CRC Handbook of Avian Body Masses

Second Edition

Edited by John B. Dunning, Jr.

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To my wife, Beth, for her support and understanding of a little obsession

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The Editor

John B. Dunning, Jr., is an associate professor of wildlife ecology in the Department of Forestry and Natural Resources, Purdue University, West Lafayette, Indiana.

Dr. Dunning graduated in 1978 from Kent State University, Kent, Ohio, with a B.S. in biological sciences (summa cum laude). He then obtained his Ph.D. in ecology from the Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, in 1986. It was during the latter time that he first learned to band birds under the tutelage of Dr. Stephen M. Russell. The compilation of avian body masses started as a necessary preliminary step in a research project for a graduate class; a project that did not yield anything else of interest.

Dr. Dunning received Elective Member status in the American Ornithologists' Union in 1990. In 2006, he was voted the Outstanding Undergraduate Teacher in his department. During his college career, he received the Kent State University Distinguished Scholar Award in 1978, and a National Science Foundation Pre-Doctoral Fellowship from 1978-1981.

Dr. Dunning studies the community and population ecology of sparrows at landscape and local scales. His research is supported by the National Science Foundation, the U.S. Department of Energy, U.S. Forest Service, and The Nature Conservancy, among others. His research focuses on the impacts that human land-use change has had on bird populations across large spatial scales. Dr. Dunning has published over 75 papers and three books. He is a member of Phi Beta Kappa.

Part I

Body Masses of Birds of the World

INTRODUCTION

John B. Dunning, Jr.

Many studies in avian biology require estimates of body size. Ecological and physiological studies, for instance, often report body mass as part of a set of baseline descriptive statistics when a large number of species are being compared (e.g., Diamond 1972, Brown and Bowers 1985). Body masses are also necessary for allometric scaling of metabolic processes (Calder 1984, Colwell 2000), and for some community structure analyses (Schluter and Repasky 1991). For birds the single best estimator of body size is usually adult body mass (Clark 1979, Rising and Somers 1989); therefore, compilations of masses are extremely useful for all of these research programs.

In spite of their utility, body masses were difficult to locate even for relatively common species (Dunning 1984, 1985) until the publication of the first edition of this handbook. Dunning (1992) presented data for about 6,300 species, using both published and unpublished sources. Since that time, additional data have been published for many birds, improving the samples available for many of the species included in the first edition. A variety of regional handbooks and monograph series (e.g., *The Birds of North America* series) that were unfinished (or not begun) at the time of the first edition's publication are now complete and provide fairly complete coverage for avifauna of certain regions. The second edition of this handbook now includes data for over 8,700 species and better coverage of portions of the world that were inadequately represented in the original compilation.

SOURCES OF DATA

The data presented in the first edition were gathered primarily by searching the published literature. Brough (1983) and George Clark's unpublished bibliography of body mass references were invaluable to this effort. In the current compilation, I gathered mass information from a variety of new sources, an effort that was aided substantially by the completion of regional handbooks and monographs such as *The Birds of Africa* (1982–2004), *The Birds of North America* (1992–2002), *The Handbook of Birds of the Western Palaearctic* (1977–1994), and *The Handbook of Australia, New Zealand, and Antarctic Birds* (1990–2006). The *Handbook of Birds of the World* (1992–2005) also presents a comprehensive reference source; however, it presents only mass ranges for the most part, and therefore I preferred other sources when available.

For the initial compilation, I conducted a systematic search in the papers published in major bird journals published from 1960 to the present, including *Ibis*, *Bulletin of the British Ornithologists' Club*, *Auk*, *Wilson Bulletin* (now *Wilson Journal for Ornithology*), *Condor*, *Emu*, *Corella*, *Notornis*, and the *Journal of Field Ornithology*. For the second edition, I extended my search to include earlier volumes of these journals and expanded coverage of additional journals such as *Journal of Avian Biology*, *Journal für Ornithologie*, *Ornitología Neotropical*, and *El Hornero*, among many others.

I included more coverage of museum series and monographs such as *Fieldiana*, *Proceedings of the Philadelphia Academy of Natural Science*, *Bulletin of the American Museum of Natural History*, among others. I also made extensive use of database search engines such as *Wildlife and Ecology Studies Worldwide* to locate articles on individual species. The recent improvement in university interlibrary loan services gave me much greater access to a variety of resources, including articles published in German, Spanish, Chinese, French, and other languages. It is still true, however, that coverage in this second edition is better for English-language literature published in the Western Hemisphere than for European or Asian journals or for articles published in non-English languages.

Many "bird family" handbooks have been published since 1992, and I consulted as many of these sources as possible, such as the handbooks on thrushes (Clement 2000), ratites (Davies 2002), and albatrosses (Tickell 2000), among others. Researchers also recommended specific sources that were missed in the compilation of the first edition (e.g., Humphrey et al. 1970, Hall 1974).

I requested unpublished data when possible from authors of articles on poorly studied species, and also from museum collections and banding (ringing) operations. One particularly useful source was the SAFRING (South African Bird Ringing Unit) summaries of ringing operations in southern Africa, which are available online (http://www.uct.ac.za/depts/stats/adu/safring-index.htm). I was also able to get useful data for many species from the online catalogs of The Field Museum, Chicago, Illinois, and the U.S. National Museum, Washington, DC. For the first edition I visited some museums, including those of the University of Arizona, Louisiana State University, and the Philadelphia Academy of Natural Sciences. Numerous other museums responded to requests for information (see Acknowledgments).

DATA COLLECTION

I included the "best available sample" that I located for each species. This sample was defined as the data from the single source that had either (1) the largest available sample size, or (2) the most complete descriptive statistics, if sample sizes from several sources were equivalent. I avoided combining data from different sources if possible to reduce the potential heterogeneity created when combining samples from different locales or seasons. I did combine data, however, when all available samples were very small (N < 10). In preparing the new edition, when I located new sources with a sample > 10 individuals, I used these in preference to combined samples from the first edition.

I preferred data from breeding birds; however, the lack of published information for many species required the liberal use of data from other seasons. If ages were reported in the original source, I used masses of only adult birds. For two or three very rare species (e.g., *Gallirallus calayanensis*), the only available data were from independent subadults. These data are reported here in the second edition, with a comment in the record that the masses are not from adult individuals.

I present separate means for males and females for sexually dimorphic species. Where the original sources tested for differences between the sexes and found none, a combined mean for both sexes is presented. In cases where the original source did not test for dimorphism, I tested for significant differences with a Student's t-test when this was possible. If enough information was not presented to test for differences, then I report separate means for the sexes if males and females differed by > 10%. A single mean is presented for samples in which sexes were not identified.

Many species of birds vary in size across their geographic range. The first edition contained relatively little data to express geographic variation, both because of space limitations and because such data were relatively rare. In this second edition, I have sought to add data where possible for geographically variable species (e.g., Golden Whistler, *Pachycephala pectoralis*). Such samples are reported by subspecies or by geographic location, whichever was reported in the original source. I did not assign samples to subspecies if the original source did not do so.

In the years since the publication of the original handbook, I have become aware of a few errors in first edition. For instance, the data reported for *Stercorarius* (*Catharacta*) *skua* in the first edition were actually from a sample of *Stercorarius parasiticus,* a substantially smaller bird. (This particular error resulted from my failure to recognize that an Israeli translation into English of a Russian publication would follow European conventions in the use of common names. Thus, "Arctic Skua" in this reference did not refer to *S. skua* [the only skua that breeds in the Arctic] but rather to *S. parasiticus*, which North American ornithologists call the Parasitic Jaeger.) Although few errors were reported to me, I resolved to eliminate as many errors as possible by verifying every entry in this second edition. This includes all sources used in the first edition. I used this verification search to add information where possible, especially location and season of collection, when reported in the original source but not included in the original compilation.

DEFINITIONS

The table presents as much of the following information as was available from the selected source(s): sex, sample size, mean, standard deviation, range, collecting location and season. Species names and order primarily follow the sixth edition of Clements's (1998) *Checklist of World Birds*. Avian taxonomy and systematics are fluid topics, and revisions of the names and species order are published frequently. It is therefore difficult to select a single authority for avian names and sequence. After I had been working on this revision for several years, the updated revision of Howard and Moore's checklist was published (Dickinson 2003). The *Handbook of the Birds of the World* series (del Hoyo et al. 1992–2005) also presents an authoritative taxonomy (although incomplete as of this writing). None of these sources agree with each other in all cases.

I used Clements (1998) because when I started my revision, it was the only updated source with information on all subspecies and their ranges, which was invaluable in identifying data in older references to current species. Also James Clements maintained a web-based list of corrections and additions that allowed me to keep the list up to date. I changed the taxonomic status of forms when new studies were published, for example, Garrido et al. (2005) for West Indian forms of the genus *Icterus*. I checked the spelling of scientific and Latin names using BirdLexi (Santa Barbara Software, Inc., Santa Barbara CA, 2006). This allowed me to conform to changes in the endings of species' names suggested by David and Gosselin (2002). When BirdLexi identified a different spelling than that in Clements (1998), I checked for a consistent spelling in Dickinson (2003) and del Hoyo et al. (1992–2005).

In addition to the above steps, I compared the status of species in Clements (1998) to a variety of published authorities, and attempted to present a modified list that reflects regional authorities. Thus, I followed the American Ornithologists' Union *Check-list* for North and Central America species where that reference disagrees with Clements (1998). I followed the *Handbook of Birds of the Western Palaearctic* for European species, and so on. In cases where authorities disagreed, I presented as much information as possible to allow flexibility to the users. For example, I included data when available for all forms of potential species splits, listing the data either as subspecies of a polymorphic form, or as separate species depending on the available published opinions.

Recently, widespread changes in the order of species have been proposed, for instance placing Galliformes first. I chose not to rearrange the sequence of orders and families to follow these proposals but largely retained the order in Clements (1998). I did this in part because no single sequence has been accepted as of this writing, and the first edition of this handbook followed the Sibley-Ahlquist sequence of orders and families (newly published at the time), which was subsequently not adopted by most authorities. This decision made the first edition hard to use in later years.

All means and ranges are given in grams. Standard deviation, when available, is given for samples > 10 individuals. When necessary (and possible), I calculated standard deviation from standard errors.

The following codes are used in the table. For sex: M = male; F = female; B = both species combined; U = sex unknown. For collecting season: W = winter; B = breeding; PB = postbreeding; Sp = spring migration; F = fall migration; M = spring and fall migration combined, Y = year round. In many sources, the data were not collected during a time period that fit neatly into these categories (i.e., April through November in temperate zones) and I do not indicate a collecting season for these data. I did not assume a season for tropical studies when not specified in the paper, even if the calendar month was given. It is unfortunate that many sources, including many comprehensive handbooks, still do not indicate the season in which the data were collected. Many sources that reported masses from museum specimens also do not indicate the collection localities.

All sources are numbered in the Literature Cited section, including sources of unpublished data. Data in the table are referenced to the original source using these numbers. Of course, the reference numbers have all changed from the first edition, since the number of sources has doubled. After I numbered the sources for the second edition, I dropped some sources as better data became available from another source. I inserted the phrase "reference deleted" for these replaced sources, so as not to imply errors in the numbering scheme. New sources added after the initial numbering are inserted in alphabetical order and given a number such as "219a."

COMPARISON OF THE FIRST AND SECOND EDITIONS

The number of species included in the handbook has increased from 6,283 in the first edition to 8,734 in the present. About 1,221 species listed in Clements (1998) are not yet included in the database. In addition to >2,400 new species, the second edition includes improved samples for many species that were in the first edition. To cite just one example, in the family Procellariidae (shearwaters and petrels), improved samples were found for 28 of the 50 species included in the first edition. Together with data for 24 new species, the current edition has improved information for 52 of the 74 shearwaters and petrels in the database, leaving only 4 species without masses.

