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DEPARTMENT OF ENVIRONMENTAL AFFAIRS

NO. 1329

18 OCTOBER 2019

**NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT, 2004
(ACT NO. 10 OF 2004)****DRAFT NORMS AND STANDARDS RELATING TO THE MANAGEMENT OF SEABIRDS IN CAPTIVITY**

I, Barbara Dallas Creecy, Minister of Environment, Forestry and Fisheries, hereby invite members of the public to comment on the draft Norms and Standards relating to the management of Seabirds in Captivity in terms of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004). Copies of the draft Norms and Standards can be downloaded from the Department's website at www.environment.gov.za or can be obtained electronically upon request by email to marinespecies@environment.gov.za.

The aim of the draft Norms and Standards is to ensure that seabirds receive the best quality of care through all the stages of rehabilitation and in permanent captivity. They also aim to set indicators that all facilities need to adhere to in order to safeguard the care of ill, injured or orphaned seabirds to meet acceptable standards that will aid in their conservation.

Members of the public are invited to submit written representations on, or objections to, the draft Norms and Standards within 30 (thirty) days after the publication of this notice in the *Gazette*. Written representations or objections received after this time may not be considered. All representations and comments must be submitted in writing to the Deputy Director-General of the Department of Environment, Forestry and Fisheries, Branch: Oceans and Coasts:

By hand: The Deputy Director-General
Attention: Ms M M Makoala
Department of Environment,
Forestry and Fisheries
Branch: Oceans & Coasts
1 East Pier Building, East Pier Road
V&A Waterfront, Cape Town
By e-mail: marinespecies@environment.gov.za

By post to: The Deputy Director-General
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BARBARA DALLAS CREECY
MINISTER OF ENVIRONMENT, FORESTRY AND FISHERIES



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

**DRAFT NATIONAL NORMS AND STANDARDS RELATING TO THE
MANAGEMENT OF SEABIRDS IN CAPTIVITY**

CHAPTER 1: INTERPRETATION, PURPOSE AND APPLICATION

1.1 EMPOWERING PROVISIONS

These Norms and Standards are issued in terms of section 9 of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (“NEMBA”).

1.2 GENERAL

These Norms and Standards relating to the Management of Seabirds in Captivity (“**Norms and Standards**”) have been prepared by the Department of Environment, Forestry and Fisheries to set appropriate standards for and therefore inform the conservation and management of seabird species. The development of the Norms and Standards has been a cooperative effort that represents the most current knowledge, expertise and techniques in the field of seabird rehabilitation. The norms and standards is a reflection of what participating organisations have learned collectively and successfully applied. It sets a benchmark of quality against which new and existing facilities can be measured and monitored.

The norms and standards is neither a complete manual on animal husbandry nor a static document. It will undergo regular revision to take into account new knowledge of animal physiology and behaviour, technological advances, developments in standards of animal care, and changing community attitudes and expectations about the humane treatment of animals. The Department will consult with permit holders regarding potential changes to the document and give written notice when the document is to be superseded. This collaborative effort to formulate the document is something to be proud of. All carers are encouraged to use this document to help improve the care and treatment of sea and shorebirds, and their successful release from rehabilitation facilities.

In this document, any reference to seabird(s) includes the term shorebird(s) and *vice versa*.

1.3 DEFINITIONS

For the purpose of this document the following definitions apply.

“Bred in Captivity” means a specimen of a seabird species that was bred and born in a controlled environment;

“Captive breeding facility” means a facility that is a controlled environment, where seabirds are bred and born with the intent to grow the wild population of the species.

“DNA Certificate” means a certificate regarding the genotyping of a particular specimen.

“DNA sample” means blood or a tissue sample of a marine or coastal species.

“Enclosures” refers to crates, cages, pens and aviaries.

“Exhibition facility” means a facility, including but not limited to, a circus, zoological garden, aquaria and travelling exhibition that keeps specimens of seabirds for public display or performance purposes, or for the purpose of facilitating any kind of interaction between humans and live specimens of such species.

“Feed” means to supply food or other objects which will be perceived as food by a specimen of seabird.

“Genotyping” means the process of determining or analysing the DNA profile of a seabird specimen.

“Habitus” means general appearance and/or behaviour.

“Mark” means an indelible imprint, microchip or any other recognised or prescribed means of uniquely identifying a specimen.

“OHS” refers to the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

Registered Facility: a licenced and registered facility which is permitted to undertake restricted activities through a National or provincial permitting process.

“Rehabilitation facility” means a facility equipped for the temporary holding of:

- a) a sick or injured specimen for the purpose of providing treatment and care of such specimen or
- b) a young orphan specimen for rearing purposes,

with the overall intent to release such specimen, but excludes a veterinarian's practice or a veterinary academic hospital.

“Sanctuary” means a facility that provides permanent care to a seabird specimen that would be unable to sustain itself if released into the wild, whether as a result of injury or on account of human imprinting.

“Scientific purpose” means to carry out a restricted activity with the primary purpose of practising science.

“Safe Holding Area” refers to a temporary area where animals have no chance of escape or injury.

“SANS” means the South African National Standards.

“Seabird” means birds that are adapted to live within the marine environment.

“Shorebird” means birds that are commonly found along sandy or rocky shorelines, mudflats, and shallow waters.

“Temporary holding facility” means a facility equipped for the temporary holding of live seabird specimens for quarantine or translocation purposes, including a boma, with the overall intent to release such specimens, but excludes rehabilitation facilities.

“Wildlife auctioneer” means a person who acts as an agent or who facilitates a commercial transaction between the seller and the purchaser of a seabird specimen.

“Wildlife trader” means a person who conducts or engages in the business of sourcing and acquiring, or purchasing and selling, a live seabird specimen for commercial purposes, and includes a wildlife auctioneer but excludes a:

- a) hunting officer;
- b) wildlife translocator; and
- c) exhibition facility.

“Wildlife translocator” means a person who transports, conveys or otherwise translocates a live specimen for commercial purposes on behalf of another person and may include the purchasing, selling or temporary possession of such a live specimen.

“Zoonotic” means pertaining to a zoonosis: a disease that can be transmitted from animals to humans or, more specifically, a disease that normally exists in animals but can infect humans.

1.4 PURPOSE & APPLICATION

The Norms and Standards are aimed at ensuring cooperative effort and represent the current state of knowledge, expertise and techniques in the field of facilities housing seabirds in captivity. These Norms and Standards aim to assist in improving the quality of care in facilities housing seabirds in captivity (rehabilitation centres and permanent captive institutions). The purpose of these norms and standards is:

- to ensure that seabirds receive the best quality of care through all the stages of rehabilitation and in permanent captivity;
- to set indicators that all facilities need to adhere to;
- to provide permitting authorities and other regulatory bodies with standards and guidelines to assess those facilities holding seabirds, permanently or temporarily in captivity;
- to provide information, recommendations, minimum standards and guidelines to ensure that all parties involved in the holding, care and rehabilitation of seabirds do so in an appropriate manner;
- The norms and standards emphasise the responsibility of:
 - all persons and organisations involved in the holding, care and rehabilitation of sick, injured or orphaned seabirds and the release thereof; and
 - all persons or organisations where seabirds are kept in permanent captivity.
- To ensure that:
 - animal care meets acceptable standards;
 - conservation benefits are maximised;
 - adverse ecological outcomes are avoided;
 - risks to human health and safety are minimised.

1.5 COMPLIANCE WITH THESE NORMS AND STANDARDS

Compliance with these norms and standards is a condition of the permit in accordance with the Threatened or Protected Marine Species Regulations that has been gazetted under section 52 of NEMBA. Failure to comply with a permit condition is an offence under the relevant regulations and may result in:

- a Compliance Notice being issued;
- the temporary closure of a facility;
- and/or the commencement of prosecution.

