Global Federation of Animal Sanctuaries

Standards For
Aquatic/Semi-Aquatic Bird Sanctuaries

Version:

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INTRODUCTION

GFAS PRINCIPLES

The Global Federation of Animal Sanctuaries (GFAS) will designate an organization as "verified" or "accredited" based upon its substantial compliance with the standards listed below. GFAS recognizes that some organizations under consideration will operate valid rescue and rehabilitation programs with a goal of releasing wildlife to the wild pursuant to IUCN and/or other international or national standards. For those animals, lifetime sanctuary care may not be part of the organization's mission. While the care for these animals may be provided on an interim basis only, the organization is still expected to meet the standards below with regard to all animals in its care and for purposes of these standards it will be identified as a "sanctuary."

Consistent with GFAS' philosophy and the standards below, it is expected that a sanctuary does not adopt policy positions that are in opposition to the welfare of the species of animals in the care of the sanctuary (for example, while it is not required that a primate sanctuary affirmatively promote a policy against laboratory research using primates, it should not promote a policy in favor of such research).

Note: Several standards make reference to a sanctuary's "Director." GFAS recognizes that a sanctuary may use a different title, and the term "Director" is intended to reference the sanctuary's Sanctuary Director, who may be called an Executive Director or Chief Executive Officer, etc.

GFAS also recognizes that sanctuaries may rely on volunteers for certain functions, including some aspects of animal care (such as food preparation). Standards referencing "staff" may take into account appropriately qualified and trained volunteers as well as employees.

Appendix I of this document provides further guidance/suggestions on facility design and avian care. These are not requirements but rather provide sanctuaries with access to knowledge gained from experience at other sanctuaries/ avian care facilities.

ANIMALS COVERED BY THESE STANDARDS

Note: Aquatic bird species which spend nearly 100% of their time on the water (grebes, loons, auks and sea ducks), coming ashore only to breed; and those which spend a significant portion of their life in the air, capable of nearly constant long distance flight (petrels, shearwaters and albatross); have extremely specialized habitat requirements unlikely to be met within the sanctuary setting. These species are not covered within these standards.

Family/Genus/Common Names

a. Family: *Alcidae, Anatidae, Aramidae, Ardeidae, Balaenicopitidae, Burhinidae, Charadriidae, Chionidae, Ciconiidae, Dromadidae, Eurypygidae, Glareolidae, Gruidae, Haematopodidae, Ibidorhynchidae, Jacanidae, Laridae, Opisthocomidae, Pedionomidae, Pelicanidae, Phalacrocoracidae, Phoenicopteridae, Rallidae, Recurvirostridae, Rostratulidae, Scolopacidae, Spheniscidae, Thinocoridae, Threskiornithidae*

b. Genus: *Actitis, Actophilornis, Aenigmatolimnas, Agamia, Aix, Alopchen, Amaurornis, Amazonetta, Anarynchus, Anas, Anastomus, Anhinga, Anous, Anser, Anthropoides, Anurolimnas, Aphanapteryx, Aphriza, Aptenodytes, Aramides, Aramidopsis, Aramus, Ardea, Arenaria, Ardeola, Atlantisia, Attagis, Aythya, Balaeniceps, Balearica, Bartramia, Biziura, Bostrychia, Botaurus, Branta, Brucephala, Bubulcus, Bubulcus, Bucephala, Bugeranus, Burhinus, Butorides, Cabalus, Calidris, Cairina, Callonetta, Camptorhynchus, Canirallus, Casmerodius, Catoptrophorus, Cercibis, Cereopsis,*

Charadrius, Chen, Chenonetta, Childonias, Chionis, Chloephaga, Chunga, Ciconia, Cladorhynchus, Clangula, Cochlearius, Coenocorypha, Coscoroba, Coturnicops, Creagrus, Crecopsis, Crex, Cursorius, Cynaochen, Cyanolimnas, Cygnus, Dendrocygna, Diaphorapteryx, Dromas, Dryolimnas, Egretta, Elseyornis, Ephippiorhynchus, Erthrogonys, Esacus, Eudromias, Eudyptes, Eudyptula, Eudocimus, Eulabiornis, Europhyga, Eurynorhynchus, Euryopyga, Fratercula, Fulica, Gallicrex, Gallinago, Gallinula, Gallirallus, Geronticus, Glareola, Gorsachius, Grus, Gygis, Gymnocrex, Habroptila, Heliopais, Heliornis, Hematopus, Heteronetta, Heteroscelus, Himantopis, Himantornis, Histrionicus, Hydrophasianus, Hymenolaimus, Ibidorhyncha, Irediparra, Ixobrychus, Jacana, Jabiru, Larosterna, Larus, Laterallus, Leptoptilos, Leucophaeus, Limicola, Limnodromus, Limosa, Lophodytes, Lophonetta, Lophotibis, Leucogernaus, Lewinia, Lymnocryptes, Malacorhynchus, Marmoronetta, Megacrex, Megadyptes, Melanitta, Merganetta, Mergus, Mesembrinibis, Mesophoyx, Metopidius, Microparra, Micropygia, Morus, Mundia, Mycteria, Neochen, Neocrex, Nesoclopeus, Netta, Nettapus, Nipponia, Nomonyx, Nyctanassa, Nycticorax, Nipponia, Nomonyx, Numenius, Opisthocomus, Orepholus, Oxyura, Pagophila, Papasula, Pardirallus, Pedionomus, Pelecanus , Phaetusa, Phalacrocorax, Phalaropus, Phegornis, Philomachus, Phimosus, Platalea, Plectropterus, Plegadis, Pluvialis, Pluvianellus, Pluvianus, Phoeniconaias, Phoenicoparrus, Phoenicopterus, Plectropterus, Podica, Polysticta, Porphryio, Porzana, Procelsterna, Prosobonia, Pseudibis, Pteronetta, Pygoscelis, Rallina, Rallus, Recuvirostra, Rhinoptilus, Rhodonessa, Rhodostethia, Rissa, Rostratula, Rougetius, Rynchops, Salvadorina, Sarkindiornis, Sarothrura, Scolopax, Scopus, Somateria, Speculanas, Spheniscus, Steganopus, Sterna, Stictonetta, Stiltia, Sula, Syrigma, Tachyeres, Tadorna, Thalassornis, Thaumatibis, Theristicus, Thincornus, Thinornis, Threskiornis, Tigrionis, Tigrisoma, Tringa, Tryngites, Vanellus, Xema, Xenus, Zibrilus, Zonerodius

c. Common names: adjutant, anhinga, avocet, bittern, booby, brolga, buffelhead, canvasback, coot, cormorant, courser, crab-plover, crake, crane, curlew, darter, dotterel, dowitcher, duck, dunlin, egret, eider, finfoot, flamingo, flufftail, gadwall, gallinule, gannet, garganey, godwit, goldeneye, goose, greenshank, gull, hammerkop, hardhead, heron, hoatzin, ibis, jabiru, jacana, kittiwake, knot, lapwing, limpkin, mallard, merganser, moorhen, native-hen, night-heron, noddy, openbill, oystercatcher, painted-snipe, pelican, penguin, phalarope, pintail, plains-wanderer, plover, pochard, pond-heron, pratincole, puffin, pygmy-goose, rail, redhead, redshank, reef-egret, ruff, sanderling, sandpiper, sandpiper-plover, scaup, scoter, seedsnipe, seriema, shag, sheathbill, shelduck, shoebill, shoveler, skimmer, smew, snipe, spoonbill, steamerduck, stilt, stint, stone-curlew, stork, sunbittern, sungrebe, surfbird, swan, tattler, teal, tern, thick-knee, tiger-heron, turnstone, watercock, waterhen, weka, whimbrel, whistling-duck, wigeon, willet, woodcock, wood-rail, wrybill, yellowlegs

Version Updates:

New and Updated content released on February 2015

- G-1 Nonprofit/ Non-Commercial Status, P-3 Disposition Ethics and Responsibility, P-4 Disposition of Live Aquatic/Semi-aquatic Birds, P-7 Euthanasia

New and Changed content released on July 2015

- V-7 Breeding/Contraception – section a.

AQUATIC/SEMI-AQUATIC BIRD STANDARDS

GFAS notes that there may be other acceptable ways of meeting the intent of each standard, aside from those detailed below, and that in some instances there may be legal, cultural or other significant barriers to meeting GFAS requirements. The standards are considered mandatory, but GFAS will consider specific exceptions to some of the listed requirements (e.g., exact enclosure size, manner of record keeping, legal requirements that impact a sanctuary's acquisition policy, etc.). GFAS encourages sanctuaries to offer feedback on the standards and to explain any reasons why it believes it cannot meet a particular standard, or why the standard is not applicable and/or appropriate to its situation. Sanctuaries are also welcome to indicate a timeline for meeting a standard if the standard is not yet met at the time of application for accreditation for verification.

The exceeding of the standards is encouraged. In addition to meeting these standards, an organization is expected to comply with all applicable international, national, state/province, and local laws and regulations.

AQUATIC/SEMI-AQUATIC BIRD HOUSING

Unless otherwise directed by a veterinarian, aquatic/semi-aquatic birds are provided sufficient opportunity and space to move about freely and normally, and to exercise choice in location so as to reduce stress and maintain good physical condition.

H-1. Types of Space and Size

General

a. The habitat and living conditions are species appropriate and replicate, in as much as possible, the aquatic/semi-aquatic birds' wild habitat with a balance between hygiene and the species' physiological and psychological needs. This includes adequate space, both vertical and horizontal, and appropriate space, in terms of diversity and complexity.

   - The physical space provides varied opportunities for the aquatic/semi-aquatic birds to interact with the environment and key elements are changed often, resulting in a dynamic living space. Facility design takes into account caregiver- aquatic/semi-aquatic bird safety and the ease of maintaining a positive relationship.

b. The habitat provides appropriate visual, olfactory, and acoustic barriers.

c. The habitat provides security from predators and unauthorized human access.

Types of Enclosures

Outdoor Enclosures

d. Outdoor enclosures are designed for housing pairs, small, or large flocks in a manner that encourages natural behaviors including: flying, foraging, walking, swimming/bathing, and safely socializing as species appropriate.

e. Size of enclosure and number of birds housed is such that aggression between birds is minimized.

f. Outdoor enclosures include substantial areas which allow normal flight, walking and swimming; and perching/roosting structures designed to allow for appropriate social interaction with conspecifics as species appropriate.

- Enclosures provide clean water sources, which are large enough to allow for swimming, diving and wading.
    - Water does not pose a health risk to the birds and is of adequate quality to ensure birds remain waterproof.
    - Disposal of water obeys all local and national regulations and does not pose a threat of pollution.
    - If natural water features with no water treatment are used, numbers of birds are kept low enough to ensure water quality is maintained.
    - If artificial water features are used:
        - Water is changed regularly to maintain quality or:
        - Water is filtered through an installed water treatment system to maintain quality.
        - Water filtering systems may vary from complex recirculating designs with high flow rates, pressure sand filtration, ozone treatment, etc. to natural reed beds and undergravel filtration which filter water and remove/recycle organic matter.
- Enclosures include an indoor shelter to provide secure shelter during inclement weather, extreme weather (hurricane, tornado, heavy snow) during which outdoor containment could be compromised and to provide alternate housing for sick or injured birds, in close proximity to the social group.