I was able to make similar improvements in many other avian families, especially doves, cuckoos, owls, woodpeckers, ovenbirds, larks, bulbuls, and babblers. The largest family for which I found data for all species was the waterfowl (Anatidae), with masses for 158 species including 9 new to this edition. Families with large numbers of species remaining without data include parrots (67 of 329 species, 20%), hummingbirds (53 of 338, 16%), babblers (85 of 266, 32%), and white-eyes (43 of 95, 45%). Smaller families that still have a high percentage of species with no data include the storks (8 of 32 species, 25%), barn owls (7 of 15 species, 47%), and orioles (10 of 29, 34%). Probably the most frustrating were families in which data are needed for only 1 remaining species. These include the cormorants (no mass for *Phalacrocorax nigrogularis*), thick-knees (*Burhinus superciliaris*), skimmers (*Rynchops albicollis*), sandgrouse (*Pterocles personata*), toucans (*Ramphastos citreolaemus*), kinglets (*Regulus teneriffae*), and bowerbirds (*Sericulus ardens*). Given the tendency for splitting among avian taxonomists, complete coverage of a family is often only a temporary milestone anyway.

I made a special effort to locate data for Neotropical species that were not in the first edition, since that region is not yet covered by a handbook series that includes body masses, unlike Africa, Australia, North America, and Europe. I was able to have emails circulated throughout Taiwan and Japan to get better coverage of the birds of those nations, which were poorly covered in the first edition. Areas of the world that still have many species without data include Pacific Is. nations, Southeast Asia, Indonesia, and China. It is possible that better coverage of the scientific literature published in French and German might help fill those holes.

LIMITATIONS AND USES OF MASS DATA

A variety of topics in avian research require a measure of a bird's size. Size can be measured most accurately through multivariate analysis of several mensural characteristics (Freeman and Jackson 1990); however, the data for such an approach are rarely available, especially when large numbers of species are being compared. Also, these multivariate analyses often require sacrifice of the birds under study (when skeletal measurements are used, for instance), making these approaches less useful for ongoing studies of living birds. Some comparative studies have shown that body mass is the single most accurate univariate measure of size in birds. Rising and Somers (1989) determined that body mass correlated more strongly with overall body size (as estimated by multivariate analysis) than did body length, wing chord, or other linear measure. Freeman and Jackson (1990) showed that body mass and tarsal length were the two best univariate measures of overall body size. Tarsal length can be more

subject to measurement error than are other linear metrics (Lougheed et al. 1991), and is available for even fewer bird species than body mass.

Body mass is a measure of the overall size of an organism, including both the organism's structural framework and its nutrient reserves (Clark 1979, Piersma and Davidson 1991). The structural size of an organism is the relatively invariant mass associated with skeletal elements and internal organs, while the nutrient reserves are the protein and fat stores that vary with an individual's condition. Studies of structural size can be done most accurately with multivariate estimates of avian skeletal elements (Freeman and Jackson 1990, Piersma and Davidson 1991) or using skeletal volume (Moser and Rusch 1988), but, again, these measures tend to be rarely available.

There are several sources of variation that cannot be adequately addressed in a compilation such as this. First and foremost, many species show geographic variation, including subspecific variation, clines, and differences among Is. and mainland forms. I have attempted to present more samples to represent geographic variation, but, as before, I was often limited in this effort by the lack of data. Another source of variation is seasonality. To be truly comprehensive, I should attempt to present data from a variety of seasons for many species. This would be especially useful for migratory species: one could easily argue that a full presentation of weight variation would include separate samples of breeding, wintering, and migrant individuals. But such a presentation is beyond the scope of this compilation.

A third source of variation is time of day. It is well established that the mass of individual birds can vary by 10% or more in a single day. Small owls, for instance, can vary in their mass by up to 40%, depending on when they last fed (Dunning 1985). The mass of migrant birds will vary during the day as they restock their energy stores during migration, and can also vary according to the length of stay in a particular patch of habitat. For the purposes of this compilation, this type of variation is a source of error that may make a small sample (e.g., masses of single birds) non-representative for a given species. I have tried to reduce the impact of this type of variation by presenting as large a sample as possible. However, for some purposes it may be critical for a researcher to understand this variation, in which case the present compilation may not be a good source of information.

Although body mass can be a useful measure of overall body size, the use of large numbers of masses collected from various sources, such as the compilation presented here, may not be justified in all comparative studies (Clark 1979). The variation introduced by combining samples from different sources may reduce the validity of comparing mass samples for some purposes. Researchers contemplating using the data in this handbook are urged to consider the effect of such variation on their study. When questions arise, the original source of the data should be consulted.

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During the preparation of the first edition of the handbook, I was supported by an NSF (National Science Foundation) grant and a postdoctoral fellowship at the Institute of Ecology, University of Georgia. Nora Mays, Rick Bowers, and Eugene Howard helped in the creating of the original database. George Clark, Steve Russell, and Charles Collins helped locate many sources of data.

In compiling data for the second edition, I taxed the patience and the reach of the interlibrary loan staff at Purdue University. I also consulted the libraries of Indiana University, the University of Georgia, University of Arizona, Kent State University, University of Canterbury (Christchurch, New Zealand), MacQuarie University (Sydney, Australia), the Cleveland Museum of Natural History, the Alexander Library of the Edward Grey Institute (Oxford, UK), and the Josselyn Van Tyne Memorial Library of the University of Michigan. The Western Foundation of Vertebrate Zoology (Los Angeles, California) and the Josselyn Van Tyne Library provided hard copies of articles prior to the current era of interlibrary access. Scott Edwards forwarded copies of bulletin issues from Harvard University. Diane Packett and Guofan Shao translated articles in Spanish and Chinese, respectively.

I also thank the curators and directors of the following collections and institutions who provided me with data for the second edition: The Burke Museum, University of Washington; Departamento de Zoologia da Universidade Federal de Minas Gerais, Brazil; Instituto de Ciencias Naturales, Universidad Nacional de Colombia; Museo Nacional, Rio de Janiero, Brazil; Universiteit van Leiden.

The following collections and institutions provided data for the first edition, much of which is included in the current edition: University of Arizona, Royal Ontario Museum, University of Alaska, Texas Cooperative Wildlife Collections (Texas A & M University), Louisiana State University, Philadelphia Academy of Natural Sciences, Field Museum of Natural History (Chicago, Illinois), Cowan Vertebrate Museum (University of British Columbia), California State University – Sacramento, University of Oklahoma, University of Washington, University of Minnesota, Delaware Museum of Natural History, Denver Museum of Natural History, Yale Peabody Museum, Museum of Vertebrate Zoology (University of California – Berkeley), Western Foundation of Vertebrate Zoology (Los Angeles, California), National History Museum (Bulawayo, Zimbabwe), New Zealand National Museum (Wellington, New Zealand), Los Angeles County Museum (California), U.S. National Museum, British Museum of Natural History, and the San Diego Museum of Natural History.

The following observatories and organizations provided unpublished data from their research programs since the publication of the first edition: Africam Safari, Puebla, Mexico; SalvaNatura, El Salvador; the MAPS (Monitoring Avian Productivity and Survivorship) program, United States (Phil Nott, Dave DeSante); Endemic Species Research Institute, Museum of Taiwan. For the first edition, data were provided by: Long Point Bird Observatory (Ontario, Canada), Point Reyes Bird Observatory (California), Manomet Bird Observatory (Massachusetts), Braddock Bay Raptor Research Project (New York), Cape May Bird Observatory and the Cape May Raptor Banding Project (New Jersey), Hastings Reservation (California), National Audubon Society, Powdermill Nature Center (Pennsylvania), Canadian Wildlife Service, and the U.S. Fish and Wildlife Service. The Zoological Society of Philadelphia, Milwaukee County Zoological Park (Wisconsin), Kobi Oji Zoo (Kobe, Japan), New York Zoological Society, and the Audubon Zoological Gardens (New Orleans, Louisiana) provided data from captive birds.

This project benefited from the cooperation of a large number of ornithologists who provided unpublished data from their research files. The predecessors to this volume included Dunning (1984) and the first edition of this handbook; both included much previously unpublished data. The internet has allowed me to contact researchers around the world to a degree that was simply impossible for the previous publication; however, I am sure that additional data remains to be uncovered. I thank all those who responded to my letters and emails with data or suggestions.

John Blake and Bette Loiselle (Panama and Costa Rica), Robert Sutton (Jamaica), Doug Stotz (Brazil), and John Fitzpatrick (Peru) provided extensive unpublished data for the first edition. Charles Collins provided me with his unpublished compilation of mass data for swifts. Although these and other unpublished sources were used in Dunning (1992), I have chosen to continue to cite the original sources as "unpublished compilations" even though, technically, the data were published in my first edition. Retaining the original citation gives credit to the researchers. I have changed the wording of the full citations in the Literature Cited section to reflect when the data were previously reported in Dunning (1992). More recently my requests for mass data were circulated in specific regions by John Innes (New Zealand) and Desmond Allen (Japan), resulting in much better coverage of these avifauna.

Many people have contributed data to the compilation, set me on the path of new sources, or responded to my queries. I thank the following individuals who have contributed to the project since the publication of the first edition: Isa Alpino, Elisabeth Ammon, Leticia Andino, Volker Bahn, Peter Barthel, John Bates, Jim Beckelman, F. Betancourt, Robin Bjork, Rick Bowers, Reed Bowman, Tom Braile, Mike Braun, Mark Brazil, Eliot Brenowitz, Dan Buden, Carlos Cadena, Juan Cesar Canales-Delgadillo, Ya Cheng-te, Dan Christian, Alice Cibois, Charles Collins, Juan Cornejo, Oswaldo Cortes, Andres Cuervo, Robert Curry, James Dean, Jenny Dell, Mike Dickison, Peter Dostine, Andrzej Dyrcz, Scott Edwards, Stephen Ervin, Robert Faucett, Edward Fendick, Chris Filardi, John Fitzpatrick, Jon Fjeldså, Padu Franco, Alejandro Grajal, Russell Greenberg, Joseph Grzybowski, Amanda Hale, Gergo Halmos, Sebastian Herzog, Janet Hinshaw, Richard Holmes, Jon Hornbuckle, Wayne Hsu, Jocelyn Hudon, Juan Carlos Illera, Jim Ingold, K. Ishida, T. Ishizuka, Sue Jackson, Fabian Jaksic, Stephanie Jones, Leo Joseph, K. Kazuto, Howard King, Guy Kirwan, Oliver Komar, Reiko Kurosawa, Adrian Long, N. Krabbe, Andrew Kratter, Thomas Labedz, Steve Latta, Oscar Laverde, Scott Ruey-Shing Lin, Weiting Liu, John Loegering, Michel Louettte, Stephen Loughead, Joao Magahaes, Miguel Marini, Tom Martin, Virginia Mascitti, Mara McDonald, Robert McFarlane, Ross McGregor, John McLaughlin, Martin McNicholl, Chris Mead, Allan Mee, Andy Mitchell, William Moskoff, Jim Mountjoy, H. Nagata, Phil Nott, Hugo Ochoa-Acuna, Jose Ochoa Quintero, Dieter Oschadleus, Luis Padilla, Patricia Parker, Robert Payne, George Powell, Paulo Pulgarin, Van Remsen, Swen Renner, Sam Riffell, Chris Rimmer, James Rising, Frank Rivera, Adriana Rodriguez, Sievert Rohwer, Tom Skovlund Romdal, Diego Rubolini, Doug Runde, Peter Ryan, Paul Salaman, Diego Santiago, Martin Schaefer, Jessie Schillaci, Nathalie Seddon, Chad Seewagen, Shin-Ichi Seki, Marisol Sepulveda, Cagan Sekercioglu, Jui-yun Shen, Jevgeni Shergain, Harry Slack, Beth Slikas, Troy Smith, Justine Stahl, Doug Stotz, Dan Strickland, Hiraoka Takashi, Michael Tarburton, Jean-Claude Thibault, Richard Thomas, Joseph Tobias, Thomas Valqui, Jan van der Brugge, Marcelo Vasconcelos, Heath Wakelee, George Wallace, Eric Walters, Matthias Waltert, Bruno Walther, David Wege, Allison Wells, Ethan White, David Wiedenfeld, James W. Wiley, Stephen Willis, Maiken Winter, Christopher Witt, John Woinarski, Rueven Yosef, and Sun Yue-Hua.