Compliance with these norms and standards does not remove the need to abide by the requirements of any other laws, Acts and regulations that can be applied to the rehabilitation process and the care of seabirds. Compliance with the norms and standards does not exempt a person or an entity from compliance with any Act, regulation or other statutory instruments.

CHAPTER 2: GENERAL PROVISIONS FOR REHABILITATION AND CAPTIVE INSTITUTIONS

2.1 FUNDAMENTAL PRINCIPLES

The fundamental principles underpinning these norms and standards that should guide institutions holding seabirds permanently or temporarily in captivity are:

- The duty of care: A person in charge of seabirds, whether it be in permanent or temporary captivity must appropriately provide for the animals' well-being. This includes providing appropriate husbandry and care, pain relief, veterinary treatment and timely euthanasia to prevent suffering.
- Capacity to care: Organisations must ensure that they have the capacity and resources to provide the essential needs for care of animals in permanent or temporary captivity and maintain acceptable standards of care.
- When the capacity to care is inadequate, it is unacceptable for bird care standards to be lowered to the extent that they are not consistent with this document.
- However, when the capacity to care is inadequate, and bird welfare standards are likely to be compromised, there are three acceptable management options, which are, in order of preference:
 - refer birds to another organisation with a current capacity to care for that species;
 - increase the capacity to care by increasing or pooling resources;
 - lower the euthanasia threshold in combination with early triage of newly rescued seabirds and proper veterinary assessment and prognosis of birds in care.
- All organisations holding seabirds are required to develop protocols and procedures that define appropriate actions and responses in the event of catastrophic events, or other circumstances in which the defined capacity to care may be exceeded
- In terms of releasing birds back into the wild, the effect on local ecosystems and wildlife communities must be considered to avoid significant detrimental effects.
- Additional outcomes of the keeping or rescue and rehabilitation of protected seabirds include:
 - contribution to the body of knowledge on the ecology, conservation, management, veterinary care, husbandry and behaviour of seabirds;
 - contribution to the education of the general public, business and industry professions on issues related to the conservation and welfare of seabirds.

Adhering to these principles will assist seabird rehabilitators and organisations in complying with the document.

2.2 CODE OF ETHICS

The Code of Ethics (Appendix 2) for rehabilitators of seabirds forms part of this document and is based on the principles of honesty, integrity, responsibility and treating others as we would have them treat us. The Code of Ethics provides basic rules of conduct for each facility to incorporate into their practice.

Standard: Ethics

- Evidence of a high standard of ethical conduct.
- Each facility needs to have a Code of Ethics.
- Evidence that each staff member knows about and complies with the Code of Ethics.

2.3 LEGISLATION – PERMITS / AUTHORISATIONS

The onus rests on those facilities housing and rehabilitating seabirds to ensure that they have all the relevant permits and authorisation for species in their care and all the relevant business operational licences.

Standard: Permits

- Ensure that Permits required for all activities relevant to the operations at facilities are in place and up to date.
- All the required reports to permitting authorities have been submitted and that they correspond with what is onsite (this can be verified during an inspection).
- Resource: National – Department of Environmental Affairs (DEA), Department of Agriculture Forestry and Fisheries DAFF), and other relevant Government Departments; Provincial and Local Authorities.

2.4 MARKING OF SEABIRDS

Standards: Marking of Seabirds

- All released seabirds to be permanently marked using appropriate marking techniques.
- Data must be housed in the relevant databases.

2.5 SAMPLE COLLECTION

The following are the minimum samples that must be collected from seabirds. All samples must be adequately labelled (i.e. bird identification number, the area of admission, date of admission) and stored appropriately.

2.5.1 Oiled Feather Sampling

Oiled feather samples must be collected from all oiled seabirds upon admission. These samples may be needed for evidence in the event of an oil spill, but can also provide information relating to the effect of chronic oil pollution along the South African coastline. (Appendix 3)

2.5.2 Blood sampling

Evaluating blood samples from seabirds on admission and during rehabilitation is essential to establish evidence of anaemia, the levels of total protein in the serum and the presence of parasites in the blood. It is also a way of assessing the condition of the bird through evaluating the regeneration of the red blood cells and the reactivity of the white blood cells. Collecting a peripheral blood sample from the foot or leg of the bird is preferred. Care should be taken not to cause injury to the bird or humans involved in the process. Effort must be made to minimise stress during this procedure. An adequate amount of blood should be collected to fill a capillary tube and make a blood smear. The collection of blood needs to be performed by suitably qualified personnel or under veterinary supervision or as stipulated within the relevant legislation. (Appendix 4)

2.5.3 Post-mortem evaluations

It is preferable that all seabirds that die at a captive or rehabilitation facility should have a post-mortem conducted. Circumstances will determine the priority for post-mortem evaluation. Adequate personal protective gear must be worn to minimise the risk to the person conducting the post-mortem and to minimize the spread of disease to other specimens. The disposal of carcasses must be done in accordance with relevant regulations (refer to the section on Waste Management).

Standard: Sampling

- Oiled feather samples must be collected from all oiled seabirds and properly stored according to the correct protocol (Appendix 3).
- The collection of blood must be performed by trained personnel in line with the South African Veterinary Council.
- Post-mortems must be conducted on seabirds (especially in priority cases), and disposal of carcasses must be in accordance with local regulations.
- There must be a liaison with the SANBI Biobank curator for the collection of DNA Samples.

2.6 VETERINARY PROTOCOLS

Protocols must be drawn up to rapidly assess the veterinary requirements of sick, injured or orphaned seabirds to provide appropriate relief from distress, pain and suffering.

2.6.1 Legal requirements

The veterinary and para-veterinary profession is regulated by the Veterinary and Para-Veterinary Professions Act, 1982 (Act No. 9 of 1982), and no person is allowed to practise as a veterinary or para-veterinary profession unless they are registered to do so. Facilities keeping scheduled drugs must adhere to the relevant legislation.

2.6.2 Drug Protocols

The prescription, maintenance and administration of all drugs kept and used at any facility caring for seabirds remain the responsibility of a veterinarian in terms of the Medicines and Related Substances Control Act, 1965 (Act No. 101 of 1965). All scheduled drugs have restricted access unless prescribed by the veterinarian. A veterinary nurse has free access to schedules 1 – 4 (under veterinary instruction). This means that lay people may only administer these drugs (schedule 1 – 4) on a specific prescription, while a veterinary nurse may access storage of these drugs. Unless a veterinarian or veterinary nurse is on the premises, all drugs of schedule 1 – 4 must be stored in a locked cupboard. All drugs of schedule 5 – 7 must always be stored in a locked cupboard (preferably in a safe, and only the responsible veterinarian may have access to the key), and a veterinary nurse may only use these drugs in the presence of a veterinarian. Schedule 7 drugs require a register for use.

Standard: Veterinary protocols

- All seabird facilities must have an attending veterinarian who is registered with the South African Veterinary Council (SAVC) and all treatments given to animals must be under the supervision of a veterinarian.
- There must be a signed agreement or memorandum of understanding between the facility and the attending veterinarian outlining the conditions of the agreement. This agreement should provide a clear mutual understanding of the division of responsibilities consistent with state laws regarding the practice of veterinary medicine. The legal prescription of medical care for seabird patients is the responsibility of the attending veterinarian.
- All facilities are advised to adhere to guidelines relating to the prescription, maintenance, administration, purchase and storage of scheduled drugs in terms of Act 101 Of 1965.

The attending veterinarian shall:

- be available to examine animals on a regular schedule and emergency basis; daily if necessary;
- be available to answer veterinary-related questions on a 24-hour basis;
- have seabird experience or be in regular consultation with a veterinarian who has seabird experience;
- have access to a list of expert veterinarians to contact for assistance;

- be available to examine seabirds immediately upon admittance to a facility if required;
- be available to assess seabirds during a catastrophic event;
- the veterinarian may delegate a portion of this responsibility to a rehabilitator by means of a mutually agreed, written protocol wherein these responsibilities are defined, the veterinarian should provide appropriate training to the rehabilitator to carry out these responsibilities. Such an arrangement allows the veterinarian to prescribe a specific treatment protocol for a specific type of injury without having to examine the individual patient.

