

STRATEGY ON THE CONSERVATION AND UTILISATION OF REPTILES AND AMPHIBIANS IN SOUTH AFRICA

CHAPTER 1

INTRODUCTION

The Constitution states, amongst others, that everyone has the right to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that;

- prevent pollution and ecological degradation;
- promote conservation; and
- secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

It is the Department of Environmental Affairs and Tourism's (DEAT) responsibility to ensure the conservation of natural resources and the utilisation thereof takes place in a sustainable manner and has therefor embarked on the development of a national environmental management system through the CONNEP process. This resulted in the development of the White Paper on Environmental Management Policy for South Africa, which has been submitted to cabinet for approval.

On a more specialised level the DEAT also initiated the development of a national policy for the conservation of South Africa's Biodiversity, which resulted in the White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity approved by Parliament in September 1997.

To implement the policy on Biological Diversity, certain focus actions in the form of strategies for specialised groups of fauna and flora needs to be taken.

The DEAT realised that there is an urgent need for a strategy on the conservation and sustainable utilisation of reptiles and amphibians, after several stake holders such as nature conservation authorities, herpetological associations, traders, etc. approached DEAT with their concerns. Problems such as illegal trade, lack of uniform legislation, as well as habitat destruction, are some of the major issues that need to be addressed as a matter of urgency.

After two workshops this draft strategy was developed. The strategy document itself falls within the framework of the previously mentioned White papers.

This strategy will contribute directly towards attaining the three objectives of the Convention on Biological Diversity, viz. conservation of biodiversity, sustainable use of natural resources and the fair and equitable sharing of benefits arising from the use of genetic resources.

Furthermore, the strategy is aligned towards the following guiding principles contained in:

(i) Policy on the Conservation and Sustainable use of South Africa's Biological Diversity

- I. Intrinsic value
- II. Duty of care
- III. Sustainable use
- IV. The fair and equitable distribution of benefits
- V. Informed and transparent decision making
- VI. Precautionary principle
- VII. Accountability and transparency
- VIII. Subsidiarity
- IX. Participation
- X. Co-ordination and Co-operation
- XI. Global and international responsibilities
- XII. Evaluation and review

(ii) White Paper on Environmental Management Policy for South Africa

- I. Accountability
- II. Capacity building and education
- III. Co-ordination
- IV. Equity
- V. Global and international co-operation and responsibilities
- VI. Good Governance
- VII. Participation
- VIII. Precaution

The provisions of international conventions such as, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on the Conservation of Migratory Wild Animals (CMS) and the Convention on Biological Diversity (CBD), were taken into account and are expressed throughout the implementation of the strategy.

Furthermore, it should be accepted that the continued maintenance and conservation of viable wild populations of these species are the primary objectives for this strategy.

CHAPTER 2

STEPS IN THE STRATEGY FORMULATION PROCESS

- Nature conservation is a concurrent competence between central and provincial government and therefore the DEAT took the lead in the development of this strategy by arranging a workshop in May 1997, to which all the provincial nature conservation institutions were invited. During this workshop the Department met with the provincial representatives to discuss the proposed strategy.
- The purpose of this workshop was to identify and discuss all the issues that needed to be addressed in such a policy and to get a document on the table from where the process could continue.
- In view of the deliberations at the workshop and additional comments and suggestions received from the provinces, a discussion document was drafted.
- This document was then submitted to the Minister who approved the document as well as the development of the strategy.
- The document was distributed to all the provincial nature conservation authorities, non-governmental institutions and other relevant role players of whom the DEAT was aware.
- A press release was also issued by the Minister to inform the public of the approved strategy process and the planned workshop.
- A workshop was held in April 1998, to which all stakeholders were invited. The discussion document was discussed in detail at this occasion.
- The discussion document was then amended to accommodate the recommendations and inputs made at the workshop and the document became the Draft Strategy on the Conservation and Sustainable Utilisation of Reptiles and Amphibians.
- The strategy will be submitted to MINMEC and the CEC for final approval where after it will be implemented jointly by all government role players.

