 Consequence of establishment

The third factor used to assess the level of threat a species' represents is the potential consequence of a establishment in Tasmania. The method to quantitatively assess the potential consequences of mammals, birds, reptiles and amphibians is outlined in this section. Bomford (2008) recommends using a qualitative and quantitative approach for the assessment of reptiles and amphibians. The criteria to conduct a qualitative assessment of the consequences of establishment of reptiles and amphibians are outlined in section 3.5.2.

C1. Taxonomic group (0-4)

Bomford (2003) has determined several factors that can predict whether introduced species will become pests. This includes species that have detrimental environmental impact through effects on prey abundance and/or cause habitat degradation; species that are prone to causing agricultural damage; and species that can hybridise with native species. Animals noted for causing environmental impacts include the Carnivora (carnivores such as foxes, cats, dingos and ferrets), Artiodactyla (even-toed ungulates such as pigs, camels, deer, goats, and buffalo), Rodentia (rodents such as rats and mice), Lagomorpha (hares, rabbits and squirrels), Perissodactyla (odd-toed ungulates such as horses, zebras, donkeys and rhinoceroses) and Marsupialia (pouched mammals such as possums, kangaroos, wallabies and koalas).

Mammals and birds that belong to families that have been established in new areas and caused agricultural damage include Canidae (foxes and dogs), Mustelidae (stoats and ferrets), Cervidae (deer), Leporidae (rabbits and hares), Muridae (rodents), Bovidae (cattle, sheep and goats), Phascolarctidae (koalas), Psittaciformes (parrots), Fringillidae (old-world finches), Ploceidae (sparrows and weavers), Sturnidae (starlings and mynas), Anatidae (ducks, geese, and swans), and Corvidae (crows).

Introduced birds can also impact on native species through hybridisation. Birds in families that are likely to hybridise with native species include the Anatidae (ducks, geese and swans), Phasianidae (pheasants and partridges), Cacatuidae (cockatoos) and Psittacidae (parrots).

The Bomford model ranks the potential consequences according to the taxonomic group that the species belongs to as follows:

- Mammal in one of the orders that have been demonstrated to have detrimental effects on prey abundance and/or habitat degradation (Carnivora, Artiodactyla, Rodentia, Lagomorpha, Perissodactyla and Marsupialia) (C1 = 2).

AND/OR

- Mammal in one of the families that are particularly prone to causing agricultural damage (Canidae, Mustelidae, Cervidae, Leporidae, Muridae, Bovidae, Phascolarctidae) = (C1 = 2) (score 4 if the dot point above also applies).
- Birds in one of the families that are particularly prone to causing agricultural damage (Psittaciformes, Fringillidae, Ploceidae, Sturnidae, Anatidae, and Corvidae) (C1 = 2).

AND/OR

- Bird in one of the families likely to hybridise with native species (including but not limited to Anatidae, Phasianidae, Cacatuidae and Psittacidae), and if there are relatives among Tasmanian native birds (C1 = 1) (score 3 if the dot point above also applies).
- Other group (C1 = 0).

C2. Overseas range size (0-2)

Estimate the species range (including current and past 1000 years, natural and introduced range).

- Less than 10 million square kilometres (C2 = 0).
- 10 – 30 million square kilometres (C2 = 1).
- Greater than 30 million square kilometres (C2 = 2).
- Unknown geographic range (C2 = 2).

C3. Diet and feeding (0-3)

Species are ranked on the following basis:

- Mammal that is a strict carnivore (eats only animal matter) and arboreal (climbs trees for any reason) (C3 = 3).
- Mammal that is a strict carnivore and strictly ground living (C3 = 2).
- Mammal that is not a strict carnivore (mixed animal-plant matter in diet) (C3= 1).
- Mammal that is primarily a grazer or browser (C3 =3).
- Other herbivorous mammal or not a mammal (C3 = 0).
- Unknown diet (C3 = 3).

C4. Competition with native fauna for tree hollows (0-2)

- Can nest or shelter in tree hollows (C4 = 2).
- Does not use tree hollows (C4 = 0).
- Unknown (C4 = 2).

C5. Overseas environmental pest status (0-3)

The overseas environmental pest status is then determined based on whether the species has been reported to cause declines in abundance of any native species of plant or animal or caused degradation to any natural community in any country or region of the world.

- Major environmental pest in any country or region (C5 = 3).
- Moderate environmental pest in any country or region (C5 = 2).

- Minor environmental pest in any country or region (C5 = 1).
- Never reported as an environmental pest in any country or region (C5 = 0).
- Unknown overseas environmental pest status (C5 = 3).

C6. Climate match to areas with susceptible native species or communities (0-5)

The Tasmanian native species and communities that could be impacted if the species established in Tasmania is considered by comparing the distribution of susceptible species and communities with the climate match output. This includes criteria for evaluating impact on Tasmanian native species and native communities that are not listed as threatened under Tasmanian legislation as well as criteria for categorising potential impacts on Tasmanian threatened species. First any native species or communities that could be susceptible to harm by the exotic animal if it established in the State are identified. The literature in relation the impacts of the species, diet and habitat use should be used to identify any impacts that may occur.

Next the geographic distribution of the susceptible species or communities (both non-listed and listed threatened species) are compared with the climate match map that was generated in the Likelihood of Establishment assessment (i.e. in section B1). The potential impact of the species is determined by the number of grid squares within specified climate match classes that overlap with the distribution of any susceptible native species or ecological communities.

The potential impact of the species on susceptible native species or communities (non-listed and listed threatened species) is ranked as follows:

- The species has more than 10 grid squares within the highest two climate match classes, and/or has more than 20 grid squares within the highest four climate match classes, that overlap the distribution of any susceptible native species or ecological communities that are not listed as threatened
  OR
  75% of the geographic range of one or more susceptible native species or ecological communities that are listed as threatened under Tasmanian legislation lies within the mapped area of the six climate match classes (10, 9, 8, 7, 6, and 5);
  OR
  The range of the species is unknown and the climate match to Tasmania is unknown (C6 = 5).

- The species has 6 to 10 grid squares within the highest two climate match classes, and/or has 11 to 20 grid squares within the highest four climate match classes that overlap the distribution of any susceptible native species or ecological communities that are not listed as threatened;
  OR
  50% of the geographic range of one or more susceptible native species or ecological communities that are listed as threatened under Tasmanian legislation lies within the mapped area of the six climate match classes (10, 9, 8, 7, 6, and 5) (C6 = 4);

- The species has 1 to 5 grid squares with the highest two climate match classes (i.e. classes 10 and 9) and/or has 6 to 10 grid squares within the highest four climate match classes that overlap the distribution of any susceptible native species or ecological community that are not listed as threatened;
  OR

25% of the geographic range of one or more susceptible native species or ecological communities that are listed as threatened under Tasmanian legislation lies within the mapped area of the six climate match classes (10, 9, 8, 7, 6, and 5) (C6 = 3).