Dimensions

g. Many factors influence the minimum space required for a pair or flock of aquatic/semi-aquatic birds, including, but not limited to: species, group size and composition, and enclosure complexity. The following are minimum requirements. Facilities provide as much space as is possible and/or practical.

h. Sanctuaries meeting only the minimum requirements for enclosure space employ additional environmental enrichment, focusing on physical and mental exercise rather than food, to compensate for reduced space and complexity.

i. General

- Enclosures are a minimum of 16 sq. ft. (1.48 sq. m) of dry substrate per bird, with a minimum vertical height of 7 ft. (2.13 m).
- Design allows birds to safely take off from land or water without colliding with enclosure boundaries.
- Indoor barn/shelters are large enough for all birds to have adequate space to rest on the ground, perch and comfortably move around. Minimum heights same as the enclosure.
    - Minimum of 2 sq. ft. (0.19 sq. m.) of open floor space per small bird.
    - Minimum of 4 sq. ft. (0.37 sq. m.) of open floor space per medium bird.
    - Minimum of 6 sq. ft. (0.56 sq. m.) of open floor space per large bird.
    - Perches are provided for roosting species.
    - Space is available to isolate birds within the flock, however very sick birds are removed, particularly if additional warmth or cage rest is needed. Birds are returned to their regular enclosure upon recovery

        - Birds carrying contagious diseases are completely isolated from the flock in a separate enclosure.
- Mixed species enclosures
    - Meet minimum space requirements for all species sharing an enclosure.
- Elderly, blind, or physically handicapped birds may be housed in appropriately sized enclosures, provided they are given time outside of the enclosure for exploring and exercising in a safe, appropriate space.
    - The sanctuary has documentation of veterinary support for such housing and provides as much activity and enrichment as possible and appropriate for each bird housed in this manner.
        - Enclosure size and equipment reflects the specific needs of the occupant.
- Flooring of indoor enclosures allows for adequate cleaning and sanitation.

H-2. Containment

Aquatic/semi-aquatic birds are safely contained.

General

a. Other than when being transported or for medical reasons, aquatic/semi-aquatic birds are kept at all times in secure enclosures or other appropriate areas.

b. Enclosures are designed to allow for aquatic/semi-aquatic birds' normal defense reactions and appropriate 'flight' or escape distances.

c. All enclosures are designed, constructed and maintained to securely contain aquatic/semi-aquatic birds and to present no likelihood of harm to them.

d. Distance or barriers between aquatic/semi-aquatic birds and between enclosures and personnel is sufficient to minimize stress to the birds and reduce the risk of disease transmission.

e. Enclosures are designed to allow for proper, safe cleaning and drainage.

f. Materials are appropriate for their particular application and are maintained in good repair.

g. Where larger predators such as raccoons are a concern, perimeter fencing is 0.5 in. (1.27 cm) X 0.5 cm (1.27 cm) and at least 16 gauge.

h. Netting, mesh, or wire is of durable material and of suitable size and strength to safely secure the species housed.
    - Enclosure material does not damage bird feathers.
        - Soft netting is recommended for most aquatic and semi-aquatic bird enclosures.

i. A regular program of sanctuary maintenance is in place.

Outdoor Enclosures

i. Perimeter containment of outdoor areas is constructed so as to prevent digging under the barrier by native wildlife, domestic species and the enclosure residents.
    - Fence is buried to a depth of 12 in. (30.5 cm) and or the enclosure has a buried wire floor connected to the fencing.

j. Fences and enclosures are inspected daily for signs of digging. Where fencing meets hard surfaces such as rock or concrete, the fencing is securely anchored in place.

k. Enclosure material is sufficiently secured to supporting posts in such a way that the weight of predators could not detach it from the support nor dislodge the supporting posts.

l. Outdoor enclosures may include a covering, such as a tarp, over the top to reduce the risk of wild bird droppings entering the aviary.

m. Outside areas may be covered with nylon mesh or netting to prevent predation from hawks and owls.

- A rope, string or twine grid may be placed over runs of non-flighted birds to provide protection from aerial predators. Grid width measures less than the wingspan of aerial predators.

n. If outdoor enclosures are not predator proof birds are checked throughout the day and secured before dark.

o. Smooth, solid barriers along the base of any mesh containment may be used to limit predator entry to enclosures and reduce risk of foot and leg entanglements for long legged species.

p. Gates and doors are designed and maintained so as to prevent native wildlife, domestic species, and other enclosure residents from lifting them from their hinges or unfastening the securing device.

q. Where snake predation is a concern, care is taken to regularly inspect and secure foundations, floors, ceilings, enclosure framework and mesh attachments such that snakes are not able to gain access to avian enclosures.

Indoor Enclosures

r. Indoor enclosures are predator proof for known predators within the geographic region and birds are secured indoors at night where no predator proof enclosure exists.

- Minimum 6 sq. ft. (0.56 sq. m) per large bird and 2 sq. ft. (0.19 sq. m) per medium and small bird.
- New construction takes into consideration the use of a concrete base or at least one level of concrete block as a base to reduce predator risk.
    - If concrete is used, it is textured to reduce risk of pressure necrosis of the birds' feet and covered in a clean, dry substrate.
- Where plastic coated wire, plastic mesh or slatted flooring is in place it is covered with a suitable porous material (astroturf, the soft plastic matting used in wet areas such as sports changing rooms, or similar).
    - Wire flooring may result in abrasions, bruises or tears of the hock, shank or footpad. Slatted floors have been implicated in the development of leg deformities.
- Windows and doors are securely covered with heavy-gauge mesh wire or screening if predators are a concern.

H-3. Ground and Plantings

Ground cover indoors and out is healthy for aquatic/semi-aquatic birds. Plantings are appropriate and safe.

Vegetation

a. Any vegetation capable of harming birds is kept out of reach.

b. Trees within or near animal enclosures are regularly inspected, trimmed or felled as necessary to avoid birds being harmed by falling branches, toxicity, or trauma.
    - Key shade trees within an outdoor enclosure are identified and protected from damage.
    - Health of trees close to fence lines is checked regularly and any removed if there is fear of it coming down on fence line.

c. Any natural materials (*e.g*., plants and their products, such as seeds or fruit) are assessed for toxicity to the species held before use.

d. All outdoor enclosures for include living or fresh vegetation, which can provide visual barriers, shade and resting sites.
    - All plant materials in an enclosure are evaluated for potential toxicity, including leaves, buds, seeds, fruit, bark and flowers.

e. Enclosures may be planted with grasses, shrubs etc. that the aquatic/semi-aquatic birds do not tend eat, provisioning the animals with preferred plant material as part of the daily diet.
    - Shrubs and vines are checked regularly to ensure they do not provide an opportunity for avian escape from the enclosure.
    - Tall grasses are recommended in flamingo enclosures as they provide visual barriers without risk of injury.
        - Flamingo enclosures have few, or no, low bushes, large boulders or rocks. Where present bushes and rocks do not hinder flock movement.

Outdoor enclosures

f. All outdoor enclosures have a natural substrate such as grass, sand or gravel.
    - The substrate can be amended with organic materials, including but not limited to soils, grasses, straw, hay, and wood shavings. Amendments are chosen for their hygienic properties and ease of maintenance.
    - Textured concrete aprons may be used around artificial water features for ease of cleaning.
    - Natural water features such as ponds and pools include aquatic plants for grazing and to provide visual barriers.
    - The substrate drains well. Appropriate rainwater runoffs are included in enclosure design as needed.
        - Substrate for aquatic/semi-aquatic species remains as dry as possible to optimize foraging and reduce the risk of food mold/spoilage-related illness.
        - Where organic materials are provided in place of natural grasses, care is taken to ensure the enclosures do not become damp or moldy.

g. Enclosure plantings may be utilized to provide visual hides/blinds. Deciduous climbing plants such as clematis, grapevines, etc, may be grown on the outside of the enclosure to form a natural semi-shaded canopy immediately above the aviary.

Indoor shelters

h. All indoor enclosures have a floor of concrete or other non-porous material, which is sloped to a drain and covered with an appropriate substrate.
    - Materials suitable for use as substrate include, but are not limited to, straw, hay or wood shavings, as species appropriate.
    - Drainage is not blocked by substrate.

- Substrate is not prone to retaining moisture or becoming moldy. Substrate is changed regularly to reduce risk of mold and moisture buildup.

i. Plants which have been determined to be safe for the species housed may be placed within the shelter to provide visual hides/blinds.

H-4. Gates and Doors

Aquatic/semi-aquatic bird enclosure gates and doors are appropriately designed to ensure both bird and human health and safety.

General

a. Housing requirements all include a double entry system so that there are two doors (or a door and a safety net) between the aquatic/semi-aquatic birds and freedom at all times. The two elements are never open at the same time.

- Doors and gates are designed to allow transport crates to be moved in and out of the enclosures.
- Installation of a trap cage, soft net sub-ceiling, and/or walls which can be lowered/moved inward to reduce flight area is recommended, as species appropriate, to facilitate safe, rapid capture.
    - Birds are acclimated to these modifications to reduce risk of injury.

b. Gates and doors are designed to remain functional under all circumstances, are maintained in good working order and free from any encumbrances that may prevent opening and closing.

- Safety catches are present on any doors leading to the outside except where there are two or more doors between the birds' enclosure and the outdoors.

c. Gates, doors and safety netting are designed/chosen to allow caregiver view of enclosures while operating the doors.

d. Doors are located at a level appropriate for the species housed. Ramps are provided, as needed, for ease of entering and exiting shelter. Openings allow the birds to maintain normal posture while entering and exiting.

e. Doors and door hardware are properly maintained to ensure proper functioning.

f. Where moveable pens are placed outdoors, a screened enclosure, mesh screen or cloth are used to reduce the risk of escape.

H-5. Shelter

Aquatic/Semi-Aquatic birds have access to man-made shelter that provides each individual with protection from extreme weather (including, but not limited to, prevailing wind, snow, sleet, rain, sun, and temperature extremes).

a. Aquatic/semi-aquatic birds have space to seek refuge from sun, wind, inclement weather and enclosure mates.

- Shelters are of sufficient size and/or number to comfortably provide protection for each bird housed in the facility.

- Where open sided nest boxes are used for shelter, they are constructed of wood or other durable, non-toxic material and are designed to facilitate cleaning, inspection and egg management. Nest boxes provided do not increase territoriality or aggression.
    - Nests built are regularly inspected for eggs and dismantled if too large to allow for thorough inspection. (See Standard V-7 Breeding)
- Shade is provided in multiple locations within enclosures to ensure that all birds have simultaneous access to shade throughout the day.
- Shade and shelter can be created through natural and artificial means including shade trees and shade fabric.
- Shelter areas provide dry space during wet weather, as well as protection from wind.

H-6. Enclosure Furniture

Aquatic/semi-aquatic birds are provided with an appropriately complex and rich habitat to explore, to ensure the birds' physical, nutritional and stimulation needs are met.

General

a. Enclosures are equipped, in accordance with the needs of the species housed, with bedding material, branchwork, nesting/hide boxes, water features, appropriate substrate, vegetation and other enrichment materials designed to aid and encourage normal behavior patterns and minimize any abnormal behavior.
    - Where nest boxes are provided care is taken to avoid increased territoriality and aggression. Nest boxes are regularly inspected for eggs and appropriate steps taken (See Standard V-7 Breeding)

b. Appropriate complexity is provided through the use of various natural and artificial materials in the enclosure, using a combination of items including, but not limited to, those listed above.
    - Items are removed when they become soiled, damaged or novelty has diminished.

c. Aquatic/semi-aquatic birds are provided access to the vertical space available within the enclosures as species appropriate.

d. Enclosures have multiple visual hides/blinds such as live plants with leaves or suspended cloth sheets to allow birds to find places with privacy to reduce potential aggression with the flock and stress from the sudden appearance of people or wild avian predators.

Outdoor Enclosures

e. Water sources including natural streams and ponds or manmade pools are provided.
    - Sand substrates are used with caution for species such as lesser flamingo which are at risk of ingestion and secondary impaction.
    - Fiberglass, concrete or rock and concrete may be used to construct pools. Plastic linings may be acceptable for some species.

f. Areas for scratching and pecking, with a variety of substrates, are provided as species appropriate.

g. Visual barriers are used to avoid confrontation or aggression, and include climbing structures, walls, shade structures, topography and large enrichment items.

Indoor Enclosures

h. To the greatest extent possible, indoor enclosures meet outdoor enclosure criteria.