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Body Masses of World Birds

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Family Struthionidae										
Struthio camelus	Ostrich	U	13	111000		86000	145000			256
Family Rheidae										
Rhea americana	Greater Rhea	U		23000		10500	40000			133a
Rhea pennata	Lesser Rhea	M	3	23900		19100	28600			256
Family Casuariidae										
Casuarius casuarius	Southern Cassowary	B		44000		29200	58500			133a
Casuarius bennetti	Dwarf Cassowary	U		35000						291
Casuarius unappendiculatus	Northern Cassowary	M		36600						256
		F	1	58000						
Family Dromaiidae										
Dromaius novaehollandiae	Emu	M	11	31500		17700	46500			256
		F	11	36900		25900	48000			
Family Apterygidae										
Apteryx australis	Brown Kiwi	M	15	2120		1720	2730		New Zealand	197
		F	31	2540		2060	3850			
Apteryx owenii	Little Spotted Kiwi	M	51	1135	119	880	1356		New Zealand	745
		F	41	1351	164	1000	1400			
Apteryx haastii	Great Spotted Kiwi	M	7	1692		1215	2320		New Zealand	745
		F	12	2418	389	1530	2718			
Family Tinamidae										
Tinamus tao	Gray Tinamou	M	113	1565		1325	1863			256
		F	54	1636		1430	2080			
Tinamus solitarius	Solitary Tinamou	M	7	1284		1014	1469			256
		F	11	1497		1300	1710			
Tinamus osgoodi	Black Tinamou	M	1	1285					Peru	370

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Tinamus major	Great Tinamou	M	16	960		885	1142			256
		F	7	1097		945	1249			
Tinamus guttatus	White-throated Tinamou	M	3	638		623	652			256
		F	4	738		680	800			
Nothocercus bonapartei	Highland Tinamou	B	8	763		455	1050		Panama; Colombia	488, 489, 798
Crypturellus berlepschi	Berlepsch's Tinamou	M				430	527			256
		F				512	615			
Crypturellus cinereus	Cinereous Tinamou	M	7	460		355	527			256, 498
		F	4	558		512	615			
Crypturellus erythropus	Red-legged Tinamou	M	1	485						498
Crypturellus soui	Little Tinamou	M	6	198		165	204		Belize	988, 1027
		F	8	236		213	268			
Crypturellus obsoletus	Brown Tinamou	M	55	421		358	482			256
		F	88	467		395	548			
Crypturellus undulatus	Undulated Tinamou	M	6	513		462	569			256
		F	1	621						
Crypturellus transfasciatus	Pale-browed Tinamou	B	6	283					Peru	1302
Crypturellus strigulosus	Brazilian Tinamou	M	27	412		332	464			256
		F	8	450		388	500			
Crypturellus duidae	Gray-legged Tinamou	B	6	426		370	489		Peru	10
Crypturellus noctivagus	Yellow-legged Tinamou	U		562		533	602			256
Crypturellus atrocapillus	Black-capped Tinamou	M	2	453		450	455		Peru	370
Crypturellus boucardi	Slaty-breasted Tinamou	M	22	418	20.6	375	464		Belize	1027
		F	18	454	45.4	374	526			
Crypturellus variegatus	Variegated Tinamou	B	9	378		354	423			256

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Crypturellus cinnamomeus	Thicket Tinamou	B	8	422		401	448		Mexico; Belize	910a, 1027
Crypturellus bartletti	Bartlett's Tinamou	U	6	241					Peru	370
Crypturellus parvirostris	Small-billed Tinamou	M	9	180		141	205			256, 657
		F	10	220		176	250			
Crypturellus tataupa	Tataupa Tinamou	M	38	202		169	229			256
		F	53	237		189	281			
Rhynchotus rufescens	Red-winged Tinamou	M	19	803		700	920			256
		F	16	886		580	1040			
Nothoprocta ornata	Ornate Tinamou	M	10	569		444	700			256
		F	10	674		593	761			
Nothoprocta perdicaria	Chilean Tinamou	U	4	458					captive	1328
Nothoprocta cinerascens	Brushland Tinamou	M	6	479		457	493			256
		F	4	573		540	615			
Nothoprocta pentlandii doeringi	Andean Tinamou	U	10	266		211	330			256
Nothoprocta pentlandii mendozae	Andean Tinamou	U	14	340		301	384			256
Nothoprocta curvirostris	Curve-billed Tinamou	U	2	376		372	380		Peru	1042
Nothura boraquira	White-bellied Tinamou	B	7	283		239	337			256
Nothura minor	Lesser Nothura	B				158	174			256
Nothura darwinii darwinii	Darwin's Nothura	M	13	215		200	245		Argentina	151
		F	16	243		209	285			
Nothura darwinii salvadorii	Darwin's Nothura	M	27	250		192	307		Argentina	151
		F	27	274		197	330			
Nothura maculosa annectens	Spotted Nothura	M	90	250		193	297	W	Argentina	151
		F	92	289		192	361			
Nothura maculosa maculosa	Spotted Nothura	M	198	234		152	292		Brazil	256
		F	182	260		164	316			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Taoniscus nanus	Dwarf Tinamou	U	1	43						256
Eudromia elegans elegans	Elegant Crested Tinamou	M		680			809		Argentina	88
		F		709			892			
Eudromia elegans albida	Elegant Crested Tinamou	M		676			695		Argentina	88
		F		749			836			
Tinamotis pentlandii	Puna Tinamou	U	1	650						362
Family Spheniscidae										
Aptenodytes patagonicus	King Penguin	M	70	12435		10200	15300	B	Marion Is.	1036
		F	71	11067		8600	13700			
Aptenodytes forsteri	Emperor Penguin	M	9	38200				B	Antarctica	745
		F	7	29500						
Pygoscelis papua	Gentoo Penguin	M	32	6400	700			B	South Georgia	1172a
		F	32	5500	650					
Pygoscelis adeliae	Adelie Penguin	M	15	5000				B	Ross Is.	3
		F	10	4700						
Pygoscelis antarcticus	Chinstrap Penguin	M	19	4435	315			B	South Shetland Is.	230
		F	25	3876	310					
Eudyptes pachyrhynchus	Fiordland Penguin	M	38	4110	390			B	New Zealand	829
		F	24	3710	400					
Eudyptes robustus	Snares Penguin	M	41	3320	347	2450	4300			745
		F	32	2780	300	2300	3400			
Eudyptes sclateri	Erect-crested Penguin	M	22	6382	520			B	Antipodes Is.	745
		F	22	5434	431					
Eudyptes chrysocome	Rockhopper Penguin	M	49	2430	230			B	Antipodes Is.	745
		F	33	2230	140					
Eudyptes schlegeli	Royal Penguin	M		4500				B	Macquaire Is.	536
		F		4000						
Eudyptes chrysolophus	Macaroni Penguin	M	71	4280	120	2300	6000		Crozet Is.	745
		F	52	4700	120	3100	6800			
Megadyptes antipodes	Yellow-eyed Penguin	M	80	5530	340	4880	6350	B	New Zealand	745
		F	80	5130	320	4310	5780			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Eudyptula minor novaehollandiae	Little Penguin	M	12278	1172	164	550	2130		Australia	745
		F	10973	1048	159	550	2100			
Eudyptula minor albosignata	Little (Blue) Penguin	M	11	1358	182	1067	1546		New Zealand	745
		F	7	1280		1108	1500			
Eudyptula minor iredalei	Little Penguin	M	11	935	96.6	752	1055		New Zealand	745
		F	6	842		698	956			
Eudyptula minor minor	Little Penguin	M	10	1244	127	1080	1475		New Zealand	745
		F	9	1085		895	1374			
Spheniscus demersus	Jackass Penguin	M	127	3310	260				South Africa	308
		F	127	2960	310					
Spheniscus humboldti	Humboldt Penguin	M	165	4711	406	3450	6000		Peru	1364
		F	123	4047	390	2950	5400			
Spheniscus magellanicus	Magellanic Penguin	M	49	4470	490			B	Argentina	745
		F	49	3770	400					
Spheniscus mendiculus	Galapagos Penguin	M	56	2135		1780	2880	B	Galapagos Is.	1312
		F	45	1730		1500	2000			
Family Gaviidae										
Gavia stellata	Red-throated Loon	U	8	1486		1150	1923		Ontario, Canada	1147a
Gavia arctica	Arctic Loon	M	5	3494		3100	4000		Siberia; Mongolia	926, 1025
		F	3	2665		2255	3075			
Gavia pacifica	Pacific Loon	M	8	1830		1135	2450		Alaska, USA	1149
		F	8	1507		990	2038			
Gavia immer	Common Loon	M	20	5460		4770	6130	B	Ontario, Canada	779
		F	20	4500		3380	4650			
Gavia adamsii	Yellow-billed Loon	M	14			4000	5800			860
		F	13			4025	6400			
Family Podicipedidae										
Tachybaptus ruficollis	Little Grebe	M	5	140		133	146	PB	Netherlands	223
		F	8	130		117	142			
Tachybaptus ruficollis philippensis	Little Grebe	M	14	222		190	250		Philippines	983
		F	11	204		175	235			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Tachybaptus novaehollandiae	Australasian Grebe	U	36	219	25	166	281		New South Wales, Australia	745
Tachybaptus pelzelnii	Madagascar Grebe	U	2	184		172	197		Madagascar	68, 957
Tachybaptus dominicus	Least Grebe	M	12	129	11.4				Panama	489
		F	12	116	11.8					
Tachybaptus dominicus	Least Grebe	M	16	139	16.9	112	164		Texas, USA; Costa Rica	1176
		F	16	122	16	94	150			
Tachybaptus dominicus	Least Grebe	M	5	161		134	182		West Indies	1176
		F	4	133		81	167			
Podilymbus podiceps	Pied-billed Grebe	M	36	474	60.6	321	568			827
		F	40	358	51	253	479			
Podilymbus gigas	Atitlan Grebe	M	2	830		804	856		Guatemala	664
		F	2	568		552	584			
Rollandia rolland	White-tufted Grebe	M	14	248	42					699
		F	11	424	18					
Rollandia microptera	Short-winged Grebe	B	19	706						699
Poliocephalus poliocephalus	Hoary-headed Grebe	M	14	258	30.2	202	311			1174
		F	14	223	27.6	190	276			
Poliocephalus rufopectus	New Zealand Grebe	B	15	249		170	291		New Zealand	1174
Podiceps major	Great Grebe	F	1	1646					Tierra del Fuego	546
Podiceps grisegena	Red-necked Grebe	B	6	1023		743	1270		Alaska, USA	894
Podiceps cristatus	Great Crested Grebe	M	7	738		596	813		Netherlands	223
		F	4	609		568	686			
Podiceps cristatus	Great Crested Grebe	F	4	869		630	1000		Tsingtao, China	1088
Podiceps auritus	Horned Grebe	U	47	453		327	528	W	Maryland, USA	525
Podiceps nigricollis	Eared Grebe	M	394	422	39.7	195	521	F	Utah, USA	238
		F	338	374	31.1	281	477			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Podiceps nigricollis	Eared Grebe	M	4	475		430	520		Tsingtao, China	1088
		F	7	386		335	440			
Podiceps occipitalis	Silvery Grebe	M	13	335	53					699
		F	7	307						
Podiceps taczanowskii	Junin Grebe	M	6	423						699
		F	7	360						
Podiceps gallardoi	Hooded Grebe	B	4	575		420	740			1173
Aechmophorus occidentalis occidentalis	Western Grebe	M	41	1429	163	1137	1826			1177
		F	21	1199	209	808	1753			
Aechmophorus occidentalis ephemeralis	Western Grebe	M	9	1138		828	1338			1177
		F	4	857		823	912			
Aechmophorus clarkii transitionalis	Clark's Grebe	M	25	1341	162	1001	1685			1177
		F	6	1133		1006	1258			
Aechmophorus clarkii clarkii	Clark's Grebe	M	7	1029		815	1201			1177
		F	9	906		718	1251			
Family Diomedeidae										
Diomedea exulans	Wandering Albatross	M	52	9110		8200	10600		South Georgia	1222
		F	53	7270		6350	8300			
Diomedea exulans gibsoni	Wandering Albatross	M	35	6800		5500	8600		Auckland Is.	1222
		F	36	5800		4600	7300			
Diomedea exulans antipodensis	Wandering Albatross	M	10	7460					Antipodes Is.	1222
		F	15	5840						
Diomedea epomophora	Royal Albatross	M	11	10300	740			B	Campbell Is.	745
		F	7	7700						
Diomedea epomophora sanfordi	Royal Albatross	U				6530	6800	B	Chatham Is.	745
Diomedea amsterdamensis	Amsterdam Is. Albatross	B	33	6270	780	4800	8000	B	Amsterdam Is.	611
Phoebastria albatrus	Short-tailed Albatross	U		4411						339
Phoebastria irrorata	Waved Albatross	M	7	3750		3110	4390			133
		F	13	3040		2700	3380			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Phoebastria immutabilis	Laysan Albatross	M	152	3310	284	2700	4100	B	Midway Is.	384
		F	54	2990	264	2500	3600			
Phoebastria nigripes	Black-footed Albatross	M	123	3400		2600	4300		Hawaiian Is.	1222
		F	104	2990		2600	3600			
Thalassarche chrysostoma	Gray-headed Albatross	M	133	3751					South Georgia	943
		F	95	3264						
Thalassarche melanophrys melanophrys	Black-browed Albatross	M	132	3922					South Georgia	943
		F	94	3206						
Thalassarche melanophrys impavida	Black-browed Albatross	M	15	3100		2750	3800		Campbell Is.	1222
		F	18	2700		2200	3150			
Thalassarche bulleri platei	Buller's Albatross	M	18	2840		2500	3300	B	Chatham Is.	1222
		F	18	2430		2150	2800			
Thalassarche bulleri bulleri	Buller's Albatross	M	6	3120		2850	3350	B	Snares Is.	1222
		F	6	2780		2050	3100			
Thalassarche cauta cauta	Shy Albatross	M	18	4350		3900	5100			745
		F	18	3700		3200	4400			
Thalassarche cauta steadi	Shy Albatross	M	6	4430		3300	5300	B	Auckland Is.	1222
		F	7	3450		2600	4200			
Thalassarche cauta salvini	Shy Albatross	M	17	4000		3300	4900	B	Bounty Is.	1222
		F	12	3590		3300	3700			
Thalassarche cauta eremita	Shy Albatross	M	13	4000		3600	4700	B	Chatham Is.	1222
		F	10	3770		3100	3900			
Thalassarche chlororhynchos bassi	Yellow-nosed Albatross	U	33	2060		1750	2600	B	Amsterdam Is.	1222
Thalassarche chlororhynchos	Yellow-nosed Albatross	U	26	2200		1780	2840	B	Gough Is.	1222
Phoebetria fusca	Sooty Albatross	B	176	2500	200	2100	3400	B	Marion Is.	71
Phoebetria fusca	Sooty Albatross	M	18	2730		2200	3250		Iles Crozet	1222
		F	12	2440		2100	2800			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Phoebetria palpebrata	Light-mantled Albatross	U	13	3150		2850	3600		Iles Crozet	1222
Family Procellariidae										
Macronectes giganteus	Antarctic Giant Petrel	M	37	4940	410	4100	5800		S. Orkney Is.	745
		F	37	3850	370	3000	4800			
Macronectes giganteus	Antarctic Giant Petrel	M	15	3500	300			B	Patagonia, Argentina	217a
		F	21	2500	200					
Macronectes halli	Hall's Giant Petrel	M	57	4790	330	4100	5450	B	Macquarie Is.	745
		F	49	3580	300	3100	4450			
Macronectes halli	Hall's Giant Petrel	M	56	4902	391	4150	5800	B	South Georgia	745
		F	43	3724	313	3050	4500			
Fulmarus glacialis	Northern Fulmar	M	47	649	52.1	552	773	B	Alaska, USA	495
		F	57	577	52.8	445	710			
Fulmarus glacialoides	Southern Fulmar	M	12	845		740	1030	B	Antarctica	745
		F	9	745		670	855			
Thalassoica antarctica	Antarctic Petrel	M	10	699		610	780		Antarctica	745
		F	10	718		610	805			
Daption capense capense	Cape Petrel	M	23	442		380	550	B	Signy Is.	745
		F	22	407		360	510			
Daption capense	Cape Petrel	M	52	452	40	345	577	B	Snares Is.	745
		F	43	419	31	342	476			
Pagodroma nivea	Snow Petrel	B	52	268	35.9	202	322	B	Antarctica	1032
Pterodroma macroptera gouldii	Great-winged Petrel	M	56	560				B	New Zealand	551
		F	28	505						
Pterodroma aterrima	Mascarene Petrel	M	1	232					Reunion	610
Pterodroma rostrata	Tahiti Petrel	U	141	409	38					1141
Pterodroma lessonii	White-headed Petrel	B	18	698	58.6	580	810	B	Kerguelen Is.	1284
Pterodroma hasitata	Black-capped Petrel	U	1	278					Dominican Republic	888