- The species has no grid squares within the two highest climate match classes (i.e. classes 10 and 9) and has 1-5 grid squares within the highest four climate match classes (i.e. classes 10 to 7) that overlap the distribution of any susceptible native species or ecological communities including species listed as threatened (C6 =2).

- The species has no grid squares within the highest four climate match classes (i.e. classes 10 to 7) that overlap the distribution of any susceptible native species or communities that are not listed as threatened and has more than one grid square within the highest six climate match classes (i.e. classes 10 to 5) that overlap the distribution of any susceptible native species or ecological communities that are not listed as threatened (C6 = 1).

- The species has no grid squares within the highest six climate match classes (i.e. 10 to 5) that overlap the distribution of any susceptible native species or ecological communities (C6 = 0).

C7. Overseas primary production (0-3)

Reports of the species damaging crops or other primary production in any region in the world are then assessed and the species is categorised as follows:

- Major pest of primary production in any country or region (C7 = 3).
- Moderate pest of primary production in any country or region (C7 = 2).
- Minor pest of primary production in any country or region (C7 = 1).
- No reports of damage to crops or other primary production in any country or region (C7 = 0).
- Unknown primary production pest status (C7 = 3).

C8. Climate match to susceptible primary production (0-5)

Potential Commodity Impact Scores (PCIS) are determined for each primary industries commodity listed in Table 1. The potential impact for each primary industries sector is categorised as follows:

- Extreme (the species can cause damage at high levels to this or similar commodities and/or major control programs have been conducted against the species in any country or region and the listed commodity would be vulnerable to the type of harm this species can cause) (PCIS = 3).
- Moderate to serious (there are reports of damage to this or a similar commodity but damage levels have never been high in any country or region and no major control programs against the species have ever been conducted OR the species has attributes making it capable of damaging this or similar commodities, but has not had the opportunity) (PCIS = 2).
- Low (the species has attributes making it capable of damaging this or a similar commodity, and has had the opportunity, but there are no reports or other evidence that it has caused damage in any country or region) (PCIS = 1).
- Nil (the species does not have attributes to make it capable of damaging this commodity) (PCIS = 0).

The PCIS score is entered into column 3 of Table 1.

Table 1. Calculating Total Commodity Damage Score. The Commodity Value Index (CVI) is an index of the value of the annual production of the commodity. Bomford (2008) recommends that adjustments to the CVI should be made when potential damage by the species is restricted to a component of the commodity being assessed. For example some species may consume pasture and therefore cause an impact on livestock in pastures, but not impact on feedlots. The Commodity Value Index has been modified from Bomford (2008) to reflect the relative value of each primary industry sector in Tasmania.

Column 1	Column 2	Column 3	Column 4	Column 5
Industry	**Commodity Value Index (CVI)**	**Potential Commodity Impact Score (PCIS, 0-3)**	**Climate Match to Commodity Score (CMCS, 0-5)**	**Commodity Damage Score (CDS columns 2 x 3 x 4)**
Cattle (includes dairy and beef)	11			
Timber (includes native and plantation forests)	10			
Aquaculture	6			
Sheep (includes wool and meat)	5			
Vegetables	5			
Fruit (includes wine grapes)	5			
Poultry (including eggs)	1.5			
Cereal grain (includes wheat, barley, sorghum etc)	1			
Other crops and horticulture (includes nuts and flowers)	1			
Pigs	1			
Bees (includes honey, beeswax, and pollination)	0.5			
Oilseeds (includes canola, sunflower etc)	0.5			
Grain legumes (includes soybeans)	0.3			
Other livestock (includes goats and deer)	0.3			
Total Commodity Damage Score (TCDS)	-	-	-	

A Climate Match to Commodity Score (CMCS) for the species in Tasmania is then calculated by comparing the geographic distribution of susceptible agricultural commodities in Tasmania with the climate match output developed in stage B (i.e. the potential distribution of the species in Tasmania). The CMCS is calculated as follows:

- More than 20% of the commodity is produced in areas where the species has a climate match within the highest three climate match classes (i.e. 10, 9 and 8) OR the overseas and Australian mainland range and climate match to Tasmania is unknown (CMCS = 5).
- More than 50% of the commodity is produced in areas where the species has a climate match within the highest six climate match classes BUT less than 20% of the commodity is produced in areas where the species has a climate match within the highest three climate match classes (CMCS = 4).
  OR
  Between 10% and 50% of the commodity is produced in areas where the species has a climate match within the highest six climate match classes AND less than 10% of the commodity is produced in areas where the species has a climate match within the highest three climate match classes (CMCS = 4).
- Between 10% and 50% of the commodity is produced in areas where the species has a climate match within the highest six climate match classes BUT more than 10% of the commodity is produced in areas where the species has a climate match within the highest three climate match classes (CMCS = 3).
- Between 1% and 10% of the commodity is produced in areas where the species has a climate match within the highest six climate match classes (CMCS = 2).
- Between 1% and 10% of the commodity is produced in areas where the species has a climate match within the highest eight climate match classes (CMCS = 1).
- None of the commodity is produced in areas where the species has a climate match within the highest eight climate match classes (ie classes 10, 9, 8, 7, 6, 5, 4 and 3) (CMCS = 0).

The CMCS score is entered into column 4 of Table 1.

The potential Commodity Damage Scores (CDS) are then determined by multiplying the Commodity Value Indices (CVI) in Column 2, with the Potential Commodity Impact Scores (PCIS) in Column 3 and the Climate Match to Commodity Score (CMCS) in Column 4. The product of the three scores in then entered into column 5 of table 1. A Total Commodity Damage Score (TCDS) is then determined as the sum of column 5.

The total score for C8 (climate match to susceptible primary production) is then determined based on the following criteria:

Total Commodity Damage Score (TCDS)	Climate match to susceptible primary production (C8)
≥ 150	5
100 – 149	4
50 – 99	3
20 – 49	2
1 – 19	1
0	0

C9. Spread of disease (1-2)

The risk that the species could spread diseases or parasites in Tasmania is then assessed. The increased level of risk is only assessed for those diseases and parasites already in Tasmania. The risk that individual animals of the species could carry exotic diseases or parasites in with them when they are imported into Tasmania is subject to a separate assessment and management conducted under the *Animal Health Act 1995*. The risk that the species could spread disease or parasites within Tasmania is categorised as follows:

- All birds and mammals (likely or unknown effect on native species and on livestock and other domestic animals) (C9 = 2).
- All amphibians and reptiles (likely or unknown effect on native species, generally unlikely to affect livestock and other domestic animals) (C9 = 1).