2.7 EUTHANASIA

Euthanasia is defined as the induction of death with minimal pain, stress or anxiety and can only be performed by a veterinarian, or a para-veterinary professional under the supervision of a veterinarian. It is the veterinarian's obligation to immediately euthanase an animal deemed to be suffering. The disposal of carcasses is discussed under Waste Management.

Standard: Euthanasia

- Euthanasia must only be performed by a veterinarian or under veterinary supervision by a para-veterinary professional.
- Euthanasia must be carried out in a humane and ethical manner.
- Carcasses must be disposed of in accordance with local regulations and permit conditions.

2.8 TRANSFER OF SEABIRDS BETWEEN FACILITIES

Seabirds may be transferred between facilities when:

- number of seabirds exceed the capacity of the existing centre;
- another registered centre may be more suitable for further treatment and subsequent release of the seabirds.

2.8.1 Transfer process:

- Both facilities must agree on the transfer to ensure that the receiving facility is prepared for the arrival of the bird/s.
- Both facilities involved in the transfer must ensure that the relevant permits have been obtained before the transfer.
- Both the transferring and receiving facilities must indicate the following on their records:
 - the names of the transferring and receiving facilities;
 - the identification numbers of the seabird/s,
 - the date of transfer;

- the reason for the transfer.
- Seabirds that are transferred between facilities must be accompanied by a detailed medical report, including history and treatments administered to date.

Standard: Transfer of seabirds between facilities

- Facilities must document their threshold in terms of capacity and have a contingency plan for when this is exceeded.
- There must be a written record to demonstrate that the minimum criteria to select seabirds for transfer to another centre has been implemented.
- Both facilities involved in the transfer must ensure that the relevant permits have been obtained before the transfer.

2.9 TRANSPORTATION OF SEABIRDS

Seabirds usually have to be transported between:

- Colony and beach to rehabilitation facilities;
- stabilisation and rehabilitation facilities;
- between different rehabilitation facilities; and
- to a release site.

2.9.1 Transport of seabirds

Standard: Transport of seabirds

- When seabirds are transported, measures to ensure adequate ventilation, temperature control and prevention of injuries should be implemented.
- Boxes or crates must not be stacked or packed tightly together, and it is preferable to leave gaps between boxes and crates to assist with airflow.
- Temperature control during the transport period must be provided.
- Injury to seabirds must be prevented by selecting the appropriate transport method and securing the boxes and crates.
- Seabirds must be able to move around, but excessive movement should be limited to prevent injury.
- Delays in transporting seabirds must be avoided. Directions or route maps must be provided to drivers to ensure the seabirds reach their destination timeously.
- Seabirds must be hydrated by tubing them with oral electrolyte fluids before transport journeys which are expected to exceed two hours. Before seabirds are transported, they must be sorted according to size, age and habitus to prevent injury to smaller or weaker seabirds and overcrowding during transport.

2.10 DISEASE CONTROL

Effective measures to prevent the spread of disease:

- between seabirds;
- between seabirds and humans (zoonotic); and
- between seabirds and local fauna are crucial.

Prevention of disease transmission is achieved through the implementation of an effective hygiene regime. During an emergency situation, seabirds and humans are more stressed and more susceptible to disease, and therefore there is an increased risk of disease.

Standard: Disease Control

- A high level of personal hygiene must be maintained. This includes the use of Personal Protective Equipment (PPE) e.g. overalls, boots, disposable gloves and surgical masks.
- Adequate handwashing facilities with the appropriate disinfectant soap must be available.
- Adequate facilities for the washing of clothing and disinfection of shoes and boots.
- Facilities must have designated areas for eating, drinking and smoking away from animal care or food preparation areas.
- Provision should be made for separate refrigeration facilities to ensure that human food, bird food, carcasses and other specimens are all kept separately.
- All personnel must be given basic information on zoonosis and disease control. They should also be advised on tetanus vaccinations and deworming treatments.
- Enclosures, where seabirds are kept, should:
 - allow for adequate drainage of dirty water;
 - be cleaned and disinfected on a daily basis;
 - enclosures for chicks and debilitated animals need more frequent cleaning;
 - enclosures must be cleaned after a group of seabirds is removed and before a new group of seabirds are placed in the enclosure;
 - ensure minimal contact between wild and local fauna and seabirds in captivity.
- The correct selection process for detergent and disinfectant effective against viruses, bacteria, fungi and algae must be followed. It is essential to choose chemicals that are non-irritating, non-corrosive and biodegradable. (Appendix 5 – Disinfectant principles)
- All equipment used (e.g. bowls used for feeding, utensils used for food preparation, medical equipment, tubes, nebulisers, towels and sheets used for bedding) should be cleaned and disinfected daily and between use for/on different seabirds.
- Newly admitted seabirds should be housed separately (preferably in quarantine) to allow for detection of any diseases.

- Seabirds confirmed or suspected of having a contagious disease must be kept isolated from all other seabirds, these birds should not be housed with the other seabirds until it is established that they are no longer contagious.
- Sensitive areas require restricted access to prevent contamination of clean areas, such as quarantine, isolation, surgical and chick areas.
- Indoor areas should have sufficient ventilation and air movement. If air conditioners are used, recycled or reused air should be avoided. The filters and grids of air conditioners should be cleaned regularly.
- Seabird dietary items should be stored and prepared in a hygienic manner.
- Discarding of organic waste must be in accordance with local and municipal by-laws.
- Any occurrence of a state-controlled disease needs to be reported to the State Veterinarian and appropriate steps taken to determine the extent of the problem and to minimise spread.

2.11 PEST CONTROL

Direct contact between vectors (e.g. mosquitoes, flies, ticks, fleas, etc.) and carriers of disease (e.g. wild seabirds, rodents, etc.) must be prevented.

Standard: Pest control

- Facilities must have a pest and insect control program.
- Measures must be in place to avoid contamination of both human and animal food and housing areas with pesticides

2.12 HUMAN RESOURCES

Staff, interns and volunteers who work with seabirds regularly, should be adequately trained in all aspects of seabird care, and regular refresher courses are strongly recommended. Volunteers should be supervised by experienced interns, volunteers or staff. Clear instructions and chain of command, especially in emergency situations will help with the smooth running of operations.

Standard: Human Resources and Training

- Staff should be adequately trained to perform the required duties and regularly assessed.
- Facilities need to comply with the Basic Conditions of Employment Act, No 75 of 1997.

2.13 HEALTH AND SAFETY

The Occupational Health and Safety Act (85 of 1993) is the overriding legislation in the workplace. Noteworthy risks specifically related to seabird rehabilitation must be addressed as follows:

- physical contact with oil should be minimised as it can irritate skin, eyes and mucous membranes. Fume intoxication should be minimised by avoiding working with oiled seabirds in a poorly ventilated area;
- the greater fire risk owing to the presence of oil and chemicals in a rehabilitation centre must be recognised and guarded against;
- fire extinguishers and other appropriate equipment and training should be provided;
- physical injuries caused by wet and slippery surfaces should be minimised through installing non-slip surfaces where possible;
- appropriate PPE should be worn at all times to ensure the safety of all personnel;
- appropriate first-aid care must be applied to open wounds that provide the perfect entry point for the transmission of zoonotic diseases;
- possible injury from staff exhaustion, fatigue and stress must be prevented through proper team management.

