



ANSERIFORMES
Taxon Advisory Group

Regional Collection Plan
3rd Edition • 2020 - 2025



Edited by
Keith Lovett, Anseriformes TAG Chair
Buttonwood Park Zoo

Photo by Pinola Conservancy

**ASSOCIATION
OF ZOOS &
AQUARIUMS**

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Photo by I. Gereg

TAG Operational Structure

The AZA Anseriformes TAG consists of a 15-member Steering Committee. Advisors to the TAG include all Program Leaders, as well as specialists in veterinary care, conservation, and privately-held collections. The Steering Committee is responsible for the TAG's overall operation, assisting in the development of Regional Collection Plans, overseeing program management, and providing leadership to both standing and ad hoc committees. Currently TAG maintains committees for workshop development, fundraising, and educational messaging. Members are required to have access to electronic communication, as the Committee communicates throughout the year via email and the AZA Network. Steering Committee members are encouraged to attend at least one TAG meeting per year and are required to vote in all TAG policy or position approval processes. A quorum of the Steering Committee is required for establishment of program recommendations. Any facility participating in an Anseriformes TAG program may designate an Institutional Representative (IR) to the Anseriformes TAG. The primary responsibility of the IR is to communicate with the Steering Committee and disseminate information from the Anseriformes TAG to their respective institutions. Communication with IRs is typically through the AZA Network, as well as at annual or mid-year meetings. The Steering Committee members are selected from the pool of IRs. The Steering Committee Chair is appointed by the Animal Program Management (APM) Committee. There are no term limits. Solicitation for Steering Committee members is made at TAG meetings and through the AZA Network. Officers are elected by the Steering Committee from within the Steering Committee members and officers serve unlimited terms for as long as they sit on the Committee. Should a serious leadership conflict occur among members of the Steering Committee, the APM Committee has a conflict resolution process. A vote of confidence may also be taken or new elections may be held.



Photo by K. Lovett

TAG Steering Committee and Advisors Table 1

Position	Name	Institution	Contact Information
Steering Committee			
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Treasurer	Vacant		
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TAG Definition

The AZA's Anseriformes TAG oversees all ducks, geese, swans, and screamers in AZA facilities. A complete listing of all species covered by the Regional Collection Plan (RCP) can be found in this document. Domestic waterfowl are well-represented in AZA facilities. For the most part, these domestic breeds do not compete with wild species for space, so they will not be considered as separate breeds for the purposes of these analyses. Recognition of domestic breeds is made in generic terms (Domestic Goose, Domestic Mallard, and Domestic Muscovy). Only the Swan Goose Yellow SSP specifically addresses the impact of Domestic Chinese Geese.



Photo by I. Gereg

TAG Mission

The mission of the AZA Anseriformes TAG is to lead the captive management of ducks, geese, swans, and screamers in the AZA region, maintain sustainable captive populations, improve the welfare of waterfowl within AZA, and inspire the conservation of waterfowl worldwide.

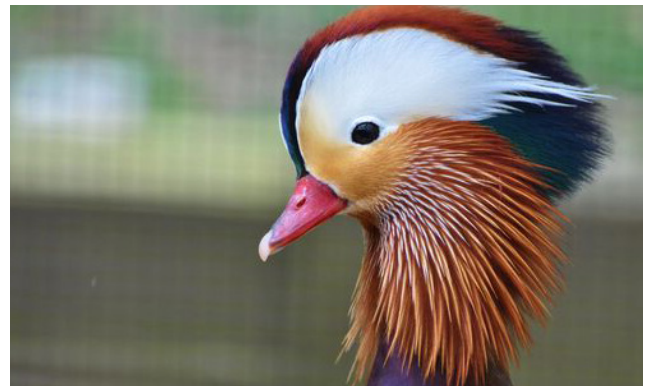


Photo by I. Gereg

TAG Vision

Through the work of the Anseriformes TAG, waterfowl will become sustainable in AZA and awareness will be raised on the need to protect wild waterfowl and wetland environments.



Photo by I. Gereg

TAG Strategic Planning Overview

Over the last couple of decades wild waterfowl maintained in captivity has experienced worldwide declines. Large and diverse collections of waterfowl that were historically held in AZA and private aviculture have become rare. There are many reasons for these declines including increased regulation, escalating management costs, disease outbreak risks, flight restriction laws and concerns. This reduction in waterfowl numbers and diversity has resulted in the Anseriformes TAG needing to become more strategic regarding its species selection and management. Additionally, the TAG has recognized the need to develop partnerships with other regional zoological and private aviculture associations. To that end, TAG leadership has been increasingly involved in collaborative collection planning meetings with the European Association of Zoos and Aquariums' (EAZA) Waterfowl, Pelican TAG and the International Wild Waterfowl Association (IWWA). The consensus of these strategic meetings has been that although there are several iconic and endangered waterfowl species that will be jointly managed in both regions, several other populations will become the regional focus of both AZA and EAZA. The recommendations for population management and monitoring outlined in this RCP are consistent with the outcome of these global strategic meetings.



Photo by K. Lovett

TAG Goals

SUSTAINABILITY

1st Goal: The TAG plans to work with EAZA and other zoological regions to determine which species will be managed multi-regionally and which populations will be a singular program focus within the AZA region.

Essential actions to meet this goal are:

- 1.) Identify which species will be managed by AZA, EAZA, and/or other zoological regions by the end of 2019 consistent with the decisions that were made during the 2019 EAZA Waterfowl TAG ICAP meeting and the publication of the AZA and EAZA TAG RCPs. This will include both formal SSP and Candidate Programs as well as TAG monitoring programs.
- 2.) Advertise Candidate Program leader positions for all newly identified species of sustainability and conservation concern identified in the EAZA Integrated Collection Assessment Planning (ICAP) meeting and as part of the EAZA and AZA Waterfowl TAG RCP process. Have all Candidate Program leaders selected by September 2020.
- 3.) Evaluate annually which Candidate Programs are thriving and should be continued and which are not sustainable and should be eliminated by 2025.
- 4.) The TAG will develop a new program for previously identified species that do not require genetic management but will benefit from TAG monitoring. Wherever possible, the TAG will try to ensure that species with evolutionary distinctness, conservation concern and/or declining populations, and species of significant AZA interest are selected for monitoring. The monitoring program will be developed and implemented by the end of 2020 and reviewed and reported on annually.

2nd Goal: In order to develop and maintain sustainable populations of waterfowl, the Anseriformes TAG will continue to monitor its SSP and Candidate Programs on an annual basis with particular emphasis on providing support and assistance for three challenged populations: Hawaiian (Nene) goose, coscoroba swan, and Indian pygmy goose.

Essential actions to meet this goal are:

- 1.) Increase Hawaiian (Nene) goose population by 10% in the next five years to reach 115-120 birds by 2025 through captive breeding and by adding founders from private aviculture institutions and/or other zoological regions.
- 2.) Increase coscoroba swan population by 25% every year for the next five years to reach 75-80 birds by 2025 through captive breeding and by adding founders from private aviculture institutions and/or other zoological regions.
- 3.) Increase Indian pygmy goose population by 15% in the next five years to reach 95-100 birds by 2025 through captive breeding and by adding founders from private aviculture institutions and/or other zoological regions.



Photo by K. Lovett

TAG Goals cont.

CONSERVATION

The TAG will continue to support waterfowl conservation initiatives worldwide with emphasis on threatened and endangered species maintained in AZA. The TAG plans to highlight species of conservation concern and work with the AZA Saving Animals From Extinction (SAFE) program as applicable.

Essential actions to meet this goal are:

- 1.) The TAG is actively supporting and endorsing conservation programs for Baer's pochards, scaly-sided mergansers, white-winged ducks, red-breasted geese, trumpeter swans, and Brazilian mergansers. By June 2020, the TAG leadership and program leaders will evaluate these programs and determine which, if any, are best suited for SAFE involvement.
- 2.) The TAG will develop a small grants program that will fund waterfowl and wetland conservation projects. This program will be managed by the newly formed TAG Fundraising and Grants Committee. On at least an annual basis, or as frequently as needed, this committee will review grant requests and make recommendations to the TAG Steering Committee for funding. This program should be operational and awarding funds by the end of 2021.

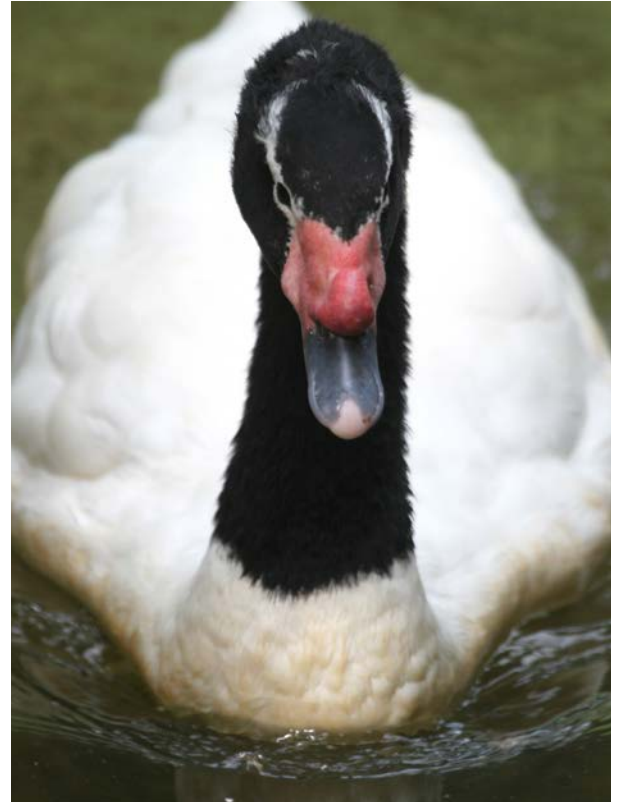


Photo by K. Lovett



Photo by K. Lovett

HUSBANDRY AND WELFARE

The TAG will continue to develop and improve the husbandry standards in AZA as a means to improve long-term population sustainability and ensure the highest quality of welfare for waterfowl.

Essential actions to meet this goal are:

- 1.) Over the next five years (2025) complete and publish a comprehensive animal care manual that includes guidance for ducks, geese, swans, and screamers. In 2020, identify and establish a working committee for this comprehensive Animal Care Manual (ACM) project.
- 2.) Continue to conduct regional and national husbandry-based workshops to improve the overall care and welfare of waterfowl in AZA and the North American zoological region. Conduct a half-day husbandry workshop at the 2020 AZA mid-year meeting and develop a committee by the end of 2020 to schedule and develop regional and/or national workshops over the next 5 years, possibly in partnership with the IWWA.

TAG Goals cont.

EDUCATION/WATERFOWL AWARENESS AND PROGRAM SUPPORT

The TAG will continue to promote waterfowl awareness within the AZA community and among the general public through increased social media presence, implementation of engaging and interactive waterfowl messaging, and the raising of funds to support TAG programs.

Essential actions to meet this goal are:

- 1.) Maintain and further develop the TAG's social media presence on Facebook, Instagram, and Twitter. These pages will have at least weekly posts and strive to consistently increase its number of followers and engagements annually by 10% through 2025.
- 2.) By the end of 2020, identify a TAG committee to develop educational and conservation messaging related to wild waterfowl protection and environmental stewardship activities. This messaging should be complete by the end of 2021 and available to all AZA institutions to be included in their zoo educational interpretives and waterfowl messaging. Additionally, by 2021 the TAG will develop methods to evaluate the effectiveness of this messaging.
- 3.) By June 2020, identify committee members for the TAG Fundraising and Grant Committee that will focus on raising funds for conservation and education programs. Annually, this TAG will create a fundraising budget that identifies the fundraising goals for the TAG.

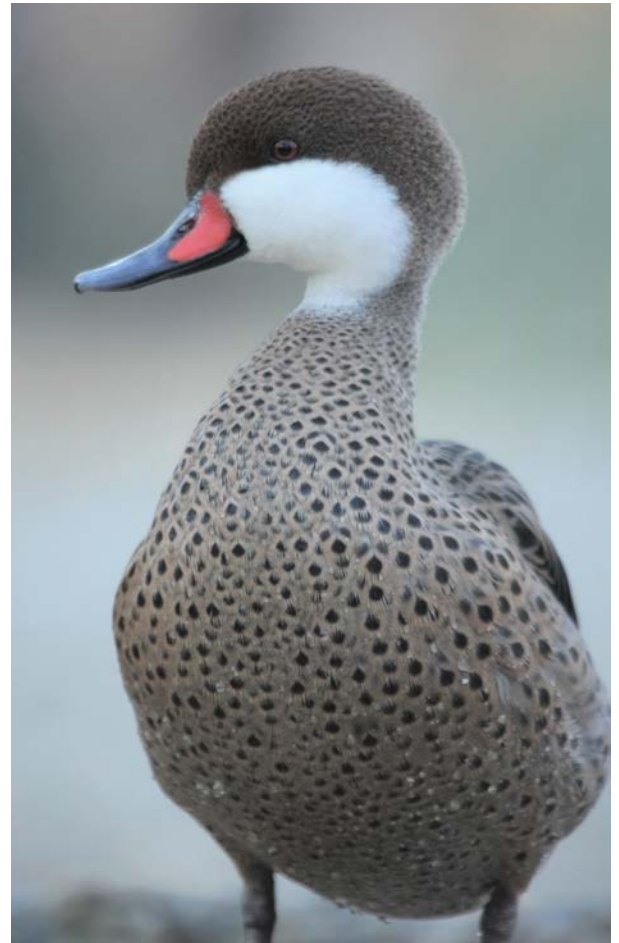


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Photo by J. Dwyer-Lindgren

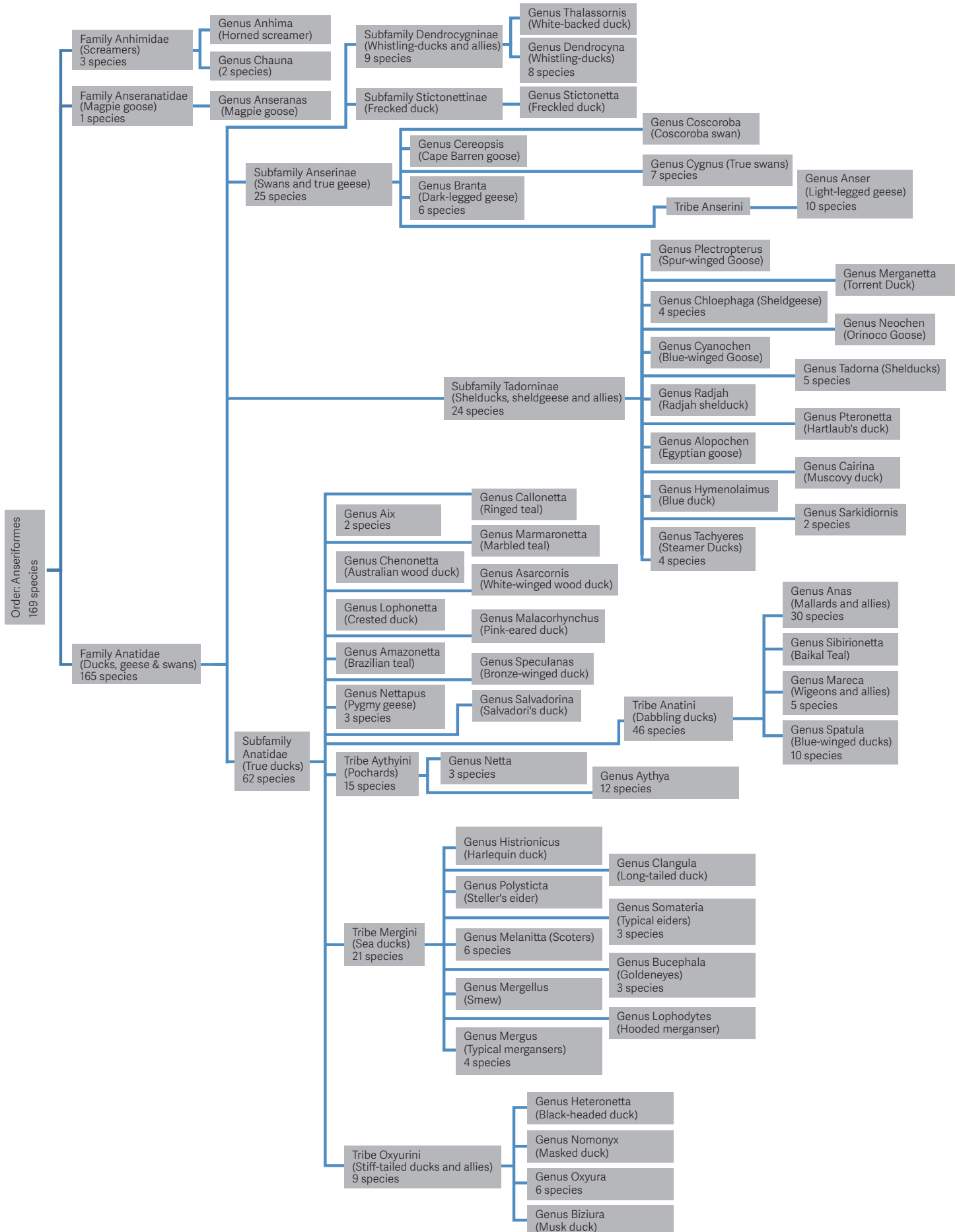
TAG Taxonomy

The order Anseriformes contains 169 extant species in three families. The largest family, Anatidae, is comprised of 165 species and includes the most recognizable species in this group: ducks, geese and swans. The families Anhimidae (screamers, 3 species) and Anseranatidae (Magpie goose) round out the order. Several Anseriformes are subject to recurring taxonomic debates, and the status of many species, subspecies and races are subject to revisions. In general, the taxonomy used in this RCP follows del Hoyo, J., and N.J. Collar (2014) with common names taken from Clements Checklist of Birds of the World (2019). Subspecies and races were included in this document only when being present, positively distinguished in AZA facilities, and consistent with the ZIMS database.



Photo by K. Lovett

TAG Taxonomy Table 2



Conservation Status of Anseriformes

The Anseriformes TAG identified the conservation status of all waterfowl from:

IUCN Red List

<http://www.iucnredlist.org/>

USFWS Endangered Species pages

<https://www.fws.gov/endangered/index.html>

CITES pages

<https://www.cites.org/eng/app/appendices.php>



Photo by K. Lovett

Conservation Status of Anseriformes Table 3

English Name	Scientific Name	Family	IUCN	USFW	CITES	Trend
Screamers						
Horned Screamer	<i>Anhima cornuta</i>	Anhimidae	LC			decreasing
Southern Screamer	<i>Chauna torquata</i>	Anhimidae	LC			stable
Northern Screamer	<i>Chauna chavaria</i>	Anhimidae	NT			decreasing
Taxonomic Oddities						
Pink-eared Duck	<i>Malacorhynchus membranaceus</i>	Anatidae	LC			stable
Blue Duck	<i>Hymenolaimus malacorhynchus</i>	Anatidae	EN			decreasing
Coscoroba Swan	<i>Coscoroba coscoroba</i>	Anatidae	LC		II	stable
Cape Barren Goose	<i>Cereopsis novaehollandiae</i>	Anatidae	LC			stable
Freckled Duck	<i>Stictonetta naevosa</i>	Anatidae	LC			stable
Musk Duck	<i>Biziura lobata</i>	Anatidae	LC			decreasing
Magpie Goose	<i>Anseranas semipalmata</i>	Anseranatidae	LC			stable
Whistling Ducks (Tribe Dendrocygnini)						
Spotted Whistling Duck	<i>Dendrocygna guttata</i>	Anatidae	LC			stable
Plumed Whistling Duck	<i>Dendrocygna eytoni</i>	Anatidae	LC			stable
White-faced Whistling Duck	<i>Dendrocygna viduata</i>	Anatidae	LC			increasing
Black-bellied Whistling Duck	<i>Dendrocygna autumnalis</i>	Anatidae	LC		III	increasing
West Indian Whistling Duck	<i>Dendrocygna arborea</i>	Anatidae	VU		III	increasing
Fulvous Whistling Duck	<i>Dendrocygna bicolor</i>	Anatidae	LC		III	decreasing
Wandering Whistling Duck	<i>Dendrocygna arcuata</i>	Anatidae	LC			decreasing
Lesser Whistling Duck	<i>Dendrocygna javanica</i>	Anatidae	LC			decreasing
White-backed Duck	<i>Thalassornis leuconotusv</i>	Anatidae	LC			decreasing
Northern Geese (Tribe Anserini)						
Bar-headed Goose	<i>Anser indicus</i>	Anatidae	LC			decreasing
Emperor Goose	<i>Anser canagicus</i>	Anatidae	NT			decreasing
Lesser Snow Goose (blue and white phases)	<i>Anser caerulescens caerulescens</i>	Anatidae	LC			increasing
Greater Snow Goose	<i>Anser caerulescens atlanticus</i>	Anatidae	LC			increasing
Ross's Goose	<i>Anser rossii</i>	Anatidae	LC			increasing
Graylag Goose	<i>Anser anser</i>	Anatidae	LC			increasing
Graylag Goose (Domestic type)	<i>Anser anser (Domestic type)</i>	Anatidae				
Swan Goose	<i>Anser cygnoides</i>	Anatidae	VU			decreasing
Swan Goose (Domestic type)	<i>Anser cygnoides (Domestic type)</i>	Anatidae				
Greater White-fronted Goose (Pacific)	<i>Anser albifrons gambelli/sponsa</i>	Anatidae	LC			unknown
Greater White-fronted Goose (Tule)	<i>Anser albifrons elgasi</i>	Anatidae	LC			unknown
Lesser White-fronted Goose	<i>Anser erythropus</i>	Anatidae	VU			decreasing
Taiga Bean Goose	<i>Anser fabalis</i>	Anatidae	LC			decreasing
Tundra Bean Goose	<i>Anser serrirostris</i>	Anatidae	LC			decreasing
Pink-footed Goose	<i>Anser brachyrhynchus</i>	Anatidae	LC			increasing

Conservation Status of Anseriformes Cont. Table 3

English Name	Scientific Name	Family	IUCN	USFW	CITES	Trend
Brant (Atlantic)	<i>Branta bernicla hrota</i>	Anatidae	LC			unknown
Brant (Black/Pacific)	<i>Branta bernicla nigricans</i>	Anatidae	LC			unknown
Barnacle Goose	<i>Branta leucopsis</i>	Anatidae	LC			increasing
Cackling Goose (Aleutian)	<i>Branta hutchinsii leucopareia</i>	Anatidae	LC		I	stable
Cackling Goose (Richardson's)	<i>Branta hutchinsii hutchinsii</i>	Anatidae	LC			stable
Cackling Goose (minima)	<i>Branta hutchinsii minima</i>	Anatidae	LC			stable
Canada Goose (includes most resident birds)	<i>Branta hutchinsii minima</i>	Anatidae	LC			stable
Giant Canada Goose	<i>Branta canadensis maxima</i>	Anatidae	LC			stable
Hawaiian (Nene) Goose	<i>Branta sandvicensis</i>	Anatidae	VU	EN	I	increasing
Red-breasted Goose	<i>Branta ruficollis</i>	Anatidae	VU		II	decreasing
Swans (Tribe Cygnini)						
Mute Swan	<i>Cygnus olor</i>	Anatidae	LC			increasing
Black Swan	<i>Cygnus atratus</i>	Anatidae	LC			stable
Black-necked Swan	<i>Cygnus melancoryphus</i>	Anatidae	LC		II	stable
Trumpeter Swan	<i>Cygnus buccinator</i>	Anatidae	LC			increasing
Whistling Swan	<i>Cygnus columbianus columbianus</i>	Anatidae	LC			unknown
Bewick's Swan	<i>Cygnus columbianus bewickii</i>	Anatidae	EN			decreasing
Whooper Swan	<i>Cygnus cygnus</i>	Anatidae	LC			unknown
Shelducks and Sheldgeese (Tribe Tadornini)						
Torrent Duck	<i>Merganetta armata</i>	Anatidae	LC			decreasing
Orinoco Goose	<i>Oressochen jubatus</i>	Anatidae	NT			decreasing
Andean Goose	<i>Oressochen melanopterus</i>	Anatidae	LC			stable
Lesser Magellan Goose	<i>Chloephaga picta picta</i>	Anatidae	LC			decreasing
Greater Magellan Goose	<i>Chloephaga picta leucoptera</i>	Anatidae	LC			decreasing
Kelp Goose	<i>Chloephaga hybrida</i>	Anatidae	LC			stable
Ashy-headed Goose	<i>Chloephaga poliocephala</i>	Anatidae	LC			decreasing
Ruddy-headed Goose	<i>Chloephaga rubidiceps</i>	Anatidae	LC			decreasing
Radjah Shelduck	<i>Radjah radjah</i>	Anatidae	LC			decreasing
Egyptian Goose	<i>Alopochen aegyptiaca</i>	Anatidae	LC			decreasing
Ruddy Shelduck	<i>Tadorna ferruginea</i>	Anatidae	LC			unknown
South African Shelduck (Cape Shelduck)	<i>Tadorna cana</i>	Anatidae	LC			increasing
Australian Shelduck	<i>Tadorna tadornoides</i>	Anatidae	LC			increasing
Paradise Shelduck (New Zealand Shelduck)	<i>Tadorna variegata</i>	Anatidae	LC			stable
Common Shelduck (European Shelduck)	<i>Tadorna tadorna</i>	Anatidae	LC			increasing
Dabbling Ducks (Tribe Anatini)						
Flying Steamer Duck	<i>Tachyeres patachonicus</i>	Anatidae	LC			decreasing
Flightless Steamer Duck	<i>Tachyeres pteneres</i>	Anatidae	LC			stable
Falkland Steamer Duck	<i>Tachyeres brachypterus</i>	Anatidae	LC			stable

Conservation Status of Anseriformes Cont. Table 3

English Name	Scientific Name	Family	IUCN	USFW	CITES	Trend
White-headed Steamer Duck	<i>Tachyeres leucocephalus</i>	Anatidae	VU			decreasing
Spur-winged Goose (Northern/White)	<i>Plectropterus gambensis gambensis</i>	Anatidae	LC			increasing
Spur-winged Goose (Southern/Black)	<i>Plectropterus gambensis niger</i>	Anatidae	LC			increasing
Wild Muscovy Duck	<i>Cairina moschata</i>	Anatidae	LC			decreasing
Muscovy Duck (Domestic type)	<i>Cairina moschata (Domestic type)</i>	Anatidae				
Patagonian Crested Duck	<i>Lophonetta specularioides specularioides</i>	Anatidae	LC			stable
Spectacled Duck (Bronze-winged Duck)	<i>Speculanus specularis</i>	Anatidae	NT			stable
Green Pygmy Goose	<i>Nettapus pulchellus</i>	Anatidae	LC			stable
Cotton Pygmy Goose	<i>Nettapus coromandelianus</i>	Anatidae	LC			stable
African Pygmy Goose	<i>Nettapus auritus</i>	Anatidae	LC			decreasing
Ringed Teal	<i>Callonetta leucophrys</i>	Anatidae	LC			stable
North American Wood Duck	<i>Aix sponsa</i>	Anatidae	LC			increasing
Mandarin Duck	<i>Aix galericulata</i>	Anatidae	LC			decreasing
African Comb Duck (Knob-billed Duck)	<i>Sarkidiornis melanotos</i>	Anatidae	LC			decreasing
American Comb Duck	<i>Sarkidiornis sylvicola</i>	Anatidae	LC			decreasing
White-winged Duck	<i>Asarcornis scutulata</i>	Anatidae	EN	EN	I	decreasing
Hartlaub's Duck	<i>Pteronetta hartlaubii</i>	Anatidae	LC			decreasing
Blue-winged Goose	<i>Cyanochen cyanooptera</i>	Anatidae	VU			decreasing
Maned Duck (Australian Wood Duck)	<i>Chenonetta jubata</i>	Anatidae	LC			stable
Brazilian Teal	<i>Amazonetta brasiliensis</i>	Anatidae	LC			decreasing
Salvadori's Teal	<i>Salvadorina waigiensis</i>	Anatidae	VU			decreasing
Baikal Teal	<i>Sibirionetta formosa</i>	Anatidae	LC		II	increasing
Garganey	<i>Spatula querquedula</i>	Anatidae	LC			decreasing
Hottentot Teal	<i>Spatula hottentota</i>	Anatidae	LC			decreasing
Silver Teal	<i>Spatula versicolor</i>	Anatidae	LC			stable
Puna Teal	<i>Spatula puna</i>	Anatidae	LC			stable
Blue-winged Teal	<i>Spatula discors</i>	Anatidae	LC			decreasing
Northern Cinnamon Teal	<i>Spatula cyanooptera septentrionalium</i>	Anatidae	LC			decreasing
Red Shoveler	<i>Spatula platalea</i>	Anatidae	LC			stable
Cape Shoveler	<i>Spatula smithii</i>	Anatidae	LC			increasing
Australian Shoveler	<i>Spatula rhynchotis</i>	Anatidae	LC			stable
Northern Shoveler	<i>Spatula clypeata</i>	Anatidae	LC			decreasing
Gadwall	<i>Mareca strepera</i>	Anatidae	LC			increasing
Falcated Duck	<i>Mareca falcata</i>	Anatidae	NT			decreasing
Eurasian Wigeon	<i>Mareca penelope</i>	Anatidae	LC			decreasing
American Wigeon	<i>Mareca americana</i>	Anatidae	LC			stable
Chiloe Wigeon	<i>Mareca sibilatrix</i>	Anatidae	LC			stable

Conservation Status of Anseriformes Cont. Table 3

English Name	Scientific Name	Family	IUCN	USFW	CITES	Trend
African Black Duck	<i>Anas sparsa</i>	Anatidae	LC			decreasing
Yellow-billed Duck	<i>Anas undulata</i>	Anatidae	LC			stable
Meller's Duck	<i>Anas melleri</i>	Anatidae	EN			decreasing
Pacific Black Duck	<i>Anas superciliosa</i>	Anatidae	LC			unknown
Laysan Duck	<i>Anas laysanensis</i>	Anatidae	CR	EN	I	increasing
Hawaiian Duck	<i>Anas wyvilliana</i>	Anatidae	EN	EN		decreasing
Philippine Duck	<i>Anas luzonica</i>	Anatidae	VU			decreasing
Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	LC			decreasing
Eastern Spot-billed Duck	<i>Anas zonorhyncha</i>	Anatidae	LC			decreasing
Mallard	<i>Anas platyrhynchos</i>	Anatidae	LC			increasing
Mallard (Domestic type)	<i>Anas platyrhynchos (Domestic type)</i>	Anatidae				
Mexican Duck	<i>Anas diazi</i>	Anatidae				
American Black Duck	<i>Anas rubripes</i>	Anatidae	LC			decreasing
Mottled Duck (Florida)	<i>Anas fulvigula fulvigula</i>	Anatidae	LC			decreasing
Mottled Duck (Gulf Coast)	<i>Anas fulvigula maculosa</i>	Anatidae	LC			decreasing
Cape Teal	<i>Anas capensis</i>	Anatidae	LC			increasing
White-cheeked Pintail (Bahama)	<i>Anas bahamensis</i>	Anatidae	LC			decreasing
White-cheeked Pintail (Galapagos)	<i>Anas bahamensis galapagensisv</i>	Anatidae				
Red-billed Duck (Pintail)	<i>Anas erythrorhyncha</i>	Anatidae	LC			decreasing
Northern Pintail	<i>Anas acuta</i>	Anatidae	LC			decreasing
Eaton's Pintail	<i>Anas eatoni</i>	Anatidae	VU			decreasing
Yellow-billed Pintail (South Georgian)	<i>Anas georgica georgica</i>	Anatidae	LC			decreasing
Yellow-billed Pintail (South American)	<i>Anas georgica spinicauda/niceforoi</i>	Anatidae	LC			decreasing
Eurasian Green-winged Teal	<i>Anas crecca crecca/nimia</i>	Anatidae	LC			stable
American Green-winged Teal	<i>Anas crecca carolinensis</i>	Anatidae	LC			unknown
Andean Teal	<i>Anas andium</i>	Anatidae	LC			decreasing
Yellow-billed Teal	<i>Anas flavirostris</i>	Anatidae	LC			decreasing
Andaman Teal	<i>Anas albogularis</i>	Anatidae	VU			stable
Sunda Teal	<i>Anas gibberifrons</i>	Anatidae	NT			stable
Gray Teal	<i>Anas gracilis</i>	Anatidae	LC			decreasing
Chestnut Teal	<i>Anas castanea</i>	Anatidae	LC			stable
Bernier's (Madagascar) Teal	<i>Anas bernieri</i>	Anatidae	EN		II	decreasing
Auckland Islands Teal	<i>Anas aucklandica</i>	Anatidae	VU			stable
Campbell Islands Teal	<i>Anas nesiotis</i>	Anatidae	EN	EN		increasing
Brown Teal	<i>Anas chlorotis</i>	Anatidae	NT			increasing
Marbled Teal	<i>Marmaronetta angustirostris</i>	Anatidae	VU			decreasing
Diving Ducks/Pochards (Tribe Aythini)						
Red-crested Pochard	<i>Netta rufina</i>	Anatidae	LC			unknown

Conservation Status of Anseriformes Cont. Table 3

English Name	Scientific Name	Family	IUCN	USFW	CITES	Trend
Southern Pochard	<i>Netta erythrophthalma</i>	Anatidae	LC			decreasing
Rosy-billed Pochard	<i>Netta peposaca</i>	Anatidae	LC			increasing
Canvasback	<i>Aythya valisineria</i>	Anatidae	LC			decreasing
Redhead	<i>Aythya americana</i>	Anatidae	LC			increasing
Common Pochard	<i>Aythya ferina</i>	Anatidae	VU			decreasing
Ring-necked Duck	<i>Aythya collaris</i>	Anatidae	LC			increasing
Ferruginous Duck	<i>Aythya nyroca</i>	Anatidae	NT			decreasing
Madagascar Pochard	<i>Aythya innotata</i>	Anatidae	CR	EN		stable
Baer's Pochard	<i>Aythya baeri</i>	Anatidae	CR			decreasing
Hardhead	<i>Aythya australis</i>	Anatidae	LC			stable
Tufted Duck	<i>Aythya fuligula</i>	Anatidae	LC			stable
New Zealand Scaup	<i>Aythya novaeseelandiae</i>	Anatidae	LC			increasing
Greater Scaup	<i>Aythya marila</i>	Anatidae	LC			decreasing
Lesser Scaup	<i>Aythya affinis</i>	Anatidae	LC			decreasing
Sea Ducks (Tribe Mergini)						
Steller's Eider	<i>Polysticta stelleri</i>	Anatidae	VU			decreasing
Spectacled Eider	<i>Somateria fischeri</i>	Anatidae	NT	T		decreasing
King Eider	<i>Somateria spectabilis</i>	Anatidae	LC			decreasing
Common Eider (Pacific)	<i>Somateria mollissima v-nigrum</i>	Anatidae	NT			unknown
Common Eider (Dresser's)	<i>Somateria mollissima dresseri</i>	Anatidae	NT			unknown
Harlequin Duck	<i>Histrionicus histrionicus</i>	Anatidae	LC			increasing
Surf Scoter	<i>Melanitta perspicillata</i>	Anatidae	LC			decreasing
Velvet Scoter	<i>Melanitta fusca</i>	Anatidae	VU			decreasing
White-winged Scoter	<i>Melanitta deglandi</i>	Anatidae	LC			decreasing
Common Scoter	<i>Melanitta nigra</i>	Anatidae	LC			unknown
Black Scoter	<i>Melanitta americana</i>	Anatidae	NT			decreasing
Long-tailed Duck	<i>Clangula hyemalis</i>	Anatidae	VU			decreasing
Bufflehead	<i>Bucephala albeola</i>	Anatidae	LC			increasing
Common Goldeneye	<i>Bucephala clangula</i>	Anatidae	LC			stable
Barrow's Goldeneye	<i>Bucephala islandica</i>	Anatidae	LC			increasing
Smew	<i>Mergellus albellus</i>	Anatidae	LC			decreasing
Hooded Merganser	<i>Lophodytes cucullatus</i>	Anatidae	LC			increasing
Common Merganser	<i>Mergus merganser</i>	Anatidae	LC			unknown
Common Merganser (Eurasian)	<i>Mergus merganser merganser</i>	Anatidae	LC			stable
Common Merganser (North American)	<i>Mergus merganser americanus</i>	Anatidae				
Brazilian Merganser	<i>Mergus octosetaceus</i>	Anatidae	CR	EN		decreasing
Red-breasted Merganser	<i>Mergus serrator</i>	Anatidae	LC			stable
Scaly-sided Merganser	<i>Mergus squamatus</i>	Anatidae	EN			decreasing

Conservation Status of Anseriformes Cont. Table 3

English Name	Scientific Name	Family	IUCN	USFW	CITES	Trend
Stiff-tailed Ducks (Tribe Oxyurini)						
Black-headed Duck	<i>Heteronetta atricapilla</i>	Anatidae	LC			stable
Masked Duck	<i>Nomonyx dominicus</i>	Anatidae	LC			decreasing
Ruddy Duck	<i>Oxyura jamaicensis</i>	Anatidae	LC			decreasing
Andean Duck	<i>Oxyura ferruginea</i>	Anatidae	LC			decreasing
White-headed Duck	<i>Oxyura leucocephala</i>	Anatidae	EN		II	decreasing
Maccoa Duck	<i>Oxyura maccoa</i>	Anatidae	VU			decreasing
Lake Duck	<i>Oxyura vittata</i>	Anatidae	LC			stable
Blue-billed Duck	<i>Oxyura australis</i>	Anatidae	NT			stable



Photo by I. Gereg

2020 TAG (AZA) Program Management Designations

The Anseriformes TAG uses four of AZA's management program categories which are assigned using selection criteria which is described later in the document.

Animal Program Management Designations

Green SSP Program

- Green SSP Programs have a population size equal to or greater than 50 individuals.
- This population is able to retain > 90.0% GD for 100+ years or 10+ generations.
- The population is presently sustainable demographically with a sufficiently large population size and a positive growth rate to reach 100 years or 10 generations.

Yellow SSP Program

- Yellow SSP Programs have a population size (total N at the time of population planning) equal to or greater than 50 individuals.
- The population is not able to retain at least 90.0% GD over for 100+ years or 10+ generations.
- The population may have never been formally planned, or was planned more than 5 years ago, so that the population sustainability score cannot be properly assessed.

Red SSP Programs

- Red SSP Programs have a population size between 20 and 49 individuals unless accepted models can demonstrate long-term sustainability, or the species is classified as Extinct in the Wild, Critically Endangered, or Endangered (e.g., IUCN or other government agency).

Candidate Program

- Candidate Programs do not meet the minimum criteria to be an SSP Program.
- Candidate Programs may have a population size fewer than 20 individuals, and/or
- Candidate Programs may have fewer than 3 participating AZA member organizations.
- Candidate Program populations may meet minimum SSP criteria, but are not designated as an SSP Program because they do not yet have a published AZA Regional Studbook.

Applying Sustainability Criteria to Designate Animal Program Management Level Criterion	Green SSP Program	Yellow SSP Program	Red SSP Program	Candidate Program
Population size (Total N)	50 and above	50 and above	20 - 49	19 and fewer
# AZA member organizations	3 and above	3 and above	3 and above	2 and fewer
Projected % GD at 100 years or 10 Generations	90.0% and above	Less than 90%	Less than 90%	N/A

Additional Anseriformes TAG Management Designations

TAG Monitored Populations:

In this RCP cycle the TAG will identify species that are currently struggling in AZA that would benefit from population monitoring and/or mentoring. Although a dedicated person will be identified for each of these challenged populations, these programs will not be managed on a genetic level. The leaders of these monitored populations will strive to identify reasons for consistent population declines, identify institutions well suited for management of these species, assist institutions in identifying birds for their collections, and alert TAG leadership of trends in these populations over the next five years. Ultimately, some of these populations may become candidates for more formal AZA/TAG management in the future.

DERP:

The TAG has chosen to categorize some of its more popular waterfowl species under the historic designation of Display, Education, and/or Research Populations (DERP). Species with this designation are in general currently held in decent quantities in AZA, are a species that zoos and aquariums desire to house, are a species that are not taking up significant space from TAG managed and monitored programs, are species that may have significant evolutionary distinctness among waterfowl, and are species that serve a role at member institutions in the areas of display value, educational messaging, and/or are part of scientific or captive management research. Additionally, some species of conservation concern have been given this designation in order for the TAG to maintain assurance populations of these select species.

Not Recommended:

During this RCP cycle, the largest designated group will be that of Not Recommended. The species with these designations are populations that are held in AZA, but in very low numbers, do not have the likely potential to be sustainable in the foreseeable future, lack zoological and aquarium interest in AZA, have limited display, education, or research value compared to other species in the TAG, and/or will take away valuable space that could otherwise be used for SSP, Candidate, or Monitored populations. The TAG is discouraging institutions from increasing their populations of this species through acquisition and/or propagation.