C10. Harm to property (0-3)

The potential for the species to inflict damage on property (including buildings, vehicles, fences, roads, equipment or ornamental gardens), or to require the building of additional infrastructure (such as fences) is then assessed. The property damage is estimated assuming that the species established throughout the area of Tasmania where there was a climate match score of 5 or higher based on the analysis in stage B, Score B1.

The property damage risk score is calculated on the basis of the total annual dollar value of damage that may occur as follows:

Estimated annual value of damage	Property damage risk score (C10)
> $5 million / year	3
$1.1 – $5 million / year	2
$100,000 - $1 million / year	1
< $100,000	0

C11. Harm to people (0-5)

It is then assessed whether the species could cause harm to, or annoy people. The species is categorised based on the following:

- Injuries or harm moderate, severe or fatal and many people at risk (C11 = 5).
- Injuries or harm severe or fatal but few people at risk (C11 = 4).
- Injuries or harm moderate but unlikely to be fatal and few people at risk OR annoyance moderate or severe but few people exposed OR injuries, harm or annoyance minor but many people at risk (C11 = 3).
- Injuries or harm or annoyance likely to be minor and few people exposed (C11 = 2).
- Low risk of harm to people (C11 = 1).
- Negligible risk (C11 = 0).

Pest Risk Score

The Pest Risk Score (C) is the sum of risk scores under section C1 to C11.

Pest Risk Rank

The consequence of establishment is then determined using the following thresholds:

Consequence of Establishment	Pest Risk Score (Sum C1 to C11)
Extreme	> 19
Serious	15 – 19
Moderate	9 – 14
Low	≤ 8

3.5.2 Qualitative assessment of the consequence of establishment: reptiles and amphibians

The method outlined above quantitatively assesses the potential consequences of the establishment of mammals, birds, reptiles and amphibians. However, Bomford (2008) recommends using a combination of qualitative and quantitative approaches for the assessment of reptiles and amphibians because of the great level of uncertainty surrounding the impact of those species. The following checklist can be used as part of the qualitative assessment. Does the species:

- have adverse impacts elsewhere;
- have close relatives with similar behavioural and ecological strategies that have had adverse impacts elsewhere;
- have a generalist diet;
- stir up sediments to increase turbidity in aquatic habitats;
- occur in high densities in their native or introduced range;
- have the potential to cause poisoning and/or physical injury;
- harbour or transmit diseases or parasites that are present in Tasmania;
- have close relatives among Tasmania's endemic reptiles and amphibians; and
- have a record of spreading rapidly following their release into new environments.

In conducting assessments for to assess the potential consequences in import risk assessments in Tasmania for reptiles and amphibians, a quantitative assessment will be conducted and then the outcome of this assessment will be validated using the checklist provided above. If the qualitative assessment suggests that the potential for additional consequences of an introduction is higher than the qualitative estimate, then the qualitative assessment of the consequence of establishment will be used.

3.6 ASSIGNMENT TO THREAT CATEGORIES

The three scores from sections A, B and C are then used to assign the exotic species to one of four threat categories (extreme, serious, moderate or low) using the rules for combining scores specified in Table 2.

Table 2: Assigning species to threat categories

A: Danger posed by individual animals (risk a captive or escaped individual would harm people)	**B: Likelihood of establishment** (risk that a particular species will establish a wild population in Tasmania)	**C: Consequence of establishment** (risk that an established population would cause harm)	**Threat category**
Highly, Moderately or Not Dangerous	Extreme	Extreme	Extreme
Highly, Moderately or Not Dangerous	Extreme	High	
Highly, Moderately or Not Dangerous	Extreme	Moderate	
Highly, Moderately or Not Dangerous	Extreme	Low	
Highly, Moderately or Not Dangerous	High	Extreme	
Highly, Moderately or Not Dangerous	High	High	
Highly, Moderately or Not Dangerous	Moderate	Extreme	
Highly, Moderately or Not Dangerous	High	Moderate	Serious
Highly, Moderately or Not Dangerous	High	Low	
Highly, Moderately or Not Dangerous	Moderate	High	
Highly Dangerous	Moderate	Moderate	
Highly Dangerous	Moderate	Low	
Highly, Moderately or Not Dangerous	Low	Extreme	
Highly, Moderately or Not Dangerous	Low	High	
Highly Dangerous	Low	Moderate	
Highly Dangerous	Low	Low	
Moderately or Not Dangerous	Moderate	Moderate	Moderate
Moderately or Not Dangerous	Moderate	Low	
Moderately or Not Dangerous	Low	Moderate	
Moderately Dangerous	Low	Low	
Not Dangerous	Low	Low	Low
Unknown	Any value	Any value	Extreme until proven otherwise
Any Value	Unknown	Any value	
Any Value	Any value	Unknown	
Unassessed	Unassessed	Unassessed	

3.7 Assumptions and limitations

The assumptions and limitations of the risk assessment model are discussed in detail in Dr Mary Bomford's publications (Bomford 2003; Bomford 2008). Significantly it is noted that the model for mammals and birds is different to the approach for reptiles and amphibians (Bomford 2003; Bomford 2008). There are also a number of additional assumptions and limitations that are specific to applying the Bomford model when assessing the level of threat of introduced mammals, birds, reptiles and amphibians to Tasmania.

Applying the Australian model to Tasmania
The way in which the model for the introduction of vertebrate wildlife into Australia is applied to Tasmania assumes that the likelihood of establishment of introduced species in Tasmania is the same as that which has been observed in Australia as a whole. This is because the Bomford model was calibrated based on the history of introduction events in Australia.

It is also assumed that the climate modelling software developed by BRS is reliable in Tasmania. This is most likely to be an issue in areas, such as the south west wilderness area, which have fewer meteorological stations than the more populated areas of Tasmania. Likewise, the climate modelling software is also reliant on the input of meteorological data in areas overseas and interstate where the species being assessed is present. If a species' distribution covers areas with few meteorological stations, then the risk assessment may underestimate the level of risk. In this situation a precautionary approach is recommended as discussed in the method above.

Future development
Future development of this model for the Tasmanian context could include testing the model against introduction events that have been successful and unsuccessful in the State to determine whether the model predictions are reliable. However the small sample size of Tasmanian introductions is unlikely to provide statistically robust results. It is likely that this will remain an area of significant uncertainty because there are many factors that affect the likelihood of introduction of a species and the potential consequences (for discussion see Bomford 2008).

Conclusions
As with any model, there are a number of assumptions and limitations associated with applying the Bomford model to assess the risk of introductions into Tasmania. It is therefore critical that, in addition to applying the model rigorously for each assessment, the results are qualitatively assessed to determine whether there are any factors that suggest that the risk assessment results are not reliable. If there is significant uncertainty surrounding an assessment a precautionary approach should be adopted, suitable to the situation. Management options that are recommended in response to the outcome of pest risk assessments should take into account the uncertainty surrounding assessments.