Standard: Health and safety

All Seabird facilities must:

- comply with the Health and Safety Act, 1993;
- supply adequate PPE requirements to staff and all those working with seabirds;
- adhere to appropriate measures in order to minimise the risk of injury to humans;
- ensure that there is adequate safety signage.

2.14 WASTE MANAGEMENT

Waste in South Africa is currently governed by various legislation, including:

- The South African Constitution (Act 108 of 1996);
- Hazardous Substances Act (Act 5 of 1973);
- Health Act (Act 63 of 1977);
- Environment Conservation Act (Act 73 of 1989);
- Occupational Health and Safety Act (Act 85 of 1993);
- National Water Act (Act 36 of 1998);
- The National Environmental Management Act (Act 107 of 1998);
- Municipal Structures Act (Act 117 of 1998);
- Municipal Systems Act (Act 32 of 2000);
- Mineral and Petroleum Resources Development Act (Act 28 of 2002);
- Air Quality Act (Act 39 of 2004);
- National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (as amended).

The following special waste categories are encountered at facilities caring for seabirds:

2.14.1 Fish waste

Care must be taken to manage fish waste in order not to attract flies. Disposal via municipal waste is acceptable. It is advisable to freeze or store waste fish and other food products in airtight containers until removal from the premises.

2.14.2 Bio-hazardous and medical waste

Medical waste is distinct from general waste and comprises of:

- potentially infectious waste materials which include expired medication;
- medical rubber gloves;
- injectable medication bottles;
- any organic material such as scabs, organs and waste removed during operations or medical procedures.

All medical waste must be placed in a red bio-hazard bag and disposed of by a professional medical waste company. The nature and volume of the waste in the container will determine how often the bin must be emptied. All sharp medical waste such as needles, scalpel blades and broken glass must be discarded in a dedicated sharps container. This container must be replaced once it has reached the level indicated on the container.

2.14.3 Carcasses

Carcasses and organic wastes suspected of disease contamination, or those that have been euthanased using potentially harmful chemical methods, must be incinerated. The discarding of carcasses must be done in accordance with local regulations and permit conditions for the disposal of medical waste, e.g. by professional and accredited cremation service.

Standard: Waste Management

- Medical waste and pharmaceutical waste must be disposed of in accordance with the relevant legislation.
- All forms of waste management must comply with all applicable legislation.
- General waste must be disposed of in accordance with the relevant legislation.
- Carcass waste must be disposed of in accordance with the relevant legislation.
- Before donating any carcasses to third parties, the facility:
 - must first establish what the individual animal(s) died from and what the carcass(es) would be used for;
 - a database of the individual that the carcass has been donated to must include name, ID

number, species, species ID, what the carcass will be used for;

- Provide proof of legal acquisition;
- Ensure proper disposal.

2.15 CONTINGENCY PLANNING

Each facility must have a contingency plan that describes how the centre will deal with events that occur outside the range of normal operations and that may adversely affect the centre's ability to operate "normally". The big variance between facilities necessitates individual and specific plans. The minimum contingency planning that should be in place at centres should account for:

- Disease outbreak;
- Oil spill contingency planning;
- Disasters e.g. fire and flooding
- Operational limitation.

Standard: Contingency planning

- Facilities must have written contingency plans for disease outbreaks, oil spills (if applicable), natural disasters (e.g. fire and flooding) and operational limitations.
- These plans should be regularly updated, exercised and reviewed to ensure relevance and efficiency.

2.16 COMPLIANCE AND EVALUATION

Table 1: The checklist below summarises the standards for each section. It is a quick reference tool and should in no way be seen as a substitute for the main text in the document.

Category:	Standard:	Compliance check:
Ethics	Continuous learning and development of all staff must be demonstrated.	
	Evidence of a high standard of ethical conduct must be provided.	
Animal wellbeing	Measures to achieve the Five Freedoms and Five Domains for all seabirds undergoing rehabilitation must be implemented. (Appendix 6)	
Permits	Permits are required for all activities taking place at the rehabilitation facility and must be up to date.	
Record keeping	Records must be kept for admissions, deaths, releases and transfers of seabirds.	

	Records must be kept of fluid, feeding, and treatment protocols for individual seabirds.	
	Annual statistics must be kept.	
Admissions	All seabirds must receive the minimum care when admitted to a rehabilitation centre. (Appendix 7)	
Routine care during rehabilitation	The minimum routine evaluation procedures of bleeding, weighing, plumage testing, and veterinary and progress checks, must be adhered to and documented.	
	The minimum standard for managing the maintenance and replacement fluid needs of seabirds in care must be adhered to.	
	The nutritional needs of seabirds in care must be addressed by evaluating the amount, type and frequency of the feeding regime against the species, body condition, weight and age of the seabirds being fed.	
	The minimum dietary supplements must be given to all seabirds during rehabilitation. (Appendix 8)	
Laboratory work	Oiled feather samples must be collected from all oiled seabirds and properly stored. (Appendix 3)	
	The collection of blood must be performed by suitably qualified and trained personnel. (Appendix 4)	
	Post-mortems must be conducted on seabirds (especially in priority cases), and disposal of carcasses must be in accordance with local regulations.	
Veterinary protocols	Seabird rehabilitation facilities must work under the direct supervision of a South African Veterinary Council (SAVC) registered veterinarian and all treatments given to animals must be under the supervision of a veterinarian.	
	Rehabilitation facilities must adhere to guidelines relating to the prescription, maintenance, administration, purchase and storage of scheduled drugs in terms of Act 101 Of 1965.	
Transfer of seabirds between facilities	Facilities must document their threshold in terms of capacity and have a contingency plan in place for when this is exceeded.	
	A documented process must demonstrate that the minimum criteria have been applied in selecting seabirds for transfer to another centre	
Transport	When seabirds are transported, measures should be implemented to ensure adequate ventilation, temperature control and the prevention injuries	

Release protocols	The minimum criteria of weight, plumage and blood testing must be adhered to before the release of all seabirds.	
	Seabird rehabilitators must adhere to the recommendations and regulations of authorities regarding the permanent identification of seabirds prior to release.	
	There must be documented evidence of adherence to minimum criteria in the selection of an appropriate release site.	
	There must be documented evidence that an appropriate method of release was selected.	
Euthanasia	Euthanasia must only be performed by a veterinarian or under veterinary supervision by a para-veterinary professional.	
	Euthanasia must be carried out in a humane and ethical manner.	
	Carcasses must be disposed of in accordance with local regulations and permit conditions.	
The housing of non-releasable seabirds	Seabird rehabilitation facilities that choose to keep non-releasable seabirds in captivity must meet the minimum criteria for housing these seabirds.	
	There must be documented evidence why the seabird/s were not deemed fit for release.	
Infrastructure and design	Facilities housing seabird must meet the minimum standards.	
Disease control	Minimum standards must be followed for the prevention of disease transmission, this includes: <ul style="list-style-type: none"> • from external sources to the rehabilitation centre; • between seabirds and humans (Zoonotic); • among seabirds being cared for at the centre; • Between released birds and the wild population. 	
	The minimum standard for selecting products and the recommended protocols for cleaning and disinfecting must be adhered to.	
	Evidence of pest and insect control program must be provided.	
Human resources	Seabird rehabilitation facilities need to comply with the Basic Conditions of Employment Act, No 75 of 1997.	
	Staff, interns and volunteers working in seabird rehabilitation centres must have adequate training to perform required duties.	

Health and safety	Seabird rehabilitation facilities must comply with the Health and Safety Act, 1993.	
	Seabird rehabilitation centres must comply with all applicable legislation regarding all forms of waste management.	
	Minimum PPE requirements must be supplied to and used by all people working with seabirds.	
Contingency planning	Seabird rehabilitation facilities must have in place written contingency plans for dealing with for disease outbreak, oil spills, natural disasters and operational limitations.	
Seabird stabilisation	Seabird rehabilitation centres that work with seabird stabilisation units should ensure that the minimum standard for operating a stabilisation unit is adhered to.	