Species not Currently Housed in AZA:

During this RCP cycle, the TAG is not recommending the addition of any new waterfowl species that are not currently held within AZA. If a species of significant conservation concern is required to be brought into captive management, the TAG will evaluate the validity of their management within the region on a case by case basis.



Photo by K. Lovett

Selection Criteria

The TAG has created a new decision tree unique to its population needs and challenges. Consistent with its goals and its regional and international strategic planning, significant emphasis has been placed on choosing species that have the likelihood of maintaining or establishing sustainable population, species of conservation concern, and species that would significantly benefit from population management or monitoring. Additionally, this new decision tree identifies species that are being held and/or managed in EAZA and by IWWA members to determine to what level, if any, a species should be managed in AZA.



Photo by I. Gereg

Decision Tree Selection Criteria Categories:

Does a population exist in AZA?:

This question identifies if this is one of the 146 species and subspecies currently maintained in AZA.

Is the development of a sustainable population feasible within AZA or through partnership with other zoological regions or private aviculture partnerships?

This question identifies whether it is realistic, taking in consideration current populations in AZA, IWWA, and EAZA, to maintain or establish a sustainable population. Factors that relate to feasibility include zoological/aquarium interest, cost, AZA and/or APM Committee standards or policies, permitting, and species management difficulties.

Is it a species of conservation concern?

This question identifies if a species is recognized as at least Near Threatened by IUCN or listed as Threatened or Endangered by USFWS.

Is it a species maintained in another zoological region?

This question identifies if a species is currently being managed in EAZA or another zoological region. This does not include species managed in IWWA.

Does an AZA managed program exist for the species?

The question identifies if a species is currently managed as an SSP or candidate program within AZA.

Is it managed in private aviculture in the AZA region?

This question identifies if a species is managed in IWWA/private aviculture to a significant level in North America.

Will the management of the population be beneficial and feasible for the species?

This question identifies whether the species would benefit from genetic management and if it is feasible to do so within AZA. Factors that relate to feasibility include zoological/aquarium interest, useful allocation of limited TAG and PMC resources, the ability of the TAG to recruit a program leader, and management challenges that will allow for success with the species.

Does interest exist in AZA for the species?

This question identifies whether interest for this species exists within AZA as identified in TAG space assessment.

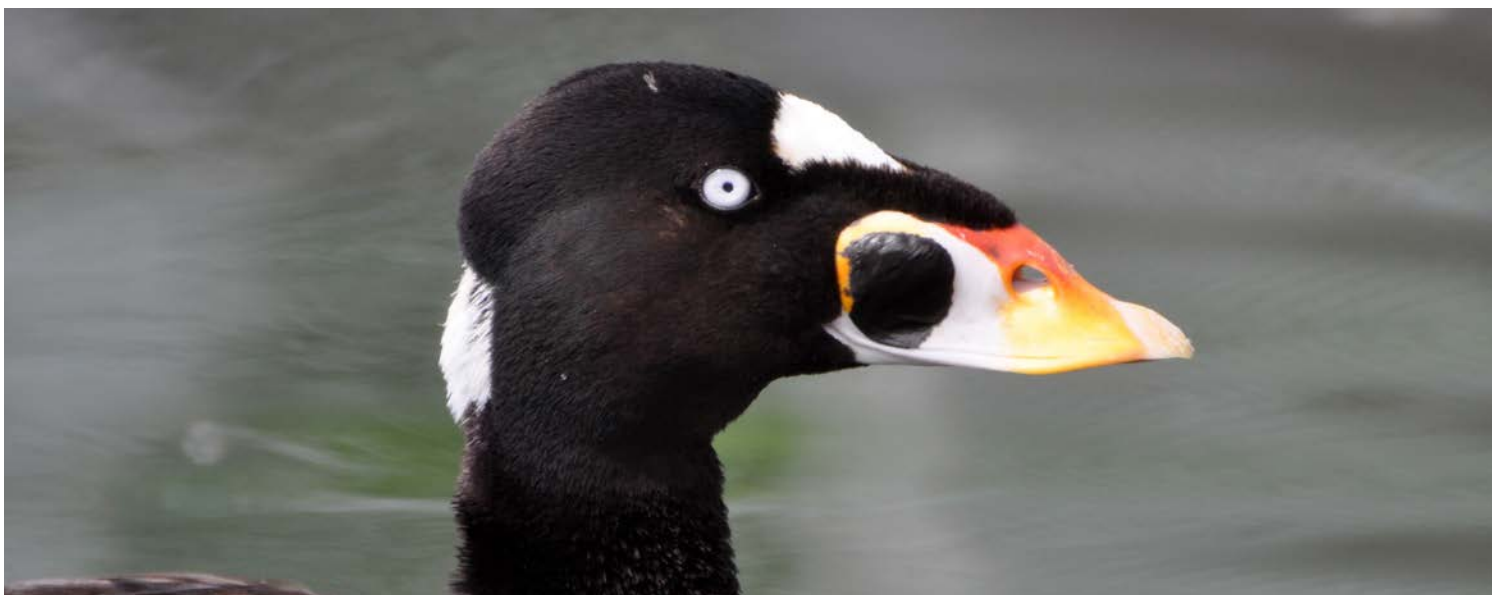


Photo by I. Gereg

Proposed EAZA Waterfowl TAG European Endangered Species Program (EEP) Species

The following are the proposed EAZA EEPs from the 2019 ICAP meeting in Devon, England.

Meller's Duck
Anas melleri

White-winged Duck
Asarcornis scutulata

Baer's Pochard
Aythya baeri

Scaly-sided Merganser
Mergus squamatus

Bernier's (Madagascar) Teal
Anas bernieri

White-headed Duck
Oxyura leucocephala

Blue-winged Goose
Cyanochen cyanoptera

Marbled Teal
Marmaronetta angustirostris

Lesser White-fronted Goose
Anser erythropus

Red-breasted Goose
Branta ruficollis

Long-tailed Duck
(Clangula hyemalis)

Eider-umbrella EEP
(Polysticta, Somateria)



Photo by I. Gereg

Anseriformes TAG Decision Tree Table 4

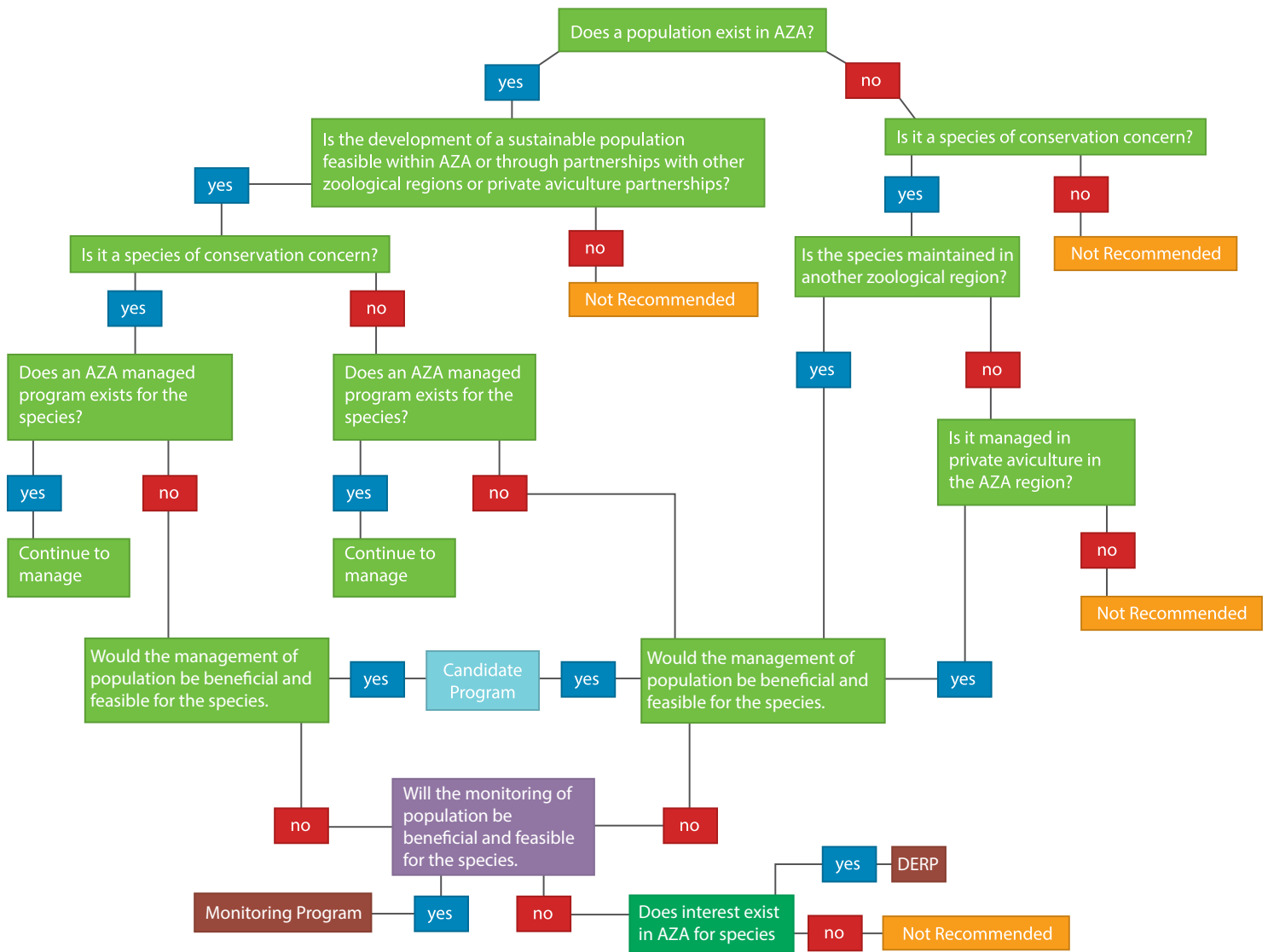


Photo by I. Gereg

Anseriformes TAG Selection Criteria / Decision Tree Results Table 5

Species	Does a population of 3.3 exist in AZA?	Is development of sustainable population feasible?	Species of conservation concern?	Does an AZA managed program exist?	Would the sustainability of the population benefit from AZA program management and is it currently feasible?	Will the population benefit from TAG monitoring and is it feasible?	Does interest exist in AZA for the species?	Is the species managed in other zoological regions?	Is it held in private aviculture in region?	Outcome
Southern screamer (<i>Chauna torquata</i>)	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yellow SSP
Spotted whistling duck (<i>Dendrocygna guttata</i>)	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yellow SSP
Cuban whistling duck (<i>Dendrocygna arborea</i>)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yellow SSP
African pygmy goose (<i>Nettapus auritus</i>)	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yellow SSP
Madagascar teal (<i>Anas bernieri</i>)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yellow SSP
Marbled teal (<i>Marmaronetta angustirostris</i>)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yellow SSP
Baer's pochard (<i>Aythya baeri</i>)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yellow SSP
Scaly-sided (Chinese) merganser (<i>Mergus squamatus</i>)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yellow SSP
White-winged duck (<i>Asarcornis scutulata</i>)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yellow SSP
Hawaiian (Nene) goose (<i>Branta sandvicensis</i>)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yellow SSP
Red-breasted goose (<i>Branta ruficollis</i>)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yellow SSP
Swan goose (<i>Anser cygnoides</i>)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yellow SSP
Trumpeter swan (<i>Cygnus buccinator</i>)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yellow SSP
Indian pygmy goose (<i>Nettapus coromandelianus</i>)	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Red SSP
Orinoco goose (<i>Oressochen jubatus</i>)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Red SSP
Coscoroba swan (<i>Coscoroba coscoroba</i>)	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Red SSP
Philippine duck (<i>Anas luzonica</i>)	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Candidate
Blue-winged goose (<i>Cyanochen cyanoptera</i>)	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Candidate
Emperor goose (<i>Anser canagicus</i>)	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Candidate
Laysan duck (<i>Anas laysanensis</i>)	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Monitored Program
Falcatid duck (<i>Mareca falcata</i>)	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Monitored Program
Magpie goose (<i>Anseranas semipalmata</i>)	Yes	Yes	No	No	No	Yes	Yes	No	Yes	Monitored Program
Cape shelduck (<i>Tadorna cana</i>)	Yes	Yes	No	No	No	Yes	Yes	No	Yes	Monitored Program

Anseriformes TAG Selection Criteria / Decision Tree Results Cont. Table 5

Species	Does a population of 3.3 exist in AZA?	Is development of sustainable population feasible?	Species of conservation concern?	Does an AZA managed program exist?	Would the sustainability of the population benefit from AZA program management and is it currently feasible?	Will the population benefit from TAG monitoring and is it feasible?	Does interest exist in AZA for the species?	Is the species managed in other zoological regions?	Is it held in private aviculture in region?	Outcome
Hartlaub's duck (<i>Pteronetta hartlaubii</i>)	Yes	Yes	No	No	No	Yes	Yes	No	Yes	Monitored Program
Spectacled Eider (<i>Somateria fischeri</i>)	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Monitored Program
White-headed duck (<i>Oxyura leucocephala</i>)	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Monitored Program
Black-bellied whistling duck (<i>Dendrocygna autumnalis</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Fulvous whistling duck (<i>Dendrocygna bicolor</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Javan whistling duck (<i>Dendrocygna javanica</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
White-faced whistling duck (<i>Dendrocygna viduata</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Ringed teal (<i>Callonetta leucophrys</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Australian wood duck (<i>Chenonetta jubata</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Mandarin duck (<i>Aix galericulata</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
North American wood duck (<i>Aix sponsa</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Cape teal (<i>Anas capensis</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Chiloe wigeon (<i>Mareca sibilatrix</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
American wigeon (<i>Mareca americana</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Blue-winged teal (<i>Spatula discors</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Red shoveler (<i>Spatula platalea</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Northern shoveler (<i>Spatula clypeata</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
White-cheeked (Bahama) Pintail (<i>Anas bahamensis galapagensis</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Northern pintail (<i>Anas acuta</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Baikal teal (<i>Sibirionetta formosa</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Green-winged teal (<i>Anas crecca acarolinensis</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Silver teal (<i>Spatula versicolor</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Puna teal (<i>Spatula puna</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP

Anseriformes TAG Selection Criteria / Decision Tree Results Cont. Table 5

Species	Does a population of 3.3 exist in AZA?	Is development of sustainable population feasible?	Species of conservation concern?	Does an AZA managed program exist?	Would the sustainability of the population benefit from AZA program management and is it currently feasible?	Will the population benefit from TAG monitoring and is it feasible?	Does interest exist in AZA for the species?	Is the species managed in other zoological regions?	Is it held in private aviculture in region?	Outcome
Hottentot teal (<i>Spatula hottentota</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Red-crested pochard (<i>Netta rufina</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Rosy-billed pochard (<i>Netta peposaca</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Canvasback (<i>Aythya valisineria</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Ferruginous duck (<i>Aythya nyroca</i>)	Yes	Yes	Yes	No	No	No	Yes	No	Yes	DERP
Ring-necked duck (<i>Aythya collaris</i>)	Yes	No	No	No	No	No	Yes	No	Yes	DERP
Lesser scaup (<i>Aythya affinis</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
North American ruddy duck (<i>Oxyura jamaicensis</i>)	Yes	Yes	No	No	No	No	Yes	No	Yes	DERP
Pacific common eider (<i>Somateria mollissima v-nigrum</i>)	Yes	No	Yes	No	No	No	Yes	Yes	Yes	DERP
Harlequin duck (<i>Histrionicus histrionicus</i>)	Yes	No	No	No	No	No	Yes	No	Yes	DERP
Long-tailed duck (<i>Clangula hyemalis</i>)	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	DERP
Bufflehead (<i>Bucephala albeola</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Barrow's goldeneye (<i>Bucephala islandica</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Smew (<i>Mergellus albellus</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Hooded merganser (<i>Lophodytes cucullatus</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Cape barren goose (<i>Cereopsis novaehollandiae</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Freckled duck (<i>Stictonetta naevosa</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Pink-eared duck (<i>Malacorhynchus membranaceus</i>)	Yes	No	No	No	No	No	Yes	Yes	Yes	DERP
Andean goose (<i>Oressochen melanopterus</i>)	Yes	No	No	No	No	No	Yes	Yes	Yes	DERP
Ruddy-headed goose (<i>Chloephaga rubidiceps</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Common shelduck (<i>Tadorna tadorna</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Radjah shelduck (<i>Radjah radjah</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP

Anseriformes TAG Selection Criteria / Decision Tree Results Cont. Table 5

Species	Does a population of 3.3 exist in AZA?	Is development of sustainable population feasible?	Species of conservation concern?	Does an AZA managed program exist?	Would the sustainability of the population benefit from AZA program management and is it currently feasible?	Will the population benefit from TAG monitoring and is it feasible?	Does interest exist in AZA for the species?	Is the species managed in other zoological regions?	Is it held in private aviculture in region?	Outcome
Old world comb duck (Graysided) (<i>Sarkidiornis melanotos</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Bar-headed goose (<i>Anser indicus</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Ross's goose (<i>Anser rossii</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Barnacle goose (<i>Branta leucopsis</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Pacific brant (<i>Branta bernicla nigricans</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Black swan (<i>Cygnus atratus</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Black-necked swan (<i>Cygnus melancoryphus</i>)	Yes	Yes	No	No	No	No	Yes	Yes	Yes	DERP
Plumed whistling duck (<i>Dendrocygna eytoni</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Wandering whistling duck (<i>Dendrocygna arcuata</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
White-backed duck (<i>Thalassomis leuconotus</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
Indian spot-billed duck (<i>Anas poecilorhyncha poecilorhyncha</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Yellow-billed duck (<i>Anas undulata</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
American black duck (<i>Anas rubripes</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
Florida mottled duck (<i>Anas fulvigula fulvigula</i>)	No	No	Yes	No	No	No	No	No	Yes	Not Recommended
Louisiana mottled duck (<i>Anas fulvigula maculosa</i>)	No	No	Yes	No	No	No	No	No	Yes	Not Recommended
Hawaiian duck (<i>Anas wyvilliana</i>)	No	No	Yes	No	No	No	No	No	Yes	Not Recommended
Chinese spot-billed duck (<i>Anas poecilorhyncha zonorhyncha</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
Pacific black duck (<i>Anas superciliosa</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Meller's duck (<i>Anas melleri</i>)	No	No	Yes	No	No	No	No	Yes	Yes	Not Recommended
African black duck (<i>Anas sparsa</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
Indonesian gray teal (<i>Anas gibberifrons</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Red-billed pintail (<i>Anas erythrorhyncha</i>)	No	Yes	No	No	No	No	No	No	Yes	Not Recommended
Yellow-billed (Chilean) pintail (<i>Anas georgica spinicauda/niceforoi</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended

Anseriformes TAG Selection Criteria / Decision Tree Results Cont. Table 5

Species	Does a population of 3.3 exist in AZA?	Is development of sustainable population feasible?	Species of conservation concern?	Does an AZA managed program exist?	Would the sustainability of the population benefit from AZA program management and is it currently feasible?	Will the population benefit from TAG monitoring and is it feasible?	Does interest exist in AZA for the species?	Is the species managed in other zoological regions?	Is it held in private aviculture in region?	Outcome
Common (European) teal (<i>Anas crecca crecca/nimia</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Chestnut teal (<i>Anas castanea</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
South Georgia pintail (<i>Anas georgica georgica</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
Sharp-winged teal (<i>Anas flavirostris oxyptera</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Chilean teal (<i>Anas flavirostris flavirostris</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Australian shoveler (<i>Spatula rhynchotis rhyncotis</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
New Zealand shoveler (<i>Spatula rhynchotis variegata</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Garganey (<i>Spatula querquedula</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Cinnamon teal (<i>Spatula cyanoptera septentrionalium</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Gadwall (<i>Mareca strepera</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Eurasian wigeon (<i>Mareca penelope</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Brazilian teal (<i>Amazonetta brasiliensis</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Redhead (<i>Aythya americana</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Tufted duck (<i>Aythya fuligula</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Southern pochard (<i>Netta erythrophthalma</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
Common pochard (<i>Aythya ferina</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
Australian white-eye (<i>Aythya australis</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
New Zealand scaup (<i>Aythya novaeseelandiae</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
Greater scaup (<i>Aythya marila</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
Argentine ruddy duck (<i>Oxyura vittata</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Maccoa (<i>Oxyura maccoa</i>)	Yes	No	Yes	No	No	No	No	No	Yes	Not Recommended
Black-headed duck (<i>Heteronetta atricapilla</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Common goldeneye (<i>Bucephala clangula</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
King eider (<i>Somateria spectabilis</i>)	No	No	No	No	No	No	No	Yes	Yes	Not Recommended

Anseriformes TAG Selection Criteria / Decision Tree Results Cont. Table 5

Species	Does a population of 3.3 exist in AZA?	Is development of sustainable population feasible?	Species of conservation concern?	Does an AZA managed program exist?	Would the sustainability of the population benefit from AZA program management and is it currently feasible?	Will the population benefit from TAG monitoring and is it feasible?	Does interest exist in AZA for the species?	Is the species managed in other zoological regions?	Is it held in private aviculture in region?	Outcome
Steller's eider (<i>Polysticta stelleri</i>)	No	No	Yes	No	No	No	No	Yes	Yes	Not Recommended
Atlantic common eider (<i>Somateria mollissima borealis</i>)	No	No	Yes	No	No	No	No	Yes	Yes	Not Recommended
Faroe common eider (<i>Somateria mollissima faeroensis</i>)	No	No	Yes	No	No	No	No	Yes	Yes	Not Recommended
Other common eider race (<i>Somateria mollissima spp.</i>)	Yes	No	Yes	No	No	No	No	Yes	Yes	Not Recommended
Surf scoter (<i>Melanitta perspicillata</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
American black scoter (<i>Melanitta americana</i>)	Yes	No	Yes	No	No	No	No	No	Yes	Not Recommended
American white-winged scoter (<i>Melanitta deglandi</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Common (American) merganser (<i>Mergus merganser americanus</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Goosander (<i>Mergus merganser merganser</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Red-breasted merganser (<i>Mergus serrator</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Lesser Magellan goose (<i>Chloephaga picta picta</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Greater Magellan goose (<i>Chloephaga picta leucoptera</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Egyptian goose (<i>Alopochen aegyptiaca</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Ashy-headed goose (<i>Chloephaga poliocephala</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
Paradise shelduck (<i>Tadorna variegata</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Ruddy shelduck (<i>Tadorna ferruginea</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Australian shelduck (<i>Tadorna tadornoides</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
New-world comb duck (Black-sided) (<i>Sarkidiornis sylvicola</i>)	Yes	Yes	No	No	No	No	No	No	Yes	Not Recommended
Northern spur-winged goose (<i>Plectropterus gambensis gambensis</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
Southern spur-winged goose (Black) (<i>Plectropterus gambensis niger</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended

Anseriformes TAG Selection Criteria / Decision Tree Results Cont. Table 5

Species	Does a population of 3.3 exist in AZA?	Is development of sustainable population feasible?	Species of conservation concern?	Does an AZA managed program exist?	Would the sustainability of the population benefit from AZA program management and is it currently feasible?	Will the population benefit from TAG monitoring and is it feasible?	Does interest exist in AZA for the species?	Is the species managed in other zoological regions?	Is it held in private aviculture in region?	Outcome
Wild muscovy (<i>Cairina moschata</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Bronze-winged duck (<i>Specularias specularis</i>)	No	No	Yes	No	No	No	No	No	Yes	Not Recommended
Patagonian crested duck (<i>Lophonetta specularioides specularioides</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Green pygmy goose (<i>Nettapus pulchellus</i>)	No	No	No	No	No	No	No	No	No	Not Recommended
Flying steamer duck (<i>Tachyeres patachonicus</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended
Magellanic (Fuegian) steamer duck (<i>Tachyeres pteneres</i>)	No	No	No	No	No	No	No	No	No	Not Recommended
Lesser white-fronted goose (<i>Anser erythropus</i>)	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Not Recommended
Pink-footed goose (<i>Anser brachyrhynchus</i>)	Yes	No	No	No	No	No	No	No	Yes	Not Recommended
Pacific white-fronted goose (<i>Anser albifrons gambelli/sponsa</i>)	No	No	No	No	No	No	No	No	Yes	Not Recommended



Photo by I. Gereg

Anseriformes TAG Selection Criteria / Decision Tree Summary

The TAG put every currently held waterfowl species in the AZA region through our selection criteria process. The result of this work is that the TAG will maintain 13 Yellow SSPs, three Red SSPs, create three new Candidate Programs, and develop a monitoring program for another seven species.

Yellow SSP: The TAG will maintain 13 Yellow SSPs during this RCP cycle. New species added to this level are Baer's pochards and scaly-sided mergansers. These two species, which were previously Candidate Programs, have significantly increased in population within AZA and had AZA Regional Studbooks published over the last year. Three populations, swan goose, white-winged duck, and Madagascar teal, as part of their goal / essential action setting, will further investigate the redundancy in the founder populations between AZA and EAZA. During this RCP cycle these programs will be further evaluated in order to determine if managed populations in both AZA and EAZA are warranted considering the limited space and resources in both regions.

Red SSP: The TAG will maintain three Red SSPs. These historic programs have struggled over the last two RCP cycles to increase their populations. Although interest remains for these species in AZA, reproduction has been limited. Each of these three SSPs (Indian pygmy goose, coscoroba swan, and Orinoco goose) have developed goals and essential actions that aggressively work to increase the overall demographics of these populations during this RCP cycle.

Candidate Programs: The TAG is adding three Candidate Program species during this cycle. All three of these species are a conservation concern in the wild, are held in relatively low numbers in AZA, have some level of zoological interest, and are populations that the TAG feel can greatly benefit from management. Two of the three species, blue-winged goose and Philippine duck, will be managed as EEPs in EAZA. The third species, emperor goose, which has a range that includes parts of North America, will only be managed by AZA.

Monitored Populations: During this RCP cycle the TAG will develop a new program to monitor seven of its populations. These populations have been realizing some level of decline in their captive populations over the last decade. Four of the species (falcated duck, spectacled eider, Laysan teal and white-headed duck) are a conservation concern in the wild. Magpie goose will be monitored to help stave off the significant population decline that has been experienced for this evolutionary distinct species. Cape shelduck was chosen for monitoring because in general shelduck populations are dropping in AZA and EAZA and the TAG feels that this species has a high likelihood of becoming sustainable in the region if the TAG can convince holders of African penguins to mix these shelducks in their exhibits. Hartlaub's duck, which has experienced the recent influx of founder genetics from Europe and Africa over the last decade, represents a West African species that is under constant threat due to habitat destruction in the wild, is poorly studied and monitored in its home range making it more vulnerable, and has significant interest in management from at least two experienced AZA institutions.

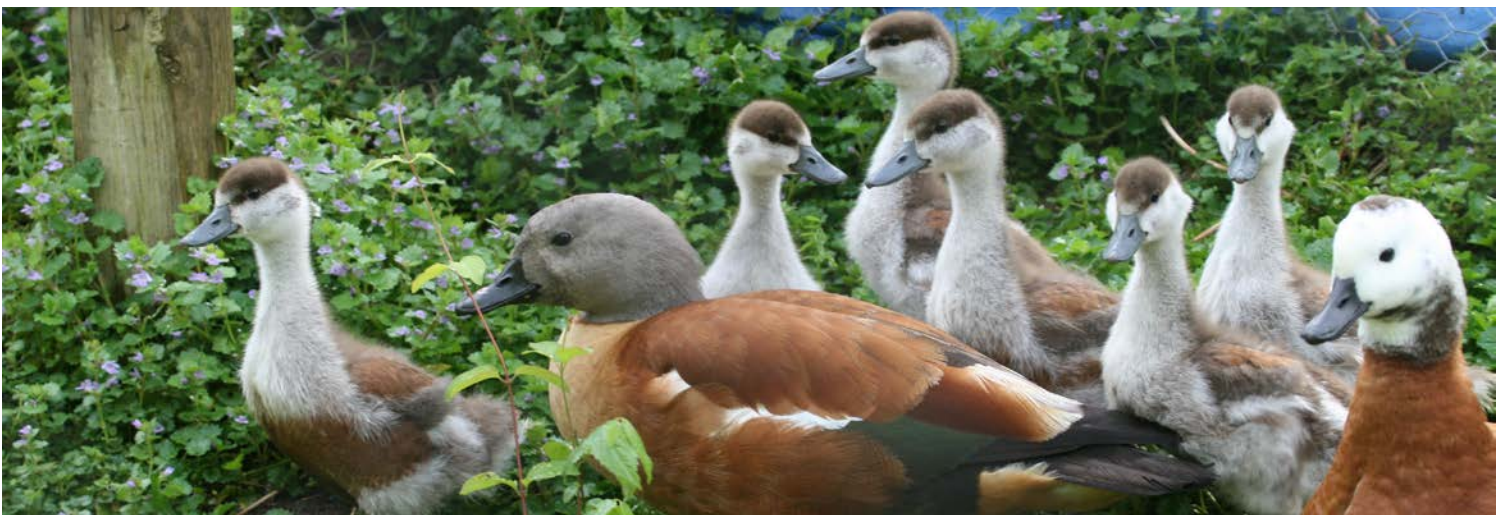


Photo by K. Lovett

Space Assessment

The Anseriformes TAG utilized a variety of methods to assess its current and future waterfowl holdings within the AZA region. These methods included information from published AZA Population Breeding and Transfer Plans and/or AZA Regional Studbooks, analysis of regional ZIMS data, and a waterfowl space survey sent to AZA institutions via the AZA Network. Current AZA holdings were calculated by an analysis of applicable breeding plan and studbook data, ZIMS data for AZA institutions, and from space survey responses for those institutions not currently on ZIMS. Future space identification for waterfowl in the region was determined through analysis of the space survey responses which requested wants and needs for each species under the TAG purview over the next five years. The space survey data is current through May 2019. In total, 169 institutions responded to the space survey. Most of the non-responding institutions do not currently maintain waterfowl as confirmed in ZIMS and/or have not designated an IR to the Anseriformes TAG. Only seven institutions with a designated IR for this TAG failed to respond to the space survey.

The space survey requested current and desired 2024 populations for 191 waterfowl species and subspecies. Of these 191 species and subspecies, 146 currently reside in captivity in the AZA region. Overall, survey respondents demonstrated their commitment to waterfowl. Of the 146 species and subspecies currently in AZA, respondents identified that they desire to maintain or increase the overall populations of 128 of these species and subspecies (87%). Although it is encouraging to TAG leadership that there still is a desire to manage many species of waterfowl in AZA, the TAG recognizes that only a limited number of these populations could ever meet currently defined sustainability requirements. In this document the TAG has chosen to only include space survey information for species that will be managed at the SSP and Candidate Program level as well as those populations recommended for monitoring. As identified in the chart below, respondents have shown significant interest in maintaining or increasing their Anseriformes SSP populations.

At the time of this writing, there currently are 1,552 managed waterfowl specimens spread across 16 SSPs and respondents indicated a desire to increase these holding by 482 specimens (31% increase) making the total SSP desired capacity in five year to be 2,034. During this RCP cycle the TAG's total targeted SSP populations will be 2025. The TAG is targeting half of the TAG's species at populations slightly to moderately higher than the number of desired SSP specimens identified in the space survey. These increased target sizes are to allow the TAG to better focus on species of conservation concern or species that are solely managed by the AZA region. The justification for these target sizes being higher than survey results is due to the TAG's Leadership feeling confident that several hundred additional specimens could likely be added under the SSP programs by encouraging institutions to increase their program flock sizes within their current spaces and by the TAG making a dedicated campaign to encourage institutions to replace their currently not recommended specimens with SSP species when opportunity presents.



Photo by K. Lovett

Space Survey Accountability Table 6

Responding institutions		
Abilene Zoo	Audubon Aquarium of the Americas	Akron Zoo
Alaska Sealife Center	Alexandria Zoological Park	Albuquerque Biopark
Aquarium of Niagara	Aquarium of the Bay	Assiniboine Park Zoo
Audubon Zoo	Bergen County Zoo	Bermuda Aquarium Museum and Zoo
Binder Park Zoo	Birmingham Zoo	Blank Park Zoo
Boonshoft Museum of Discovery	Bramble Park Zoo	Brandywine Zoo
BREC Baton Rouge Zoo (Sustainability Partner Applicant)	Brevard Zoo	Brookgreen Gardens
Buffalo Zoo	Butterfly House	Buttonwood Park Zoo
Busch Gardens Tampa	Caldwell Zoo	Cameron Park Zoo
Cape May County Park and Zoo	Capron Park Zoo	Central Florida Zoo and Botanical Gardens
Charles Paddock Zoo	Chattanooga Zoo	Cheyenne Mountain Zoo
Chicago Zoological Society/Brookfield Zoo	Cincinnati Zoo	Cleveland Metroparks Zoo
Columbus Zoo And Aquarium	Como Zoo	Connecticut's Beardsley Zoo
Conservation Society of California-Oakland Zoo	Cosley Zoo	CuriOdyssey
Dakota Zoo	Dallas World Aquarium	Dallas Zoo
David Traylor Zoo of Emporia	Denver Zoo	Detroit Zoological Society
Dickerson Park Zoo	Discovery Cove	Disney's Animal Kingdom
Ellen Trout Zoo	Elmwood Park Zoo	El Paso Zoo
Fort Wayne Children's Zoo	Fort Worth Zoo	Freeport-McMoRan Audubon Species Survival Center
Fresno Chaffee Zoo	Fundación Zoológica de Cali	Gladys Porter Zoo
Great Plains Zoo	Greensboro Science Center	Grizzly & Wolf Discovery Center
Happy Hollow Zoo	Henry Vilas Zoo	Houston Zoo
Hutchinson Zoo	Jacksonville Zoo and Gardens	Jenkinson's Aquarium
John Ball Zoo	John G Shedd Aquarium	Kansas City Zoo
Lake Superior Zoo	Lee Richardson Zoo	Lincoln Children's Zoo
Lincoln Park Zoo	Lion Country Safari	Little Rock Zoo
Living Desert Zoo and Gardens State Park	Livingston Ripley Waterfowl Conservancy (Sustainability Partner)	Los Angeles Zoo
Louisville Zoological Garden	Loveland Living Planet Aquarium	Maryland Zoo in Baltimore
Memphis Zoo	Mesker Park Zoo & Botanic Garden	Miller Park Zoo
Milwaukee County Zoo	Minnesota Zoo	Monterey Bay Aquarium
Museum of Life and Science	Museum of Science	Mystic Aquarium
Naples Zoo	Nashville Zoo	National Aviary
National Mississippi River Museum & Aquarium	North Carolina Aquarium at Fort Fisher	North Carolina Zoo
Northeastern Wisconsin Zoo	Oklahoma City Zoo	Omaha's Henry Doorly Zoo and Aquarium
Omaha Zoo/ Lee G Simmons Conservation Park and Wildlife Safari	Oregon Coast Aquarium	Palm Beach Zoo & Conservation Society
Peoria Zoo	Philadelphia Zoo	Phoenix Zoo

Space Survey Accountability Cont. Table 6

Responding institutions Cont.		
Pinola Conservancy	Point Defiance Zoo & Aquarium	Potawatomi Zoo
Potter Park Zoo	Rainforest and Aquarium at Moody Gardens	Red River Zoo
Reid Park Zoo	Ripley's Aquarium of the Smokies	Riverbanks Zoo and Garden
Roger Williams Park Zoo	Sacramento Zoo	Safari West
Saginaw Children's Zoo	San Antonio Zoo	San Diego Zoo Safari Park
San Diego Zoo	Saint Louis Zoo	Salisbury Zoo
San Francisco Zoo	Santa Barbara Zoo	Santa Fe College Teaching Zoo
Scovill Zoo	SeaWorld San Antonio	SeaWorld California
SeaWorld Orlando	Sedgwick County Zoo	Seneca Park Zoo
Sequoia Park Zoo	Smithsonian National Zoo	Staten Island Zoo
St. Augustine Alligator Farm Zoological Park	St. Paul's Como Zoo	Sunset Zoo
Texas State Aquarium	The Wilds	Toledo Zoo & Aquarium
Topeka Zoo	Tracy Aviary	Trevor Zoo
Tulsa Zoo	Turtle Back Zoo	Utah's Hogle Zoo
Utica Zoo	Vancouver Aquarium	Virginia Aquarium & Marine Science Center
Virginia Zoo	WCS Bronx Zoo	WCS Central Park Zoo
WCS Prospect Park Zoo	Wildlife Safari	Woodland Park Zoo
ZooAmerica Wildlife Park	Zoo de Granby	Zoo Knoxville
Zoo Miami	Zoo New England - Stone Zoo	Zoo New England - Franklin Park Zoo
ZooTampa at Lowry Park		



Photo by I. Gereg

Space Survey Accountability Table 7

Non-responding institutions		
Acuario de Veracruz	Adventure Aquarium	Africam Safari Par
African Safari Wildlife Park *	Aquarium of the Pacific	Arizona Sonora Desert Museum *
Atlantis, Paradise Island	Birch Aquarium at Scripps	Butterfly Pavilion
Cabrillo Marine Aquarium	Calgary Zoo *	California Science Center
Chahinkapa Zoo	Clyde Peeling's Reptiland	Dolphin Discovery Cozumel
Dolphin Discovery Isla Mujeres	Dolphin Discovery Punta Cana	Dolphin Island, Singapore
Erie Zoo	Everland Zoo	Florida Aquarium
Fossil Rim Wildlife Center	Fundación Teraikèn	Georgia Aquarium
Greenville Zoo	Idaho Falls Zoo at Tautphaus Park	Indianapolis Zoo
International Crane Foundation	Landry's Downtown Aquarium, Denver	Landry's Houston Aquarium
Lehigh Valley Zoo	The Living Desert Zoo and Gardens	Maritime Aquarium at Norwalk
Mote Marine Laboratory and Aquarium	National Aquarium	New England Aquarium
WCS- New York Aquarium	Newport Aquarium	North Carolina Aquarium at Pine Knoll Shores, N.C.
North Carolina Aquarium on Roanoke Island, N.C.	Northwest Trek Wildlife Park *	Oceanogràfic Valencia
Ocean Park Corporation	OdySea Aquarium	Oglebay's Good Zoo
Parque Zoológico de Leon	Pueblo Zoo	Queens Zoo
Racine Zoo	Ripley's Aquarium at Myrtle Beach	Ripley's Aquarium of Canada
Riverside Discovery Center	Rolling Hills Zoo	Roosevelt Park Zoo *
Rosamond Gifford Zoo at Burnet Park	S.E.A. Aquarium, Singapore	SEA LIFE Arizona Aquarium, Ariz.
SEA LIFE Carlsbad Aquarium, Calif.	SEA LIFE Charlotte-Concord Aquarium, N.C.	SEA LIFE Grapevine Aquarium, Texas
SEA LIFE Kansas City Aquarium, Mo	SEA LIFE Michigan Aquarium, Mich.	SEA LIFE Orlando Aquarium, Fla.
Seattle Aquarium	Seoul Zoo	Shark Reef Aquarium at Mandalay Bay
South Carolina Aquarium	Squam Lakes Natural Science Center	Steinhart Aquarium
The Seas, Disney	Toronto Zoo, Canada *	Virginia Living Museum
Western North Carolina Nature Center	Zoo Boise	ZooMontana
* AZA institutions with designated Anseriformes TAG IR		

Space Survey Results and Target Size Table 8

Space Survey Results and Target Size						
Species	Management Level in 2020 RCP	# of AZA Institutions	2019 AZA SSP and/or Studbook Data	2024 AZA Holding (Space Survey)	2020 Target Populations	Program Leaders
Southern Screamer (<i>Chauna torquata</i>)	Yellow SSP	44	60.43.6 (109)	71.52.6 (129)	115	Joanna Klass joanna.klass@zoo.org (920) 619-0952
Spotted Whistling Duck (<i>Dendrocygna guttata</i>)	Yellow SSP	19	69.61 (130)	75.70.2 (147)	130	Ian Shelley ian.shelley@marylandzoo.org (410) 916-8470
West Indian Whistling Duck (<i>Dendrocygna arborea</i>)	Yellow SSP	20	37.34 (71)	54.57.5 (116)	100	Mindy Rabideau mindyr@tracyaviary.org (801) 596-850
African Pygmy Goose (<i>Nettapus auritus</i>)	Yellow SSP	28	52.44.13 (109)	70.65.27 (162)	150	Stephanie Allard, PhD sallard@dzs.org (248) 541-5717 ext.3720
Madagascar Teal (<i>Anas bernieri</i>)	Yellow SSP	18	30.38 (68)	34.45 (79)	75	Allan Craig Mikel allan.mikel@louisvilleky.gov (502) 459-2196
Marbled Teal (<i>Marmaronetta angustirostris</i>)	Yellow SSP	41	153.125.8 (286)	177.143.15 (335)	275	R. Harrison Edell harrison.edell@dallaszoo.com (469) 554-7201
Baer's Pochard (<i>Aythya baeri</i>)	Yellow SSP	21	53.50 (103)	58.60.14 (132)	150	Jamie Toste jamie.toste@state.mn.us (952) 431-9278
Scaly-sided (Chinese) Merganser (<i>Mergus squamatus</i>)	Yellow SSP	13	30.39.12 (81)	49.55.12 (116)	125	Chuck Cerbini chuck.cerbini@toledozoo.org (419) 385-5721 ext.2008
White-winged Duck (<i>Asarcornis scutulata</i>)	Yellow SSP	10	37.34 (71)	43.40.15 (98)	100	Dr. Kimberly Cook k.cook@akronzoo.org (330) 375-2550 ext.7221
Hawaiian Goose (<i>Branta sandvicensis</i>)	Yellow SSP	19	36.34.3 (73)	46.40.3 (89)	125	William Robles wrobles@auduboninstitute.org 631-379-3517
Red-breasted Goose (<i>Branta ruficollis</i>)	Yellow SSP	22	77.66 (143)	97.91.9 (197)	200	Joanna Klass joanna.klass@zoo.org (920) 619-0952
Swan Goose (<i>Anser cygnoides</i>)	Yellow SSP	14	44.58 (102)	52.66 (118)	110	Christine Fuehrmeyer cfuehrmeyer@lpzoo.org (312)742-7742
Trumpeter Swan (<i>Cygnus buccinator</i>)	Yellow SSP	33	38.45.2 (85)	42.56.7 (105)	110	Tiffany Mayo trm1@clevelandmetroparks.com (216) 661-6500 ext.4007
Indian Pygmy Goose (<i>Nettapus coromandelianus</i>)	Red SSP	11	26.21 (47)	29.27.15 (71)	100	Stephanie Allard, PhD sallard@dzs.org (248) 541-5717 ext.3720
Orinoco Goose (<i>Neochen jubata</i>)	Red SSP	18	26.19.1 (46)	41.39.13 (93)	85	Nancy Nill nnill@palmbeachzoo.org 561-533-0887 (353)
Coscoroba Swan (<i>Coscoroba coscoroba</i>)	Red SSP	12	15.13 (28)	21.26 (47)	75	Matt Wade McHale matthew.mchale@miamidade.gov (910) 547-1207
Totals			783.724.25 (1552)	955.927.143 (2034)	2025	

Species	Management Level in 2020 RCP	# of AZA Institutions	2019 AZA SSP and/or Studbook Data	2024 AZA Holding (Space Survey)
Philippine Duck (<i>Anas luzonica</i>)	Candidate Program	4	12.7 (19)	18.14.4 (36)
Emperor Goose (<i>Chen canagica</i>)	Candidate Program	10	35.29 (64)	51.45.4 (100)
Blue-winged Goose (<i>Cyanochen cyanoptera</i>)	Candidate Program	7	9.11.1 (21)	19.20.3 (42)
Totals			56.47.1 (104)	88.79.11 (178)
Laysan Duck (<i>Anas laysanensis</i>)	Monitored Population	6	33.23.3 (59)	38.31.8 (77)
Falcatad Duck (<i>Mareca falcata</i>)	Monitored Population	16	33.34 (67)	44.49.4 (97)
Magpie Goose (<i>Aneranus semipalmata</i>)	Monitored Population	11	17.23 (40)	20.29 (49)
Cape Shelduck (<i>Tadorna cana</i>)	Monitored Population	6	7.3 (10)	10.7 (17)
Hartlaub's Duck (<i>Pteronetta hartlaubii</i>)	Monitored Population	5	14.14 (28)	16.16 (32)
Spectacled Eider (<i>Somateria fischeri</i>)	Monitored Population	3	18.19 (37)	23.30.4 (57)
White-headed Duck (<i>Oxyura leucocephala</i>)	Monitored Population	5	14.20.2 (36)	27.33.3 (63)
Totals			136.136.5 (277)	178.195.19 (392)

Regional Anseriformes Populations Table 9

Consistent with the TAG's international strategic planning efforts, the information in the following chart was used to determine populations within AZA, AZA region (by means of a 2016 IWWA survey), EAZA, and the EAZA region. This information better allowed the TAG to understand which species currently within AZA had potentially sustainable populations and which species would benefit from an influx of birds from AZA regional private aviculture and/or EAZA.