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Pterodroma cahow	Bermuda Petrel	U	1	246					Bermuda	1321
Pterodroma incerta	Atlantic Petrel	U		520						2
Pterodroma alba	Phoenix Petrel	U	20	259	28.1			B	Christmas Is.	1301
Pterodroma inexpectata	Mottled Petrel	U	89	316	32.1	247	441	B	New Zealand	969
Pterodroma solandri	Providence Petrel	M	3	518		443	600		Lord Howe Is.	745
		F	2	424		414	433			
Pterodroma ultima	Murphy's Petrel	U	13	360		325	377		Pitcairn Is.	1309
Pterodroma neglecta	Kermadec Petrel	U	9	501		370	590	B	Macauley Is.; Chile	745, 861b
Pterodroma magentae	Magenta Petrel	U	17	465	21.6	423	507			745
Pterodroma arminjoniana	Trinidade Petrel	U	68	394	43	287	460		Round Is.	745
Pterodroma heraldica	Herald Petrel	U	4	266	29					1140
Pterodroma mollis	Soft-plumaged Petrel	B	85	312	34.7	250	380	B	Marion Is.	1059
Pterodroma feae	Cape Verde Petrel	U	17	311	20.6	275	355		Desertas	125a
Pterodroma madeira	Madeira Petrel	B				175	231			1130
Pterodroma baraui	Barau's Petrel	U		400					estimated	123
Pterodroma phaeopygia	Galapagos Petrel	U	37	389	40				Santa Cruz, Galapagos	1226
Pterodroma phaeopygia	Galapagos Petrel	U	17	413	40				Floreana, Galapagos	1226
Pterodroma sandwichensis	Hawaiian Petrel	B	38	434	52.9			B	Hawaiian Is.	1113
Pterodroma externa	Juan Fernandez Petrel	U	207	428	47.5					1141
Pterodroma cervicalis	White-necked Petrel	U	30	445	31.5	380	545		Kermadec Is.	745
Pterodroma occulta	Vanuatu Petrel	U				300	350		estimated	551a

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Pterodroma cookii	Cook's Petrel	M	3	164		112	250		New Zealand	223
		F	7	193		149	241			
Pterodroma defilippiana	Defilippe's Petrel	U	6	169		143	220			125a, 1148
Pterodroma leucoptera	Gould's Petrel	U	129	159	14.8					1141
Pterodroma leucoptera brevipes	Gould's Petrel	B	20	136		116	158	B	Fiji	1277
Pterodroma hypoleuca	Bonin Petrel	B	168	176	13	150	220	B	Hawaiian Is.	486
Pterodroma nigripennis	Black-winged Petrel	B	30	163	10.9	132	185		Kermadec Is.	745
Pterodroma nigripennis	Black-winged Petrel	B	15	185	19.6	156	228	B	Chatham Is.	745
Pterodroma axillaris	Chatham Petrel	F	1	165					Chatham Is.	745
Pterodroma longirostris	Stejneger's Petrel	U	27	143	9					1140
Pterodroma pycrofti	Pycroft's Petrel	B	80	159	16.8	128	198		New Zealand	745
Pterodroma macgillivrayi	Fiji Petrel	U	1	143					Fiji	1278
Halobaena caerulea	Blue Petrel	U	215	202	17.5	163	251	B	Marion Is.	396a
Pachyptila vittata	Broad-billed Prion	U	29	196				B	New Zealand	969
Pachyptila salvini	Salvin's Prion	B	89	159	13	130	210	B	Crozet Is.	115
Pachyptila desolata	Antarctic Prion	U	118	147	14.1	115	183	B	Kerguelen Is.	1284
Pachyptila belcheri	Slender-billed Prion	U	66	145	12.5	118	180	B	Kerguelen Is.	1284
Pachyptila crassirostris	Fulmar Prion	M	9	149		134	172	B	Chatham Is.	745
crassirostris		F	8	141		110	157			
Pachyptila crassirostris eatoni	Fulmar Prion	U	25	126	10.1	102	144		Heard Is.	745
Pachyptila turtur	Fairy Prion	U	54	137		110	175	B	Crozet Is.	115