CHAPTER 3: MANAGEMENT OF REHABILITATION FACILITIES & PERMANENT CAPTIVITY FOR SEABIRDS

3.1 REHABILITATION

The goal of seabird rehabilitation is to provide humane care and conservation benefit to the species. This is achieved by meeting all the requirements for release while minimising the impact of captivity on the seabirds. From a conservation perspective, it is essential to ensure that the least amount of disturbance is caused to the breeding cycle of the rehabilitated seabirds and that their time in captivity is kept to a minimum. All effort should be made to minimise the risk of contracting any disease in captivity and potentially spreading diseases to sensitive wild seabird populations, upon release. This is a delicate balance, and seabirds should be prepared for release into the wild as soon as possible to reduce complications associated with captivity.

This section aims to:

- Assist permitting authorities and other regulatory bodies with norms and standards to assess seabird rehabilitation facilities;
- Ensure that a standard for seabird rehabilitation is implemented and maintained.

Standards: General

- An organisation conducting seabird rescue and rehabilitation activities in South Africa must be a legal entity and hold a valid rehabilitation permit issued under the relevant legislation.
- All rehabilitation facilities must have a Standard Operating Procedure (SOP) document providing detailed

information about protocols and procedures.

- A permitted rehabilitation organisation must ensure that:
 - all staff and volunteers engaged in seabird rehabilitation activities comply with this document;
 - the organisation and its staff and volunteers comply with the conditions of their rehabilitation permit;
 - the organisation provides new and inexperienced staff and volunteers with appropriate and ongoing training and mentoring;
 - a process is established for handling alleged breaches of this document, or non-compliance with other relevant rules of the organisation;
 - a procedure is established for responding to complaints either from external or internal parties;
 - all staff and volunteers are given timely, clear and detailed directions by the organisation concerning the activities that they may carry out under the rehabilitation permit.

3.2 FACILITIES – INFRASTRUCTURE AND DESIGN

A seabird facility must ensure adequate infrastructure to ensure that the seabirds in their care have species-specific and safe holding areas and enclosures. The natural biology and behaviour of any species must be considered in the infrastructure design for seabird facilities. Standards for facilities are based on good judgement and sound practical sense. Boundary, roof and holding areas should ideally be wire mesh/walls of at least 1.5m high. To ensure that seabirds are housed in an acceptable way, the factors listed below need to be taken into consideration.

Hence, the layout and design must:

- be practical and aim to reduce stress to captive animals;
- be adaptable to allow a large intake of seabirds;
- prevent injury or escape;
- minimise stress to seabirds;
- enable safe levels of hygiene and prevent exposure to diseases;
- allow for areas and enclosures for various stages of treatment (e.g. intensive care, quarantine, pre-release, washing and drying of oiled seabirds);
- enable natural behaviours;
- provide adequate ventilation in all areas where seabirds are kept;

- prevent direct contact between seabirds undergoing rehabilitation and external factors (e.g. climate, noise, disturbance, stress, machinery, pollution, predation, wild birds and vectors);
- provide hygienic, insect and rodent free storage of food for birds, supplements and other nutritional requirements;
- provide adequate freezer space for storage of frozen fish, especially when there is a large intake of seabirds.
- Must adhere to SANS 10142: The purpose of this document is to provide, in a convenient form, common rules for the safety of specific, fixed, MV electrical installations in systems with nominal voltages above 1 kV not exceeding 22 kV a.c. and up to and including 3 MVA installed capacity. (All parts of the final MV installation below 1 kV are covered by the requirements of SANS 10142-1.) This document contains minimum requirements and additional information with regard to the safe operation, and to ensure acceptable reliability, of the medium-voltage part of an electrical installation.

Standards: Facility Design

- A facility must be able to provide enclosures or cages or pens:
 - of appropriate size;
 - made from appropriate materials;
 - that contain appropriate furnishings for all ages of all species that they commonly care for.
- A facility must have a designated area for intensive care treatment and quarantine.
- A facility must provide those birds undergoing rehabilitation with sufficient shelter from overheating, excessive rain and cold temperatures.
- Each bird must be able to turn about freely, and lie or sit comfortably, unless medically restrained.
- The construction material must be of sufficient strength and where practicable, be of a nonporous, waterproof finish to facilitate effective cleaning and disinfection.
- A facility must be made secure against rodents and potential predators, including adequate perimeter control.
- A facility must be constructed in such a manner as to prevent the escape of birds and to ensure the effective confinement of birds at all times.
- The water supply to the facility must be of continuous supply. The supply should be of such quality, quantity and pressure as to accommodate the filling pools, washing birds, washing down work areas and laundry needs.
- A facility must have at least one pool. The size and depth of the pool should be appropriate for the species commonly cared for.
- A facility must have a suitable substrate with adequate drainage to prevent birds standing on flat, wet and hard surfaces. The substrate should be non-slip. Irregular surfaces may be beneficial as it provides

natural exercising of the legs and feet (e.g. pebbles).

- The surface drainage should be adequate to allow for quick drying, and all floors should slope towards a drain. Drainage must be sufficient to ensure that there is no permanent standing water
- The drainage and washing water of the centre, must run into an adequate sewer and comply with the requirements of the National Environmental Management: Waste Act (Act 59 of 2008) and local authorities.
- Frozen fish must be stored at minimum temperatures -18 0C.
- There must be a reliable supply of electricity, sufficient for all electrical needs within the centre. Backup options such as batteries, generators should be considered for essential equipment in case of power failure.
- The code on electrical installations for wet areas must be adhered to within the centre. This is not limited to SANS10142.

3.3 CONSTRUCTION MATERIALS

Standards: Construction Materials

- All materials should be easy to clean and disinfect.
- Only materials that are impervious to water or that can be waterproofed to be made impervious, should be used.
- Materials used for walls should provide visual barriers and adequate ventilation, minimise chances of injury, and protect against ingress by predators and domestic animals.
- Suitable pool materials include plastics, fibreglass, rubber, cement and natural ponds.
- The internal walls and floor surfaces, shelves and tables of the facility must be of such a nature that they can be properly cleaned and disinfected so that hygienic conditions can be maintained.

3.4 ENCLOSURES

Assigning pen or enclosure size strictly by species is not always realistic. Enclosures should provide birds with the opportunities necessary for complete recovery from injuries and may include crates, cages, pens and aviaries. Enclosures should be designed to allow easy cleaning and access and minimise handling of birds. They should also ensure that seabirds undergoing rehabilitation are housed in a way that:

- prevents injury or escape;
- minimises stress;
- maintains safe levels of hygiene;

- allows natural behaviours.

The enclosure sizes recommended in the standards are the minimum (Appendix 9). The size requirements may vary due to the:

- function of the area, e.g. smaller intensive care unit vs larger area for washing and rinsing of birds,
- the species of birds, e.g. seagulls vs pelicans.

Alternative techniques for housing and pre-release conditioning are encouraged but must meet basic natural biology, comfort, husbandry and hygiene requirements.

Standards: Enclosures

- Enclosures must be constructed and maintained in such a way to prevent injury and escape.
- Enclosures must be designed and/or positioned to protect birds from physical contact with wild animals and pests.
- Enclosures must be designed and/or properly positioned.
- Birds in care must not be exposed to odours, vibrations or noises that are likely to result in unnecessary familiarisation, stress or illness. Use of certain aerosols and insect repellents can be toxic to animals in care and should be avoided, e.g. cigarette smoke in an enclosed area or loud music.
- Enclosures must be constructed from non-toxic materials that can be easily cleaned and disinfected.
- If multiple birds are kept within a single enclosure, there must be sufficient space for individuals to avoid undue conflict.
- Where practicable, enclosures must be appropriate for the species, and the types of injuries, stage of development and/or stage of rehabilitation of the animal being housed.
- Enclosures must maintain habitat elements appropriate to the species and the condition of the animal (e.g. perching, pools, suitable substrate).
- Enclosures housing birds not subject to critical care must allow for the display of natural behaviour and support rehabilitation for survival in the wild.
- All enclosures, including the substrate, must be kept in a clean and hygienic condition.
- There must be adequate ventilation in all areas where birds are kept.
- Cleaning and disinfection regimes must be appropriate for the species and excreta must not be allowed to

accumulate excessively in any enclosure, substrate or bedding.