Species Held in North America						
Species	2020 RCP Management Status	# of AZA Institutions	2019 AZA SSP and/or Studbook Data	2015/2016 IWWA Holding from Survey	2019 ZIMS Data EAZA	2019 ZIMS Data European Region
Southern Screamer (<i>Chauna torquata</i>)	Yellow SSP	44	60.43.6	46.36.1	54.54.9	65.61.12
Cuban Whistling Duck (<i>Dendrocygna arborea</i>)	Yellow SSP	20	37.34.0	56.54.5	16.17.17	34.33.34
Spotted Whistling Duck (<i>Dendrocygna guttata</i>)	Yellow SSP	19	69.61.0	30.28.6	18.23.24	20.14.12
Swan Goose (<i>Anser cygnoides</i>)	Yellow SSP	14	44.58.0	49.56.1	52.40.37	68.61.83
Red-breasted Goose (<i>Branta ruficollis</i>)	Yellow SSP	22	77.66.0	197.186.47	139.130.65	196.195.109
Hawaiian (Nene) Goose (<i>Branta sandvicensis</i>)	Yellow SSP	19	36.34.3	104.88.24	59.56.45	170.152.59
Trumpeter Swan (<i>Cygnus buccinator</i>)	Yellow SSP	33	38.45.2	68.87.12	8.3.0	11.7.0
African Pygmy Goose (<i>Nettapus auritus</i>)	Yellow SSP	28	52.44.13	51.45.0	14.14.0	13.13.0
White-winged Duck (<i>Asarcornis scutulata</i>)	Yellow SSP	10	37.34.0	33.38.0	39.39.5	50.53.5
Madagascar Teal (<i>Anas bernieri</i>)	Yellow SSP	18	30.38.0	42.46.0	61.49.6	81.68.21
Marbled Teal (<i>Marmaronetta angustirostris</i>)	Yellow SSP	41	153.125.8	173.149.5	83.76.17	102.103.62
Baer's Pochard (<i>Aythya baeri</i>)	Yellow SSP	21	53.5.0	83.85.0	63.54.2	121.86.36
Scaly-sided (Chinese) Merganser (<i>Mergus squamatus</i>)	Yellow SSP	13	30.39.12	61.56.0	9.9.0	15.14.0
Coscoroba Swan (<i>Coscoroba coscoroba</i>)	Red SSP	12	15.13.0	40.32.0	29.25.10	36.34.4
Orinoco Goose (<i>Neochen jubata</i>)	Red SSP	18	26.19.1	64.47.8	11.16.16	19.24.16
Indian Pygmy Goose (<i>Nettapus coromandelianus</i>)	Red SSP	11	26.21.0	19.17.0	2.3.0	2.3.0

Species Held in North America						
Species	2020 RCP Management Status	# of AZA Institutions	2019 AZA SSP and/or Studbook Data	2015/2016 IWWA Holding from Survey	2019 ZIMS Data EAZA	2019 ZIMS Data European Region
Emperor Goose (<i>Anser canagicus</i>)	<i>Candidate</i>	10	20.15.0	94.99.4	23.23.14	44.44.22
Blue-winged Goose (<i>Cyanochen cyanoptera</i>)	<i>Candidate</i>	7	7.9.1	28.26.1	14.12.2	14.13.2
Philippine Duck (<i>Anas luzonica</i>)	<i>Candidate</i>	4	74.0	55.42.0	19.16.14	37.32.15

Species Held in North America						
Species	2020 RCP Management Status	# of AZA Institutions	2019 AZA SSP and/or Studbook Data	2015/2016 IWWA Holding from Survey	2019 ZIMS Data EAZA	2019 ZIMS Data European Region
Magpie Goose (<i>Aneranus semipalmata</i>)	Monitored Program	11	17.23.0	36.35.2	26.30.2	28.54.2
Cape Shelduck (<i>Tadorna cana</i>)	Monitored Program	6	5.1.0	29.25.0	8.11.5	16.21.15
Hartlaub's Duck (<i>Pteronetta hartlaubii</i>)	Monitored Program	5	14.14.0	21.21.5	1.2.0	1.2.0
Falcat Duck (<i>Mareca falcata</i>)	Monitored Program	16	33.34.0	108.125.1	17.18.1	42.44.8
Laysan Duck (<i>Anas laysanensis</i>)	Monitored Program	6	33.23.3	68.60.31	32.22.10	52.53.21
Spectacled Eider (<i>Somateria fischeri</i>)	Monitored Program	4	24.29.0	39.40.0	9.11.0	11.13.0
White-headed Duck (<i>Oxyura leucocephala</i>)	Monitored Program	5	14.20.2	32.3.0	32.40.22	109.127.67

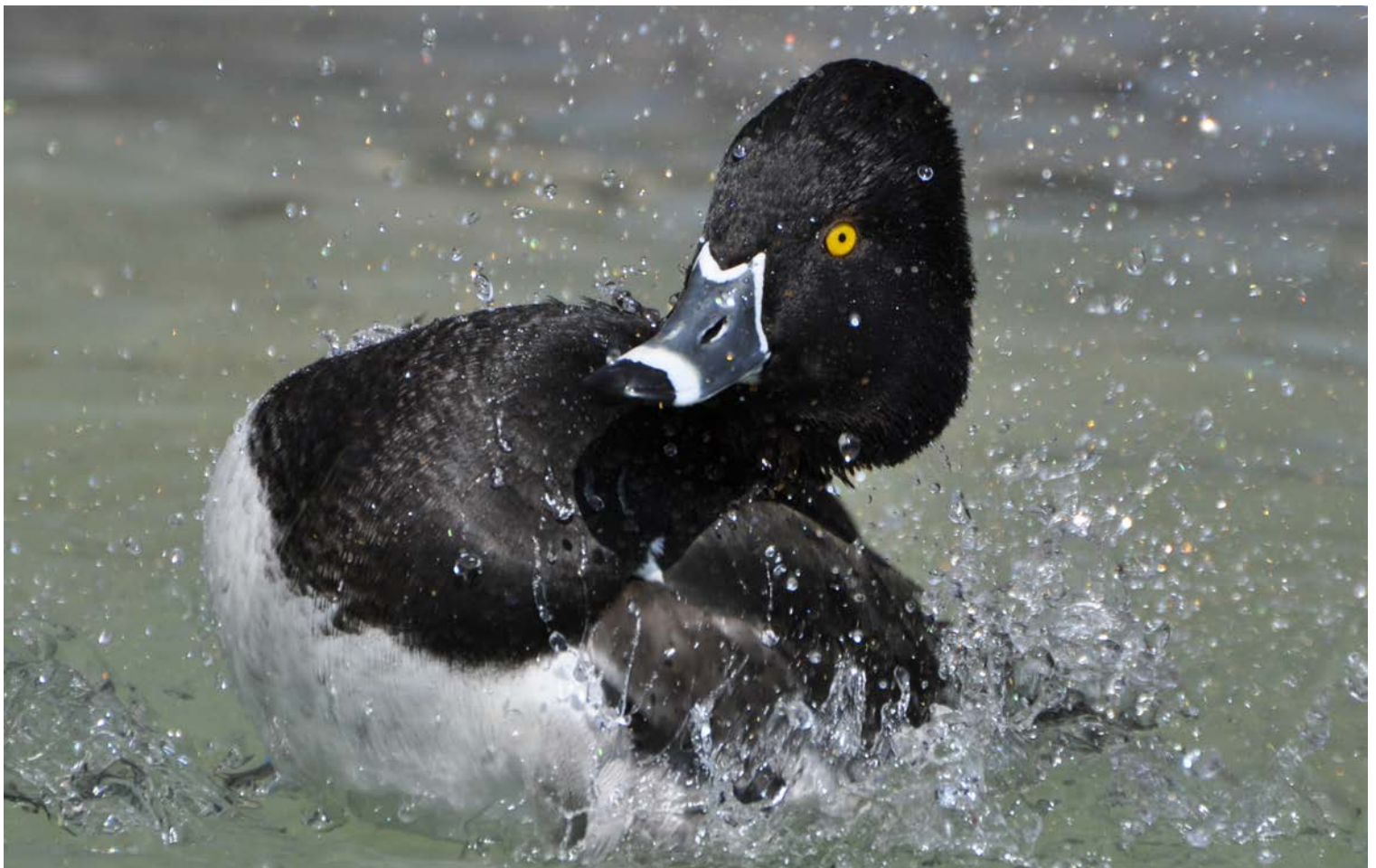


Photo by I. Gereg

Regional Anseriformes Populations Cont. Table 9

Species Held in North America						
Species	2020 RCP Management Status	# of AZA Institutions	2019 AZA SSP and/or Studbook Data	2015/2016 IWWA Holding from Survey	2019 ZIMS Data EAZA	2019 ZIMS Data European Region
Pink-Eared Duck (<i>Malacorhynchus membranaceus</i>)	DERP	2	7.6.0	12.15.0	2.2.0	2.2.0
Cape Barren Goose (<i>Cereopsis novaehollandiae</i>)	DERP	9	7.9.0	45.49.10	24.42.5	37.51.13
Freckled Duck (<i>Stictonetta naevosa</i>)	DERP	9	24.24.3	28.43.2	4.4.0	21.26.0
Black-bellied Whistling Duck (<i>Dendrocygna autumnalis</i>)	DERP	25	39.67.30	85.97.128	37.32.37	74.61.58
White-faced Whistling Duck (<i>Dendrocygna viduata</i>)	DERP	55	176.170.52	306.303.69	236.250.309	330.339.478
Bar-headed Goose (<i>Anser indicus</i>)	DERP	24	53.84.5	125.138.26	126.129.233	169.178.348
Ross's Goose (<i>Chen rossii</i>)	DERP	6	28.22.1	70.65.11	18.8.7.0	58.37.10
Barnacle Goose (<i>Branta leucopsis</i>)	DERP	8	21.18.0	79.87.0	139.130.65	155.129.259
Andean Goose (<i>Chloephaga melanoptera</i>)	DERP	5	3.6.0	22.23.0	2.1.0	9.11.2
Ruddy-headed Goose (<i>Chloephaga rubidiceps</i>)	DERP	1	1.2.0	15.14.0	3.5.0	10.10.4
Radjah Shelduck (<i>Tadoma radjah</i>)	DERP	16	27.15.1	51.40.2	18.19.4	18.20.1
Common Shelduck (<i>Tadoma tadoma</i>)	DERP	16	46.34.68	71.75.17	128.142.208	194.194.330
Ringed Teal (<i>Callonetta leucophrys</i>)	DERP	47	91.71.7	430.389.23	176.150.78	277.239.153
Mandarin Duck (<i>Aix galericulata</i>)	DERP	45	111.74.2	651.590.19	303.281.214	545.483.611
North American Wood Duck (<i>Aix sponsa</i>)	DERP	54	147.101.20	566.525.46	219.173.223	353.265.302
Old-World Comb Duck (Graysided) (<i>Sarkidiornis melanotos melanotos</i>)	DERP	9	27.39.0	27.48.0	92.114.32	112.143.40
Australian Wood Duck (<i>Chenonetta jubata</i>)	DERP	15	27.37.0	60.51.5	41.32.29	72.56.36
Baikal Teal (<i>Anas formosa</i>)	DERP	21	36.27.0	178.17.0	29.29.10	3.1.2
Blue-winged Teal (<i>Anas discors</i>)	DERP	24	40.23.5	127.158.1	20.20.2	26.35.19
Northern Shoveler (<i>Spatula clypeata</i>)	DERP	23	38.25.1	177.145.1	61.49.6	89.80.46
Hottentot Teal (<i>Spatula hottentota</i>)	DERP	18	36.28.3	94.80.6	54.66.54	64.66.76
Red Shoveler (<i>Spatula platalea</i>)	DERP	15	39.31.0	30.29.0	19.21.9	1.2.4
Puna Teal (<i>Spatula puna</i>)	DERP	14	42.27.2	123.96.0	20.21.19	68.70.21
Silver Teal (<i>Spatula versicolor</i>)	DERP	10	26.37.0	27.48.0	92.114.32	112.143.40
American Wigeon (<i>Mareca americana</i>)	DERP	10	19.15.0	79.80.0	6.4.0	1.0.0
Chiloe Wigeon (<i>Mareca sibilatrix</i>)	DERP	23	45.39.6	117.127.8	58.56.57	135.126.109
Northern Pintail (<i>Anas acuta</i>)	DERP	42	128.116.17	244.243.13	107.88.23	168.121.69
White-cheeked (Bahama) Pintail (<i>Anas bahamensis</i>)	DERP	16	27.35.0	97.95.36	98.84.46	188.123.113

Regional Anseriformes Populations Cont. Table 9

Species Held in North America						
Species	2020 RCP Management Status	# of AZA Institutions	2019 AZA SSP and/or Studbook Data	2015/2016 IWWA Holding from Survey	2019 ZIMS Data EAZA	2019 ZIMS Data European Region
Cape Teal (<i>Anas capensis</i>)	DERP	10	1413.2	54.52.8	58.53.52	82.81.80
Green-winged Teal (<i>Anas carolinensis</i>)	DERP	6	14.9.0	158.163.4	3.3.0	3.3.2
Sharp-winged Teal (<i>Anas flavirostris oxyptera</i>)	DERP	6	8.7.4	31.32.12	5.6.3	31.21.6
Indian Spot-billed Duck (<i>Anas poecilorhyncha poecilorhyncha</i>)	DERP	5	26.23.0	58.58.0	29.31.3	30.31.3
Rosy-billed Pochard (<i>Netta peposaca</i>)	DERP	22	82.65.5	109.92.8	75.78.13	124.117.32
Red-crested Pochard (<i>Netta rufina</i>)	DERP	15	60.49.16	110.104.25	180.162.180	254.253.255
Lesser Scaup (<i>Aythya affinis</i>)	DERP	12	17.15.5	105.106.2	8.9.0	14.13.5
Redhead (<i>Aythya americana</i>)	DERP	41	135.128.22	216.207.12	2.2.0	16.21.0
Ferruginous White-eye (<i>Aythya nyroca</i>)	DERP	11	51.47.2	70.52	156.150.90	249.222.109
Canvasback (<i>Aythya valisineris</i>)	DERP	16	31.32.0	146.149.3	3.5.0	30.32.1
Pacific Common Eider (<i>Somateria mollissima v-nigra</i>)	DERP	4	9.11.0	56.61.0	0.1.0	0.1.0
Harlequin Duck (<i>Histrionicus histrionicus</i>)	DERP	6	15.10.2	53.58.0	8.8.6	13.12.6
Long-tailed Duck (<i>Clangula hyemalis</i>)	DERP	5	10.9.1	50.55.0	5.6.0	13.23.1
Bufflehead (<i>Bucephala albeola</i>)	DERP	21	29.36.1	118.12.0	22.15.5	90.93.24
Barrow's Goldeneye (<i>Bucephala islandica</i>)	DERP	15	21.13.9	112.94.1	7.8.5	24.26.6
Smew (<i>Mergellus albellus</i>)	DERP	21	49.42.5	158.152.3	50.45.3	131.120.18
Hooded Merganser (<i>Lophodytes cucullatus</i>)	DERP	51	146.137.22	306.334.44	42.36.17	144.130.24
North American Ruddy Duck (<i>Oxyura jamaicensis</i>)	DERP	42	163.113.27	337.274.45	43.32.16	49.35.40
Black Swan (<i>Cygnus atratus</i>)	DERP	43	33.49.20	113.150.64	72.99.91	13.19.18
Black-necked Swan (<i>Cygnus melancoryphus</i>)	DERP	28	24.45.18	64.55	47.35.19	55.44.19

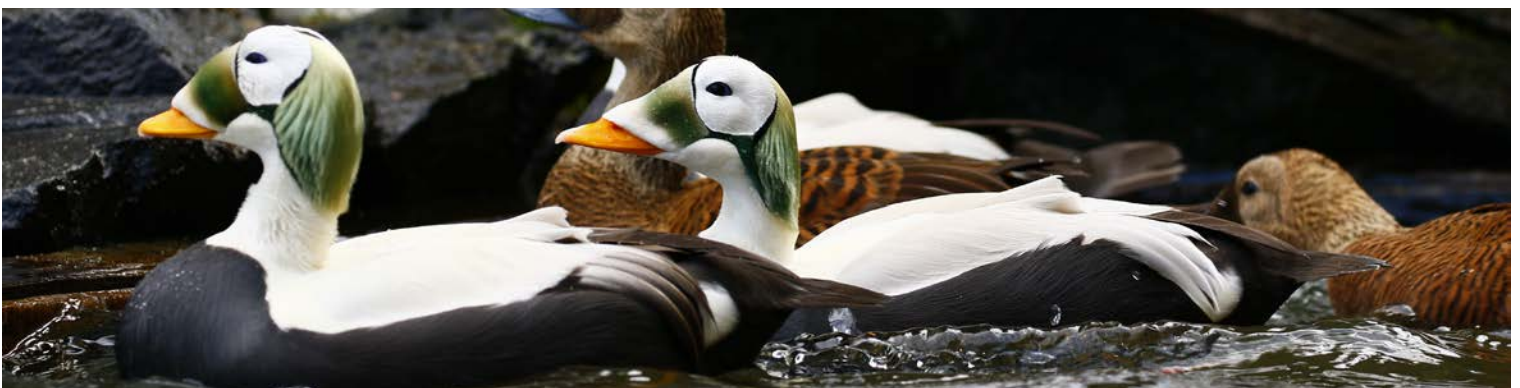


Photo by D. Schouten

Regional Anseriformes Populations Cont. Table 9

Species Held in North America						
Species	2020 RCP Management Status	# of AZA Institutions	2019 AZA SSP and/or Studbook Data	2015/2016 IWWA Holding from Survey	2019 ZIMS Data EAZA	2019 ZIMS Data European Region
Wandering whistling Duck (<i>Dendrocygna arcuata</i>)	Not Recommended	2	13.10.0	25.19.15	2.0.0	33.31.3
Fulvous whistling Duck (<i>Dendrocygna bicolor</i>)	Not Recommended	21	46.54.28	126.112.27	146.157.282	172.186.395
Javan whistling Duck (<i>Dendrocygna javanica</i>)	Not Recommended	3	8.4.0	35.34.2	23.23.2	38.41.2
Plumed whistling Duck (<i>Dendrocygna eytoni</i>)	Not Recommended	5	21.20.2	37.44.8	15.20.0	27.35.0
White-backed Duck (<i>Thalassomis leuconotus</i>)	Not Recommended	1	3.2.0	11.15.0	10.8.3	17.17.3
Tule White-fronted Goose (<i>Anser albifrons elgasi</i>)	Not Recommended	1	2.2.0	17.16.0	0.0.0	0.0.0
Greater Snow Goose (<i>Chen caerulescens atlanticus</i>)	Not Recommended	3	5.8.0	7.60.0	1.0.6	1.0.6
Pacific White-fronted Goose (<i>Anser albifrons frontalis</i>)	Not Recommended	0	0	20.21.0	0	0
Lesser Snow Goose (white phase) (<i>Chen caerulescens caerulescens</i>)	Not Recommended	5	4.8.5	58.57.18	4.2.1	11.16.4
Pink-footed Goose (<i>Anser brachyrhynchus</i>)	Not Recommended	2	13.8.0	23.22.0	2.3.0	9.11.2
Lesser White-fronted Goose (<i>Anser erythropus</i>)	Not Recommended	6	10.18.0	57.47.1	54.33.19	88.52.20
Atlantic Brant (<i>Branta bernicla hrota</i>)	Not Recommended	0	0	9.11.0	0	6.7.0
Russian Brant (<i>Branta bernicla bernicla</i>)	Not Recommended	0	0	2.20.0	0	0
Brant (Black/Pacific) (<i>Branta bernicla nigricans</i>)	Not Recommended	8	20.17.0	29.22.1	5.6.6	15.12.7
Giant Canada Goose (<i>Branta canadensis maxima</i>)	Not Recommended	2	1.1.0	22.27.11	2.2.20	2.2.22
Atlantic Canada Goose (<i>Branta canadensis canadensis</i>)	Not Recommended	0	0	1.1	1.2.0	4.7.25
Dusky Canada Goose (<i>Branta canadensis occidentalis</i>)	Not Recommended	1	1.0.0	5.6	0	0
Other Canada Goose race (race not specified)	Not Recommended	15	5.8.31	7.8.4	14.19.82	0
Cackling Goose (<i>Branta hutchinsii minima</i>)	Not Recommended	0	0	28.29	13.14.13	18.19.21
Aleutian Cackling Goose (<i>Branta hutchinsii leucopareia</i>)	Not Recommended	2	14.0	17.25.0	18.13.15	21.14.20
Richardson's Cackling Goose (<i>Branta hutchinsii hutchinsii</i>)	Not Recommended	0	0	4.40.0	0	4.4.0
Other Cackling Goose race (race not specified)	Not Recommended	2	14.0	8.8.4	0	0
Mute Swan (<i>Cygnus olor</i>)	Not Recommended	12	11.16.3	271.268.14	43.29.31	45.34.56
Whooper Swan (<i>Cygnus cygnus</i>)	Not Recommended	4	7.4.3	23.35.11	14.12.5	23.16.7
Whistling Swan (<i>Cygnus columbianus</i>)	Not Recommended	2	0.1.0	18.21.0	8.11.4	24.27.9
Bewick's Swan (<i>Cygnus bewickii</i>)	Not Recommended	0	0	0.10.0	7.10.3	22.25.7
Andean Goose (<i>Chloephaga melanoptera</i>)	Not Recommended	4	2.5.0	22.23	2.1.0	9.11.2
Greater Magellan Goose (<i>Chloephaga picta leucoptera</i>)	Not Recommended	1	0.2.0	13.14.0	2.1.0	3.2.0

Regional Anseriformes Populations Cont. Table 9

Species	2020 RCP Management Status	# of AZA Institutions	2019 AZA SSP and/or Studbook Data	2015/2016 IWWA Holding from Survey	2019 ZIMS Data EAZA	2019 ZIMS Data European Region
Lesser Magellan Goose (<i>Chloephaga picta picta</i>)	Not Recommended	1	1.0.0	14.16.0	2.3.0	2.3.0
Ashy-headed Goose (<i>Chloephaga poliocephala</i>)	Not Recommended	2	2.3.0	15.15	1.2.0	5.7.5
Egyptian Goose (<i>Alopochen aegyptiacus</i>)	Not Recommended	19	36.37.25	51.69.85	30.42.112	39.54.189
Ruddy Shelduck (<i>Tadorna ferruginea</i>)	Not Recommended	9	25.16.0	37.34.10	69.69.93	133.139.312
Australian Shelduck (<i>Tadorna tadornoides</i>)	Not Recommended	5	5.4.0	31.37.0	11.9.0	12.11.4
Paradise Shelduck (<i>Tadorna variegata</i>)	Not Recommended	1	1.0.0	21.23.0	5.5.2	8.7.9
Flying Steamer Duck (<i>Tachyeres patachonicus</i>)	Not Recommended	1	1.1.0	3.50.0	4.4.0	4.4.0
Magellanic (Fuegian) Steamer Duck (<i>Tachyeres pteneres</i>)	Not Recommended	0	0	0.0.0	4.8.0	4.9.0
Northern Spur-winged Goose (<i>Plectropterus gambensis gambensis</i>)	Not Recommended	2	3.1.0	6.5.1	18.19.4	18.20.21
Southern Spur-winged Goose (Black) (<i>Plectropterus gambensis niger</i>)	Not Recommended	4	4.1.0	21.12.0	0.0.0	10.11.0
Wild Muscovy (<i>Cairina moschata</i>)	Not Recommended	12	18.13.1	25.46.5	32.43.5	70.103.134
Patagonian Crested Duck (<i>Lophonetta specularioides specularioides</i>)	Not Recommended	1	0.1.0	5.70.0	4.9.0	19.21.0
Bronze-winged Duck (<i>Specularnas specularis</i>)	Not Recommended	3	14.0	18.19.6	6.8.0	12.13.5
Green Pygmy Goose (<i>Nettapus pulchellus</i>)	Not Recommended	0	0.0.0	1.0.0	0.0.0	0.0.0
New World Comb Duck (Black-sided) (<i>Sarkidiornis melanotos sylvicola</i>)	Not Recommended	7	21.24.1	18.19.0	4.7.0	7.21.0
Brazilian Teal (<i>Amazonetta brasiliensis</i>)	Not Recommended	8	17.10.0	50.45	84.87.23	115.119.28
Cinnamon Teal (<i>Spatula cyanoptera septentrionalium</i>)	Not Recommended	18	31.22.4	208.187.1	0	10.5.0
Australian Shoveler (<i>Spatula rhynchotis rhynchotis</i>)	Not Recommended	4	13.13.2	3.40.0	19.21.9	29.31.0
New Zealand Shoveler (<i>Spatula rhynchotis variegata</i>)	Not Recommended	4	4.1.0	21.12	0	10.11.0
Eurasian Wigeon (<i>Mareca penelope</i>)	Not Recommended	8	42.26.6	65.63.0	67.63.19	94.81.53
Gadwall (<i>Mareca strepera</i>)	Not Recommended	5	17.14.0	64.63	18.18.12	30.32.22
Chestnut Teal (<i>Anas castanea</i>)	Not Recommended	12	14.11.0	31.28	49.47.35	66.57.39
Common (European) Teal (<i>Anas crecca</i>)	Not Recommended	18	37.30.1	30.28	44.52.17	54.67.57
Red-billed Pintail (<i>Anas erythrorhyncha</i>)	Not Recommended	4	5.3.0	27.19.0	27.29.7	38.39.20
Chilean Teal (<i>Anas flavirostris flavirostris</i>)	Not Recommended	0	0.0.0	3.50.0	3.6.0	5.11.17
Florida Mottled Duck (<i>Anas fulvigula fulvigula</i>)	Not Recommended	0	0.0.0	5.6.4	0.0.0	0.0.0
Louisiana Mottled Duck (<i>Anas fulvigula maculosa</i>)	Not Recommended	0	0.0.0	8.60.0	0.0.0	0.0.0
Indonesian Gray Teal (<i>Anas gibberifrons gibberifrons</i>)	Not Recommended	2	6.2.6	25.17.1	10.12.16	23.22.0
South Georgia Pintail (<i>Anas georgica georgica</i>)	Not Recommended	3	4.10.2	5.40.0	4.8.0	4.8.0
Yellow-billed (Chilean) Pintail (<i>Anas georgica spinicauda</i>)	Not Recommended	2	6.2.6	25.17.1	10.12.16	23.22.0

Regional Anseriformes Populations Cont. Table 9

Species	2020 RCP Management Status	# of AZA Institutions	2019 AZA SSP and/or Studbook Data	2015/2016 IWWA Holding from Survey	2019 ZIMS Data EAZA	2019 ZIMS Data European Region
Meller's Duck (<i>Anas melleri</i>)	Not Recommended	2	9.6.0	15.13.0	33.45.9	44.58.8
Chinese Spot-billed Duck (<i>Anas poecilorhyncha zonorhyncha</i>)	Not Recommended	1	3.4.0	11.70.0	4.3.0	13.12.1
American Black Duck (<i>Anas rubripes</i>)	Not Recommended	4	4.4.6	51.42.8	2.2.0	6.4.0
African Black Duck (<i>Anas sparsa</i>)	Not Recommended	3	4.4.0	10.24.4	24.31.5	28.35.5
Pacific black Duck (<i>Anas superciliosa</i>)	Not Recommended	1	2.3.0	13.80.0	5.5.1	11.14.1
Yellow-billed Duck (<i>Anas undulata</i>)	Not Recommended	7	15.9.3	44.39.13	48.32.10	56.56.11
Hawaiian Duck (<i>Anas wyvilliana</i>)	Not Recommended	2	3.4.0	11.12.0	8.8.0	15.12.5
Southern Pochard (<i>Netta erythrophthalma</i>)	Not Recommended	4	3.6.2	36.44.1	33.36.0	37.37.0
Australian White-eye (<i>Aythya australis</i>)	Not Recommended	1	1.0.0	10.50.0	8.12.0	22.24.0
Ring-necked Duck (<i>Aythya collaris</i>)	Not Recommended	10	19.18.0	63.63	4.5.0	20.26.7
Common Pochard (<i>Aythya ferina</i>)	Not Recommended	3	6.4.31	17.20.0	122.134.77	130.134.99
Tufted Duck (<i>Aythya fuligula</i>)	Not Recommended	7	13.18.0	72.72.0	132.129.55	161.149.94
New Zealand Scaup (<i>Aythya novaeseelandiae</i>)	Not Recommended	3	10.10.0	52.46.4	13.12.6	16.12.2
Greater Scaup (<i>Aythya marila</i>)	Not Recommended	3	3.5.0	36.51.0	21.49.9	51.55.20
Steller's Eider (<i>Polysticta stelleri</i>)	Not Recommended	1	28.34.0	39.29.0	0.0.0	0.0.0
Atlantic Common Eider (<i>Somateria mollissima dresseri</i>)	Not Recommended	2	14.10.7	68.68.0	0.0.0	0.0.0
Faroe Common Eider (<i>Somateria mollissima faeroensis</i>)	Not Recommended	1	1.1.0	1.20.0	0.0.0	0.0.0
Other Common Eider race (race not specified)	Not Recommended	6	25.23.1	8.8.5	63.64.18	72.82.19
King Eider (<i>Somateria spectabilis</i>)	Not Recommended	3	7.8.0	20.26.0	3.3.2	3.3.2
American Black Scoter (<i>Melanitta americana</i>)	Not Recommended	1	0.1.0	3.2.2	0.0.0	0.0.0
American White-winged Scoter (<i>Melanitta deglandi deglandi</i>)	Not Recommended	2	4.2.0	19.25.0	0.0.0	0.0.0
Surf Scoter (<i>Melanitta perspicillata</i>)	Not Recommended	0	0.0.0	15.90.0	0.0.0	0.0.0
Common Goldeneye (<i>Bucephala clangula</i>)	Not Recommended	11	8.16.9	79.90.11	60.85.31	143.172.38
Common (American) Merganser (<i>Mergus merganser americanus</i>)	Not Recommended	2	6.2.0	12.20.2	0.0.0	0.0.0
Goosander (<i>Mergus merganser merganser</i>)	Not Recommended	0	0.0.0	1.10.0	1.1.28	1.2.0
Red-breasted Merganser (<i>Mergus serrator</i>)	Not Recommended	6	8.10.0	16.29.0	3.5.1	4.6.1
Black-headed Duck (<i>Heteronetta atricapilla</i>)	Not Recommended	0	0.0.0	3.20.0	2.1.0	23.19.0
Maccoa (<i>Oxyura maccoa</i>)	Not Recommended	7	9.10.0	17.18.0	3.4.0	27.33.0
Argentine Ruddy Duck (<i>Oxyura vittata</i>)	Not Recommended	7	12.11.1	45.28.1	3.8.1	15.21.1

Anseriformes Programs Summary Table

Table 10

Common Name (Genus species)	Date of Last PVA/B&T Plan	Current Population Size*	Current Number of Participating AZA Member Institutions and Sustainability Partners	Projected % GD at 100 years or 10 generations **	SSP Program Designation	5 Year Target Population Size	Space Needed (target population size minus current space)	Recent 5 Year Population Trend (increasing, decreasing, or stable)	USFWS IUCN CITES
Swan goose (<i>Anser cygnoides</i>)	2019	(44.58) 102	14	71%	Yellow SSP	110	8	Increasing	Not Listed Vulnerable Not Listed
African pygmy goose (<i>Nettapus auritus</i>)	2018	(52.44.13) 109	28	67%	Yellow SSP	150	41	Increasing	Not Listed Least Concern Not Listed
Marbled teal (<i>Marmaronetta angustirostris</i>)	2018	(153.125.8) 286	41	Cannot Calculate	Yellow SSP	275	-11	Increasing	Not Listed Vulnerable Not Listed
Madagascar teal (<i>Anas bernieri</i>)	2019	(30.38) 68	18	70%	Yellow SSP	75	7	Decreasing	Not Listed Endangered Appendix II
Red-breasted goose (<i>Branta ruficollis</i>)	2019	(77.66) 143	22	79.7%	Yellow SSP	200	57	Increasing	Not Listed Vulnerable Appendix II
Southern screamer (<i>Chauna torquata</i>)	2018	(60.43.6) 109	44	88.5%	Yellow SSP	115	9	Stable	Not Listed Least Concern Not Listed
West Indian whistling duck (<i>Dendrocygna arborea</i>)	2017	(37.34) 70	20	NA	Yellow SSP	100	30	Stable	Not Listed Vulnerable Appendix II
Spotted whistling duck (<i>Dendrocygna guttata</i>)	2019	(69.61) 130	19	NA	Yellow SSP	130	0	Increasing	Not Listed Least Concern Not Listed
Trumpeter swan (<i>Cygnus buccinator</i>)	2018	(38.45.2) 85	33	Cannot calculate	Yellow SSP	110	25	Increasing	Not Listed Least Concern Not Listed
Hawaiian (Nene) goose (<i>Branta sandvicensis</i>)	2018	(36.34.3) 73	19	50.1%	Yellow SSP	125	52	Decreasing	Endangered Vulnerable Appendix I
White-winged duck (<i>Asarcornis scutulata</i>)	2016	(37.34) 71	10	Cannot Calculate	Yellow SSP	100	29	Decreasing	Endangered Endangered Appendix I
Baer's pochard (<i>Aythya baeri</i>)	Never Planned	(53.50) 103	21	TBD	Yellow SSP	150	47	Increasing	Not Listed Critically Endangered Not Listed
Scaly-sided merganser (<i>Mergus squamatus</i>)	Never Planned	(30.39.12) 81	13	TBD	Yellow SSP	125	44	Increasing	Not Listed Endangered Not Listed
Indian pygmy goose (<i>Nettapus coromandelianus</i>)	2018	(26.21) 47	11	54.2%	Red SSP	100	53	Stable	Not Listed Least Concern Not Listed
Orinoco goose (<i>Neochen jubata</i>)	2018	(26.19.1) 46	18	50.2%	Red SSP	85	39	Decreasing	Not Listed Near Threatened Not Listed
Coscoroba swan (<i>Coscoroba coscoroba</i>)	2018	(15.13) 28	14	26.5%	Red SSP	75	50	Decreasing	Not Listed Least Concern Appendix II

* Population data provided by SSP Program Leaders and/or published Studbook data

** Data for GD at 100 years was taken from the most recent Breeding and Transfer Plan listed on the chart

Replacement Chart for Non-Recommended Species

During this RCP cycle 82 species and subspecies were not recommended to be managed within AZA. Most of these species are currently held in AZA and all are held in the AZA region. Wherever possible, the TAG has recommended replacement species that are managed as SSPs, Candidate Programs, or Monitored Programs. Additionally, when a program species was not a realistic replacement, DERP species were recommended. Replacements were provided with zoogeographic and non-zoogeographic considerations.