Perching and Resting Areas

i. Perches are of a variety of diameters and textures suitable for the species and arranged in the enclosure to allow all birds multiple comfortable locations and elevations to perch and to allow birds to walk or fly from one perch to another. Metal pipe is not used for perch construction.

- Perches are renewed and replaced regularly; but not all perches are renewed at the same time, as major change in perching arrangements can be disruptive.
- Birds who cannot fly or are only capable of limited flight, those with foot or leg injuries and/or any other physical disability are provided with special ramps, platforms or other specialized structures as appropriate for their condition.

j. Perches within the enclosure are appropriately positioned to allow for natural flight patterns, including take-off and landing, of the species who use them.

k. Platforms, straw bales, shavings or other non-slip surfaces are provided for roosting off the ground, as species appropriate.

H-7. Sanitation

Proper sanitation is practiced to reduce pathogen transmission.

General

a. Local, county, state laws regarding proper waste removal are observed.

b. Disinfectant and sanitizing products used allow for safe cleaning of avian enclosures where it is not possible to transfer birds from enclosures prior to cleaning, disinfection and/or sanitizing.

- Areas are wiped dry after use of stronger disinfectants, such as dilute bleach, before birds are once again allowed access.

c. As fomites (shoes, clothing, etc. which carry infectious materials) may be a source of zoonotic disease, all who may come in contact with such materials are made aware of these risks and trained accordingly. (See also Standard V-8, Zoonotic Disease Protocols).

d. Uneaten perishable food is removed within a timeframe appropriate for the type of foodstuff and size of enclosure, prior to molding or contamination.

Removal of Animal Waste

e. Animal waste is removed from the habitat as often as necessary to prevent contamination of the aquatic/semi-aquatic birds contained therein, to minimize disease hazards and to reduce odors. This also enables caregivers to collect fecal samples in a timely manner.

f. Soiled bedding material and substrate are removed and replaced with fresh materials daily, or as needed to prevent buildup. If odorous, bedding is changed regardless of how long in place.

g. Avian waste is handled with precautions appropriate to bio-hazardous waste, and is not composted.

h. Damaged and soiled enrichment items are removed daily, or as soon as possible.

i. Efforts are made to prevent native wildlife getting access to avian waste.

Tools

j. Each enclosure has dedicated tools to prevent cross contamination between enclosures. When resources restrict the ability to have dedicated tools, tools are disinfected between enclosures to prevent the spread of parasites and disease.

k. Tools are labeled when use is restricted to specific areas.

l. Sanitation tools or equipment, including wheelbarrows, are not used for transport or storage of foodstuffs or bedding.

Cleaning and Disinfection

m. Feeding areas, automatic water devices, water and food containers are cleaned and disinfected daily.

n. Care is taken to minimize overspray of waste, directly or via aerosolizing, into adjacent cages during cleaning.

o. Birds are not present in enclosures being cleaned using power hoses. Care is taken to prevent accidental spraying of animals in adjacent enclosures when power hoses are used for cleaning.

p. Masks are available to staff cleaning avian enclosures and surfaces are dampened to reduce the risk of in halation of aerosolized avian waste and dander.

q. Concrete floored enclosures are dried thoroughly before bedding material is replaced.

r. All hard surfaces including walls, floors, ceiling, benches, climbing structures, cage mesh and caregiver work areas are sanitized regularly to the extent possible. Note that in large outside enclosures with plenty of exposure to sunshine and rain, there may not be a need for regular scrubbing and cleaning but areas are monitored for potential sanitation problems.

s. Cleaning and Disinfection Standard Operating Procedures are developed and followed to address:

- safe disinfectant use to prevent hazards to the birds, caregivers and the environment;
- cleaning and disinfecting protocols for food preparation and veterinary care areas using more powerful disinfectants on hard surfaces;
- daily, weekly, monthly and quarterly cleaning schedules for all hard surfaces including walls, floors, ceiling, benches, cage mesh and staff work areas are designed to minimize the risk of disease transmission;
- disinfectants and other cleaning products stored separately from foodstuffs.

t. A Material Safety Data Sheet (MSDS) or equivalent is readily available for all cleaning products in use and all containers are properly labeled as to contents.

H-8. Temperature, Humidity, Ventilation, Lighting

Temperature, humidity, ventilation, and lighting are appropriately addressed.

Temperature

a. The temperature is within an acceptable range for the species housed.

- Weather is considered in addition to temperature.
- Allowance is made to accommodate individual animals not able to tolerate temperatures above or below the usual range of comfort for the species.
- Great caution is taken with elderly, infant and disabled birds.

- Windbreaks and shade are sufficient to accommodate all aquatic/semi-aquatic birds simultaneously with consideration for social structure and relationships within and among pair/flocks.

b. In outdoor aviaries, aquatic/semi-aquatic birds have access to heated or cooled areas when ambient temperature falls outside of the acceptable range for the species housed.

- For most aquatic/semi-aquatic species temperatures below 40ºF (4.4ºC) and above 90ºF (32.2ºC) require supplemental heating and cooling respectively.
    - Access to water features is generally sufficient for cooling.
    - Particular care is taken with long-legged wading birds, which are prone to frostbite, as their circulation is designed to maintain core body temperature at the expense of the extremities, and restricted movement and cold temperatures may cause severe tissue damage to the lower limb.

c. In indoor enclosures, providing aquatic/semi-aquatic birds with opportunities to choose temperature ranges within an enclosure is preferred.

- Areas of additional warmth may be provided for elderly, sick or very young birds.
- Heated enclosures provide adequate ventilation to reduce excess humidity/moisture and the attendant health risks.
    - Species prone to pneumonia are kept at temperatures at/below 55ºF (12.8ºC).
    - Temperate bird species, in particular, are protected from overheating.
- Any climate control systems include redundancy and back-up power in case of equipment or power failure.

Humidity

d. Indoor humidity is kept within the optimal range for the species housed. Humidity should not be above 80% in controlled environments to prevent fungal and mold growth. High humidity can be mitigated through proper ventilation or dehumidifier systems.

- Where forced air heat is used and water features are not provided, misters, spray bottles or humidifiers may be needed to add moisture to the air.

Ventilation

e. Proper ventilation of indoor enclosures is used to maintain avian health.

f. Air recirculation systems, heaters, air conditioners and humidifiers are regularly cleaned and serviced to reduce risk of respiratory disease.

g. To the extent possible, separate air handling systems are maintained between avian housing areas to prevent disease transmission.

h. Window and door placement is designed to ensure sufficient cross-ventilation in warm climates.

Lighting

i. Light, natural and artificial, is appropriate for the species housed in terms of intensity, spectrum and duration.

j. Every effort is made to approximate the natural day length of the species housed. For tropical species housed in other areas supplemental lighting may be needed to ensure adequate time for foraging and other natural behaviors.

k. Indoor enclosures - Natural lighting is optimal and can be obtained using skylights, windows, roll-up doors, and other means.

- Newly arrived birds are protected from flying into windows by reducing reflectivity; brightly colored material strips hanging 2in(5cm) apart or Mobius strips will break up the reflection.
    - Windows may also be covered with netting to reduce reflection and, if properly placed, cushion any impact.

l. Supplemental lighting is provided to ensure adequate light for caregivers to observe animals, clean enclosures and perform related animal care tasks both day and night.

m. Species prone to fatal impact trauma when startled are provided with very low watt night-light (light level approximating moonlight) to aid in safe way-finding when startled at night, particularly in indoor enclosures.

n. Outdoor enclosures –Supplemental lighting is available for use in outdoor areas in event of an emergency.

NUTRITION REQUIREMENTS

N-1. Water

Fresh clean water is available in sufficient quantity.

Quantity

a. Fresh clean water is available at all times to all individuals.

b. Multiple water sources are available for flocks of aquatic/semi-aquatic birds to ensure all birds have constant access to water sources.

Quality

c. Water quality parameters are maintained at a generally acceptable level for aquatic/semi-aquatic birds in terms of turbidity, salts, etc.

d. Potable water sources are tested for contaminants annually.

e. All water sources (including water bowls) are cleaned at least daily, and more often if needed.

f. If automatic water devices are not used in hot climates, water sources are shaded or changed multiple times to avoid overly hot water.

Automatic Water Devices

g. Devices are tested daily to ensure water is available.

h. Devices are easily disabled when birds must be fasted for medical purposes.

i. When monitoring of water consumption is required, an alternative means of providing water is devised.

j. In colder climates, steps are taken (such as installation of heat sources) to ensure water consumption does not decrease with lower ambient air temperatures.

N-2. Diet

A properly balanced and healthy diet is provided appropriately based on the needs of each bird, pair or flock of aquatic/semi-aquatic birds, following veterinary instructions for special needs.

General

a. A veterinarian or qualified nutritionist periodically reviews all aspects of the aquatic/semi-aquatic birds' diet at the sanctuary.

b. Diets of individual, pairs and flocks of aquatic/semi-aquatic species (including vitamin supplementation) are of a quality, quantity and variety to match the physiological and psychological state of the individual as it changes over time, with consideration for the age, life stage, species, condition, and size of the individual.

c. Food is wholesome, palatable, free from contamination and of sufficient quantity and nutritive value to maintain all aquatic/semi-aquatic birds in good health.

d. The sanctuary utilizes a feeding regimen that ensures each individual receives adequate nutrition regardless of status in social group.

e. Where possible and appropriate, each bird, pair or flock's daily dietary needs are documented and made available to animal care staff.

f. In large enclosures, routine observation of feeding activity ensures all birds are able to access sufficient food.

g. Commercially prepared diets are not the sole diet for aquatic/semi-aquatic birds, but are fed as part of a diet which includes seeds, grains, insects, fresh vegetables, greens, and other whole foods, as species appropriate.

- The natural diet of each aquatic/semi-aquatic species is taken into account when developing sanctuary diets.

h. Grit in hanging containers is available at all times for grazing species.

Leafy Greens, Vegetables and Browse

i. Fresh vegetables and greens may be offered as enrichment to grazing species.

j. Grazing birds have access to fresh plant materials in pools, pastures and/or yards, as species appropriate.

k. All plants offered to aquatic/semi-aquatic birds are nontoxic and grown without chemical pesticides. Caregivers are trained to identify safe, non-toxic plant species appropriate for the birds.

Animal Protein

l. Feeding of fish-eating birds outside of the main swimming, diving water body is recommended to minimize pollution.

- The oily feces produced by these species can collect on the water surface leading to contamination of feathers and loss of waterproofing.

m. Commercially available insects including crickets, mealworms and waxworms may be offered to species who feed on the insects opportunistically.

- Care is taken to avoid the use of pesticides near avian enclosures.

Vitamins/Supplements

n. Prior to offering supplemental vitamins, the health and condition of the individual, pair or flock of aquatic/semi-aquatic birds, as well as the diet, is reviewed by a nutritionist experienced in avian care and/or the attending veterinarian.

Treats/Enrichment items

o. Species appropriate enrichment foods are fed in small amounts and dispersed throughout the substrate, water features and/or plants and trees to encourage natural foraging behaviors.

p. Preferred food items from the basic diet can be reserved for enrichment.

q. The calories in foods used as enrichment are considered when planning the overall diet.

r. Birds confined to indoor enclosures for medical or other reasons are provided with more frequent enrichment opportunities.

N-3. Food Presentation and Feeding Techniques

Food is prepared and presented in a safe and appropriate manner to meet aquatic/semi-aquatic birds' health and **social needs**.

General

a. Feeding and drinking receptacles are placed in positions that minimize the risks of contamination from soiling by the resident birds themselves, wild birds, rodents and other potentially invasive species.

b. Food receptacles, where used, are appropriate for the species housed in terms of number, size and placement, and are cleaned daily.

c. Receptacles for bird food and water are designed to minimize spillage and are not used for any other purpose.

d. Within open top enclosures, feeding is handled to reduce the risk of attracting wild birds into the enclosure.

e. Aquatic/semi-aquatic birds have access to feed throughout the day, allowing them to forage for naturally. Enclosures are raked or substrate changed as needed to prevent consumption of contaminated, moldy or rotten food.

f. Food items are place above floor level in indoor enclosures to minimize contamination.