- Incompatible species or individuals must not be housed in the same enclosure, or within sight of each other.
- Enclosures should be at least the size recommended in Appendix 9 for the species and stage of rehabilitation. These dimensions are suitable for average-sized adults. Smaller individuals may not require the space specified and larger individuals may require more space.

3.5 INTENSIVE CARE ENCLOSURES

Intensive care enclosures aim to reduce activity for a short period to facilitate frequent monitoring, treatment, feeding and re-hydration. Birds undergoing intensive care should not be kept in cages with exposed wire as it can cause feather damage.

Standards: Intensive care enclosures

- Intensive care enclosures must provide sufficient space for birds to maintain a normal posture (e.g. stand upright) and to stretch its body and limbs, but not enough space to run, jump or fly.
- Intensive care enclosures must provide a constant temperature appropriate to the species, age and nature of the illness or injury.
- Birds in intensive care housing must experience a light-dark cycle that replicates outside conditions. If an artificial light source is used, it must be separate from any artificial heating.
- Intensive care housing must be designed and/or positioned so that visual and auditory stimuli are reduced (e.g. by covering with a towel and placing in a quiet room).
- Intensive care housing must be adequately ventilated without allowing excessive drafts.
- The substrate used in intensive care housing must be replaced at least twice daily.

3.5.1 Intermediate care housing

This kind of housing provides mobile birds with enough space to allow some physical activity while enabling it to be readily caught for monitoring or treatment.

Standards: Intermediate care housing

- Intermediate care housing must provide sufficient space for birds to move about freely while being conveniently sized for quick capture.
- If an artificial heat source is provided, birds must be able to move to a cooler section of the enclosure.
- Intermediate care housing must have adequate air flow.
- Birds in intermediate care housing must experience a light-dark cycle that replicates outside conditions. This may be achieved by placing the enclosure in a well-lit room or a sheltered area outside.

3.5.2 Pre-release housing

This kind of housing provides birds with the opportunity to regain physical condition, acclimatise to current weather conditions and practise natural behaviour. At this stage of rehabilitation, interactions between birds and

Standard: Pre-release housing

- Pre-release housing must provide sufficient space for birds to move about freely and express a range of natural behaviours.
- It must provide areas where birds can gain exposure to prevailing weather conditions and locations where it can shelter.
- It must contain habitat that enables birds to perform a range of natural behaviours.
- For example, Seabirds require a pool of clean water deep enough for swimming and a dry area covered with a suitable substrate.
- Flying birds in pre-release housing should have some opportunity for flight. This may not be feasible for the larger seabirds; however, there should be enough space for the bird to flap its wings.
- Pre-release housing for birds capable of flight should have a double-door entry system.

humans must be greatly reduced.

3.6 POOLS

When designing pools for seabirds, the natural feeding, drinking and bathing behaviour of each species should be considered, along with the depth of water that best accommodates such behaviours. Both fresh water and salt water can be used. Pools must be of the appropriate size and depth for commonly cared for species.

Suitable pool materials include plastics, fibreglass, rubber, cement and natural ponds. Pool design must allow for exit points that will minimise damage to a bird's keel when exiting the pool e.g. a graduated side and/or roughened surface at the exit point.

Water quality is an important consideration. Birds can more easily preen and align their feathers in fresh soft water.

To control coliform bacteria, a water treatment filtration system can be employed. These systems can include sand, diatomaceous earth, ozone, biological, and ultraviolet light (UV). The addition of chlorine or bromine system in conjunction with the filtering system also aids in controlling the coliform level. Noxious odours such as ammonia and chlorine that can cause health problems at high concentrations should be carefully monitored.

Skimming capacity is essential for the health of the birds. Oils that build up on the water should be removed to maintain healthy feather condition. The number of skimmers should correspond to pool size and configuration.

Different species require pools of various depths:

- diving species require deep pools and may not enter a shallow pool such as a children's paddling pool;
- wading birds bathe regularly and require pools up to 25cm in depth;
- species such as terns and oystercatchers will fly over and feed off the water, but they do not float or bathe in deep water. These species benefit from graduated pools, with the depth proportionate to their size (e.g. shallower for smaller terns).

Standard: Pools

- Water must be of good quality and not interfere with feather waterproofing.
- The water in a pool should be clear and of good colour with a low bacterial count. (Coliform bacteria levels should not exceed 1,000 MPN (most probable number) per 100 ml of water). A coliform bacteria count over 1,000 MPN is an indicator of potentially harmful conditions.
- Water softness of 2–3 grains or 30–50 mg per litre of calcium carbonate is optimal.
- A higher concentration of minerals in hard water appears to interfere with feather waterproofing.
- The pH for saltwater should range from 8.0 to 8.3 and for freshwater 5.5 to 7.5.
- Pools must be equipped with a skimmer of appropriate size.
- Rehabilitation facilities without filtration must maintain a clean supply of water, and replaced on a regular basis.
- Drainage systems for land areas and pool areas must be separate to avoid pool contamination from run-

off when the areas surrounding the pool are cleaned.

- Drains, intake valves, and skimmers should be covered to prevent direct contact with birds. In filtered systems, care should be taken to provide covers to prevent the possibility of a bird being trapped.
- Pool design must allow for exit points that will minimise damage to a bird's keel when exiting the pool.
- Any sharp or abrasive areas must be covered to prevent injury and substrates should be appropriate to avert injuries to feet.

3.7 ADMISSIONS:

Standard: Admitting seabirds

- All rehabilitation centres must have a standard admissions procedure, and/or a Standard Operating Procedure (SOP) document that must be produced when required.
- Record all information as required in Section 3.9 of this document.
- All new admissions must be marked with a temporary and unique identification tag. This temporary identification must be maintained throughout the rehabilitation process.
- The following should be evaluated when admitting a seabird:
 - scan for transponder or record leg ID bands;
 - mass (weight);
 - blood (Blood evaluation; Packed cell volume and Total Protein, the presence of parasites, anaemia and infection);
 - hydration;
 - habitus and physical evaluation - all birds admitted to a seabird rehabilitation facility must be evaluated against the minimum criteria of hydration and habitus (Appendix 7). This will provide a guideline for treatment protocols to follow;
 - all birds admitted should be dewormed on admission with a broad spectrum deworming agent at the appropriate dosage;
 - oiled feather samples must be collected from all oiled birds and stored according to the recommended protocols. (Appendix 3);
- All seabirds must be diagnosed by a veterinarian or a person mandated by the SAVC;
- The veterinarian must prescribe a treatment plan, and seabirds under treatment should be assessed by the veterinarian at an interval determined by the prescribed treatment plan.

3.8 ROUTINE CARE DURING REHABILITATION

In order to adequately monitor the progress of seabirds undergoing rehabilitation, and make effective changes to treatment plans, minimum routine evaluations and checks must be carried out on all seabirds in rehabilitation facilities as listed in the box below.