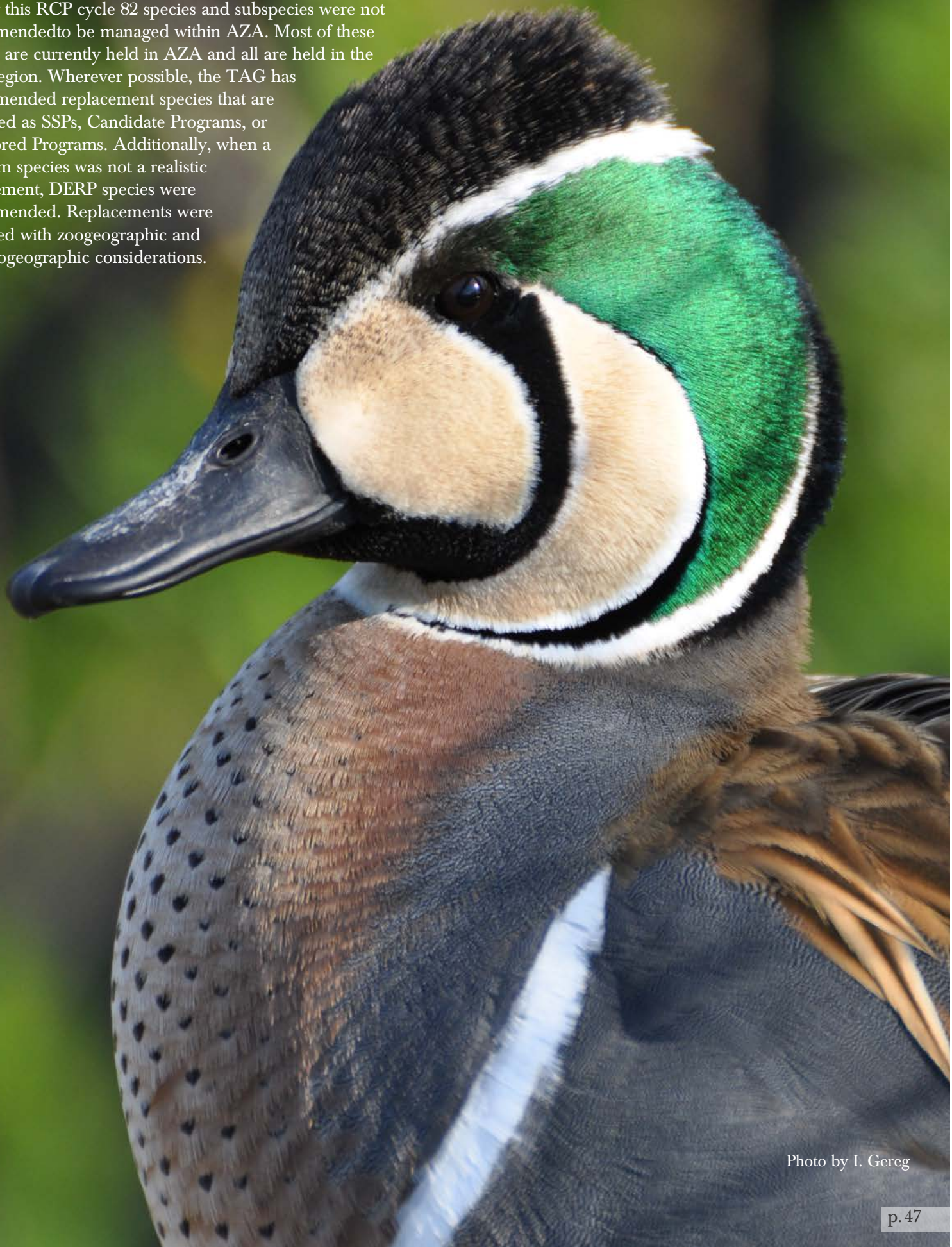


Photo by I. Gereg

Non-Recommended Species Replacement Chart Table 11

Species	Outcome	Zoogeographic Replacement	Non-Zoogeographic Replacement
Plumed Whistling Duck (<i>Dendrocygna eytoni</i>)	Not Recommended	Spotted Whistling Duck	Cuban Whistling Duck
Wandering Whistling Duck (<i>Dendrocygna arcuata</i>)	Not Recommended	Spotted Whistling Duck	Cuban Whistling Duck
White-backed Duck (<i>Thalassomis leuconotus</i>)	Not Recommended	White-headed Duck, African Pygmy Goose, Madagascar Teal	Spotted Whistling Duck, Marbled Teal
Indian Spot-billed Duck (<i>Anas poecilorhyncha poecilorhyncha</i>)	Not Recommended	Spotted Whistling Duck, Philippine Duck, Falcated Duck, Baikal Teal	Madagascar Teal, Marbled Teal, Cape Shelduck, Hartlaub's Duck, Laysan Teal
Yellow-billed Duck (<i>Anas undulata</i>)	Not Recommended	Madagascar Teal, Blue-winged Goose, Hartlaub's Duck, Cape Shelduck	Philippine Duck, Falcated Duck
American Black Duck (<i>Anas rubripes</i>)	Not Recommended	American Wigeon, Northern Pintail	Laysan Teal , Falcated Duck, Philippine Duck
Florida Mottled Duck (<i>Anas fulvigula fulvigula</i>)	Not Recommended	American Wigeon, Northern Pintail	Laysan Teal, Falcated Duck, Philippine Duck
Louisiana Mottled Duck (<i>Anas fulvigula maculosa</i>)	Not Recommended	American Wigeon, Northern Pintail	Laysan Teal, Falcated Duck, Philippine Duck
Hawaiian Duck (<i>Anas wyvilliana</i>)	Not Recommended	Laysan Teal , Hawaiian Goose	Philippine Duck, Falcated Duck
Chinese Spot-billed Duck (<i>Anas poecilorhyncha zonorhyncha</i>)	Not Recommended	Spotted Whistling Duck, Philippine Duck, Falcated Duck, Baikal Teal	Madagascar Teal, Marbled Teal, Hartlaub's Duck, Laysan Teal
Pacific Black Duck (<i>Anas superciliosa</i>)	Not Recommended	Spotted Whistling Duck, Philippine Duck, Falcated Duck , Baikal Teal	Madagascar Teal, Marbled Teal, Hartlaub's Duck, Laysan Teal
Meller's Duck (<i>Anas melleri</i>)	Not Recommended	Madagascar Teal, Blue-winged Goose, Cape Shelduck, Hartlaub's Duck	Philippine Duck, Falcated Duck
African Black Duck (<i>Anas sparsa</i>)	Not Recommended	Madagascar Teal, Blue-winged Goose, Cape Shelduck, Hartlaub's Duck	Philippine Duck, Falcated Duck
Indonesian Gray Teal (<i>Anas gibberifrons</i>)	Not Recommended	Spotted Whistling Duck, Indian Pygmy Goose, Philippine Duck, Falcated Duck, Baikal Teal	African Pygmy Goose, Marbled Teal, Laysan Teal
Red-billed Pintail (<i>Anas erythrorhyncha</i>)	Not Recommended	Madagascar Teal, Blue Winged Goose, Cape Shelduck, Hartlaub's Duck	Philippine Duck, Falcated Duck, Laysan Teal
Yellow-billed (Chilean) Pintail (<i>Anas georgica spinicauda</i>)	Not Recommended	Cuban Whistling Duck, Orinoco Goose, Silver Teal, Puna Teal, Chiloe Wigeon	Spotted Whistling Duck, Madagascar Teal, Marbled Teal
Common (European) Teal (<i>Anas crecca</i>)	Not Recommended	Marbled Teal	African Pygmy Goose, Indian Pygmy Goose, Laysan Teal, Green-winged Teal
Chestnut Teal (<i>Anas castanea</i>)	Not Recommended	Spotted Whistling Duck, Freckled Duck, Pink-eared Duck, Australian Wood Duck	Madagascar Teal, Marbled Teal, Falcated Duck, Laysan Teal, Philippine Duck
South Georgia Pintail (<i>Anas georgica georgica</i>)	Not Recommended	Cuban Whistling Duck, Orinoco Goose, Silver Teal, Puna Teal, Chiloe Wigeon	Spotted Whistling Duck, Madagascar Teal, Marbled Teal
Sharp-winged Teal (<i>Anas flavirostris oxyptera</i>)	Not Recommended	Cuban Whistling Duck, Orinoco Goose, Silver Teal, Puna Teal, Chiloe Wigeon	Spotted Whistling Duck, Madagascar Teal, Marbled Teal
Chilean Teal (<i>Anas flavirostris flavirostris</i>)	Not Recommended	Cuban Whistling Duck, Orinoco Goose, Silver Teal, Puna Teal, Chiloe Wigeon	Spotted Whistling Duck, Madagascar Teal, Marbled Teal
Australian and New Zealand Shoveler (<i>Anas rhynchos rhynchos and variegata</i>)	Not Recommended	Spotted Whistling Duck, Freckled Duck, Pink-eared Duck, Australian Wood Duck	Madagascar Teal, Marbled Teal, Falcated Duck, Laysan Teal, Philippine Duck
Garganey (<i>Spatula querquedula</i>)	Not Recommended	Spotted Whistling Duck, Marbled Teal, Philippine Duck, Falcated Duck, Baikal Teal	Madagascar Teal, Laysan Teal, Cape Teal, Hottentot Teal
Cinnamon Teal (<i>Spatula cyanoptera septentrionalium</i>)	Not Recommended	Blue-winged Teal, Green-winged Teal, American Wigeon, Northern Pintail	Laysan Teal, Marbled Teal, Madagascar Teal, Cape Teal, Hottentot Teal, Silver Teal, Puna Teal
Sharp-winged Teal (<i>Anas flavirostris oxyptera</i>)	Not Recommended	Cuban Whistling Duck, Orinoco Goose, Silver Teal, Puna Teal, Chiloe Wigeon	Spotted Whistling Duck, Madagascar Teal, Marbled Teal
Gadwall (<i>Mareca strepera</i>)	Not Recommended	American Wigeon, Northern Pintail	Laysan Teal , Falcated Duck, Philippine Duck
Eurasian Wigeon (<i>Anas penelope</i>)	Not Recommended	Marbled Teal, Falcated Duck, Philippine Duck, Baikal Teal	Madagascar Teal, Laysan Teal
Brazilian Teal (<i>Amazonetta brasiliensis</i>)	Not Recommended	Ringed Teal, Silver Teal, Puna Teal	Madagascar Teal, Marbled Teal, Laysan Teal, African Pygmy Goose, Indian Pygmy Goose
New World Comb Duck (Black-sided) (<i>Sarkidiornis melanotos melanotos</i>)	Not Recommended	Orinoco Goose, Cuban Whistling Duck, Coscoroba Swan	Falcated Duck, Philippine Duck, Australian Wood Duck

Non-Recommended Species Replacement Chart Cont. Table 11

Species	Outcome	Zoogeographic Replacement	Non-Zoogeographic Replacement
Northern Spur-winged Goose (<i>Plectropterus gambensis gambensis</i>)	Not Recommended	Blue-winged Goose, Cape Shelduck,	Coscoroba Swan, Southern Screamer, Hawaiian Goose, Magpie Goose
Southern Spur-winged Goose (Black) (<i>Plectropterus gambensis niger</i>)	Not Recommended	Blue-winged Goose, Cape Shelduck	Coscoroba Swan, Southern Screamer, Hawaiian Goose, Magpie Goose
Wild Muscovy (<i>Cairina moschata</i>)	Not Recommended	Orinoco Goose, Coscoroba Swan, Cuban Whistling Duck, Ruddy-headed Goose	Blue-winged Goose, Hawaiian Goose, White-winged Duck
Bronze-winged Duck (<i>Specularnas specularis</i>)	Not Recommended	Orinoco Goose, Southern Screamer, Ruddy-headed Goose	Blue-winged Goose, Hawaiian Goose, Cape Shelduck
Patagonian Crested Duck (<i>Lophonetta specularioides specularioides</i>)	Not Recommended	Orinoco Goose, Ruddy-headed Goose, White-faced Whistling Duck, Black-bellied Whistling Duck	Falcated Duck, Philippine Duck, Australian Wood Duck
Green Pygmy Goose (<i>Nettapus pulchellus</i>)	Not Recommended	None	Indian Pygmy Goose, African Pygmy Goose
Flying Steamer Duck (<i>Tachyeres patachonicus</i>)	Not Recommended	Coscoroba Swan, Ruddy-headed Goose, Andean Goose	Spectacled Eider, Pacific Common Eider, Cape Shelduck
Meagellanic (Fuegian) Steamer Duck (<i>Tachyeres pteneres</i>)	Not Recommended	Coscoroba Swan, Ruddy-headed Goose, Andean Goose	Spectacled Eider, Pacific Common Eider, Cape Shelduck
Redhead (<i>Aythya americana</i>)	Not Recommended	Canvasback, Ringed-neck Duck, Lesser Scaup, Bufflehead, Barrow's Goldeneye	Baer's Pochard, Scaly-sided Merganser, Ferruginous White Eye, White-headed Duck
Tufted Duck (<i>Aythya fuligula</i>)	Not Recommended	Baer's Pochard, Scaly-sided Merganser, Ferruginous White-eye Duck, White-headed Duck	Canvasback, Ring-necked Duck, Barrow's Goldeneye
Southern Pochard (<i>Netta erythrophthalma</i>)	Not Recommended	White-headed Duck, Rosy-billed Pochard	Baer's Pochard, Scaly-sided Merganser, Ferruginous White-eye Duck
Common Pochard	Not Recommended	Ferruginous White Eye, White-headed Duck, Baer's Pochard	Canvasback, Rosy-billed Pochard, Barrow's Goldeneye
Australian White-eye (<i>Aythya australis</i>)	Not Recommended	Baer's Pochard, Ferruginous White-eye Duck, Scaly-sided Merganser, Smew	White-headed Duck, North American Ruddy Duck
New Zealand Scaup (<i>Aythya novaeseelandiae</i>)	Not Recommended	Baer's Pochard, Ferruginous White-eye Duck, Scaly-sided Merganser, Smew	White-headed Duck, North American Ruddy Duck
Greater Scaup (<i>Aythya marila</i>)	Not Recommended	Canvasback, Ring-necked Duck, Lesser Scaup, Bufflehead, Barrow's Goldeneye	Baer's Pochard, Scaly-sided Merganser, Ferruginous White-eye, White-headed Duck
Common Goldeneye (<i>Bucephala clangula</i>)	Not Recommended	Barrow's Goldeneye, Canvasback, Ring-necked Duck	Baer's Pochard, Scaly-sided Merganser, Ferruginous White-eye, White-headed Duck
Goosander (<i>Mergus merganser merganser</i>)	Not Recommended	Scaly Sided Merganser, Red-crested Pochard	Hooded Merganser , Barrow's Goldeneye
Red-breasted Merganser (<i>Mergus serrator</i>)	Not Recommended	Barrow's Goldeneye, Hooded Merganser	Scaly-sided Merganser
Argentine Ruddy Duck (<i>Oxyura vittata</i>)	Not Recommended	North American Ruddy Duck, Ring-necked Duck, Lesser Scaup, Rosy-billed Pochard	White-headed Duck, Baer's Pochard, Ferruginous White Eye Duck
Maccoa (<i>Oxyura maccoa</i>)	Not Recommended	White-headed Duck	Baer's Pochard, Ferruginous White-eye Duck, North American Ruddy Duck
Black-headed Duck (<i>Heteronetta atricapilla</i>)	Not Recommended	White-headed Duck	Baer's Pochard, Ferruginous White-eye Duck, North American Ruddy Duck
King Eider (<i>Somateria spectabilis</i>)	Not Recommended	Spectacled Eider, Pacific Common Eider	None
Steller's Eider (<i>Polysticta stellari</i>)	Not Recommended	Spectacled Eider, Pacific Common Eider	None
Atlantic Common Eider (<i>Somateria mollissima dresseri</i>)	Not Recommended	Spectacled Eider, Pacific Common Eider	None
Faroe Common Eider (<i>Somateria mollissima faeroeensis</i>)	Not Recommended	None	Spectacled Eider, Pacific Common Eider
Other Common Eider race	Not Recommended	Spectacled Eider, Pacific Common Eider	None
Surf Scoter (<i>Melanitta perspicillata</i>)	Not Recommended	Long-tailed Duck, Harlequin Duck, Spectacled Eider, Pacific Common Eider	None
American Black Scoter (<i>Melanitta americana</i>)	Not Recommended	Long-tailed Duck, Harlequin Duck, Spectacled Eider, Pacific Common Eider	None

Non-Recommended Species Replacement Chart Cont. Table 11

Species	Outcome	Zoogeographic Replacement	Non-Zoogeographic Replacement
American White-winged Scoter (<i>Melanitta deglandi deglandi</i>)	Not Recommended	Long-tailed Duck, Harlequin Duck, Spectacled Eider, Pacific Common Eider	None
Lesser Magellan Goose (<i>Chloephaga picta picta</i>)	Not Recommended	Orinoco Goose, Coscoroba Swan, Ruddy-headed Geese, Andean Goose, Southern Screamer	Hawaiian Goose, Red-breasted Goose, Swan Goose, Blue-winged Goose, Emperor Goose, Magpie Goose, Cape Shelduck
Greater Magellan Goose (<i>Chloephaga picta leucoptera</i>)	Not Recommended	Orinoco Goose, Coscoroba Swan, Ruddy-headed Geese, Andean Goose, Southern Screamer	Hawaiian Goose, Red-breasted Goose, Swan Goose, Blue-winged Goose, Emperor Goose, Magpie Goose, Cape Shelduck
Egyptian Goose (<i>Alopochen aegyptiacus</i>)	Not Recommended	Blue-winged Goose, Cape Shelduck, Hartlaub's Duck	Southern Screamer, Andean Goose, Ruddy Headed Goose, Red-breasted Goose, Australian Wood Duck
Ashy-headed Goose (<i>Chloephaga poliocephala</i>)	Not Recommended	Ruddy-headed Goose, Orinoco Goose, Coscoroba Swan, Southern Screamer, Andean Goose	Southern Screamer, Andean Goose, Ruddy Headed Goose, Red-breasted Goose, Australian Wood Duck
Paradise Shelduck (<i>Tadorna variegata</i>)	Not Recommended	Rajdah Shelduck, Magpie Goose, Australian Wood Duck	Common Shelduck, Blue-winged Goose, Ruddy-headed Goose
Ruddy Shelduck (<i>Tadorna ferruginea</i>)	Not Recommended	Cape Shelduck, Blue-winged Goose	Rajdah Shelduck, Ruddy-head Goose, Common Shelduck, Australian Wood Duck
Australian Shelduck (<i>Tadorna tadornoides</i>)	Not Recommended	Rajdah Shelduck, Magpie Goose, Australian Wood Duck	Cape Shelduck, Common Shelduck, Blue-winged Goose, Ruddy-headed Goose, Hawaiian Goose
Lesser White-fronted Goose (<i>Anser erythropus</i>)	Not Recommended	Red-breasted Goose, Swan Goose, Barnacle Goose	Emperor Goose, Hawaiian Goose, Blue-winged Goose, Pacific Brant Goose
Pink-footed Goose (<i>Anser brachyrhynchotis</i>)	Not Recommended	Red-breasted Goose, Swan Goose, Barnacle Goose	Emperor Goose, Hawaiian Goose, Blue-winged Goose, Pacific Brant Goose
Pacific White-fronted Goose (<i>Anser albifrons frontalis</i>)	Not Recommended	Emperor Goose, Pacific Brant Goose	Red-breasted Goose, Swan Goose, Andean Goose
Tule White-fronted Goose (<i>Anser albifrons elgasi</i>)	Not Recommended	Emperor Goose, Pacific Brant Goose	Red-breasted Goose, Swan Goose, Andean Goose
Giant Canada Goose (<i>Branta canadensis maxima</i>)	Not Recommended	Emperor Goose, Hawaiian Goose	Red-breasted Goose, Coscoroba Swan, Blue-winged Goose, Barnacle Goose
Atlantic Canada Goose (<i>Branta canadensis canadensis</i>)	Not Recommended	Emperor Goose, Hawaiian Goose	Red-breasted Goose, Coscoroba Swan, Blue-winged Goose, Barnacle Goose
Dusky Canada Goose (<i>Branta canadensis occidentalis</i>)	Not Recommended	Emperor Goose, Hawaiian Goose	Red-breasted Goose, Coscoroba Swan, Blue-winged Goose, Barnacle Goose
Other Canada Goose race	Not Recommended	Emperor Goose, Hawaiian Goose	Red-breasted Goose, Coscoroba Swan, Blue-winged Goose, Barnacle Goose
Cackling Goose (<i>Branta hutchinsii minima</i>)	Not Recommended	Emperor Goose, Hawaiian Goose	Red-breasted Goose, Coscoroba Swan, Blue-winged Goose, Barnacle Goose
Aleutian Cackling Goose (<i>Branta hutchinsii leucopareia</i>)	Not Recommended	Emperor Goose, Hawaiian Goose	Red-breasted Goose, Coscoroba Swan, Blue-winged Goose, Barnacle Goose
Richardson's Cackling Goose (<i>Branta hutchinsii hutchinsii</i>)	Not Recommended	Emperor Goose, Hawaiian Goose	Red-breasted Goose, Coscoroba Swan, Blue-winged Goose, Barnacle Goose
Other Cackling Goose race	Not Recommended	Emperor Goose, Hawaiian Goose	Red-breasted Goose, Coscoroba Swan, Blue-winged Goose, Barnacle Goose
Atlantic Brant (<i>Branta bernicia hrota</i>)	Not Recommended	Red-breasted Goose, Barnacle Goose, Nene, Pacific Brant	Blue-winged Goose, Ruddy-headed Goose, Cape Shelduck
Russian Brant (<i>Branta bernicia bernicia</i>)	Not Recommended	Swan Goose, Red-breasted Goose, Emperor Goose	Blue-winged Goose, Ruddy-headed Goose, Cape Shelduck
Lesser Snow Goose (<i>Anser caerulescens caerulescens</i>)	Not Recommended	Emperor Goose, Pacific Brant, Ross's Goose	Blue-winged Goose, Ruddy-headed Goose, Cape Shelduck
Greater Snow Goose (<i>Anser caerulescens antlanticus</i>)	Not Recommended	Emperor Goose, Pacific Brant, Ross's Goose	Blue-winged Goose, Ruddy-headed Goose, Cape Shelduck
Whistling Swan (<i>Cygnus columbianus</i>)	Not Recommended	Trumpeter Swan	Coscoroba Swan, Black Swan, Black-necked Swan
Bewick's Swan (<i>Cygnus bewickii</i>)	Not Recommended	None	Trumpeter Swan, Coscoroba Swan, Black Swan, Black-necked Swan
Whooper Swan (<i>Cygnus cygnus</i>)	Not Recommended	None	Trumpeter Swan, Coscoroba Swan, Black Swan, Black-necked Swan
Mute Swan (<i>Cygnus olor</i>)	Not Recommended	None	Trumpeter Swan, Coscoroba Swan, Black Swan, Black-necked Swan

Management Update Table Table 12

Management history of TAG species from the 2008, 2012, and 2020 RCPs.

Species	Management Level in 2008 RCP	Management Level in 2012 RCP	Management Level in 2020 RCP	SSP Coordinator and Studbook Keeper
Southern Screamer (<i>Chauna torquata</i>)	PMP	Yellow SSP	Yellow SSP	Joanna Klass joanna.klass@zoo.org (920) 619-0952
Spotted Whistling Duck (<i>Dendrocygna guttata</i>)	Studbook	Studbook Red	Yellow SSP	Ian Shelley ian.shelley@marylandzoo.org (410) 916-8470
West Indian Whistling Duck (<i>Dendrocygna arborea</i>)	PMP	Studbook Red	Yellow SSP	Mindy Rabideau mindyr@tracyaviary.org (801) 596-850
African Pygmy Goose (<i>Nettapus auritus</i>)	PMP	Yellow SSP	Yellow SSP	Stephanie Allard, PhD sallard@dzs.org (248) 541-5717 ext.3720
Madagascar Teal (<i>Anas bernieri</i>)	Phase In	Studbook Red	Yellow SSP	Allan Craig Mikel allan.mikel@louisvilleky.gov (502) 459-2196
Marbled Teal (<i>Marmaronetta angustirostris</i>)	PMP	Yellow SSP	Yellow SSP	R. Harrison Edell harrison.edell@dallaszoo.com (469) 554-7201
Baer's Pochard (<i>Aythya baeri</i>)	Phase In	Non-Program Species	Yellow SSP	Jamie Toste jamie.toste@state.mn.us (952) 431-9278
Scaly-sided (Chinese) Merganser (<i>Mergus squamatus</i>)	Not Recommended	Non-Program Species	Yellow SSP	Chuck Cerbini chuck.cerbini@toledo zoo.org (419) 385-5721 ext.2008
White-winged Duck (<i>Asarcornis scutulata</i>)	PMP	Yellow SSP	Yellow SSP	Dr. Kimberly Cook k.cook@akronzoo.org (330) 375-2550 ext.7221
Hawaiian (Nene) Goose (<i>Branta sandvicensis</i>)	PMP	Yellow SSP	Yellow SSP	William Robles wrobles@auduboninstitute.org 631-379-3517
Red-breasted Goose (<i>Branta ruficollis</i>)	DERP	Studbook Red	Yellow SSP	Joanna Klass joanna.klass@zoo.org (920) 619-0952
Swan Goose (<i>Anser cygnoides</i>)	PMP	Yellow SSP	Yellow SSP	Christine Fuehrmeyer cfuehrmeyer@pzoo.org (312) 742-7742
Trumpeter Swan (<i>Cygnus buccinator</i>)	PMP	Studbook Red	Yellow SSP	Tiffany Mayo trm1@clevelandmetroparks.com (216) 661-6500 ext.4007
Indian Pygmy Goose (<i>Nettapus coromandelianus</i>)	PMP	Yellow SSP	Red SSP	Stephanie Allard, PhD sallard@dzs.org (248) 541-5717 ext.3720
Orinoco Goose (<i>Neochen jubata</i>)	DERP	Studbook Red	Red SSP	Nancy Nill nnill@palmbeachzoo.org 561-533-0887 (353)
Coscoroba Swan (<i>Coscoroba coscoroba</i>)	PMP	Studbook Red	Red SSP	Matt Wade McHale matthew.mchale@miamidade.gov (910) 547-1207
Philippine Duck (<i>Anas luzonica</i>)	Phase In	Non-Program Species	Candidate Program	N/A
Emperor Goose (<i>Chen canagica</i>)	DERP	RAFT	Candidate Program	N/A
Blue-winged Goose (<i>Cyanochen cyanopectera</i>)	N/A	RAFT	Candidate Program	N/A
Laysan Duck (<i>Anas laysanensis</i>)	DERP	RAFT	Monitored Population	N/A

Management Update Table Cont. Table 12

Species	Management Level in 2008 RCP	Management Level in 2012 RCP	Management Level in 2020 RCP	SSP Coordinator and Studbook Keeper
Falcated Duck (<i>Mareca falcata</i>)	DERP	RAFT	Monitored Population	N/A
Magpie Goose (<i>Aneranus semipalmata</i>)	DERP	RAFT	Monitored Population	N/A
Cape Shelduck (<i>Tadorna cana</i>)	N/A	RAFT	Monitored Population	N/A
Hartlaub's Duck (<i>Pteronetta hartlaubii</i>)	Phase Out	RAFT	Monitored Population	N/A
Spectacled Eider (<i>Somateria fischeri</i>)	DERP	RAFT	Monitored Population	N/A
White-headed Duck (<i>Oxyura leucocephala</i>)	Phase In	Non-Program Species	Monitored Population	N/A



Photo by J. Dwyer-Lindgren

SSP Five Year Goals and Essential Actions

Common Name/Scientific Name: Swan goose (*Anser cygnoides*)

Animal Program Designation: Yellow SSP

Primary Role: Education & Conservation

Goal #1/Essential Action: Annually review the population to ensure that the SSP is striving to meet the TAG target population goals for the species. In order to meet this goal, the SSP will work to develop one additional same-sex flock every two years and encourage holding institutions with domestic swan geese to replace their birds with “wild” swan geese over the next five years as applicable. The SSP will also identify three or four new holders over the next five years to foster better stability within the population.

Goal #2/Essential Action: Work to transition the studbook to Sandbox by March 2020 and to have full integration into ZIMS by December 2020. Improve historic studbook data quality by researching founder pedigrees to allow for a better understanding of the genetic redundancy in the AZA/EAZA populations. The goal is to have research completed by 2022 and be able to provide guidance to the TAG regarding the need for future management in the region by 2024.

Goal #3/Essential Action: Consistent with TAG goals, annually work with TAG Education Committee to develop conservation messaging regarding the plight of this endangered species. By the end of 2020, become integrated into the TAG Education Committee and by 2021 develop all conservation messaging related to the species. All materials should be disseminated to holding institutions by 2022 and plan to utilize the TAG measurement tool to evaluate effectiveness of messaging by 2025.



Photo by D. Dow



Photo by Pinola Conservancy

Common Name/Scientific Name: African pygmy goose (*Nettapus auritus*)

Animal Program Designation: Yellow SSP

Primary Role: Education

Goal #1/Essential Action: Increase reproductive output via dissemination of husbandry survey results by March 2020 and hand-rearing resources by distributing a hand-rearing survey by January 2021. From 2021-2025 annually send an updating survey to holding institutions to determine the impact that the hand-rearing resources have had on reducing duckling mortality.

Goal #2/Essential Action: Retain animals in the SSP/managed population by making more timely transfer recommendations and minimizing moves not recommended by the SSP by soliciting new holders and updating the wait list annually. On a yearly basis identify new and/or replacement holders to allow for more timely transfers of the previous year’s offspring, allowing recommended institutions to continue with breeding.

Goal #3/Essential Action: Annually compile information on morbidity and mortality trends by gathering necropsy/histopath information from holding institutions starting in June 2020. Annually work with TAG veterinary advisors to better analyze pathology reports. Disseminate the results to TAG leadership and holding institutions by the end of 2023.

Common Name/Scientific Name: Indian pygmy goose (*Nettapus coromandelianus*)
Animal Program Designation: Red SSP
Primary Role: Education

Goal #1/Essential Action: Increase reproductive output via dissemination of husbandry survey results by March 2020 and hand-rearing resources by distributing a hand-rearing survey by January 2021. From 2021-2025 annually send an updating survey to holding institutions to determine the impact that the hand-rearing resources have had on reducing duckling mortality.

Goal #2/Essential Action: Retain animals in the SSP/managed population by making more timely transfer recommendations and minimizing moves not recommended by the SSP by soliciting new holders and updating the wait list annually. On a yearly basis identify new and/or replacement holders to allow for more timely transfers of the previous year's offspring, allowing recommended institutions to continue with breeding.

Goal #3/Essential Action: Annually compile information on morbidity and mortality trends by gathering necropsy/histopath information from holding institutions starting in June 2020. Annually work with TAG veterinary advisors to better analyze pathology reports. Report the results to TAG leadership and holding institutions by the end of 2023.

Goal #4/Essential Action: Increase Indian pygmy goose population by 15% in the next five years to reach 95-100 birds by 2025 through captive breeding and by adding founders from private aviculture institutions and/or other zoological regions.



Photo by Pinola Conservancy



Photo credit: L.Audunson

Common Name/Scientific Name: Marbled teal (*Marmaronetta angustirostris*)
Animal Program Designation: Yellow SSP
Primary Role: Education & Conservation

Goal #1/Essential Action: In 2020, bring the newly-appointed SSP Vice Coordinator up to speed on the SSP population demographics, breeding and management strategies, and SSP programs and initiatives. By 2022, create succession planning that will allow for the seamless transition of SSP leadership in the future.

Goal #2/Essential Action: Over the next five years continue to work with Mallorcan colleagues in developing parameters for genetic testing of specimens within AZA populations to compare with Western Mediterranean specimens.

Goal #3/Essential Action: Once genetic sampling is complete and parameters are set, work with at least five AZA institutions that were part of the sampling to breed birds to transfer to EAZA for eventual release by 2023.

Common Name/Scientific Name: Madagascar teal (*Anas bernieri*)

Animal Program Designation: Yellow SSP

Primary Role: Education & Conservation

Goal #1/Essential Action: Gather information from within the AZA region regarding challenges in managing Madagascar teal in a zoological setting. Once the information is received and analyzed, develop a resource that provides guidance on species management, recommendations for mixed-species housing, and strategies for indoor and outdoor management to reduce year-round breeding issues. The goal is to have the resources completed by 2022 and distributed in 2023.

Goal #2/Essential Action: Transition studbook to Sandbox by the beginning of 2020 and fully integrate studbook to ZIMS live version by December of 2020.

Goal #3/Essential Action: To counteract recent declines in the population and to become less reliant on non-AZA facilities, recruit two new institutions to house species (in both breeding and non-breeding flocks) every two years through 2025.

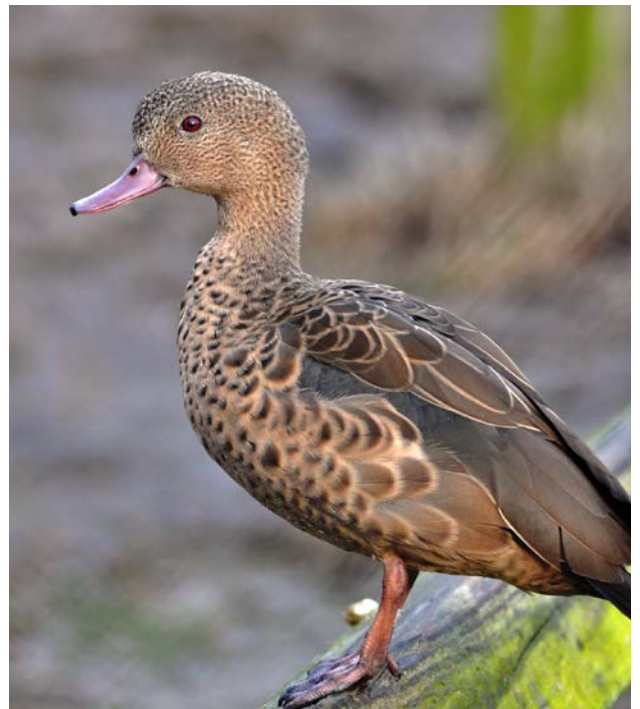


Photo by I. Gereg

Common Name/Scientific Name: Red-breasted goose (*Branta ruficollis*)

Animal Program Designation: Yellow SSP

Primary Role: Education & Conservation

Goal #1/Essential Action: Continue working with Dr. Nicky Petkov of the AEWIA Red-breasted Goose International Working Group to raise funds for the LIFE for Safe Flight project through October 2022. This will be done by applying for the Woodland Park Zoo's Wildlife Survival Fund for an annual contribution of \$1000 USD. Other funding may be sought through grants through other zoos, AAZK, ASAG, etc. as specific project needs arise.

Goal #2/Essential Action: As a means to increase the overall sustainability of the population and meet the RCP target population goals, identify a new holder annually to maintain a breeding or a non-breeding flock through 2025.

Goal #3/Essential Action: In order to grow the SSP population, develop guidelines regarding species breeding strategies and rearing. The goal is to develop materials by the end of 2020. These guidelines will then be disseminated to holders in 2021. The SSP will follow-up with holders annually to determine if management strategies were being followed and the rate of success.

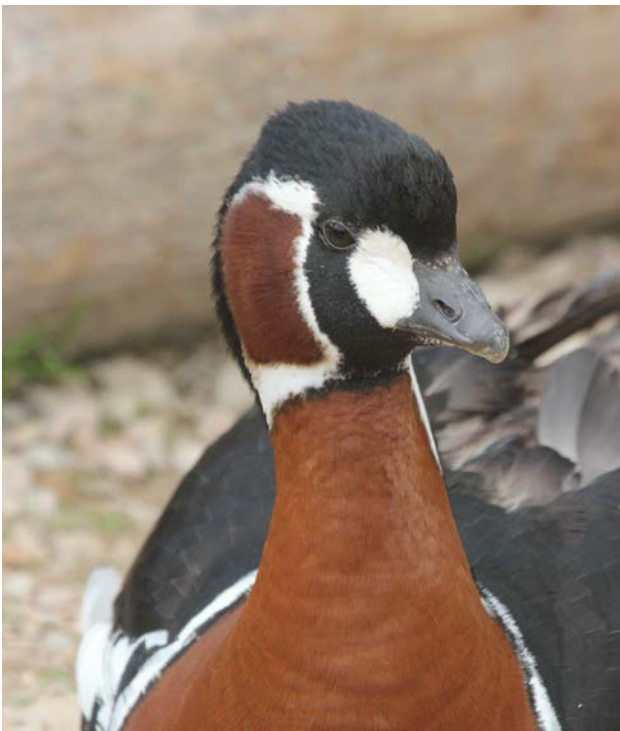


Photo by K. Lovett

Common Name/Scientific Name: Orinoco goose (*Neochen jubata*)
Animal Program Designation: Red SSP
Primary Role: Education & Conservation

Goal #1/Essential Action: Continue to gain a better understanding of ZIMS for studbooks and fully transition studbook by the end of 2020.

Goal #2/Essential Action: Determine strategies and best practices for captive breeding and rearing of the species. By the end of 2021, these guidelines will be outlined and distributed to holding institutions in the hopes of increasing breeding success within AZA populations. The SSP will follow-up annually to evaluate the efficacy of these guidelines and reevaluate if necessary.

Goal #3/Essential Action: By the end of 2020, work with the TAG Education Committee to develop educational/conservation messaging related to the species and the health of wetlands within the Amazon Basin. Materials will be developed and distributed to institutions by 2022 and their efficacy evaluated by 2025.

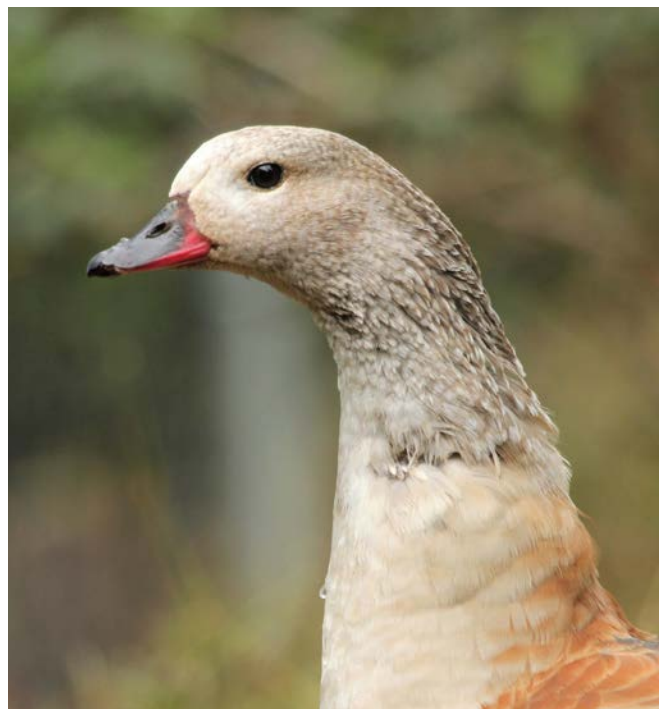


Photo by K.Lovett



Photo by D. Dow

Common Name/Scientific Name: Southern Screamer (*Chauna torquata*)
Animal Program Designation: Yellow SSP
Primary Role: Education

Goal #1/Essential Action: Recruit 1-2 new holders on an annual basis to allow for the steady growth of the population and to replace institutions that are phasing out the species. The goal is to meet the TAG target population goal by 2025.

Goal #2/Essential Action: In order to grow the SSP population, develop guidelines regarding species breeding strategies and rearing. The goal is to develop materials by the end of 2020. These guidelines will then be disseminated to holders in 2021. The SSP will follow-up with holders annually to determine if management strategies were being followed and the rate of success.

Goal #3/Essential Action: Work with Dr. Michael Garner/Northwest ZooPath to research and analyze chick mortality within the population. Determine by the end of 2020 if this project is viable. From 2021-2023 work with TAG veterinary advisors to analyze mortality information and develop a report that can be sent to TAG leaders and species holders.

Common Name/Scientific Name: West Indian whistling duck
(*Dendrocygna arborea*)

Animal Program Designation: Yellow SSP

Primary Role: Education & Conservation

Goal #1/Essential Action: Attend studbook school by May 2021. Work through TAG leadership to identify a mentor to assist in the updating of studbook information and transitioning data to ZIMS by the end of 2020.

Goal #2/Essential Action: Through 2020, obtain information from holders on management practices related to nesting, incubation, and parent/hand-rearing. Analyze this data in 2021 and create materials to be sent to holders. Distribute materials in 2022 and follow-up annually. In 2023 and 2024, determine if institutions are realizing increased breeding success within their flocks.

Goal #3/Essential Action: Assess full-winged vs. pinioned birds within the current population and track needs for the future of the population. Communicate with current facilities on whether they can house full-winged birds or require pinioned birds to assess future needs of the population. This information will be compiled in a document by 2020. This document will be shared with the TAG and pinioning status for each bird will be recorded within the studbook by 2021.



Photo by K . Lovett

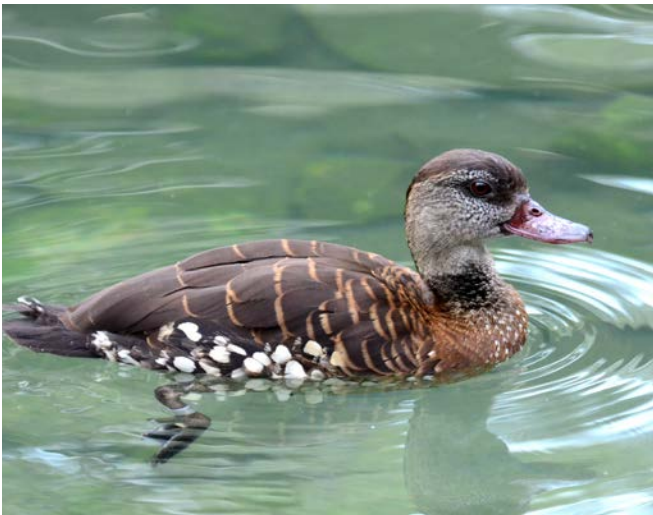


Photo by Pinola Conservancy

Common Name/Scientific Name: Spotted whistling duck
(*Dendrocygna guttata*)

Animal Program Designation: Yellow SSP

Primary Role: Education

Goal #1/Essential Action: By March 2020, transition studbook from PopLink to Sandbox and fully integrate studbook into ZIMS by December 2020.