Feeding Techniques

g. Variations in food presentation are considered part of the enrichment program for aquatic/semi-aquatic birds. Distributing food throughout an enclosure allows natural foraging behavior.

h. Food is offered in a manner that encourages positive social interaction appropriate to the species housed, including pair and/or flock feeding, sharing and foraging. Integrated individuals are fed together to maintain social relationships.

i. Birds are separated as needed to prevent aggression and allow for accurate determination of food consumption.

Diet Changes, Increases or Decreases

j. Adjustments made to an already formulated and nutritionally balanced diet are made to the entire diet to ensure continued nutritional balance.

k. Considerations for diet increase include weight and condition of all birds in the group, overall food consumption, activity level of the group, feeding competition and other medical or behavioral considerations.

l. Diet increases or decreases are made in modest increments with avian response to the change assessed for a minimum period before additional changes are made.

m. Underweight individuals experiencing health or behavioral problems may be separated for supplemental feeding as needed to avoid undesirable weight gain in conspecifics.

n. Newly arrived birds are slowly transitioned to the facility's aquatic/semi-aquatic bird diet of significantly different to previous diet.

N-4. Food Storage

Food is stored appropriately.

General

a. Separate and secure facilities are provided for proper and hygienic storage of food.

b. Dry goods (*e.g.*, seeds and commercial diets) are stored in clean, dry storage areas in sealed containers or on pallets. Products are dated and rotated to use oldest stock first, and expired food as well as bags damaged by pests is discarded.

c. Produce is stored in a clean, dry refrigerator, and is ordered at regular intervals in amounts that can be used prior to spoilage.

d. Forage and bedding (grass hay, alfalfa, straw and other baled products are stored in a sheltered area on pallets.

e. Items frozen for use are dated and labeled, and no frozen items are thawed and refrozen. Items that are not fed frozen are thawed in a refrigerator to minimize risk of spoilage.

f. Insects are housed per instructions from the provider or in appropriate insect colony housing . Insects intended for use as food are housed in appropriate containers to prevent contamination by insect pests.

N-5. Food Handling

Food is handled and prepared in an appropriate manner to retain nutritional value, freshness, and freedom from spoilage, invasive species, or other forms of contamination.

General

a. Food is protected against dampness, deterioration, mold, and/or contamination by insects, wild birds, rodents or other animals.

b. No food that is spoiled or otherwise contaminated is served.

c. Fruits and vegetables fed to insect colonies are changed often to prevent consumption of spoiled food items.

d. Diets are prepared in a safe and hygienic manner to reduce the possibility of contamination or spoilage.

e. Food preparation techniques meet all local, state/province, and national regulations.

f. Separate cutting boards, utensils, and food preparation surfaces are used when meats, fish, and produce diets are prepared in a common kitchen area.

g. Food preparation surfaces are thoroughly cleaned after use.

h. Staff and volunteers wash hands thoroughly prior to handling food, and wearing gloves during food preparation is recommended.

VETERINARY CARE

V-1. General Medical Program and Staffing

There is a written veterinary medical program, overseen by a veterinarian, with adequate support staff at the Sanctuary, with 24/7 veterinary care available on call.

a. The sanctuary has a written veterinary medical program, including long term preventative medical protocols, disease surveillance and containment procedures, that is developed and carried out under the supervision of a licensed veterinarian – the attending veterinarian - who has training or experience in providing medical care for the aquatic/semi-aquatic birds and other species housed at the sanctuary, and who is aware of specific health concerns regarding the birds at the sanctuary.

b. One or more full-time veterinarians specifically concerned with the veterinary medical program is highly recommended for sanctuaries whose budget will support the salaries of such trained personnel. Sanctuaries unable to employ a full-time veterinarian have access to a part-time veterinarian, under a contractual or other similar arrangement, with training and appropriate experience with the aquatic/semi-aquatic species housed at the sanctuary.

c. Veterinary care is available 7 days per week and 24 hours per day for the sanctuary on an on-call basis when a veterinarian is not physically on grounds. When the primary veterinarian is unavailable, there are other suitably experienced veterinarians on call.

d. There are support staff to carry out the following roles: (1) Husbandry (aquatic/semi-aquatic bird caregivers), (2) Technical (medical technologists, veterinary nurses, or individuals trained at the sanctuary), and (3) Clerical. The sanctuary has available properly trained and qualified professional and supporting personnel as necessary to implement these roles.

e. A staff member is trained to serve as medical program director, dealing with emergencies until a veterinarian arrives or is reached. He or she is able to direct any restraint of the aquatic/semi-aquatic birds, perform basic first aid, be responsible for administration of post-surgical care, and be skilled in maintaining appropriate medical records.

f. Medications are stored appropriately on site, according to label directions. Medications requiring refrigeration are stored separately from food items.

V-2. On-Site and Off-Site Veterinary Facilities

Veterinary facilities are appropriately located, designed and equipped.

a. Any on-site veterinary facility at the sanctuary meets all local and state/province building regulations.

b. Surfaces in the on-site veterinary facility with which aquatic/semi-aquatic birds can come in contact are non-toxic and can be readily disinfected.

c. The on-site facility is located away from areas of heavy public use to minimize noise levels for hospitalized aquatic/semi-aquatic birds.

d. The on-site facility has separate areas for any of the following veterinary functions performed on-site: physical examinations and medical treatments, enclosures for hospitalized birds, sterile surgery, necropsy, medical quarantine, laboratory, radiology and pharmaceuticals storage which includes, when necessary, a safe for narcotics that meets the standards set by applicable regulations (*e.g.*, the Drug Enforcement Administration [DEA] in the United States).

   - Food preparation areas, storage areas and staff locker room/housing with showers are separate from the medical facility.

e. If the sanctuary does not have an on-site veterinary facility, or only a partially outfitted veterinary facility, it has a contract or similar arrangement with a nearby veterinary hospital for off-site diagnostics and treatment as needed. The hospital should have a sterile surgical facility with anesthetic equipment, radiology equipment, a laboratory, and pharmaceutical storage. If necropsies are performed at the hospital, there is a separate area for necropsies and a separate storage refrigerator for storage of carcasses.

f. See also Standard V-4 “Clinical Pathology, Surgical, Treatment and Necropsy Facilities."

V-3. Preventative Medicine Program

The sanctuary has a complete preventative medicine program.

a. Appropriate preventative medicine programs are in place to manage all aquatic/semi-aquatic birds, with special attention paid to geriatric animals.

b. The preventative medicine program includes quarantine procedures, parasite surveillance and control, immunization, contraception, infectious disease screening, and periodic reviews of diets, husbandry techniques and invasive species control.

c. When circumstances permit, and as appropriate for the individual bird, an overall examination is performed annually, blood is collected, serum banked as a baseline control and the results are recorded. The attending veterinarian, in consultation with the sanctuary director, determines any schedule for routine physical examinations, including ocular and musculoskeletal assessment, and implements any necessary treatment.

d. A veterinarian, veterinary technician/nurse, or other trained personnel performs regular fecal examinations to look for pathogens (random enclosure sampling is adequate for group-housed aquatic/semi-aquatic bird). Results are recorded. Fecal examinations are repeated following treatment to evaluate efficacy.

e. All aquatic/semi-aquatic birds are immunized if recommended by the attending veterinarian, using currently recommended procedures and products as appropriate for the country, species and individual. Where possible, killed vaccines are utilized to minimize the potential for adverse reactions. Schedules and products are dictated by the disease status of domestic and wild animals in the area surrounding the sanctuary and relevant local and national laws.

f. When aquatic/semi-aquatic birds are immunized, the type, serial number, and source of product are recorded in the individual animal's medical record.

V-4. Diagnostic Services, Surgical, Treatment and Necropsy Facilities

Diagnostic services, surgical facilities and services, medical treatment for sanctuary aquatic/semi-aquatic birds and necropsy are all high quality, humane, professional, legal, and safe.

Diagnostic Services

a. Diagnostic laboratory services are available on- or off-site to assist with the evaluation of aquatic/semi-aquatic birds and the diagnosis of disease.

- Where diagnostic services are performed on-site appropriate safety equipment and training is in place, e.g. radiation exposure monitoring, personal protective equipment and hazardous material handling equipment; and there is a maintenance program in place for X-ray machines and other laboratory equipment.
- Diagnostic capabilities include radiology, cytology, microbiology, parasitology, complete blood count, blood chemistry, urinalysis, serology and other appropriate laboratory procedures.

Surgical

b. The sanctuary has access to surgical facilities (either on-site or at a nearby veterinary hospital) that are clean, free from excessive noise and unnecessary pedestrian traffic, have adequate lighting, ventilation, and temperature controls, and can be easily cleaned and disinfected. For off-site aseptic surgical facilities, an on-site area that can be adapted for occasional or emergency aseptic surgical use is available.)

c. Surgical facilities have access to appropriate anesthetics including injectable and inhalant anesthetics, reversal agents, etc. Where gas anesthetic equipment, including scavenger units, is used equipment is cleaned and calibrated and filters are replaced, annually at a minimum. Gas cylinders are safely stored and replaced regularly. Facilities have sterilized surgical packs, surgical preparation solutions, intravenous fluids, fluid administration equipment, pulse oximetry, heart monitoring equipment (*e.g.* electrocardiogram, stethoscope), and emergency drugs on-site with appropriate maintenance and/or replacement schedules for each.

d. If on-site, the sanctuary ensures that surgical equipment is maintained in good working order and is on a program of routine preventive maintenance and calibration.

e. Only a licensed veterinarian performs surgery, using standard operating procedures. (Note: A veterinary technician/nurse appropriately trained by a veterinarian in states or provinces where such action is permitted by veterinary practice acts can perform surgical first aid.)

f. The veterinarian uses aseptic surgical procedures whenever applicable.

g. Veterinarians and support personnel are compassionate and knowledgeable about the humane aspects of avian treatment, including the proper use of anesthetics, analgesics, and tranquilizers.

h. Surgical incisions are observed daily, or as frequently as possible while minimizing stress to the aquatic/semi-aquatic birds, for signs of dehiscence or infection. Analgesics are administered post-operatively when appropriate.

Treatment

i. Medications are maintained and used in accordance with local, state/province, and national laws and regulations and are administered in accordance with the state veterinary practice act, or equivalent outside the US.

j. The sanctuary has a pharmacy on-site where routinely used drugs, such as emergency resuscitative medications, antibiotics, anthelmintics, fluids, anesthetics, analgesics, tranquilizers, etc are maintained.

k. All medications are purchased, prescribed and administered under the guidance of the veterinarian.

l. When distributed to avian caregivers, medications are properly labeled and packaged, with the contents identified and instructions for the amount, frequency and duration of administration as well as the name and identification of the aquatic/semi-aquatic bird to receive the medication, the expiration date of the medication, prescribing doctor and number of refills if any.

m. All medical treatments and drug prescriptions are documented in the aquatic/semi-aquatic bird's medical record.

n. Basic physical capture and restraint equipment to facilitate medical treatment is available at the sanctuary.

Necropsy

o. Whenever possible, there is an isolated area on the grounds for performing necropsies, or appropriate storage facilities for holding the deceased aquatic/semi-aquatic bird until the body can be transported to a facility for a postmortem examination as soon as possible, understanding that necropsies performed longer than 24 hours after death may be of limited value due to autolysis of the body. (Note: Any refrigerated area for holding dead birds is physically separate from live bird holding, treatment, and surgery areas and from food supply storage or preparation areas.)

p. Disposition of dead aquatic/semi-aquatic birds and their parts meet all legal restrictions.

q. Dead specimens not used are incinerated or disposed of as deemed suitable by the veterinarian in accordance with local, state/province and national regulations.