Standard: Routine care during rehabilitation

- Seabirds receiving veterinary treatment must be assessed at the frequency prescribed in the veterinarian treatment plan.
- Seabirds that are not receiving veterinary treatment must be assessed at the frequency determined in the SOP's of the facility or as prescribed by the veterinarian and/or an experienced rehabilitator.
- Seabirds must have blood samples taken once per week.
- Blood smears and micro-haematocrit samples must be evaluated according to the recommended protocols. (Appendix 4).
- Seabirds must be weighed weekly. Hatchlings and small chicks must be weighed daily.
- Plumage must be evaluated for waterproofing qualities weekly.
- The fluid requirements of dehydrated birds must be addressed adequately and all seabirds receiving fluid therapy must be checked daily to establish the level of hydration.
- Seabirds must be fed a diet that is as close as possible to their diet in the wild. The recommended amount and frequency of feeds needs to be adhered to. (Appendix 8).
- Seabirds undergoing rehabilitation must have their ambient temperature requirements met.
- The correct dietary supplements must be given to all seabirds during rehabilitation.

3.9 RECORD KEEPING

Standardised record keeping is essential in order for facilities to give accurate reports on all seabirds in care. All records are a valuable source of information and should be as far as possible be collected and stored electronically in relevant databases. It is advisable to that a backup of the physical records is kept offsite.

3.9.1 Minimum Records Required

The following must be recorded for all seabirds admitted to the centre:

- date of admission;
- species;
- age (e.g. egg, chick, blue, juvenile, adult);
- area bird was found;
- name and address of the person/organisation who collected the bird (where possible);
- detailed reason for admission (RFA);

- body condition (including weight, habitus and hydration);
- temporary identification number used during rehabilitation;
- permanent identification number if applicable (SAFRING number and/or transponder number);
- outcome (release, transfer, death);
- outcome date (date of release, transfer, death);
- location of release if applicable
- reason for death if applicable;
- statement of death: natural or euthanasia;
- An indication of a post-mortem examination.

In addition to the above, the following must also be kept:

- results for tests performed to prepare the bird for release, e.g. weight, blood and waterproofing results, must be recorded for each bird;
- post-mortem examination results (if available);
- veterinary procedures and treatments for each bird including the following information:
 - daily records on the fluid therapy administered including type, quantity and frequency, even in emergency situations, e.g. oil spills;
 - daily records on the feeding regime including type, quantity and frequency;
 - daily records on treatment administered including drug, quantity and frequency;
 - all tests performed to assess the progress of seabirds, including weight results, blood results, veterinary checks and waterproofing results;
 - records regarding changes in physical behaviour.

3.9.2 Medical Records

Records for individual seabirds must be updated with information following medical/veterinary checks including diagnosis, prescribed treatment (drug name, dosage, frequency and duration of treatment).

3.9.3 Release records

The following should be recorded for all seabirds that are released:

- temporary identification number used during rehabilitation;
- permanent identification number if applicable (SAFRING and/or transponder number or other identification methods that may aid in identification);
- release date;
- release location must be recorded;
- method of release must be recorded;

- released birds must be marked using the standard agreed upon method.

3.9.4 Transfer records

The following must be recorded for all seabirds that are transferred to other centres:

- temporary identification number used during rehabilitation;
- permanent identification number if applicable (SAFRING number and/or transponder number or other identification methods that may aid in identification);
- transfer date;
- reason for transfer;

3.9.5 Marking Records

Unmarked specimens of marine seabirds must be marked in accordance with the method as may be determined by the permit issuing authority. Records of marked birds admitted into the facility must be kept and data submitted to the relevant organisation. These annual records should balance back to the number of seabirds in the rehabilitation centre.

Standard: Record Keeping

- Records need to be kept and reported to the relevant authority in the specified time period.
- All birds must be temporarily marked upon admission to identify them for the rehabilitation process.

3.10 RELEASE:

To ensure that only seabirds that possess an appropriate level of physical, cognitive and behavioural fitness are released to the wild.

Standards: Release of Seabirds after Rehabilitation

- Rehabilitated seabirds must be assessed as physically and behaviourally fit by a veterinarian or an experienced rehabilitator before release. Once released, seabirds will need to immediately be capable of foraging and defending themselves against potential predators.
- A bird must only be deemed physically fit for release if:
 - it is no longer in need of medical care;
 - exhibits no signs of active disease;
 - shows normal laboratory values, which must be tested;

- possesses plumage that is adequate for that species to survive (i.e. waterproof);
- possesses an adequate vision to find/catch food and manoeuvre in a normal manner;
- exhibits locomotive skills necessary for that species to survive;
- demonstrates proper species behaviour (e.g., not improperly imprinted);
- it is of correct age for independent survival;
- it is of correct weight for that species and age;
- it shows normal hydration (<3%);
- it has a Habitus of 4+.

3.10.1 Release timing, site and method

This section ensures that the release timing and site for rehabilitated seabirds are chosen to maximise the chances of survival in the wild with a minimal negative impact on wild populations. Choosing the most appropriate release site depends on the species, the number of seabirds to be released and a variety of environmental factors. Seabirds should be released in periods of favourable weather and early in the day to reduce the stress associated with readjusting to a natural environment.

Standards: Release timing, Site and Method

- Rehabilitated or hand-raised birds must be released near an active breeding colony, except releases for other approved conservation activities (e.g. creation of new breeding sites) provided that location is within the bird's normal home range and where such bird is ordinarily found in the wild.
- A suitable environment for release is one that must:
 - be free of any oil contamination or other significant environmental pollution, where there is no danger of re-contamination;
 - have an adequate food source;
 - provide all predictable habitat features that the species might require;
 - be as free from predators as possible, or not have higher predation rates than the site where they

were originally found.

- Birds must not be released in weather conditions that are likely to cause significant hardship or reduced chances of survival.
- Major releases should be done in consultation with local authorities and other relevant stakeholders.
- The best practice method of release must be where birds have the best chance to enter the natural environment with as little stress as possible.

3.10.2 Guidelines: Release methods

Table 2: The following are guidelines for the release of seabirds.

Penguins:	<ul style="list-style-type: none">• Releasing rehabilitated birds in an active breeding colony or from a boat is acceptable.• Hand-reared penguin chicks are best released into an active breeding colony, to establish or re-establish a breeding colony.• Penguins can be released from a beach but this is best done when a large group of penguins can be released together, with adults.• Beach releases provide good opportunities for media involvement and associated advocacy issues, but these factors should not compromise the birds by exposing them to higher levels of stress.• The public should be held at an appropriate distance and not be allowed to “crowd” bird access to the sea.• Beach releases should only be undertaken if enough staff and volunteers are present to assist with crowds and protecting the birds until they have reached the ocean successfully.
Gannets:	<ul style="list-style-type: none">• Gannets should be released from slopes down to the sea. A slope with a gradient of 45 – 50° down to the ocean is ideal. For easy lift-off, an onshore wind of at least 20 knots is needed. The bird should be released at the top of the slope. Gannets can be

	<p>released from a public beach as long as there is sufficient wind to assist the gannets with take-off.</p> <ul style="list-style-type: none"> Gannets can be released from a boat into the open sea.
Cormorants:	<ul style="list-style-type: none"> Cormorants are ideally released from a boat into the open sea or an existing colony.
Gulls and terns:	<ul style="list-style-type: none"> These birds can be successfully released where other gulls normally roost, including mainland colonies and island colonies.
Pelagic species	<ul style="list-style-type: none"> These species should be released offshore, as far out as possible. Also, some species should be released as far south as possible (depending on the time of year)

Table 3: The minimum criteria for releasing seabirds are:

Species	Minimum Weight Requirement	Testing Requirement	Blood Requirement
African penguin	Adult and juveniles: 2.8kg Blues: 2.6kg Must meet the requirements of the African penguin body condition index	100% waterproof	Yes
Cape Gannet	Adult and juveniles: 2.5kg	The ventrum of the bird needs to be 100% dry; the dorsum needs to be at least 80% dry.	Yes
Cape cormorant	Adult and juveniles: >1kg	The ventrum of the bird needs to be 100% dry; the dorsum needs to be at least 80% dry.	Yes