CHAPTER 3

STRATEGY FOR THE CONSERVATION AND SUSTAINABLE USE OF REPTILES AND AMPHIBIANS

GOAL 1. Provide general guidelines, which will ensure the conservation of reptiles and amphibians

1.1 National inventory

There is a need for a national inventory of herpetofauna, which would, at a national level, incorporate information about the distribution of all reptile and amphibian taxa. Knowledge about the taxonomic status of reptile and amphibian taxa is a critical tool for the formulation of conservation plans as well as for the management and utilisation of South Africa's herpetofauna.

OBJECTIVE 1.1

Establish a national inventory of herpetofauna

Actions:

- The DEAT, in collaboration with a panel of experts, will manage the continued compilation of the South African Red Data Books (RDB) on reptiles and amphibians as part of the national inventory.
- RDB's will still be published in hard copy and in due course an electronic database of RDB, which would be accessible to everyone, should also be developed and maintained.
- The RDB's should be revised at intervals of maximum five years.
- The DEAT co-ordinate the establishment and maintenance of a national inventory on the distribution and the taxonomic status of reptiles and amphibians in South Africa.
- Uniform terminology should be drafted and applied throughout.
- The first conservation priority for scientists should be to assist in obtaining and compiling these data.
- For the purpose of this document the IUCN criteria will be applied.

1.2 Research

Management of herpetofauna cannot take place without the information, which results from research. Research forms the foundation of the majority of conservation decisions.

OBJECTIVE 1.2

Promote research in the field of herpetology

Actions:

- Biologists should be encouraged to engage in research projects on the biology of our indigenous reptiles and amphibians. No distinction needs to be made between foreign scientists and local scientists. (Within the obligations of local capacity building).
- Research on the level of utilisation, which still meets the requirement of sustainable utilisation of indigenous herpetofauna, should be encouraged.
- Researchers should be encouraged to make findings of conservation importance known to the conservation authorities and supply them, if possible, with conservation management recommendations as well as articles and reports resulting from their research.
- Reptile breeders should be encouraged to make available to the relevant nature conservation authorities, any knowledge which may have scientific or conservation value, keeping in mind the issue of Intellectual Property Rights.

- Uniform standards for the screening and approval of research projects on our indigenous herpetofauna need to be defined. Due to a lack of herpetological expertise this could be achieved if a focal point or competent authority for the approval of research projects was instituted at the provincial level.

1.3 Capacity building

OBJECTIVE 1.3

Create opportunities for capacity building

Actions:

- An acute shortage of herpetological expertise exists within the conservation organisations nationally. Since it is unlikely that additional posts requiring herpetological skills will arise, provinces should be encouraged to allow staff to undergo in-service training. This would allow the provinces to evaluate the conservation status of the herpetofauna within their regions and to make informed decisions about permit applications.
- Institutions such as the S.A. Wildlife College should be encouraged to offer short courses in herpetology, aimed at nature conservation staff and other interested parties such as breeders and traders. In addition, universities should be encouraged to offer degrees with specialisation in herpetology

1.4 Mechanisms for monitoring

OBJECTIVE 1.4

Establish mechanisms for monitoring

Actions:

- Permits will be issued to reptile collectors with the condition attached that the collectors return information regarding precise dates and exact localities of herpetofauna collected from the wild to conservation authorities. These data could contribute to the above national inventory.

1.5 Conservation

OBJECTIVE 1.5

Promote conservation of reptiles and amphibians through reintroduction and conservation programs

Actions

- A yearly reporting system should be established where provinces should supply progress reports regarding the implementation of this strategy and where information regarding “new” trade can be reported. In this way, the impact of this strategy, and the impact of commercial use, on the long-term conservation of natural populations, can be evaluated.
- Conservation programs need to focus mainly on the protection of the species and the habitat in which they occur.
- The need for a structured breeding and reintroduction program of rare and endangered herpetofauna is recognised. However, such initiatives should only be undertaken when the reintroduction is an integral part of the conservation program for a particular species and/or ecosystems.
- Reintroduction programmes should follow the IUCN/SSC Guidelines for Reintroductions.
- Prospective conservation breeding programmes for rare and endangered species should be submitted to a panel of experts for recommendations.
- An option is to establish a working group on the reintroduction of herpetofauna to articulate the procedure for reintroduction.

- The implications of reintroduction, such as inbreeding, genetic contamination and the spreading of diseases, should also be taken into account, as well as the danger of the over utilisation of habitats.
- The final decision on whether to allow the introduction of certain species, remains the responsibility of the provincial authorities, with the implications of reintroduction taken into account as well as the broader national implications of the decision. The final decision has to conform to national interests and not counter the interests of another province.