Goal #2/Essential Action: As a means to maintain the current SSP population and meet the TAG target population goals, recruit two new institutions every two years to allow for less reliance on any one holding institution and allow for replacement of institutions that are phasing out species. These new holding institutions will be for both breeding and non-breeding flocks in order to meet the needs of the SSP.

Goal #3/Essential Action: Through 2020, collect data on mixed species currently or historically housed with spotted whistling ducks. In 2021, work with other Asian waterfowl SSP leaders to create a document identifying mixed species opportunities for spotted whistling ducks. By 2022, distribute materials to TAG leadership and holding institutions.

Common Name/Scientific Name: Coscoroba swan (*Coscoroba coscoroba*)
Animal Program Designation: Red SSP
Primary Role: Education

Goal #1/Essential Action: Increase coscoroba swan population by 25% every year for the next five years to reach 75-80 birds by 2025 through captive breeding and by adding founders from private aviculture institutions and/or other zoological regions.

Goal #2/Essential Action: By March of 2020 transition current studbook from previous database to Sandbox within ZIMS. By the end of 2020 fully transition studbook to ZIMS live version.

Goal #3/Essential Action: By 2021, develop guidelines related to the husbandry and reproduction of captive populations of the species. This document will then be shared with TAG leadership and holding institutions and reevaluated annually.



Photo by I. Gereg



Photo by K.Lovett

Common Name/Scientific Name: Trumpeter swan (*Cygnus buccinator*)
Animal Program Designation: Yellow SSP
Primary Role: Education & Conservation

Goal #1/Essential Action: Through 2020, encourage zoos to collect blood samples for genetic analysis to help understand the genetic makeup of the AZA regional population. In 2021 start working with geneticists to analyze samples with the goal of continuing widespread reintroduction programs by 2022.

Goal #2/Essential Action: On an annual basis continue working/attend meetings with applicable Dept. of Natural Resources and USFWS to develop stronger partnerships which will lead to expanded conservation of the species. Plan on presenting results of this partnership work at least every other year at TAG workshops.

Goal #3/Essential Action: In 2020 strive to place unpaired swans currently residing in AZA institutions while also meeting the demands of new institutions looking to become involved in the SSP. Concurrently work with AZA institutions to acquire rehabbed swans with pure Rocky Mountain bloodlines. Goal of sending annual report to TAG leadership on progress of incorporating new bloodlines into AZA populations.

Common Name/Scientific Name: Nene goose (*Branta sandvicensis*)
Animal Program Designation: Yellow SSP
Primary Role: Education & Conservation

Goal #1/Essential Action: Increase Hawaiian (nene) goose population by 10% in the next five years to reach 115-120 birds by 2025 through captive breeding and by adding founders from private aviculture institutions and/or other zoological regions.

Goal #2/Essential Action: In 2020, continue to work with USFWS in Hawaii to explore opportunities to augment the AZA population with injured/non-releasable birds from range areas while also pursuing the development of captive-bred release programs. Goal of reporting plans for partnership development to TAG leadership and holding institutions in 2021.

Goal #3/Essential Action: By the end of 2020, working in conjunction with the TAG Education Committee, develop educational and conservation messaging related to Hawaiian goose conservation. This messaging should be complete by the end of 2021 and available to all AZA institutions to be included in their zoo educational interpretives and Hawaiian goose messaging. Additionally, by 2021 work with the TAG committee to develop methods to evaluate the effectiveness of this messaging.

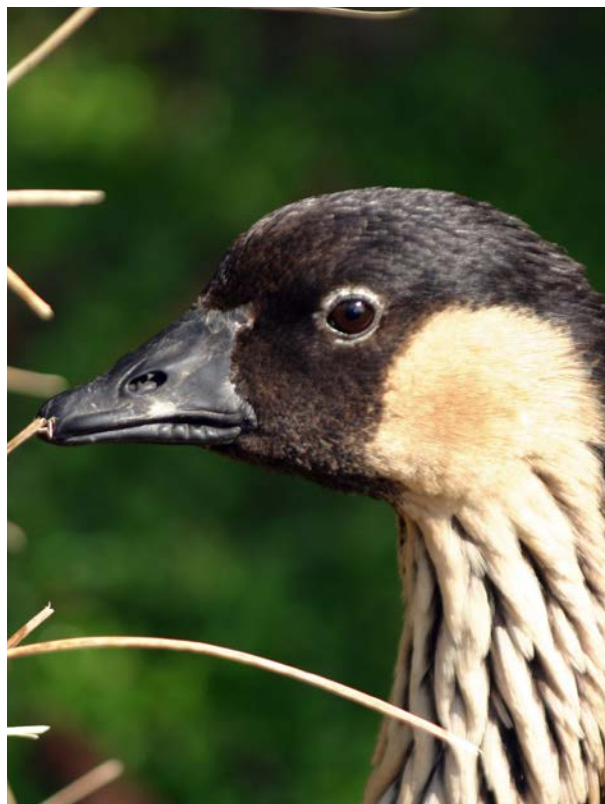


Photo by K. Lovett



Common Name/Scientific Name: White-winged duck (*Asarcornis scutulata*)
Animal Program Designation: Yellow SSP
Primary Role: Research, Education & Conservation

Goal #1/Essential Action: By the end of 2021, utilizing info from the AZA and EAZA studbooks, assess the relatedness of the two populations and determine how much overlap there is in the founder pedigree in both regions. By end of 2022, analyze with the help of the PMC ideal target populations for a combined AZA and EAZA population. Additionally, for 2021, assess zoological interest for the species in AZA.

Goal #2/Essential Action: Through support of the Akron Zoo, IWWA, and the TAG, continue avian TB studies at Sylvan Heights and Hiram College. Report annually to TAG leadership and AZA holders updates on the progress of the research. In 2020, formalize plans to expand genetic analysis of the North American captive population with implementation of the work, if feasible, in 2021.

Goal #3/Essential Action: By the end of 2021, continue to work on developing partnerships to allow for a conservation meeting in Assam with CPSG. Disseminate information from these proposed meetings at TAG meetings and workshops.

Photo by I. Gereg

Common Name/Scientific Name: Baer's pochard (*Aythya baeri*)
Animal Program Designation: Yellow SSP
Primary Role: Conservation, Research

Goal #1/Essential Action: In 2020, use the results of a scheduled DNA analysis to compare the new genetic data against assumed studbook pedigree. The information garnered from this genetic/studbook work will be used to maximize genetic diversity in the population and develop appropriate bird pairings for breeding over the next five years.

Goal #2/Essential Action: By the end of 2021, work collaboratively with WWT and EAZA studbook keeper to develop guidelines related to general husbandry, reproduction, and rearing to be used in the ex-situ management of Baer's pochards. In 2022 (or sooner if completed early) circulate these guidelines on a global level particularly within EAZA and AZA.

Goal #3/Essential Action: Throughout 2020, publish and migrate studbook information to ZIMS and submit sustainability partnerships as required.

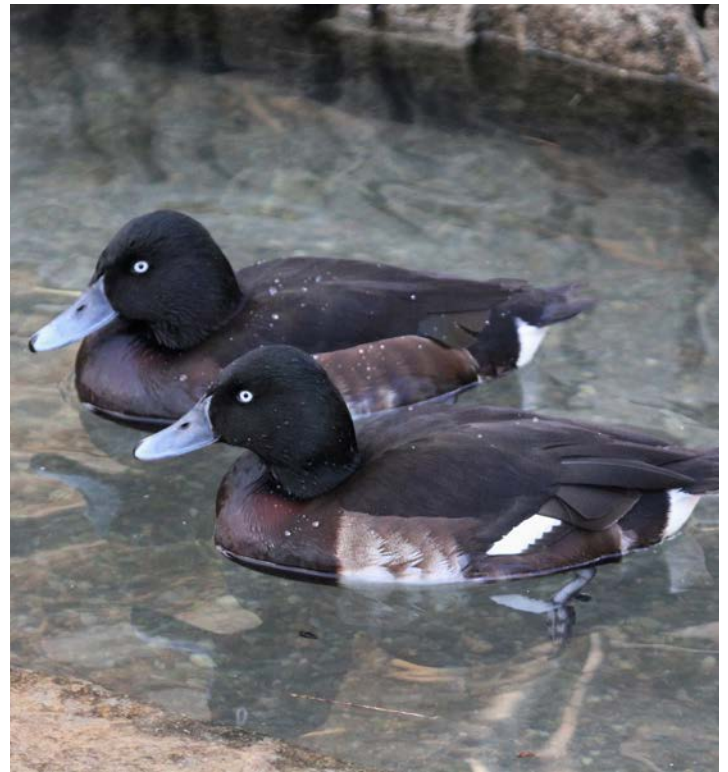


Photo by Photo by L. Audunson



Photo by L. Audunson

Common Name/Scientific Name: Scaly-sided merganser
(*Mergus squamatus*)

Animal Program Designation: Yellow SSP
Primary Role: Conservation

Goal #1/Essential Action: Complete a husbandry document for the species in collaboration with the TAGs ACM efforts by the end of 2020. The document will include all aspects of husbandry including housing, feeding, breeding management, hand-rearing, etc. Goal to disseminate species-specific information to holders in 2021 and include in a larger TAG ACM publication within the next five years.

Goal #2/Essential Action: As a means to increase the AZA population, consistent with the TAG target population goal for the species, identify at least one new institution annually for the next five years that can serve as a holder of a breeding or non-breeding flock. Report progress to TAG leadership on an annual basis.

Goal #3/Essential Action: Develop a program to encourage increased institutional participation in SSME in situ conservation. In 2020 develop a plan in collaboration with the SSME task force and solicit TAG conservation Committee endorsement of these plans. Over the next five years, increase institutional contributions by at least 25% compared to the previous five years.



Photo by Pinola Conservancy

Order: Anseriformes

Family: Anhimidae

Scientific Name: *Chauna torquata*

Common Name: Southern Screamer

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Conservation Status:

USFWS: Not Listed
IUCN: Least Concern
CITES: Not Listed
Wild Population Trend: Stable

Sustainability Criteria:

Current Population: 60.43.6
Participating Institutions: 44
Target Population: 115
Genetic Diversity at 100 years: 88.5%

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
Wetlands, marshes, lagoons

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
Can withstand 32F with good weather, heated barn access (@40F), and flowing water

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
Access to running water, shade, and barn

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Waterfowl pellets, ample lettuce, and apple chunks. It's believed screamer chicks have higher protein requirements than other waterfowl and they take readily to duckweed and mealworms.

Life Expectancy in the Wild:

Males: 15 years
Females: 15 years

Life Expectancy in Captivity:

Males: Mean = 12.4 years, though birds have bred >35 years
Females: Mean = 12.4 years, though birds have bred >35 years

BREEDING INFORMATION:

Courtship Displays:

Sexes are alike in appearance. Their duet is the call for which they are aptly named, with one bird taking the high notes and the other the low. Allopreening and walking side by side are also part of the courtship repertoire. Birds are considered monogamous. Some captive pairs stay true to their austral spring nesting season (Sept/Nov) while the majority typically produce eggs between March-August. Historically there have been outliers that produce multiple clutches seemingly year-round if eggs are infertile, nest attempts fail, or eggs are dummied.

Nest Site Description:

Large mass of vegetation and plant debris. Will build in shallow water, or on land close to the water's edge. Use sticks of various sizes, mulch, shrub clippings, grasses, and just about any other plant material offered in captive settings. Both sexes participate in nest building, and there has even been a record of a pair that allowed their young from the previous year to assist.

Parental Care:

Both sexes cooperate in chick rearing. Chicks are brooded for the first few days. They spend the majority of their day foraging with the chicks, showing them choice diet items. There have been instances where the male typically incubates during the day, with the female taking over at night.

Chick Development:

Chicks are nidifugous and are capable of swimming immediately. They are downy and can range from rusty brown to yellow-gray, becoming grayer with age, and having lighter underparts. Their legs and feet are brownish-orange and their bill is a dark brownish-black. Eyes are dark brown. Their bill, legs, and feet resemble that of adults in shape and proportion to the rest of their body.

Chicks fledge between 8-10 weeks of age and become fully independent by 12-14 weeks. They will often stay with their parents until the next breeding season, and can typically be held up to a year with their parents in zoological settings.

Hand-rearing of screamer chicks has proven difficult for most. Lots of walking is needed for proper development along with numerous food item offerings throughout the day. Getting them to begin self-feeding can be a challenge. Duckweed is a favorite protein source for chicks and great for encouraging them to self-feed. Many facilities have reported diarrhea and loose stool prior to chick mortality.

Age at Sexual Maturity:

Males: 2-3 years
Females: 2-3 years

Clutch Size, Egg Description:

Clutch size can be between 2-7 though is typically 3-5. Eggs are large and white or off-white. Mean mass is 160g. Average size is 91mm x 61mm. Laid every 2-3 days until clutch complete.

Incubation Period:

Typically 42-46 days with some reports of 40-48 days

Fledgling Period:

8-10 weeks

CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Gregarious in the non-breeding season, forming large flocks upwards of 1,000 individuals. Generally monogamous, this species forms 1.1 pairs that become highly territorial during nesting season (austral spring, Sept/Nov). Unpaired birds and juveniles maintain smaller flocks during this time, with unpaired mature males often testing bonded pairs. Bonded pairs and chicks will often remain together until the next breeding season.

Social Structure in Captivity:

Typically housed in 1.1 pairs. Singletons are discouraged due to the social nature of these birds. Recently, same-sex 2.0 pairs have been successfully attempted. This will aid in placement of surplus birds as well as create a more suitable social environment for unpaired males. Chicks can stay with adults until about one year of age before they are typically chased off prior to nesting season. Sometimes adults will allow older offspring to stick around without displacing them, though this seems to be a rare occurrence.

Management Challenges:

Can be territorial during the breeding season towards keeper staff and enclosure mates, which is why a larger space is required if a pair is kept with other animals. Historically, they have been kept in 1.1 pairs, which can leave birds unpaired if only same-sex surplus birds are available. Chicks can have a relatively high mortality rate and losses are common.

ADDITIONAL COMMENTS:

Please contact Joanna Klass, Woodland Park Zoo, at Joanna.klass@zoo.org for more information.

REFERENCES:

AZA Survival Statistics Table. Retrieved October 5, 2017, from <http://www.aza.org/species-survival-statistics>

Carboneras, C., Boesman, P. & Kirwan, G.M. (2017). Southern Screamer (*Chauna torquata*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <http://www.hbw.com/node/52791> on 5 October 2017).

Todd, Frank S. Waterfowl: Ducks, Geese & Swans of the World. San Diego, CA: Sea World, 1979.

COMPLETED BY:

Name: Joanna Klass

Minimum Group Size:

1.1 is ideal

Maximum Group Size:

2 birds plus offspring

Compatible in Mixed Species Exhibits:

Yes

Comments:

Compatible with other waterfowl, flamingos, ibis, spoonbills, herons, gulls, pelicans, passerines, cracids, and small psittacines, to name a few. Housed successfully with hoofstock, capybara, New World monkeys, and cavy. Varied success with anteaters; considered risky.

SSP Coordinator and AZA Regional Studbook Keeper

Joanna Klass
Woodland Park Zoo
joanna.klass@zoo.org
(920) 619-0952

Date: 10/4/2017

Order: Anseriformes

Family: Anatidae

Scientific Name: *Dendrocygna arborea*

Common Name: West Indian Whistling Duck

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Conservation Status:

USFWS: Not Listed
IUCN: Vulnerable
CITES: II
Wild Population Trend: Increasing

Sustainability Criteria:

Current Population: 37.34
Participating Institutions: 20
Target Population: 100
Genetic Diversity at 100 years: N/A

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical Cuba, Bahamas

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Captive: waterfowl breeder pellet, greens, insects

Wild: grasses, fruits, berries, seeds and grains

Life Expectancy in the Wild:

Males: unknown

Females: unknown

Life Expectancy in Captivity:

Males: Average 9 years, up to 22 years

Females: Average 9 years, up to 22 years

BREEDING INFORMATION:

Nest Site Description:

Leaf-lined depressions on ground, no down lining

Parental Care:

Both parents protect the young

Chick Development:

Typical duckling development

CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Whistling ducks are assumed to be monogamous, but this has not been well documented. They may stay with the same mate from one year to the next. Offspring may stay with parents up to a year in the wild, but the parents do not tolerate their older offspring as well during nesting.

Management Challenges:

Birds can be more dominant during introductions with other species, but usually settle in peaceably once an understanding has been reached with the other species. Be vigilant with older or compromised animals. Assertive displacement usually only lasts a few days.

ADDITIONAL COMMENTS:

As with most whistling ducks, this species spends more time on land than other typical duck species. During chick-rearing, they will spend much more time on the water.

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Population Analysis & Breeding and Transfer Plan, West Indian whistling duck, *Dendrocygna arborea*. 2016. Harris, G. Lawless, A.

AZA Regional Studbook, West Indian whistling duck, *Dendrocygna arborea*. 2015. Harris, G. Jamie (Reis) Toste, Bird Supervisor, Minnesota Zoo. Personal communication. 2015.

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Wetland Birds in Turks and Caicos Islands I: A search for West Indian whistling-ducks *Dendrocygna arborea*. (2000). Hilton, G.M., Cleaves, T., Murray, T., Hughes, B., Williams, E.G.

Behavior and Natural History of the West Indian whistling-duck *Dendrocygna arborea* on Long Island, Bahamas. (1998). Staus, N.L.

COMPLETED BY:

Name: Gwen Harris

Age at Sexual Maturity:

Males: 1 year

Females: 2 years

Clutch Size, Egg Description:

6-10

Incubation Period:

30 days

Fledgling Period:

24-48 hours

Minimum Group Size:

2 ducks

Maximum Group Size:

As many as your pond and habitat will allow

Compatible in Mixed Species Exhibits:

Yes

Comments:

Can be housed with flamingos, waterfowl, ibis, shorebirds, small mammals and more!

SSP Coordinator and AZA Regional Studbook Keeper

Mindy Rabideau

Tracy Aviary

mindyr@tracyaviary.org

(801) 596-850

Date: 11/1/2017

Order: Anseriformes

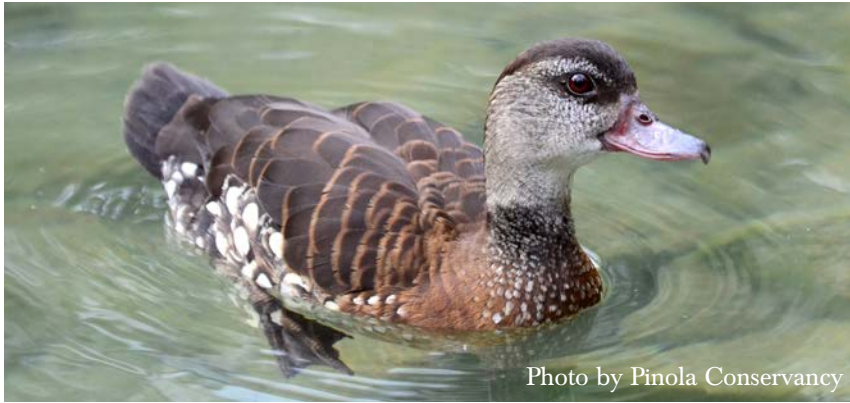
Family: Anatidae

Scientific Name: *Dendrocygna guttata*

Common Name: Spotted Whistling Duck

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Conservation Status:

USFWS: Not Listed
IUCN: Least Concern
CITES: Not Listed
Wild Population Trend: Stable

Sustainability Criteria:

Current Population: 69.61
Participating Institutions: 19
Target Population: 130
Genetic Diversity at 100 years: N/A

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical
Found in Southeast Asia, the Philippines, Indonesia, New Guinea, and N. Australia

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
Freshwater Wetlands, Marshes

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
Can be maintained outdoors as long as they have access to moving water to keep their feet from freezing

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
Can be kept outdoors as long as water and shade are available

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Captives can be fed commercial waterfowl diet, supplemented with greens, insects/worms, and vitamins and minerals.

Life Expectancy in the Wild:

Males: unknown
Females: unknown

Life Expectancy in Captivity:

Males: 15 Years
Females: 15 Years

BREEDING INFORMATION:**Courtship Displays:**

Spotted whistling ducks form strong pairs bonds, strengthened by allopreening. Pairs communicate with repeated, low whistling sounds.

Age at Sexual Maturity:

Males: 2 Years
Females: 2 Years

Nest Site Description:

Tree cavities, often near water

Clutch Size, Egg Description:

An average of 10 (but up to 16) round white eggs

Parental Care:

Both parents incubate the eggs and will protect the nest from potential predators.

Incubation Period:

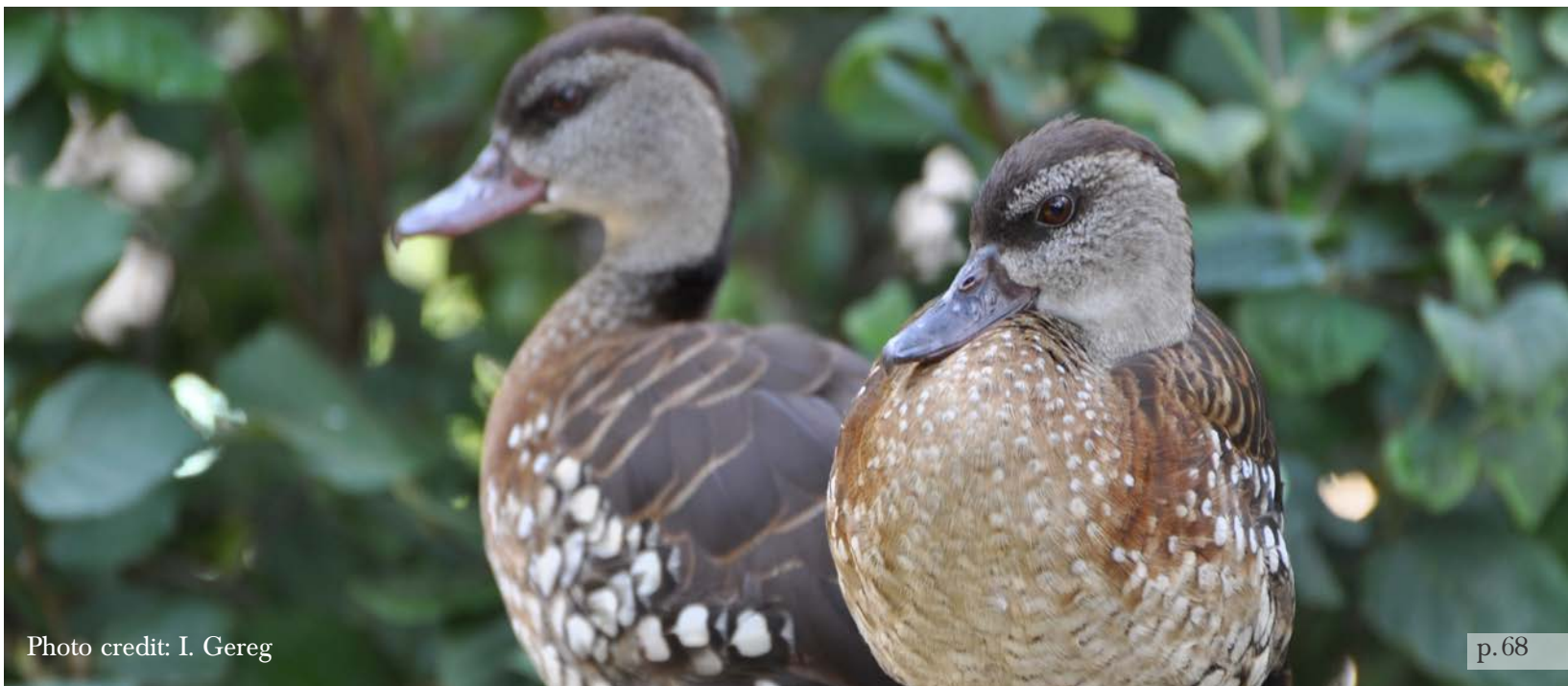
28-31 Days

Chick Development:

Ducklings are born with sharp nails and stiff tails, which allow them to quickly exit the nest cavity. They grow quickly and are fully feathered at seven weeks, with adult coloration achieved by the end of their first year.

Fledgling Period:

8 Weeks



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Large flocks, sometimes mixed with other duck species

Social Structure in Captivity:

Pair, flocks (single or mixed species)

Management Challenges:

Spotted whistling ducks are sometimes aggressive towards other duck species, especially other whistling ducks, though they can be maintained together in enclosures of appropriate size. The whistling ducks are more arboreal than many other duck species and will often nest in tree cavities; they would be better suited for enclosures where they are not flight-restricted.

ADDITIONAL COMMENTS:

The spotted whistling duck is predominately brown with a pale grey throat and a whitish belly; the upperparts are darker than the underparts, with light red-brown edging to the feathers. The common name is in reference to the small white spots on the neck, breast, and flanks. The beak, legs, and feet are dark grey with a pinkish tint. Juveniles tend to be darker than adults. A small dark crest can be partially raised when the duck is excited. The eyes are very large with dark brown irises. Both sexes are alike in size and appearance. Body length is 43-50cm, the wingspan is 85-95cm, and the average weight is 800 grams. There are no subspecies, nor is there seasonal variation in plumage. The birds often make a whistling sound while in flight. This is caused by the deep notches in the primary flight feathers, which vibrate as air passes through them, producing a whirring noise. Spotted whistling ducks are nocturnal, spending their days roosting in treetops, where they congregate in large numbers. At dusk, they break off into smaller groups to feed and forage. They feed on a variety of grasses, aquatic plants, aquatic invertebrates, seeds, and small fish. Poorly studied in the wild, the spotted whistling duck is also one of the least common whistling ducks in captive collections. The first captive breeding took place at the Wildfowl Trust in England in 1959, and the species was not imported into American zoo collections until the 1980s. The wild population is largely secure over its large range, and in some parts of its range it is one of the most commonly encountered waterfowl species. In other areas, though, it is declining due to habitat loss as wetlands are converted into agricultural lands. The species is listed as "Least Concern" by the IUCN, and is not listed in CITES. Note: Some data in this fact sheet (i.e.: fledgling period, enclosure size, life span) is not available for the spotted whistling duck, and was extrapolated from data available on more commonly kept *Dendrocygna* species.

REFERENCES:

- Lovett, Keith. 2010 Oct 14. AZA Regional Studbook – Spotted Whistling Duck (*Dendrocygna guttata*)
- Todd, Frank S. 1979. Waterfowl: Ducks, Geese, and Swans of the World. Sea World Press: San Diego. <http://www.arkive.org/spotted-whistling-duck/dendrocygna-guttata/>
- Johnsgard, Paul A. 1965. Handbook of Waterfowl Behavior: Tribe Dendrocygnini (Whistling Ducks).

COMPLETED BY:

Name: Ian Shelley

Minimum Group Size:

Pair

Maximum Group Size:

As many as an exhibit can comfortably house.

Compatible in Mixed Species Exhibits:

Yes

Comments:

Often kept in mixed-species aviaries with other waterfowl, but have the potential to be aggressive towards other duck species, especially other whistling ducks.

SSP Coordinator and AZA Regional Studbook Keeper

Ian Shelley
The Maryland Zoo in Baltimore
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(410) 916-8470

Date: 4/21/2014

Order: Anseriformes

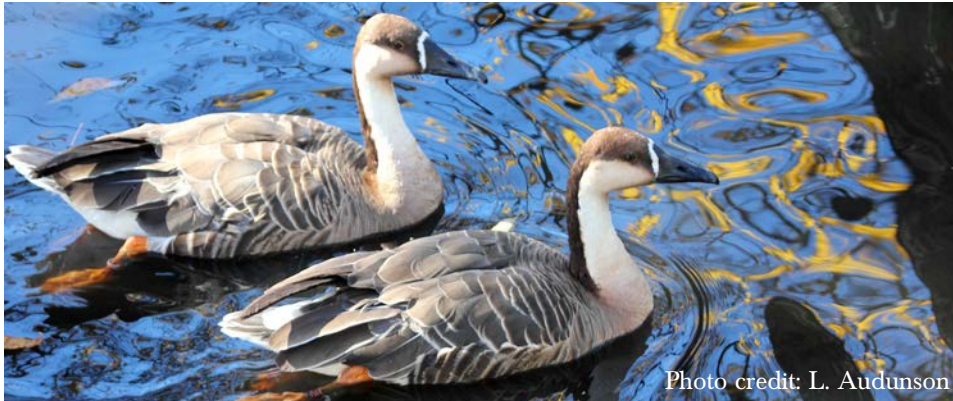
Family: Anatidae

Scientific Name: *Anser cygnoides*

Common Name: Swan goose

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Conservation Status:

USFWS: Not Listed
IUCN: Vulnerable
CITES: Not Listed
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 44.58
Participating Institutions: 14
Target Population: 110
Genetic Diversity at 100 years: 71%

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical

Migratory. Key breeding grounds in the border area between Russia, Mongolia and mainland China. It winters in North and South Korea, central China and occasionally in Japan.

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal

Varied, generally in close proximity to fresh or brackish lakes and rivers

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F

Can be maintained outdoors as long as they have access to open water

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F

Can be maintained outdoors as long as they have access to water and shade

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Herbivore, feeds primarily by grazing on dry land and grubbing for roots and tubers. Can be maintained on captive waterfowl chow and supplemental greens.

Life Expectancy in the Wild:

Males: unknown
Females: unknown

Life Expectancy in Captivity:

Males: Oldest recorded male= 22 years.
Median life expectancy= 11.4 years
Females: Oldest recorded female= 32 years.
Median life expectancy= 11.4 years

BREEDING INFORMATION:

Courtship Displays:

Mutual vocalizations, head dipping, neck-stretching and triumph ceremonies.

Nest Site Description:

A shallow nest of plant material on the ground, usually situated in dense vegetation near water.

Parental Care:

Female broods while male defends. Both parents assist with rearing.

Chick Development:

Goslings are precocial. Shortly after hatching, parents will lead them to water. Have yellowish-buff head and underparts, broad blackish eye-patch, dusky brown upperparts with pale buff patches and blackish-grey bill with pale tip.

Age at Sexual Maturity:

Males: 1.5 years old until approximately 19 years old
Females: 1.5 years old until approximately 16 years old

Clutch Size, Egg Description:

5-8 eggs in clutch, all white.
Size 73-92mm x 45-57mm. Mass 117-160g

Incubation Period:

28 days

Fledgling Period:

2 months



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Flock size varies seasonally up to 40 birds in spring, non-breeding summer flocks up to 200 and molting flocks slightly larger (exceptionally up to 1000), and largest in winter. Nests in single pairs or loose colonies.

Social Structure in Captivity:

Pairs or small flocks. Single sex flocks possible.

Management Challenges:

Because of their size, Swan geese are often maintained in open-air, outdoor enclosures instead of enclosed aviaries. Their pools and food sources tend to attract wild birds, such as Canada geese and mallards, which become potential disease vectors and competitors for food. Hatchlings are often reared off exhibit due to predation risk. Full-winged birds tend to wander. Pinioning or wingclipping advised.

Like other geese, swan geese can be hard on vegetation and will overgraze areas when kept in smaller exhibits.

ADDITIONAL COMMENTS:

The swan goose is the largest goose species, reaching up to 3 feet in length. Males and females are similar in coloration, with males being slightly larger in size and weight. It displays a white throat and a dark brown crown extending along the back of the neck to the wings. The swan goose has a black bill and chestnut-colored chest. It is the ancestor of the domestic “Chinese” and “African” goose breeds and some swan goose representatives show evidence of hybridization with their domestic cousins.

REFERENCES:

Carboneras, C. & Kirwan, G.M. (2018). Swan Goose (*Anser cygnoid*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.).

Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/52810> on 23 January 2018).

Swan goose fact sheet lpzoo.org

BirdLife International 2016. *Anser cygnoid*. The IUCN Red List of Threatened Species 2016.

Swan goose AZA Species Survival Plan Yellow Program 2015

Minimum Group Size:

2

Maximum Group Size:

As many as an exhibit can comfortably house.

Compatible in Mixed Species Exhibits:

Yes

Comments:

Known to hybridize with other Anser species, particularly when kept unpaired

SSP Coordinator and AZA Regional Studbook Keeper

Christine Fuehrmeyer
Lincoln Park Zoo
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(312)742-7742

COMPLETED BY:

Name: Christine Fuehrmeyer

Date: 1/24/2018

Order: Anseriformes

Family: Anatidae

Scientific Name: *Branta ruficollis*

Common Name: Red-breasted Goose

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Conservation Status:

USFWS: Not Listed
IUCN: Vulnerable
CITES: II
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 77.66
Participating Institutions: 22
Target Population: 200
Genetic Diversity at 100 years: 79.7%

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical Siberian Tundra

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal Tundra

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
Adults are very winter hardy so long as they have access to drinking water.

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
Above 90F provide shaded areas.

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Captives can be fed various greens and Mazuri waterfowl maintenance/breeder.

Life Expectancy in the Wild:

Males: Unknown
Females: Unknown

Life Expectancy in Captivity:

Males: 20 years
Females: 20 years

BREEDING INFORMATION:

Courtship Displays:

Mutual head bobbing between males and females. Males will also puff up the mane on the back of their necks while rattling their wings.

Nest Site Description:

Colony breeders with a preference for steep river banks, crags, and ravines of lowland tundra. In captivity this species will accept slatted boxes, hollow tree stumps, A-frame boxes with a partially concealed entrance, and natural nest sites behind rocks and vegetation.

Parental Care:

Incubation is done by the female while the male remains near the nest site to defend the nest.

Chick Development:

Goslings are dark brown on top and have a pale green/yellow stomach, forehead, nape, and wingtips. Chicks will leave the nest between 24-36 hours post hatch. They do well on Mazuri waterfowl starter and finely chopped greens, but their primary diet should be greens and grass from a few days of age going forward. Average hatch weight is 47.5g (n=29). Goslings are prone to gapeworm which can be treated with ivermectin. Coccidia is also a problem on occasion but easily treated. Red-breasted geese are excellent sitters and parents. Parent rearing is a safe option in a well-planted enclosure with plenty of grazing opportunities.

Age at Sexual Maturity:

Males: 3 years
Females: 3 years—*some females will lay at two years old, though most start at 3.

Clutch Size, Egg Description:

6-9 White colored eggs. 64.8 mm x 46.3 mm (n=43). Fresh eggs are on average 72.4g.

Incubation Period:

23-26 Days

Fledgling Period:

35-42 days



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Small colonies

Social Structure in Captivity:

Pairs or small flocks

Management Challenges:

Red-breasted geese can be difficult to breed in captivity. In the wild, these geese rely heavily on the presence of breeding peregrine falcons for nest site protection. There is also a greater reluctance among these geese to breed in North America due to light period differences from their arctic habitat. Red-breasted goose productivity increases with the presence of fresh grasses and small colonies of conspecifics. During breeding season, flocks can be left alone to settle territorial disputes, or be separated by bonded pairs to supplementary enclosures. This species is also prone to predation, specifically in open aviary settings, by other birds due to their small size. Seem prone to West Nile Virus and heavy losses have been seen in some collections because of it.

ADDITIONAL COMMENTS:

Red-breasted geese are the most terrestrial of the northern geese. When kept in captivity, a firm grassy area should be provided. They are typically found on the terrestrial portion of exhibits, and are rarely found resting in water. When housing pinioned birds in open-topped exhibits, be considerate of available water for roosting at night due to predatory susceptibility on land. The flock tends to stay together until pairs start to venture off to nest. Red-breasted geese are a vocal species with a distinct high-pitched, melodic call. White millet can be provided in a water pan or grassy area for enrichment. Red-breasted Geese were first propagated in North America on the grounds of what is now LRWC.

REFERENCES:

- Delacour, Jean, and Peter Scott. *The Waterfowl of the World*. London: Country Life, 1974. Print.
- Dunster, Jim. Zoo Miami. Personal communication. June 1, 2015.
- Todd, Frank S. *Waterfowl: Ducks, Geese & Swans of the World*. San Diego, CA: Sea World, 1979. Print.
- Todd, Frank S. *Waterfowl: Ducks, Geese & Swans of the World*. San Diego, CA: Sea World, 1979.

COMPLETED BY:

Name: Emily Olson, Jamie Toste – Minnesota Zoo
Jacob Kraemer –Pinola Conservancy
Ian Gereg–Philadelphia Zoo

Minimum Group Size:

1.1

Maximum Group Size:

Can be kept in flocks of multiple pairs.

Compatible in Mixed Species Exhibits:

Yes

Comments:

They are known to be aggressive amongst themselves, but are docile with other species. In captivity, these geese have been found to be very compatible with many types of waterfowl including: dabbling ducks, whistling-ducks, perching-ducks, stiff-tailed ducks, shelducks, oddities and diving ducks. They are compatible with other types of birds such as passerines, pheasants, cranes, and wading birds. This species can also be housed in a mixed-taxa exhibit. There is currently 1.1 housed with 1.1 White-cheeked Gibbons and 77 individuals from 25 different species of waterfowl at the Minnesota Zoo.

SSP Coordinator and AZA Regional Studbook Keeper

Joanna Klass
Woodland Park Zoo
joanna.klass@zoo.org
(920) 619-0952

Date: 6/8/2015

Order: Anseriformes

Family: Anatidae

Scientific Name: *Branta sandvicensis*

Common Name: Hawaiian (Nene) Goose

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Conservation Status:

USFWS: EN
IUCN: Vulnerable
CITES: I
Wild Population Trend: Increasing

Sustainability Criteria:

Current Population: 36,343
Participating Institutions: 19
Target Population: 125
Genetic Diversity at 100 years: 50.1%

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical Native to the Hawaiian islands

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Waterfowl maintenance/breeder, fresh chopped greens (Romaine/Kale)

Life Expectancy in the Wild:

Males: UNK

Females: UNK

Life Expectancy in Captivity:

Males: 20-30 years

Females: 20-30 years

BREEDING INFORMATION:

Courtship Displays:

Copulation takes place on land.

Nest Site Description:

Vegetated areas for natural security; birds in the wild usually create a “scrape” nest, in captivity birds like to nest in triangular log nests. Birds often nest against a stationary object. I.e. Trees, fences or walls.

Parental Care:

Female incubates exclusively and rarely leaves the nest, even to eat. Male acts as sentinel during this period and becomes quite aggressive in his defense of the nest site. The chicks usually remain with the parents about 1 full year until the next breeding season occurs.

Chick Development:

Hatch weight ~105g-110g, brownish/green tint at hatch; precocial, they should be supplied with plenty of fresh chopped greens from the start or rearing. Chicks are usually fully winged by 4 months of age.

Age at Sexual Maturity:

Males: 2 years old

Females: 2 years old

Clutch Size, Egg Description:

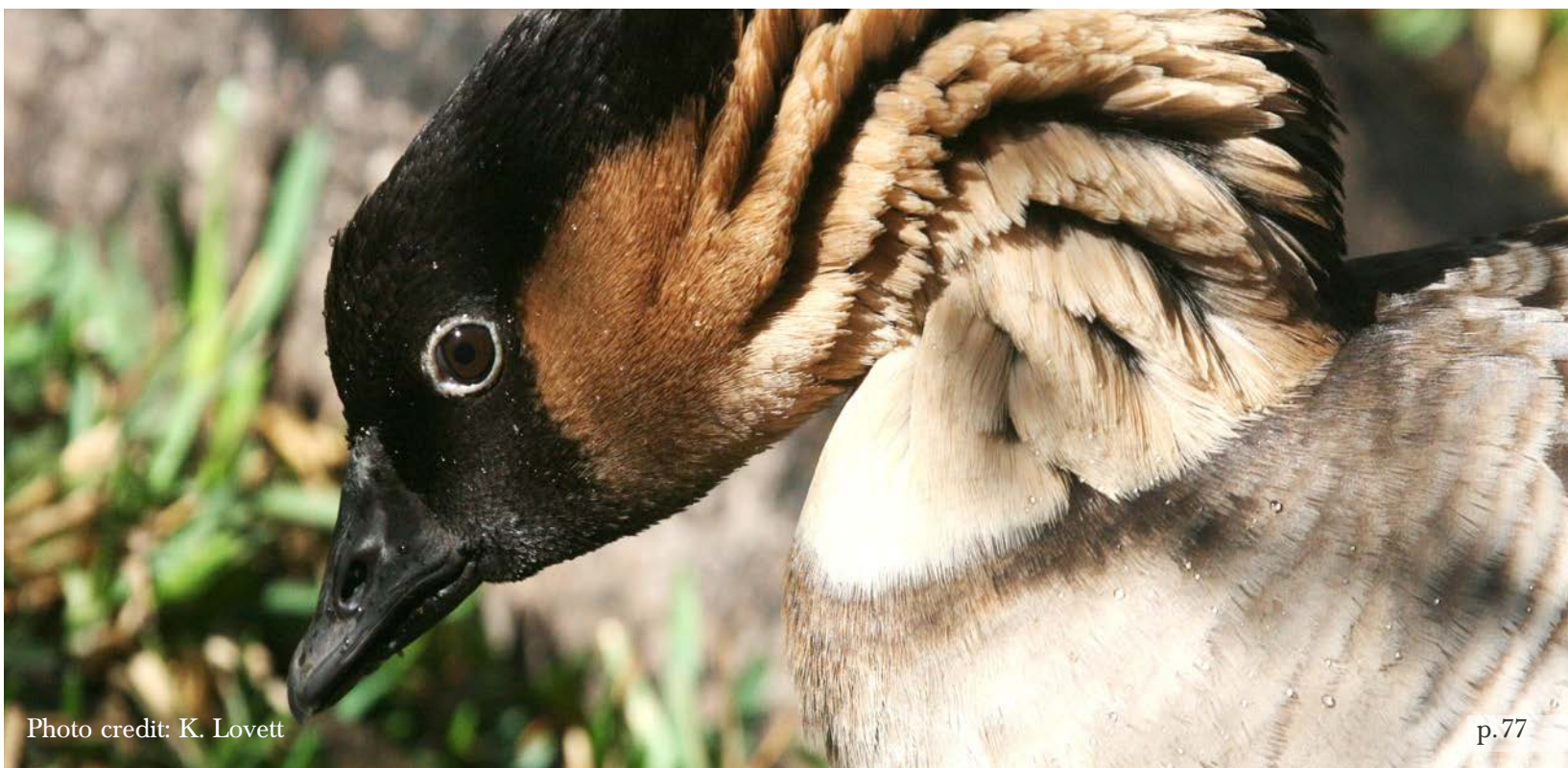
3-5 white eggs; eggs are laid on consecutive days until completion of the clutch.