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Bulweria bulwerii	Bulwer's Petrel	U	191	99	13.8	78	130	B	Hawaiian Is.	486
Bulweria fallax	Jouanin's Petrel	U	8	173		150	185		Indian Ocean	31
Procellaria cinerea	Gray Petrel	U	37	1131	133	900	1520	B	Kerguelen Is.	1284
Procellaria aequinoctialis	White-chinned Petrel	U	87	1213	134	980	1885	B	Crozet Is.	611a
Procellaria parkinsoni	Parkinson's Petrel	M	9	723		620	855	B	Little Barrier Is., Australia	745
		F	8	682		587	791			
Procellaria westlandica	Westland Petrel	U	67	1199	109			B	New Zealand	745
Aphrodroma brevirostris	Kerguelen Petrel	U	126	357	43.2	255	451	B	Marion Is.	1059
Calonectris leucomelas	Streaked Shearwater	B	181	580	66.7	435	713		Korea	679
Calonectris diomedea	Cory's Shearwater	U	37	535	60	400	650	B	Crete	1020
Puffinus creatopus	Pink-footed Shearwater	B	19	744	56.3	600	825		Chile	1082
Puffinus carneipes	Flesh-footed Shearwater	B	9	609		533	692	B	New Zealand	745
Puffinus gravis	Greater Shearwater	U	58	849	26.7			PB	Nova Scotia, Canada	141
Puffinus pacificus	Wedge-tailed Shearwater	U	124	388	33.4	320	510	B	Hawaiian Is.	486
Puffinus bulleri	Buller's Shearwater	B	30	407	40.6	339	449		New Zealand	745
Puffinus griseus	Sooty Shearwater	U	100	787		666	978	B	New Zealand	894
Puffinus tenuirostris	Short-tailed Shearwater	U	67	559	53	460	740	B	Australia	745
Puffinus nativitatis	Christmas Shearwater	U	99	356	30	280	415	B	Hawaiian Is.	486
Puffinus puffinus	Manx Shearwater	M	60	468	34.9			B	Wales, UK	124
		F	53	439	30.6					

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Puffinus mauretanicus	Balearic Shearwater	U	448	497	44.6			B	Spain	16a
Puffinus yelkouan	Levantine Shearwater	B				330	485			1130
Puffinus huttoni	Hutton's Shearwater	U	17	364				B	New Zealand	363
Puffinus opisthomelas	Black-vented Shearwater	B	258	408	44	332	545		Natividad Is., Mexico	624
Puffinus auricularis townsendi	Townsend's Shearwater	B	10	323		290	358			6
Puffinus auricularis newelli	Newell's Shearwater	U	35	381	45	340	411	B	Hawaiian Is.	6
Puffinus gavia	Fluttering Shearwater	M	2	221		200	243		New Zealand	745
		F	8	237		206	302			
Puffinus assimilis	Little Shearwater	U	91	226		170	275	B	Gough Is., S. Atlantic Ocean	1192
Puffinus lherminieri	Audubon's Shearwater	U	78	168		128	211	B	Galapagos Is.	481
Puffinus lherminieri bailloni	Audubon's Shearwater	U	12	226	28.2	165	259		Reunion	610
Puffinus lherminieri nicolae	Audubon's Shearwater	U	62	168	19				Seychelles	114
Puffinus lherminieri colstoni	Audubon's Shearwater	U	8	214					Aldabra	114
Puffinus persicus	Persian Shearwater	U	1	195					Indian Ocean	31
Family Hydrobatidae										
Garrodia nereis	Gray-backed Storm-Petrel	U	38	38.2	3.5	31	44	B	Kerguelen Is.	1284
Oceanites oceanicus	Wilson's Storm-Petrel	U	31	32	3	27	39	B	Crozet Is.	611a
Oceanites oceanicus	Wilson's Storm-Petrel	B	9	28.9		25	35		Chile	1082

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Oceanites gracilis	White-vented Storm-Petrel	U	3	16.7		16	17		Galapagos Is.	482, 1141a
Pelagodroma marina maoriana	White-faced Storm-Petrel	U	100	47.2	4	40	62		New Zealand	223
Fregetta tropica	Black-bellied Storm-Petrel	U	38	52	3	43	59	B	Crozet Is.	611a
Fregetta grallaria grallaria	White-bellied Storm-Petrel	U	35	52	4.7	45	65	B	Lord Howe Is.	745
Fregetta grallaria segethi	White-bellied Storm-Petrel	U	7	38.9		34	43		Humboldt Current, Pacific	1141a
Fregetta grallaria titan	White-bellied Storm-Petrel	U	1	64					E. Pacific Ocean	1141a
Nesofregetta fuliginosa	Polynesian Storm-Petrel	U	6	70	5					1140
Hydrobates pelagicus	European Storm-Petrel	U	1770	25.2		20.3	31.1	B	Britain	515
Oceanodroma microsoma	Least Storm-Petrel	U	11	20.5	1.1	18.2	21.7		E. Pacific Ocean	227
Oceanodroma tethys	Wedge-rumped Storm-Petrel	U	57	22.6	2.2	19	30	B	Galapagos Is.	482
Oceanodroma castro	Band-rumped Storm-Petrel	U	102	45.3	5.1	33.5	54	B	Galapagos Is.	482
Oceanodroma castro	Band-rumped Storm-Petrel	U	229	44.1	4.4	33	58	B	Azores Is. (hot season)	1116
Oceanodroma castro	Band-rumped Storm-Petrel	U	729	49.2	4.5	36	67	B	Azores Is. (cool season)	1116
Oceanodroma leucorhoa leucorhoa	Leach's Storm-Petrel	B	150	41.4	5.8	24	57.5		Pacific Ocean	227
Oceanodroma leucorhoa beali	Leach's Storm-Petrel	B	124	39.8	5	29	53		E. Pacific Ocean	227
Oceanodroma leucorhoa socorroensis	Leach's Storm-Petrel	B	152	31.7	4.2	22.4	44		Guadalupe Is.	227
Oceanodroma leucorhoa chapmani	Leach's Storm-Petrel	B	78	34.8	2.7	29	42	B	Baja California, Mexico	227

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Oceanodroma monorhis	Swinhoe's Storm-Petrel	U	4	39.8		39	40			31, 223
Oceanodroma tristrami	Tristram's Storm-Petrel	B	80	92	8.2	71	112	B	Laysan Is., Hawaiian Is.	756
Oceanodroma tristrami	Tristram's Storm-Petrel	U	23	86.2	6	74	94	B	Nihoa Is., Hawaiian Is.	1116
Oceanodroma markhami	Markham's Storm-Petrel	B	40	53.1						125a
Oceanodroma matsudairae	Matsudaira's Storm-Petrel	M	1	62						745
Oceanodroma melania	Black Storm-Petrel	B	112	61.5	5	53	77	B	California, USA	4
Oceanodroma homochroa	Ashy Storm-Petrel	U	20	36.9	2.3	33.3	42.4		E. Pacific Ocean	227
Oceanodroma hornbyi	Ringed Storm-Petrel	B	3	40.6		32.5	46		South Pacific Ocean	1148
Oceanodroma furcata	Fork-tailed Storm-Petrel	U	422	54.4	3.4	45	67.5	B	Washington, USA	87
Oceanodroma furcata	Fork-tailed Storm-Petrel	U	81	65.6	4.7	50	82	B	Alaska, USA	87
Family Pelecanoididae										
Pelecanoides garnotii	Peruvian Diving-Petrel	U	65	202					Peru	1363
Pelecanoides garnotii	Peruvian Diving-Petrel	B	10	239	22	210	270		Chile	861b, 1082
Pelecanoides magellani	Magellanic Diving-Petrel	M	4	134		115	145		Chile	861b, 1082
Pelecanoides georgicus	South Georgia Diving-Petrel	U	71	121	13	90	150	B	Crozet Is.	611a
Pelecanoides urinatrix	Common Diving-Petrel	U	52	141	13	105	165	B	Crozet Is.	611a
Pelecanoides urinatrix exsul	Common Diving-Petrel	U	44	164	11	133	185	B	Kerguelen Is.	745

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Family Phaethontidae										
Phaethon aethereus	Red-billed Tropicbird	U		750						971
Phaethon rubricauda	Red-tailed Tropicbird	B	411	659	59.4				Johnson Atoll	1063
Phaethon rubricauda	Red-tailed Tropicbird	B	688	685	63.5				Christmas Is.	1063
Phaethon lepturus lepturus	White-tailed Tropicbird	U	59	334					Aldabra Atoll	279
Phaethon lepturus catesbyi	White-tailed Tropicbird	U	110	367	27.8				Bermuda; West Indies	678
Phaethon lepturus dorotheae	White-tailed Tropicbird	U	4	288		251	312		Pacific Ocean	678
Family Pelecanidae										
Pelecanus onocrotalus	Great White Pelican	M	52	11450	1340	9000	15000			591
		F	22	7590	1020	5400	9000			
Pelecanus rufescens	Pink-backed Pelican	M	19	5970	780	4500	7000			591
		F	64	4920	630	3900	6200			
Pelecanus philippensis	Spot-billed Pelican	M	2	5400		5100	5700		captive	591
		F	1	4650						
Pelecanus crispus	Dalmatian Pelican	M	6	10400		9500	12000			591
		F	4	8700		7250	10000			
Pelecanus conspicillatus	Australian Pelican	U	4	5505		4000	6800			745
Pelecanus erythrorhynchos	American White Pelican	M	11	6329		3510	8000			591
		F	6	4970		3630	5900			
Pelecanus thagus	Peruvian Pelican	U		6000					Peru	307
Pelecanus occidentalis	Brown Pelican	M	56	3702	389				Florida, USA	489
		F	47	3174	329					
Family Sulidae										
Morus bassanus	Northern Gannet	M	27	2932		2470	3470		Great Britain	845
		F	27	3067		2570	3610			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Morus capensis	Cape Gannet	M	61	2618		2296	2920			745
		F	53	2669		2381	3118			
Morus serrator	Australian Gannet	U	50	2350		2000	2800		New Zealand	745
Sula abbotti	Abbott's Booby	M	3	1503		1370	1620			845
		F	3	1600		1470	1700			
Sula nebouxii	Blue-footed Booby	M	23	1283		1100	1580		Galapagos Is.	845
		F	28	1801		1450	2230			
Sula variegata	Peruvian Booby	M	3	1350		1250	1350		Peru; Chile	845, 861b
		F	2	1520		1500	1540			
Sula dactylatra	Masked Booby	M	195	1623		1300	1980		Christmas Is.	12
		F	196	1803		1375	2250			
Sula dactylatra personata	Masked Booby	M	27	1880		1503	2211	B	Hawaiian Is.	316
		F	27	2095		1616	2353			
Sula dactylatra dactylatra	Masked Booby	M	2	1450		1400	1500		St. Thomas	314
		F	4	1584		1450	1660			
Sula granti	Nazca Booby	M	48	1627		1220	1970		Galapagos Is.	12
		F	37	1881		1470	2350			
Sula sula websteri	Red-footed Booby	M	20	938		850	1160		Galapagos Is.	413
		F	20	1068		850	1210			
Sula sula rubripes	Red-footed Booby	B	10	1223	109				Midway Is.	1064
Sula sula rubripes	Red-footed Booby	B	803	1110	131				Johnson Atoll	1064
Sula sula	Red-footed Booby	B	490	857	105				Christmas Is.	1064
Sula leucogaster leucogaster	Brown Booby	M	4	1078					Virgin Is.	1062
		F	23	1360	143					
Sula leucogaster brewsteri	Brown Booby	M	158	1191	108				San Pedro Martir, Mexico	1062
		F	120	1450	101					
Sula leucogaster plotus	Brown Booby	M	52	1187	126				Johnston Atoll	1062
		F	54	1525	153					