It is considered that the advantages of the approach outweigh the limitations of the model. The model is internationally recognised as world's best practice (Simons & De Poorter 2009). It has been applied routinely in a number of situations within Australia both nationally and by the Western Australian and Queensland Governments. Finally the approach uses accessible climate matching software (CLIMATCH) to assess the likelihood of establishment that is both easy to use and publicly available, and therefore can be used by stakeholders wishing to have a species included on a list of wildlife suitable for import.

4. Risk Management

All management requirements imposed on the importation, keeping and movement of exotic vertebrates will be broadly consistent with the Vertebrate Pests Committee's *Guidelines for the Import, Movement and Keeping of Exotic Vertebrates in Australia* (NRMSC 2004). Appropriate management requirements consistent with the guidelines are outlined in this section for each of the risk assessment threat categories (extreme, serious, moderate, and low). Management arrangements for species that have not been assessed are also outlined. For more detail of the proposed risk management options refer to the VPC guidelines (NRMSC 2004).

It is proposed that species that have been categorised as an extreme, serious or moderate threat can only be imported by holders of wildlife exhibition licences. In future, additional classes of licence holders under the *Nature Conservation Act 2002* (the Act) may be developed. To ensure that this policy remains consistent with future classes of licence holders, the management controls in this section list generic requirements of all importers (Table 3) and requirements that are specific to wildlife exhibition licences (Table 4).

Table 3: Risk management requirements for the import and keeping of exotic vertebrates. This table lists management requirements that will apply to imports of mammals, birds, reptiles and amphibians. Mandatory requirements that will apply to all species in each of the four threat categories and additional requirements that may be required, depending on the species, are shown.

Mandatory requirements that will apply	**Risk Assessment Threat Category**			
	Extreme	**Serious**	**Moderate**	**Low**
The animal must not be released, or be allowed to escape from effective control.	✓	✓	✓	✓
Specimens seized or forfeited as a result of illegal or accidental introductions, where rehousing is not available, will be humanely euthanized.	✓	✓	✓	✓
Animal welfare requirements under the *Animal Welfare Act 1993* and any approved Code of Practice or Management Plan must be met.	✓	✓	✓	✓
Import only permitted by holders approved to keep the species under licence (additional requirements that apply to wildlife exhibition licences are outlined in Table 4).	✓	✓	✓	
Individuals to be micro-chipped or otherwise identified, or treated to allow identification.	✓	✓	✓	
Facility must meet minimum standards for welfare and security.	✓	✓	✓	
Facility must be available for inspection at any reasonable time.	✓	✓	✓	
Audits of facilities and collections.	✓	✓	✓	
The maximum number of individuals of a species held at the facility to be stipulated on the licence, taking into account relevant factors. Gender may also be stipulated.	✓	✓	✓	
Written approval prior to movement of animals between facilities and trade of species under licence.	✓	✓	✓	
Record keeping and reporting to DPIPWE as required by DPIPWE.	✓	✓	✓	
Collections containing species subject to approval by DPIPWE as meeting best practice for keeping the species concerned.	✓	✓	✓	
Bonds, insurance or cost recovery systems.	✓	✓		
Import prohibited except under exceptional circumstances. Requires Ministerial approval.	✓			
High security facility approved on a case by case basis.	✓			

Mandatory requirements that will apply	**Risk Assessment Threat Category**			
	Extreme	**Serious**	**Moderate**	**Low**
Import of serious threat species will generally be prohibited unless there is a clear public benefit and sufficient measures exist for the secure housing and on-going management of the species. Species kept solely for: i. Public display and education purposes approved by DPIPWE and/or ii. Genuine scientific research approved by DPIPWE.		✓		
Additional requirements that may apply	**Risk Assessment Threat Category**			
	Extreme	**Serious**	**Moderate**	**Low**
Facility meets best practice standards for keeping the species and standard of overall management is acceptable.	✓	✓	✓	✓
Sterilised animals and/or limited to single sex (no pregnant animals).	✓			
Breeding controlled and monitored via annual reports to DPIPWE to satisfy biosecurity and conservation objectives.	✓			
Breeding controlled and limited numbers in research institutions. Where breeding is required it must be under a population management plan.		✓	✓	
Bonds, insurance or cost recovery systems.			✓	✓
Import only permitted by holders approved to keep the species under licence (additional requirements that apply to wildlife exhibition licences are outlined in Table 4).				✓
Individuals to be micro-chipped or otherwise identified, or treated to allow identification.				✓
Record keeping and reporting to DPIPWE.				✓
Import only into facilities meeting certain criteria and with restrictions.				✓
Approval of system for carcass/egg disposal.				✓
Facility must be available for inspection at any reasonable time.				✓
Audits of facilities and collections.				✓
Maximum number of species and the sex listed on the licence, taking into account relevant factors.				✓
Notification of movement of animals between facilities and trade of species under permit.				✓

4.1 Extreme threat species

Imports of species assessed as an extreme threat will normally be prohibited and the species will be listed as a restricted animal under Schedule 5 of the *Wildlife (General) Regulations 2010*. The Minister will only consider the importation of extreme threat species under exceptional circumstances. Import permits will only be issued to holders of a wildlife exhibition licence that authorises the holder to keep extreme threat species. Management requirements that will apply to the import, keeping and movement of extreme threat species are listed in Table 3. Requirements that are specific to holders of wildlife exhibition licences[4] are listed in Table 4.

Extreme threat species that are approved for import into the State will be listed as restricted (special purpose) wildlife under Schedule 6 of the *Wildlife (General) Regulations 2010*. Under the regulations, it is an offence to buy, sell or have possession of any restricted (special purpose) wildlife or any product of such wildlife without a permit. Premises housing extreme threat species will be subject to random inspections to assess compliance with permit conditions.

[4] Wildlife Exhibition Licences are issued under the *Wildlife (Exhibited Animals) Regulations 2010*.

Table 4: Risk management requirements for the import and keeping of exotic vertebrates for holders of wildlife exhibition licences. These requirements are in addition to the general controls outlined in Table 3.

