



# **ZOO KEEPER INFORMATION**

**Auckland Zoo and its role in Conservation  
and Captive Breeding Programmes**

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# **INTRODUCTION**

The intention of this manual is to give a basic overview of the general operating environment of zoos, and some of Auckland Zoo's internal procedures and external relationships, in particular those that have an impact on species management and husbandry. The manual is designed to be of benefit to all keepers, to offer a better understanding of the importance of captive animal husbandry and species management on a national and international level.

## **AUCKLAND ZOO VISION**

Auckland Zoo will be globally acknowledged as an outstanding, progressive zoological park.

## **AUCKLAND ZOO MISSION**

To focus the Zoo's resources to benefit conservation and provide exciting visitor experiences which inspire and empower people to take positive action for wildlife and the environment.

## **STRATEGIC INTENT**

### **Conservation**

To focus resources on securing sustainable populations of species and their habitats through integrated zoological programmes and strategic partnerships.

### **Animal Welfare and Husbandry**

To further advance best practice animal husbandry and welfare that ensures physical and psychological well being of the animal collection.

### **Research**

To be a recognised and credible resource for the wildlife research community and enable significant contributions in the field of conservation medicine.

### **Recreation**

To provide unique botanical, wildlife and cultural experiences that delight the visitor.

### **Education**

To provide exemplary learning opportunities that positively influence people's understanding, values, and impact on the natural world.

### **Sustainability**

To promote sustainable practices in all aspects of the Zoo's operations.

# THE ROLE OF MODERN ZOOS

Gerald Durrell :	<i>“The enormous importance of the zoo’s place in the conservation field has only just been recognised .... as sanctuaries and reservoirs for endangered species”.</i>
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**The roles of modern zoos are generally recognised as:**

- 1) Conservation
- 2) Education
- 3) Research
- 4) Entertainment

**The conservation role of zoos:**

The aim of captive breeding programmes is to create genetically sustainable captive populations, with the ultimate goal of releasing animals back into safe wild situations.

Hundreds of zoos and conservation organisations are involved in captive breeding programmes internationally. Details of many captive breeding programmes are available in resources in the Keeper Library, particularly in journal articles and items in the Zoo Fact File.

**Some successful captive breeding programmes that have led to releases:**

European bison  
Hawaiian goose  
Pere David’s deer  
Arabian oryx

Red wolf  
Golden-lion tamarin  
Przewalski’s horse

**Phases of reintroduction programmes:**

- 1) Animals placed into captivity
- 2) Captive breeding
- 3) Training for release
- 4) Site selection and preparation
- 5) Soft/hard release
- 6) Monitoring

## ISSUES WITH CAPTIVE BREEDING PROGRAMMES

- 1) **Can reduce wild populations:** This is less of an issue now than in previous times, as zoo animals are generally bred within the zoo environment, and rarely sourced from the wild.
- 2) **May have different selection pressures:** For example, Bewick swans kept in captivity in more southerly locations than those, in which they would be found in the wild. This may lead to different influences on their breeding patterns, behaviour etc.
- 3) **Loss of breeding instincts in second generation:** An Auckland Zoo example of this was a cotton-topped tamarin mother, who killed her young, as she lacked infant-rearing experience. In general, this does not happen frequently, as zoos continue to improve husbandry techniques, and fewer animals are hand-raised than previously.
- 4) **Public perceptions:** Visitors often think lush enclosures are best for animals, but, for example, Arabian oryx actually prefer dry, bare enclosures. Visitors also often assume that animals should be housed in a pair/group situation, although some animals, eg. tigers, find this stressful. Another example is the notion that 'natural-looking' enclosures must be best for animals, but this may also lead to unstimulating environments within a captive situation.
- 5) **Inbreeding:** Breeding between highly related animals may lead to 'genetic bottlenecks', with loss of valuable genetic material. For example, all zebra in New Zealand zoos are highly related, due to the unavailability of animals for import over a long period. Laboratory mice have a 90% genetic loss, due to continued inbreeding practices. Another example is the Przewalski's horse, which became extinct in the wild in 1975. Its total population now stems from a handful of captive animals. This reduction in genetic diversity has led to some weaknesses in the population, such as reduced life expectancy and increased infant mortality rates.
- 6) **Foreign genes in an animal:** This is the introduction of genes from one species into another (called introgression), for example, a mating between a Przewalski's horse and a 'contaminated' mare, with some domestic horse genes. This would make the offspring less valuable for conservation purposes. In another instance, domestic cattle genes in a European bison bull led to seven lethal genes entering the population, resulting in increased mortality rates.
- 7) **Hybrids:** This is where offspring result from the mating of animals from separate sub-species, species, etc. For example, hybrid Bornean/Sumatran orang utans, "zoo" lions, etc. These hybrids have a 'blend' of the distinguishable characteristics, which normally differentiate sub-species. To prevent further hybridisation, these hybrids generally go to 'holding zoos' and are excluded from participating in captive breeding programmes.

# OVERCOMING CAPTIVE BREEDING PROBLEMS

To reduce the chance of genetic bottlenecks/hybridisation/introgression, etc, zoos nowadays keep track of the genetics and history of their populations in a far more scientific and structured way than they did in the past.

Research is essential to the understanding of a species' habits and ecology, to enable us to care for it better in captivity, and allow animals to maintain natural behaviours, which may enable them to survive in a wild situation. Simply put, an understanding of how an animal lives in the wild, is a vital step in creating a captive environment that is more conducive to its needs.

Before captive breeding programmes are undertaken, information is gathered on wild populations. This information is called a PHVA\* and it covers the following:

- 1) Population history.
- 2) Genetically effective population sizes.
- 3) Current population size.
- 4) Population growth rate.
- 5) Age of reproduction and number of offspring.
- 6) Spatial distribution.
- 7) Mortality rate and possible sources of catastrophe.

\* PHVA (Population habitat viability assessment). These are assessments are carried out by the species conservation body of SSC (Species Survival Commission), through the IUCN (World Conservation Union).

# ASSESSING DEGREES OF RISK

## IUCN (WORLD CONSERVATION UNION) POLICY

*“Require increased habitat protection for biotic diversity and self-sustaining captive populations”.*

IUCN released the 2006 **Red list of threatened species** in May 2006. In a press release to herald the new publication, IUCN released this statement: *“The total number of species declared officially Extinct is 784 and a further 65 are only found in captivity or cultivation. Of the 40,177 species assessed using the IUCN Red List criteria, 16,119 are now listed as threatened with extinction. This includes one in three amphibians and a quarter of the world’s coniferous trees, on top of the one in eight birds and one in four mammals known to be in jeopardy.*

*The 2006 IUCN Red List of Threatened Species brings into sharp focus the ongoing decline of the earth’s biodiversity and the impact mankind is having upon life on earth. Widely recognized as the most authoritative assessment of the global status of plants and animals, it provides an accurate measure of progress, or lack of it, in achieving the globally agreed target to significantly reduce the current rate of biodiversity loss by 2010.”*

## FACTS ABOUT THREATENED SPECIES (extract from IUCN website)

### How many species are threatened?

- 16,119 species are threatened with extinction, but this may be a gross underestimate because fewer than 3% of the world’s 1.9 million described species have been assessed by the Red List.
- Animals: 7,725
- Plants and lichens: 8,394
- In major species groups, the percentage of threatened species ranges between 12% and 52%.
- Birds: 12% or 1 in 8
- Mammals: 23% or 1 in 4 are threatened.
- Amphibians: 32% or 1 in 3.
- Turtles and tortoises: approximately 42%
- Conifers: 25% or 1 in 4
- Cycads (an ancient group of plants): 52%

### What are the threats?

- 99% of threatened species are at risk from human activities. Humans are the main cause of extinction and the principle threat to species at risk of extinction.



- Habitat loss and degradation are the leading threats. They affect 86% of all threatened birds, 86% of the threatened mammals assessed and 88% of the threatened amphibians.
- Introductions of alien species. Some of the worst include. cats and rats, green crabs, zebra mussels, the African tulip tree and the brown tree snake. Introductions of alien species can happen deliberately or unintentionally, for example, by organisms "hitch-hiking" in containers, ships, cars or soil.
- Over-exploitation . Resource extraction, hunting, and fishing for food, pets, and medicine threatens many species.
- Pollution and disease.
- Human-induced climate change is increasingly recognised as a serious threat. Climate change is altering migratory species patterns, causing coral bleaching, etc.

### **Which species are threatened by what?**

- Mammals: 33% are threatened by over-exploitation.
- Birds: 30% are threatened by over-exploitation and invasive alien species. Invasives are impacting 67% of threatened birds on islands.
- Amphibians: 29% are affected by pollution (including climate change) and 17% by disease (particularly chytridiomycosis). The interaction between disease and extreme climatic events (drought) is the leading hypothesis for widespread amphibian declines.
- Marine species: Primarily threatened by over-exploitation and habitat loss. Incidental mortality as a result of fisheries is an increasing threat, affecting seabirds, marine mammals, and other marine species.
- By-catch from fisheries threatens 83 bird species.
- Freshwater species are most threatened by habitat loss, followed by pollution and invasive species.
- Threat processes are dynamic and change over time. Invasive alien species were historically the greatest threat to birds, but today, habitat loss has emerged as the dominant threat. This may change again if predictions of global warming are correct.

### **Where are the most species threatened?**

- In the tropics, especially on mountains and on islands.
- While the vast majority of extinctions since 1500 AD have occurred on oceanic islands, over the last 20 years, roughly 50% of extinctions occurred on continents.
- Central and South America; Africa south of the Sahara; and tropical South and Southeast Asia. Why? These are the tropical continents that contain the tropical and subtropical moist broadleaf forests that are believed to host the majority of the earth's terrestrial and freshwater species.
- Australia , Brazil, China, Indonesia, and Mexico have both a high number of threatened and threatened *endemic* species.

- Threatened marine mammals are concentrated in the Northern Pacific Ocean.
- Threatened seabirds, chondrichthyan fishes (sharks, rays and chimaeras) and seahorses (the latter two not completely assessed) are especially threatened in the eastern Indian Ocean and southwest and west-central Pacific.

### **What are the trends?**

- The number of threatened species is increasing in almost all the major taxonomic groups.
- Since 1994 the number of bird species threatened with global extinction has risen to 12%.
- Red List Indices for birds and amphibians show that the status of both has declined steadily since the 1980s.
- How are trends measured? The Red List Indices (RLIs) are an important new development which measure trends in extinction risk by comparing the status of specific groups of species over time. RLIs can only be calculated for species groups that have been fully assessed at least twice, so they are only available for certain groups. Red List Indices are currently available for birds and amphibians.

### **What is extinction?**

- The Red List considers a species extinct when exhaustive surveys in known or expected habitats fail to record any individuals.
- The IUCN Red List documents 784 extinctions and 65 extinctions in the wild since 1500AD (when historical scientific records began), but this number doesn't account for the thousands of species that go extinct before scientists even have a chance to describe them.
- Previous extinctions were due to natural causes. Extinction is actually a natural phenomenon that we expect to occur at a rate of approximately 1 to 5 species per year, but nowadays experts believe we are losing dozens per day – that's roughly 100 to 1000 times higher than background rates!
- Current extinctions are generally brought about by humans. Extinctions caused by humans are considered to be a recent phenomenon: today 99% of threatened species are at risk from human activities.

The **Red list** categorises animals according to their degree of risk, as follows:

### **IUCN THREATENED SPECIES CATEGORIES**

- 1) Extinct (EX).
- 2) Extinct in the Wild (EW).
- 3) Critically Endangered (CR).
- 4) Endangered (E).
- 5) Vulnerable (VU).
- 6) Near Threatened (NT)
- 7) Least Concern (LC)
- 8) Data Deficient (DD)
- 9) Not Evaluated (NE)

The latest red list information is available on the internet at <http://www.redlist.org/>.

Further details on the criteria used to determine whether species are classified as Critically Endangered, Endangered, Vulnerable, etc may also be found in Appendix I.

Auckland Zoo houses many endangered species, some of which are listed below, with their IUCN classification:

Sumatran tiger	Critically Endangered (CR)
Fijian banded iguana	Endangered (E)
North Island brown kiwi	Vulnerable (VU)
Siamang	Near Threatened (NT)

In Appendix II, you will find a list of all of the species currently held at Auckland Zoo, along with their corresponding IUCN category.

## **ASMP CATEGORIES**

The Australasian Species Management Program (ASMP) also prioritises species according to their required management level. There are three categories of management:

- Level 1a –high intensity genetic and demographic specimen-level management.
- Level 1b –low intensity genetic and demographic specimen-level management.
- Level 2 – group-level management.
- Level 3 - annual census only.

Information about the different management levels can be found in Appendix VII. For species held at Auckland Zoo, the corresponding ASMP categories can also be found in Appendix II.

# TRADE IN ENDANGERED SPECIES

One of the main factors leading to the decline of a species is pressure from the human population. Not only are we destroying many species' habitats, but there are still many species facing extinction due to illegal trade in animals and animal parts.

International co-operation is vital to any attempt to stamp out this trade. In the past, it has not always been illegal to enter countries carrying endangered species. For example, the exodus of golden-headed tamarins out of Brazil for the pet-trade (illegally, but not controlled) and into Belgium, where it was legal to import them, was a huge contributing factor to the species' decline in the wild. CITES was established to try to restrict the movement of endangered species, such as these, for trade purposes.

## CITES

(Convention on the International Trade in Endangered Species of Wild Fauna and Flora, established 1975).

- 1) Lists all species at risk from trade.
- 2) Lists all species that may be at risk in future.
- 3) Lists "look-alike" species.
- 4) Includes pet trade animals, eg. Parrots, fish, primates.
- 5) Covers biomedical research trade, eg. Primates - now should all be bred from existing captive populations.
- 6) Covers zoo trade - should all be captive bred.
- 7) Produce trade, eg. 5 million reptile skins exported from India in the 1970s.

## CITES SCHEDULES

These schedules distinguish which animals are most at risk from trade:

- 1) CITES I** species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances.
- 2) CITES II** species not necessarily threatened with extinction, but in which trade must be controlled, in order to avoid utilisation incompatible with their survival.
- 3) CITES III** species that are protected in at least one country, which has asked other CITES parties for assistance in controlling the trade.

At Auckland Zoo, we hold many endangered species that have CITES classifications. Some examples are listed below:

Sumatran tiger	CITES I	Jackson's chameleon	CITES II
Red panda	CITES I	American alligator	CITES II
Asiatic elephant	CITES I	Kea	CITES II
Ring-tailed lemur	CITES I	Chacma baboon	CITES II
Hooded parrot	CITES I	Serval	CITES II

In Appendix II, you will find a current list of all of the species currently held at Auckland Zoo, along with their corresponding CITES category. See also [www.cites.org](http://www.cites.org) (CITES website) for further information.

# THE WORLD ZOO AND AQUARIUM CONSERVATION STRATEGY

The World Zoo Conservation Strategy was published by the IUDZG\* in 1993, in response to the recognition of the contribution that zoos can make to conservation. As a result of this strategy, zoos within different regions of the world also created their own associations to deal with the co-ordination of issues laid out by the strategy, such as captive breeding programmes, eg. the Australasian region created the association known as ARAZPA.

The second version of the Strategy was published in 2005 by WAZA, under the title *Building a future for wildlife*. A copy may be found in the Keeper Library, filed at 590.74.

## Reasons for having a Strategy:

- 1) To provide zoo professionals worldwide with a cohesive document that provides a common set of goals.
- 2) Provide environmentalists/conservationists with information about zoos and their purpose and benefits.

## Aims of the Strategy:

- 1) To identify conservation areas that zoos can help with and to provide support for this to take place.
- 2) To get support from national and international authorities and other organisations to get full potential out of the conservation use of zoos.
- 3) To promote to all zoos that conservation is the most important aspect of a modern zoo and to help policy-makers to set priorities.
- 4) To provide global contacts by linking up zoo resources internationally.

## Who uses the Strategy?

People who make decisions that affect zoos on a national and international level. Zoos also use the strategy to help them with their conservation policies and profile.

## Conservation ideas underpinning the Strategy

- 1) It is considered unsafe to have all the captive population of, for example, tigers, in one zoo. A disease outbreak could wipe out the entire population. Populations are, therefore, split up.
- 2) Pooling husbandry information is very useful to the improvement of captive management techniques.
- 3) With better knowledge of the genetics of populations, the occurrence of inbreeding can be reduced. Although the populations are geographically split up to reduce risks of disease etc, they can be genetically managed as a single population.

\* IUDZG = International Union of Directors of Zoological Gardens (now WAZA).

## A living document

This means the Strategy is not 'set in stone'. The first version of the Strategy was published in 1993, and it is expected that it will continue to 'evolve' over time as conservation needs change.

### **What does the Strategy talk about?**

The Strategy contains nine chapters, which cover the following topics:

- 1) Integrating conservation -how zoos can integrate all aspects of their work with conservation activities, and identifies the fundamental values of sustainability and conservation, and social and environmental responsibility.
- 2) Wild populations - the need for zoos to make further contributions to conservation in the wild (*in situ* conservation).
- 3) Science and research - zoos becoming fully and actively integrated into the research community.
- 4) Population management – zoos as primary centres of expertise in small population management, with involvement in global or regional breeding programmes.
- 5) Education and training – the educational role of zoos will be socially, environmentally and culturally relevant.
- 6) Communication – the need for zoos and associations to become highly effective in communicating conservation issues, and their role in conservation.
- 7) Partnership and politics – through increased co-operation and partnerships, zoos will continue to raise standards of animal management, educate the public to act on behalf of conservation issues and assist in field projects.
- 8) Sustainability – the need for zoos to work towards sustainability and reduce their 'environmental footprint', using natural resources in a way that does not lead to their decline.
- 9) Ethics and animal welfare – zoos will follow ethical principles and maintain the highest standards of animal welfare.