GOAL 2. Establish guidelines for general use of reptiles and amphibians

2.1 The use of reptiles and amphibians during research

This section refers to the utilisation of herpetofauna for any research purposes, e.g. medical, conservation or academic purposes.

OBJECTIVE 2.1

Ensure that the use of reptiles and amphibians in research of any nature does not adversely affect the conservation status of reptiles and amphibians.

Actions:

- Researchers should be encouraged to make findings of conservation importance known to the conservation authorities.
- The national principle should be that the institutions involved, should be *bona fide* research institutions, which will be obliged to adhere to applicable legislation. The applicable permits may only be issued when the province has been convinced of the credibility of the project and the institution, after thoroughly investigating the objectives and purpose of the study.
- Uniform standards for the screening and approval of research projects on herpetofauna need to be defined. A focal point or clearinghouse for the approval of research projects could be used to screen research projects in provinces with no herpetological expertise.

2.2 Obtaining and keeping of reptiles and amphibians

OBJECTIVE 2.2

Regulate obtaining and keeping of reptiles and amphibians to minimize the adverse effects on South Africa's biodiversity components.

General actions:

- It is the responsibility of the provincial nature conservation authority to process information and to monitor permit holders on a merit base.
- All users should be treated equally, including traditional healers, breeders, hobbyists, researchers, zoos, herpetological associations, animal rehabilitators and any other institution or person. However, when demands are of such nature that priorities need to be assigned, *bona fide* research institutions should enjoy priority above individual collectors.
- Keepers of reptiles and amphibians must have proof of legal acquisition (collection permit, purchase slip, letter from donator or seller)
- Provision should be made in the envisaged legislation for penalising in instances where legal acquisition cannot be proved.
- Keeping and breeding facilities should be approved and adhere to nationally defined and approved guidelines. Guidelines will be defined and approved by the Department of Agriculture, which is responsible for regulating animal health, after consultation with nature conservation authorities as well as *bona fide* zoos and snake/reptile parks.
- Breeders and traders should keep a register, detailing all births and deaths involving herpetofauna in their possession or on their property. This information should be made available for inspection to a law enforcement officer or other competent officer from the relevant provincial nature conservation institution at any time.
- The keeping of injured animals by members of the public should be discouraged and a campaign on this issue should be launched. Animals can be taken to a rehabilitation institution.

b. Specific actions for indigenous species:

- All indigenous herpetofauna, regardless of their conservation status, i.e. endangered, vulnerable or common should be regarded as precious and valuable. No exceptions between species of different conservation status will therefore be made with regards to permit requirements.
- Collection permits will be issued on the basis of the application (whether the applicant is collecting for trade purposes or whether the applicant is a private collector) as well as on the status and abundance of the species in the relevant province.

- Collection in nature reserves and/or protected areas should be prohibited or limited and subject to the issuance of the applicable permits and authorisation. Furthermore, collection in nature reserves will only be allowed subject to the IUCN category status of the reserves as well as its conservation status.
- Breeders and traders could collect their breeding stock (F0) from the wild.
- Information on permits issued, monitoring of permit holders and numbers of animals collected should also be available on a national database.
- Species will only be released under certain conditions for which criteria need to be established.
- Applications for collection for commercial purposes will only be considered, if a proper project proposal accompanies the application. Additionally, an Environmental Assessment should be submitted to the relevant conservation authorities, in order to evaluate the impact and sustainability of such a development/project, and to inform the local community of the proposed activity.

c. Specific actions for exotic species:

- The keeping and importation of exotic species will only be allowed under strict conditions, including the requirement of a permit. It should be kept in mind that exotic species could be potentially invasive or potential vectors of diseases to both humans and other species.
- Before a permit will be issued, the applicant should provide proof that the species, to be imported, will hold no potential threats to South Africa's indigenous fauna and flora. The Precautionary Principle will apply and the import and keeping of exotic species will only be considered, if an Environmental Assessment shows no harmful effects. The assessment should be conducted by an independent and recognised consultant at the expense of the prospective importer. The assessment report will be scrutinised by the relevant authorities and experts to enable them to approve or refuse the application.
- The prospective importer must submit an integrated environmental management plan to the relevant authorities for approval.
- A list of exotic species, which will not be allowed in South Africa, should be compiled, maintained and reviewed on a regular basis. This will enable the conservation authorities to eliminate species, which could pose a potential threat to the indigenous fauna and flora. This should also be linked to the Clearing House Mechanism (CHM).
- Exotic reptiles and amphibians must be kept in escape-proof holding facilities that are registered as such with the relevant conservation authorities.
- No release of exotic species into the wild will be allowed.