Mandatory requirements that will apply to all species in the threat category	**Risk Assessment Threat Category**			
	Extreme	**Serious**	**Moderate**	**Low**
Risk management policy to manage all internal threats to the continued security of species must be in place, including maintenance of the physical security of the premises.	✓	✓	✓	
Population management plan with maximum number of individuals for the facility.	✓	✓	✓	
Handling restricted to people with appropriate expertise.	✓	✓	✓	
Evaluation of environmental aspects/impacts so external threats are minimised.	✓	✓	✓	
Security must be relevant to the species and adequate to prevent escapes including in the event of natural disasters.	✓	✓	✓	
A generic contingency plan must be written to manage the deliberate or accidental release of animals from the facility.	✓	✓	✓	
Long term viability of the business and a contingency plan for trade of animals must be demonstrated.	✓	✓	✓	
Proprietors and key personnel to have no relevant criminal convictions for the past five years.	✓	✓	✓	
Approval of system for carcass/egg disposal.	✓	✓	✓	
Escape and recapture policy including details of resourcing requirements.	✓	✓	✓	
Independent third party audit reports to be supplied with applications to renew licences.	✓	✓	✓	
Public/animal interactions must be approved by DPIPWE.	✓	✓	✓	
Breeding controlled and monitored via annual reports to DPIPWE to satisfy biosecurity and conservation objectives.		✓	✓	
Additional requirements that may apply	**Risk Assessment Threat Category**			
	Extreme	**Serious**	**Moderate**	**Low**
Member of ZAA or equivalent professional bodies and abide by the body's Code of Ethics, policies and procedures.	✓	✓	✓	
Breeding limited to CITES or IUCN listed species that is under an population plan within the species management plan approved by DPIPWE. The breeding program must meet the objectives of a threatened species recovery program or be part of an insurance population approved by DPIPWE.	✓			

4.2 SERIOUS THREAT SPECIES

Serious threat species will only be approved for importation if there is a clear public benefit to be gained and sufficient measures exist for the secure housing and on-going management of the species. The import must be for the purpose of public display and education. Serious threat species can only be imported by holders of a licence to keep the species and/or are a scientific research facility approved by DPIPWE. Imports of serious threat species will only be permitted for the purposes of public display and education and/or genuine scientific research. The security at the facility must be adequate to prevent escapes, including in the event of natural disasters. Management controls that apply to the import, keeping and movement of serious threat species are listed in Table 3. Additional controls that apply to holders of wildlife exhibition licences are outlined in Table 4.

Serious threat species that are approved for import into the State will be listed as restricted (special purpose) wildlife under Schedule 6 of the *Wildlife (General) Regulations 2010*. Under the regulations, it is an offence to buy, sell or have possession of any restricted (special purpose) wildlife or any product of such wildlife without a permit. Premises housing serious threat species will be subject to random inspections to assess compliance with permit conditions.

4.3 Moderate threat species

Importers of moderate threat species will be required to hold a licence to keep the species and/or be a scientific research facility approved by DPIPWE. Management requirements that apply to the import, keeping and movement of moderate threat species are listed in Table 3. Additional requirements that will apply if the importer is the holder of a wildlife exhibition licence are outlined in Table 4.

4.4 Low threat species

This category of species will include species that can be imported with few management requirements and species that can be imported provided a number of conditions are met. Species that can be imported with a limited number of conditions may be imported by people who do not hold a licence to keep the animals. The vast majority of these imports are expected to be caged birds.

Other low threat species will have controls on keeping and movement within Tasmania. Import permits for these species will only be issued to the holders of wildlife exhibition licences and/or be a scientific research facility approved by DPIPWE.

The list of potential management requirements to which imports will be subject to are outlined in Table 3. Additional requirements that apply if the import is for the purpose of public display are listed in Table 4.

4.5 Un-assessed species

Any species that is not assessed will be considered an extreme threat species and the import of that species will be prohibited. Applications to amend the list and have a species assessed can be made following the procedure outlined in the following section. This requires the applicant to submit a species profile, which will be used in a risk assessment.

4.6 Risk communication

Risk communication is an important component of the risk assessment process. This policy document, which outlines the method used for risk assessment, will be publically available. Additionally, stakeholder comment will be sought on proposed imports and the outcome of risk assessments will be placed on the DPIPWE website.

5. Procedures for Importing, Keeping and Moving Vertebrate Wildlife

5.1 Permits to import wildlife

5.1.1 Wildlife sourced from overseas

The import of live animals into Australia is regulated under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBCA) and the *Quarantine Act 1908*. In order for an import permit to be granted, specimens must be on the list of species suitable for live import into Australia under the EPBCA. The Australian Government may issue conditions on keeping and movement outlined in the import permit issued. These conditions are made in addition to any conditions imposed by DPIPWE and must be adhered to.

5.1.2 Species that can be imported without a permit

These guidelines do not apply to dogs, cats and domestic stock. Domestic stock are listed under Schedule 7 of the *Wildlife (General) Regulations 2010.* These species can be imported without a permit under the *Nature Conservation Act 2002.* An authority to import these species with associated import conditions may be required under the *Animal Health Act 1995*.

5.1.3 Species that require a permit to import

Under the *Nature Conservation Act 2002*, a permit is required to import all controlled animals into Tasmania. Controlled animals include any mammal, bird, amphibian and reptile except for dogs, cats, domestic stock and restricted animals. In future additional classes of animals may be prescribed by the regulations to be controlled animals. A permit is also required to import restricted animals, however the importation of restricted animals is only permitted if it is necessary to manage feral populations of animals of the same species.

5.1.4 Application for a permit to import species

Controlled animals will not be permitted for import unless they are on the list of species that can be imported into Tasmania. Members of the public may be permitted to import species that have been assessed as a low threat. An application for a permit to import listed low threat species must be made in writing to the Wildlife Management Branch using the *Application for Interstate Import/Export Permit of Wildlife & Wildlife Products*. A copy of the permit is required to be fixed externally to the carrier in which the animal or product is being transported. Additional requirements will apply to species that are imported into Tasmania for the purpose of public display.

5.1.5 Imports for the purpose of public display

Permits to import animals for the purpose of public display will not be issued unless the importer holds a wildlife exhibition licence or a wildlife display permit that specifies that the importer is permitted to hold the species. The holder of a wildlife exhibition licence or a wildlife display permit must comply with any code of practice and management plan specified in the licence. They must not release, or allow any wildlife to be released. Wildlife must not be sold or otherwise disposed of without the prior written approval of the Secretary of DPIPWE.

Additional conditions will apply to wildlife that is imported for public display under the *Wildlife (Exhibited Animals) Regulations 2010.*

WILDLIFE EXHIBITION LICENCE

Only the holders of a wildlife exhibition licence, approved to keep moderate, serious and low threat species will be permitted to import those species. The species must be included on the management plan, and a number of conditions will be included in the plan to ensure that the import does not represent an unacceptable level of risk.

WILDLIFE DISPLAY PERMIT

Holders of a wildlife display permit may be approved to import low threat species for the purpose of public display. The application for a wildlife display permit must be made in writing to the Secretary. The permit holder must be approved to keep the species, and a number of conditions may apply.

PROCEDURES FOR TRAVELLING ANIMAL COLLECTIONS INCLUDING CIRCUSES

The holder of a wildlife exhibition licence can apply for a travelling wildlife exhibition permit. A travelling wildlife exhibition permit will only be issued for low threat species. The holder of a travelling wildlife exhibition permit must comply with any relevant code of practice, or management plan, approved by the Secretary and specified in the permit. The permit will also require that during the transporting of wildlife, the wildlife is not subjected to excessive noise, exhaust fumes, heat or cold and is provided with adequate ventilation. Applications for travelling wildlife exhibition permits must be made in writing to the Secretary of DPIPWE.