V-5. Quarantine and Isolation of Aquatic/Semi-Aquatic Birds

Appropriate quarantine and isolation policies and accommodations are in place and utilized.

a. Upon arrival, all aquatic/semi-aquatic birds undergo quarantine for a minimum of 30 days, according to the protocol established by the attending veterinarian, or for a greater period if required by applicable law. The quarantine period may be longer for birds that have received minimal screening prior to arrival, such as birds from the wild. Birds previously housed together may be quarantined together.

b. If the sanctuary does not have an adequate quarantine facility, steps are taken to have aquatic/semi-aquatic birds undergo quarantine under these guidelines prior to their arrival.

c. Local, state/province, or national regulations regarding quarantine of newly arrived aquatic/semi-aquatic birds are followed.

d. All utensils and outer clothing used in quarantine are restricted to that area.

e. Protective clothing, if recommended by the attending veterinarian, and footbaths are used by all staff entering the quarantine area or areas containing quarantined birds. Quarantine clothing is not removed from the quarantine area, except in a sealed container if necessary for cleaning.

f. Caregivers have access to masks when cleaning or handling anything with which the quarantine birds come into contact.

g. If gloves are not worn (in an effort to reduce stress on the birds) sterile hand-washing technique is used before and after working in the quarantine area.

h. Where possible, staff working in quarantine areas does not work with other sanctuary animals. If this is not possible, work is done in the quarantine areas last.

i. Quarantine staff cares for newly admitted aquatic/semi-aquatic birds in their quarantine area before caring for sick birds, which are housed in separate isolation enclosures.

j. The quarantine area allows for daily cleaning and sanitation, either with removable catch trays or a drainage system that allows waste matter to flush into a septic system; waste is otherwise removed and disposed of properly.

k. In enclosures housing birds carrying infectious or transmissible diseases, to the extent possible, all surfaces of the enclosure are properly sanitized.

l. Quarantine areas have adequate ventilation, heat and air conditioning, which are used to ensure optimum conditions, particularly in the case of young, elderly or sick aquatic/semi-aquatic birds who may be more sensitive to environmental changes.

m. Separate air handling systems are maintained in quarantine and general sanctuary population areas to reduce risk of disease transmission.

n. Quarantine bird waste is handled separately from all other manure or compost at the facility. Because of the risk of disease transmission, quarantine waste is not spread on pastures or composted.

V-6. Medical Records and Controlled Substances

Complete medical records and appropriate statistics are maintained, aquatic/semi-aquatic birds have permanent identification, and controlled substances are prescribed and stored legally.

Medical Records

a. An electronic database format is recommended for most record keeping, but in either case, the sanctuary has a back-up system for the records.

b. Records that, if not required by law, are required by GFAS include but are not limited to:

Individual records

- Origin, age, species, gender, microchip number, band, photo, bio, etc.
- Individual veterinary record.
- Weight, current diet and record of diet changes.
- Food consumption and preferred food items.
- Where applicable and appropriate, any positive reinforcement training records showing completed objectives and those in development.
- Acquisition documents

Group records

- Welfare assessment for the aquatic/semi-aquatic birds as a whole including measures of: disease prevalence, morbidity and mortality rates, daily census, intake activity and disposition statistics.

- Inspection Reports, as applicable, from international, national, state/province and local agencies, as well as accrediting organizations.
- Other documentation, as applicable, such as complaints or police reports pertaining to specific birds or flocks of birds.

c. Medical records are dated, legible and indicate examination findings, treatments (types of medication, dosage, duration), surgical procedures, anesthetic procedures (type of agent, dosage, effect), results of all laboratory tests (parasitological, hematologic, bacteriologic, etc.) pathology reports, plus immunization records with all relevant dates, bird identification and nutrition/diet information, and, where applicable, necropsy reports.

d. Copies of medical records accompany any bird, pair or flock of aquatic/semi-aquatic species who is/are transferred to another sanctuary.

e. Medical records are maintained under the direction of the veterinarian or trained avian caregiver. Where possible, duplicate record sets are stored at another site, or in a fire proof or theft proof safe on site or an online storage system.

f. Statistics are tabulated regularly on the rates and nature of illness and mortality in the sanctuary.

Controlled Substances

g. Only a licensed veterinarian prescribes controlled substances used at the sanctuary, and all such substances are secured in accordance with any applicable laws.

h. The sanctuary maintains appropriate records and logs for all controlled drugs used. Controlled drug logs are kept up to date and comply with any national or other legal requirements (such as the Drug Enforcement Agency in the U.S.).

i. Expired controlled drugs are marked as such and stored separately.

j. Controlled drugs, are discarded in accordance with applicable national, state, and local law and regulations (such as the USDA and DEA in the United States).

V-7. Breeding/Contraception

No intentional propagation of aquatic/semi-aquatic birds occurs, sound practices are in place and implemented to prevent propagation and to properly care for chicks hatched at the sanctuary.

a. Although GFAS recognizes the importance of appropriate “conservation breeding” programs, they fall outside the mandate of GFAS Accreditation programs unless they adhere to the following guidelines:

- Animals are not brought into captivity for the purpose of breeding. Animals that are allowed to breed should enter a wildlife facility as a result of normal acquisition protocols such as surrender or government confiscation and be considered an endangered or threatened species with available release sites within the state/province, conducted with specific conservation goals, in accordance with local, state/province, national, and international law and regulations.

- Breeding should not be forced – that is, not the result of artificial insemination or being placed in enclosures of insufficient size or otherwise not in keeping with GFAS standards.

- Breeders – that is, the parent animals – should be released into the wild with their young. If breeding animals are deemed non-releasable, there should be documented evidence from a

qualified professional that the animals cannot be released because of a physical condition or other reason that would make them unable to survive in the wild. Offspring of non-releasable parents should not be released until an age of species-specific maturity for survivability.

- Non-releasable breeding animals should receive the care required of all animals under the GFAS standards and should not be maintained for the purpose of breeding if they have incurable or unmanageable pain or suffering and do not have an acceptable quality of life.

- The facility should have an identified release site for the breeding animals and offspring, with any necessary permits or memoranda of understanding in place. While GFAS may consider whether a definite plan (such as ongoing surveys of land for potential release sites and a timeline for releasing animals) is sufficient, it will not be sufficient for a facility to simply say that it hopes or plans to be able to release the animals one day. Thus, a facility may not breed any animals in captivity, even highly endangered animals in order to create a sustainable population, without a definite release plan in place.

- In such facilities chicks are reared according to current best practice guidelines.

b. Reproduction is controlled through habitat and egg management.

- Nesting behavior is discouraged through habitat design. Nesting sites are generally not provided in the enclosure; however, egg management may be used for species for which nest building is an integral part of their social behavior.
    - Nest boxes, if used, are regularly checked for eggs, which are removed. To reduce the risk of constant egg production, with subsequent health impacts, eggs may be replaced with 'dummies' or the eggs may be hard-boiled and returned. These replacement 'eggs' are removed once the bird has abandoned the unproductive nest.

V-8. Zoonotic Disease Program

The staff and sanctuary veterinarian are knowledgeable about zoonotic diseases that may affect aquatic/semi-aquatic birds at the sanctuary, and implement appropriate policies and procedures as needed to mitigate risk and deal with any exposures that occur.

a. Personnel have adequate training to understand the potential risk of disease transmission, including potential sources of disease, modes of disease transmission, and clinical signs associated with disease.

b. All personnel are informed when a zoonotic disease occurs at the sanctuary.

c. When a reportable disease is identified, all appropriate local, state/province, and national regulatory officials are contacted.

d. All areas in which the staff has direct contact with aquatic/semi-aquatic birds have hand-washing facilities available in the immediate vicinity (or an equivalent; e.g., bactericidal hand-wipes)

e. Human food consumption by the staff does not occur in the immediate area of avian contact.

V-9. Euthanasia

Euthanasia is governed by an ethical written policy that includes identification of appropriate personnel and procedures.

a. The sanctuary has a written policy addressing the circumstances surrounding euthanasia decisions and procedures, including the following:

b. Euthanasia is performed in compliance with any national or local law, administered under the strict supervision of a licensed veterinarian.

c. Euthanasia is in the best interest of the individual animal only used as a final option, and is not used as management tool (such as a means to create space for more animals).

d. Acceptable reasons for euthanasia include:

- Incurable disease/injury that is likely to cause unmanageable pain or suffering;
- Disease/injury where treatment is likely to cause unreasonable pain or suffering;
- Disease/injury where available treatment will not be effective in restoring the bird to an acceptable quality of life;
- Disease/injury where treatment is beyond the normal community standards of monetary expenditure and would cause an excessive burden on the sanctuary resources, and no other sanctuary can step in, after reasonable efforts to locate such a sanctuary;
- The process of aging has resulted in an unacceptable quality of life;
- In the event of presenting an infectious disease risk to some or all of the residents;
- For facilities engaged in the rehabilitation and reintroduction of wildlife, it is determined in accordance with an appropriate protocol or other “decision tree” analysis that an animal cannot be reintroduced to its natural habitat and there is no appropriate (consistent with these standards) long-term care option.

e. Euthanasia is performed so that it avoids distress to the animal, and unless impossible, is performed out of view of other animals.

f. The species and ecosystems are carefully considered during disposition activities.

WELL BEING AND HANDLING OF AQUATIC/SEMI-AQUATIC BIRDS

W-1. Physical Well-Being

All aquatic/semi-aquatic birds are routinely monitored to ensure their physical well-being. All aspects of husbandry, including veterinary care, environmental enrichment and diet are designed to optimize the birds' physical well-being.

a. The welfare of each individual bird, pair and flock is the overriding consideration in all sanctuary actions.

b. Aquatic/semi-aquatic birds are able to enjoy lives that are as close as possible to that of their wild counterparts as regards stimulation and interest through adopting husbandry and management procedures, including appropriate housing and enclosure design, environmental enrichment programs and positive reinforcement training programs, if species appropriate, and a balanced diet to meet nutritional requirements.

c. Aquatic/semi-aquatic birds are provided with opportunities to fly, swim, dive or walk, nest, forage for food, and play by providing species-appropriate structures, water features, open spaces to explore, places to hide and rest in comfort, and a variety of plants and substrates and other enclosure enhancements where food/enrichment items can be hidden.

d. Regular assessments are performed in an effort to measure the welfare of individual birds through monitoring of nutritional, physical and social conditions. Qualified personnel conduct daily observations of each bird, pair or flock to monitor for signs of physical abnormalities. Any unusual activities are recorded in a log at each inspection. Sudden changes in food consumption and other behaviors are immediately brought to the attention of supervisory staff. Note: Where it is not possible to observe each bird, pair or flock on a daily basis, time is spent observing all birds on at least a weekly basis, an accurate population count is maintained and health issues monitored.

e. Where possible and appropriate, records of individual birds, pairs and flocks are kept to provide both behavioral and veterinary history.

f. Where possible, aquatic/semi-aquatic birds' weight is assessed and recorded at least twice yearly to monitor for signs of illness and to determine dosages for chemical anesthetics.

g. The use of positive reinforcement training may be appropriate for those aquatic/semi-aquatic birds who enjoy interacting with people to provide additional enrichment, reduce the need for chemical immobilization and to reduce stress during medical intervention.

W-2. Social Housing

Aquatic/semi-aquatic birds are grouped appropriately with the safety of birds and staff in mind.

General

a. Aquatic/semi-aquatic birds housed in the same primary enclosure are compatible.

b. Aquatic/semi-aquatic birds are not housed near animals that interfere with their health or cause them physical or psychological discomfort.