## ISIS

One of the ways in which zoos can better co-ordinate their efforts is to share information internationally. This became possible with the development of a computer system, which pools information from all participating zoos.

ISIS (International Species Information System) is an electronic information system, designed to hold information on wild animals in captivity. The ISIS organisation is based in Minnesota, USA. ISIS has set up a range of computer databases to help zoos keep clear and accurate records for their animals. This information is then pooled internationally. The information is available to all zoos that subscribe to ISIS, currently around 500 member institutions. This means that information is available at an international level for each animal within the zoos' populations.

## ARKS

ARKS (Animal Records Keeping System) is a computer database written by ISIS staff. It is used by zoos to record the information reported in keeper daily reports (Appendix VI). All animal records entered onto the ARKS database are submitted to ISIS on a regular basis.

All Auckland Zoo keepers have access to ARKS, which is available on all networked computers in the Zoo. The report facilities on ARKS are of particular use to keepers. These include:

- Taxon report – lists all animals of a particular species held at the Zoo, and includes all their identifiers, eg ARKS number, band numbers, Trovan chip numbers, house names, etc. Very useful as an aid to identifying animals correctly.
- Specimen report – lists all the information recorded on ARKS about an individual animal. This includes identifiers, weights, lengths, details of birth/acquisition, enclosures and notes. The notes section is where most of the information recorded on daily reports ends up, and the aim of the notes is to give as complete a picture as possible of an individual animal's history. This information can then be used by keepers to attain a better understanding of the individual animal, and to make informed choices about future husbandry techniques, diet, medical procedures, etc. Simple examples would be that knowing that a particular animal is very fond of bananas may be useful for administering medical treatment, or that being aware that an animal has a history of aggression towards female keepers may influence the management of that animal.
- Transaction report – lists transactions (births, deaths, arrivals, departures, releases to wild, etc) for a species for a specified period. Very useful if you want to check information like how many Operation Nest Egg kiwi chicks have been released over a specified period.
- Collection inventory report – lists all the animals of every species held in the Zoo over a specified period. For example, a collection inventory report for today's date would tell you how many animals there are of each species in the Zoo today.
- Relationship report – creates a list of all of an individual animal's ancestors, siblings, and descendants. A very useful overview of who is related to whom.
- Weight/length report – generates a graph of an individual animal's weight or length over a specified time period. Very useful for charting an animal's growth rate or identifying potential problems (weight loss is often one of the first signs of ill health).

The other records databases also available to zoos include MedARKS (Medical Animal Records Keeping System), ReGASP (Regional Animal Species Collection Plan) and SPARKS (Single Population Analysis and Records Keeping System).



# AUCKLAND ZOO'S RECORDS

## WHY DO WE NEED ACCURATE RECORDS?

It is important that our records contain comprehensive information on the animals at the Zoo. In individual terms, we need to know the genetics of our animals so that we can breed from them effectively. A good knowledge of individual history also gives us the background information we need to shape the future husbandry and management of the animal. With precise information on husbandry, medical procedures and biology of our animals, we can also add to the international data for particular species. Often, we find that only limited information has been published on zoo animals. It is therefore important for modern zoos to add to this knowledge base. Records are also required for legal purposes – e.g. proof of ownership. MAF also require a copy of the Zoo's inventory as part of the annual zoo registration process.

## LOCAL ARKS NUMBERS

Each animal in Auckland Zoo is given a local identification number (ARKS number) when it is born/arrives at the Zoo. Associated with this number is our Zoo which also has an ISIS-registered code; this code is AUCKLAND. Our ARKS numbers are only local numbers, so there may be numerous other animals allocated the same number around the world, but they all have different institution codes. Up until 2000, ARKS numbers started with the year the animal was born/arrived in the Zoo – e.g. 990003 indicates the 3<sup>rd</sup> animal born/arrived in 1999. In 2000 and 2001, ARKS numbers began with 10. Unfortunately though, you couldn't tell just by looking at the number, what year the animal arrived at the Zoo. So, from 2002 onwards, all ARKS numbers started with A, e.g. A20001 for the first animal born/arriving in 2002, A30001 in 2003, etc. Some older animals have numbers which were allocated under an older system devised at Auckland Zoo. They have ARKS numbers such as MP3180. In this case, the MP stands for 'Mammal', 'Primate' and the animal would be the 31<sup>st</sup> to be born/arrive in 1980. This system fell into disuse with the advent of ARKS, since it is much easier to have a uniform numbering system for all animals.

There are also some animals – all fish, some reptiles and amphibians, and some bird species, which have group identification codes, rather than individual ARKS numbers. This is because individuals of the species are not easily identifiable, so they are managed as a group, rather than as individuals. Instead of a number, the group ID is a word, eg ZEBRA for zebra danio fish, BRAIL for banded rail. The group ID can be used in exactly the same way as an ARKS number to locate information on ARKS.

## IDENTIFICATION OF ANIMALS

We try to keep individual records on animals wherever possible rather than keeping one record on a whole group of animals. This is so that we have a detailed history of each animal in our collection. To make sure we are identifying the right individual, we use a number of different identification techniques. A summary of these identification techniques can be found in Appendix III.

In the past, zoos were often very bad at keeping records. The information was frequently scanty, and often only group cards were kept (see Appendix VI for an example of an old Auckland Zoo species record!). Now, we find these records very frustrating when we try to glean information about animals that the Zoo previously held.

## WHAT SHOULD GO ON DAILY REPORTS?

There are many things that should be reported on the daily keeper reports. A brief description is shown below:

<b>Sex</b>	record male, female or unknown. May be written in format 1.1.1 (e.g. 1 male, 1 female, 1 unknown sex).
<b>Species</b>	taxonomic name is preferred, as it is more specific than common name – one species may have several different common names, eg. <i>Puma concolor</i> is known variously as panther, puma, mountain lion, catamount, cougar, painter.
<b>ID</b>	record any identifying house names, band numbers, etc here.
<b>ARKS#</b>	record individual ARKS numbers or group IDs here – this information is essential for recording data against the correct individual/group on ARKS.
<b>Enclosure</b>	record the animal's enclosure (if you are transferring the animal, record the original enclosure here and the new enclosure under Information/Notes).
<b>Information/Notes</b>	include the following types of information:

1. **Population information:** Births, deaths, transfers. Accompanying this information should be parentage information, times of birth, shipment details, necropsy information etc.
2. **Husbandry information:** Changes in diet, enrichment schemes, training/conditioning, regrouping of animals, human interaction, hand-rearing information etc.
3. **Medical information:** Medical treatments, physical condition, injuries, faecal samples, vet checks, etc.
4. **Animal information:** Behavioural notes, reproductive behaviour, egg information, changes in group dynamics, pairing, identifiers, weights, lengths, etc.
5. **Other information:** Enclosure information, locations of animals within enclosure, weather. It is important for us to know exactly where the animals are in the Zoo (For a current enclosure map of Auckland Zoo, see Appendix IV).

For more information on the types of information required on daily reports, see the guidelines listed in Appendix V.

Examples of daily reports and examples of some ARKS reports can be found in Appendix VI.



## **ZIMS: THE NEXT GENERATION IN ISIS SOFTWARE**

ISIS is working with almost 500 experts from zoological institutions worldwide to build a twenty-first-century database system – ZIMS. ZIMS will replace the current ISIS software applications to provide a more accurate, comprehensive database.

ZIMS, a web-based application, will allow users to see collections of animal data (their own and others) in real-time, from any authorised computer, anywhere in the world. ZIMS will enhance local care and international conservation efforts by providing better/faster access to information, increasing efficiency, communication, productivity and data quality.

Auckland Zoo has been selected by ISIS as one of 19 global early adopters, and is one of only two early adopter institutions in Australasia (the other is Adelaide Zoo). While specific timeframes are not yet confirmed, Auckland Zoo is likely to start deploying (installing, testing and using) ZIMS in late 2006 or early 2007.

Watch this space!.....

## STUDBOOKS

A well-managed breeding programme is vital to the ongoing success of captive animal populations. This is not a new concept - in fact, the first 'studbook' was compiled for thoroughbred horses in 1791. However, studbooks of this nature aimed to select out certain characteristics, in order to produce a pedigree animal. Studbooks for endangered wild animals focus on maximising genetic variation within captive populations. The studbook keeper has the job of collecting genetic information on each animal (both alive and dead) for a particular species within the region (e.g. Australasia). Some studbooks are co-ordinated internationally, so a studbook keeper may manage an entire international captive population. (See Appendix VII for the official position descriptions of studbook keepers. Note that there are different levels of management of a species depending on how endangered the species is).

### SPARKS

Studbook information is correlated on a simple computer database designed by ISIS, called SPARKS (Single Population Analysis and Records Keeping System). The 'studbook' is a long list of all the animals within a region, preferably dating back to when they were first brought into captivity. Look at Appendix VIII for an example of a studbook for greater flamingos in Australasia. By analysing the data stored in SPARKS, a studbook keeper can determine the best pairings in order to retain maximum genetic diversity (as opposed to inbreeding). This analysis is run using PM2000 (Population Management 2000), a specialised software package, which analyses genetic and demographic data imported from SPARKS.

## SPECIES CO-ORDINATORS AND TAXON ADVISORY GROUPS

One step up from a studbook keeper is a species co-ordinator. The species co-ordinator uses the information gathered by the studbook keeper to make informed decisions on how the population should be managed. In many cases, the studbook keeper for a species will also be the species co-ordinator. The role of the species co-ordinator is to make breeding recommendations to holding institutions – including giving advice on which animals should be paired for breeding, recommending against breeding particular animals (eg those whose genes may be over-represented in the captive population) or recommending transfers of animals in order to achieve good pairings.

As part of ASMP, all species in the Australasian region are also covered by TAGs (taxon advisory groups). These groups discuss issues and decide on long-term plans for all species within their region.

## ARAZPA

ARAZPA (Australasian Regional Association of Zoological Parks and Aquaria) was formed following a conference in Auckland in 1990. The ARAZPA offices are based at Taronga Zoo, Sydney, Australia.

Membership of the association comprises all major zoos in the Australasian region (for a list of member zoos, see Appendix IX). All ARAZPA zoos have to qualify for membership, which means they meet a certain standard and are involved in regional captive breeding programmes. ARAZPA, like many other associations in other regions of the world, was established to help implement the objectives of the *World Zoo Conservation Strategy*. So, its goals are similar to those of the strategy, but focused on species held within the Australasian region.

## ASMP

(Australasian Species Management Program). This is the “species management arm” of ARAZPA. It provides scientific, technical and administrative support for Australasian zoos. This is in the form of computer support, literature and contacts.

The ASMP office, based at Taronga Zoo, generates captive species management recommendations. It does this by producing captive management plans, advising institutions on husbandry techniques and management strategies for particular species in their care. This is important to ensure effective species management for conservation purposes.

ASMP appoints the positions of TAG convenors, studbook keepers and captive co-ordinators.

In New Zealand, captive management of New Zealand species has long been managed by CMaG (New Zealand Conservation Management Group). In June 2004 the CMaG membership voted to merge with ARAZPA, to become the New Zealand branch of ARAZPA. Under the merger the New Zealand Species Management Plan (NZSMP) will be established as the model for captive management programmes. The NZSMP aims to maximise the benefit of captive populations for conservation and to fulfil the requirements of the Department of Conservation's policies.

### Regional Census and Plan

Each year, ASMP publishes the *Regional Census and Plan*. This lists all of the species, and numbers of individual animals, held at all ARAZPA member zoos, along with the management intentions of each institution regarding each species held. This vast amount of information is all taken from information listed on the ReGASP database, which institutions submit to ASMP on an annual basis. The *Regional Census and Plan* is very useful in helping zoos to work together to manage captive populations more effectively.

# ANIMAL TRANSFERS

As part of the Zoo's involvement in ASMP species management programmes, as well as to meet its own operational needs (eg to manage limited spaces), the Zoo regularly imports and exports animals from and to other zoos. Import and exports occur both within New Zealand and internationally. International transfers are predominantly within the Australasian region, but transfers further afield (eg birds to Germany; cheetahs from South Africa) are not unusual. Full transfer procedures, along with examples of permits, are detailed in Appendix X, but the major points are outlined here:

## **Planning an animal transfer**

Before any specimens are transferred into or out of the Zoo, there must be an agreement to transfer. Decisions to import new species are generally directed by the Collection Planning committee, in accordance with the recommendations of the ASMP taxon advisory groups. The impetus for transfer may be an internal one – eg. the Zoo's plan to import a new species or to export excess stock – or an external one – eg. a request from a species co-ordinator to transfer an animal into or out of the Zoo for breeding purposes. Because most of the zoos to/from which we transfer animals are engaged in regional breeding programmes, terms of transfer tend to be a form of exchange or donation. On occasion, animals may be loaned to another institution, and a loan agreement will be drawn up and signed by both parties.

## **Role of the Curators**

It is the role of the curator to correspond with the species co-ordinator, the sending/receiving institution and relevant Zoo staff, in order to confirm the feasibility of the transfer, as well as to discuss the terms and timing of transfer. The curator retains an involvement in the progress of the transfer, to ensure that everything runs smoothly and to assist in resolving any problems along the way.

## **Role of the Registrar**

Once the transfer has been confirmed, and terms and timing agreed, the Registrar is responsible for corresponding with relevant staff at the sending/receiving institution to ensure that all necessary permits are arranged and transport organised. In the case of national transfers, the Registrar submits a request for transfer approval to MAF. The legal requirements for international transfers are more complicated, but generally, an animal being exported will require a MAF export health certificate to be signed off, and may require a CITES export certificate (for schedule I and II listed species). For imports, a MAF permit is always required and a CITES import permit is required for schedule I listed species. Other countries' requirements vary, but similar permits are usually required at their end. For international transfers, the Registrar engages a freight agent to facilitate the transport of the animal(s). In the case of exports, the agent will book flights and organise delivery to the airport for large animals. For imports, they take care of customs clearance and also deliver large animals to the Zoo. Once the transfer has occurred, the Registrar confirms arrival or departure of the animal(s) with the sending/receiving institution and both institutions update their animal records to reflect the transfer details.

## **Role of the Vet Dept**

The Vet Dept organises all pre-export isolation for animals leaving the Zoo and quarantine for animals coming into the collection. Generally, animals leaving the Zoo for other NZ institutions will spend 2 weeks in pre-export isolation. The requirement for animals being exported internationally will depend on the health screening

requirements of the importing country, but pre-export isolation in these cases is usually 30 days. Pre-export isolation for international imports does not start until all permits are in hand (in case there are any delays, which might result in an extended period of isolation). All animals arriving into the Zoo undergo 30 days post-arrival quarantine. In the case of animals imported from overseas, MAF specifies the health screening and quarantine requirements for the species, and a MAF vet will inspect the animals on arrival and at weekly intervals throughout quarantine.

### **Role of section staff**

The section staff are responsible for liaising with the Vet Dept, to ensure that the correct isolation or quarantine procedures are followed. For international exports, the Registrar liaises with section staff to obtain a diet sheet for the animal(s), which is sent to the receiving institution (this is to help the receiving institution to settle the animal in on arrival and to make any dietary adjustments gradually). The Registrar also updates section staff on the progress of permits, and liaises with them regarding preferred dates for departure or arrival of animals travelling internationally. For national transfers, section staff liaise directly with the sending/receiving zoo to organise the transport of the animal(s). All animals leaving the Zoo need to have an appropriate crate in which to be transferred and, if there is not one already available, section staff are responsible for liaising with Maintenance staff to arrange for a crate to be made. All crates used for international animal transfers must comply with the IATA (International Air Transport Association) *Live animals regulations*, a copy of which is held in the Records Office. Once the transfer occurs, section staff are responsible for delivering or collecting the animal to/from the airport or (in some local cases) the sending/receiving institution.

### **Species new to New Zealand**

Sometimes the Zoo wishes to import a species not currently held in New Zealand. In these cases, there are additional legal requirements that must be met before an import can be organised:

### **ERMA**

The Environmental Risk Management Authority is responsible for considering applications to import any new organisms into New Zealand. Their definition of "new organism" is as follows: "*The HSNO Act\* 1996 defines this as any species not present in New Zealand immediately before the date the Act came into effect. It also includes a genetically modified organism, a new organism in containment and risk species as defined by the regulations.*" No new species can be brought into the country without ERMA approval. The application process is a lengthy one, which generally costs the applicant several thousands dollars.

### **MAF import health standards**

All species imported into New Zealand must have an IHS (import health standard), which will identify the species and the country from which it may be imported (eg. red pandas from Australia). A species may be ERMA approved, but without an IHS, it is still not possible to import it into New Zealand. It is therefore imperative to check that an IHS is available before proceeding to plan an import.