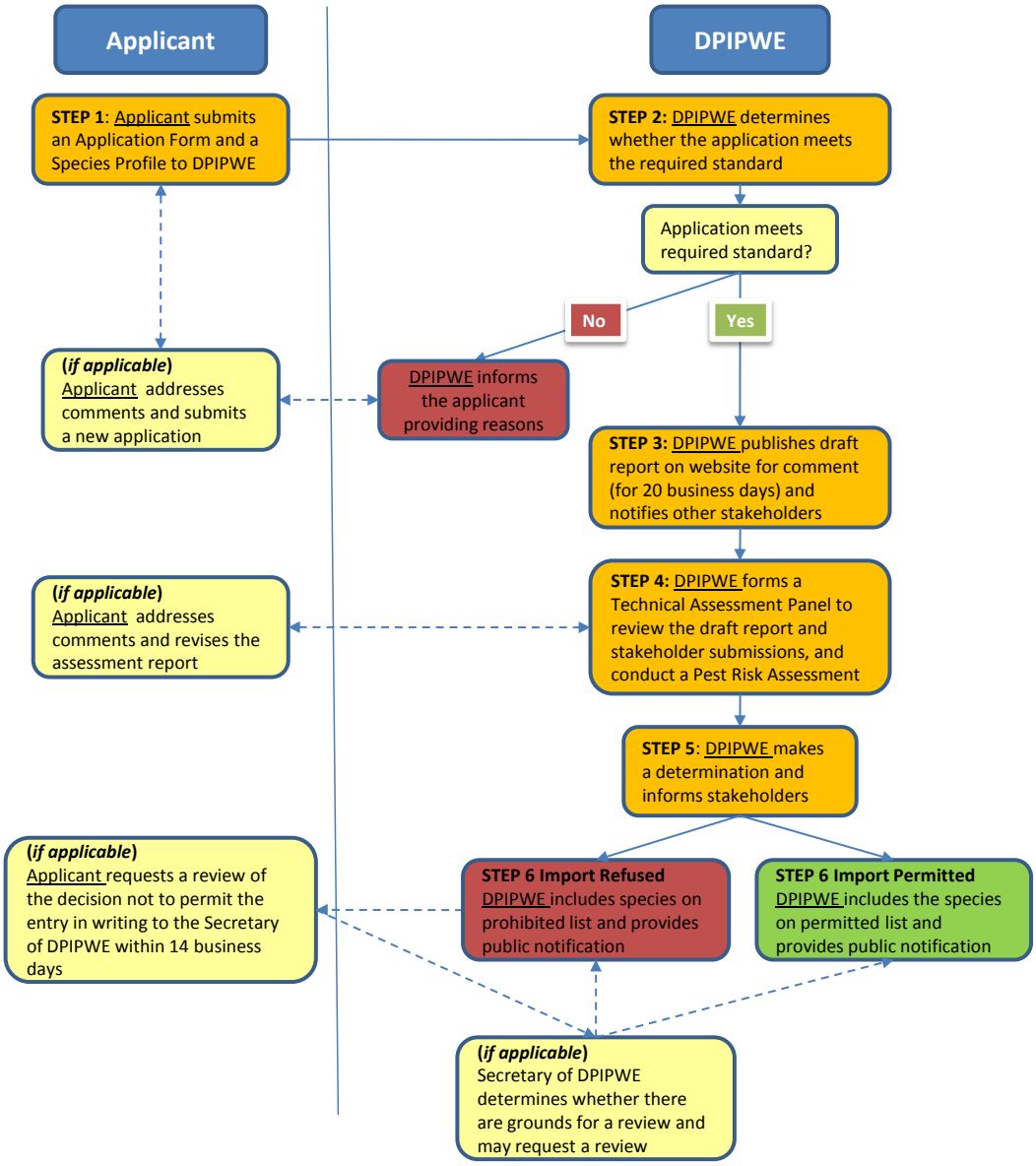
5.2 PROCEDURES TO AMEND THE LIST OF SPECIES THAT CAN BE IMPORTED INTO TASMANIA

An information package on how to apply to have a species added to the list of species that can be imported into Tasmania is available on the DPIPWE internet site and by request from the Wildlife Management Branch. The package includes an *Application Form* and *Guidelines to Prepare a Species Profile to Amend the List of Wildlife that can be Imported into Tasmania* (DPIPWE 2011). The applicant will be required to provide a species profile that will be used to conduct a risk assessment. The species profile must be developed by suitably qualified people (see Appendix 1). The applicant will be responsible for ensuring that the information is provided to DPIPWE at an acceptable standard. People considering making an application should contact the Wildlife Management Branch of DPIPWE to discuss their application prior to developing a species profile.

The procedure for varying the list of species that can be imported into Tasmania is outlined in Figure 1. On receipt of an application DPIPWE will determine whether it is complete and meets the standard specified in the *Guidelines to Prepare a Species Profile to Amend the List of Wildlife that can be Imported into Tasmania* (DPIPWE 2011). If the application does not meet the minimum standard the application will be rejected and DPIPWE will inform the applicant in writing providing the reasons for the decision and highlighting the deficiencies in the species profile. The applicant may choose to address the deficiencies and resubmit the application.

If the application is accepted, the species profile will be placed on the DPIPWE website and stakeholders will be notified. Twenty business days will be provided for stakeholder comment. The Technical Assessment Panel (TAP) will review the species profile and public comment and conduct a risk assessment using the method outlined in this policy. The Terms of Reference of the TAP are provided in Appendix 2.

Based on the outcome of the risk assessment, species will be categorised as a low, moderate, serious or extreme threat and risk management measures will be recommended commensurate with the level of risk.



Note: Conditions under the *Animal Health Act 1995* and *Animal Welfare Act 1993* may also apply.
Includes imports from the Australian mainland only.
Permits to export from mainland jurisdictions may be required.

Figure 1: Flow chart for the procedures to have the list of species that may be imported into Tasmania amended. A number of conditions may apply. Obtaining approval to add a species to the list of species that can be imported does not guarantee that the applicant will be granted permission to import the species. Species imported for the purpose of public display will require an approved management plan for that species and specified in the relevant wildlife exhibition licence or wildlife display permit before a permit to import is issued. The import may also need to be authorised by the Chief Veterinary Officer (CVO) before the importation is permitted.

5.2.1 Stakeholder Consultation

Stakeholders will be provided with the opportunity to comment on proposals to vary the list of species that can be imported into Tasmania. The public can do this by registering for biosecurity updates from the DPIPWE internet site. People that choose to receive information on the natural environment and wildlife will receive notification that a species is being considered for a risk assessment. The species profile will be placed on the DPIPWE website and there will be a 20 day comment period.