d. Specific actions for alien species:

- The keeping of alien species will only be allowed under strict conditions, including the requirement of a permit. Alien species could be potentially invasive or potential vectors of diseases to both humans and other species.
- Before a permit will be issued, the applicant should provide proof that the species to be brought into the province will hold no potential threats to the province's indigenous fauna and flora. The Precautionary Principle will apply and the bringing into the province and the keeping of alien species will only be considered if an Environmental Assessment shows no harmful effects. The applicant for the permit to move or bring the species into the province should be tasked to have an assessment conducted by an independent and recognised consultant at the applicant's own expense. The assessment report will be scrutinised by the relevant authorities and experts to enable them to approve or refuse the application.
- The applicant must submit an integrated environmental management plan to the relevant authority for approval.
- A list of alien species, which will not be allowed into a specified province, should be compiled, maintained and reviewed on a regular basis. This will enable the conservation authorities to eliminate species that could pose a potential threat to the province's indigenous fauna and flora. This could be linked to the Clearing House Mechanism.

2.3. Commercial use and trade

OBJECTIVE 2.3

Regulate commercial use of reptiles and amphibians to minimize the adverse effects on South Africa's biodiversity components.

a. General actions:

- Breeders and traders should keep a record book detailing all business transactions involving herpetofauna in their possession or on their property. This information should be available for inspection by any relevant nature conservation authority at any time.
- Crossbreeding should be very well controlled and the risk of Genetic Modified Organisms should be taken into account. Criteria need to be established.
- All species listed in the Appendices of CITES that are imported must be accompanied by the necessary CITES permits.
- All specimens of species listed in Appendix I of CITES should be micro-chipped by the owner, whether or not it was imported or bred in captivity. Records should be sent to the nature conservation authorities on a yearly basis.

b. Specific actions for indigenous species:

- Subject to the principle of sustainable use, utilisation and commercial exploitation of indigenous herpetofauna will be allowed for all species except wild-caught threatened species.
- Breeding stock must be obtained legally. Criteria for allowing collection from the wild of limited specimens need to be established.
- Subject to the principle of sustainable use, trade of wild-caught indigenous herpetofauna will be allowed for all species except threatened species. A functional application system should be developed to make provision for distinguishing between wild-caught and captive bred herpetofauna.
- Crossbreeding will not be allowed for any indigenous species.
- Pet shops are allowed to trade in certain indigenous species subject to relevant permit requirements. The nature conservation authorities in conjunction with zoos, snake/reptile parks and museums will compile a list of species that can be allowed in the pet trade.

c. Specific actions for exotic species:

- A list of exotic species, which will not be allowed in South Africa, should be drafted.
- There should be strict control for the re-export to prevent South Africa being used as a route for easy trade.
- A national database of imported exotic species should be maintained. The extent of information that should be included in the database as well as capacity constraints needs to be included.
- Guidelines for the exportation of species should be outlined. When issuing permits the sovereign rights of the government over biological diversity and resources should be considered.
- Pet shops are allowed to trade in exotic species that are not on the prohibited list and that have been shown by an environmental assessment to hold no potential threats to South Africa's indigenous fauna and flora and have been approved by the relevant conservation authorities. The trade will be subject to the relevant permit requirements.

2.4 Transportation

OBJECTIVE 2.4

Regulate transportation of reptiles and amphibians

Actions:

- IATA regulations shall be followed for reptiles and amphibians transported by air.
- Transport permits within provinces should be phased out. Permits to capture and/or hold or sell herpetofauna should include permission to transport reptiles and amphibians intra-provincially. Inter-provincial transport should be on permit.

- For inter-provincial movements it is very important to realize that uniform provincial policies are essential to make effective control possible. Therefore a national policy or strategy should bound provinces to apply uniform criteria.