\*HSNO Act = Hazardous Substances and New Organisms Act 1996

## SOME USEFUL ACRONYMS

ARAZPA	Australasian Regional Association of Zoological Parks and Aquaria (just one of several regional associations – others include AZA (North America), EEP (Europe))
ARKS	Animal Records Keeping System
ASMP	Australasian Species Management Program
CBSG	Conservation Breeding Specialist Group. This is a global group co-ordinating captive breeding efforts (of which ASMP is a regional sub-group)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CmaG	New Zealand Captive Management Group. (New Zealand fauna species management advisory group). Became CMAg: ARAZPA NZ in 2005.
ERMA	Environmental Risk Management Authority
IATA	International Air Transport Association
IHS	Import health standard (issued by MAF for imports into New Zealand)
ISIS	International Species Information System (global data and information service)
IUCN	International Union for the Conservation of Nature and Natural Resources (nowadays, known as the World Conservation Union).
IUDZG	International Union of Directors of Zoological Gardens (subsequently WZO, now WAZA)
MAF	Ministry of Agriculture and Forestry
MedARKS	Medical Animal Records Keeping System
NZSMP	New Zealand Species Management Program. The New Zealand counterpart of ASMP, dealing with management of New Zealand fauna.
ReGASP	Regional Animal Species Plan
SPARKS	Single Population Analysis and Records Keeping System
SSC	Species Survival Commission (of the World Conservation Union)
TAG	Taxon Advisory Group
WAZA	World Association of Zoos and Aquariums (formerly IUDZG, then WZO)
WWF	World Wildlife Fund
WZO	World Zoo Organisation (formerly IUDZG and now WAZA)



## SOME USEFUL REFERENCES

A wide range of books and journals is available in the Keeper Library. There are two databases on the Zoo computer network to assist you in finding books and articles. Books are listed on the book catalogue, while there is a separate index to articles in journals held in the Library. Additional articles may also be found in the Zoo Fact File cabinets in the Keeper Library. Articles from this filing cabinet may be photocopied, but not borrowed.

Books and journals may be borrowed from the library for a period of 1 week, and must be signed out (and back in) in the red book in the library. See Appendix XI for further information on using the Keeper Library.

Good examples of captive breeding programmes and re-introductions can be found in the *Oryx* journals. *International Zoo News (IZN)* is a magazine dedicated to news and articles from the zoo world, and is published 8 times per annum.

Information on the regulations concerning trade and transportation of endangered animals can be found in the IATA *Live animals regulations* book in the Records Office.

Copies of past and present ASMP *Regional census and plan* can be found in the Keeper Library and the Records Office. These publications include updates on all of the Australasian captive management programmes, and show which species are held by ARAZPA institutions. They also list contact details for all ARAZPA institutional members.

There is a copy of the *Building a future for wildlife (The World Zoo and Aquarium Conservation Strategy)* in the Keeper Library (**590.74**).

*A primer in conservation genetics* (**574**) provides a comprehensive introduction to the general principles of conservation genetics.

Useful websites include:

- |                                  |  |
|----------------------------------|--|
| • CITES                          | <a href="http://www.cites.org">www.cites.org</a>           |
| • IUCN                           | <a href="http://www.iucn.org">www.iucn.org</a>             |
| • WAZA                           | <a href="http://www.waza.org">www.waza.org</a>             |
| • ARAZPA                         | <a href="http://www.arazpa.org.au">www.arazpa.org.au</a>   |
| • ISIS                           | <a href="http://www.isis.org">www.isis.org</a>             |
| • Red List of Threatened Species | <a href="http://www.redlist.org">www.redlist.org</a>       |
| • MAF                            | <a href="http://www.maf.govt.nz">www.maf.govt.nz</a>       |
| • ERMA                           | <a href="http://www.ermanz.govt.nz">www.ermanz.govt.nz</a> |
| • Dept of Conservation           | <a href="http://www.doc.govt.nz">www.doc.govt.nz</a>       |
| • CMaG                           | <a href="http://www.cmag.org.nz">www.cmag.org.nz</a>       |

# APPENDICES

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# APPENDIX I

## IUCN CATEGORIES

### IV. THE CATEGORIES

A representation of the relationships between the categories is shown in Figure 1.

#### **EXTINCT (EX)**

A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

#### **EXTINCT IN THE WILD (EW)**

A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

#### **CRITICALLY ENDANGERED (CR)**

A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see Section V), and it is therefore considered to be facing an extremely high risk of extinction in the wild.

#### **ENDANGERED (EN)**

A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see Section V), and it is therefore considered to be facing a very high risk of extinction in the wild.

#### **VULNERABLE (VU)**

A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (see Section V), and it is therefore considered to be facing a high risk of extinction in the wild.

#### **NEAR THREATENED (NT)**

A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

#### **LEAST CONCERN (LC)**

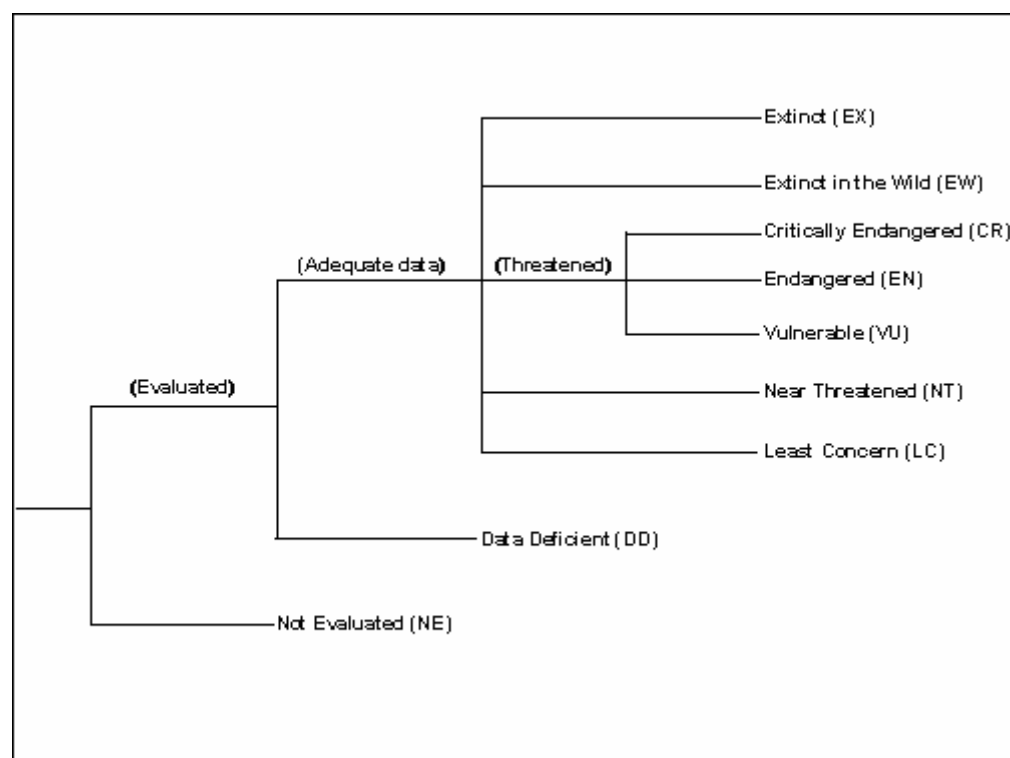
A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.

#### **DATA DEFICIENT (DD)**

A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care should be exercised in choosing between DD and a threatened status. If the range of a taxon is suspected to be relatively circumscribed, and a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

#### **NOT EVALUATED (NE)**

A taxon is Not Evaluated when it has not yet been evaluated against the criteria.



**Figure 1.** Structure of the categories.

## APPENDIX II



**LIST OF ANIMALS CURRENTLY HELD AT AUCKLAND ZOO**  
Includes current ASMP Management Levels, IUCN Conservation Status and CITES Listing as available  
14<sup>th</sup> February 2006

<b><u>CLASS: INVERTEBRAE:</u></b>				
Species Common name/Scientific name	ASMP Taxon Advisory Group	ASMP Management Level	IUCN Category	CITES listing
Leather coral <i>Lobophytum sp</i>	Invertebrate	3	Not evaluated	
Leathery soft coral <i>Sarcophyton sp</i>	Invertebrate	3	Not evaluated	
Giant Carribean anemone <i>Condylactis gigantea</i>	Invertebrate	3	Not evaluated	
Umbrella false coral <i>Discosoma sp.</i>	Invertebrate	3	Not evaluated	
Pacific false coral <i>Actinodiscus sp.</i>	Invertebrate	3	Not evaluated	
Hammer branch coral <i>Euphyllia cristata</i>	Invertebrate	3	Not evaluated	
Branch-capped coral <i>Euphyllia divisa</i>	Invertebrate	3	Not evaluated	
Bubble coral <i>Plerogyra</i>	Invertebrate	3	Not evaluated	
Bubble coral <i>Plerogyra sinuosa</i>	Invertebrate	3	Not evaluated	
Brain coral <i>Lobophyllia sp</i>	Invertebrate	3	Not evaluated	
Durian ivory coral <i>Galaxea astreata</i>	Invertebrate	3	Not evaluated	
Mushroom coral <i>Fungia fungites</i>	Invertebrate	3	Not evaluated	
Luminescent colonial anemone <i>Parazoanthus sp</i>	Invertebrate	3	Not evaluated	
Mat anemone <i>Zoanthus sp</i>	Invertebrate	3	Not evaluated	
Red-kneed tarantula <i>Brachypelma smithii</i>	Invertebrate	3	Not evaluated	II
Unicorn prawn <i>Macribrachium rosenbergii</i>	Invertebrate	3	Not evaluated	
Koura (freshwater crayfish) <i>Paranephrops planifrons</i>	Invertebrate	3	Not evaluated	

<b>CLASS: PISCES:</b>				
<b>Species Common name/Scientific name</b>	<b>ASMP Taxon Advisory Group</b>	<b>ASMP Management Level</b>	<b>IUCN Category</b>	<b>CITES listing</b>
Silver arawana <i>Osteoglossum bicirrhosum</i>	Aquatic	3		
Zebra danio <i>Brachydanio rerio</i>	Aquatic	3		
Flying fox sharkminnow <i>Epalzeorhynchus kalopterus</i>	Aquatic	3		
Rainbow shark <i>Labeo erythropterus</i>	Aquatic	3		
Checker barb <i>Puntius oligolepis</i>	Aquatic	3		
Golden barb <i>Puntius sachsii</i>	Aquatic	3		
Sumatran tiger barb <i>Puntius tetrazona</i>	Aquatic	3		
Cherry barb <i>Puntius titteya</i>	Aquatic	3		
Harlequin rasbora <i>Rasbora heteromorpha</i>	Aquatic	3		
Clown loach <i>Botia macracanthus</i>	Aquatic	3		
Coolie loach <i>Pangio kuhlii</i>	Aquatic	3		
River hatchetfish <i>Gasteropelecus sternicla</i>	Aquatic	3		
Buenos Aires tetra <i>Hemigrammus caudovittatus</i>	Aquatic	3		
Glowlight tetra <i>Hemigrammus erythrozonus</i>	Aquatic	3		
Bleeding heart tetra <i>Hyphessobrycon erythrostigma</i>	Aquatic	3		
Black neon tetra <i>Hyphessobrycon herbertaxelrodi</i>	Aquatic	3		
Serpa tetra <i>Hyphessobrycon serpae</i>	Aquatic	3		
Columbian tetra <i>Hyphessobrycon columbianus</i>	Aquatic	3		
Cardinal tetra <i>Paracheirodon axelrodi</i>	Aquatic	3		
Glass bloodfin tetra <i>Prionobrama filigera</i>	Aquatic	3		
Silver dollar <i>Mylossoma aureum</i>	Aquatic	3		
Red pacu <i>Piaractus brachypomus</i>	Aquatic	3		
Glass catfish <i>Kryptopterus bicirrhis</i>	Aquatic	3		
Bronze catfish <i>Corydoras aeneus</i>	Aquatic	3		
Peppered catfish <i>Corydoras paleatus</i>	Aquatic	3		
Suckermouth catfish <i>Hemiancistrus dolichopterus</i>	Aquatic	3		
Plecostomus <i>Hypostomus ancistroides</i>	Aquatic	3		
Plecostomus <i>Hypostomus plecostomus</i>	Aquatic	3		
Giant kokopu <i>Galaxias argenteus</i>	Aquatic	3		

Koaro <i>Galaxias brevipinnis</i>	Aquatic	3		
Banded kokopu <i>Galaxias fasciatus</i>	Aquatic	3		
Inanga <i>Galaxias maculatus</i>	Aquatic	3		
Boesemann's rainbowfish <i>Melanotaenia boesemani</i>	Aquatic	3		
Lake Kutubu rainbowfish <i>Melanotaenia lacustris</i>	Aquatic	3		
Potbelly seahorse <i>Hippocampus abdominalis</i>	Aquatic	3		
Squarespot fairy basslet <i>Pseudanthius pleurotaenia</i>	Aquatic	3		
Pajama cardinalfish <i>Sphaeramia nematoptera</i>	Aquatic	3		
Diamond fish <i>Monodactylus argenteus</i>	Aquatic	3		
Copperband butterflyfish <i>Chelmon rostratus</i>	Aquatic	3		
Coral beauty <i>Centropyge bispinosus</i>	Aquatic	3		
Falcon hawkfish <i>Cirrhichthys falco</i>	Aquatic	3		
Cichlid <i>Cichlidae (species hybrids)</i>	Aquatic	3		
Blue mbuna cichlid <i>Labeotropheus fuelleborni</i>	Aquatic	3		
Bluestreak hap cichlid <i>Labidochromis caeruleus</i>	Aquatic	3		
Nyasa golden cichlid <i>Melanochromis auratus</i>	Aquatic	3		
Blue butterfly (ram) Cichlid <i>Microgeophagus ramirezi</i>	Aquatic	3		
Mbuna cichlid <i>Pseudotropheus socolofi</i>	Aquatic	3		
Cobalt blue zebra cichlid <i>Pseudotropheus zebra</i>	Aquatic	3		
Freshwater angelfish <i>Pterophyllum scalare</i>	Aquatic	3		
Yellowtail clownfish <i>Amphiprion clarkii</i>	Aquatic	3		
Peacock clownfish <i>Amphiprion ocellaris</i>	Aquatic	3		
Bluegreen chromis <i>Chromis viridis</i>	Aquatic	3		
Sixline wrasse <i>Pseudocheilinus hexataenia</i>	Aquatic	3		
Torrentfish <i>Cheimarrichthys fosteri</i>	Aquatic	3		
Cran's bully <i>Gobiomorphus basalis</i>	Aquatic	3		
Common bully <i>Gobiomorphus cotidianus</i>	Aquatic	3		
Redfinned bully <i>Gobiomorphus huttoni</i>	Aquatic	3		
Knight goby <i>Stigmatogobius sadanundio</i>	Aquatic	3		
Spotted scat <i>Scatophagus argus</i>	Aquatic	3		
Spotted surgeon <i>Ctenochaetus strigosus</i>	Aquatic	3		

Smoothhead unicornfish <i>Naso lituratus</i>	Aquatic	3		
Sailfin tang <i>Zebrasoma desjardini</i>	Aquatic	3		
Yellow tang <i>Zebrasoma flavescens</i>	Aquatic	3		
Little giant gourami <i>Colisa fasciata</i>	Aquatic	3		
Mosaic gourami <i>Trichogaster leerii</i>	Aquatic	3		
Moonlight gourami <i>Trichogaster microlepis</i>	Aquatic	3		
Blue gourami <i>Trichogaster trichopterus</i>	Aquatic	3		
<b><u>CLASS: AMPHIBIA:</u></b>				
<b>Species Common name/Scientific name</b>	<b>ASMP Taxon Advisory Group</b>	<b>ASMP Management Level</b>	<b>IUCN Category</b>	<b>CITES listing</b>
Axolotl <i>Ambystoma mexicanum</i>	Reptile and Amphibian	3	VU	II
Japanese fire-bellied newt <i>Cynops pyrrhogaster</i>	Reptile and Amphibian	3		
Green and gold bell frog <i>Litoria aurea</i> (hybrid)	Reptile and Amphibian	3	NT	
Brown (whistling) tree frog <i>Litoria ewingii</i>	Reptile and Amphibian	3		
African clawed frog <i>Xenopus laevis</i>	Reptile and Amphibian	3		
Archey's frog <i>Leiopelma archeyi</i>	New Zealand Fauna	3	NT	
<b><u>CLASS: REPTILIA:</u></b>				
<b>Species Common name/Scientific name</b>	<b>ASMP Taxon Advisory Group</b>	<b>ASMP Management Level</b>	<b>IUCN Category</b>	<b>CITES listing</b>
Eastern snake-necked turtle <i>Chelodina longicollis</i>	Reptile and Amphibian	3		
Reeve's turtle <i>Chinemys reevesii</i>	Reptile and Amphibian	3		
Red-eared slider <i>Trachemys scripta elegans</i>	Reptile and Amphibian	3	NT	
Star tortoise <i>Geochelone elegans</i>	Reptile and Amphibian	3		II
Galapagos tortoise <i>Geochelone nigra</i>	Reptile and Amphibian	1a	VU	II
Leopard tortoise <i>Geochelone pardalis</i>	Reptile and Amphibian	3		II
American alligator <i>Alligator mississippiensis</i>	Reptile and Amphibian	3		II
Cook Strait tuatara <i>Sphenodon punctatus</i>	New Zealand Fauna	1b		I
Northern tuatara <i>Sphenodon punctatus punctatus</i>	New Zealand Fauna	1b		I
Eastern water dragon <i>Physignathus lesueurii lesueurii</i>	Reptile and Amphibian	3		
Scheltopusik <i>Ophisaurus apodus</i>	Reptile and Amphibian	3		
Jackson's chameleon <i>Chamaeleo jacksonii</i>	Reptile and Amphibian	3		II