5.2.2 Appealing decisions of the technical assessment panel

The applicant can appeal a decision not to add a species to the list of species that can be imported into Tasmania. Requests for a review must be in writing to the Secretary DPIPWE and received within 14 business days of being informed of the outcome of the risk assessment. The Secretary (DPIPWE) will determine whether there are grounds for review and if so identify appropriate personnel to conduct the review. A review may be provided if the assessment process did not reasonably provide for stakeholder participation, or if the assessment did not consider key scientific or technical information.

5.2.3 Importing extreme threat species

Species that are assessed as an extreme threat will generally not be added to the list of species that can be imported into Tasmania. Extreme threat species will only be permitted if there is a clear public benefit to be gained by importing the species and sufficient measures exist for the secure housing and on-going management of the species. Ministerial approval will be required prior to including an extreme threat species onto the list of species that can be imported into Tasmania.

5.2.4 Timeframe

DPIPWE will endeavour to complete the assessment of applications to vary the list of species that can be imported into Tasmania within 16 – 20 weeks. If an applicant is required to submit a new application, because the original application is refused, the timeframe for conducting the assessment will be re-set. If an applicant is required to provide more information, or respond to stakeholder submissions, the clock will stop until the information addressing the request is received by DPIPWE.

5.3 Monitoring, compliance and enforcement

5.3.1 General requirements

The Quarantine Services Branch of DPIPWE maintain inspections at land, sea and air ports in Tasmania. Quarantine officers have a range of powers under a number of Acts that relate to biosecurity. Quarantine officers will enforce these arrangements at the Tasmanian border. If a Quarantine Officer suspects that a controlled animal has been imported into the State without the necessary permits they will contact the Wildlife Management Branch for directions as soon as practicable and within 24 hours.

Species that are imported into Tasmania without the necessary permits may be seized, re-exported, re-housed, and if neither option is available, humanely euthanized. The importer may be directed to organise the re-export within a specified timeframe. The animal may be disposed of by giving it to an educational or research institution within Tasmania or on the Australian mainland. The importer will be required to meet any costs associated with the seizure, destruction or disposal of an escaped animal.

Holders of a wildlife exhibition licence will be subject to random and regular inspections to ensure that permit conditions are being adhered to. The inspection regime will be more frequent for those licence holders that are permitted to house extreme and serious threat species due to the higher level of risk of these species.

Under the *Nature Conservation Act 2002* it is an offence to cause or allow controlled animals to go at large in the State.

5.3.2 Additional requirements for holders of wildlife exhibition licences

In addition to the general conditions outlined above, a number of requirements apply to the holders of wildlife exhibition licences under the *Wildlife (Exhibited Animals) Regulations 2010* (the Regulations). Without the prior written permission of DPIPWE a wildlife exhibition licence holder must not keep, release, sell or otherwise dispose of any wildlife. All species kept by the wildlife park or zoo must have an approved management plan and be specified in the licence. Licence holders must comply with the management plan and any code of practice approved by the DPIPWE. The licence holder must not cause or permit any wildlife to escape.

Under the Regulations a number of requirements that relate to record keeping, disease notification, obligations in relation to escaped wildlife, and following directions from DPIPWE also apply. These requirements are outlined below.

Record keeping

Holders of wildlife exhibition licences will be required to keep daily records in a form approved by DPIPWE. Records must be in a form that can be quickly and easily examined, and analysed. All documents must be kept safely. Records specific to individual animals may be required. The records for each animal may include the following information which must be recorded within 48 hours of any change to the following:

- the method of identification, the identification number, scientific name, any personal name and any distinctive markings;
- the origin (i.e. details of the wild population or of the parents and their origin, and of any previous location this individual has been housed)
- the dates of acquisition and disposal, with details of circumstances and addresses;
- the date or estimated date of birth[5], and the basis on which the date is estimated;
- details of routine weighing;
- clinical data, including results of physical examination by a qualified veterinarian and details of and date when any form of treatment was given, together with results of routine health examinations;
- breeding and details of any offspring;
- the date of death and the results of any post mortem examination if carried out;
- losses of wildlife from the exhibition, other than by death (e.g. escapes).

Wildlife officers may require the licence holder to produce these records anytime during normal working hours and at any other reasonable time.

Disease notification and response

Licence holders must also notify DPIPWE if they know, or have reason to suspect, that any wildlife kept is infected with a disease, or is liable to spread disease. The notification must be as soon as practicable, and

[5] In the case of animals with pouched young births must be recorded within 48 hours of operators/staff noticing emergence of young from the pouch.

within 48 hours after the licence holder became aware of the disease. As soon as practicable after becoming aware of the disease the licence holder must quarantine the wildlife from other species capable of contracting the disease.

OBLIGATIONS FOR ESCAPED OR RELEASED WILDLIFE

If an animal being kept under a wildlife exhibition licence escapes or is released, the licence holder must notify the Secretary as soon as practicable, and within 2 hours, after becoming aware of the escape or release. The holder of the licence must take all reasonable steps to recover the escaped or released wildlife. If it is necessary to prevent an immediate threat to the public or environment, the licence holder must destroy the escaped or released wildlife.

Any wildlife kept under a wildlife exhibition licence that has escaped or has been released into the wild and is not recovered within a period of 48 hours after the licence holder becomes aware of the escape or release, will be forfeited to the Crown.

A wildlife officer may require the holder of a wildlife exhibition licence, by notice in writing, to take any action that the officer considers necessary to facilitate the recovery or destruction of any escaped or released wildlife.

The holder of a wildlife exhibition licence is liable to pay to the Crown the costs, charges and expenses incurred by a wildlife officer in the destruction or recovery of, or an attempt to destroy or recover, any escaped or released wildlife.

DIRECTIONS TO WILDLIFE EXHIBITION LICENCE HOLDERS

In addition to the requirements outlined above, the holder of a wildlife exhibition licence must comply with the directions given by authorised DPIPWE staff. Directions may include, but are not limited to, the following:

- the provision of food and water;
- the amount of space to be provided to the species;
- the kind of shelter to be provided to the species;
- the separation individual animals or different species;
- restrictions on displaying wildlife that are diseased or suffering from a wound;
- restrictions or prohibitions on handling wildlife; and
- restrictions or prohibitions on breeding wildlife.

Any direction by DPIPWE will be made in writing.

6. CONCLUSIONS

6.1 IMPLEMENTATION OF THE NEW WILDLIFE IMPORT ARRANGEMENTS

This policy will be implemented once the Minister for the Environment, Parks and Heritage approves the proposed administrative arrangements. Before a species can be imported, holders of wildlife exhibition licences will need to apply to have their licences amended. The species for inclusion on the permit must be included on the list of species that may be imported into Tasmania. People seeking to have the list of species that can be imported into Tasmania amended should contact DPIPWE for more information in the first instance, before preparing an application.