- Avian and non-avian predator and prey species are not housed in close proximity.

c. Habitats are of sufficient size to allow appropriate space between individuals, within and between social groupings and to allow for temporary isolation from conspecifics.

d. Aquatic/semi-aquatic birds are housed so that no individual endures constant harassment or suffers physical injury, nor do social behaviors prevent any individual from maintaining proper nutrition and hydration.

e. The sanctuary has the ability to separate and isolate birds to address behavioral concerns. If aquatic/semi-aquatic birds are isolated for social reasons, all efforts are made to find a suitable social group within the facility or at another accredited institution.

f. Solitary housing is temporary and reserved for situations including, but not limited to: quarantine; medical assessment and/or care; lack of appropriate social partners or social tension resulting in disruption to the pair or flock, or physical aggression leading to injuries.

- Housing for species that are not naturally social or flocking takes their social needs into account.
- Birds in solitary housing may benefit from being able to see and hear other birds.

Social Housing

g. The individual developmental and social history of the aquatic/semi-aquatic bird(s) is taken into consideration when determining social groups.

- Birds are housed in compatible pairs or groups appropriate to the species' natural social structure(s) unless such pairs or groups present a danger to any individual or group or are restricted by the attending veterinarian for health reasons.
- Housing is designed to encourage pair and flock activity that benefits the individuals and the flock as a whole while discouraging aggression, territoriality, food and/or mate competition wherever possible.
- There is adequate space and options are available for individuals or paired birds to separate or hide from the group.

Mixed Species Housing

h. Compatible mixed species social pairs and/or groups may be encouraged as appropriate provided such pairs or groups present no danger to any individual or group.

W-3. Introduction of Unfamiliar Individuals

Introduction of any new aquatic/semi-aquatic bird to a social group is done according to techniques appropriate conspecifics and heterospecifics for each species, with staff safety ensured.

General

a. Every attempt is made to integrate social aquatic/semi-aquatic birds into conspecific flocks or partnerships as species appropriate.

b. Introduction of unfamiliar aquatic/semi-aquatic birds is closely monitored to ensure birds do not injure one another.

- In particular, caution is used when introducing adult male birds into social groups.

- As needed and possible, information listed below is gathered for the introduction planning process:
  - Age and gender
  - Social experience with other birds
- Criteria are established for separating birds if introduction does not proceed safely.
- All caregivers have a clear understanding of any contingencies for problems which might occur, and are empowered to take appropriate action in the event of a perceived emergency.

W-4. Behavioral and Psychological Well-Being

The behavioral/psychological well-being of each aquatic/semi-aquatic bird, pair, or flock is evaluated and addressed, and a welfare plan and report is part of the bird, pair or flock file.

General

a. There is a formal, written enrichment program that promotes species-appropriate behavioral opportunities and ensures captive aquatic/semi-aquatic birds' psychological well-being. A complete environmental enrichment program includes the following:

- Structural enrichment - Enclosure design and furniture that add complexity to the environment and promote species-specific behavior (*e.g.*, swimming/diving foraging/exploring, flying, perching).
- Object enrichment – Objects that encourage inspection and manipulation and promote species-specific behavior (*e.g.*, nesting, foraging, tool-use).
- Food enrichment - Varying food choices and food presentation, including the use of puzzles that increase food procurement time.
- Social enrichment – In addition to, or in place of, species appropriate pairing or flock structure, affiliative interactions between caregivers and aquatic/semi-aquatic birds may be appropriate in some instances. The decision to include social enrichment with caregivers should be made on an individual basis, considering only the social needs of the bird.

b. All avian care staff are trained to recognize abnormal behavior and clinical signs of illness. Measures of well-being that are assessed include:

- species appropriate behavior and interaction with other birds;
- the bird's ability to respond appropriately to variable environmental conditions, physiological states, developmental stages, and social situations as well as adverse stimuli.

c. Stereotypic behavior, self-injurious behavior, and inappropriate responses to various stimuli not previously documented or witnessed may be evidence of compromised well-being and are investigated. A plan to address the concerns is developed.

d. Where possible and appropriate, a behavioral/psychological profile for each bird, pair or flock is maintained and updated annually. A copy of this profile is kept in the permanent file of the bird, pair or flock.

W-5. Aquatic/Semi-Aquatic Bird-Caregiver Relationships

Positive relationships between aquatic/semi-aquatic birds and caregivers are maintained. Birds are not fearful or aggressive in response to human presence or routine care procedures.

General

a. Aquatic/semi-aquatic birds arrive at sanctuaries with a variety of previous experience with caregivers, which caregivers take into account in their interactions with these species.

b. A positive relationship between the aquatic/semi-aquatic birds and regular caregivers, animal managers and veterinary staff is one in which the birds are given the freedom to integrate with their conspecific social group with minimal human interference or to interact regularly with caregivers if they choose.

- Particular attention is paid to preventing stereotypic behaviors from developing in highly human-socialized birds.
- Staff are trained to perform routine duties in a consistent manner which helps the birds to anticipate where people will be during feeding, cleaning, etc. and allows them to move out of those areas.

c. Interactions with aquatic/semi-aquatic birds do not cause overheating, excessive cooling, physical harm, or unnecessary discomfort, and minimizes physical and psychological stress or trauma as much as possible.

d. Negative interactions are avoided. However, when they occur, efforts are made to recover trust and a positive relationship, if the bird enjoys regular interaction with people

e. Physical abuse, deprivation of food or water and other forms of negative reinforcement or punishment-based training are never used to train, shift or otherwise handle aquatic/semi-aquatic birds.

W-6. Handling and Restraint

Any necessary handling and restraint is done safely and appropriately, with minimal distress to aquatic/semi-aquatic birds. Staff are trained in aquatic/semi-aquatic bird-specific safe handling techniques/practices.

General

a. Handling for veterinary care is done as expeditiously and carefully as possible in a manner that does not cause trauma, overheating, excessive cooling, physical harm, or unnecessary discomfort, and minimizes physical and psychological stress as much as possible.

b. Staff and volunteers handling birds are given a background in scientific knowledge of, and advances in, bird behavior. Up-to-date information on bird behavior is utilized to ensure appropriate handling procedures to minimize stress.

- Except in case of emergency, birds are only restrained by animal caretakers trained in avian handling.
- Care is taken to avoid injury or stress to the birds during restraint procedures.

c. Acclimation of enclosure residents to a trap cage, or installation of features that facilitate minimum stress captures is highly recommended.
    - Catch pens, alleys and chutes may be used for larger birds, as species appropriate.
        - Smooth sided pens, not horse or cattle fencing, are used to create these facilities.

d. As species appropriate, shields, nets, gloves, hoods, towels or blankets may be used to ensure the safety of the bird and caretaker.

e. Use of gloves may be inappropriate for species that learn to (or may learn to) associate them with stressful situations. Use of nets, towels/blankets, or hoods may result in less stress for such birds.

f. Chemical immobilization is performed only by a licensed veterinarian or by trained staff under the guidance of a licensed veterinarian, or other qualified individuals authorized by the sanctuary director or veterinarian, following the laws and regulations of country where the animals are housed. Specific anesthetic protocols, including record-keeping, are followed.

g. Where possible and appropriate, positive reinforcement training is used to minimize the need for chemical immobilization and to reduce stress during procedures.
    - With appropriate training, many procedures can be performed cooperatively and without anesthesia, such as examination of body parts, treatment of superficial injury, heart rate monitoring and, in some instances, EKGs, and blood draws.

W-7. Animal Transport

Aquatic/semi-aquatic birds are appropriately transported to maximize safety and minimize stress and in accordance with all local, state/province, national, international requirements and laws.

General

k. Birds are transported only when necessary, such as when being transported to the sanctuary, to a medical facility for care, or to another accredited Sanctuary for reasons as described in acquisition standards.

l. Pre-transport health examinations ideally include a complete physical exam with attention to parasite checks, necessary vaccinations, and completion of any tests required by regulations of the receiving state/province or country.
    - For large groups of birds, a general flock health assessment is performed with parasite checks and any required tests done on a random sample from the group.

m. Health certificates and any required transport permits accompany the aquatic/semi-aquatic birds when being transported interstate or internationally. All transport abides by local, state/province, national and international law. A veterinarian is responsible for preparing and signing the health certificate.

n. Prior to transport, the sanctuary ensures that adequate facilities are available at the receiving end and food items that are familiar to the animal are available.

o. Where possible and appropriate, aquatic/semi-aquatic birds are acclimated to shipping container/carrier prior to transport. Capture, restraint, and transportation methods consider the bird's temperament and behavior in order to minimize injury, and distress.

p. At a minimum, transport enclosures meet appropriate animal welfare standards (*e.g.*, IATA, US Animal Welfare Act Transportation Standards or similar).

q. Transport crates and vehicles are in good condition and meet national and/or international standards. Equipment suitable for lifting, crating and transportation of animals kept within the sanctuary is readily available.

r. Transport containers:

- have impervious surfaces, which are cleaned and disinfected after use.
- provide adequate but not excessive space, which allows the bird to stand and turn easily while reducing the risk of panic flight injuries.
- are padded with absorbable material and/or a layer of deep litter to prevent injury and allow the birds to remain clean.
- are secured to prevent tipping or sliding.
- are darkened to reduce stress.
- provide adequate protection from weather extremes.
- are not wire bottomed due to risk of toe injuries.
- Aquatic/semi-aquatic species which are not prone to panic flight may be transported in the back of vans, SUVs, etc. on tarps and bedding provided that they are not overcrowded and the transport area is covered in such a way that the birds will not be caught or wedged in small crevices.

s. Any bird taken outside the sanctuary, for an approved reason such as medical treatment or transfer to a more appropriate sanctuary, is in the personal possession of the sanctuary director, or of competent persons acting on his/her behalf and adequate provision is made for the safety and well-being of the animal and public safety.

t. All birds taken outside the sanctuary are kept securely at all times. Birds are managed outside the sanctuary in such a way that the animal is under control and not likely to suffer distress, cause injury, or transmit or contract disease.

u. Complete medical records, diet and husbandry information, and identifying papers (*e.g.*, describing tattoos, or other identification methods) accompany all transported birds.

ADOPTIONS AND FOSTERING

P-1. Adoptions

Aquatic/Semi-Aquatic Bird adoptions are accompanied by appropriate legal documents that, specify the transfer of ownership within an agreed time frame, provide a lifetime safety net for the bird(s), and ensure humane and responsible care. Adoptions are only considered where it is legal.

a. A documented adoption policy/process is in place that includes, at a minimum:
   - Evaluation of each bird's health; behavior and temperament; companionship needs and flock grouping/relationships.
   - A recorded, detailed, legal description of each bird including any identifying marks, bands, microchips, etc.
   - An application and thorough screening process that ensures each adopter has the knowledge, skills and resources to manage and care for the intended bird(s) to be adopted.

b. Adopted birds are provided with appropriate living environments (including appropriate food, water, shelter, and safe enclosures), veterinary, and preventative care, all in accordance with GFAS Aquatic/Semi-Aquatic Bird Care Standards. The adopted bird's social, behavioral and companionship needs are also met.

c. All aquatic/semi-aquatic bird adoptions are accompanied by a legally binding document that includes at a minimum:
   - A safety net for the adopted bird by specifying the recovery of the bird should the adopting party fail to abide by outlined duties and expectations.
   - Prohibiting the adopter from allowing birds to reproduce or knowingly allowing eggs to hatch; selling or transferring the bird for slaughter; transferring the bird to a livestock auction; subjecting the bird to prohibited commercial uses, such as for eggs or meat.
   - The conditions under which an adopted bird can be returned to the original adoption organization or rehomed to a placement equal to or better than the current adoption placement, in accordance with GFAS Aquatic/Semi-Aquatic Bird Care Standards.
   - Specifying that the rescue/sanctuary organization be notified in the event of the death of an adopted bird. Birds are humanely euthanized only on the recommendation of the attending veterinarian.
   - Specifying the methods and time period(s) wherein the primary aquatic/semi-aquatic bird rescue/sanctuary facility may follow up on the adopted bird's health, welfare and progress and to ensure compliance with the terms of the agreement.