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Family Phalacrocoracidae										
Phalacrocorax sulcirostris	Little Black Cormorant	M	42	1100	100	800	1300		Australia	745
		F	34	900	100	700	1300			
Phalacrocorax auritus floridanus	Double-crested Cormorant	M	33	1808	224				Florida, USA	489
		F	32	1540	215					
Phalacrocorax auritus auritus	Double-crested Cormorant	M	763	2089	147				Quebec, Canada	494
		F	375	1831	139					
Phalacrocorax fuscicollis	Indian Cormorant	B	5	706		600	790			591
Phalacrocorax brasilianus brasilianus	Neotropic Cormorant	M	10	1260	12.6				Panama	489
		F	3	1070						
Phalacrocorax brasilianus mexicanus	Neotropic Cormorant	M	14	1393		1150	1550			591
		F	8	1256		1100	1450			
Phalacrocorax carbo sinensis	Great Cormorant	M	36	2283		1975	2687	B	Germany	223
		F	17	1936		1673	2174			
Phalacrocorax carbo carbo	Great Cormorant	M	6	3240					Greenland	493
		F	6	2630						
Phalacrocorax carbo lucidus	Great Cormorant	M	3	3090						591
		F	5	2248		1590	2950			
Phalacrocorax capensis	Cape Cormorant	M	24	1330						591
		F	11	1104						
Phalacrocorax neglectus	Bank Cormorant	M	77	2107		1775	2425			591
		F	92	1794		1500	2150			
Phalacrocorax capillatus	Japanese Cormorant	M	6	3140		3000	3350		Japan	1276
		F	7	2500		2300	2700			
Phalacrocorax penicillatus	Brandt's Cormorant	M	3	2570		2382	2682			591
		F	12	1925		1399	2298			
Phalacrocorax aristotelis	European Shag	M	3	1948		1760	2154			591
		F	7	1598		1407	1788			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Phalacrocorax pelagicus	Pelagic Cormorant	M	16	2072		1814	2440			591
		F	11	1641		1214	2041			
Phalacrocorax urile	Red-faced Cormorant	M	20	2428	113	2200	2500		Aleutian Is.	176
		F	16	1847	64.9	1650	2100			
Phalacrocorax magellanicus	Rock Shag	M	7	1553		1440	1680			591
		F	10	1417		1330	1550			
Phalacrocorax bougainvillii	Guanay Cormorant	M	7	2485		2100	3222			591, 1082
Phalacrocorax varius	Pied Cormorant	M	60	2196		1814	2472			591
		F	175	1715		1361	2062			
Phalacrocorax fuscescens	Black-faced Cormorant	M	30	1515						591
Phalacrocorax carunculatus	Rough-faced Shag	M	1	2655					New Zealand	745
		F	1	2500						
Phalacrocorax chalconotus	Bronze Shag	M	6	2717		1797	3875		New Zealand	745
		F	8	1814		1447	2356			
Phalacrocorax onslowi	Chatham Is. Shag	M	1	2400					Chatham Is.	745
		F	1	1790						
Phalacrocorax colensoi	Auckland Is. Shag	U		2000					Auckland Is.	503
Phalacrocorax campbelli	Campbell Is. Shag	M	2	2000					Campbell Is.	745
		F	8	1800		1600	1900			
Phalacrocorax ranfurlyi	Bounty Is. Shag	M	7	2500		2300	2900		Bounty Is., New Zealand	745
		F	6	2500		2000	2700			
Phalacrocorax bransfieldensis	Antarctic Shag	M	16	3022	170					745
		F	21	2576	138					
Phalacrocorax georgianus	South Georgia Shag	M	130	2883	255				S. Georgia Is.	745
		F	101	2473	154					
Phalacrocorax atriceps	Imperial Shag	M	10	2716		2104	3341			591, 861b
		F	5	2266		2087	2400			
Phalacrocorax nivalis	Heard Is. Shag	M	4	3157				B	Heard Is.	450
		F	3	2467						

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Phalacrocorax melanogenis	Crozet Shag	M	5	2450		1700	2700		Possession Is.	745
		F	5	2040		1950	2250			
Phalacrocorax verrucosus	Kerguelen Shag	U	27	2630	373	2100	3300		Nuageuses Is.	1284
Phalacrocorax purpurascens	Macquarie Shag	M	16	2860	145	2650	3200		Macquarie Is.	745
		F	18	2430	152	2180	2700			
Phalacrocorax gaimardi	Red-legged Cormorant	M	6	1379		1200	1550		Chile	1082
		F	4	1338		1250	1400			
Phalacrocorax punctatus	Spotted Shag	M	14	1210	200	850	1670			745
		F	8	1160		770	1610			
Phalacrocorax featherstoni	Pitt Is. Shag	M	2	985		645	1325			745
		F	2	1102		1078	1127			
Phalacrocorax melanoleucos melanoleucos	Little Pied Cormorant	M	28	822		691	963		Australia	591
		F	78	730		567	864			
Phalacrocorax melanoleucos brevirostris	Little Pied Cormorant	M	6	796		715	877		New Zealand	591
		F	5	586		413	704			
Phalacrocorax africanus	Long-tailed Cormorant	B	19	545		435	635			591
Phalacrocorax coronatus	Crowned Cormorant	M	6	798		710	880			591
		F	5	728		670	780			
Phalacrocorax niger	Little Cormorant	U		427		360	525			591
Phalacrocorax pygmeus	Pygmy Cormorant	M	3	743		650	870			223
		F	3	615		565	640			
Phalacrocorax harrisi	Flightless Cormorant	M	32	3500	500	2700	4650		Galapagos Is.	1231
		F	37	2600	300	1950	3650			
Family Anhingidae										
Anhinga anhinga	Anhinga	B	26	1235					Florida, USA	489
Anhinga melanogaster rufa	Darter	M	10	1436		1206	1711			591
		F	9	1357		1055	1660			
Anhinga melanogaster melanogaster	Darter	U	4	1340		1160	1500			591

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Anhinga melanogaster novaehollandiae	Darter	M	16	1600		1200	2100			745
		F	18	1700		900	2600			
Family Fregatidae										
Fregata aquila	Ascension Is. Frigatebird	U		1620						133
Fregata andrewsi	Christmas Is. Frigatebird	M		1400					Christmas Is.	745
		F		1550						
Fregata magnificens	Magnificent Frigatebird	M	19	1465	105				Barbuda	280
		F	19	1704	89					
Fregata magnificens	Magnificent Frigatebird	M	40	1265	73.7				Isla Isabel, Mexico	1225a
		F	48	1563	64.6					
Fregata minor	Great Frigatebird	M	316	927	111	640	1350	B	Christmas Is.	1062a
		F	312	1183	115	850	1550			
Fregata minor	Great Frigatebird	M	26	1280	102				Hawaiian Is.	792
		F	25	1662	96					
Fregata minor	Great Frigatebird	M	54	1234	103				Johnson Atoll	792
		F	33	1490	135					
Fregata ariel	Lesser Frigatebird	M	29	754		625	875		Aldabra Atoll	279
		F	45	858		760	955			
Family Ardeidae										
Syrigma sibilatrix	Whistling Heron	F	2	463		370	555		Brazil; Argentina	63, 211
Pilherodius pileatus	Capped Heron	M	5	530		444	591		Suriname	489
		F	4	610		562	632			
Ardea cinerea	Gray Heron	B	30	1443		1020	2073		Netherlands	223
Ardea herodias	Great Blue Heron	M	24	2480	290				British Columbia, Canada	158
		F	29	2110	340					
Ardea herodias occidentalis	"Great White" Heron	M	11	3015	255	2680	3390		Florida, USA	76
		F	8	2570		1980	3200			
Ardea cocoi	Cocoi Heron	U		3200					Brazil	1105
Ardea cocoi	Cocoi Heron	M	1	1148					Suriname	498
		F	1	1465						

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Ardea pacifica	Pacific Heron	U	9	881		600	1220		Australia	745
Ardea melanocephala	Black-headed Heron	U	6	1060		710	1650			133
Ardea sumatrana	Great-billed Heron	F	5	2024		1300	2600			745
Ardea goliath	Goliath Heron	U	3	4468		4310	4750			133
Ardea purpurea	Purple Heron	M				617	1218		Netherlands	223
		F				525	1135			
Ardea purpurea	Purple Heron	M	2	1112		1100	1125		Philippines	983
		F	4	1019		925	1150			
Ardea alba	Great Egret	M	12	935	134					489
		F	9	812						
Egretta rufescens	Reddish Egret	B	7	614		364	869			725
Egretta picata	Pied Heron	U	6	259		210	372		Australia	745
Egretta vinaceigula	Slaty Egret	U	5	288		250	340		Zambia	302
Egretta ardesiaca	Black Heron	U	7	324		270	390		Zambia	302
Egretta tricolor	Tricolored Heron	M	35	415	45.5					489
		F	5	334						
Egretta intermedia	Intermediate Egret	M	7	408		350	500		China	184a
		F	5	516		484	562			
Egretta novaehollandiae	White-faced Heron	M	7	599		505	693		New Zealand	745
		F	4	521		462	559			
Egretta caerulea	Little Blue Heron	M	11	364	47.1					488
		F	8	315						
Egretta thula	Snowy Egret	U	17	371						489
Egretta garzetta	Little Egret	F	9	312		280	344			184a
Egretta gularis	Western Reef-Heron	M	1	400						223
Egretta eulophotes	Chinese Egret	M	2	554		530	578		Tsingtao, China	1088
		F	2	385		380	390			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Egretta sacra	Pacific Reef-Heron	B	4	383		341	440		New Britain; Solomon Is.	426, 658
Egretta sacra	Pacific Reef-Heron	B	2	658		620	695		Fiji	1196c
Ardeola ralloides	Squacco Heron	B	23	287		230	370			223
Ardeola grayii	Indian Pond-Heron	M	2	253		230	276		Maldives	223, 740
Ardeola bacchus	Chinese Pond-Heron	M	7	332					Hopei, China	1087
		F	2	280						
Bubulcus ibis	Cattle Egret	M	27	372		296	460		Florida, USA	1207
		F	59	360		270	512			
Butorides striata	Striated Heron	F	1	226					Solomon Is.	658
Butorides striata javanica	Striated Heron	U				153	208		Malaysia	1287
Butorides striata carcinophila	Striated Heron	B	11	184		145	220		Philippines	437, 983
Butorides virescens	Green Heron	U	34	212	5.9				Florida, USA	489
Butorides virescens	Green Heron	B	70	187	17.3	138	220		Caribbean Is.	19
Agamia agami	Agami Heron	B	8	567					Panama; Venezuela; Suriname	489, 498, 1308
Nycticorax nycticorax	Black-crowned Night-Heron	B	10	810		615	1014		Northeast USA; Suriname	498, 894
Nycticorax caledonicus	Rufous Night-Heron	M	4	856		750	1014			658, 786, 1017
Nyctanassa violacea	Yellow-crowned Night-Heron	M	8	716					Florida, USA	488
		F	7	649						
Gorsachius goisagi	Japanese Night-Heron	M	1	527					Philippines	954
Gorsachius melanolophus	Malayan Night-Heron	B	5			377	451	F		1287
Cochlearius cochlearius	Boat-billed Heron	M	11	693		577	770		Mexico; Central America; Suriname	295, 498, 1151
		F	7	597		503	726			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Tigrisoma mexicanum	Bare-faced Tiger-Heron	M	3	1274					Panama	489
		F	4	1046						
Tigrisoma fasciatum	Fasciated Tiger-Heron	U		850					Costa Rica	1170
Tigrisoma lineatum	Rufescent Tiger-Heron	B	8	813		630	980		Suriname	498
Zebrilus undulatus	Zigzag Heron	F	1	123					Peru	988
Ixobrychus involucris	Stripe-backed Bittern	U	12	80.1		69	104		Brazil; Peru; Argentina Suriname	63, 211, 370, 498
Ixobrychus exilis	Least Bittern	U	20	86.3	4.3					489
Ixobrychus sinensis	Yellow Bittern	B	28	94.3		63	120		Hopei, China	1087
Ixobrychus minutus dubius	Little Bittern	U	15	83.9	16.9	59	120		Australia	745
Ixobrychus minutus	Little Bittern	B	32	118		67	144	B	South Africa	1036
Ixobrychus eurhythmus	Schrenck's Bittern	M	12	139		120	158		Hopei, China	1087
		F	5			141	150			
Ixobrychus cinnamomeus	Cinnamon Bittern	M	4	128		106	148		Philippines; China	437, 954, 1087
		F	1	125						
Ixobrychus sturmii	Dwarf Bittern	B	2	140		130	150		Angola	266
Ixobrychus flavicollis	Black Bittern	B	8	321		275	358			658, 812, 954
Botaurus pinnatus	Pinnated Bittern	M	4	1047		875	1157		Mexico; Suriname	498, 1145
		F	2	630		554	705			
Botaurus lentiginosus	American Bittern	U	16	706	183	520	1072	B	Ontario, Canada	1147a
Botaurus stellaris	Great Bittern	M	11	1209		950	1730		Hopei, China	1087
		F	2	1440		1230	1650			
Botaurus poiciloptilus	Australasian Bittern	M	15	1353	308	875	2085		Australia; New Zealand	745
		F	10	868	221	571	1135			
Family Scopidae										
Scopus umbretta	Hamerkop	U	10	472		420	534		South Africa	1036