Crowned and Reed cormorants	Adult and juveniles: 800g	The ventrum of the bird needs to be 100% dry; the dorsum needs to be at least 80% dry.	Yes
White-breasted Cormorant	Adult and juveniles: 2.5kg	The ventrum of the bird needs to be 100% dry; the dorsum needs to be at least 80% dry.	Yes
Bank cormorant	Adult and juveniles: 2kg	The ventrum of the bird needs to be 100% dry; the dorsum needs to be at least 80% dry.	Yes
Kelp gull	Adult and juveniles: 800g	Plumage must appear visibly dry the the bird must be able to fly above 2m	No
Hartlaub's and terns	Hartlaub's Gulls: 200g Swift Terns: 250g Other terns: Check prominence of keel bone to assess body condition.	Plumage must appear visibly dry the the bird must be able to fly above 2m	No
Great White Pelican	Adults and juveniles: 7kg	100% dry after 1 hour of swimming	Yes

Standard: Release criteria

- All seabirds to be released after rehabilitation must meet the minimum criteria for release as set out in 3.10.2.
- The minimum blood values (collected not more than 48 hours prior to release) for all seabirds prior to release are as follows:
 - Packed Cell Volume (PCV): 38-50%;
 - Total Protein (TP): >4 /dl;
 - Blood smear must be negative for blood parasites, normal regeneration and the absence of active white blood cells and toxic granulation.
- A bird not meeting some of the above criteria but that is deemed fit may be released at the discretion of the attending veterinarian.
- Organisations need to monitor weather prior to the release day. Ideally, conditions should be sunny or slightly overcast with a light wind and a light to moderate swell.
- Birds rehabilitated over a long period of time will need good weather conditions to adjust to heavy weather conditions. This should be considered before releasing birds.
- Do not release under the following conditions:
 - a) Winds
 - Heavy rain with strong North-westerly winds especially in winter could seriously hamper African Penguins getting out to sea (when released by boat/beach). Gannets can get blown off course.
 - Do not release penguins from the beach with strong south-easterly winds (any whitecaps on the sea).
 - Gannets can be released with strong south-easterly winds (although not gale force conditions) as they will be assisted by the tailwind.
 - Other birds can be released in a moderate south easterly wind.
 - b) Swell
 - Do not release penguins from the beach when heavy swells occur (>3m).

3.11 CRITERIA FOR SELECTION – NON-RELEASABLE BIRDS

Non-releasable seabirds:

If a bird presents with one or more of the following conditions (but not limited to), it could be considered a candidate for permanent captivity:

- damaged plumage including, but not limited to, large bald patches, preen gland trauma (i.e. the bird cannot be waterproof);
- injuries that hinder normal swimming or foraging behaviour, e.g. severe flipper injuries;
- mild cases of neurological damage;
- seabirds imprinted on humans;
- mild cases of scoliosis (i.e. hunch-back seabirds);
- damage to barbs on the tongue and/or trauma to the tongue;
- Seabirds with severe beak deformities, e.g. skew beak, missing part of the beak.
- The decision to place non-releasable seabirds into permanent captivity should be made by a veterinarian. A signed veterinarian report must be available, stating why the bird is not releasable.

Standard: Non-releasable seabirds

- Demonstrate and document that a selection process for placing seabirds in permanent captivity is in place. A signed veterinarian report must be available, stating why the bird is not releasable.
- Be advised by the process for accepting birds into permanent captivity – (studbook, DNA, SANS)

IN ADDITION TO THE ABOVE, THE FOLLOWING SECTION IS EXCLUSIVELY APPLICABLE TO FACILITIES HOUSING SEABIRDS PERMANENTLY

3.12 HOUSING OF SEABIRDS IN PERMANENT CAPTIVITY

The management of seabirds in permanent captivity is regulated under SANS 10379:2005 (South African National Standard: Zoo and aquarium practice), which is the South African national standard for Zoo and Aquarium Practice. This standard includes provisions for management systems, the husbandry and welfare of animals, conservation and research practices and educational and recreational aspects.

3.13 CRITERIA FOR TRANSFER TO PERMANENT CAPTIVITY

To maintain the integrity of a metapopulation, particularly the genetic diversity, all movements of birds into permanent captivity must be advised by the relevant authority responsible for the regional Studbooks. All relevant information as required by the international database must be provided by the Rehabilitation facility to the regional Studbook.

3.14 CRITERIA FOR HOUSING IN PERMANENT CAPTIVITY

The criteria for housing seabirds on a permanent basis are:

- seabirds kept in permanent captivity must be kept in a facility licenced (permitted) and dedicated to managing captive populations. These birds must be included in the meta-population management protocol as implemented under international directives in conjunction with National legislation;
- the carrying capacity of the permanent resident enclosure must be adhered to, as guided by international best practice for zoos and aquaria;
- seabirds in permanent residence must be recorded in the Regional Studbook, and this information must be updated quarterly and published annually;
- seabirds in permanent residence must be DNA profiled and transpondered (microchipped);
- Captive populations need to be guided by International Conservation strategies, i.e. there needs to be a meta-population management plan advising the captive breeding process;
- Captive facilities need to demonstrate international best practice.

3.14.1 Samples for genotyping & Studbook

All facilities must liaise with the South African Biodiversity Institute (SANBI) concerning the collection of DNA samples and relevant information substantiating the sample.

All facilities must provide samples required to the Wildlife Biomaterial Bank (Bio-bank) depository managed by the SANBI. This will contribute towards the conservation of the species.

All facilities with permanent seabirds must participate in any regional or national studbook approved by the Department.

All facilities must provide the following information to the relevant studbook keeper:

- quantities and sex of specimens acquired;
- whether such specimens were born in the facility, purchased, received as a donation or a new loan, or a loan returned or a specimen that was deemed as un-releasable by a veterinarian;
- quantities and sex of specimens kept;
- quantities and sex of specimens disposed of, whether such specimens died, were sold, or given as a donation or a loan.

Standard: Criteria in the housing for permanent captivity

- There must be participation in providing updated information to any regional or national studbook approved by the Department.
- Relevant information must be provided to the Studbook Keeper within the requested time;
- seabirds in permanent residence must be DNA profiled and transpondered (microchipped);

- Captive populations need to be guided by International Conservation strategies, i.e. there needs to be a meta-population management plan advising the captive breeding process;
- Captive facilities need to demonstrate international best practice.

REFERENCES

- Animals Protection Act, 1962 (Act No. 71 of 1962);
- National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004);
- Performing Animals Protection Act, 1935 (Act No. 24 of 1935);
- South African National Standards (SANS);
- African Penguin Biodiversity Management Plan, 2013 (Gazette No: 36966);
- Nature Conservation Ordinance, 1974 (Act No.19 of 1974);
- Policy on the Management of Seals, Seabirds & Shorebirds, 2007 (Gazette No: 30437);
- Seabirds & Seals Protection Act (Act No. 46 of 1973);
- Threatened or Protected Marine Species, 2017 (Gazette No: 40876);
- WAZA Conservation strategy 'Conserving Wildlife';
- WAZA Welfare strategy 'Caring for Wildlife'.

STATE INSTITUTIONS

- South African Biodiversity Institute (SANBI): National Zoological Gardens (NZG)

ORGANISATIONS:

- Dyer Island Conservation Trust (DICT);
- International Wildlife Rehabilitation Council (IWRC);
- Pan-African Association of Zoos and Aquaria (PAAZA);
- Southern African Foundation for the Conservation of Coastal Birds (SANCCOB);
- Tenikwa Wildlife Rehabilitation & Awareness Centre
- The African Penguin & Seabird Sanctuary (APSS);
- The National Wildlife Rehabilitators Association;
- The New Zealand Wildlife Health Centre;
- World Association of Zoos and Aquaria (WAZA).

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