Forest gecko <i>Hoplodactylus granulatus</i>	New Zealand Fauna	3		
Northland green gecko <i>Naultinus grayi</i>	New Zealand Fauna	3		
Madagascan giant day gecko <i>Phelsuma madagascariensis grandis</i>	Reptile and Amphibian	3		II
Fijian banded iguana <i>Brachylophus fasciatus</i>	Reptile and Amphibian	1a	E	I
Cunningham's skink <i>Egernia cunninghami</i>	Reptile and Amphibian	3		
Falla's skink <i>Oligosoma fallai</i>	New Zealand Fauna	3	NT	
Chevron skink <i>Oligosoma homolanotum</i>	New Zealand Fauna	3	VU	
Eastern blue-tongued skink <i>Tiliqua scincoides scincoides</i>	Reptile and Amphibian	3		
<b><u>CLASS: AVES:</u></b>				
<b>Species Common name/Scientific name</b>	<b>ASMP Taxon Advisory Group</b>	<b>ASMP Management Level</b>	<b>IUCN Category</b>	<b>CITES listing</b>
Ostrich <i>Struthio camelus</i>	Non-passerine	3		I
Emu <i>Dromaius novaehollandiae novaehollandiae</i>	Non-passerine	3		
North Island brown kiwi <i>Apteryx australis mantelli</i>	New Zealand Fauna	1a	VU	
Little blue penguin <i>Eudyptula minor minor</i>	New Zealand Fauna	3		
White-faced heron <i>Ardea novaehollandiae</i>	Non-passerine	3		
Australian white ibis <i>Threskiornis molucca strictipennis</i>	Non-passerine	3		
Greater flamingo <i>Phoenicopterus ruber roseus</i>	Non-passerine	2		II
Mute swan <i>Cygnus olor</i>	Non-passerine	3		
North American wood duck <i>Aix sponsa</i>	Non-passerine	3		
Grey teal <i>Anas gracilis</i>	Non-passerine	3		
Australasian shoveler <i>Anas rhynchotis variegata</i>	New Zealand Fauna	3		
New Zealand scaup <i>Aythya novaeseelandiae</i>	New Zealand Fauna	3		
Blue duck <i>Hymenolaimus malacorhynchos</i>	New Zealand Fauna	1a	VU	
Paradise shelduck <i>Tadorna variegata</i>	New Zealand Fauna	3		
Turkey <i>Meleagris gallopavo</i>	Non-passerine	3		
Golden pheasant <i>Chrysolophus pictus</i>	Non-passerine	3	NT	
Japanese quail <i>Coturnix japonica</i>	Non-passerine	3		
Chinese (Indian blue, king) quail <i>Excalfactoria chinensis</i>	Non-passerine	3		
Himalayan monal <i>Lophophorus impejanus</i>	Non-passerine	3		I

Swinhoe's pheasant <i>Lophura swinhoii</i>	Non-passerine	3	NT	I
Common peafowl <i>Pavo cristatus</i>	Non-passerine	3		
Helmeted guineafowl <i>Numida meleagris</i>	Non-passerine	3		
Brolga (Australian crane) <i>Grus rubicunda</i>	Non-passerine	1b		II
Buff-banded rail <i>Rallus philippensis assimilis</i>	New Zealand Fauna	1b		
Black-winged stilt <i>Himantopus himantopus leucocephalus</i>	Non-passerine	1b		
Spur-winged plover (masked lapwing) <i>Vanellus miles novaehollandiae</i>	Non-passerine	3		
Green-winged (emerald) dove <i>Chalcophaps indica</i>	Non-passerine	3		
Pied imperial (nutmeg)pigeon <i>Ducula bicolor spilorrhoea</i>	Non-passerine	3		
Luzon bleeding-heart pigeon <i>Gallicolumba luzonica</i>	Non-passerine	3	NT	II
Diamond dove <i>Geopelia cuneata</i>	Non-passerine	3		
New Zealand pigeon <i>Hemiphaga n. novaeseelandiae</i>	New Zealand Fauna	3		
Crested pigeon <i>Ocyphaps lophotes</i>	Non-passerine	3		
Namaqua dove <i>Oena capensis</i>	Non-passerine	3		III
Senegal (laughing) dove <i>Streptopelia senegalensis</i>	Non-passerine	3		III
Yellow-bibbed lory <i>Lorius chlorocercus</i>	Non-passerine	3		II
Rainbow lorikeet <i>Trichoglossus haematodus moluccanus</i>	Non-passerine	3		II
Sulphur-crested cockatoo <i>Cacatua galerita</i>	Non-passerine	3		II
Major Mitchell's cockatoo <i>Cacatua leadbeateri</i>	Non-passerine	3	NT	II
Red-tailed black cockatoo <i>Calyptorhynchus banksii</i>	Non-passerine	3		II
North Island kaka <i>Nestor meridionalis septentrionalis</i>	New Zealand Fauna	1a	VU	II
Kea <i>Nestor notabilis</i>	New Zealand Fauna	1a	NT	II
Masked lovebird <i>Agapornis personata</i>	Non-passerine	3		II
Australian king parrot <i>Alisterus scapularis</i>	Non-passerine	3		II
Blue and gold macaw <i>Ara ararauna</i>	Non-passerine	3		II
Sun conure <i>Aratinga solstitialis</i>	Non-passerine	3		II
Yellow-crowned kakariki <i>Cyanoramphus auriceps</i>	New Zealand Fauna	1b	NT	II
Red-crowned kakariki <i>Cyanoramphus n. novaezelandiae</i>	New Zealand Fauna	3		I
Eclectus parrot <i>Eclectus roratus</i>	Non-passerine	3		II
Hooded parrot <i>Psephotus dissimilis</i>	Non-passerine	3	NT	I

Morepork <i>Ninox novaeseelandiae novaeseelandiae</i>	New Zealand Fauna	1b		I
Laughing kookaburra <i>Dacelo novaeguineae</i>	Non-passerine	3		
Silvereye <i>Zosterops lateralis</i>	Passerine	3		
Bellbird <i>Anthornis melanura</i>	New Zealand Fauna	3		
Tui <i>Prosthemadera novaeseelandiae novaeseelandiae</i>	New Zealand Fauna	1b		
Cuban finch <i>Tiaris canora</i>	Passerine	3		
Orange-breasted waxbill <i>Amandava subflava clarkei</i>	Passerine	3		III
Gouldian finch <i>Erythrura gouldiae</i>	Passerine	3	E	
Red-billed firefinch <i>Lagonostict senegala</i>	Passerine	3		III
Javan sparrow <i>Padda oryzivora</i>	Passerine	3	VU	II
Parson (black-throated) finch <i>Poephila cincta</i>	Passerine	3		
Zebra finch <i>Poephila guttata</i>	Passerine	3		
Red-cheeked cordon-bleu <i>Uraeginthus bengalus</i>	Passerine	3		
North Island kokako <i>Callaeas cinerea wilsoni</i>	New Zealand Fauna	1a	E	
<b><u>CLASS: MAMMALIA:</u></b>				
<b>Species Common name/Scientific name</b>	<b>ASMP Taxon Advisory Group</b>	<b>ASMP Management Level</b>	<b>IUCN Category</b>	<b>CITES listing</b>
Parma wallaby (Kawau Is) <i>Macropus parma</i>	Monotreme and Marsupial	1b	NT	
Red-necked wallaby <i>Macropus rufogriseus banksiana</i>	Monotreme and Marsupial	3		
Red kangaroo <i>Macropus rufus</i>	Monotreme and Marsupial	3		
Grey-headed flying-fox <i>Pteropus poliocephalus</i>	Australian Bat and Rat	2		
Little red flying-fox <i>Pteropus scapulatus</i>	Australian Bat and Rat	3		II
Ring-tailed lemur <i>Lemur catta</i>	Primate	1a	VU	I
Golden lion tamarin <i>Leontopithecus rosalia</i>	Primate	1a	CR	I
Cotton-top tamarin <i>Saguinus oedipus</i>	Primate	1a	E	I
Black-handed spider monkey <i>Ateles geoffroyi geoffroyi</i>	Primate	1a	VU	II
Bonnet macaque <i>Macaca radiata</i>	Primate	3		II
Chacma baboon <i>Papio hamadryas ursinus</i>	Primate	3		II
Siamang <i>Hylobates syndactylus</i>	Primate	1a	NT	I
Chimpanzee <i>Pan troglodytes</i>	Primate	1a	E	I
Orangutan <i>Pongo pygmaeus (hybrid)</i>	Primate	1b	VU	I

Bornean orangutan <i>Pongo pygmaeus pygmaeus</i>	Primate	1a	E	I
European rabbit <i>Oryctolagus cuniculus</i>	No programme			
Flemish giant rabbit <i>Oryctolagus cuniculus flemish giant</i>	No programme			
Minilop rabbit <i>Oryctolagus cuniculus minilop</i>	No programme			
Netherland dwarf rabbit <i>O. cuniculus netherland dwarf</i>	No programme			
New Zealand rabbit <i>O. cuniculus new zealand</i>	No programme			
Hooded rat <i>Rattus norvegicus hooded</i>	No programme			
Guinea pig <i>Cavia porcellus</i>	No programme			
Patagonian cavy (mara) <i>Dolichotis patagonum</i>	Miscellaneous Exotic Mammals	2	NT	
Brazilian agouti <i>Dasyprocta leporina</i>	Miscellaneous Exotic Mammals	2		
Red panda <i>Ailurus fulgens fulgens</i>	Carnivore	1a	E	I
Oriental small-clawed otter <i>Amblonyx cinereus</i>	Carnivore	1a	NT	II
Slender-tailed meerkat <i>Suricata suricatta</i>	Carnivore	1b		
Asiatic golden cat <i>Catopuma temminckii</i>	Carnivore	1a	NT	I
Serval <i>Leptailurus serval</i>	Carnivore	1a		II
Lion <i>Panthera leo (hybrid)</i>	Carnivore	1a	VU	II
African lion <i>Panthera leo krugeri</i>	Carnivore	1a	VU	II
Sumatran tiger <i>Panthera tigris sumatrae</i>	Carnivore	1a	CR	I
New Zealand fur seal <i>Arctocephalus forsteri</i>	Marine Mammal	1b		II
Californian sealion <i>Zalophus californianus californianus</i>	Marine Mammal	1b		
Asian elephant <i>Elephas maximus</i>	Perissodactyl and Proboscidean	1a	E	I
Damara zebra <i>Equus burchelli antiquorum</i>	Perissodactyl and Proboscidean	1a		
Grant's zebra <i>Equus burchelli boehmi</i>	Perissodactyl and Proboscidean	1a		
Southern white rhinoceros <i>Ceratotherium simum simum</i>	Perissodactyl and Proboscidean	1a	CD	II
Hippopotamus <i>Hippopotamus amphibius</i>	Artiodactyl	1a		II
Giraffe <i>Giraffa camelopardalis</i>	Artiodactyl	1a	CD	
Baringo (Rothschild's) giraffe <i>Giraffa camelopardalis rothschildi</i>	Artiodactyl	1a	CD	
Angolan springbok <i>Antidorcas marsupialis angolensis</i>	Artiodactyl	1b	CD	
Domestic goat <i>Capra hircus hircus domestic</i>	No programme			
Angora goat <i>Capra hircus hircus angora</i>	No programme			

Domestic sheep <i>Ovis aries aries domestic</i>	No programme			
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## **APPENDIX III**

### **IDENTIFICATION TECHNIQUES USED FOR ANIMALS AT AUCKLAND ZOO**

#### **Transponders/microchips**

The Trovan brand of microchips is the most commonly used at Auckland Zoo. These microchips are surgically inserted into animals above a certain size. A coded implant is recorded onto ARKS in the format: 00-0014-AE38.

It is one of the requirements that all animals that travel overseas must be implanted with a transponder/microchip. All CITES listed animals, wherever possible, will have transponders implanted at Auckland Zoo. Before the animal leaves a country, and when it arrives, this transponder microchip will be checked by the authorities, to ensure that it corresponds with the paperwork accompanying the animal.

#### **Ear tags**

These have been used here in the past, especially for domestic stock, such as llamas, goats etc. The general rule is that males are tagged on the right ear, females on the left ear, and unsexed animals on the right ear.

#### **Leg bands**

Most birds are given leg bands at the Zoo. The Native Fauna section uses Department of Conservation official metal bands (embossed with registered codes). Colour bands are frequently used as an aid to easy visual identification. Banding of legs is done in the same fashion as for ear tags, ie. Males banded on the right leg, females on the left leg, etc.

#### **Notching marks**

Some of our reptiles have had toe-clips for visual identification. However, it is not a very reliable form of identification, as animals can lose toenails, etc. and this can be misleading. Toe-clips are recorded on ARKS in the following format: 3024. These numbers correspond to a particular toe digit that has been removed, ie. From the front left leg (3), front right leg (0, none), back left leg (2), and back right leg (4).

#### **Temporary markings**

Sometimes, newborn pups or offspring are marked with a spot of paint or a shaved patch on a particular location. Eggs undergoing artificial incubation are numbered with a pencil for identification.

#### **Natural markings**

Many animals can be recognised from individual features or markings specific to them. Most keepers get to know their animals well enough to recognise them without needing to refer to the artificial identifiers all the time.

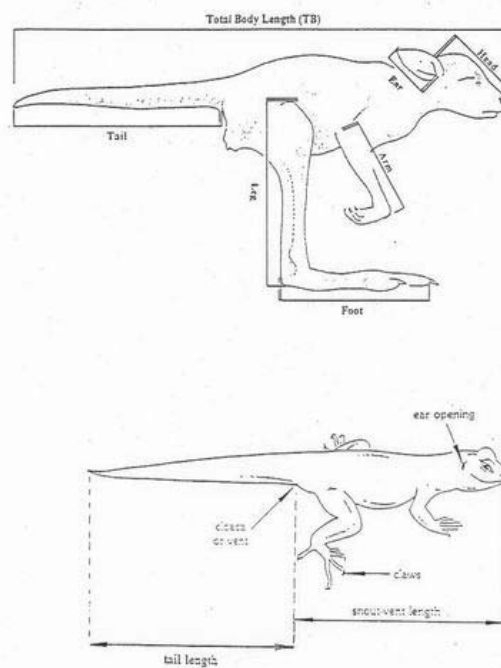
#### **Measurements**

Measurements are often used to estimate ages and to record growth. Some young reptiles, for example, are regularly measured and weighed and this, along with enclosure details and distinguishing natural features, provides us with enough information to individually identify them.

Young wallaby joeys can have their birth date estimated by taking foot measurements and weights of the juvenile. The measurements can be used in conjunction with the ARAZPA publication, *Birth Date Determination in Australasian Marsupials*, to calculate birth date.

Growth data is also useful to help gain more information on growth patterns of a particular species and is often utilised by studbook keepers.

Some examples of measurement practices are shown below:







# APPENDIX V

## DAILY REPORTS: “DOS AND DON'TS”

### Some guidelines to help you with your daily report writing

#### DO:

- Write your section name and the date at the top of your report!
- Check ARKS #s carefully to ensure that you have the correct animal.
- If you have caught up animals for any reason, please check ID (bands, Trovan chips etc) to confirm the animals' identities.
- Record ARKS #s for individual animals or groups of 6 or fewer animals.
- If the animal is part of a group count (e.g. fish, some reptiles/amphibians/birds), please record the group ID – instead of a number, this is a word e.g. ZEBRA for zebra danio.
- If you transfer an animal between enclosures, record the original enclosure in the “Encl.” column. State the enclosure to which you moved it under “Information/Notes”.
- Record any changes (and the reason for changes) in husbandry techniques or to the animal's environment – e.g. enclosure refurbishment, behavioural enrichment, new diet etc. – and follow up with some information on the animals' response to these changes. This information helps to provide a comprehensive picture of husbandry techniques and species behaviour.
- Report details of any research or training programmes you have in place, and follow up on progress/changes.
- If you take any weight/length measurements, please report them. Having a good record of animal weights on ARKS can be particularly useful in helping to identify illness, pregnancy etc. Please always record previous weights on the report.
- If you give the animal a physical ID (e.g. leg band, Trovan implant), please report the number of the ID and where it is (e.g. R leg; between shoulder blades).
- If an animal sustains an injury, indicate precisely where (e.g. R front leg; L ear). Please check your right and left to make sure you record the correct one.
- Report breeding behaviour, egg-laying, suspected pregnancy etc.
- When an animal is born/hatches, record ARKS #s for both sire and dam. If you are unsure, report that sire/dam is unknown and follow up if you manage to confirm the identity at a later time.
- Remember to report deaths and transfers into/out of the Zoo.
- Record medical observations, treatments and medical test results (e.g. blood, urine samples, etc) as fully as possible – do not assume that all information will be reported by the Vet Dept, as it may not be.
- If more than one animal is involved, e.g. an animal is attacked by another, please record ARKS #s for both/all animals so that data can be recorded against all specimen records.
- Write as legibly, clearly and succinctly as possible to avoid misunderstandings and ensure that our animal records are as accurate as possible.
- As well as the above, report any instance of unusual behaviour – it may not appear significant at the time, but it might form part of an ongoing pattern of behaviour.
- Follow up on observations – e.g. if you report an animal unwell, be sure to report on any improvement/deterioration in condition.
- Sign your own contributions for future reference/follow up.
- **If in doubt, report it!**

#### DON'T:

- It is not necessary to give individual ARKS #s if you are reporting on a group of 7 or more animals (unless the report specifically refers to one or two individuals within the group).
- Do not make up terminology – if in doubt, please consult a dictionary.
- Don't write in pencil – pen is more permanent.
- It is generally not necessary to record everyday events such as cleaning, feeding etc, unless you have something new or unusual to report, e.g. a change in feeding schedule/diet/cleaning solution etc.