P-2. Foster Care Placements

Aquatic/Semi-Aquatic Bird foster care placements are accompanied by legal documents that do not transfer ownership but specify the responsibilities of all parties for providing humane and responsible care.

a. Aquatic/semi-aquatic birds in foster care placements are provided with appropriate living environments (including appropriate food, water, shelter, and safe enclosures), veterinary and preventative care, all in accordance with GFAS Aquatic/Semi-Aquatic Bird Care Standards. The bird's social, behavioral and companionship needs are also met.

b. All aquatic/semi-aquatic bird foster care placements provide physical facilities and levels of care equal to or above that of the primary aquatic/semi-aquatic bird sanctuary/rescue facility in accordance with GFAS Aquatic/Semi-Aquatic Bird Care Standards.

c. All aquatic/semi-aquatic bird foster care placements are accompanied by a legally binding document specifying the duties and responsibilities of each party.

d. All foster care agreements contain wording related to the recovery of the bird(s) should the foster home fail to abide by such duties and expectations, or if the foster home can no longer keep the bird(s).

e. Aquatic/semi-aquatic bird foster care agreements specify the methods and time period(s), wherein the primary aquatic/semi-aquatic bird rescue/sanctuary facility may follow up on the fostered bird's health, welfare and progress and to ensure compliance with the terms of the agreement.

f. Aquatic/semi-aquatic bird foster care agreements specify how potential adopters will be able to visit the bird(s) and under what circumstances and conditions.

g. Aquatic/semi-aquatic bird foster home caregivers have access to veterinarians able to make emergency calls, and the names and telephone numbers of those veterinarians are kept on file with the primary sanctuary/rescue facility.

h. Aquatic/semi-aquatic bird foster care agreements instruct caregivers to seek professional advice regarding potential tax benefits, if any, of fostering a bird.

i. The rescue organization has sufficient liability insurance to cover all birds located off-site from the primary aquatic/semi-aquatic bird rescue/sanctuary, and which ownership of has been retained.

AQUATIC/SEMI-AQUATIC BIRDS BEING RELEASED TO THE WILD

GFAS strongly supports the efforts of wildlife rehabilitators and sanctuary managers to return wildlife to its natural environment, provided appropriate steps are taken to ensure that the animals released are likely to survive in the wild.

Facilities releasing aquatic/semi-aquatic birds to the wild must also make every effort to reduce risk of their having a damaging impact on ecological resources, including other animal species, found naturally in the release area. Examples of risk factors include but are not limited to:

- Displacement of indigenous animals;
- Transmission of novel pathogens;
- Disruption of local human communities, including crop raiding and damage to property;
- Alterations to the environment that disrupt the ecological niche of other species.

For a more detailed discussion of the potential risks, as well as time and financial commitment involved in creating a quality re-introduction project, *see* the International Union for the Conservation of Nature Species Survival Commission (IUCN/SSC) Reintroduction Specialist Group's "Guidelines for Re-Introductions".

R-1. General Considerations

The sanctuary has policies, agreements and plans in place to optimize the chances for successful re-introduction of aquatic/semi-aquatic birds into the natural environment.

a. The facility has a written policy regarding the handling of any potential problems involving released birds. The policy should include but is not limited to:
   - a plan to minimize the risk to humans and property in the area of release;
   - a plan for compensation for or mitigation of damages incurred by the released birds;
   - a deterrent plan to discourage inappropriate activities, *i.e*., spending time around human habitation or crop raiding.
   - a plan for management or removal of birds who fail to integrate appropriately or who become habitual 'problem birds.'

b. In as much as possible, using the latest available information on potential health concerns regarding other species found in the area of release, birds are tested and treated for pathogens that might pose a threat to other wildlife.

c. The facility has agreements in place with any and all appropriate authorities to allow the release process to proceed as smoothly as possible.

d. Ideally, permissions, any necessary documentation, site determination, etc. begin as soon as it is determined that there are birds in care that are likely to be suitable for release.
   - In particular, facilities obtain any permits or other forms of authorization needed to proceed with the release.
   - Potential release sites are identified and evaluated as early in this process as possible.

e. Cooperative agreements are in place prior to birds being released which may include, but are not limited to:

- veterinary and scientific involvement in post-release monitoring;
- community acceptance of the project and involvement in habitat protection and awareness raising;
- landowner agreements enabling release, including the addressing of specific permissions and permits;
- involvement of NGOs with similar or conflicting interests that may impact (positively or negatively) the project.

R-2. Rescue Of Aquatic/Semi-Aquatic Birds

The sanctuary has developed guidelines for rescue work, taking into account staff and animal safety, contingencies for caring for the bird once rescued, and any local, state or national regulations or agency cooperation required.

a. Facilities accepting aquatic/semi-aquatic birds from the illegal trade have policies and procedures (ideally in writing) in place with the appropriate authorities that allow for rapid transfer of the animals to the sanctuary or rescue center. These policies and procedures are designed to reduce the risk of:

- disease transmission;
- habituation;
- Inappropriate or inhumane treatment, due to lack of knowledge, by personnel involved in seizure of wildlife from the illegal trade.

b. In as much as possible, while respecting local or national cultural/religious tenets, a euthanasia policy is in place to address situations where the bird's prognosis for survival is too low to warrant attempting treatment.

- In situations where field euthanasia is being considered, where possible and appropriate (*e.g.*, the bird is reasonably safe from further human interference and the stress of capture would outweigh the benefit of humane euthanasia), the option of leaving the bird *in situ* may be considered.
- See also Standard V-5, "Euthanasia."

R-3. Evaluation Of Suitability For Release

Aquatic/semi-aquatic birds admitted into sanctuary are evaluated for their potential suitability for release.

a. The sanctuary has a protocol in place (ideally in writing) to evaluate potential release candidates and to determine which birds are given priority for potential release.

- Birds who have spent little time in captivity and/or who have had little human contact are given priority for potential release.
- Birds found to be free of diseases and/or parasites of potential concern to the health of the population, particularly in the intended release area, are given priority for potential release.

b. All aquatic/semi-aquatic birds are treated as potential release candidates, particularly those who have not been kept long term as pets. If birds admitted into sanctuary are determined to be potential release candidates, every effort is made to protect them from exposure to human activities and to keep them as wild as possible.

R-4. Quarantine And Prerelease Housing

The sanctuary has appropriate quarantine facilities and prerelease housing for aquatic/semi-aquatic birds, with consideration given to sick and injured birds.

(See also Standards H-1 to H-9, "Aquatic/Semi-Aquatic Bird Housing," and V-5, "Quarantine and Isolation of Aquatic/Semi-Aquatic Birds")

General

a. Non-quarantine housing for aquatic/semi-aquatic birds being considered for release provides as close to natural a setting as possible. The space allows for foraging, flying, nesting and other actions naturally performed in the wild.

b. Quarantine facilities and prerelease housing for birds intended for release are situated a minimum of 66 ft. (20m), giving consideration to factors such as wind direction, from resident avian populations to protect them from exposure to pathogens present in the sanctuary population that could compromise their return to the wild. A wall surrounding the quarantine area reduces pathogen transfer risk and aids in restricting access to authorized personnel.

- Where this is not possible, sanctuary residents are screened for potential pathogens of concern, and pathogen-free birds are housed closest to the birds intended for release to the wild.
- Sanctuary birds being used as surrogates are screened for pathogens prior to introduction to any dependent aquatic/semi-aquatic birds.

c. Where possible and appropriate, sanctuaries follow International Wildlife Rehabilitation Council guidelines (http://www.nwrawildlife.org/content/minimum-standards) in dividing housing into three types:

- Restricted activity/mobility – for the initial stages of rehabilitation where the illness or injury requires the bird be treated and/or prevented from activities that would slow the rehabilitation process. At a minimum, the bird is able to maintain normal upright/alert posture and to stretch the body.
- Limited activity/mobility – for the recovery stage of rehabilitation where the bird is regaining mobility and building strength, and staff does not need access to the bird on a daily basis. The bird is able to move short distances and perform some limited flying and perching activities.
- Unlimited/Prerelease – the final stages of rehabilitation where the main concern is ensuring that the bird is fit for release. In this phase, the enclosure provides the aquatic/semi-aquatic birds with opportunities to demonstrate the skills necessary for survival in the wild.

Quarantine Housing

d. Sick or injured wildlife is quarantined in such a way that the rehabilitation process is begun during the quarantine phase.

e. Quarantine facilities have appropriate housing for the treatment of injured or ill aquatic/semi-aquatic birds.

f. Quarantine facilities are designed to allow for monitoring and, as needed, modification of behavior of birds intended for release.

g. Healthy birds admitted to quarantine have as large an enclosure as possible to help maintain natural locomotion and foraging behaviors.

h. Upon arrival, aquatic/semi-aquatic birds are quarantined for an adequate number of days, ideally for a minimum of 30 days. In some situations, a longer quarantine may be advisable.

i. The attending veterinarian works closely with regional, national and international experts and authorities to determine appropriate quarantine timing based on health risks to which the newly admitted aquatic/semi-aquatic birds may have been exposed.

Initial Housing for Orphaned, Ill or Injured Aquatic/Semi-Aquatic Birds

j. Birds admitted requiring treatment for illness or injury are housed in enclosures that allow for ease of care. These initial care enclosures can be smaller than that which is acceptable for long-term care.

- Dependent on illness or injury, either Restricted or Limited activity/mobility housing may be utilized.

k. Enclosures provide visual and acoustic barriers to minimize stress.

l. Dependent young birds are housed in nursery units, preferably with conspecifics, as species appropriate.

- Where safe, and species appropriate, adult birds are utilized as surrogates to care for the young birds, thus reducing human contact. Where this is not possible, puppets and other devices are used to prevent imprinting or inappropriate socialization.

Intermediate Housing for Dependent Aquatic/Semi-Aquatic Birds

m. As soon as the dependent birds are fledged or, in the case of precocial species no longer require specialized climate, they are moved to intermediate housing, where human contact is decreased and interaction with conspecifics is increased, as species appropriate. Where possible, the birds are moved to the release site and cared for in a soft release enclosure.

n. Birds are provided with adequate opportunity for swimming, flying, roosting/perching and foraging.

o. In as much as possible, conspecifics are used to teach natural behaviors, if species appropriate and necessary.

p. Intermediate housing is isolated from resident bird areas, ideally within a natural habitat which allows the young birds to adjust to a more wild environment.

Intermediate and Prerelease Housing for Sick or Injured Aquatic/Semi-Aquatic Birds

Note: Adult and independent young birds, dependent on their admitting condition, may not require intermediate housing.

q. Birds suffering from injuries that may affect their suitability for release are moved to intermediate housing while regaining strength. Birds are regularly evaluated to determine whether they are likely to be releasable. Once the birds are deemed fit, they are moved to prerelease housing.

r. Independent birds brought in for rehabilitation who can be released back into the environment from which they came are returned as soon as it is determined that the animal has recovered sufficiently to resume its presence in its former area.

s. Consideration is given to social and territorial issues that may affect safe return to the original habitat.

t. Prerelease housing for adult and independent young birds is ideally situated at the intended release site, allowing the birds to acclimate to their new environment before release.

u. In both intermediate and prerelease housing, sufficient vertical as well as horizontal space is provided to allow the birds to develop strength for flight and to display normal wild behaviors.

R-5. Diet, Nutrition And Foraging Skills

Aquatic/semi-aquatic birds are fed an appropriate diet that approximates that which will be found in the habitat to which they are released, and foraging behavior is encouraged.

a. As early in the rehabilitation process as possible, aquatic/semi-aquatic birds are exposed to the types of foods found naturally within the environment where they will be released and assessed for their ability to find appropriate foods and avoid inedible or poisonous foods.

b. Release candidates are fed in such a way as to encourage natural foraging behaviors.

c. Rescued birds admitted in poor physical condition may require specialized diets to recover their health. Nutritional deficiencies are assessed and diets modified to address those deficiencies. Once the birds are back on a normal nutritional plane, any foods not found in their planned release area are no longer fed.