Incubation Period:

Female exclusively; 29 days.

Fledgling Period:

In the wild chicks usually remain with the parents about 1 full year until the next breeding season occurs. In captivity chicks should be fully winged at about 8 weeks.



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Semi-gregarious after breeding season has occurred, families flock together as they wander and search for food.

Social Structure in Captivity:

Birds tend to form strong pair bonds so 1:1 is an ideal breeding setup, but with the proper sized exhibit multiple pairs could nest and breed. Dominant males will push a less dominant male out of the social structure, but birds that are raised together tend to form strong bonds.

Management Challenges:

Known to nest in the off season, birds usually lay during milder winter months.

ADDITIONAL COMMENTS:

Birds tend to acclimate to human presence very well, they will be highly defensive of mates and nest sites around keepers. If birds are in an exhibit within close proximity to public interaction they are a great species to take advantage of “public feed machines”; if not the case exhibits should allow ample space between the general public and the birds due to their highly social and inquisitive demeanor.

REFERENCES:

Todd, Frank S. Natural History of Waterfowl. Ibis Publishing company, California. (1996)

<http://www.fws.gov/pacificislands/fauna/HIgoose.html>

COMPLETED BY:

Name: William Robles

Minimum Group Size:

1.1/2.0/0.2

Maximum Group Size:

Smaller exhibits should not be over-crowded, juvenile birds can be placed in larger groups until mature. 5 birds in a medium sized exhibit can be cared for quite well but birds must have ample space to nest and retreat to themselves. Over-crowding with mature males can disrupt breeding successful breeding seasons.

Compatible in Mixed Species Exhibits:

Yes

Comments:

Birds can be territorial, but with enough space in an exhibit can live/breed quite nicely in a mixed aviary.

SSP Coordinator and AZA Regional Studbook Keeper

William Robles

Audubon Aquarium of the Americas

wrobles@auduboninstitute.org

631-379-3517

Date: 12/5/2015

Order: Anseriformes

Family: Anatidae

Scientific Name: *Cygnus Buccinator*

Common Name: Trumpeter Swan

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance)



Conservation Status:

USFWS: Not Listed
IUCN: Least Concern
CITES: Not Listed
Wild Population Trend: Increasing

Sustainability Criteria:

Current Population: 38.45.2
Participating Institutions: 33
Target Population: 110
Genetic Diversity at 100 years: Cannot Calculate

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical
 Widespread across northern North America from Alaska to central Canada and south to Idaho and Illinois.

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
 By lakes, ponds and marshes

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
 As long as swimming water is available they can handle most temperatures- very cold tolerant species

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
 As long as swimming water and shade opportunities are available they can handle most temperatures

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Commercial waterfowl diet, greens, (smelt and insects as supplements)

Life Expectancy in the Wild:

Males: 15-20 years

Females: 15-20 years

Life Expectancy in Captivity:

Males: 20-25 years

Females: 20-25 years

BREEDING INFORMATION:

Courtship Displays:

Courtship begins in mid-January and continued until mid-March. Behaviors often include head bobbing and wing quivering as the male and female face each other. After copulation both swans in the pair extend their wings and call in unison. Trumpeter Swans mate for life.

Nest Site Description:

Nest can be six feet in diameter, usually made of sticks or grasses, on banks or islands near water. Nesting begins in late April, early May

Parental Care:

The female Trumpeter Swan is more efficient in gathering materials and constructing the nest. Males do not assist in incubation but will sit on and guard the nest. The male will vigorously chase away intruders and perform a “triumph display” where it quivers their feathers and call loudly when the intruder is repelled. Trumpeter Swans frequently turn their eggs. For the first few weeks of life the cygnets are closely guarded. When swimming the female leads the cygnets and the males follows behind. A parental “puddling” behavior is described as rapid paddling of the feet to stir up food from the pond bottom for the short-necked, weak-legged cygnets.

Chick Development:

Cygnets normally hatch at the same time and weigh around 7 ounces. They rely on high protein food that will gradually shift to a vegetable diet. Juveniles have a pink-fleshy bill with greyish feet, legs and plumage. Cygnets remain with their parents through their first winter then they are driven away by their parents. They remain with their siblings until about 2 years of age when they then seek mates.

Age at Sexual Maturity:

Males: 3-6 years

Females: 3-6 years

Clutch Size, Egg Description:

4-9, dull creamy white eggs (4 ½” long, 3” wide) laid at 2-day intervals

Incubation Period:

32-40 days (34 day average)

Fledgling Period:

84-120 days



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Encompass territories spanning 70-400 acres with pairs separated by at least half a mile.

Social Structure in Captivity:

Housed mostly in pairs, but can have groups (usually 1.2), parents can be housed with cygnets for up to a year.

Management Challenges:

Can be aggressive at times to keepers during nesting season. Due to their territoriality, facilities can usually only house 1.1 (pair) on exhibit or 0.2. Open exhibits will attract native wild waterfowl which may lead to food competition and the possibility of external diseases introduced to the captive birds. Trumpeter swans are susceptible to gout which is often found on necropsy of deceased individuals. Gout is usually secondary to some other infection possibly due to diet or another underlying cause. They can also be susceptible to bumblefoot if proper substrate is not offered.

ADDITIONAL COMMENTS:

Trumpeter Swans are the tallest of all waterfowl at a height of 4 feet tall and 6-feet long with males (cob) weighing around 27.9 pounds and females (pen) around 22.5 pounds. The sexes are alike in appearance, but males are usually larger than females. Adults are long bodied and necked and have an all-black bill, with a salmon-red stripe running between the upper and lower bill. They also have black legs and feet with an all-white body. Deep, resonant, trumpet-like call, loudest of all waterfowl; a single or double 'ko-hoh' similar to a crane. Trumpeter swans were once fairly common throughout most of the northern U.S. and Canada. Due to mostly market hunting, the population was nearly decimated by the early 1900's with only ~69 birds left in a small Rocky Mountain population in the lower 48 states and small populations of birds in Alaska and western Canada. Thanks to restoration programs around the United States with the help from zoological, private and government facilities trumpeter swan population have reached over 60,000 individuals. The IUCN currently lists this species as being one of Least Concern. Trumpeter swans were never on the Federal list of endangered species but various states have listed them as state-threatened or state-endangered. Even though the population is well on its way to recovery, they only inhabit about a third of their original home range and there are still active restoration programs which many zoos currently participate in. In the wild they face challenges such as lead poisoning, power line collisions, illegal hunting, pollution and habitat loss.

REFERENCES:

- Burn, Hilary & Madge, Steve. 1988. *Waterfowl: An identification to the ducks, geese and swans of the world*. Houghton Mifflin Company: New York.
- Compton, Donna, Craven, Scott & Matteson Sumner. "The Trumpeter Swan." Web.
- Johnsgard, Paul. 2016. *Swans: Their Biology and Natural History*. Zea Books: Lincoln.
- Todd, Frank S. 1997. *Handbook of Waterfowl Identification*. Ibis Publishing: San Diego.
- Todd, Frank S. 1997. *Natural History of the Waterfowl*. Ibis Publishing: San Diego.
- The Trumpeter Swan Society
<http://www.trumpeterswansociety.org/index.html>
<http://www.trumpeterswansociety.org/swan-information.html>

COMPLETED BY:

Name: Tiffany Mayo

Minimum Group Size:

1 (preferred size is 2)

Maximum Group Size:

Varies, mostly 1.1, but can be 0.2; 1.2- usually can only have 1 male if there is a group of adults

Compatible in Mixed Species Exhibits:

Yes

Comments:

Compatible with other waterfowl species except for other swans, can also be housed with ungulates such as reindeer.

SSP Coordinator and AZA Regional Studbook Keeper

Tiffany Mayo
Cleveland Metroparks Zoo
trm1@clevelandmetroparks.com
(216) 661-6500 ext.4007

Date: 7/4/2017

p.81

Order: Anseriformes

Family: Anatidae

Scientific Name: *Nettapus auritus*

Common Name: African Pygmy Goose

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male):



Photo (Female):



Conservation Status:

USFWS: Not Listed
IUCN: Least Concern
CITES: Not Listed
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 52,441
Participating Institutions: 28
Target Population: 150
Genetic Diversity at 100 years: 67%

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal

African swamps, marshes and sluggish rivers supporting an abundance of aquatic vegetation. They prefer quiet, secluded pools with plenty of dense vegetation to camouflage.

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Mazuri waterfowl maintenance/breeder, millet/red millet and fresh chopped greens (romaine/kale).

Life Expectancy in the Wild:

Males: 10-15 years
Females: 10-15 years

Life Expectancy in Captivity:

Males: 10-15 years
Females: 10-15 years

BREEDING INFORMATION:

Courtship Displays:

Female solicits male frequently with head-bobbing.

Nest Site Description:

Typically in hollow tree cavities above water, sometimes as high as 60 ft. (in the wild). It is rare for them to nest on land but has been reported in ground vegetation around swampy marshes. Entrance holes range from 2.6" x 2.4" with a nest chamber ~5" in diameter. In captivity birds tend to feel comfortable as cavity nesters, hollow palm logs and porch boxes work very well, although they have been known to utilize ground vegetation and tunnel boxes.

Parental Care:

Female incubates exclusively, male acts as sentinel during this period. Female broods the chicks on her own, but male will stay nearby. The drake's role in brood care is unknown.

Chick Development:

Chicks have a stiff tail at hatch, black and white with a black dot on cheek; hatch weights can range from 15g-18g. By 45 days of age, chicks typically weigh ~200g and are full winged.

Age at Sexual Maturity:

Males: 2 years
Females: 2 years

Clutch Size, Egg Description:

5-9 Ivory white eggs (up to 12 in some cases); eggs tend to be laid every other day. First eggs in clutch may be olive-tinged

Incubation Period:

23-26 days

Fledgling Period:

50-60 days



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Birds can be semi-gregarious, at times forming groups of 20-200 birds. Larger groups tend to occur during molt and dry seasons.

Social Structure in Captivity:

Dominant drakes will push a less dominant drake out of the social structure; birds tend to form strong pair bonds so 1:1 is an ideal breeding setup.

Management Challenges:

Charming birds, but can be quite anxious in an aviary that doesn't allow them to have their own private area and/or visual barriers. A more advanced species to breed in captivity although recently, success has been more prominent in zoos across the US. During chick rearing, chicks need quite a bit of stimulation in the first few days after being introduced to food and special attention should be paid to keeping their plumage clean.

Minimum Group Size:

1:1

Maximum Group Size:

2:2; depending on the size of the pond and breeding setup.

Compatible in Mixed Species Exhibits:

Yes

Comments:

Birds can be kept and bred successfully in a mixed exhibit but care should be taken not to overcrowd the exhibit as well as to provide plenty of visual barriers and nesting opportunities.

SSP Coordinator and AZA Regional Studbook Keeper

Stephanie Allard, PhD
Detroit Zoo
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(248) 541-5717 ext.3720

REFERENCES:

Todd, Frank S. Natural History of Waterfowl. Ibis Publishing company, California. (1996)

Scott, P. A Colored Key of the Wildfowl of the World. Slimbridge, England. The Wildfowl Trust. (1988)

COMPLETED BY:

Name: William Robles

Date: 11/3/2015

Order: Anseriformes

Family: Anatidae

Scientific Name: *Asarcornis scutulata*

Common Name: White-winged duck

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Conservation Status:

USFWS: EN
IUCN: Endangered
CITES: I
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 37.34
Participating Institutions: 10
Target Population: 100
Genetic Diversity at 100 years: Cannot calculate

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other India
 Africa Australia Neotropical

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Standard waterfowl maintenance diet

Life Expectancy in the Wild:

Males: unknown

Females: unknown

Life Expectancy in Captivity:

Males: Up to 12-16 yrs.

Females: Up to 12-16 yrs.

BREEDING INFORMATION:**Courtship Displays:**

Head bobbing, throwing heads back then forward to skim the water.

Nest Site Description:

Tree holes in wild. Will adapt well to a large (2-2.5ft deep) at least slightly raised nest box.

Parental Care:

Female incubates while male guards nest. Young are precocial. Both parents will show brood attendance.

Chick Development:

Chicks move onto water as soon as they leave the nest.

Age at Sexual Maturity:

Males: 2nd year

Females: 2nd year

Clutch Size, Egg Description:

6 – 13, white

Incubation Period:

33 days

Fledgling Period:

14 weeks



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Pair is most common. Generally monogamous.

Social Structure in Captivity:

Will pair well, but also have been shown to breed well when held in a large group.

Management Challenges:

Due to the fact that these are perching ducks there is a tendency to try to keep them fully flighted rather than pinioned.

The captive populations in both Europe and N. America both face challenges with being exceptionally susceptible to avian tuberculosis. Maintaining exquisite water quality as well as housing the ducks within a constructed habitat (no soil-water interface) seems to help in mitigating this disease in this species.

ADDITIONAL COMMENTS:

Males and females are very similar in appearance and have no eclipse phase. Males are somewhat larger with a larger bill (Male 3-4kg, Female 2-3kg). Reports of females having a more densely mottled head and neck do not hold true for the North American population of ducks.

Described as secretive in the wild; however, this tendency is not generally noted in captivity.

REFERENCES:

BirdLife International (2015) Species factsheet: *Asarcornis scutulata*. Downloaded from <http://www.birdlife.org> on 04/06/2015.

BirdLife International 2013. *Asarcornis scutulata*. The IUCN Red List of Threatened Species. Version 2014.3. <www.iucnredlist.org>. Downloaded on 06 April 2015.

Green, A.J. 1993. The biology of the white-winged duck. *Cairina scutulata*. Forktail 8: 65-82

COMPLETED BY:

Name: Kimberly Cook, DVM

Minimum Group Size:

2 ducks (1.1 or 0.2)

Maximum Group Size:

Depends on space. Have been held in groups of 20+ ducks.

Compatible in Mixed Species Exhibits:

Yes

Comments:

Do not tend to aggress on other species and hold their own against other waterfowl. Will perch on logs while many others stay on the water.

SSP Coordinator and AZA Regional Studbook Keeper

Dr. Kimberly Cook
Akron Zoological Park
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(330) 375-2550 ext.7221

Date: 4/6/2015

Order: Anseriformes

Family: Anatidae

Scientific Name: *Anas bernieri*

Common Name: Madagascar Teal

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Conservation Status:

USFWS: Not Listed
IUCN: Endangered
CITES: II
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 30.38
Participating Institutions: 18
Target Population: 75
Genetic Diversity at 100 years: 70%

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical Only found on Madagascar

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal Low altitude coastal areas, often associated with large rivers. And mangroves.

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F Are hardy down to 32 degrees Fahrenheit with acclimation. Reports of birds being kept outdoors in brief spouts of temperatures as low as 15 degrees Fahrenheit with open water sources. See comments(1)

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F No heat intolerance reported. See comments (1). Shade and fresh open, clean water should be provided with temps over 90 degrees Fahrenheit.

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

A balanced wildfowl pellet is sufficient. Non-breeding- Maintenance pellet with 15.5 % protein. Breeding- breeder pellet 17.5% protein. A mixture of seed (millet and other small seeds) is readily eaten. Mealworms, crickets and other small invertebrates are eaten by both adults and young. Greens and mixed chopped fruit and vegetables (apples, corn, carrots, peas) can be offered but some individuals may not readily eat them. Ducklings Should be provided a Starter Crumb (20 % protein) that then should be replaced with Grower Pellet (17.5 % protein) when the first feathers begin to emerge at around 14 days of age. Ducklings are should allowed the adult diet at around fledging. Small amounts of chopped lettuce, grated hard-boiled egg, and small insects may be provided. Calcium supplements should be provided.

BREEDING INFORMATION:

Courtship Displays:

None reported but birds create a strong pair bond. Breeding Season: No defined breeding seasons seems to occur. However, the highest number of hatchings have occurred during the months of May-September. The breeding season appears to coincide with the rainy season in Madagascar (which can be reproduced in captivity). It appears breeding can occur any time of the year (inside and outdoors) as long as conditions are suitable.

Nest Site Description:

Wild-First recorded in 1997, all nests of wild Madagascar Teal found have since been in natural cavities in only one tree species, Grey Mangrove *Avicennia marina*. Captivity-Natural tree cavities can be easily replicated by using nest-boxes or hollowed logs. Nest boxes are typically placed approximately 3 m above the ground usually close to the water's edge. Teal have also used boxes 5 m above the ground. It is likely that pinioned birds would use boxes closer to the ground. In 2004, a female Teal with no box nested on the ground. Nest-boxes may have a small block of wood attached below the entrance hole to aid landing and entry by the female. A small layer of wood-shavings or plant compost is always added to new boxes, as birds will not carry in any nesting material.

Parental Care:

Ideally, ducklings should be left with their parents for rearing. Both male and female will protect the young and aggressively defend them against conspecifics, other animals and even humans. Males will respond to the distress calls of their offspring but only the female will brood the young. Food such as crumb and mealworms should be sprinkled around pond edges when the young are freshly hatched but the brood will quickly learn to leave the water to feed from a bowl.

Chick Development:

Ducklings weigh on average 18.4 g on hatching. The first proper feathers begin to emerge through the natal down at about 14 days old, the first wing feathers (remiges) appearing at about 21 days. Wing feathers grow at 3-5 mm a day and measurement of the growing wing can be used to indicate the duckling's age

Life Expectancy in the Wild:

Males: Unknown

Females: Unknown

Life Expectancy in Captivity:

Males: Unknown but 18 yrs. have been reported

Females: Unknown but 18 yrs. have been reported

Age at Sexual Maturity:

Males: 11 months, Preferred breeding age 2 yrs.

Females: 11 months, Preferred breeding age 2 yrs.

Clutch Size, Egg Description:

Typically, 6-7 eggs are laid in each clutch (mean 6.75; n=52, 3-9). Eggs are smooth, elliptical and pale fawny-buff to yellowish-buff in colour and average 46.3 x 34.8 mm in dimensions (n=374, 40.6-51.4 x 32.3-39.9) and weigh on average 29.4 g (n=22, 27.3-32.4). In captivity, Teal have readily laid replacement clutches if the eggs have been collected and, presumably because of longer breeding conditions than would be available in Madagascar, two broods of young have been reared by pairs in the same year.

Incubation Period:

Incubation is by the female alone, and the eggs hatch after approximately 27-28 days.

Fledgling Period:

Fledge (are capable of their first flight) at 45-49 days old. Madagascar Teal are fully grown at approximately 12 weeks old.

CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Little is known. Small flocks seen outside of breeding season. Pairs are very territorial during breeding season.

Social Structure in Captivity:

Although Teal can be maintained in mixed sex flocks outside of the breeding season, and in conditions where breeding cannot be attempted, Teal should only be kept in pairs. The highly aggressive nature of Madagascar Teal will mean that attempts to keep more than one pair in an aviary will generally prove disastrous and it is even rare that trios can be maintained in normal enclosures. Same sex flocks can be kept together. Flocks of adult Teals (up to 16 birds) have been housed together in aviaries during the non-breeding season, (November-April) since 1998 in Jersey.

Management Challenges:

Finding additional facilities to work with Madagascar Teals is a high priority and finding facilities willing to incorporate Mad teals with other species (outside of tropical aviaries) for better management of the species within the AZA population and AZA facilities. Changing the bad reputation this species has been labeled is a must and been a challenge. AZA zoos have provided this species with ideal habitats that promote breeding, as well as the territorial behavior that has been seen during the breeding season, and have caused many zoo to shy away from this species. The territorial behavior during the breeding season was a shock to many and has since given this species an undeserving bad reputation.

ADDITIONAL COMMENTS:

1-More knowledge is needed on the hardiness of this species. Most are housed indoors and in tropical settings.

2-More knowledge is needed on the compatibility with other species.

3-Contact the Studbook Keeper for a full list of species that have been successfully kept with Madagascar Teals.

*All Madagascar Teals are owned by The Madagascan Government (MEF) and managed by Durrell Wildlife Conservation Trust. All facilities must have a loan agreement signed between their facility and Durrell Wildlife Conservation Trust. The North American Regional Studbook Keeper will provide the document on behalf of Durrell Wildlife Conservation Trust. *Mad Teals like to roost off the ground. Birds like to go high and still spend a significant amount of time on the ground and in water. Pinioned will find all routes into the trees and try to roost off of the ground. *Male and female Madagascar Teal are very similar and are best differentiated by vocalizations. Males, however, are typically larger than females and almost always have larger skulls (measure from the bill tip to the back of the head).

*Measurements and weights: from captive population at Jersey Zoo: Wing: Male 213 mm (n = 41, 205-220); Female 205.6 mm (n = 50, 188-217). Bill: Male 34.75 mm (n = 7, 33.5-37.5); Female 33.7 mm (n = 10, 33-36). Skull: Male 82.6 mm (n = 41, 79.7-84.9); Female 79.2 mm (n = 52, 76.5-81.7). Weight: Male 387 g (n = 39, 325-420); Female 361 g (n = 49, 270-408). *Length 16 inches (40 cm): from Scott & Lubbock 1974.

REFERENCES:

Dr. H. Glyn Young. January 2005. Madagascan Dabbling Ducks Madagascar Real Anas bernieri Meller's Duck Anas melleri Guidelines on Their Husbandry, Biology and Conservation

Mikel, Craig 2015. AZA Regional Studbook

H. GLYN YOUNG¹, FÉLIX RAZAFINDRAJAO² & RICHARD E. LEWIS². 2013. Madagascar's wildfowl (Anatidae) in the new millennium

COMPLETED BY:

Name: Craig Mikel

Minimum Group Size:

Minimum 2 if not breeding, only one breeding pair should be kept together.

Maximum Group Size:

Only one breeding pair should be kept together.

Compatible in Mixed Species Exhibits:

Varies

Comments:

Madagascar Teals may create a territory during the breeding season and may protect this area during the breeding season, some chasing and displacement has been reported. Madagascar Teal should be watched closely after mixing with other species and, as the breeding season approaches, it is worth remembering which other birds each pair is tolerant of. -Individuals and individual pairs have been tolerant of other species. Caution should be used when mixing with shy ground birds such as ground dwelling Columbiformes. Tolerant of many species of birds. Teals have been successfully mixed with Lemur Species and medium sized Tortoises.

See comments (2) and (3)

SSP Coordinator and AZA Regional Studbook Keeper

Allan Craig Mikel
Louisville Zoological Garden
allan.mikel@louisvilleky.gov
(502) 459-2196

Date: 3/7/2015

Order: Anseriformes

Family: Anatidae

Scientific Name: *Marmaronetta angustirostris*

Common Name: Marbled teal

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male):



Photo credit: L. Audunson

Photo (Female):



Photo credit: I. Gereg

Conservation Status:

USFWS: Not Listed
IUCN: Vulnerable
CITES: Not Listed
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 153.125.8
Participating Institutions: 41
Target Population: 275
Genetic Diversity at 100 years: Cannot calculate

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical
Southern Spain/Mallorca, Mediterranean basin, sub-Saharan Africa, Middle East, Northwest India,

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
Freshwater lakes and ponds; brackish water; marshes

Circadian Cycle: Diurnal Crepuscular Nocturnal Other
Forages mainly nocturnally at certain times of the year, with records showing a spike in nocturnal activity November-March

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
Hardy ducks; can withstand below freezing temperatures as long as they have running water. Heat sources and dry areas/perches free of snow and ice should be offered during winter months, where applicable.

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Marbled teal will readily take commercial waterfowl pellets, such as Mazuri. It is recommended to offer a maintenance pellet during non-breeding months (typically ~August-March) and a breeder pellet during breeding (~April-July). They eagerly forage for mealworms, crickets, and other insects. Marbled teal will readily consume romaines or other greens (especially floating on water) and white proso millet sprinkled in or near water, or offered as sprigs of spray millet. Birds will forage on duckweed and other aquatic vegetation, if available.

Life Expectancy in the Wild:

Males: 6-10 years
Females: 6-10 years

Life Expectancy in Captivity:

Males: Median is 6 years, with oldest recorded male from SSP population being 19
Females: Median is 5.4 years, with oldest recorded female from SSP population reaching 20

BREEDING INFORMATION:

Courtship Displays:

Males court females by performing a quick movement in where he draws his neck back, flares the crest at the back of his head, and emits a soft but high-pitched single nasally, whistly 'eeep' call.

Nest Site Description:

Made by female only. Slight depression in ground nestled amongst plants (grasses, shrubs, etc.). Nest is lined with adjacent vegetation and, once incubation begins, down. Typically near or above water in thick grasses. In captivity, they take ready to standard porchbox-style duck boxes. They will use boxes on the ground or lofted up on logs, with preference being above or near water features. Pine shavings, hay, dry grasses, or other soft material can be used to fill the bottom of the box.

Parental Care:

Once ducklings hatch, the female is the main protector and caregiver. Sometimes, the male will assist in guarding the brood, but he typically deserts the female and young. Brood amalgamation and brood parasitism has been reported.

Chick Development:

Ducklings hatch synchronously and fledge around 55-56 days of age. They take to water after they have hatched and dried, ~24-48 hours, and are precocial like other waterfowl species.

Age at Sexual Maturity:

Males: 1 year
Females: 1 year

Clutch Size, Egg Description:

7-14 pale straw-colored eggs, incubated by the female alone. Egg size is typically 42-51mm x 32-36mm, with a weight between 25.5-34.5g. Easily candled with candler, flashlight, cell phone flashlight, field candler, etc.

Incubation Period:

25-27 days

Fledgling Period:

55-56 days



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Forms seasonal monogamous pair bonds in the winter/early spring. Will flock together in small groups or pairs.

Social Structure in Captivity:

Best kept in pairs or groups. Bachelor and same-sex groups have been done successfully and easily.

Management Challenges:

Generally hardy. Need open water, heat, and shelter options during winter in colder climates where below freezing temperatures occur for prolonged periods of time.

ADDITIONAL COMMENTS:

Marbled teal are interesting in that taxonomists are divided into two camps: one that believes they are more closely related to pochards, while the other believes they should remain in the genus *Anas*. They lack a speculum and do not experience a molt into an eclipse plumage. Marbled teal do not dive often, but they are adept at it and will do so in order to escape threats.

This species inhabits regions of the world that have historically been plagued with violence and warfare. Drainage of wetlands, illegal hunting pressure, and hydrological changes resulting in drying of breeding areas before ducklings have fledged all work against the marbled teal. They are currently listed as Vulnerable by the IUCN, with the Spanish population being listed as Critically Endangered. Estimates from 2002 and 2016 state that the global population is around 55,000-61,000 individuals with a decreasing trend.

Active conservation efforts are in place for this species, though the most recent Species Action Plan was published in 2008. Nature Iraq has conducted extensive population surveys, public education, and hunter awareness programs between 2005-2010. European conservation efforts and research is currently being done in Spain, with a recent paper having been published in 2017.

If you are interested in learning more about housing this species, please contact SSP Coordinator Harrison Edell (Harrison.edell@dallaszoo.org) and/or Vice Coordinator Joanna Klass (Joanna.klass@zoo.org).

REFERENCES:

Handbook of Birds of the World – Marbled teal : <https://www.hbw.com/species/marbled-teal-marmaronetta-angustirostris>

IUCN Redlist – Marbled teal : <https://www.iucnredlist.org/species/22680339/110054350>

2018 Marbled Teal SSP Breeding and Transfer Plan : <https://ams.aza.org/itweb/upload/TealMarbledYellowSSP2018Final-a0742e47.pdf>

Habitat selection of Marbled Teal and White-headed Duck during the breeding and wintering seasons in south-eastern Spain (2012) : https://www.researchgate.net/publication/230865925_Habitat_selection_of_Marbled_Teal_and_White-headed_Duck_during_the_breeding_and_wintering_seasons_in_south-eastern_Spain

The status and conservation of the Marbled Teal *Marmaronetta angustirostris* (2017) : https://www.researchgate.net/publication/314500774_The_status_and_conservation_of_the_Marbled_Teal_Marmaronetta_angustirostris

Species action plan for the Marbled Teal *Marmaronetta angustirostris* in the European Union (2008): https://www.researchgate.net/publication/265208417_Species_action_plan_for_the_Marble_Teal_Marmaronetta_angustirostris_in_the_European_Union

COMPLETED BY:

Name: Joanna Klass, Joanna.klass@zoo.org Woodland Park Zoo

Minimum Group Size:

2 birds

Maximum Group Size:

No maximum

Compatible in Mixed Species Exhibits:

Yes

Comments:

Mixes well with other species and complements mixed aviaries well. Unobtrusive and generally shier than some other speices.

SSP Coordinator and AZA Regional Studbook Keeper

R. Harrison Edell

Dallas Zoo

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(469) 554-7201

Date: 10/5/2019

Order: Anseriformes

Family: Anatidae

Scientific Name: *Aythya baeri*

Common Name: Baer's Pochard

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male):



Photo credit: L.Audunson

Photo (Female):



Photo by Pinola Conservancy

Conservation Status:

USFWS: Not Listed
IUCN: Critically Endangered
CITES: Not Listed
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 53.50
Participating Institutions: 21
Target Population: 150
Genetic Diversity at 100 years: TBD (never planned)

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical
Primarily in China, with small numbers of birds being found with recent surveys in Russia and Myanmar

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
Water bodies including open lakes, rivers, streams and wetlands

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
Below 20F as long as open water is present

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
Temps over 100F with shade and water

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Mazuri waterfowl maintenance and breeder formula seasonally, or Mazuri Seaduck; fish; mealworms, crickets

Life Expectancy in the Wild:

Males: unknown
Females: unknown

Life Expectancy in Captivity:

Males: 10-12 years
Females: 10-12 years

BREEDING INFORMATION:

Courtship Displays:

The drake has a head throw display in which a small patch of white below the mandible is flashed in the direction of the hen with a bulging nape display. The drake will flap his wings and preen, or extend his neck near the water line towards the hen. Birds will pair up well before the breeding season over the winter, when some vocalizations can be heard. Both sexes utter harsh “graaak” sounds.

Nest Site Description:

Scrape nest lined with grasses, or a cavity box lined with shavings and pine mulch on the ground.

Parental Care:

Female incubates solo.

Chick Development:

Hatch weight average 26g, yellow downy face and breast with brown crown, back and flanks. Vent sexing and pinioning suggested at day 4. Retrices start growing in around day 15. Birds moved to a floor/small pool cage around 17 days. Birds are almost grown out of juvenile plumage at 31 days.

Age at Sexual Maturity:

Males: 2 years, although 1 year old drakes can have low fertility clutches
Females: 2 years, although 1 year old hens can lay, often having low fertility clutches

Clutch Size, Egg Description:

6-10 yellowish gray, cream or pale brown eggs, roughly 44-52 mm long x 34-39 mm wide, fresh weight average 37g.

Incubation Period:

27 days

Fledgling Period:

50-60 days

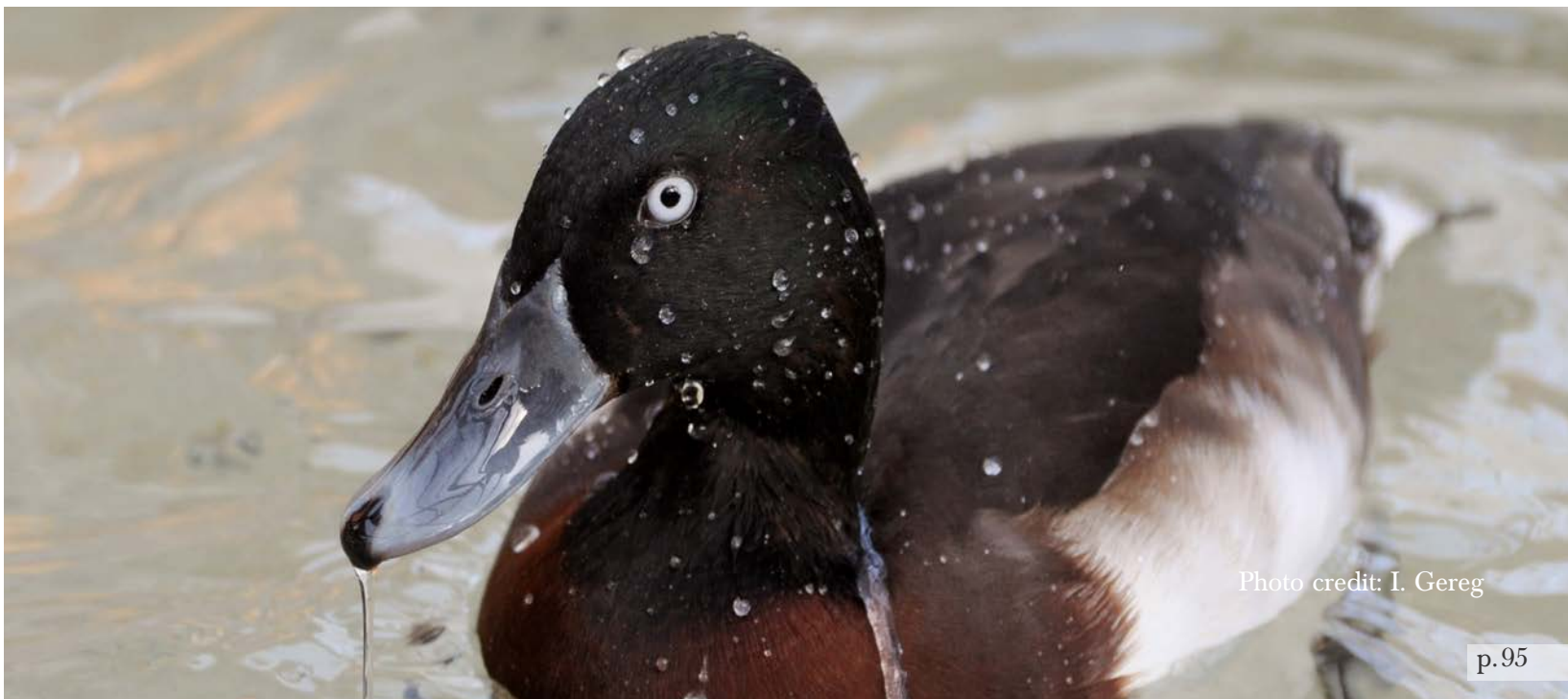


Photo credit: I. Gereg

CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Baer's Pochard have a widespread range in Asia, primarily found most recently in China, with small numbers of birds in Russia and Myanmar. They are found in the tens in the winter grounds, but only single numbers in the breeding grounds due to their critically endangered status.

Social Structure in Captivity:

This is a passive waterfowl species. They mix well in groups. Breeding pairs develop over winter. Birds don't necessarily flock together in mixed-species exhibits nor pair up outside of breeding season.

Management Challenges:

Poor fertility in the first year can be expected. Clutch survivability can be poor due to a lack of genetics of the species in captivity. Typically ducklings will fail to thrive; the clutch will have a few ducklings that stop growing. The condition is fairly noticeable around 30-40g, when the rest of the clutch will quickly grow into the 50-60g range, and a few may look "runty," although they continue to eat well. If you see more than 2-3 days of this you should be able to identify a poor-doer with size alone. Some ducklings show reduced waterproofing, or appear weak, and it is recommended to humanely euthanize. Poor-doer ducklings will eventually be found dead when larger clutch mates have reached approximately 80-100g.

Adolescent baer's pochard surviving past 30 days can also sometimes have a droopy wing when the primaries are growing in. This wing droop fails to correct itself and the bird can have a permanent imperfection to the wing. The condition may be a congenital defect. Suggestions to attempt to correct during hand-rearing are rearing the ducklings outdoors in UV and in a large enough space to encourage mobility, monitoring diet during feather growth, and wrapping the wings with vet wrap (not tape) to support while heavy.

Birds under one year are not typically bright enough to introduce to complex exhibit arrangements such as extreme weather variations, assertive cagemates, open-topped/predator exposure exhibits, etc. Suggest a interim protected housing arrangement until the bird is over a year old.

It is strongly recommended to house Baer's Pochard isolated from other *Aythya* spp. Hybridization is a concern with both the wild and captive population and research may be done to identify pure bloodlines.

Minimum Group Size:

1.1

Maximum Group Size:

Exhibit size dependent. Suggest housing in pairs so that parentage can be tracked.

Compatible in Mixed Species Exhibits:

Yes

Comments:

Baer's Pochards mix well with other species of waterfowl. They also mix well in large groups of the same species. They are not recommended with other *Aythya* spp. due to hybridization, unless under close management. This species has been housed in mixed-taxa exhibits, such as White-cheeked Gibbon and Reeve's Muntjac.

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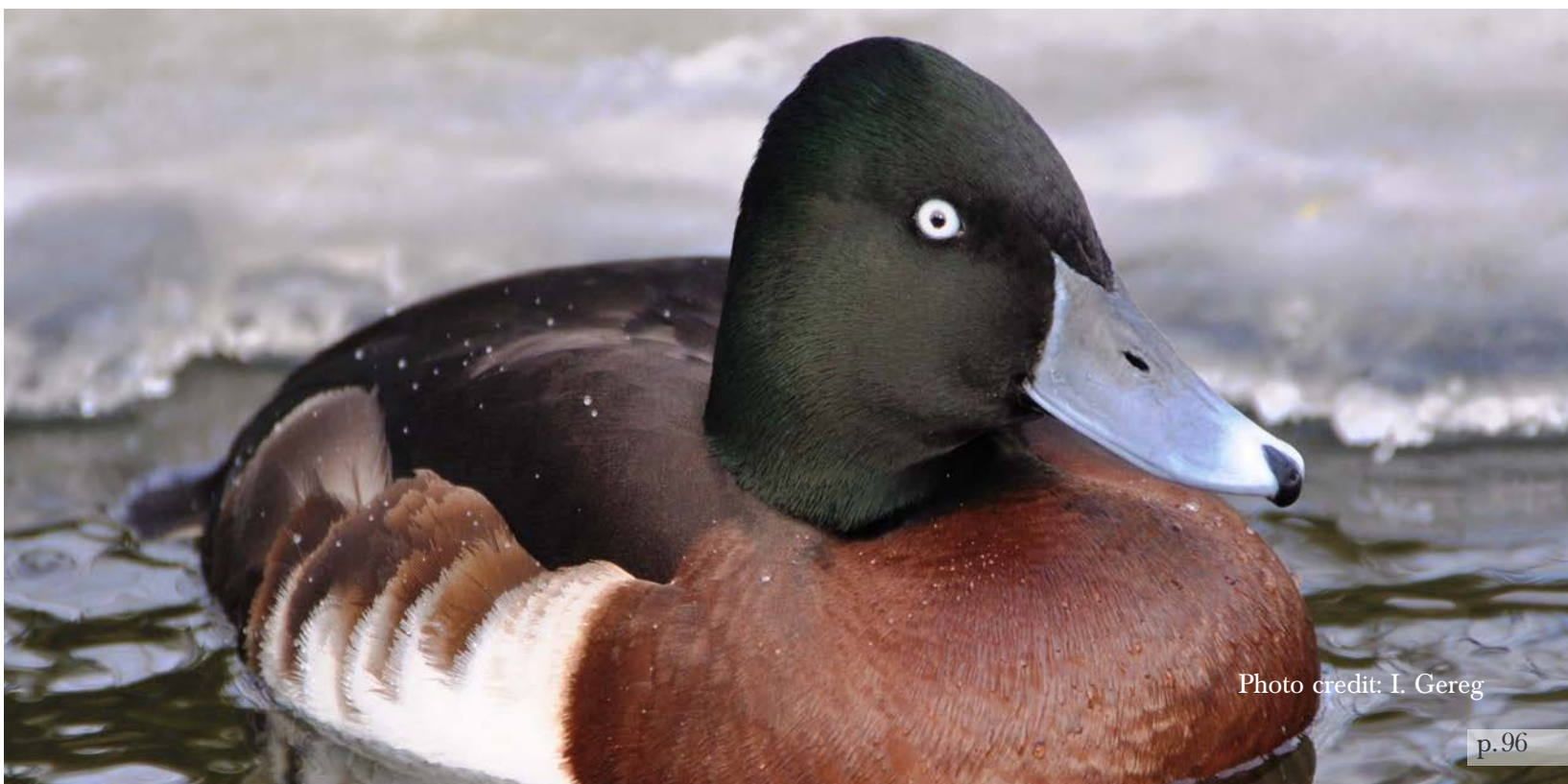


Photo credit: I. Gereg

ADDITIONAL COMMENTS:

Incubation temperature/RH%: 37.5C/40% and adjust accordingly to reach 15% weight loss. Suggest 100% RH in hatcher.