- Do not delete comments made by other staff on daily reports – discuss any potential errors with the person concerned.

## APPENDIX VI

### EXAMPLES OF DAILY REPORTS AND ARKS REPORTS

COMMON NAME	SEALIONS	SEX: M. 1 F. 2	ENCLOSURE No.
SCIENTIFIC NAME	Zalophus californianus		
GROUP	Pinnipedia	HABITAT	Pacific Ocean
DISTINGUISHING MARKS			
DAM		SIRE	
ARRIVAL DATE 7-8-61		DEPARTURE DATE	
PURCHASED Sealions International, Santa Barbara		DEAD	
BRED		SOLD	
GIFT		EXCHANGED	
EXCHANGED			

5-10-62 3 sealions still showing Keratitis and Uveitis 5 x 250 mgs. Chloromycetin twice daily for 6 days, also caps. Myadec (Farke Davis) 1 twice daily to ALL sealions.

9-10-62 slightly improved

13-10-62 small sealion has injured flipper - 15-10-62 improved

19-1-63 ~~Millie off food and appears unwell~~

3-6-64 Sealions to get Eldec capsules

14-1-65 largest sealion not eating and cannot see out of either eye. Vet. informed

15-1-65 respiratory tract infection 2 x 250 mgm. Chloromycitin twice daily for 4 days.

19-1-65 one small female with cut flipper

31-12-67 Rosie treated by vet. - 5 ccs Triplopen (injuries to mouth)

5-1-68 still off-colour - has more bites on body

8-1-68 has more sores on front of lower jaw - vet. seen n.a. menatime

26-1-68 Chloromycetin 3 x day

5-2-68 Terramycin 250 mgn capsule a.m. midday and 2 p.m.



## EXOTIC BIRDS DAILY REPORT

Date: 27/04/2006

SEX	SPECIES	HOUSE NAME/I.D.	ARKS NUMBER	ENCLOSURE	NOTES	INITIALS
0.1.0	Hooded parrot	Black 169 Right	A40036	MA2	Found dead on concrete area at rear of enclosure today. No obvious injuries. Post mortem by vet found probable head injury as cause of death.	SK/CD
0.2.0	Parma wallabies	Blind L Eye	100243 Unknown	UP13	Pouch very enlarged, with obvious movement seen by keepers and she was investigating and licking within pouch. 2 <sup>nd</sup> Parma seen with visibly enlarged pouch and movements within.	CD/SK
0.1.0	Red-tailed black cockatoo		940059	BA5	Female on nest every time that the enclosure was observed today.	CD/SK
1.0.0	Kookaburra	Kookie	A20184	EA3	Given strips of horse meat today, as an alternative to mice, which are unavailable at present. Ate one piece in front of keeper, as well as numerous mealworms.	CD/SK
1.0.0	Sulphur-crested cockatoo	Captain	K6071	BA4	Wing clipped today. Was able to be distracted by a favourite keeper, Terry Howe, and wing clipped without restraint. Taken for a walk to the lunchroom and "meet and greet" with public on the way. Was very distressed when returned to aviary.	SK/CD
1.0.0	Rainbow lorikeet	Scabby	990025	B/room	Vet came down to check him today. Released in contained area to see how he flew. Managed to fly a little but is still quite weak.	SK/CD JPotter
					<b>Pest Control:</b> 4 mice caught today.	

Report Start Date  
1/01/00

## Specimen Report for AUCKLAND / 100297

Report End Date  
30/06/02

Taxonomic name: *Eudyptula minor minor*

Family: Spheniscidae

Common name: Blue penguin

Order: Sphenisciformes

### Current information

Sex:	Female	Sire ID:	WILD at Obtained From Wild
Birth type:	Wild Born	Dam ID:	WILD at Obtained From Wild
Birth Location:	Obtained From Wild	Rearing:	Hand
Hatch date-Age:	~ 1 Oct 2000 - 1Y,8M,28D +/-14 Days	Hybrid:	Unknown
Time since last Acq:	0Y,9M,25D as of report end date		

<u>Date in</u>	<u>Acquisition - Vendor/local Id</u>	<u>Holder</u>	<u>Disposition - Recipient/local Id</u>	<u>Date out</u>
4 Sep 2001	Trade from MARINE NZ / UNK	AUCKLAND / 100297		

<u>Date</u>	<u>Identifier type</u>	<u>Identifier</u>	<u>Location</u>
4 Sep 2001	House Name	Lucy	
4 Sep 2001	Tag/Band	unbanded	

<u>Date</u>	<u>Type</u>	<u>Value</u>	<u>Units</u>
19 Aug 2001	live animal weight	975	gram
18 Sep 2001	live animal weight	838	gram
26 Sep 2001	live animal weight	872	gram
8 Jan 2002	live animal weight	933	gram
16 Jan 2002	live animal weight	917	gram
30 Jan 2002	live animal weight	910	gram
26 Feb 2002	live animal weight	912	gram
6 Mar 2002	live animal weight	920	gram
12 Mar 2002	live animal weight	940	gram
26 Mar 2002	live animal weight	890	gram
10 Apr 2002	live animal weight	905	gram
26 Apr 2002	live animal weight	904	gram

<u>Date</u>	<u>Note type</u>	
22 Jun 2001	Note	Lucy was an unsuccessful forager. Arrived at Marineland on 3/12/2000 as a newly fledged youngster. No reaction to live fish and didn't have the strength to try. Has been treated for chest problems.
4 Sep 2001	Acquisition note	These 6 birds arrived at 3.00 p.m. from Marineland in Napier. All travelled well.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
4 Sep 2001	Feeding	All force fed 3 pieces salmon each p.m. Electrolyte solution also given to rehydrate.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
4 Sep 2001	Animal management note	Birds left in crates overnight due to heavy rain. Will be introduced to aviary early tomorrow morning.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
5 Sep 2001	Animal management note	Transferred into aviary today. Volunteer watch all day.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
6 Sep 2001	Feeding	All hand-fed twice today - mid-morning and mid-afternoon.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.

Report Start Date  
1/01/00

## Specimen Report for AUCKLAND / 100297

Report End Date  
30/06/02

6 Sep 2001	Behavior note	McGonagal discovered the back beach today. Lucy and Stella seem to be roosting in dune box. Other four are roosting in driftwood cave.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
7 Sep 2001	Feeding	All birds given 2x Mazuri tablets a.m., except Pluto. All fed well.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
7 Sep 2001	Behavior note	Stella and Lucy roosting in the sand dune box - have had to be removed for all feedings. At 4p.m. feed, Henry, Ani, Pluto and McGonagal were out swimming and all came over for fish, except Henry.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
8 Sep 2001	Feeding behaviour	All birds fed well a.m. and p.m. Henry and Ani not fed at midday - not interested.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
8 Sep 2001	Behavior note	Pluto, Stella and Lucy all in sand dune box during day. Birds climbing ramp to back beach.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
9 Sep 2001	Behavior note	Took 3 feeds. Staying in shelter.
10 Sep 2001	Feeding behaviour	Fed well.
11 Sep 2001	Feeding behaviour	All feeding from hand at p.m. feed. Keeper had to go to Henry and pull Ani out, but both fed well. All others approached keeper to feed.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
11 Sep 2001	Medical observation	Vet checked breathing as bird has history of suspected aspergillosis and keepers note wheezing when bird is fed fish. Some harsh, dry respiratory sounds hear on thoracic auscultation. Bird is bright and in good body condition. Monitor.
12 Sep 2001	Feeding	Fed less over day, allowed to become hungry overnight. All birds are coming up to keeper to be fed and feeding from hand (no force feeding).  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
13 Sep 2001	Feeding behaviour	All birds (except Henry, who stayed on back beach and only had 2 fish) are responding to keeper tapping on metal bucket as a feeding signal. All feeding eagerly from the hand.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
14 Sep 2001	Feeding behaviour	All feeding well. Henry eating a lot today.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
16 Sep 2001	Behavior note	Both birds roosting in the dune box. Both came out for feeding.  This comment was added to the following specimens: 100295, 100297.
18 Sep 2001	Medical observation	All have lost weight and need to be built up.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
18 Sep 2001	Medical treatment	All birds on Aspergillosis preventative medication (Sporonox) for 3 weeks.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.

Report Start Date  
1/01/00

## Specimen Report for AUCKLAND / 100297

Report End Date  
30/06/02

18 Sep 2001	Medical note	Received blood results from pre-shipment exam today. High WBC counts in 4 birds and two (100296 and 100298) have heterophilia. All birds to be placed on preventative course of Sporonox for 3 weeks.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
20 Sep 2001	Medical treatment	All treated with Sporonox (twice daily).  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
22 Sep 2001	Diet	Herring introduced into diet for all penguins.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
22 Sep 2001	Note	First day exhibit open to public. All birds seem to have coped well but public do tend to crowd around birds when they come onto path. Keeper recommends having zoo staff in aviary at all times during public hours.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
26 Sep 2001	Medical observation	General vet check - good, has gained weight. Still has noisy respiration but lungs sound clear. Noise seems to be emanating from head region.
26 Sep 2001	Medical note	If this bird needs GA, check and flush out sinuses.
1 Oct 2001	Medical treatment	Preventative Sporonox tx abandoned as unable to find a suitable means of getting it into the birds - the effort is causing stress with some negative impact on food intake.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
1 Oct 2001	Medical note	Blood samples to be taken in two weeks to check WBC count. Continue to monitor weights weekly.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
5 Nov 2001	Egg information	Egg found under boat. Almost certainly laid by Stella. Egg removed.  This comment was added to the following specimens: 100294, 100295, 100297.
8 Nov 2001	Shed/moult/hair loss	Lucy is in full moult.
8 Nov 2001	Feeding behaviour	Taking 2x daily feeds.
9 Nov 2001	Egg information	Egg found in lower nest box. Assumed to be Stella's, as she probably laid the first egg.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
11 Nov 2001	Feeding behaviour	Not eating a lot - only took 2-3 pieces.
11 Nov 2001	Shed/moult/hair loss	Has pin feathers and looks good.
10 Jan 2002	Feeding behaviour	Does not like sprats very much.
16 Jan 2002	Behavior note	Very flighty - didn't feed today.
19 Jan 2002	Feeding behaviour	Both feeding well a.m. and p.m.  This comment was added to the following specimens: 100295, 100297.
20 Jan 2002	Behavior note	Both still out and about today. Feeding well.  This comment was added to the following specimens: 100295, 100297.
4 Feb 2002	Medical procedure	Cloacal swabs collected for chlamydia screening, as Marineland reports recent death of one of their penguins from chlamydiosis.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.

Report Start Date  
1/01/00

## Specimen Report for AUCKLAND / 100297

Report End Date  
30/06/02

4 Feb 2002	Medical note	Keepers to wear mask, gloves and gown when force feeding McGonagal.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.
8 Feb 2002	Medical observation	Chlamydia test results -ve.  This comment was added to the following specimens: 100295, 100296, 100297, 100298, 100299.
27 Apr 2002	Group behavior	Penguins very "scatty" today. Ani and Pluto did not eat at all and the other four only ate in the morning. Birds came out in the afternoon but were not interested in food. Behaviour possibly due to very humid weather.  This comment was added to the following specimens: 100294, 100295, 100296, 100297, 100298, 100299.

<u>Date</u>	<u>Enclosure</u>
-------------	------------------

4 Sep 2001	SL1
------------	-----

<u>Date</u>	<u>Sex</u>
-------------	------------

4 Sep 2001	Female
------------	--------

<u>Date</u>	<u>Rearing</u>
-------------	----------------

4 Sep 2001	Hand
------------	------

<u>Date</u>	<u>Parent(s)</u>	<u>local Id</u>	<u>Location</u>
-------------	------------------	-----------------	-----------------

4 Sep 2001	Sire	WILD	WILD
------------	------	------	------

4 Sep 2001	Dam	WILD	WILD
------------	-----	------	------



Report Start Date  
12/05/06

## Taxon Report for Eudyptula minor

Report End Date  
12/05/06

100294	<b><u>Eudyptula minor minor</u></b>	Lower Risk - Least		Blue penguin
<u>Date in</u>	<u>Acquisition - Vendor/local Id</u>	<u>Holder</u>	<u>Disposition - Recipient/local Id</u>	<u>Date out</u>
4 Sep 2001	Trade from MARINE NZ-UNK	AUCKLAND		
<u>Sex-</u>	Female -	<u>Birth type:</u>	Wild Born	
<u>Hybrid status</u>	Unknown	<u>Birth Location:</u>	Obtained From Wild	
<u>Enclosure</u>	SL1	<u>Hatch date-Age:</u>	~ 1 Oct 2000 - 5Y,7M,11D +/-14 Days	
<u>Sire</u>	WILD at WILD	<u>Dam</u>	WILD at WILD	
<u>Rearing:</u>	Hand	<u>House Name:</u>	Ani	
<u>Tag/Band:</u>	P26364			
100296	<b><u>Eudyptula minor minor</u></b>	Lower Risk - Least		Blue penguin
<u>Date in</u>	<u>Acquisition - Vendor/local Id</u>	<u>Holder</u>	<u>Disposition - Recipient/local Id</u>	<u>Date out</u>
4 Sep 2001	Trade from MARINE NZ-UNK	AUCKLAND		
<u>Sex-</u>	Male -	<u>Birth type:</u>	Wild Born	
<u>Hybrid status</u>	Unknown	<u>Birth Location:</u>	Obtained From Wild	
<u>Enclosure</u>	SL1	<u>Hatch date-Age:</u>	~13 Nov 2000 - 5Y,5M,28D +/-07 Days	
<u>Sire</u>	WILD at WILD	<u>Dam</u>	WILD at WILD	
<u>Rearing:</u>	Hand	<u>House Name:</u>	Pluto	
<u>Tag/Band:</u>	P26368			
100297	<b><u>Eudyptula minor minor</u></b>	Lower Risk - Least		Blue penguin
<u>Date in</u>	<u>Acquisition - Vendor/local Id</u>	<u>Holder</u>	<u>Disposition - Recipient/local Id</u>	<u>Date out</u>
4 Sep 2001	Trade from MARINE NZ-UNK	AUCKLAND		
<u>Sex-</u>	Female -	<u>Birth type:</u>	Wild Born	
<u>Hybrid status</u>	Unknown	<u>Birth Location:</u>	Obtained From Wild	
<u>Enclosure</u>	SL1	<u>Hatch date-Age:</u>	~ 1 Oct 2000 - 5Y,7M,11D +/-14 Days	
<u>Sire</u>	WILD at WILD	<u>Dam</u>	WILD at WILD	
<u>Rearing:</u>	Hand	<u>House Name:</u>	Lucy	
<u>Tag/Band:</u>	unbanded			
100298	<b><u>Eudyptula minor minor</u></b>	Lower Risk - Least		Blue penguin
<u>Date in</u>	<u>Acquisition - Vendor/local Id</u>	<u>Holder</u>	<u>Disposition - Recipient/local Id</u>	<u>Date out</u>
4 Sep 2001	Trade from MARINE NZ-UNK	AUCKLAND		
<u>Sex-</u>	Female -	<u>Birth type:</u>	Wild Born	
<u>Hybrid status</u>	Unknown	<u>Birth Location:</u>	Obtained From Wild	
<u>Enclosure</u>	SL1	<u>Hatch date-Age:</u>	~15 Jun 1999 - 6Y,10M,28D +/-14 Days	
<u>Sire</u>	WILD at WILD	<u>Dam</u>	WILD at WILD	
<u>Rearing:</u>	Hand	<u>House Name:</u>	McGonagal	
<u>Tag/Band:</u>	P26360			
100299	<b><u>Eudyptula minor minor</u></b>	Lower Risk - Least		Blue penguin
<u>Date in</u>	<u>Acquisition - Vendor/local Id</u>	<u>Holder</u>	<u>Disposition - Recipient/local Id</u>	<u>Date out</u>
4 Sep 2001	Trade from MARINE NZ-UNK	AUCKLAND		
<u>Sex-</u>	Male -	<u>Birth type:</u>	Wild Born	
<u>Hybrid status</u>	Unknown	<u>Birth Location:</u>	Obtained From Wild	
<u>Enclosure</u>	SL1	<u>Hatch date-Age:</u>	~ 1999 - 7Y,4M,11D +/-1 Yr.	
<u>Sire</u>	WILD at WILD	<u>Dam</u>	WILD at WILD	
<u>Rearing:</u>	Hand	<u>House Name:</u>	Henry	
<u>Tag/Band:</u>	P26374			
A60043	<b><u>Eudyptula minor minor</u></b>	Lower Risk - Least		Blue penguin
<u>Date in</u>	<u>Acquisition - Vendor/local Id</u>	<u>Holder</u>	<u>Disposition - Recipient/local Id</u>	<u>Date out</u>
7 Apr 2006	Donation from PUBLIC-NONE	AUCKLAND		
<u>Sex-</u>	Unknown -	<u>Birth type:</u>	Wild Born	
<u>Hybrid status</u>	Not a hybrid	<u>Birth Location:</u>	NEW ZEALAND	
<u>Enclosure</u>	AC	<u>Hatch date-Age:</u>	~ Oct 2005 - 0Y,6M,26D +/-03 Mo.	
<u>Sire</u>	WILD at N ZEALAND	<u>Dam</u>	WILD at N ZEALAND	
<u>Rearing:</u>	Parent			