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Family Ciconiidae										
Mycteria americana	Wood Stork	M	9	2702						489, 498
		F	2	2415		2050	2780			
Mycteria ibis	Yellow-billed Stork	M	1	2384						473, 1085a
		F	6	1949		1190	2330			
Mycteria leucocephala	Painted Stork	B	10	3180		3030	3370			473
Anastomus lamelligerus	African Openbill	U	11	1081		628	1400			133, 1156
Ciconia nigra	Black Stork	U	13	2926						473
Ciconia abdimii	Abdim's Stork	B	10	1398	117	1160	1570		captive	800
Ciconia episcopus	Wooly-necked Stork	B	8	2061		1590	2790			473
Ciconia maguari	Maguari Stork	M	9	4200						473
		F	5	3800						
Ciconia ciconia	White Stork	M	41	3571		2610	4400	PB	Germany	223
		F	27	3325		2275	3900			
Ciconia boyciana	Oriental Stork	M	7	5014		4200	5900		captive	644, 828a
		F	8	4687		3400	5200			
Ephippiorhynchus asiaticus	Black-necked Stork	U		4100						133
Ephippiorhynchus senegalensis	Saddle-billed Stork	M	5	6378		5085	7524			473, 1156
		F	3	5947		5000	6840			
Jabiru mycteria	Jabiru	M	8	6892		5902	8100			473, 1085a
		F	4	5217		4300	6356			
Leptoptilos javanicus	Lesser Adjutant	B	7	4651		4000	5230			473, 1085a, 1287
Leptoptilos crumeniferus	Marabou Stork	M	37			5600	8900			473
		F	22			4000	6800			
Family Balaenicipididae										
Balaeniceps rex	Shoebill	M	1	6700						473
		F	4	5268		4360	5900			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Family Threskiornithidae										
Threskiornis aethiopicus	Sacred Ibis	M	40	1618	140	1268	1963		Pretoria, South Africa	713
		F	54	1378	126	1131	1718			
Threskiornis melanocephalus	Black-headed Ibis									
Threskiornis molucca	Australian Ibis	M	72	2006	138	1700	2350		Australia	745
		F	84	1606	146	1300	2120			
Threskiornis spinicollis	Straw-necked Ibis	M	3	1465		1400	1570		Australia	745
		F	4	1238		1150	1320			
Pseudibis davisoni	White-shouldered Ibis	M	1	1588						1287
Pseudibis gigantea	Giant Ibis	M	1	3515						1287
Geronticus eremita	Waldrapp	B	9	1202		1000	1350		captive	800, 851
Nipponia nippon	Crested Ibis	U		1900					Japan	339
Bostrychia hagedash	Hadada Ibis	B	5	1238		993	1512			1156, 1212
Theristicus caerulescens	Plumbeous Ibis	M	1	1500					Bolivia	1145
Theristicus caudatus	Buff-necked Ibis	B	5	1726		1550	1950		Brazil; Argentina; Chile	63, 546, 861b, 1082
Theristicus branickii	Andean Ibis	M	1	1492					Peru	1042
Mesembrinibis cayennensis	Green Ibis	B	7	756		670	865		Peru; Suriname	193
Phimosus infuscatus	Bare-faced Ibis	B	4	559		512	600		Brazil; Argentina	63, 804
Eudocimus albus	White Ibis	M	12	1036	105	873	1261	B	Florida, USA	663
		F	16	764	68.4	593	864			
Eudocimus ruber	Scarlet Ibis	M	8	741		710	770		Trinidad	359
		F	13	588		505	640			
Plegadis falcinellus	Glossy Ibis	M				557	768	S	Former USSR	223
		F				530	680			
Plegadis chihi	White-faced Ibis	M	32	697	58.9	563	807	B	Utah, USA	314
		F	35	546	45.3	433	677			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Plegadis ridgwayi	Puna Ibis	M	3	657		608	734		Bolivia; Peru	1042, 1145
		F	3	511		478	554			
Platalea leucorodia	Eurasian Spoonbill	B	8	1868		1656	2080			473, 926
Platalea regia	Royal Spoonbill	M	6	1886		1650	2070		Australia	745
		F	4	1575		1400	1800			
Platalea alba	African Spoonbill	B	5	1521		1020	1900			508, 800
Platalea minor	Black-faced Spoonbill	U		1228					Japan	339
Platalea flavipes	Yellow-billed Spoonbill	M	4	1895		1750	2000			743
		F	2	1600		1500	1700			
Platalea ajaja	Roseate Spoonbill	B	30	1490	170	1225	1800		Florida, USA	76
Family Phoenicopteridae										
Phoenicopterus ruber roseus	Greater Flamingo	M	13	3540		3100	4100	B	France	50
		F	12	2530		2100	3300			
Phoenicopterus ruber	Greater Flamingo	M	4	3493		3280	3800		Namibia; South Africa	1036
		F	4	2700		2180	3080			
Phoenicopterus chilensis	Chilean Flamingo	B	5	2277		1790	3200			362, 546, 766, 1042
Phoenicopterus minor	Lesser Flamingo	F	1	1500						1036
Phoenicopterus andinus	Andean Flamingo	M	1	4900					Argentina	766
Phoenicopterus jamesi	Puna Flamingo	U		2000						274
Family Anhimidae										
Anhima cornuta	Horned Screamer	U		3150					Brazil	1105
Chauna chavaria	Northern Screamer	M	1	2117					captive	1143
		F	1	3090						