Hand rearing protocol:

Day 0 dry dock with clutchmates, offer soaked Mazuri Waterfowl starter pellets and shredded whole hard-boiled egg, 250 W heat lamp placed 3' above roosting area.

Day 1 if fully expressed feathers, offer wet brooder setup, 250W heat lamp placed 3' above roosting area, and steady overflow of water in wet brooder. Toss starter in water and tap at water in addition to offering soaked starter and egg.

Day 3 birds should be waterproofed.

Day 7-10 omit egg.

Day 17 move to floor/pool enclosure.

Day 30 begin transition to adult diet.

WNV series has been started as early as 16 days at Prospect Park Zoo at 0.5 ml WNV-EEE.

Adults:

Body Length: 16.1-18.1 in

Wingspan: 27.6 - 31.1 inches

Weight: males avg 1.9 lbs, females avg 1.5 lbs

This critically endangered species of diving duck occurs in eastern Asia. There is estimated to be less than ~300 birds thought to be surviving in the wild. Due to its wide range and catastrophic decline, scientists are urging a conservation response to bring this bird back from the brink of extinction in the wild. Their main threats are not well understood, but the loss of habitat in breeding and wintering sites is of critical concern, as well as hunting, egg collection, and disturbance for rice agriculture.

The Convention on the Conservation of Migratory Species of Wild Animals (CMS) and East Asian - Australasian Flyway Partnership (EAAFP) have prepared an International Single Species Action Plan (ISSAP) for the Conservation of the Baer's Pochard in 2015. One of the eight proposed results of the plan includes a global management strategy for the captive population of Baer's Pochard.

In December 2014, the Association of Zoos' and Aquariums (AZA) Anseriformes Taxon Advisory Group (TAG) created a Baer's Pochard program to monitor North American holdings of the species. This program is monitored by Jamie Toste at the Minnesota Zoo. The current population stems from three imports by two facilities between 2005-2010: Sylvan Heights Bird Park in Scotland Neck, NC, and Pinola Conservancy in Shreveport, LA, totalling 12 founders. Livingston Ripley Waterfowl Conservancy in Litchfield, CT participated in breeding Baer's Pochard as early as 2010 and birds sent to Central Park Zoo in 2010 were the first individuals to have offspring in an AZA facility.

In 2019, the program leader championed a genetics research project to sample the DNA from the North American population of Baer's Pochard in an effort to understand the genetic relationships between living Baer's Pochard included in the study. The results of this study will be incorporated into a meaningful breeding and transfer plan in 2020 among North American holders of this species to maximize long-term genetic retention of the ex situ population. This project was collaborated with funds contributed by Pinola Conservancy, San Diego Zoo, Buttonwood Park Zoo, Akron Zoo and the Minnesota Zoo, along with 22 facilities that submitted DNA samples to the project.

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Hearn, R.D. 2014. International Single Species Action Plan for the Conservation of the Baer's Pochard *Aythya baeri*. CMS Technical Series No. #3, EAAFP Technical Series No. #3

Hearn, R.D. 2015. The Troubled Baer's Pochard *Aythya baeri*: cause for a little optimism? *BirdingASIA* 24 (2015): 78-83.

Toste, Jamie. 2019. Genetic Analysis of the US Population of Baer's Pochard (*Aythya baeri*) for Improved Captive Management 2019.

Photo copyright © C. Mannheim. ibidemimages@yahoo.com

COMPLETED BY:

Name: Jamie Toste

Date: 11/10/2019

Order: Anseriformes

Family: Anatidae

Scientific Name: *Mergus squamatus*

Common Name: Scaly-sided (Chinese) Merganser

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male):



Photo credit: L.Audunson

Photo (Female):



Photo credit: I. Gereg

Conservation Status:

USFWS: Not Listed
IUCN: Endangered
CITES: Not Listed
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 30.39.12
Participating Institutions: 13
Target Population: 125
Genetic Diversity at 100 years: TBD (never planned)

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
With access to open water, this species can withstand temperatures well below freezing.

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
Access to shade and cold water is beneficial when temperatures reach and exceed 100° F. This species does not appear to heat stress as easily as other Sea Duck species.

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

The main component of the Scaly-sided Merganser's captive diet is Mazuri Sea Duck pellets. Being obligate piscivores this diet is very important to meet their nutritional needs. The pelleted diet may be supplemented with chopped fish (capelin, smelt, etc.) for enrichment and demonstrations but is by no means necessary to keep and breed the birds successfully. Live fish are relished as well when available.

Life Expectancy in the Wild:

Males: Likely 8 years maximum
Females: Likely 8 years maximum

Life Expectancy in Captivity:

Males: 10 years
Females: 10 years

BREEDING INFORMATION:

Courtship Displays:

Scaly-sided Mergansers in captivity begin courtship and copulation in the late summer and early fall. As soon as the adults are finished emerging into breeding plumage, drakes begin displaying and hens begin soliciting. Drakes display a head-throw that is similar to that of the Common Merganser (*Mergus merganser merganser*). During this display, the drake throws his head backwards and extends the neck fully with the bill pointed straight upwards. This position is held for no more than a second until the neck is recoiled as quickly as it was thrown upwards and the drake reassumes the starting posture. During courtship, drakes will flash the sclera of their eyes, forcing a circle of white to appear around the dark irises. Scaly-sided Mergansers also frequently display comfort and selfmaintenance behaviors that have become ritualized into courtship displays. These behaviors include bathing, preening, rearing, wing-flapping, and drinking. Both males and females will frequently drink before copulation. Drakes also display a variation on the normal drinking behavior. A male bird will dip his bill into the water and then quickly shake his head side-to-side while pulling his bill out of the water. This usually scatters droplets of water into the air. This behavior has also been observed in the Common Merganser (*Mergus merganser merganser*) and the Hooded Merganser (*Lophodytes cucullatus*), and has been termed "water-twitching" or "jabbing".

Nest Site Description:

Scaly-sided Mergansers are obligate cavity nesters, laying inside tree cavities along rivers in their breeding range. Preference is shown towards nest sites around forty feet (12-13m) above the ground and facing the water. In captivity, hens will readily use a typical wooden nest box for cavity-nesting ducks with an entrance hole of 5 or 6 inches. This species will also nest in porch boxes, which offer added security while laying and incubating eggs.

Parental Care:

Scaly-sided Merganser hens are solely responsible for incubation and chick-rearing. The drake will defend the nest site during breeding and egg-laying, but will abandon soon after incubation commences.

Chick Development:

Scaly-sided Mergansers have an average hatch weight of 36.27g and can weigh anywhere in between 32.20g and 41.65g at hatching. The hatchling Scaly-sided Merganser resembles the downy young of the Common Merganser (*Mergus merganser*), and to a lesser extent that of the Red-breasted Merganser (*Mergus serrator*). The head is nearly spherical, with the upper half being a light chestnut color. This coloration extends from the nares all the way to the nape, where the color begins to fade and abruptly bleed into white on the cheeks and underchin. Right below the eye, a white stripe exists that starts at the bill and extends back to the end of the eyeball. The pupil is large and black, while the iris is grayish-blue. This merganser's bill is already serrated at hatching and is almost black in coloration. There exists a prominent off-white nail at the tip of the upper mandible, and the tip of the lower mandible bears this same coloration as well. The back, sides, and tail of the ducklings are a light grey down, with white spots present in pairs on the scapular region, lower half of the wings, sides just above the legs, and dorsal surface of the rump. Tail feathers begin growing in at around twelve days of age. Scapular feathers begin growing in at around twenty-five days of age. At around thirty-two days of age, pin feathers on the wings begin to grow in.

Age at Sexual Maturity:

Males: 2 years
Females: 2 years

Clutch Size, Egg Description:

Clutch size in captive birds normally ranges from 8 to 12 eggs being laid at a rate of 1 egg/36-48 hours. Eggs are elliptical, unpatterned, and buff colored. Mean dimensions of eggs produced in captivity are 63.95mm x 43.63mm. These values are mostly consistent with that of wild birds. Mean fresh egg mass is 67.02g.

Incubation Period:

35 days

Fledgling Period:

about 65 days

CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Scaly-sided Mergansers form pairs and actively defend nesting sites during the breeding season. They form larger flocks of up to twenty birds in winter.

Social Structure in Captivity:

This species can be bred in pairs, but may also be maintained in larger breeding groups. Scaly-sided Mergansers have formed breeding trios in captivity.

Management Challenges:

Scaly-sided Mergansers do best on cool, clear, running water and it is recommended that the minimum pool depth be three feet. Health issues, especially with the eyes, may develop if kept on shallow pools with little water turnover. Due to their instinctual urge to pursue and grab shiny objects in the water, Scalysided Mergansers also have the propensity to ingest inedible objects. Special care must be taken to not leave hardware in their pens. Pens and pools must also be clear of coins as these will also be ingested, leading to obstruction, zinc toxicity, and death. Even if foreign objects are removed from the GI tract, these birds can stress easily when in atypical housing setups mixed with routine and frequent handling. Merganser hens are typically poor mothers and although they may sit well on eggs they will not do well with ducklings on exhibit. Hand-rearing is very strongly recommended for success with this species. Scaly-sided Mergansers are among the earliest of seasonal waterfowl nesters. Eggs have been produced as early as February in several North American collections. If unattended eggs are left outside with temperatures below 20°F, there is a good chance of them freezing.

ADDITIONAL COMMENTS:

Please contact Chuck Cerbini at chuck.cerbini@toledozoo.org for more information on this species.

REFERENCES:

- Solovyeva D.V., Vartanayan S.L., Vartanayan N. I-F. 2013. Artificial nest-sites for Scaly-sided Merganser *Mergus squamatus* (Gould, 1864) – a way to breeding habitat restoration. *Amurian Zoological Journal*. V(2):201-207.
- Solovyeva D.V., Liu P., Antonov A.I., Averin A.A., Pronkevich V.V., Shokhrin V.P., Vartanyan S.L., Cranswick P.A. 2014. The population size and breeding range of the Scaly-sided Merganser *Mergus squamatus*. *Bird Conservation International*. 24(4):393-405.
- Zhengjie Z., Han X., Zhang S., Wu J., Piao Z. 1995. Breeding ecology of the Chinese Merganser in the Changbai Mountains, China. *Journal of Field Ornithology*. 66(1):54-59.
- Johnsgard, P. (1965). *Handbook of Waterfowl Behavior*. Lincoln, Nebraska. University of Nebraska-Lincoln.
- Personal observation and data-collection.

COMPLETED BY:

Name: Chuck Cerbini

Minimum Group Size:

One pair.

Maximum Group Size:

Dependent on exhibit size, but large breeding groups can be maintained.

Compatible in Mixed Species Exhibits:

Yes

Comments:

Scaly-sided Mergansers are easily maintained in mixed waterfowl collections.

SSP Coordinator and AZA Regional Studbook Keeper

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Toledo Zoo & Aquarium
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(419) 385-5721 ext.2008

Date: 3/18/2016

Order: Anseriformes

Family: Anatidae

Scientific Name: *Coscoroba coscoroba*

Common Name: Coscoroba Swan

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Conservation Status:

USFWS: Not Listed
IUCN: Least Concern
CITES: II
Wild Population Trend: Stable

Sustainability Criteria:

Current Population: 15.3
Participating Institutions: 14
Target Population: 75
Genetic Diversity at 100 years: 26.5

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
Ponds, lagoons, canals

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
Capable of tolerating wide range of temperatures provided shelter and moving water are available

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
Capable of tolerating wide range of temperatures provided water and shade are available

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Commercial waterfowl pellets, chopped greens

Life Expectancy in the Wild:

Males: 7 Years (Average)

Females: 7 Years (Average)

Life Expectancy in Captivity:

Males: 35 Years

Females: 35 Years

BREEDING INFORMATION:**Courtship Displays:**

Male calls to the female and bites the back of her neck; mating takes place in the water.

Nest Site Description:

Bulky, conical mound of plant material built on small island or on floating raft of vegetation. Eggs are laid in a shallow depression at the top, lined with grasses and feathers.

Parental Care:

Females incubate the eggs while males guard the nest site. When the female leaves the nest to feed, the male does not take over incubation. After the eggs hatch, both parents care for the cygnets, leading them to food (even stirring up the water with their feet to uncover food) and guarding them from predators. The Coscoroba swan is the only swan which does not carry its cygnets on its back.

Chick Development:

Chicks begin calling from inside the egg a few days prior to hatching. Cygnets are 99-119 grams at hatching and are gray or brown with dark stripes on their back and head. They are precocial and able to swim and feed themselves within hours of birth.

Age at Sexual Maturity:

Males: 3-5 Years

Females: 3 Years

Clutch Size, Egg Description:

Eggs are white or cream colored, 8.2-9.4 centimeters long, 5.3-6.7 centimeters wide, and weighing 129-203 grams.

Incubation Period:

33-40 Days

Fledgling Period:

2-4 Months



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Paired during the breeding season, congregate into large flocks during the molting season

Social Structure in Captivity:

Paired

Management Challenges:

Because of their size, coscorobas are often maintained in open-air, outdoor enclosures instead of enclosed aviaries. Their pools and food sources tend to attract native wild birds, such as Canada geese and mallards, which become potential disease vectors and competitors for food.

ADDITIONAL COMMENTS:

The sole member of its genus, the Coscoroba swan is the smallest of the world's swan species. Males measure 88-115 centimeters and weigh 3.8-4.5 kilograms. Females are smaller, weighing 3.2-4.5 kilograms. Size is the only external physical trait which can be used to differentiate between the sexes. Both adult males and females have entirely white plumage except for their black primary feathers. The flattened bill is red or orange, while the eyes may be red, orange, yellow, or brown. Juveniles are duller, often a gray or brownish plumage with gray legs and bill. The name "Coscoroba" is an onomatopoeic representation of the bird's call. The call of the female is of higher pitch than that of the male. The Coscoroba is the only swan species not in the genus *Cygnus*. Taxonomically, some authorities ally them more closely with the geese or whistling ducks, or consider them to be a genetic link between the different groups of waterfowl. Unusual attributes of the Coscoroba include the appearance of the cygnets, the absence of bare skin on the face, the small size, and the vocalization. Barring nesting failure or the death of a partner, Coscoroba swans often mate for life. Initial courtship displays may be intense and highly ritualized, becoming less so in subsequent years. Pairs often stay in the same territory every year. Though pairs will defend their nesting sites fiercely, against both predators and other Coscoroba swans, they became much more sociable after the cygnets hatch. At this time, the flight feathers are molted, and the temporarily flightless swans congregate in larger flocks for protection. The Coscoroba swan is currently listed as a species of Least Concern by the IUCN. The major potential threat to the species is habitat loss and degradation through the loss or diversion of wetlands.

REFERENCES:

"Coscoroba Swan (*Coscoroba coscoroba*)" Woodland Park Zoo. Web. 9 Jul 2015.
<https://www.zoo.org/page.aspx?pid=1842#.VZ8JOfn-IgQ>

Calabuig, Cecilia. 2012. Coscoroba Swan (*Coscoroba coscoroba*), Neotropical Birds Online (T. S. Schulenberg, Editor). Ithaca: Cornell Lab of Ornithology; retrieved from Neotropical Birds Online: http://neotropical.birds.cornell.edu/portal/species/overview?p_p_spp=693136

Konopik, Ann. 2012. AZA Regional Studbook – Coscoroba Swan (*Coscoroba coscoroba*).

Tarsnane, Simon. 1985. Waterfowl: A Guide to Management and Propagation. Tarsnane Productions: Billing.

COMPLETED BY:

Name: Ian Shelley (Salisbury Zoo)

Minimum Group Size:

Pair

Maximum Group Size:

Compatible in Mixed Species Exhibits:

Yes

Comments:

Can be housed alongside other waterfowl species, as well as other birds, such as shorebirds, macaws, and flamingos

SSP Coordinator and AZA Regional Studbook Keeper

Matt Wade McHale

Zoo Miami

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(910) 547-1207

Date: 2/25/2015

Order: Anseriformes

Family: Anatidae

Scientific Name: *Neochen jubata*

Common Name: Orinoco Goose

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male Right - larger & Female Left):



Conservation Status:

USFWS: Not Listed
IUCN: Near Threatened
CITES: Not Listed
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 26.19.1
Participating Institutions: 18
Target Population: 85
Genetic Diversity at 100 years: 50.2%

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
Live on forest covered riverbanks in damp clearings, wet savannas and muddy and sandy margins of large freshwater wetlands.

Circadian Cycle: Diurnal Crepuscular Nocturnal Other
Mainly eat during the day but have been known to forage at night

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
As long as they have access to water.

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
As long as shade and fresh water are available

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Primarily herbivores and eats leaves, seed-heads, grass and algae but will feed on insects. In captivity, Mazuri waterfowl pellet (or something similar) is sufficient. Greens can be offered periodically. During breeding season it is suggested to offer Mazuri breeding waterfowl pellet (or something similar). In non-breeding season offer Mazuri maintenance waterfowl pellet (or something similar).

For ducklings offer Mazuri waterfowl starter pellet (or something similar), slowly weaning them to maintenance by the time they are a month old.

Life Expectancy in the Wild:

Males: 7.8

Females: 7.8

Life Expectancy in Captivity:

Males: 15

Females: 15

BREEDING INFORMATION:

Courtship Displays:

Ruffled feathers, wing lifting, repeat whistle vocalizations and social preening. Male has high pitched whistling call while female has cackling call. Known to maintain a strong pair bond throughout the year

Nest Site Description:

Nest in tree cavities near the water but have been reported to lay eggs on the ground in areas densely covered in grass and other plants close to rivers and wetlands.

Parental Care:

Only the female incubates the eggs but both parents assist in raising offspring. Offspring have been seen with parents a year or more after hatching.

Chick Development:

Ducklings leave nest cavity shortly after hatching following their parents.

Age at Sexual Maturity:

Males: 2 years old

Females: 2 years old

Clutch Size, Egg Description:

6-10 pale brownish-cream eggs. If there are several breeding females, it has been seen in captivity where 2 females will lay in same nest with one of the females taking sole responsibility for incubating the eggs.

Incubation Period:

30 days

Fledgling Period:

Get adult feathers at ~2-3 months of age.



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Are usually in pairs but can be seen in larger groups (including family groups)

Social Structure in Captivity:

Pairs, groups (single sex and mix sexed)

Management Challenges:

Can show aggression towards other birds especially during mating season.

ADDITIONAL COMMENTS:

Although not sexually dimorphic, males are larger than females.

Name for the Orinoco river of Venezuela and Columbia which is the longest river in South America.

They are a very terrestrial species preferring to walk, foraging along the riverbanks, edge of wetlands and damp clearings. Ducklings will go into water to flee predators.

REFERENCES:

<http://www.iucnredlist.org/details/22679987/0>

<https://neotropical.birds.cornell.edu/Species-Account/nb/species/origoo1/overview>

COMPLETED BY:

Name: Nancy Nill

Minimum Group Size:

2

Maximum Group Size:

20

Compatible in Mixed Species Exhibits:

Yes

Comments:

Can be put with many mammal and bird species without any issues. Remembering that ample space is provided for all animals since they are known to be territorial during breeding season.

SSP Coordinator and AZA Regional Studbook Keeper

Nancy Nill
Palm Beach Zoo
nnill@palmbeachzoo.org
561-533-0887 (353)

Date: 10/21/2018

Order: Anseriformes

Family: Anatidae

Scientific Name: *Nettapus coromandelianus*

Common Name: Indian (cotton) pygmy goose

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male):



Photo (Female):



Conservation Status:

USFWS: Not Listed
IUCN: Least Concern
CITES: Not Listed
Wild Population Trend: Stable

Sustainability Criteria:

Current Population: 26.21
Participating Institutions: 11
Target Population: 100
Genetic Diversity at 100 years: 54.2%

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical Two subspecies recognized.

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal Permanent ponds, lakes and lagoons supporting submerged vegetation are preferred. Tend to avoid running water due to absence of vegetation.

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F 100 F

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Mazuri waterfowl maintenance or breeder (depending on breeding status), Mazuri gamebird, millet, seed, chopped greens. Does well with duck weed (especially ducklings), may receive mealworms or small crickets in some cases.

Life Expectancy in the Wild:

Males: 10-15 years (data deficient)
Females: 10-15 years (data deficient)

Life Expectancy in Captivity:

Males: 10-15 years
Females: 10-15 years

BREEDING INFORMATION:

Courtship Displays:

Female may solicit male with head-bobbing and vocalizations. Mutual bill-dipping may also occur.

Age at Sexual Maturity:

Males: 2 years of age
Females: 2 years of age

Nest Site Description:

Elevated tree hollows in or near water in the wild. Will use a variety of nest box designs located near water in captive settings. Vegetation has also been used in some cases.

Clutch Size, Egg Description:

6-14 creamy white eggs, sometimes initially olive-tinged. Weigh approximately 27g.

Parental Care:

Female incubates. Both parents stay with ducklings until fledging occurs.

Incubation Period:

21-24 (average of 23, but up to 28 days has been recorded).

Fledging Period:

45-55 days

Chick Development:

Brown upper areas and white abdomen, with dark head cap and relatively long tail at hatching. Can weigh between 12-18g at hatch and can range from 175-225g at fledging.



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Usually encountered in pairs or small groups

Social Structure in Captivity:

Typically housed in pairs

Management Challenges:

Have been difficult to breed successfully in many cases, and ducklings have low survival rates. Wet brooding has improved duckling survival. Sub-optimal housing situations occur with limited water space and birds can be stressed by proximity to humans (including care staff, in some cases). Need to be kept fully winged.

Minimum Group Size:

2

Maximum Group Size:

Depends on size of habitat and composition of the group.

Compatible in Mixed Species Exhibits:

Yes

Comments:

Do well in mixed species settings as long as they have plenty of visual barriers and separate nesting areas.

SSP Coordinator and AZA Regional Studbook Keeper

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REFERENCES:

Todd, Frank S. Natural History of Waterfowl. Ibis Publishing company, California. (1996)

Scott, P. A Colored Key of the Wildfowl of the World. Slimbridge, England. The Wildfowl Trust. (1978)

COMPLETED BY:

Name: Stephanie Allard

Date: 11/15/2018



Order: Anseriformes

Family: Anatidae

Scientific Name: *Anser canagicus*

Common Name: Emperor goose

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Conservation Status:

USFWS: Not Listed
IUCN: Near Threatened
CITES: Not Listed
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 35.29
Participating Institutions: 10
Target Population: N/A
Genetic Diversity at 100 years: N/A

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical
 Small range along the Gulf of Anadyr and Chukotskiy Peninsula, NE Russia; extreme NW USA (Alaska); Aleutian islands

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
 Arctic coast and tundra

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
 Extremely cold tolerant

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
 OK in warmer climates with access to shade and cool water

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Takes readily to commercial pellet, such as Mazuri. Offer a Maintenance pellet in the non-breeding season and Breeder pellet during lay and nesting. Offer greens such as romaine, wheat grass, kale, oat grass, etc. Will take to white proso millet and spray millet. Goslings should be fed ample greens (romaine, kale, dandelion, grass, etc.) and given grazing opportunities. Feed a Waterfowl Starter pellet and then transition to Maintenance once juvenile plumage begins to replace down.

Life Expectancy in the Wild:

Males: 10-25 years
Females: 10-25 years

Life Expectancy in Captivity:

Males: 10-25+ years
Females: 10-25+ years

BREEDING INFORMATION:

Courtship Displays:

Emperor geese form monogamous long-term pair bonds. Generally, these bonds begin to form in the winter and early spring. Little is known about their courtship behaviors and how pairs are formed, but bonded geese will often perform mirroring behaviors, such as foraging in step with one another, and will rest beside one another.

Nest Site Description:

In the wild, nests are shallow depressions in the ground that are lined with grass, feathers, and down. In captive settings, geese will often select for open-topped areas, such as wedged behind a tree, fence, shelter, etc. lined with hay or grasses. They will also use hollowed out log rounds.

Parental Care:

Both parents cooperatively care for their young, defending and teaching them how to forage. Young can be kept housed with adults for at least a year, though they may be displaced during the next nesting season.

Chick Development:

Goslings are downy, with dark gray coloration above and pale gray to whitish below and on crown. They are precocial, and the first 24 hours after hatch are spent drying off beneath the female as she broods. Emperor goose goslings are up and running in a few days as they quickly learn how to forage from their parents. Blood feathers on wings typically begin to appear at 4 weeks of age. Juveniles have mottled plumage on their heads, with the white coming in during their first autumn and becoming more pronounced coming into their first year.

Age at Sexual Maturity:

Males: 2; in the wild 3-4
Females: 2; in the wild 3-4

Clutch Size, Egg Description:

4-6 creamy white eggs, with later breeders sometimes having smaller clutches

Incubation Period:

24-25 days by female alone

Fledgling Period:

45-60 days



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Gregarious and highly social. Monogamous pairs will leave to nest but then rejoin large flocks with their juveniles after nesting.

Social Structure in Captivity:

Can be kept in pairs or large groups. Runs easily with other species of geese. If kept in a flock, an enclosure with ample space to form territories during nesting season recommended.

Management Challenges:

Like all geese, having space to forage and roam is important for their overall health. If grassy areas are not available, they take readily to romaine and fodder, as well as plants like sedges and irises. They will graze down a grassy area unless the pasture is managed.

Minimum Group Size:

0.0.2

Maximum Group Size:

N/A

Compatible in Mixed Species Exhibits:

Yes

Comments:

Can be run in large flocks of other emperor geese or with other goose species. Does well in mixed exhibits.

ADDITIONAL COMMENTS:

Active research is being conducted by Alaska Fish and Wildlife to track juveniles and develop less invasive GPS tracking units. This species is currently listed as Near Threatened by the IUCN.

This is a Candidate Species with the Anseriformes Taxon Advisory Group (2019/2020). If interested in learning more about this species, please contact one of the Anseriformes TAG Steering Committee members. Contact information for Joanna Klass is listed below.

REFERENCES:

Handbook of Birds of the World. Emperor goose *Anser canagicus*. (https://www.hbw.com/species/emperor-geese-anser-canagicus#Status_and_conservation)

Todd, Frank S. Waterfowl: Ducks, Geese & Swans of the World. San Diego, CA: Sea World, 1979. Print.

COMPLETED BY:

Name: Joanna Klass, Joanna.klass@zoo.org

Date: 11/9/2019

Order: Anseriformes

Family: Anatidae

Scientific Name: *Cyanochen cyanoptera*

Common Name: Blue-winged goose, Abyssinian blue-winged goose

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Conservation Status:

USFWS: Not Listed
IUCN: Vulnerable
CITES: Not Listed
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 9,111
Participating Institutions: 7
Target Population: N/A
Genetic Diversity at 100 years: N/A

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical Endemic to Ethiopia

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal Highlands of Ethiopia (4000ft+)

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F Can tolerate below freezing if given access to open pools and shelters; heat advised below 32F.

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F Does fine in hot weather with shade and fresh water.

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Takes readily to commercial pellet, such as Mazuri. Offer a Maintenance pellet in the non-breeding season and Breeder pellet during lay and nesting. Offer greens such as romaine, wheat grass, kale, oat grass, etc. Will take to white proso millet and spray millet. Goslings should be fed ample greens (romaine, kale, dandelion, grass, etc.) and given grazing opportunities. Feed a Waterfowl Starter pellet and then transition to Maintenance once juvenile plumage begins to replace down.

Life Expectancy in the Wild:

Males: No data
Females: No data

Life Expectancy in Captivity:

Males: Avg: ~9 years, can be 16+ years
Females: Avg: ~9 years, can be 16+ years

BREEDING INFORMATION:

Courtship Displays:

Blue-winged geese form monogamous long-term pairs. Males will stand almost completely vertical, with their necks stretched out behind them. They will also puff out their chest as they make a 'whu whu whu' noise, flipping their bill straight up and back down as they do so. The male will then run in this posture behind the female as she makes a soft wheezy barking call. After this display, they will often stand face to face with necks outstretched towards one another as they make a soft quick 'whu whu whu' noise.

Nest Site Description:

The female alone builds the nest. In the wild, she will build a nest lined with grasses, feathers, and down. It is concealed amidst vegetation. In zoological or avicultural settings, blue-wings have nested in thickly vegetated areas underneath shrubs or in grasses, inside of Sky Kennels lined with hay or shavings, a-frames, and slatted wooden boxes.

Parental Care:

Both parents cooperatively raise the goslings, teaching them how to forage. Offspring have been able to stay with their parents into the next breeding season, but typically get chased off before lay and hatch.

Chick Development:

Goslings are downy, with darker brownish-black down above and silvery white below. Bill and legs are black. Average hatch weight of 51.5g. They begin to develop blood feathers and juvenile plumage around 4 weeks.

Age at Sexual Maturity:

Males: 2
Females: 2

Clutch Size, Egg Description:

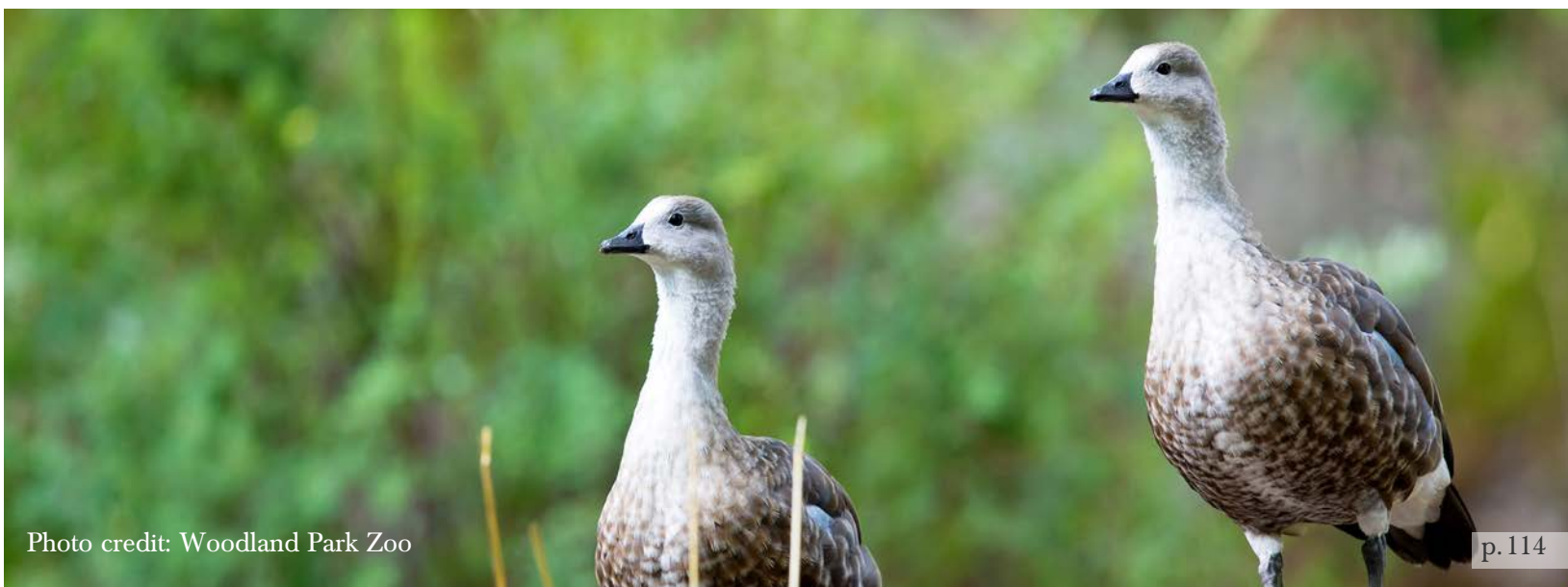
4-7 cream-colored eggs.
70 mm x 50 mm; mass 73-94g

Incubation Period:

30 - 34 days by female alone

Fledgling Period:

85 - 100 days



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Not at all gregarious. Blue-winged geese form loose flocks in the non-breeding season. During nesting season, pairs leave the flock and will fiercely protect their territories and family groups.

Social Structure in Captivity:

Best kept in 1.1 pairs. Will tolerate young for about a year, maybe longer for female offspring.

Management Challenges:

Due to the often aggressive nature of this species during the breeding season, it is highly advised that they either have their own yard during this period, or they are kept in a large, vast enclosure where everyone can keep their distance. Aggressive males have been known to maim or kill exhibit mates and wild birds in smaller enclosures housing a 1.1 pair. Singletons have been housed with other species of geese, waterfowl, wading birds, and small hoofstock without issue.

ADDITIONAL COMMENTS:

This species is listed as Vulnerable by the IUCN due to a decreasing population and the fact that they have an extremely restricted range (endemic to Ethiopia). Not a true goose, blue-winged geese are classified as a sheldgoose and are the sole species of the genus *Cyanochen*.

Blue-winged geese are a Candidate Species with the Anseriformes Taxon Advisory Group (2019/2020 RCP). If interested in learning more about this species, please contact a member of the Anseriformes TAG Steering Committee. Contact information for Joanna Klass is listed below.

REFERENCES:

Handbook of Birds of the World. Blue-winged goose, *Cyanochen cyanoptera*. <https://www.hbw.com/species/blue-winged-goose-cyanochen-cyanoptera>

Todd, Frank S. Waterfowl: Ducks, Geese & Swans of the World. San Diego, CA: Sea World, 1979. Print.

COMPLETED BY:

Name: Joanna Klass, Joanna.klass@zoo.org

Minimum Group Size:

0.0.2

Maximum Group Size:

1.1; Larger flocks possible with unpaired, same-sex or juvenile birds; not highly gregarious

Compatible in Mixed Species Exhibits:

Varies

Comments:

Some birds can become extremely aggressive towards keepers and smaller animals if they are housed as the sole occupants of smaller yards. If keeping in a mixed-species enclosure, it is advised that the yard is very spacious to allow the geese and other animals ample room to steer clear of one another.

Date: 11/9/2019

Order: Anseriformes

Family: Anatidae

Scientific Name: *Anas luzonica*

Common Name: Philippine Duck

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Conservation Status:

USFWS: Not Listed
IUCN: Vulnerable
CITES: Not Listed
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 12.7
Participating Institutions: 4
Target Population: N/A
Genetic Diversity at 100 years: N/A

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical Philippine Islands

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
Can withstand temperatures to 100f with the proper shade and water features.

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Waterfowl maintenance/breeder, Insects (crickets, mealworms, waxworms), fresh chopped greens (romaine/kale).

Life Expectancy in the Wild:

Males: 10 years
Females: 10 years

Life Expectancy in Captivity:

Males: 10 – 15 years
Females: 10 – 15 years

BREEDING INFORMATION:

Courtship Displays:

Precopulatory behavior is the usual mutual Head-pumping. After treading, the male performs a single Bridling movement; then he rapidly Nod-swims around the female, nodding his head most vigorously. After one copulation over twenty individual nods were counted during such a Nod-swim, whereas the common mallard seldom nods at all and at most three or four times. The male finally Turns-the-back-of-the-head to the bathing female.

Age at Sexual Maturity:

Males: 1 Year
Females: 1 Year

Clutch Size, Egg Description:

8 – 14 pale green eggs.

Nest Site Description:

Ground nesters amid dense vegetation, may inspect or utilize nest-boxes in controlled situations.

Incubation Period:

25 – 26 days

Parental Care:

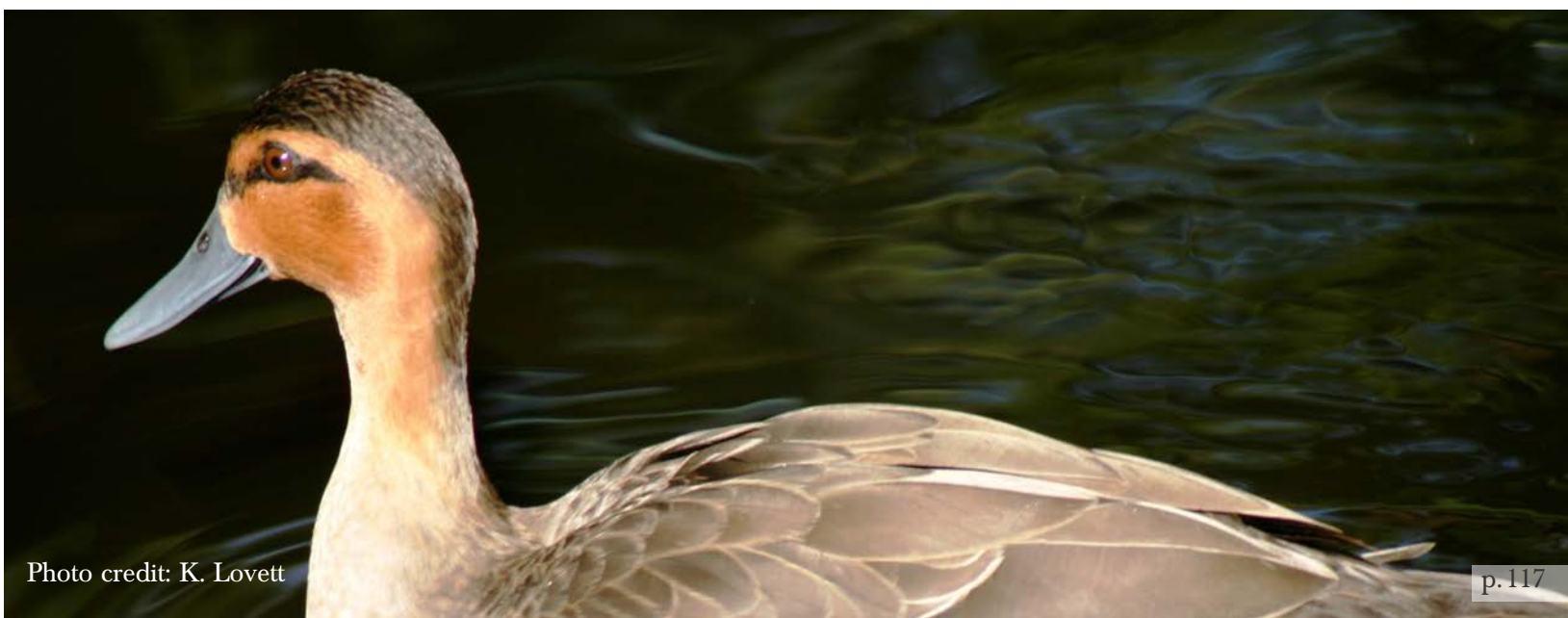
Chicks are able to walk on day one but will be taught and led by the hen to forage and find water.

Fledgling Period:

2 months

Chick Development:

Chicks are precocial, covered in down with their eyes open at hatch. ~24g - 30g hatch weight.



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Flocks of 100 – 200 birds may congregate but smaller pairs and groups are more typical.

Social Structure in Captivity:

Birds tend to form strong pair bonds so 1.1 is an ideal breeding setup.

Management Challenges:

This species may on occasion become territorial or aggressive during the breeding season. With proper planning and management they can successfully be kept in mixed species exhibits.

Minimum Group Size:

1.1

Maximum Group Size:

1.1

Compatible in Mixed Species Exhibits:

Yes

Comments:

This species does well with a multitude of different Anseriformes and Phoenicopteriformes.

ADDITIONAL COMMENTS:

For specific information on incubation parameters and nest box dimensions please reach out directly to the Anseriformes TAG or author of this Species Fact Sheet.