# Relationship Report for MG0186 / Auckland Zoological Park

Taxonomic name: *Giraffa camelopardalis*

Family: Giraffidae

Common name: Giraffe

Order: Artiodactyla

## Ancestor(s)

Local ID	Sire	Dam	Hybrid status	Sex	Birthdate	Birth location	Current location	G
MG0280 / AUCKLAND	800177 / HONOLULU	800165 / HONOLULU	SubSpecies hybrid	Male	13 Jun 1980	HONOLULU	Deceased	1
MG0180 / AUCKLAND	800177 / HONOLULU	800166 / HONOLULU	SubSpecies hybrid	Female	24 Jun 1980	HONOLULU	Deceased	1

## Full Sibling(s)

Local ID	Sire	Dam	Hybrid status	Sex	Birthdate	Birth location	Current location
MG0188 / AUCKLAND	MG0280 / AUCKLAND	MG0180 / AUCKLAND	SubSpecies hybrid	Female	5 Aug 1988	AUCKLAND	Deceased
MG0190 / AUCKLAND	MG0280 / AUCKLAND	MG0180 / AUCKLAND	SubSpecies hybrid	Male	8 Jan 1990	AUCKLAND	Deceased
MG0291 / AUCKLAND	MG0280 / AUCKLAND	MG0180 / AUCKLAND	SubSpecies hybrid	Female	12 May 1991	AUCKLAND	Deceased
MG0292 / AUCKLAND	MG0280 / AUCKLAND	MG0180 / AUCKLAND	SubSpecies hybrid	Male	6 Dec 1992	AUCKLAND	Deceased

## Maternal half-sibling(s)

Local ID	Sire	Dam	Hybrid status	Sex	Birthdate	Birth location	Current location
MG0184 / AUCKLAND	MG0175 / AUCKLAND	MG0180 / AUCKLAND	SubSpecies hybrid	Female	22 Sep 1984	AUCKLAND	Deceased

## Paternal half-sibling(s)

Local ID	Sire	Dam	Hybrid status	Sex	Birthdate	Birth location	Current location
MG0189 / AUCKLAND	MG0280 / AUCKLAND	MG0183 / AUCKLAND	SubSpecies hybrid	Female	28 Jan 1989	AUCKLAND	Deceased
MG0289 / AUCKLAND	MG0280 / AUCKLAND	MG0184 / AUCKLAND	SubSpecies hybrid	Male	6 May 1989	AUCKLAND	Deceased
MG0390 / AUCKLAND	MG0280 / AUCKLAND	MG0183 / AUCKLAND	SubSpecies hybrid	Male	6 Aug 1990	AUCKLAND	Deceased
MG0290 / AUCKLAND	MG0280 / AUCKLAND	MG0183 / AUCKLAND	SubSpecies hybrid	Male	6 Aug 1990	AUCKLAND	Deceased
MG0490 / AUCKLAND	MG0280 / AUCKLAND	MG0184 / AUCKLAND	SubSpecies hybrid	Male	22 Dec 1990	AUCKLAND	Deceased
MG0191 / AUCKLAND	MG0280 / AUCKLAND	MG0186 / AUCKLAND	SubSpecies hybrid	Male	26 Apr 1991	AUCKLAND	Deceased
MG0391 / AUCKLAND	MG0280 / AUCKLAND	MG0183 / AUCKLAND	SubSpecies hybrid	Male	11 Dec 1991	AUCKLAND	Deceased
MG0192 / AUCKLAND	MG0280 / AUCKLAND	MG0184 / AUCKLAND	SubSpecies hybrid	Female	26 Nov 1992	AUCKLAND	Deceased
940060 / AUCKLAND	MG0280 / AUCKLAND	MG0186 / AUCKLAND	SubSpecies hybrid	Male	23 Mar 1994	AUCKLAND	WERRIBEE

## Descendant(s)

Local ID	Sire	Dam	Hybrid status	Sex	Birthdate	Birth location	Current location	G
MG0191 / AUCKLAND	MG0280 / AUCKLAND	MG0186 / AUCKLAND	SubSpecies hybrid	Male	26 Apr 1991	AUCKLAND	Deceased	1
940060 / AUCKLAND	MG0280 / AUCKLAND	MG0186 / AUCKLAND	SubSpecies hybrid	Male	23 Mar 1994	AUCKLAND	WERRIBEE	1
A20198 / AUCKLAND	980128 / AUCKLAND	MG0186 / AUCKLAND	SubSpecies hybrid	Male	2 Dec 2002	AUCKLAND	HAMILTON	1
A40093 / AUCKLAND	980128 / AUCKLAND	MG0186 / AUCKLAND	SubSpecies hybrid	Male	4 Aug 2004	AUCKLAND	HAMILTON	1
A60002 / AUCKLAND	980128 / AUCKLAND	MG0186 / AUCKLAND	SubSpecies hybrid	Male	4 Jan 2006	AUCKLAND	AUCKLAND	1

## Measurements Report for Auckland Zoological Park / A60032

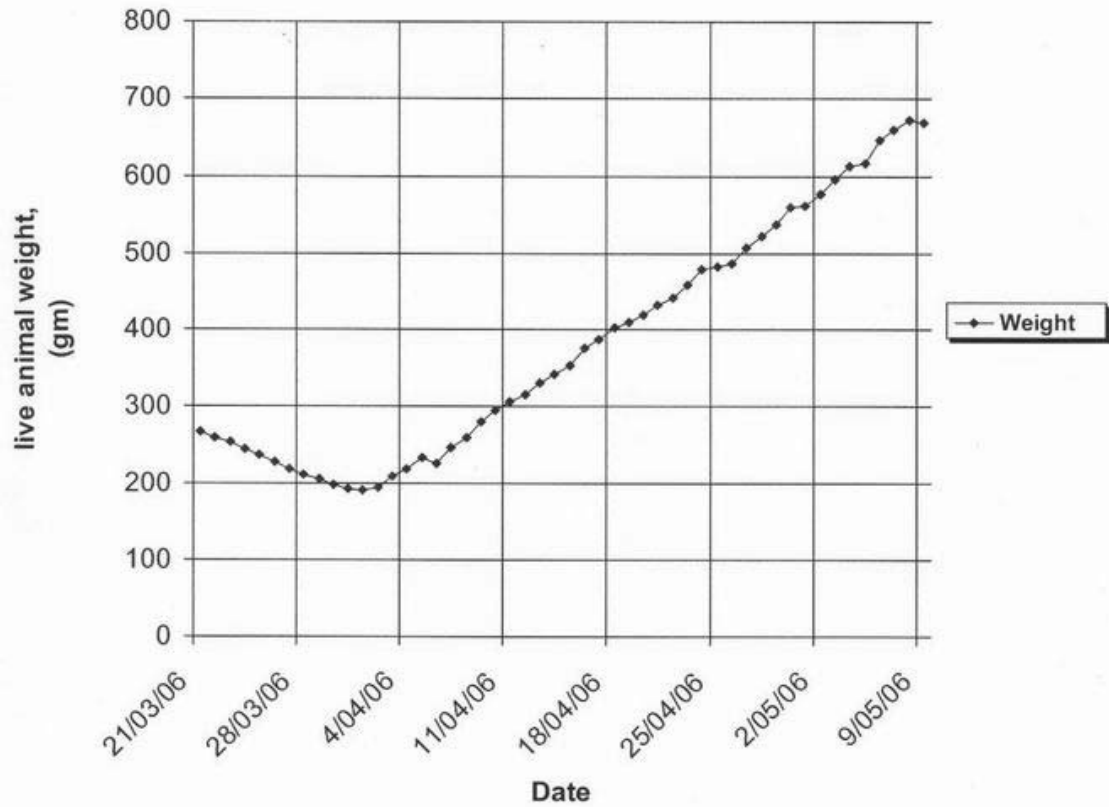


Taxonomic name: *Apteryx australis mantelli*

Family: Apterygidae

Common name: North Island brown kiwi

Order: Apterygiformes



# APPENDIX VII

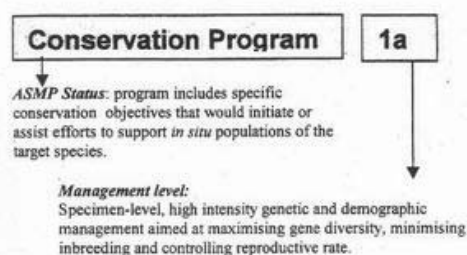
## ASMP MANAGEMENT CATEGORIES AND PROGRAM POSITIONS

### MANAGEMENT CATEGORIES

The Australasian Species Management Program Categories provide a framework for organising species management and planning at a regional level. These categories are designed to indicate at a glance, the role or status of a taxon in the regional collection, whether or not regionally coordinated management is being applied, and if so at what intensity.

TAGs assign a category to each taxon held in the region. Each management category has two terms: the first term indicates the main purpose of any regional collaboration (ASMP Status); the second term describes the intensity of population management applied (Management Level).

For example:



The new categories are defined as follows:

#### ASMP Category definitions

##### 1. Program type

###### *Conservation Program*

Programs in this category include specific conservation objectives that would initiate or assist efforts to support *in situ* populations of the target species. They may be single or multi-institution programs.

###### *Population Management Program*

Population management programs are established for taxa which the TAG considers would benefit from some level of regional population management. Taxa should be held, or planned to be held, in more than one institution, and in population sizes of at least 20.

###### *Husbandry Research*

There remain many taxa in zoos for which husbandry is insufficiently known for a managed program to be possible. Where the TAG feels that a taxon of this type is worthy of the investment of regional resources (usually those species held, or planned to be held, in more than one institution, in numbers >20), this category is applied. The goal of the program is to

establish and document husbandry techniques and information for the target taxon.

###### *Phase Out*

This category is applied to taxa considered by the TAG to be occupying spaces that could be more usefully assigned to others of higher regional priority. Replacing one species with another can be a long process. Specimens of the preferred taxon may be difficult to locate, acquire or manage. Phase Out taxa may therefore require management, to ensure that exhibits do not sit empty while a healthy population of the replacement taxon is being developed.

###### *No Regional Program*

This category indicates that the TAG has evaluated this taxon and sees no need for regional management or resourcing. Within and between-institution management may occur, but this is not coordinated or overseen by the Australasian Species Management Program. Taxa in this category may include, for example, those regularly acquired through rehabilitation programs.

###### *Not Recommended*

This category is only for taxa not currently held in the region but flagged to be imported or collected from the wild. It is applied to taxa that the TAG has evaluated, and has deemed not appropriate for the regional collection and/or detrimental to existing programs.

###### *Not Evaluated*

Where this category is assigned it indicates that the TAG has not yet evaluated the regional implications or needs of the taxon.

##### 2. Management Levels

###### *Level 1 - Specimen-level management*

Level 1 management is applied to taxa for which specimen-level records are routinely kept, and for which specimen-level manipulation of breeding pairs is possible and practical. Level 1 is further split into high and low intensity management:

###### *Level 1a*

Indicates high intensity genetic and demographic management aimed at maximising gene diversity, minimising inbreeding and controlling reproductive rate. Programs are overseen by a species coordinator who prepares a strategic plan for the population and annual breeding recommendations, which institutions make a formal commitment to follow.

#### *Level 1b*

Indicates low intensity genetic and demographic management aimed at minimising inbreeding and managing population size. Programs are overseen by a species coordinator, who provides guidance on appropriate reproductive rates and circulates lists of suitable pairings. Curators use this information to guide animal transfer arrangements and the formation of new pairs.

#### *Level 2 - Group-level management*

This level denotes group-level, lower-intensity genetic and demographic management and is applied where specimen-level manipulation of mating choices is impractical. Different schemes are available to meet different aims. Programs are overseen by a coordinator who selects and implements an appropriate scheme.

#### *Level 3 - Annual census only*

The census of current and planned holdings for the region is published in the body of the annual Regional Census and Plan document

### **Summary of program types and potential levels of population management**

#### *New ASMP Categories*

##### *ASMP Status*

##### *Level of population management*

##### *ASMP-level Management:*

ASMP Conservation Program  
ASMP Population Management Program  
ASMP Husbandry Research  
Phase out

1a	1b	2	3
1a	1b	2	-
-	-	-	3
1a	1b	2	3

##### *No ASMP-level Management:*

Not evaluated  
No regional implications  
Not recommended

-	-	-	3
-	-	-	3
-	-	-	3

##### *Notes:*

Dashes (-) indicate that the management level is not relevant to that particular *ASMP Status* category. Plans to change the ASMP status and/or management level of a taxon appear in the Census and Plan above the TAG notes section.

## ASMP SPECIES PROGRAM POSITIONS

The Australasian Species Management Program relies for its success on a network of position holders appointed from the staff of member zoos.

ASMP programs begin with a decision by the relevant Taxon Advisory Group (TAG) that a particular taxon would benefit from some level of regional coordination and/or resourcing. The TAG determines whether the taxon requires a conservation program, a population management program or a husbandry program.

### Species Contacts

Position holders are initially appointed to the position of Species Contact, while they develop the framework of a species program – the Program Outline. This details the rationale behind the selection of the species for regional attention and provides a work plan tailored to achieve the program's objectives. The work plan might include some or all of the following program components: a studbook, a captive management plan, husbandry guidelines, a regional plan for cooperative acquisition, a review of conservation measures, a plan for a regional education program and so on. Once the Species Contact has completed an approved Program Outline and has begun to implement the work plan, their position is upgraded to one of those listed below.

### Husbandry Program Coordinators

Husbandry Program Coordinators develop husbandry and management resources for the target taxon. For some taxa this involves reviewing and documenting techniques that reflect regional standard practice. For others, where little is known, the work involves initial investigation and may

require coordinating or monitoring trials.

### Studbook Keepers

Studbook keepers are responsible for maintaining studbook data and periodically reporting to the TAG. Some studbook keepers will be required to develop and implement a management strategy for the taxon involved. Once the strategy has been approved by the relevant advisory group and by staff at the ARAZPA office, studbook keepers are upgraded to the position of species coordinator.

### Species Coordinators

Species coordinator responsibilities include: maintaining a studbook, analysing the population annually, providing specimen recommendations to institutions on the basis of these analyses, reporting regularly to the ARAZPA office and coordinating any other areas of regional work required for the taxon (as directed by the relevant advisory group).

### Taxon Advisory Group (TAG) Convenors

TAG convenors are responsible for coordinating the production of recommendations for defined group of species, usually an Order or Family. TAG convenors also monitor and direct the activities of voluntary position holders for taxa covered by the TAG.

### TAG Advisors

Each TAG has a number of advisors who provide specialised expertise as needed. Advisors may be drawn from within member zoos, or from the wider conservation or scientific community. Typically, TAGs have advisors for veterinary issues, education, taxonomy and husbandry.

## TAXON ADVISORY GROUPS

Every species currently held by an ARAZPA institution, or listed as a planned holding of at least one ARAZPA institution, is covered by a Taxon Advisory Group (TAG). The TAG Convenors, appointed from the species management staff of ARAZPA institutions, are responsible for coordinating the activities of the group.

### Primary goals

The primary responsibility of each TAG is to consider captive priorities for all species under the TAG and to develop recommendations covering those species prioritised for captive management within the Australasian region. The advisory group, in collaboration with other regional and international bodies, aims to participate in the development of global priorities and global captive action plans. The regional TAG is then responsible for assessing these global priorities in a regional context.

Specific aims are:

- To review the size and composition of captive populations held in ARAZPA institutions. To consider the number of spaces available for exhibition and breeding and to coordinate the optimal use of such spaces by determining priorities for allocating species, populations and individuals to these spaces.

- To compile information on the conservation status of various taxa through communication with wildlife agencies and IUCN specialist groups.
- To establish and encourage communication among all parties involved in the development and implementation of Captive Management Plans.
- To recruit potential regional Studbook Keepers and Species Coordinators for involvement with target species.
- To promote and guide the development of managed programs by facilitating research into exhibit design and management, animal husbandry, reproduction, genetics, population biology, systematics, disease, mortality, nutrition and behaviour.
- To assist, where appropriate, in the definition of husbandry and captive breeding guidelines and in animal transactions required for the implementation of Captive Management Plans.

### TAGs and animal records keeping

The operation of TAGs relies heavily on the activities of the region's animal records officers who, through ARAZPA's Animal Records Keeping Advisory Group, establish and promote regional standards for the maintenance of zoo collection and specimen records.