2.5 Translocation of indigenous species

Regulate translocation of reptiles and amphibians to minimize the adverse effects on South Africa's biodiversity components.

OBJECTIVE 2.5

Provide interim guidelines for the translocation of reptiles and amphibians

Actions:

- The issue of translocation should and will be dealt with in a national strategy on the translocation of wildlife. Until that is in place, provision should be made for this in the present document to deal with the issue on an interim basis.
- Regarding the removal of animals from urban areas as well as animals that need to be removed from areas where development is due to take place. These animals should be captured and translocated, by a competent nature conservation official, to the nearest suitable habitat, preferably not a nature reserve, unless it is the only suitable habitat. The provincial nature conservation institutions should use their own discretion.
- The animals can be donated or sold by nature conservation authority to any institution such as zoos, snake parks, museums, universities, approved private keepers, the traditional healers ect. or rehabilitation centres or person.
- The question whether to replace, rehabilitated animals is a matter of concern. There ought to be a distinction between animals from a known origin and animals whose origin is unknown. The possibility of introducing diseases to wild populations is another implication of reintroduction that should be considered. Criteria need to be developed to address these concerns.

2.6 Rehabilitation of indigenous species

Regulate rehabilitation of reptiles and amphibians to minimize the adverse effects on South Africa's biodiversity components.

OBJECTIVE 2.6

Ensure that the rehabilitation of reptiles and amphibians are strictly regulated

Actions:

- Rehabilitators should register with a national body or the provincial conservation authorities.
- All rehabilitation institutions should meet the national strategy conditions as well as conformation with the provisions of the province, concerned.
- Rehabilitation centers is considered as users and are therefore subject to the same criteria as other users.

GOAL 3. Establish guidelines for the disposal of confiscated and surplus animals

OBJECTIVE 3.1

Provide guidelines for the disposal of confiscated reptiles and amphibians.

Actions:

a. General

- Criteria need to be established to define under which circumstances animals can be confiscated. In general, animals will be confiscated when the permit requirements are contravened or proof of legal acquisition cannot be complied.
- Prior to disposal, confiscated and surplus animals should be kept in the same manner as required in this strategy for the keeping of animals.
- The decision on the disposal of confiscated live animals listed in the Appendices of CITES, should be undertaken in accordance with the procedures set out by CITES (Refer Conf. Res. 9.11).

b. Indigenous species:

- Donate animals to institutions such as zoos' or snake parks. (Treasury restrictions on state property should be kept in mind.)
- Reintroduce or release animals to their natural habitats, only if origin is known and animals are free from contagious diseases.
- Animals can be sold per tender. The Nature Conservation Authority should control this.
- Euthanasia can be considered if all other options failed. Euthanasia of indigenous species should make provision, if possible, for the utilisation of the products derived from the specimen. Euthanasia should be done in the most humane way, either by a veterinarian (state or private) or by competent nature conservation official.

c. Non-CITES exotic species

- The animals could be donated or sold to any relevant institution such as museums and universities, zoos or snake parks or approved private persons or traditional healers.
- Specimens of listed undesirable exotics should be euthanasia.
- Animals could be put back into trade or sold per tender or be exported or sent back to country of origin.

GOAL 4. Provision for permits and legislative requirements

OBJECTIVE 4.1

Provision for legislation and permits in order to control the use of reptiles and amphibians.

Actions:

- National legislation, implemented by the provincial nature conservation institutions, is required.
- Functional implementation of a permitting system in accordance with national criteria should be developed together with a standard protocol for the issuing of permits.
- There is a need in some provinces for provincial legislation to authorise officials to search any person or vehicle, should foul play be suspected. The constitution does make provision for this provided that the right procedures are followed.
- There shall be stricter monitoring and control of all possible exports and imports at airports, harbours, border posts etc. Control and inspections of consignments shall be a national competency. Limited ports will be considered.
- Permit authorities should perform inspections of premises of permit holders. Criteria need to be established, as well conditions and responsibilities

Permits required :