Photo credit: L.Audunson

REFERENCES:

Todd, Frank S. ;Natural History of Waterfowl. Ibis Publishing company, California. (1996)

Johnsgard, Paul ;Handbook of Waterfowl Behavior

COMPLETED BY:

Name: William Robles, wrobles@auduboninstitute.org

Date: 11/15/2019

Order: Anseriformes Family: Anseranatidae

Scientific Name: *Anseranas semipalmata* Common Name: Magpie Goose

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - similar appearance):



Photo (Goslings):



Conservation Status:

USFWS: Not Listed
IUCN: Least Concern
CITES: Not Listed
Wild Population Trend: Stable

Sustainability Criteria:

Current Population: 17.23
Participating Institutions: 11
Target Population: N/A
Genetic Diversity at 100 years: N/A

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
Most often found in marshes and floodplains

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
Ok to occasional frosts, cannot tolerate standing snow or ice.

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Waterfowl maintenance/breeder, Insects (crickets, mealworms, waxworms), fresh chopped greens (romaine/kale)

Life Expectancy in the Wild:

Males: 10 – 20 years old
Females: 10 – 20 years old

Life Expectancy in Captivity:

Males: 15 – 25 years old
Females: 15 – 25 years old

BREEDING INFORMATION:

Courtship Displays:

“Concert calling” by pairs and trios

Nest Site Description:

Large mound of vegetation placed on the ground, typically near the water’s edge or rising out of it

Parental Care:

Both males and females incubate the eggs and assist with tending the young.

Chick Development:

Precocial, covered in down with their eyes open at hatch. Goslings remain with parents until about a year old.

Age at Sexual Maturity:

Males: 3 – 4 years
Females: 2 – 4 years

Clutch Size, Egg Description:

5-11 pale yellow to white eggs. Clutch size varies by arrangement, with pairs typically producing smaller clutches than trios.

Incubation Period:

28-30 days

Fledgling Period:

11 weeks

CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Social and gregarious during much of the year, nesting in loose colonies and forming large flocks during the non-breeding season. Breeding trios of a male and two genetically related females are observed with regularity, though pairings of one male and one female are also common.

Social Structure in Captivity:

Forms lifelong pair bonds. Typically kept in pairs of one male and one female, or multiple pairs housed in large enclosures. Trio breeding configuration does not seem to be as prevalent in captivity.

Management Challenges:

This species can be challenging to entice to breed, but once established pairs can be reliable and prolific. Ideally this species should be kept fully-flighted as they prefer to loaf and roost on elevated perches. Due to an asynchronous wing molt this species can be challenging to manage wing-clipped. Use caution when housing this species in weather below freezing; their long toes are prone to frostbite.

ADDITIONAL COMMENTS:

Hand-reared magpie geese, particularly females, can make unique and interesting program animals.

REFERENCES:

Todd, Frank S. Natural History of Waterfowl. Ibis Publishing company, California. (1996)

COMPLETED BY:

Name: Jamie Toste

Minimum Group Size:

2 birds. Pairs or single sex grouping

Maximum Group Size:

Limited only by enclosure size.

Compatible in Mixed Species Exhibits:

Yes

Comments:

Typically suitable for a variety of mammalian and bird mixed-species exhibits.

Date: 11/10/2019

p.120

Order: Anseriformes

Family: Anatidae

Scientific Name: *Tadorna cana*

Common Name: Cape Shelduck

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male):



Photo credit: I. Gereg

Photo (Female):



Photo credit: I. Gereg

Conservation Status:

USFWS: Not Listed
IUCN: Least Concern
CITES: Not Listed
Wild Population Trend: Increasing

Sustainability Criteria:

Current Population: 7.3
Participating Institutions: 6
Target Population: N/A
Genetic Diversity at 100 years: N/A

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical South Africa

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
Most often found in marshes and rivers but also found seasonally in brackish lakes.

Circadian Cycle: Diurnal Crepuscular Nocturnal Other
Feeding chiefly at night, they fly to and from foraging sites at dawn and dusk. Most of the daytime hours are spent preening and loafing or sleeping.

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
Can withstand temperatures to 100f with the proper shade and water features.

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Waterfowl maintenance/breeder, Insects (crickets, mealworms, waxworms), fresh chopped greens (romaine/kale).

Life Expectancy in the Wild:

Males: 10 – 20 years old
Females: 10 – 20 years old

Life Expectancy in Captivity:

Males: 10 – 20 years old
Females: 10 – 20 years old

BREEDING INFORMATION:

Courtship Displays:

Agonistic and sexual behavior: female. The Inciting call and posture of the Cape shelduck are exactly like those of the ruddy shelduck. As is true of that species, Inciting can be elicited throughout the year, but is most frequent during spring. Agonistic and sexual behavior: male. The male's response to Inciting is like that of the ruddy shelduck. The one-syllable threat note might be written as korrr, and the two-note sexual call as ka-thoo'. At the same time as the latter note is uttered the head is jerked up and back, and the characteristic High-and-erect posture is assumed. This differs from the threat call posture, in which the head is held forward and the neck is outstretched.

Copulatory behavior. Treading occurs in water of swimming depth, and pronounced Head-dipping movements resembling bathing are performed by the male and less often by the female. Treading is like that of the ruddy shelduck, with the female beginning to call several seconds before the male calls and dismounts. In this species the male lifts the wing on the side opposite the female to a directly vertical position, holding it in that position for several seconds while in a High-and-erect posture. Both birds then begin normal bathing.

Nest Site Description:

In the wild this species uses old mammal burrows under ground i.e. Aardvark, African porcupine. In zoological exhibits a shelduck box is provided which often has a tunnel cavity leading to a large secluded box.

Parental Care:

Upon hatching Drakes lead their mates and progeny to water. For the initial five weeks family bonds are quite strong and ducklings remain within the territory. Broods are always kept separate from other shelduck families to avoid hostile confrontations.

Chick Development:

Chicks are precocial, covered in down with their eyes open at hatch.

Age at Sexual Maturity:

Males: 2 – 3 years
Females: 2 – 3 years

Clutch Size, Egg Description:

10-15 cream colored eggs.

Incubation Period:

30 days

Fledgling Period:

63-70 days or ~10 weeks

CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Despite quarrelsome dispositions, they are seasonally gregarious, particularly during the flightless molt in November and December.

Social Structure in Captivity:

Birds tend to form strong pair bonds so 1.1 is an ideal breeding setup.

Management Challenges:

This species can become aggressive towards other waterfowl and even penguins during feeding times. A close eye should be kept if introduced to different species.

ADDITIONAL COMMENTS:

For specific information on incubation parameters and next box dimensions please reach out directly to the Anseriformes TAG or author of this Species Fact Sheet.

Minimum Group Size:

1.1

Maximum Group Size:

The ideal setup in a zoological park for breeding success is 1.1, although females can double and triple up with males in the wild. Aggression tends to take place when exhibits are not large enough.

Compatible in Mixed Species Exhibits:

Yes

Comments:

This species is often found in African penguin exhibits and can do quite well. Birds can however develop an appetite for fish, so care should be taken to make sure they do not become aggressive during penguin feeding times.

REFERENCES:

Todd, Frank S. Natural History of Waterfowl. Ibis Publishing company, California. (1996)

<https://harteman.nl/tadornacana>

<https://seaworld.org/animals/facts/birds/cape-shelduck/>

<https://pdfs.semanticscholar.org/cfad/6df83676cbac46d6c9ac940915aee1102b5b.pdf>

COMPLETED BY:

Name: William Robles, wrobles@auduboninstitute.org

Date: 11/7/2019

Order: Anseriformes

Family: Anatidae

Scientific Name: *Pteronetta hartlaubii*

Common Name: Hartlaub's duck

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male & Female - Males have white on forehead):



Conservation Status:

USFWS: Not Listed
IUCN: Least Concern
CITES: Not Listed
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 14.14
Participating Institutions: 5
Target Population: N/A
Genetic Diversity at 100 years: N/A

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal

Circadian Cycle: Diurnal Crepuscular Nocturnal Other Reported to be a nocturnal feeder in the wild

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
Shelters along with open water sources are necessary in the winter; access to heat strongly advised below freezing

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
Does well in warm climates; must have shade opportunities and fresh water sources

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Commercial waterfowl diet, such as Mazuri. If they are kept as the only waterfowl in an enclosure, Breeder pellet before and during lay. Maintenance pellet otherwise. Readily takes crickets, mealworms, and other insects. Supplement diet with romaine, greens, duckweed, and grass fodder.

Sporadic breeders – can nest at any time of the year. If in a community with other waterfowl, they will thrive on whatever the group is receiving in terms of Breeder vs. Maintenance pellet.

Life Expectancy in the Wild:

Males: Averages 20-30 years

Females: Averages 20-30 years

Life Expectancy in Captivity:

Males: Averages 20-30 years

Females: Averages 20-30 years

BREEDING INFORMATION:

Courtship Displays:

Hartlaub's ducks are monogamous; they form strong, long-term pair bonds. Their courtship includes a raucous chattering vocalization from the male as he bobs his head up and down, facing the female. The female will face him and bob her head along with his. They will spend a lot of time together, often perching, feeding, and swimming side by side.

Their breeding is sporadic and not seasonal.

Nest Site Description:

As of the 1990s, no wild Hartlaub's nests have ever been found by researchers. It is presumed they nest in tree hollows and cavities. Under human care, they will readily take to boxes with large openings (5 inch diameter or larger). They have used nest boxes that are lofted, on the ground, or up on ledges.

Parental Care:

Cared for by both sexes. Very attentive parents. Juveniles are eventually driven away from parents' territory prior to next nesting season.

Chick Development:

Ducklings are sooty dark brown above and yellowish below, with an orange tinge to their chin, neck, and face. Average hatch weight ranges between 35-46g. They do well on a diet of waterfowl starter pellets. Once juvenile plumage begins to come in, switch to a maintenance pellet. Like adults, they readily take to insects and chopped greens. Similar to other ducks, fledging takes place around 8-10 weeks of age.

Age at Sexual Maturity:

Males: 1 year

Females: 1 year

Clutch Size, Egg Description:

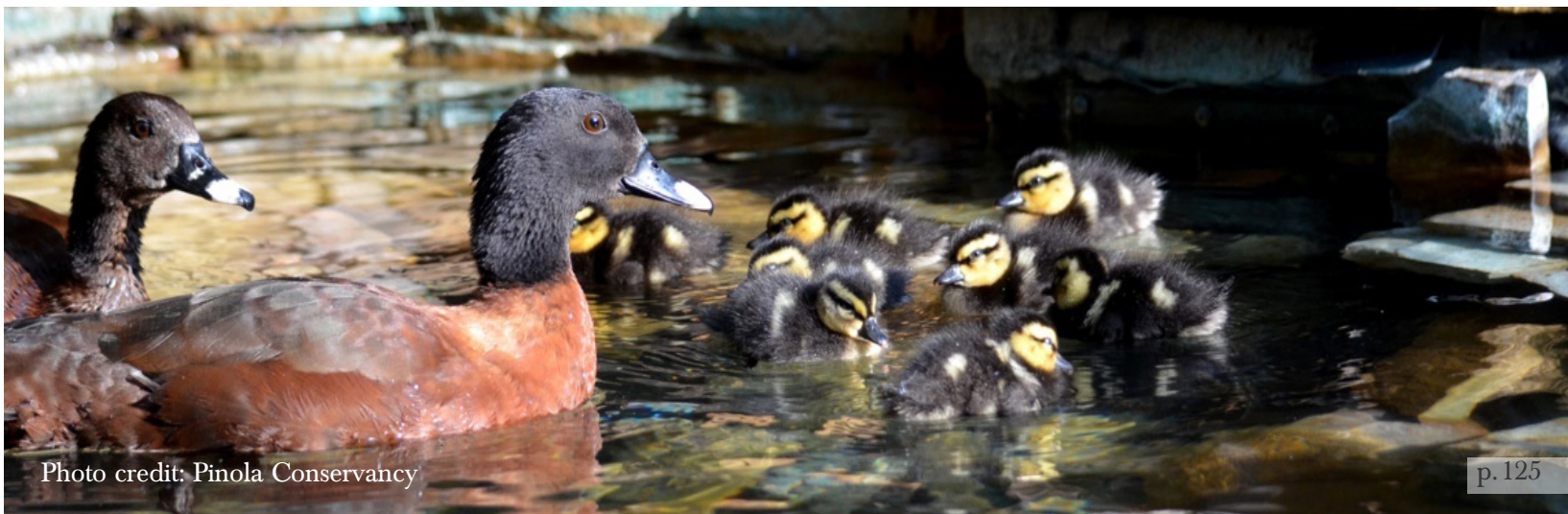
7-11 cream-colored eggs laid at 24-hour intervals. 57.9mm x 44.4mm; mass 62-75g

Incubation Period:

30-32 days by female alone

Fledging Period:

8 weeks



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Infrequently reported in large groups thought to be molting congregations. Forms long-term monogamous pair bonds and they are believed to occupy the same territory year-round. Not particularly gregarious outside of their family group.

Social Structure in Captivity:

Kept best in pairs and family groups.

Management Challenges:

The Hartlaub's duck is an assertive species. They will not hesitate to displace other birds that come into their territory, particularly during nesting, and will defend their space. Hartlaub's do well housed in large, mixed enclosures with ample perching.

ADDITIONAL COMMENTS:

A large-bodied duck, males are slightly larger than females. Males will often have more white just above their upper mandible. This area will also become swollen prior to courtship and nesting.

Hartlaub's ducks are listed as Least Concern by the IUCN, though very little is actually known about this species. Historically, they have not been well studied. They appear common throughout their known range. Deforestation for logging and agriculture is one of their largest threats.

Minimum Group Size:

2 birds; 1.1

Maximum Group Size:

1.1 + offspring

Compatible in Mixed Species Exhibits:

Varies

Comments:

Enclosure must be large enough to allow a pair of Hartlaub's to establish a small territory.

REFERENCES:

Handbook of Birds of the World. Emperor goose *Anser canagicus*. (https://www.hbw.com/species/emperor-goose-anser-canagicus#Status_and_conservation)

Todd, Frank S. Waterfowl: Ducks, Geese & Swans of the World. San Diego, CA: Sea World, 1979. Print.

COMPLETED BY:

Name: Joanna Klass, Joanna.klass@zoo.org

Date: 11/17/2019

Order: Anseriformes

Family: Anatidae

Scientific Name: *Mareca falcata*

Common Name: Falcated duck (teal)

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male left & Female right):



Conservation Status:

USFWS: Not Listed
IUCN: Near Threatened
CITES: Not Listed
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 33.34
Participating Institutions: 16
Target Population: N/A
Genetic Diversity at 100 years: N/A

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical
Southeastern Siberia and northeastern Mongolia to northern Japan

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
Rarely leaving salt waters however inland rice paddies and lakes are popular foraging locations. Birds will breed within forest limits as well.

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
Can withstand temperatures to 100f with the proper shade and water features.

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Waterfowl maintenance/breeder, Insects (crickets, mealworms, waxworms), fresh chopped greens (romaine/kale).

Life Expectancy in the Wild:

Males: Unknown
Females: Unknown

Life Expectancy in Captivity:

Males: 6 – 10 years
Females: 6 – 10 years

BREEDING INFORMATION:

Courtship Displays:

Males use a courting method similar to others in the *Anas* genus, including an introductory shake, a neck-stretching burp call, a grunt whistle, and a head-up-tail-up display. During the mating season the falcated ducks form monogamous pairs that last throughout the mating season. Follow link for a video of courtship displays <https://vimeo.com/61648428>

Nest Site Description:

This species tends to favor a short porch box with nesting material provided; wood shavings, pine needles (no sap) are favorite items. Birds will collect dried leaves as well and tend to favor nesting further from pond's edge rather than closer. Birds have also been noted to build nests in small fountain grasses a bit of a walk away from the pond's edges.

Parental Care:

Incubation and rearing of chicks solely by the hen, drake abandons incubation female in the wild.

Chick Development:

Chicks are precocial, covered in down with their eyes open at hatch. ~27g at hatch.

Age at Sexual Maturity:

Males: 1– 2 years
Females: 1– 2 years

Clutch Size, Egg Description:

6 - 9 cream white or yellowish colored eggs.

Incubation Period:

24 - 26 days

Fledgling Period:

45 – 60 days



CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Usually observed alone or in pairs during breeding season, but flocks form during non-breeding season.

Social Structure in Captivity:

Birds tend to form strong pair bonds so 1:1 is an ideal breeding setup, however multiple females can be kept with a lone male for higher breeding success.

Management Challenges:

Not a very difficult species to manage in a mixed aviary with plenty of space and places for them to forage.

Minimum Group Size:

1:1

Maximum Group Size:

The ideal setup in a zoological park for breeding success is 1:1, although females can double and triple up with males.

Compatible in Mixed Species Exhibits:

Yes

Comments:

This species does well with a multitude of different Anseriformes and Phoenicopteriformes.

ADDITIONAL COMMENTS:

For specific information on incubation parameters and nest box dimensions please reach out directly to the Anseriformes TAG or author of this Species Fact Sheet.

REFERENCES:

Todd, Frank S. Natural History of Waterfowl. Ibis Publishing company, California. (1996)

<https://www.hbw.com/species/falcated-duck-mareca-falcata>

<https://www.iucnredlist.org/species/22680153/92846435>

COMPLETED BY:

Name: William Robles, wrobles@auduboninstitute.org

Date: 11/7/2019

Order: Anseriformes

Family: Anatidae

Scientific Name: *Anas laysanensis*

Common Name: Laysan duck

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male Left - olive bill & Female Right):



Conservation Status:

USFWS: EN
IUCN: Critically Endangered
CITES: I
Wild Population Trend: Increasing

Sustainability Criteria:

Current Population: 33,233
Participating Institutions: 6
Target Population: N/A
Genetic Diversity at 100 years: N/A

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical Native to the Hawaiian islands

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F Can withstand temperatures to 100° F with the proper shade and water features.

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Waterfowl maintenance/breeder, Insects (crickets, mealworms, waxworms), fresh chopped greens (romaine/kale).

Life Expectancy in the Wild:

Males: 10 – 12 years
Females: 10 – 12 years

Life Expectancy in Captivity:

Males: 16 - 18 years
Females: 16 - 18 years

BREEDING INFORMATION:

Courtship Displays:

None often observed in captivity, possibly happens overnight. Copulation occurs in the water and the female is almost (if not fully) submerged under water coming up for small breaths during the process.

Nest Site Description:

This species tends to favor a short porch box with nesting material provided; wood shavings, pine needles (no sap) are favorite items. Birds will collect dried leaves as well and tend to favor nesting further from ponds edge rather than closer.

Parental Care:

Chicks are able to walk but are led by the hen and taught to forage from day one.

Chick Development:

Chicks are precocial, covered in down with their eyes open at hatch. ~24g - 30g hatch weight.

Age at Sexual Maturity:

Males: 3 years
Females: 3 years

Clutch Size, Egg Description:

4-8 greenish -white eggs; eggs are laid every other day until completion of the clutch.

Incubation Period:

26 days

Fledgling Period:

50 – 60 days

CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

This species has been observed as gregarious and in smaller flocks. They have also been observed quite active overnight behaving as a nocturnal species.

Social Structure in Captivity:

Birds tend to form strong pair bonds so 1:1 is an ideal breeding setup, however multiple females can be kept with a lone male for higher breeding success.

Management Challenges:

This species has a curious demeanor by nature and care should be taken to make sure they cannot get themselves into trouble in their exhibit. Not aggressive towards other waterfowl species.

ADDITIONAL COMMENTS:

For specific information on incubation parameters and nest box dimensions please reach out directly to the Anseriformes TAG or author of this Species Fact Sheet.

REFERENCES:

Todd, Frank S. Natural History of Waterfowl. Ibis Publishing company, California. (1996)

<https://www.fws.gov/pacific/ecoservices/documents/LaysanDuckRRP/LaysanDuckRRPChap1.html#ib>

Minimum Group Size:

1.1/2.0/0.2

Maximum Group Size:

Smaller exhibits should not be over-crowded. Five – Six birds can be cared for quite well in a medium sized exhibit but birds must have ample space to nest and retreat to themselves.

Compatible in Mixed Species Exhibits:

Yes

Comments:

This species does well with a multitude of different Anseriformes and Phoenicopteriformes.

COMPLETED BY:

Name: William Robles, wrobles@auduboninstitute.org

Date: 11/7/2019

Order: Anseriformes

Family: Anatidae

Scientific Name: *Somateria fischeri*

Common Name: Spectacled eider

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male):



Photo credit: I. Gereg

Photo (Female):



Photo credit: D. Schouten

Conservation Status:

USFWS: T
IUCN: Near Threatened
CITES: Not Listed
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 18.19
Participating Institutions: 3
Target Population: N/A
Genetic Diversity at 100 years: N/A

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
Breeds along the northern coast of Siberia and N & W Alaska; winters on sea ice in the Bering Sea

Circadian Cycle: Diurnal Crepuscular Nocturnal Other

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
Thrive in below freezing temperatures. Cold temperatures may be necessary to stimulate breeding behaviors and pair bond formation.

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
Must have shade and cool running water. They are not prone to instinctually seek shade and it may take them some time to learn.

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Commercial Sea Duck and Diving Duck pellets are available from Mazuri. Can be supplemented with dog food, mealworms, and fish. Alaska Sea Life Center offers blue mussels frequently (between 1-2in long, not to exceed 2in) that the birds swallow whole. Ducklings can be started on Mazuri Waterfowl Starter or similar commercial pellet. Sea Duck/Diving Duck pellet can also be ground into smaller pieces until ducklings are large enough to swallow whole. Care should be taken not to overfeed on the water as oils that leach from pellets gather on the water's surface. This can affect feather condition, particularly on the breast. Only feed out what the birds will consume to avoid spoilage and water pollution.

BREEDING INFORMATION:

Courtship Displays:

Pair bonds are formed during the winter out on the Bering Sea. Males will display in tightly packed groups, often of 100+ birds. While courting females, males will sound like a low foghorn. Like other eider species, spectacled eiders perform a head turning display, albeit infrequently, where they slowly turn their head side to side in front of a perspective mate. The upward-stretch is a more important part of their courtship ritual. This involves the male rising its breast out of the water rapidly, shaking its head with a downward tilt of the bill, and then drawing its head back as it settles back into the water. Another important sequence for the male's courtship is described by Johnsgard as 'bill-toss-neck-jerk', where the male tosses his bill up quickly, throwing his head up until it touches his back. Then he jerks his neck upward and forward. Female spectacled eiders will swim alongside potential mates and sometimes perform a chin-lifting behavior. As with other waterfowl, once they have selected a mate, they will assume the prone position and lie flat along the water's surface.

Nest Site Description:

Female spectacled eiders have been observed to exhibit strong nest site fidelity and will frequently return to the same area. In the wild, they will often renovate old or abandoned nests. Nests are shallow depressions lined with vegetation and down. In avicultural settings, spectacled eider hens typically opt to create simple depressions behind natural objects, such as logs, rocks, and clumps of vegetation. Although they appear to have a preference for natural nest sites, they will sometimes use partially buried tires, hollowed out log rounds, a-frames, leaning pallets, depressions inside of slatted boxes, and tipped over trash cans lined with sand and vegetation, to name a few successful manmade structures.

Parental Care:

Raised by female alone.

Chick Development:

Eider ducklings are precocial, downy, and well suited to cool environments. They are up and active after drying off (12-24 hours after hatch) and take quickly to water. Having pool access at 24-36 hours post-hatch is critical for this highly aquatic species. See Additional Comments for more information.

Life Expectancy in the Wild:

Males: 15 years
Females: 15 years

Life Expectancy in Captivity:

Males: 20+ years
Females: 20+ years

Age at Sexual Maturity:

Males: 2 - 4 years in wild
Females: 2 years

Clutch Size, Egg Description:

1-6 eggs, with 4-5 on average. Greenish brown wash. Laid at one-day intervals. Nests with 7+ eggs indicate a second hen may be dumping in/utilizing the nest.

Incubation Period:

23 - 24 days by female alone

Fledgling Period:

50 - 53 days

CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Highly gregarious, with the entire population overwintering together on pack ice in the Bering Sea.

Social Structure in Captivity:

Highly gregarious; flocks well with other waterfowl species.

Management Challenges:

Eiders are highly susceptible to aspergillosis. It is not advisable to handle them or put them in stressful situations in warmer temperatures (+72-75F) as this can increase the chances that they will succumb to an aspergillus sp. infection. If they absolutely must be handled on a warm day, plan to do so in the early morning or evening when temperatures are cooler. Highly recommended to avoid handling of birds during molt. Being an Arctic species, housing them in southern institutions is not advised unless special enclosure modifications can be made (cold fresh water, air conditioning, fans, etc.) or birds are housed indoors in a well-ventilated area.

Minimum Group Size:

0.0.2 for display; breed better in groups with multiple pairs (0.0.6+)

Maximum Group Size:

>0.0.2; gregarious

Compatible in Mixed Species Exhibits:

Yes

Comments:

Does well with other waterfowl, shorebirds, alcids, etc. Will hybridize with other eider species.

ADDITIONAL COMMENTS:

If hand-rearing, take care not to overheat ducklings. Dry brooder temperatures should read in the high 80s, with the ability for ducklings to get away from the heat. Once ducklings have fluffed up (around 24-36 hours), move them into a wet brooder. Here, the 'hotspot' should again read in the high 80s with ducklings having ample space to completely get away to a cooler area. They will spend the majority of their time in or near the water. It is imperative that eider ducklings get access to pool/swimming water and a safe haul-out 24-36 hours after hatch. At around 2 weeks of age, duckling should be moved to a larger pool with a hotspot in the low 80s and the rest of the enclosure at ambient temperature (high 60s-70s).

Spectacled eiders, though highly pelagic, can and do thrive in freshwater systems.

This species is listed as Near Threatened by the IUCN (2018). The Anseriformes Taxon Advisory Group (TAG) listed spectacled eiders as a Monitored Species in the 2019/2020 RCP.

REFERENCES:

Handbook of Birds of the World. <http://www.hbw.com>. Accessed 11 November 2019.

Johnsgard, Paul A. Comparative behavior and relationships of the eiders (1964). Papers in Ornithology. <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1062&context=biosciornithology>

Personal communications with Arnold Schouten @ Dry Creek Waterfowl
Personal experience

COMPLETED BY:

Name: Joanna Klass, Joanna.klass@zoo.org

Date: 11/9/2019

Order: Anseriformes

Family: Anatidae

Scientific Name: *Oxyura leucocephala*

Common Name: White-headed duck

AZA Program Status: Green SSP Yellow SSP Red SSP Candidate Program Monitored Population

Photo (Male):



Photo credit: I. Gereg

Photo (Female):



Photo credit: D. Wright

Conservation Status:

USFWS: Not Listed
IUCN: Endangered
CITES: II
Wild Population Trend: Decreasing

Sustainability Criteria:

Current Population: 14,202
Participating Institutions: 5
Target Population: N/A
Genetic Diversity at 100 years: N/A

NATURAL HISTORY:

Geographic Range: Europe Asia North America Other
 Africa Australia Neotropical
Mediterranean basin to extreme NW China and Mongolia; main population in Russia and Kazakhstan

Habitat: Forest Desert Grassland Other
 Riverine Montane Coastal
Wetlands and marshes; fresh or brackish water with dense vegetation.

Circadian Cycle: Diurnal Crepuscular Nocturnal Other Wild birds reported to feed mainly at night

Cold Tolerance: To 70° F To 60° F To 50° F Other
 To 40° F To 30° F To 20° F
Shelters (ideally in the form of thick aquatic vegetation) and an open water source needed in cold (<20F) temperatures.

Heat Tolerance: To 30° F To 50° F To 70° F Other
 To 90° F To 110° F
Open running water and shade recommended in excessive heat.

Diet: Frugivore Carnivore Piscivore Insectivore
 Nectivore Omnivore Folivore Other

Captive Dietary Needs:

Commercial waterfowl diet, such as Mazuri. Breeder pellet before and during lay. Maintenance pellet otherwise. Supplement diet with romaine, greens, duckweed, grass fodder, and millet. Adults will rarely take mealworms and insects. Ducklings will consume high amount of insects such as bloodworms, mealworms, and crickets. Waterfowl Starter is recommended for young birds (0-4 weeks). Shredded hard-boiled egg or crumbles can be added to food dishes as a source of easily digestible protein for the first few days to one week, or longer for poor doers.

Life Expectancy in the Wild:

Males: Little known about wild survival rates
Females: Little known about wild survival rates

Life Expectancy in Captivity:

Males: 10-13+ years
Females: 10-13+ years

BREEDING INFORMATION:

Courtship Displays:

Male white-headed ducks make a low rattling noise to attract females. They will lay their tails flat against the water and draw their heads in and low, swimming around females and displacing potential rivals. When in full display mode, the male will angle his head and body towards prospective mates, puff up, and splash the water's surface in the direction of his audience. He will also draw himself up into an alert posture and raise his head and tail slowly before returning them to their normal position.

Nest Site Description:

White-headed ducks nest in reed beds and amongst thick vegetation. Females are solely responsible for nest building. They will haul out onto these beds/islands of vegetation and into thickly vegetated areas near the shoreline. Here, they build up a nest by pulling the surrounding plant material down and around them. Sometimes, they will even form a 'dome' or tight ball to conceal their nest. In the wild, they often take over old nests from other waterbirds, such as coots. They have been known to use porch boxes but show a preference for nesting amongst tall aquatic plants such as sedges, irises, etc. They will take to specially made platforms that are placed within clumps of vegetation just over the water. Nests are sparsely lined with down.

Females will defend their nests ferociously.

Parental Care:

Female cares for the ducklings. Males will sometimes assist in defense of brood, particularly in avicultural settings.

Chick Development:

Like other stiff-tails, ducklings take to the water almost immediately after hatch. They will brood underneath the female for 12-24 hours. Afterwards, they follow the hen into the water and learn to forage. They are adept swimmers and can be observed diving within 24-48 hours.

For hand-rearing, ducklings should be allowed to dry off (~24 hours) and then given access to a shallow pool. Stiff-tail ducklings do not tolerate handling well, with white-headed ducks seeming to be even more sensitive than most. It is strongly advised to be as hands-off as possible when rearing this species, either foregoing weights, gathering them sparingly, or weighing in a passive manner (setting duckling on scale as they are being put into a clean brooder, weighing every 3-4 days after hatch and backing off after a few weeks of age, etc.).

They must be encouraged to use the pool. Placing the food dish right at the water's edge, sprinkling crumble into the water, offering duckweed, and adding bloodworms/mealworms along the shoreline are all techniques that will promote foraging and self-feeding.

There has been much success allowing females to raise their ducklings in mixed-species enclosures. Care should be taken if there are predatory birds (such as herons), or pests (rats) sharing the enclosure. This method is not recommended for open-topped exhibits.

Age at Sexual Maturity:

Males: 1-2 years
Females: 1 year

Clutch Size, Egg Description:

4-9 large, white eggs at 1-2 day intervals; According to Handbook of Birds of the World, they lay the largest egg to body mass ratio of any species of waterfowl.

Incubation Period:

22-24 days

Fledging Period:

8-10 weeks

CAPTIVE HABITAT INFORMATION:

Social Structure in the Wild:

Large congregations in the winter (hundreds of birds). Will form smaller flocks during nesting season. Their mating system is unclear, with monogamous, polygynous, and promiscuous systems all observed. Groups of males will form hierarchies where dominant males will pair with two or more females.

Social Structure in Captivity:

Does well in groups or pairs. Groups allow expression of natural courtship and breeding behaviors, with the group mating system described above becoming obvious.

Management Challenges:

Hand-rearing of ducklings can be difficult; care should be taken to be as hands off as possible. White-headed ducks should have pools that allow for easy haul in and out, and/or mats of vegetation.

ADDITIONAL COMMENTS:

White-headed ducks are currently listed as Endangered by the IUCN. There are active conservation efforts taking place in Europe, where birds are either outcompeted or hybridize with invasive North American ruddy ducks.

This is a TAG Monitored species per the 2019/2020 Anseriformes TAG RCP.

If you have questions or are interested in learning more about this fantastic stiff-tail, please contact the Anseriformes TAG. Contact information for the author of this fact sheet is listed below.

REFERENCES:

Handbook of Birds of the World. White-headed duck *Oxyura leucocephala*. (<http://www.hbw.com>). Accessed 18 November 2019.

Animal Diversity Web. (https://animaldiversity.org/accounts/Oxyura_leucocephala)

COMPLETED BY:

Name: Joanna Klass, Joanna.klass@zoo.org

Minimum Group Size:

0.0.2

Maximum Group Size:

>0.0.2; does well in large groups; the competition between males promotes natural courtship displays and breeding behaviors

Compatible in Mixed Species Exhibits:

Yes

Comments:

Highly compatible in mixed species exhibits. Expect lots of displacement, chasing, and displaying during breeding season. This is completely normal, healthy behavior that holders want to see in their WHDU flocks. Injury or serious complications from this behavior are extremely rare, and they do best in groups or pairs.

Date: 11/19/2019

TAG Approved Position Statements

Flight Restriction Statement

- a) The Anseriformes Taxon Advisory Group (TAG) recognizes the welfare debate surrounding the use of flight restriction in birds is complex and generates many strong and varied opinions.
- b) The Anseriformes TAG encourages every AZA institution to devote significant time and resources to thinking through and documenting its own institutional guidelines on if, when, and how flight restriction will be employed. The TAG encourages all institutions to create large, multi-faceted exhibits where birds can live and breed while remaining flighted.
- c) The Anseriformes TAG suggests evolving toward the ultimate deletion of pinioning as a regularly practiced means of flight restriction. The TAG encourages all institutions to incorporate the importance of flight for birds into future masterplans and designs for new exhibits, and to work towards covered exhibits for all flying bird species.
- d) The pinioning of waterfowl should only occur when all other avenues for alternative methods of containment have been thoroughly investigated. The procedure should be conducted by an animal care/husbandry expert, or veterinarian experienced in pinioning procedures. Birds should only undergo pinioning while under five (5) days of age.

Highly Pathogenic Avian Influenza (HPAI) Vaccination of Waterfowl

The Anseriformes TAG does not currently recommend the vaccination of waterfowl against HPAI. As of time of publication, there are no recommended vaccines or vaccine protocols for HPAI in zoological birds. Consult the Zoo and Aquarium All Hazards Preparedness, Response and Recovery (ZAHP) Fusion Center and the US Department of Agriculture Animal and Plant Health Inspection Service's HPAI website for the most current updates on HPAI outbreaks and response plans. The Anseriformes TAG suggests all AZA facilities keeping waterfowl outdoors have an HPAI preparedness plan for their facility.

Permanent Identification Methods for TAG Managed and Monitored Species

All individual birds of TAG managed or monitored species should be transpondered by fledging. Transponders should be readable by a universal reader. Intrascapular placement is recommended for consistency. Alternately, birds may be permanently marked with stainless steel seamless bands (rings) stamped with the facility name where the bird was hatched and a non-repeating individual identification number. Consult the TAG Chair for sources, sizing and application of stainless seamless bands.

Pinioning of White-winged Ducks (WWD) and pygmy geese

Based on natural histories that include frequent high perching and nesting in elevated cavities, the TAG strongly encourages zoos to maintain WWD and pygmy geese fully-flighted. Please consult SSP coordinators for any of these species prior to implementing any permanent flight restriction. For birds already pinioned, please ensure the SSP coordinator is aware to facilitate appropriate management of individual birds.

Managing the Soil-Water Interface for Disease Management

The TAG recommends minimizing or eliminating areas of soil-water interface (mud, pooling water, etc.). These areas are prime for concentrations of mycobacteria. A smooth concrete, rockwork, stones, or other impervious surfaces are recommended at and near the waterline.

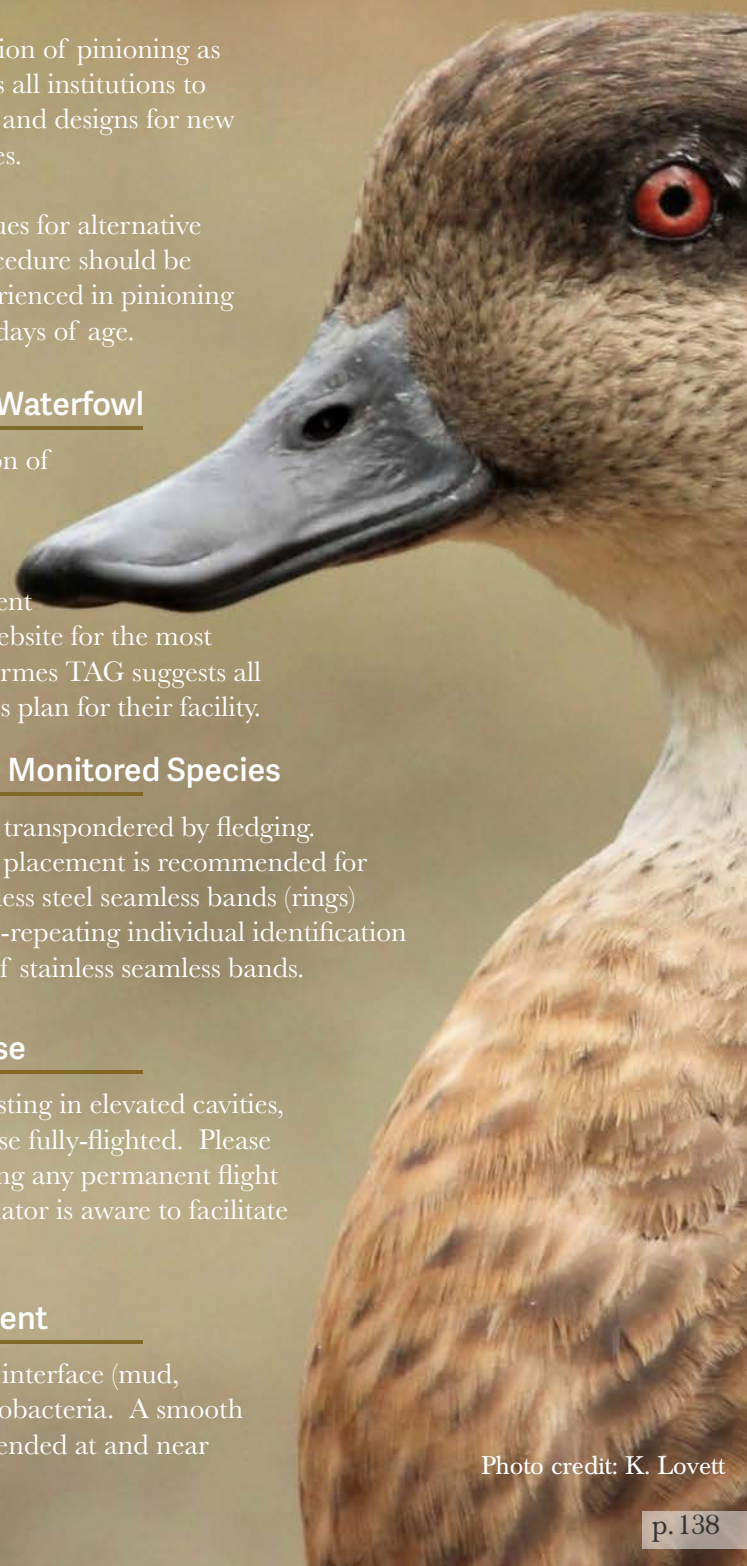


Photo credit: K. Lovett

References

Association of Zoos and Aquariums. 2018. Taxon Advisory Group (TAG) Handbook. Association of Zoos and Aquariums, Silver Spring, MD.

Avian Scientific Advisory Group (ASAG) Anseriformes Species Fact Sheets
Available at: http://aviansag.org/Fact_Sheets/Anseriformes/Anseriformes.html

AZA Anseriformes TAG Regional Collection Plan, 1st edition, 2008 - 2012.
Available at: https://ams.aza.org/iweb/upload/RCP_Anseriformes2008-e66d0ed8.pdf

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Available at: https://ams.aza.org/iweb/upload/RCP_Anseriformes2012-e66d0ed8.pdf

AZA Anseriformes TAG Annual Report, 2019.
Available at: <https://ams.aza.org/iweb/upload/Anseriformes%20TAG%20Annual%20Report%202019-3db0b443.pdf>

CITES. 2018. Convention on International Trade in Endangered Species of Wild Fauna and Flora Appendices I, II, and III (valid from 4 October 2017). Chatelaine, Geneva, Switzerland: International Environment House. 762 p.

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Available at: <http://www.wildwaterfowl.org/2018/05/01/captive-waterfowl-survey/>

IUCN Red List of Threatened Species. Version 2018.2. <http://www.iucnredlist.org> . Downloaded on 15 November 2019.

USFWS. 2018. Foreign species report. Department of the Interior, Washington, DC.
Available at: http://ecos.fws.gov/tess_public/pub/SpeciesReport.do?lead=10&listingType=L





Photo credit: I. Gereg