# APPENDIX VIII

## EXAMPLE OF A SPARKS STUDBOOK REPORT

sparks.doc

GREATER FLAMINGO Studbook  
(Phoenicopterus ruber roseus)

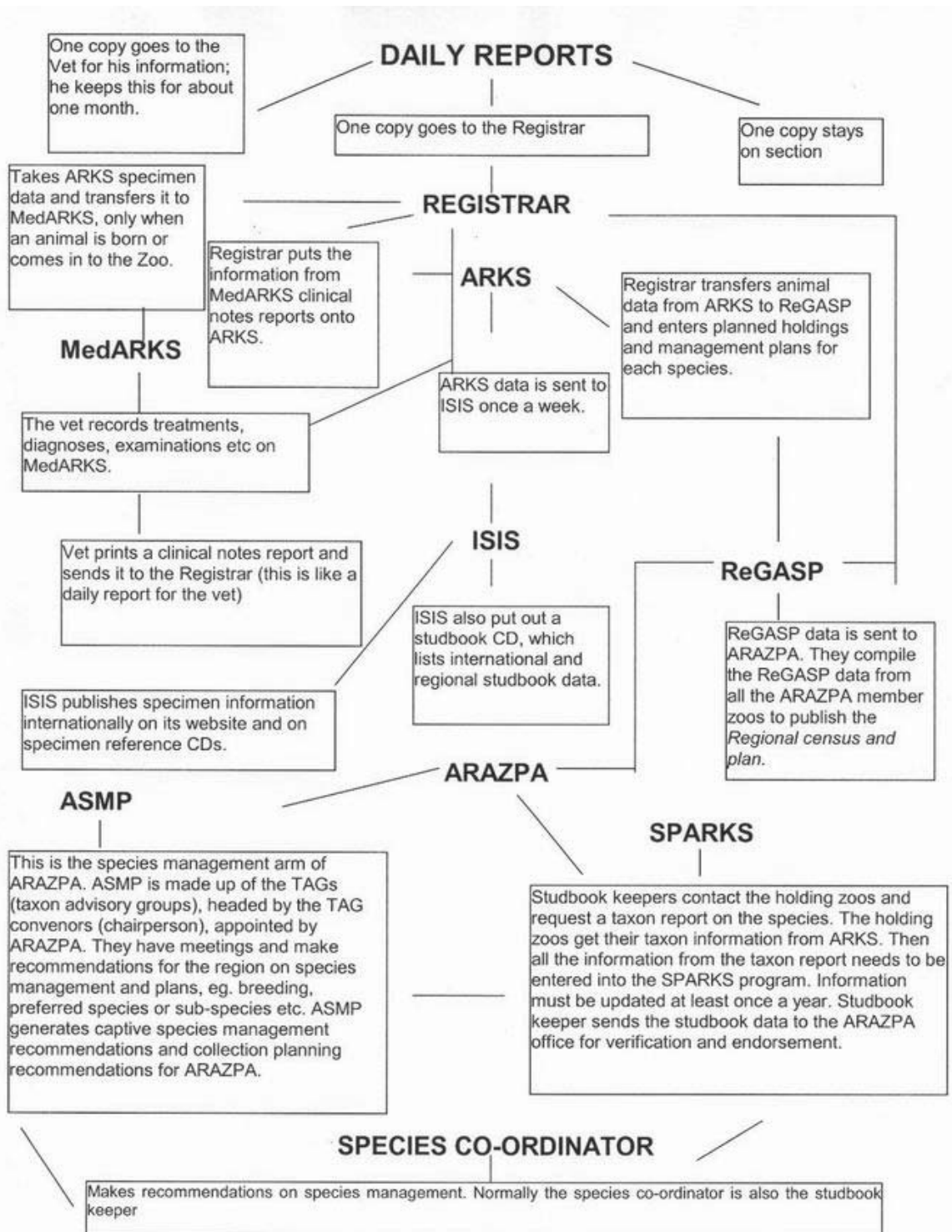
Page 1

Stud #	Sex	Hatch Date	Sire	Dam	Location	Date	Local ID	Event
T1	M	~ 1967	UNK	UNK	UNKNOWN	~ 1967	ELCID	Hatch
T01	?				ADELAIDE	31 Dec 1933	330001	Transfer
T02	F	17 May 2001	T26	T33	SLIMBRIDG AUCKLAND	17 May 2001 30 Jul 2001 16 Dec 2002	UNK 100278	Hatch Transfer Death
[Death by: Unknown means]								
T03	M	18 May 2001	T45	T22	SLIMBRIDG AUCKLAND	18 May 2001 30 Jul 2001	UNK 100280	Hatch Transfer
T04	F	18 May 2001	T29	T35	SLIMBRIDG AUCKLAND	18 May 2001 30 Jul 2001	UNK 100274	Hatch Transfer
T05	F	19 May 2001	T36	T27	SLIMBRIDG AUCKLAND	19 May 2001 30 Jul 2001	UNK 100281	Hatch Transfer
T06	M	21 May 2001	T23	T37	SLIMBRIDG AUCKLAND	21 May 2001 30 Jul 2001	UNK 100279	Hatch Transfer
T07	F	23 May 2001	T38	T24	SLIMBRIDG AUCKLAND	23 May 2001 30 Jul 2001	UNK 100283	Hatch Transfer
T08	M	27 May 2001	T41	T40	SLIMBRIDG AUCKLAND	27 May 2001 30 Jul 2001 10 Aug 2001	UNK 100264	Hatch Transfer Death
[Death by: Infection associated <input type="checkbox"/> Unknown <input type="checkbox"/> Respiratory <input type="checkbox"/>								
Fungal]								
T09	M	28 May 2001	T42	T28	SLIMBRIDG AUCKLAND	28 May 2001 30 Jul 2001	UNK 100282	Hatch Transfer
T10	M	29 May 2001		T39	SLIMBRIDG AUCKLAND	29 May 2001 30 Jul 2001	UNK 100265	Hatch Transfer
T11	F	30 May 2001	T26	T33	SLIMBRIDG AUCKLAND	30 May 2001 30 Jul 2001	UNK 100266	Hatch Transfer
T12	F	31 May 2001	T38	T24	SLIMBRIDG AUCKLAND	31 May 2001 30 Jul 2001	UNK 100267	Hatch Transfer
T13	M	3 Jun 2001	T45	T22	SLIMBRIDG AUCKLAND	3 Jun 2001 30 Jul 2001	UNK 100268	Hatch Transfer
T14	M	5 Jun 2001	T36	T27	SLIMBRIDG AUCKLAND	5 Jun 2001 30 Jul 2001	UNK 100269	Hatch Transfer
T15	F	6 Jun 2001	T26	T33	SLIMBRIDG AUCKLAND	6 Jun 2001 30 Jul 2001	UNK 100271	Hatch Transfer
T16	F	7 Jun 2001	T43	T30	SLIMBRIDG AUCKLAND	7 Jun 2001 30 Jul 2001	UNK 100270	Hatch Transfer

Compiled by: Kirsty Chalmers and Michael Batty thru Auckland Zoological Park  
Data current thru: 25 Feb 2003 Australasian regional studbook  
Printed on 12 May 2006 using Sparks vl.53



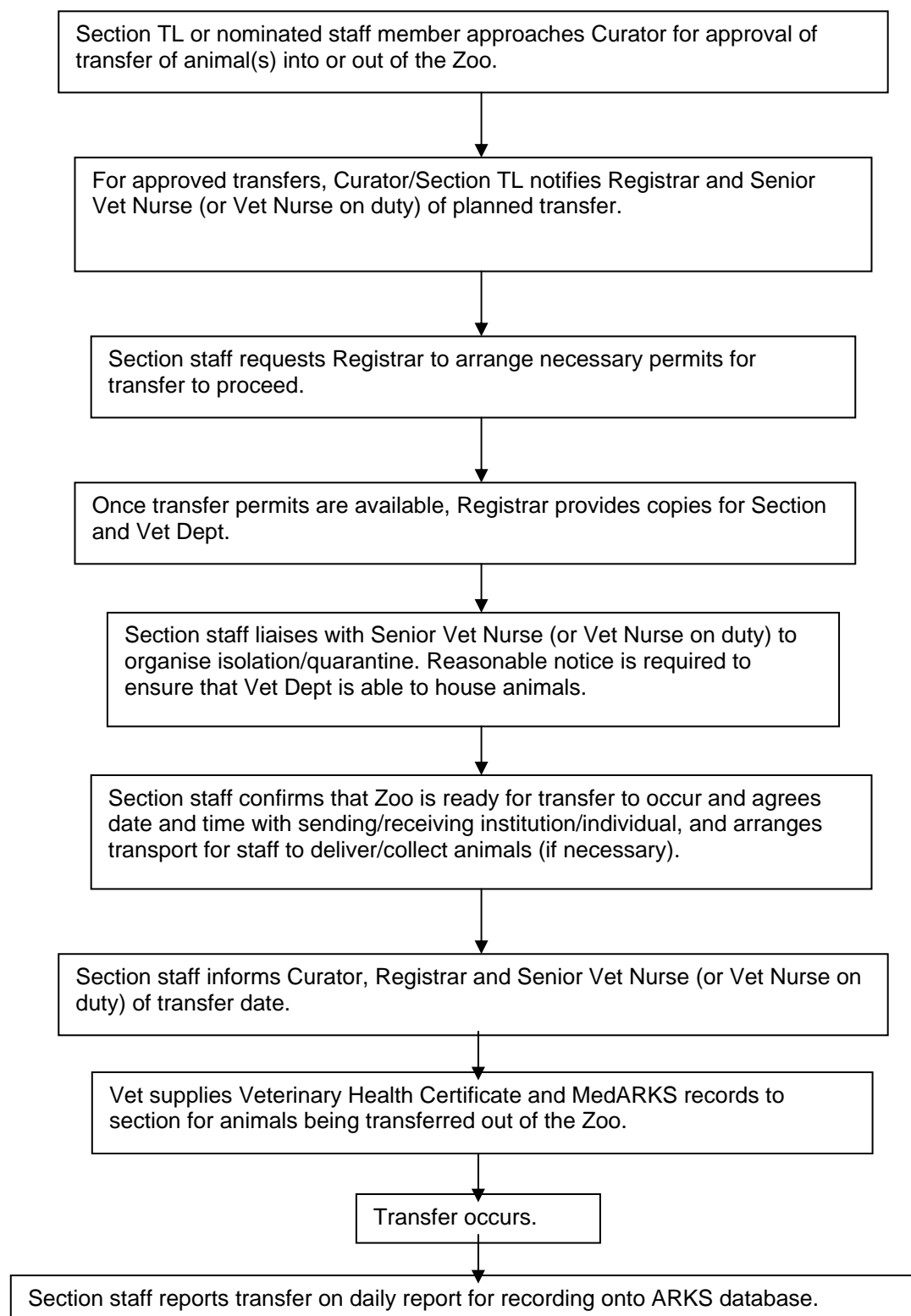
## APPENDIX IX



<b>ARAZPA</b>	Australasian Regional Association of Zoological Parks and Aquaria
<b>ARKS</b>	Animal Records Keeping System
<b>ASMP</b>	Australasian Species Management Program
<b>CITES</b>	Convention on International Trade in Endangered Species of Wild Fauna and Flora
<b>ISIS</b>	International Species Information System (global data and information service)
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources (World Conservation Union)
<b>ReGASP</b>	Regional Animal Species Plan
<b>SPARKS</b>	Single Population Analysis and Records Keeping System
<b>TAG</b>	Taxon advisory group

## APPENDIX X

### PROTOCOL FOR TRANSFER OF ANIMALS INTO OR OUT OF AUCKLAND ZOO (WITHIN NEW ZEALAND)



# GENERAL PROCEDURE FOR NATIONAL ANIMAL IMPORTS

Collection Planning committee decides to import species. For species in managed breeding programmes, approval of DoC/ASMP species coordinator is required.



Curator or appointed staff member corresponds with suitable institution(s) which may provide the animal(s) OR Zoo is approached by an institution offering surplus animal(s). Suitability of animal(s) and terms of transfer discussed and agreed.



Registrar (or other appropriate staff) at sending zoo (SZ) sends ARKS specimen reports for the animal(s) to Auckland Zoo Registrar.



## PERMITS

For exotic species, Registrar applies to MAF for import permit, using electronic form "*Transfer request zoo*". If approved, MAF officer signs the form and faxes it back. Registrar supplies copy to section and Vet Dept.

For native species, SZ/holder applies to their local DoC conservancy for a transfer permit. Auckland Zoo must have a holding permit for the species to be transferred. SZ needs to know Auckland holding permit number for the transfer permit.



TL of section and Vet Dept organise suitable post-arrival isolation area.



## TRAVEL ARRANGEMENTS

Section TL liaises with SZ to arrange mutually suitable date for transfer. SZ confirms flight details. Section TL organises section staff member to fetch animal(s) from Auckland Airport, unless animals are being delivered. If necessary, TL organises vehicle to accommodate larger crate(s).



Paperwork accompanying the animal(s) is given to the Registrar. Registrar provides copies of any medical records to the Vet Dept.



Registrar contacts SZ to confirm safe arrival of animal(s), and supplies SZ with new ARKS number(s) for animal(s).



After post-arrival isolation period, animal can be transferred to new enclosure.



### **PAYMENT**

Freight costs are borne by Auckland Zoo. SZ invoices Zoo and Finance Officer organises payment. Crates are returned to SZ, unless otherwise agreed.

# GENERAL PROCEDURE FOR NATIONAL ANIMAL EXPORTS

Animal(s) identified as surplus by Collection Planning committee OR request from DoC/ASMP species coordinator to transfer animal as part of managed breeding programme. (Note that all animals which are part of managed breeding programmes require the approval of the DoC/ASMP species coordinator prior to transfer to another institution).



Curator/section staff corresponds with suitable institution(s) which may import the animal(s), discusses and agrees terms of transfer.



## PERMITS

For exotic species, Registrar applies to MAF for approval to export, using electronic form “*Transfer request zoo*”. If approved, MAF officer signs the form and faxes it back. Registrar supplies copy to section and Vet Dept.

For native species, Team Leader, Native Fauna applies to DoC Auckland Conservancy for a transfer permit. The recipient must have a DoC holding permit for the species. DoC Auckland need to know the recipient’s holding permit number for the transfer permit.



## CRATES

Team Leader (TL) of section (or designated staff) sources suitable crate(s) for transfer, either at Auckland Zoo or from recipient. Vet checks that crates are suitable.



If no suitable crate available, TL liaises with Maintenance/Carpentry staff to arrange construction of appropriate crate.



## PRE-EXPORT ISOLATION

Section staff liaise with Senior Vet Nurse to ensure commencement of pre-export isolation, and advise Registrar of end date of pre-export isolation.



## TRAVEL ARRANGEMENTS

Section TL liaises with receiving zoo (RZ) to arrange mutually suitable date for export and books flight. Section TL liaises with Vet Dept to organise crating of animal(s) and organises section staff member to deliver animal(s) to Auckland Airport, unless animals are being driven to destination. If necessary, TL organises vehicle to accommodate larger crate(s).

Registrar prepares crate labels and provides them to section staff for securing to the crate(s).



Registrar prints specimen report(s) for the animal(s). Vet Dept delivers copies of medical records and veterinary certificate to section. Document pack secured to crate.



Animal(s) delivered to airport by section staff, at least 1 hour prior to flight departure.



Section staff contact RZ to confirm departure of animal(s).



RZ confirms safe arrival of animal(s). Provides ARKS numbers at new institution and returns crate(s).



#### **PAYMENT**

Freight costs are borne by the RZ. All flights are through Pace Couriers. Invoice must be provided to Finance Officer in order to invoice RZ.

# GENERAL PROCEDURE FOR INTERNATIONAL ANIMAL IMPORTS

Collection Planning committee decides to import species. For species in managed breeding programmes, approval of ASMP species coordinator is required.



Curator or appointed staff member corresponds with suitable institution(s) which may provide the animal(s) OR Zoo is approached by an institution offering surplus animal(s). Suitability of animal(s) and terms of transfer discussed and agreed.



Registrar (or other appropriate staff) at sending zoo (SZ) sends ARKS specimen reports for the animal(s) to Auckland Zoo Registrar.



## PERMITS

Curator copies correspondence to Registrar, who liaises with Registrar (or other appropriate staff) at the SZ re permits required for the transfer. Registrar applies to MAF for import permit, and to CITES office for CITES import permit (for species listed on schedule I). Registrar at SZ applies for CITES export permit (where required) and quarantine authority (eg AQIS) export health certificate.



Registrar alerts TL of section and Vet Dept to organise suitable post-arrival quarantine facilities. Registrar organises MAF vet to inspect quarantine facility and provide written approval to MAF Wellington (depending on species being imported, there may be specific quarantine requirements – eg avian quarantine).



Registrar faxes MAF import permit and CITES import permit (where applicable) to SZ. Registrar at SZ faxes copy of their CITES export permit (where applicable) to Registrar. (SZ will usually only receive export health certificate from their quarantine authority within 48 hours prior to export, so this will arrive just prior to transfer of animal).



## TRAVEL ARRANGEMENTS

Once all permits are available, animal(s) are in pre-export isolation at SZ and Auckland Zoo is ready to receive the animal(s), Registrar liaises with SZ to arrange mutually suitable date for transfer. Registrar requests current diet schedule for animal(s) from SZ and forwards this to section TL/Vet Dept to coordinate food supply.

SZ confirms flight details, faxes pro forma invoice for customs purposes to Registrar and provides Air Waybill (AWB) number to Registrar.

Registrar contacts customs agent to organise customs clearance for animal(s) prior to arrival. Registrar faxes copies of all permits, pro forma invoice and provides AWB number and flight details to customs agent. Registrar requests purchase order number for freight agent, to cover customs clearance fees, and supplies this to agent.