Indigenous species	Exotic Species
<ul style="list-style-type: none"> Provincial entry permit for all species to province of final destination 	<ul style="list-style-type: none"> Provincial entry permit for all species to province of final destination
<ul style="list-style-type: none"> Provincial exit permit 	<ul style="list-style-type: none"> Provincial exit permit
<ul style="list-style-type: none"> Import permits for all indigenous species to be imported, subject to proof of legal acquisition. 	<ul style="list-style-type: none"> Import permit for all exotic species to be imported
<ul style="list-style-type: none"> Export permits for all indigenous species to be exported, subject to proof of legal acquisition. 	<ul style="list-style-type: none">
<ul style="list-style-type: none"> CITES permits for all CITES species to be exported or imported. 	<ul style="list-style-type: none"> CITES permits for all CITES species to be exported or imported.
<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Keeping permits for all exotic species. This includes transport permit.
<ul style="list-style-type: none"> Trade or disposal permits for wild-caught and captive bred indigenous reptiles and amphibians. This permit is required to sell, donate, swap any indigenous reptile or amphibian species. 	<ul style="list-style-type: none"> Trade or disposal permits for exotic reptile and amphibians species. This permit is required to sell, donate, swap any exotic reptile or amphibian species
<ul style="list-style-type: none"> Collection permits to collect indigenous species from the wild. <p>*Collection permit for traders will be subject to a quota system determined by the relevant provincial nature conservation authority and will be issued at the beginning of each year to be valid for a one year period. Applicants can apply for additional permits during the year.</p> <p>*Collection permit for private collectors will be subject to a limited number of specimens (2 or 3 at a time) as well as restricted to a time period for collection.</p>	

CHAPTER 4

GLOSSARY

Alien species	Species which do not naturally occur in an area, and which are deliberately or accidentally introduced by humans to ecosystems outside of their natural range.
Captive bred	Offspring, including eggs, born or otherwise produced in a controlled environment.
Captivity	The keeping of animals under artificial conditions.
CITES Appendix I	Include all species threatened with extinction which are or may be affected by trade. Trade in specimens of these species must be subject to particularly strict regulation in order not to endanger further their survival and must only be authorized in exceptional circumstances.
Collection	Obtaining of specimens from their natural habitat
Commercial purposes	Intention to make money/profit
Conservation	The management of human use of the biosphere to yield the greatest benefit to present generations while maintaining the potential to meet the needs and aspirations of future generations
Conservation status	The status of a species in the environment in which it originally occurred; threatened, endangered, vulnerable, common.
Endangered species	Species facing a very high risk of extinction in the wild in the near future.
Euthanasia	Humane killing of an animal by a chemical process.
Exotic species	Any species from a foreign country which does not naturally occur in South Africa.
F1 generation	First generation offspring
F2 generation	Second generation offspring
Genetically Modified Organisms	Organisms whose genetic material (inclusive RNA and DNA) does not occur naturally by mating or natural recombination.
Highly exploited	Species utilised due to popularity.
IATA Life animal regulations	International Air Transport Association. Guidelines in respect of transportation of animals by air.
Indigenous species	Species native to a particular area i.e. South Africa
Inter provincial	Between different provinces

Intra provincial	Within a province
Precautionary principle	Where there is a threat of significant reduction or loss of biological diversity but inadequate or inconclusive scientific evidence to prove this, action should be considered to avoid or minimise threats.
Protected areas	Geographically defined areas designated and managed to achieve specific conservation objectives. Protected areas are dedicated primarily to the protection and enjoyment of natural or cultural heritage, to the maintenance of biodiversity, and to the maintenance of life-support systems.
Red data Books	These provide information on the current status and conservation requirements of threatened species and ecosystems. This can be at a global or national level.
Re-export	Export of specimen that did not originate in South Africa.
Rehabilitation	To return a degraded ecosystem or population to an undegraded condition and to productive use.
Reintroduction	The introduction of a specimen to the ecosystem from which it originally came.
Sustainable use	The use of components of biological diversity in a way and at a rate that does not lead to its long-term decline, thereby maintaining its potential to meet the needs and aspirations of present and future generations.
Trade	To negotiate or enter into any transaction in relation to, purchase, sell, exchange, offer for sale any reptile or amphibian species.
Traditional knowledge	A body of knowledge built up by a group of people through generations of living in close contact with nature. It is both cumulative and dynamic, building upon the experience of earlier generations and adapting to the new technological and socio-economic changes of the present.
Translocation	The removal of species both from their natural habitat as well as from urban areas and the release of species in another area.
Transportation	The actual transport of species per vehicle, plane etc. within and between province.
Wild caught	Taken from the wild.