R-6. Husbandry And Health

All aspects of care, including caregiver-aquatic/semi-aquatic bird relationships, introduction to social groups and overall health evaluation, are focused on preparing the birds for return to the wild.

a. Once a aquatic/semi-aquatic bird has been evaluated as a potential release candidate, all aspects of care are focused on preparing the bird for the wild.

- Human activities and noises are minimized in areas housing birds being prepared for reintroduction.
- Human interaction with birds being prepared for release to the wild is restricted to those activities that will enhance the birds' ability to live in the wild.

b. The bird is placed in an appropriate social group or paired with a compatible conspecific, as species appropriate. Where appropriate surrogate conspecifics are not available, dependent young birds may be reared by human caregivers using approved best practices for the species housed.

- Care is taken to ensure these young birds develop appropriate survival skills as well as intraspecific social behaviors.
- Birds are integrated into a social group as species appropriate as quickly as possible.

c. Introductions follow Standard W-3 "Introduction of Unfamiliar Individuals."

d. Opportunities to swim, dive, fly and learn skills in the natural environment are provided.

e. Birds admitted into care from the wild at the stage where they are already independent, with recoverable illness or injuries, are treated and released as quickly as possible, taking into account the potential for the bird not being accepted back into its previous social group or territory, as well as seasonal presence of the species in the area.

f. Caregiver-aquatic/semi-aquatic bird relationships for birds intended for release to the wild, while ensuring the birds' psychological well-being is met, focus on avoiding any types of interaction that may compromise the birds' chances for release;

g. Veterinary staff evaluate overall health including:

- recovery from the initial cause for admission to the facility;
- pathogen surveillance to ensure the bird does not present a risk to the wild population as a result of exposure during the rehabilitation process, using the latest available information from the OIE-World Organization for Animal Health (www.oie.int).

h. Birds being cared for in sanctuary for later release back to the wild are managed in such a way as to optimize their chances for successful return to the natural environment.

R-7. Health And Safety Of Caregivers Working With Releasable Aquatic/Semi-Aquatic Birds

No caregiver begins work with releasable aquatic/semi-aquatic birds until routine testing has indicated he or she poses no risk to the birds' release to the wild.

(See also Standard V-8, "Zoonotic Disease Program")

a. Caregivers working with birds intended for release to the wild are routinely monitored for potential anthroponoses (diseases that have potential to be transmitted to the birds).

b. Hematological testing and fecal cultures for pathogens may be utilized, as appropriate for the region, to ensure the health of both the birds and their caregivers. New caregivers should not have contact with the birds for the first two weeks of employment.

c. Provision of adequate nutrition for staff is considered as a possible contribution to the continued well-being of both staff and birds.

R-8. Assessment of Health and Skills

Aquatic/semi-aquatic birds are fully assessed for health and appropriate skills prior to release.

a. Aquatic/semi-aquatic birds who have completed the rehabilitation process and have been successfully integrated into a social group or pair, as is species appropriate, are further evaluated for release, with attention to health and the skills attained.

b. Each bird's skills (*e.g.* foraging, flying, swimming/diving, appropriate interaction or avoidance behaviors in the presence of conspecfics, avoidance of dangers including poisonous foods and potential predators) are evaluated.

c. A complete health assessment is performed including:

- Overall fitness as relates to being able to survive in the wild, keep up with a conspecific group, avoid predators, etc.
- Injuries and limitations that originally caused the bird to be brought into care are resolved, either completely, or to the extent that the bird has a reasonable chance for long term survival.

d. Birds have been tested, and found free of pathogens that have potential to harm the wild population in the planned release area, based on the latest current knowledge.

e. Genetic assessment has been done to ensure that the birds being released are of an appropriate subspecies/population/subpopulation for the release site, if the origin of the bird is unknown.

R-9. Determining Appropriate Release Sites

Release sites are evaluated for health and other threats and for appropriateness for the species.

a. The potential release site is evaluated for the presence of appropriate and adequate food sources.

b. The area is evaluated for potential health concerns.

c. The potential release site is surveyed to ascertain whether any wild conspecifics are present, either permanently or seasonally.

- Migratory birds are only released as seasonally appropriate, i.e. when conspecifics are still present or they are transported to a site appropriate for the season.

d. The area is evaluated to establish carrying capacity for the species to be released, taking into consideration others releases that may have already taken place and issues of territoriality. Birds are released in an appropriate habitat where carrying capacity for the species has not been reached.

e. The area is evaluated for instances of potential human-wildlife conflict.

f. IUCN guidelines are, in as much as possible, followed when determining release sites for rehabilitated aquatic/semi-aquatic birds.

g. Birds are released away from areas where there is potential for or has been a history of human-bird conflict.

R-10. The Release Process And Post Release Monitoring

Aquatic/semi-aquatic birds are supported as needed to adapt in their new environment and are monitored post release.

a. Once it is determined that the birds are able to sustain themselves within their new environment supplemental care is discontinued.

b. A post-release monitoring program is in place to ensure the rehabilitation program is providing released birds with the skills necessary to survive, that the habitat is adequate and that, as species appropriate, the birds have integrated into the wild.

c. Ideally, birds are returned to the wild using a soft release process wherein they are housed in an enclosure within the release area where supplemental food may be provided as needed and observation of their acclimatization may be observed.

d. Post release monitoring, in conjunction with outside veterinary and scientific personnel, continues for a minimum of one year.

- Where possible satellite tagging is used to monitor aquatic/semi-aquatic birds, particularly migratory species.

  - In addition to providing information on the individual bird tagged, data on migratory routes, critical stopover points and seasonal habitat used is often gained from monitoring released birds.

- Level of monitoring may decrease over time as birds are determined to be acclimating to the environment.
- Longer term monitoring of the birds and their impact on the habitat is preferred where possible.
- Practices used and results obtained, both positive and negative, are shared both within the facility and with others involved in aquatic/semi-aquatic bird reintroduction to aid in the continued improvement of the program.

APPENDIX I

General

The availability of clean water sufficient for these activities is essential for the welfare of aquatic/semi-aquatic bird, as is access to clean, dry areas which are necessary to ensure foot health.

Preening is an important behavioral pattern in all birds, and in most aquatic and semi-aquatic birds, it involves immersion in water. Preening movements that remove foreign bodies from the feathers and distribute oil from the uropygial gland above the tail often follow immersion in water. This activity is necessary for waterproofing and heat regulation in many aquatic and semi aquatic birds. Some species molt all of their fight feathers at once, rendering them flightless and, as consequence, more susceptible to predation during the molt.

Aquatic and semi-aquatic birds have varying levels of adaptation to spending time in water and on land. Sanctuaries housing these birds need to be aware of the specific needs of the species housed. Territoriality and mobbing behavior, which may occur during the breeding season, needs to be addressed both in the design of the facility and in the management of these birds.

Housing

Where possible, consideration is given to soft netting enclosure ceilings and wall to reduce risk of injury from panic flights during capture. Birds are acclimated to these modifications to reduce risk of injury.

Ideally plastic mesh or slatted flooring is not used.

Containment

For outdoor enclosures, mesh of no larger than 1in (2.54cm) x 0.5in (1.27cm) is recommended for predator (rodent and snake) control.

Non-toxic materials are recommended where possible. (Please note, however, that much of the information provided below is anecdotal and may not reflect the latest information available. Sanctuaries are encouraged keep up to date on this subject.)

- Stainless steel, while more costly, is one of the safest options for outdoor aviaries and has the added advantage of resisting corrosion and weathering.
- Chain link may be appropriate for some species.
- Where there is no viable alternative to potentially hazardous materials, measures are taken to mitigate risk.
    - For example, galvanized-after-weld wire may pose a risk of zinc toxicity but can be treated with a dilute acid wash first.
    - Powder coated steel and galvanized wire cages are of recent manufacture as older construction methods pose a risk of zinc toxicity.
    - Galvanized steel cages pose a risk of lead toxicity.
    - Vinyl and plastic coated wire is easily chewed through by many bird species and ingestion may cause digestive problems.

Grounds and Plantings

Shavings from aromatic woods such as pine and cedar are used with caution as the aromatic hydrocarbons in their resins may be harmful if ingested or if they volatilize. (Please note, however, this information is anecdotal and may not reflect the latest information available. Sanctuaries are encouraged keep up to date on this subject.)

Low allergenic shavings intended for horses may be used but must be kept clean and dry and change regularly if used with aspergillosis susceptible species. Aspergillosis, caused by fungal spores which would not normally be present in a marine environment, is a significant problem, particularly for seabirds. Some aquatic birds (particularly those who spend more time on land) may have more innate resistance. Hay or straw is not a suitable substrate for susceptible species.

Pollen from some trees (e.g. willows) can physically affect feather structure resulting in a loss of waterproofing, known as 'wet feather'.

Enclosure Furniture

Natural materials for perches are recommended but where PVC pipe or other smooth materials are used, jute or other natural fibers are used to cover the perches and promote foot health.

Branches with high sap resin content (e.g. pines) or with thorny, very rough or very smooth/slippery bark are not advised for use as perches.

Ventilation

Ideally, indoor enclosures have a negative air pressure, with regular exchange of non-re-circulated air. A minimum of one complete air exchange per hour is recommended.

Lighting

Dimming systems may be used to prevent stress from sudden exposure to bright light or complete darkness.

Where secondary lighting is used to overcome problems of insufficient daylight length (in northern latitudes in winter) this should be of an intensity and color temperature which approximates natural daylight (about 5000 degrees K).

Fluorescent lighting, although energy efficient, is used with caution as there is evidence that many birds are negatively affected by the high frequency flickering (strobe effect) of some fluorescent and LED light sources. Where such lights are used these should be of a frequency greater than 170Hz with an electronic ballast operating at a minimum of 42,000 cycles per second (cps).

Transport

Ideally birds are transported in individual compartments of suitable size. Dog or cat carriers modified to prevent escape and injury may be utilized.

- Care is taken to ensure that gaps around the door and large grid openings are secured.
- Carriers with primarily solid walls or other means of providing a darkened environment are recommended to reduce stress.

Adequate food and water is provided per IATA specifications.

- Any food and water containers used are designed to prevent spillage.
- A sponge or other device may be placed in the water container to prevent drowning.
- Fruits can be a safe source of hydration for birds used to eating them.

Ideally birds are only transported in moderate weather or transport vehicles are climate controlled to prevent temperature extremes.

- Transport temperatures should be between 70ºF (21ºC) and 85ºF (29.5ºC) for most species.
- Vehicle suspension is in good condition to prevent excessive disturbance to the birds should rough roads be encountered.

- If transporting by personal vehicle, non-IATA approved shipping containers may be used.
- Cardboard boxes or other smooth and soft-walled containers may be safer than hard plastic or plywood containers for some species who are not likely to chew their way out, provided there is no danger of the boxes being crushed during transport.
- IATA standards for size, ventilation, perching, etc are followed

Ideally small birds are not transported by air, except in passenger compartment.

- If regulations require the bird be removed from the carrier for inspection, this is done in an enclosed space (small room) and time for this procedure is factored into travel plans.
- If using commercial air carrier an itinerary with shortest total transport time and fewest plane changes is chosen.
- Adequate time to make connecting flights is part of the consideration when choosing itinerary.
- Smaller commuter planes are avoided where possible, as live cargo gets bumped from these flights more regularly.
- Temperatures and weather in all cities on route are checked to ensure they are within tolerances for the species and no obvious flight delays are likely.
- Shipping on weekends and holidays is avoided.

Social/Solitary Housing

Birds placed in solitary housing temporarily may benefit from being able to see and hear other birds.