Registrar contacts MAF vet to confirm flight details and arrange MAF inspection at airport.

Registrar confirms flight details with TL of section and Vet Dept.

Section TL organises section staff member to fetch animal(s) from Auckland Airport and liaises with Vet Dept to ensure that quarantine facility is ready and procedures in place. If necessary, TL organises vehicle to accommodate crate(s) (for very large shipments, the freight agent will provide transport from the Airport).

Just prior to transfer, SZ faxes copy of quarantine authority export health certificate to Registrar. Registrar faxes copy to customs agent.

Registrar supplies original MAF and CITES import permits and copies of CITES and quarantine authority export permits to staff fetching animal(s) from Airport. Registrar keeps copies of all permits on file at Zoo.

SZ confirms departure of animal(s).

Customs clearance completed by customs agent prior to arrival of animal(s). Animal(s) collected from Airport by section staff and inspected by MAF prior to release from Airport.

Paperwork accompanying the animal(s) is given to the Registrar. Registrar provides copies of all medical records to the Vet Dept.

Registrar contacts SZ to confirm safe arrival of animal(s), and supplies SZ with new ARKS number(s) for animal(s).



Registrar liaises with MAF vet to organise weekly post-arrival quarantine visits, and organises purchase order to cover MAF fees. At the end of this period (providing there are no problems), MAF vet faxes through release form to Registrar, which Registrar copies to Vet Dept and TL of section.

Animal can be transferred to non-quarantine enclosure within Zoo.



#### **PAYMENT**

Costs of health screening, quarantine inspections and transport are borne by Auckland Zoo. SZ invoices Zoo and Finance Officer organises payment. Crates are returned to SZ at their expense, unless Auckland Zoo pays SZ to retain them.

# GENERAL PROCEDURE FOR INTERNATIONAL ANIMAL EXPORTS

Animal(s) identified as surplus by Collection Planning committee OR request from ASMP species coordinator to transfer animal as part of managed breeding programme. (Note that all animals which are part of managed breeding programmes require the approval of the ASMP species coordinator prior to transfer to another institution).



Curator corresponds with suitable institution(s) which may import the animal(s), discusses and agrees terms of transfer.



## PERMITS

Curator copies correspondence to Registrar, who liaises with registrar (or other appropriate staff) at the receiving zoo (RZ) re permits required for the transfer. Registrar applies to MAF for export health certificate, and to CITES office for CITES export permit (for species listed on schedules I or II). Registrar at RZ applies for CITES import permit (where required) and quarantine authority (eg AQIS) import permit.



Registrar faxes CITES export permit (where applicable) to RZ. Registrar at RZ faxes copies of their CITES and quarantine import permits to Registrar. Pre-export isolation of animal(s) will only commence once copies of all necessary permits are in hand.



Registrar faxes RZ's quarantine authority import permit to MAF vet to be checked against MAF export health certificate (in case certificate needs to be updated to meet new requirements).



## CRATES

Registrar provides Team Leader (TL) of section with copy of appropriate IATA crate standard for section to check whether suitable crate(s) available for transfer.



If no suitable crate available, TL liaises with Maintenance/Carpentry staff to arrange construction of crate according to the IATA standard, within appropriate timeframe.



## PRE-EXPORT ISOLATION

Registrar sends “pre-export requirements” form to Senior Vet Nurse and TL of section.



Senior Vet Nurse liaises with section to ensure commencement of pre-export isolation, and advises Registrar of end date of pre-export isolation.



Section staff provide Registrar with the following information:

- any special requirements of the animal(s) – eg feeding, maximum time spent in crate, medical conditions, etc.
- copy of diet sheet.
- dimensions (LxHxW) and weights of completed crates.



### **TRAVEL ARRANGEMENTS**

Registrar liaises with RZ to arrange mutually suitable date for export. Registrar then contacts freight agent to book flight. Registrar faxes copies of all permits to freight agent, and supplies crate dimensions and weights, and animal weights. Freight agent confirms booking and supplies Air Waybill (AWB) number. (If necessary, Registrar requests purchase order number for freight agent and supplies this to agent).



Registrar confirms flight details with RZ, provides the AWB number, and faxes a signed pro forma invoice for customs purposes to the RZ.

Registrar contacts MAF vet to arrange final animal inspection and sign-off of MAF export health certificate (this must occur within 48 hours of the animal export). Registrar provides details of animal identification, RZ address, import permit numbers and flight details to MAF vet.



Registrar sends “final travel arrangements” form to Senior Vet Nurse and TL of section.



Section TL organises section staff member to transport animal(s) to Auckland Airport and liaises with Vet Dept to organise crating of animal(s). If necessary, TL organises vehicle to accommodate crate(s) (for very large shipments, the freight agent will provide transport).



Registrar prepares crate labels and provides them to section for securing to the crate(s).

Animal(s) complete pre-export isolation, MAF vet signs export health certificate and checks crate(s) within 48 hours of animal transfer.

Registrar faxes export health certificate to freight agent and to RZ.



Registrar prepares two document packs (one original and one set of copies) to accompany the animal(s). A set of copies is retained on file for future reference. Each document pack must have a contents page and include the following: NZ CITES export permit (where applicable), copy of CITES import permit (where applicable), copy of quarantine authority (eg AQIS) import permit, MAF export health certificate, Auckland Zoo veterinary health certificate and declaration, pro forma invoice for customs use, transfer of animals form, ARKS specimen report(s), MedARKS reports and health screening results, diet sheet.

Registrar gives document packs to staff delivering animal(s) to airport.



Animal(s) delivered to airport by section staff, normally 3 hours prior to flight departure (unless specific arrangements made for a later delivery time).



Registrar contacts RZ to confirm departure of animal(s).



RZ confirms safe arrival of animal(s). Provides ARKS number(s) at new institution and returns crates (unless paying for cost of construction).



### **PAYMENT**

Costs of health screening, MAF inspections and transport are borne by the RZ. Registrar asks MAF to invoice freight agent, who usually invoices RZ direct. Vet Dept notifies Finance Officer of health screening costs which are invoiced to RZ. Crates are returned at Auckland Zoo's expense unless RZ elects to retain crates and pay for the cost of materials and labour

## TRANSFER REQUEST

### Zoo Animals

#### Facility of origin

Name of facility

**Auckland Zoo**

Name of facility operator

**Glen Holland**

MAF Regn no. **24**

Applicant Fax no. **(09) 360-3818**

Signed:

Date: 17<sup>th</sup> May 2006

#### Receiving facility

Name of facility

**Hamilton Zoo**

Name of facility operator

**Stephen Standley**

MAF Regn no. **131**

**Please attach confirmation that the animals will be accepted by the Receiving Facility**

Hamilton Zoo have indicated that they will apply to MAF for transfer approval for import. Please contact me if you need further information.

#### Animal details (must include Scientific Name and Individual identifier):

5.0.0 red-necked wallabies (*Macropus rufogriseus banksianus*) – ARKS numbers 960108, A20223, A40167, A40241 and A50178.

1.1.0 brolga / Australian crane (*Grus rubicunda*) – ARKS numbers A20170 and A40163.

#### Method and date of transfer:

Transport will be by road, in individual crates in a covered vehicle.

Transfer in late May 2006 (approximately 30<sup>th</sup> May).

#### FORWARD COMPLETED FORM TO YOUR LOCAL MAF SUPERVISOR

##### Conditions

1. Please note a copy of this form must accompany the animal being transferred.
2. The minimum requirement for the transportation of the zoo animals within New Zealand and for transfers between facilities shall be in accordance with the International Air Transport Association (IATA) Live Animals Regulations and the Zoo Standard.
3. All containers must be clearly labeled with the name, address and phone number of both the sender and the recipient.

#### BIOSECURITY NEW ZEALAND AUTHORITY USE ONLY

**Dr Stephen Butcher**  
**Senior Adviser**  
**Biosecurity New Zealand**  
**PO Box 2526,**  
**Wellington**

**Transfer request meets the requirements of the standard.**

**Signed:**

**Date:**

#### MAF QUARANTINE SERVICE USE ONLY

**This transfer is approved / not approved**

The supervisors of both facilities confirm that the requirements for transfer have been met and recommend transfer approval

**Crystal Lange**  
**MAF Quarantine Service**  
**Ruakura Research Centre,**  
**East St,**  
**Hamilton**  
**Fax 07 856 1827 Phone 07 856 1829**

**Signed:**

**Date:**



Ministry of Agriculture and Forestry, New Zealand  
Te Manatu Ahuwhenua, Ngaherehere, Aotearoa



Certificate Number AE32534

**ZOOSANITARY CERTIFICATE**

Species: ZOO PRIMATES  
To: AUSTRALIA  
Exporting country: NEW ZEALAND  
Competent Authority: MINISTRY OF AGRICULTURE AND FORESTRY  
Import permit number: 200603109

**I IDENTIFICATION OF ANIMAL**

Description	Species	Sex	Date of birth	Microchip No / Site of implantation
Primate - "Irian"	Siamang	Male	3.5 YO	00-0683-68E2 - between scapulae

Number of animals (1) One

**II ORIGIN OF ANIMAL**

Name and address of exporter: Auckland Zoo, Private Bag, Grey Lynn, Auckland, NEW ZEALAND.

Place of origin of animal: As Above

**III DESTINATION OF ANIMAL**

Name and address of consignee: Adelaide Zoo, Frome Road, Adelaide SA5000, AUSTRALIA

Means of transport: Airfreight

**IV SANITARY INFORMATION**

Certificate Number AE 32534

## VETERINARY CERTIFICATE

I, D L Jones BVSc Dip Prof Ethics, an Official Veterinarian of the New Zealand Ministry of Agriculture and Forestry certify after due enquiry, with respect to the primates identified in this certificate certify that:

### 1 COUNTRY FREEDOM

1.1 New Zealand is free from the following disease:

Simian immunodeficiency syndrome (simian immunodeficiency virus), simian haemorrhagic fever, Marburg disease, Ebola virus disease, foot-and-mouth disease and rabies.

### 2 PREMISES OF ORIGIN

- 2.1 The premises of origin is a zoo, aquarium, scientific or other institution, approved, licensed or registered by the government of the exporting country to hold primates.
- 2.2 The premises of origin are under veterinary supervision, where the health of the animal(s) is monitored so that incursions of disease are identified, and control and/or eradication measures can be applied. A health monitoring program should including microbiological and parasitological tests and necropsies.
- 2.3 The premises of origin is located in a country in which no case of yellow fever has been reported in the 12 months prior to certification.
- 2.4 The animal(s) has been continuously resident in the premises of origin for the two years prior to shipment or since birth.
- 2.5 The animal(s) is not wild caught.
- 2.6 No case of tuberculosis (disease due to infection with *Mycobacterium tuberculosis* or *M bovis*) has occurred in primates in the premises of origin during the five years prior to shipment.

### 3 TESTING

3.1 Each animal for export has been tested during the 12 months prior to export for tuberculosis, with negative results by:

EITHER: 3.1.1 an intradermal tuberculin test using 0.1ml of mammalian old tuberculin\*

OR: 3.1.2 0.1ml of bovine PPD tuberculin containing at least 50,000IU/ml\*

OR: 3.1.3 by a comparative tuberculin test using 0.1ml of bovine PPD tuberculin containing at least 20,000 IU/ml in one site, and 0.1ml of avian PPD tuberculin containing at least 20,000IU/ml in another site\*

OR: 3.1.4 by gamma interferon assay (Primagam, CSL Ltd)\*

Note 1: If any animal in the export consignment is positive, none of the animals are eligible for import.

Note 2: Unweaned animals accompanying eligible dams are exempt from testing.

\* Delete as appropriate



Certificate Number AE 32534.....

**4 ISOLATION**

- 4.1 The animal(s) has been kept in buildings and enclosures where there has been no case or other evidence of rabies, hepatitis B, measles, simian immunodeficiency syndrome or simian haemorrhagic fever in any animal, in the six months prior to shipment.
- 4.2 Each animal for export has been kept in isolation from other primates not of the same health status for at least 30 days immediately prior to export and, during this time, has remained free from signs of communicable disease.

**5 TREATMENT**

- 5.1 Each animal for export has been treated with broad spectrum parasiticides for internal and external parasites within 30 days immediately prior to export and the details of treatments are included in the health records appended to the veterinary certificate.

**6 EXAMINATION**

- 6.1 Each animal for export has been examined within 48 hours prior to shipment and found to be healthy, free from clinical signs of contagious disease, and fit for transport.

**7 TRANSPORT**

- 7.1 The animal(s) was sealed into its travel crate prior to export using a tamper proof seal bearing the seal marks: NZMAF005409.

Official Veterinarian  
New Zealand Ministry of Agriculture and Forestry

Name and address



19 APR 2006

Official stamp and date

Dr D L Jones BVSc  
NZFSA Verification Agency  
P.O. Box 53030  
Auckland International Airport  
Ph 09 - 257 0623 Fax 09 - 257 0631  
Email: chips.jones@nzfsa.govt.nz

Note: All pages are to be endorsed with the official stamp






Ministry of Agriculture and Forestry, New Zealand  
Te Manatū Ahuwhenua, Ngāherehere, Aotearoa



## PERMIT TO IMPORT LIVE ANIMALS

This permit is issued under The Biosecurity Act, 1993. Any queries, please contact Biosecurity Operations (Animals), MAF Biosecurity New Zealand, P O Box 2526, Wellington, (Phone 64 4 819 0459, Facsimile 64 4 819 0662)

Authorising Officer : Gillian Mylrea on 02 Mar 2006

  
for Director General, Ministry of Agriculture & Forestry,  
Biosecurity New Zealand, acting under delegated authority.

**Permit for :** Auckland Zoo  
Private Bag  
Grey Lynn  
Auckland  
New Zealand  
Attention : Kirsty Chalmers  
Records Officer

**Permit No :** 2006028076  
**Replaces Permit No :** N/A  
**Expiry Date :** 02 Sep 2006  
**No of Consignments :** Single

**Shipped From :** South Africa

**Exporter Name :** De Wildt Cheetah & Wildlife Trust  
Spier Wine Estate  
Baden Powell Drive, Stellenbosch  
South Africa

**Country of :** South Africa  
**Origin**  
**Product To :** Zoological  
**be Exported**

Species	Breed	Sex	Age	Life Stage	Identification	Quantity	Description
Felid	Cheetah	Male	10 months	Juvenile	45331F1E67	1	
Felid	Cheetah	Male	10 months	Juvenile	454A561D30	1	

### Import Health Standard

ZOOFELIC.ALL, 14 Dec 2005, ZOO - Zoo Felids from All Countries

Permit No: 2006028076

Page 1 of 2



TRADE IN ENDANGERED SPECIES  
ACT 1989



CONVENTION ON  
INTERNATIONAL TRADE IN  
ENDANGERED SPECIES OF  
WILD FAUNA AND FLORA

PERMIT TO IMPORT

CONSIGNEE — name and address

De Wildt Cheetah and Wildlife Trust  
Spier Wine Estate  
Lynedoch  
Stellenbosch  
South Africa

Permit Number: 06NZIM0001HO  
PERMITTEE — name and address

Auckland Zoo  
Motions Road  
Western Springs  
Auckland  
New Zealand

SPECIAL CONDITIONS

Valid until : 28/09/06  
Security Stamp No.: 0107864  
Valid for one consignment only



MANAGEMENT AUTHORITY  
DEPARTMENT OF CONSERVATION  
P.O. BOX 10420  
WELLINGTON  
NEW ZEALAND

CONSERVATION

SCIENTIFIC NAME	COMMON NAME	DESCRIPTION	SCHEDULE APPENDIX & SOURCE	QUANTITY
<i>Acinonyx jubatus</i>	cheetah LAST ITEM	Live (animals)	IZC	Two(2)

THIS AUTHORITY IS ISSUED BY:

ISSUED WITHOUT ALTERATION OR ERASURE

Wellington

28/03/2006

Wilbur Dovey



PLACE

DATE

SIGNATURE

OFFICIAL STAMP & TITLE

PLACE OF IMPORT/EXPORT

DATE

SIGNATURE

OFFICIAL STAMP & TITLE

THIS STAMP VOIDS THIS PERMIT  
FOR FURTHER TRANSACTIONS

## APPENDIX XI



### Quick guide to using the Keeper Library

#### SEARCHING FOR MATERIALS:

There are a number of simple databases (in Word and Excel), which give easy access to book titles, journal articles, audiovisual materials, etc. All can be found at:

G:\ZooWeb\Keeper Library

#### BORROWING MATERIALS:

Zoo staff may borrow materials for **2 weeks**. Unitec students may borrow materials for **1 week**. The following materials may not be borrowed from the Library (please use them in the Library or photocopy the sections you wish to use):

- Articles in the "Zoo Fact File" filing cabinet
- Books from the REFERENCE section
- "*Shape of enrichment*" newsletter issues

The audiovisual collection is housed in a locked cabinet, so if you wish to borrow anything from here, please speak to me.

If in doubt about whether a specific item may be borrowed, please check with me.

#### SIGN OUT BOOK:

Please remember to sign out all items when you borrow them, and to sign them back in when you return them.

#### RETURNING MATERIALS:

Please return items to the shelves in the correct place, so that other library users may find materials easily.

#### QUERIES:

If anyone has any queries about anything relating to the Keeper Library, please feel free to ask me for help! ☺

**Kirsty Chalmers**

Registrar

21<sup>st</sup> April 2006