6.2 REVIEW OF THIS POLICY

This policy will be reviewed by DPIPWE six months after it is approved by the Minister to ensure that the predicted policy outcomes are being achieved and that the administration of the policy is efficient and effective. It is anticipated that after the initial review the policy will be subject to review every three years or in response to significant changes in the policy setting. The methodology for risk assessments outlined in this document will be subject to ongoing review in response to scientific advances in the field.

6.3 FURTHER INFORMATION AND FEEDBACK

For further information about this policy, or to apply to have the list of species that can be imported into Tasmania amended, contact the Wildlife Management Branch of the Department of Primary Industries, Parks, Water and Environment at the following address:

Wildlife Management Branch
Department of Primary Industries, Parks, Water and Environment
GPO Box 44, Hobart 7001
Ph: 1300 368 550
Email: wildlife.reception@dpipwe.tas.gov.au
Visit: www.dpipwe.tas.gov.au

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DPIPWE (2011) Guidelines to Prepare a Species Profile to Amend the List of Wildlife that can be Imported into Tasmania. Department of Primary Industries, Parks, Water and Environment. Hobart, Tasmania.

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Simons, S. A. and M. De Poorter (2009). Best Practice in Pre-Import Risk Screening for Species of Live Animals in International Trade: Proceedings of an Expert Workshop on Preventing Biological Invasions, University of Notre Dame, Indiana USA, 9-11 April 2008. Global Invasive Species Program. Nairobi, Kenya,

Vertebrate Pest Committee. (2007). Vertebrate Pest Committee list of exotic vertebrate animals in Australia, July 2007. <www.feral.org.au>. Accessed 7 February 2011.

8. APPENDICES

APPENDIX 1: CRITERIA FOR PEOPLE ELIGIBLE TO DEVELOP PEST PROFILES

Uncertainty is an inevitable element of pest risk assessment, and one important source of uncertainty is attributed to the assessor(s) (i.e. human error). A high level of technical skill and rigor of the information used for pest risk assessment is critical to maximise the accuracy and consistency of pest risk assessments (Bomford 2008). Given this, it is necessary to apply a minimum standard for people compiling information for pest risk assessments for wildlife imports.

Qualifications and Experience

As a minimum people developing species profiles must have the following qualifications and experience.

- Tertiary qualifications in biological sciences;
- Proven experience in conducting risk analysis.

APPENDIX 2: ROLE AND TERMS OF REFERENCE OF THE TECHNICAL ASSESSMENT PANEL

Committee	Technical Assessment Panel
Background	The Technical Assessment Panel has been created in response to the review of existing wildlife import arrangements in Tasmania.
Purpose	The Technical Assessment Panel (TAP) is a committee of technical experts within DPIPWE whose role is to conduct pest risk assessments for the import of Controlled Animals (as defined by the *Nature Conservation Act 2002*) and provide advice on the suitability of import and associated management conditions that may need to be put in place. The TAP is to take into account the requirements of the *Nature Conservation Act 2002*, *Animal Health Act 1995* and *Animal Welfare Act 1993* and their associated regulations.
Functions	• The TAP will meet on an as needs basis to assess applications to import mammals, birds, reptiles and amphibians into Tasmania and provide recommendations to the Wildlife Policy Steering Committee in relation to issuing permits to import. • In administering these functions, the TAP will apply the *Policy and Procedures for the Import, Movement and Keeping of Vertebrate Wildlife in Tasmania* (DPIPWE 2011), and will ensure the provisions of all relevant legislation are taken into account. • The TAP will also ensure the outcomes of the assessment process are consistent with the national Vertebrate Pest Committee Guidelines for the Import, Movement and Keeping of Non-indigenous Vertebrates in Australia. • In order to fulfill its functions the TAP may seek additional expertise as required, and may request further information from the applicant. • The panel will liaise with the Quarantine Services Branch as and when required.
Membership	The panel shall comprise of representatives nominated from the Wildlife Management Branch, Biodiversity Conservation Branch, Policy and Conservation Assessment Branch and Animal Health and Welfare Branch of DPIPWE. Representatives will have technical expertise in the areas of pest risk assessment, biological sciences and animal health and welfare. Specialists will be co-opted onto the panel as required. The TAP will be chaired by the Manager, Wildlife Management Branch, DPIPWE, or delegate.
Executive support	The Wildlife Management Branch will provide executive support to the TAP. This will consist of organising meetings (venues and agenda), taking and recording minutes and responding to general inquiries relating to the TAP. Records will be maintained on DocOne®.

APPENDIX 3: USEFUL INFORMATION SOURCES FOR RISK ASSESSMENTS

Based on: Massam, M., Kirkpatrick, W., and Page, A. (2010) *Assessment and prioritisation of risk for forty exotic animal species*. Department of Agriculture and Food, Western Australia, Invasive Animals Cooperative Research Centre, Canberra.

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Christidis L and Boles WE (2008). *Systematics and Taxonomy of Australian Birds.* CSIRO Publishing: Collingwood.

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Wilson DE and Reeder DM (1993). *Mammal Species of the World. A Taxonomic and Geographic Reference.* Smithsonian Institution Press: Washington.

WEB-BASED PUBLICATIONS AND OTHER INFORMATION SYSTEMS

BiologyBrowser — a free web site offering resources for the life sciences information community (www.biologybrowser.org/).

Either BIOSIS (http://www.biosisresearch.com.au/), or Biological Abstracts (via subscription) — provide information in virtually every life sciences discipline, including biology, biochemistry, biotechnology, botany, pre-clinical and experimental medicine, pharmacology, zoology, agriculture, and veterinary science.

Catalogue of Life: Annual Checklist (www.usa.species2000.org).

CITES, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (www.cites.org).

Global Invasive Species Database (www.issg.org/database/species/search.asp?st=100ss).

GOOGLE® search engines (scholar.google.com.au/; www.google.com.au/).

HAGR, Human Ageing Genomic Resources (genomics.senescence.info/).

ITIS, Integrated Taxonomic Information System (www.itis.gov).

IUCN Red List, International Union for Conservation of Nature (www.iucnredlist.org).

MEDLINE® — compiled by the U.S. National Library of Medicine and published on the web by the Community of Science, a comprehensive source of life sciences and biomedical bibliographic information (medline.cos.com/).

Scirus — a comprehensive science-specific search engine that searches over 485 million science-specific web pages (www.scirus.com/).

Species 2000 & ITIS Catalogue of Life (www.catalogueoflife.org/annual-checklist/search.php)

The Reptile Database (www.tigr.org/reptiles/search.php).

Zoological Record — the world's oldest continuing database of animal biology, considered the world's leading taxonomic reference (via subscription).

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