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Chauna torquata	Southern Screamer	F	1	4400					Brazil, approximate	63
Family Anatidae										
Anseranas semipalmata	Magpie Goose	M	402	2766	283	1838	3195			745
		F	359	2071	237	1405	2770			
Dendrocygna guttata	Spotted Whistling-Duck	F		800						1012
Dendrocygna eytoni	Plumed Whistling-Duck	M	63	788		600	930			745
		F	65	792		580	1400			
Dendrocygna bicolor	Fulvous Whistling-Duck	M	138	770	70.1	545	958		SW Louisiana, USA	529
		F	148	743	77.2	595	964			
Dendrocygna arcuata	Wandering Whistling-Duck	M	287	866		741	948			745
		F	293	732		453	976			
Dendrocygna javanica	Lesser Whistling-Duck	U				450	600			7
Dendrocygna viduata	White-faced Whistling-Duck	U	10	690	35.9	635	760		South Africa	508
Dendrocygna arborea	West Indian Whistling-Duck	F		1150						1012
Dendrocygna autumnalis	Black-bellied Whistling-Duck	M	61	796	68.6	660	950		Texas, USA	571
		F	59	760	49.9	655	880			
Dendrocygna autumnalis	Black-bellied Whistling-Duck	M	78	741		530	890		Guyana	571
		F	82	726		530	890			
Thalassornis leuconotos	White-backed Duck	B	10			575	840		Angola	266
Cygnus olor	Mute Swan	M	59	11800	890	9200	14300	W	Britain	967
		F	35	9670	640	7600	10600			
Cygnus atratus	Black Swan	M	270	6200		4600	8700			1075
		F	243	5100		3700	7200			
Cygnus melanocoryphus	Black-necked Swan	M	9	5550		4500	6754			546, 1075
		F	7	4000		3500	4400			
Cygnus buccinator	Trumpeter Swan	M	152	11900		9100	14500	W		802
		F	120	10300		7000	12500			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Cygnus cygnus	Whooper Swan	B	12	9350		7400	14000		Northern Europe	223
Cygnus columbianus	Tundra Swan	M	1447	7200	800			W	Eastern USA	694
		F	1290	6300	700					
Cygnus columbianus bewickii	Tundra (Bewick's) Swan	M	96	6400		4900	7800	W	Britain	515
		F	95	5700		3400	7200			
Coscoroba coscoroba	Coscoroba Swan	M	3	4854		3800	5400			546, 1075
		F	3	3800		3200	4500			
Anser cygnoides	Swan Goose	M	1	3575					Mongolia, China	925, 926
		F	1	3450						
Anser fabalis rossicus	Bean Goose	M	126	2668	233	1970	3390	W	Netherlands	223
		F	117	2374	203	2000	2800			
Anser fabalis fabalis	Bean Goose	M	68	3198	302	2690	4060	W	Netherlands	223
		F	58	2843	274	2220	3490			
Anser brachyrhynchus	Pink-footed Goose	M	750	2770	310	1900	3350	F	Britain	223
		F	796	2520	270	1810	3150			
Anser albifrons frontalis	Greater White-fronted Goose	M	384	2075	215			F	California, USA	334
		F	407	2348	222					
Anser albifrons gambeli	Greater White-fronted Goose	M	54	2700	220			W	California, USA	334
		F	53	3000	220					
Anser erythropus	Lesser White-fronted Goose	M	2	1900		1800	2000		Norway; Denmark; Wales; UK	223
		F	2	1622		1400	1843			
Anser anser	Greylag Goose	M	94	3509	321	2600	4560	W	Scotland, UK	223
		F	75	3108	274	2160	3800			
Anser indicus	Bar-headed Goose	M	1	2460					Mongolia	926
		F	2	1990		1860	2120			
Chen caerulescens caerulescens	Snow Goose	M	467	2744	235			F	James Bay, Canada	214
		F	422	2517	217					
Chen caerulescens atlanticus	Snow Goose	M	92	2847	231			PB	Bylot Is., Canada	822
		F	100	2456	149					
Chen rossii	Ross' Goose	M	25	1632	153	1350	1955	B	Northwest Terr., Canada	1035
		F	20	1640	245	1155	2040			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Chen canagica	Emperor Goose	M	13	2370	178			PB	Alaska, USA	921a
		F	101	1926	130					
Branta bernicla nigricans	Brant	M	430	1370	350	1080	1790	PB	Northwest Terr., Canada	109
		F	361	1230	400	880	1590			
Branta bernicla hrota	Brant	M	27	1293	99			B	Southhampton Is., Canada	959
		F	41	1224	179					
Branta leucopsis	Barnacle Goose	M	366	1788	163	1350	2230	PB	Spitzbergen	889a
		F	253	1586	122	1210	1950			
Branta hutchinsii hutchinsii	Cackling Goose	M	129	2180	3					823
		F	125	1920	20					
Branta hutchinsii taverneri	Cackling Goose	M	60	2606	267					823
		F	61	2421	238					
Branta hutchinsii leucopareia	Cackling Goose	M	36	1946	137					823
		F	46	1704	157					
Branta hutchinsii minima	Cackling Goose	M	52	1480	29.8	1240	1700		California, USA	956
		F	58	1264	29.4	940	1490			
Branta canadensis canadensis	Canada Goose	M	232	3814			6265			844
		F	159	3314			5902			
Branta canadensis occidentalis	Canada Goose	M	130	3232	261					823
		F	131	2640	202					
Branta canadensis parvipes	Canada Goose	M	70	3266	320					823
		F	59	2854	335					
Branta canadensis moffitti	Canada Goose	M	26	4460	306			W	Minnesota, USA	780
		F	31	3770	334					
Branta canadensis interior	Canada Goose	M	128	4181		3799	4727	W	Illinois, USA	955
		F	121	3514		3062	3912			
Branta canadensis maxima	Canada Goose	M	6	4858	280					823
		F	10	4825	425					
Branta sandvicensis	Hawaiian Goose (Nene)	M		2165		1695	3050		captive	39
		F		1930		1525	2560			
Branta leucopsis	Barnacle Goose	M	366	1788	163	1350	2230	PB	Spitzbergen	889a
		F	253	1586	122	1210	1950			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Branta ruficollis	Red-breasted Goose	M	5	1375		1200	1625	W		223
		F	2	1094		1058	1130			
Cereopsis novaehollandiae	Cape Barren Goose	M	14			3700	5100	F		745, 1012
		F		3560						
Stictonetta naevosa	Freckled Duck	M	63	969		747	1130			745
		F	31	842		691	985			
Cyanochen cyanoptera	Blue-winged Goose	F		1520						1012
Chloephaga melanoptera	Andean Goose	U	4	2037		2000	2100			362
Chloephaga picta	Upland Goose	M	8	3105		2752	3533		Argentina	210, 546, 978a
		F	5	2672		2404	2823			
Chloephaga hybrida	Kelp Goose	M	2	2575		2540	2611		Argentina	546, 978a
		F	2	2022		2000	2043			
Chloephaga poliocephala	Ashy-headed Goose	M	3	2289		2270	2327		Tierra del Fuego	546, 978a
		F	1	1760						
Chloephaga rubidiceps	Ruddy-headed Goose	U	2	2086		2043	2128		Tierra del Fuego	546
Neochen jubata	Orinoco Goose	F		1250						1012
Alopochen aegyptiana	Egyptian Goose	M	53	1873		1520	2100			223, 1036
		F				1500	1800			
Tadorna ferruginea	Ruddy Shelduck	M	10	1368		1156	1640		China	184a
		F	8	1115		919	1315			
Tadorna cana	South African Shelduck	B	8	1182		1012	1295		South Africa	508
Tadorna tadornoides	Australian Shelduck	M	67	1559		990	1980			745
		F	185	1291		878	1850			
Tadorna variegata	Paradise Shelduck	M	23	1712	145	1422	2000			745
		F	10	1387	178	1059	1799			
Tadorna tadorna	Common Shelduck	M	11	1261	110	1100	1450	S	Netherlands; Denmark; Kazakhstan	223
		F	5	1043		926	1250			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Tadorna radjah	Radjah Shelduck	M	46	934		750	1101			745
		F	49	839		600	1130			
Tachyeres pteneres	Flightless Steamerduck	M	3	5344		4625	6186		Tierra del Fuego	546
		F	1	4200						
Tachyeres leucocephalus	White-headed Steamerduck	F		3013						1012
Tachyeres brachypterus	Falkland Steamerduck	F		3450						1012
Tachyeres patachonicus	Flying Steamerduck	M	7	3062		2892	3178		Tierra del Fuego	546
		F	8	2600		2438	2835			
Plectropterus gambensis	Spur-winged Goose	U	11	3869		2400	5400		South Africa	1036
Cairina moschata	Muscovy Duck	M	4	2858						489
		F	4	2042						
Cairina scutulata	White-winged Duck	M				2945	3855			7
		F				2150	3050			
Sarkidiornis melanotos	Comb Duck	M	1	2610						7
		F				1925	2325			
Pteronetta hartlaubii	Hartlaub's Duck	F		790						1012
Nettapus pulchellus	Green Pygmy-goose	M	47	310		300	430			745
		F	26	304		245	340			
Nettapus coromandelianus	Cotton Pygmy-goose	M	52	403		311	495			745
		F	37	380		255	439			
Nettapus auritus	African Pygmy-goose	U	7	266		220	325			133, 266
Callonetta leucophrys	Ringed Teal	M	2	410		370	450			63, 212a
		F	3	321		285	340			
Aix sponsa	Wood Duck	M	248	681			907	F		894
		F	163	635			907			
Aix galericulata	Mandarin Duck	M		628		571	693			273
		F		512		428	608			
Chenonetta jubata	Maned Duck	M	45	815		700	955			745
		F	26	800		662	984			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Amazonetta brasiliensis	Brazilian Teal	U		500					Brazil	1105
Hymenolaimus malacorhynchos	Blue Duck	M	11	897	48.6	820	970		New Zealand	745
		F	14	768	59.4	680	870			
Merganetta armata	Torrent Duck	M	1	482						546, 1012
		F		330						
Salvadorina waigiuensis	Salvadori's Teal	M	1	324					New Guinea	770
Anas sparsa	African Black Duck	M	18	1027		950	1156		South Africa	1036
		F	10	938		820	1055			
Anas penelope	Eurasian Wigeon	M	42	819		610	1073		Denmark	894
		F	24	724		552	962			
Anas americana	American Wigeon	M	65	792	79.1	635	1036	Y	Western Canada	1326
		F	68	719	80.6	512	872			
Anas sibilatrix	Chiloe Wigeon	M	2	1072		1036	1107		Tierra del Fuego	546
		F	3	795		624	965			
Anas falcata	Falcated Duck	M	4	713		590	770		Hopei, China	1087
		F	5	585		422	700			
Anas strepera	Gadwall	M	68	968	9.8	790	1250	W	Alabama, USA	691
		F	27	866	14.4	720	980			
Anas formosa	Baikal Teal	M	12	437		360	520		Hopei, China	1087
		F	8	431		402	505			
Anas crecca carolinensis	Green-winged Teal	M	194	364			454	F		894
		F	81	318			409			
Anas crecca crecca	Green-winged Teal	M	999	320				W	England	622a
		F	498	291						
Anas crecca nimia	Green-winged Teal	M	15	392		310	440	B	Amchitka, Aleutian Is.	622a
		F	4	378		338	418			
Anas flavirostris	Speckled Teal	U	9	434		395	478		Argentina	210
Anas capensis	Cape Teal	U	63	402		342	590		South Africa	223
Anas bernieri	Bernier's Teal	M	7	382		320	405		Madagascar	1358
		F	2	375		365	385			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Anas gibberifrons	Sunda Teal	M	218	508	38					701
		F	153	469	36					
Anas albogularis	Andaman Teal	M		400						622a
		F		340						
Anas gracilis	Gray Teal	M	10	525	17.4	500	547		New Zealand	1358
		F	7	420		376	499			
Anas gracilis	Gray Teal	M	210	507		395	670		Australia	745
		F	138	474		350	602			
Anas castanea	Chestnut Teal	M	89	660	65					701
		F	58	590	138					
Anas aucklandica	Auckland Is. Teal	M	10	521	49				Auckland Is.	701
		F	6	410						
Anas nesiotis	Campbell Is. Teal	M	1	426					Campbell Is.	701
Anas chlorotis	Brown Teal	B	42	582					New Zealand	701
Anas platyrhynchos	Mallard	U	5847	1082	129	720	1580	Y	Britain, UK	889
Anas platyrhynchos	Mallard	M	1308	1246	108			W	Mississippi, USA	305
		F	453	1095	106					
Anas platyrhynchos diazi	Mallard (Mexican Duck)	M				960	1060			894
		F				815	990			
Anas laysanensis	Laysan Duck	M	64	456	35.3	348	548		Laysan Is.	819
		F	48	463	37	365	525			
Anas wyvilliana	Hawaiian Duck	M	28	644					Hawaiian Is.	1286
		F	19	585						
Anas fulvigula	Mottled Duck	M	86	1043	86.2	876	1241		Florida, USA	807
		F	71	934	89.3	699	1151			
Anas rubripes	American Black Duck	M	376	1400		900	1800	F	Massachusetts, USA	894
		F	176	1100		900	1500			
Anas undulata	Yellow-billed Duck	U	42	1008	121	660	1220		South Africa	508
Anas melleri	Meller's Duck	M	19	1010	99.8	883	1240		captive	1357
		F	21	911	66.6	832	1140			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Anas poecilorhyncha	Spot-billed Duck	M	13	1156		1000	1340		Hopei, China	1087
		F	2	865		750	980			
Anas superciliosa	Pacific Black Duck	M	112	1089	105	765	1276		New Zealand	745
		F	120	981	108	624	1276			
Anas superciliosa	Pacific Black Duck	M	100	1133	110	800	1400		Australia	745
		F	100	1015	180	600	1400			
Anas superciliosa pelewensis	Pacific Black Duck	M	1	642					Solomon Is.	658
		F	2	600		560	640			
Anas luzonica	Philippines Duck	M	7	891		852	977		Philippines	954
		F	9	777		752	818			
Anas specularis	Spectacled Duck	M	1	1461					Tierra del Fuego	546
		F	1	1532						
Anas specularioides	Crested Duck	M	1	1078					Tierra del Fuego	546
		F	1	965						
Anas acuta	Northern Pintail	M	188	1006	96	605	1245	W	California, USA	28
		F	151	887	86	615	1100			
Anas eatoni	Eaton's Pintail	U	38	571	68	455	695		Kerguelen Is.	1284
Anas georgica georgica	Yellow-billed Pintail	M	3	632		610	660	B	South Georgia	1285
		F	2	535		460	610			
Anas georgica spinicauda	Yellow-billed Pintail	M	4	718		624	786		Tierra del Fuego	546, 1042
Anas bahamensis	White-cheeked Pintail	M	8	535		475	590		Suriname	498
		F	6	502		402	633			
Anas bahamensis galapagensis	White-cheeked Pintail	B	2	438		425	450		Galapagos	1286
Anas erythrorhyncha	Red-billed Duck	M	104	587		509	667		Southern Africa	1036
		F	52	532		464	607			
Anas puna	Puna Duck	M	2	554		546	562		Peru	1042
Anas versicolor	Silver Duck	M	1	624					Tierra del Fuego	546
		F	1	610						
Anas hottentota	Hottentot Duck	B	10			235	325		Angola	266

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Anas querquedula	Garganey	M	100	342					France	223
		F	100	310						
Anas discors	Blue-winged Teal	M	110	380	35.7			W	Mexico	1013
		F	82	340	28.1					
Anas cyanoptera	Cinnamon Teal	M	44	383		315	450			401
		F	69	372		265	470			
Anas platalea	Red Shoveler	M	2	473		472	475		Tierra del Fuego	546
		F	1	458						
Anas smithii	Cape Shoveler	M	5	585						1012, 1036
		F		598						
Anas rhynchotis	Australian Shoveler	B	146	667		545	852		Australia	745
Anas rhynchotis variegata	Australian Shoveler	M	43	637	46.9	540	750		New Zealand	745
		F	32	614	46.2	530	708			
Anas clypeata	Northern Shoveler	M	90	636			908	F		894
		F	71	590			726			
Malacorhynchus membranaceus	Pink-eared Duck	M	77	404		290	480		Australia	745
		F	81	344		272	423			
Marmaronetta angustirostris	Marbled Duck	U		477		420	500	W	Former USSR	273
Rhondonessa caryophyllacea	Pink-headed Duck	U				793	1360			7
Netta rufina	Red-crested Pochard	B	29	1118		990	1300	S	Kazakhstan	223
Netta peposaca	Rosy-billed Pochard	U		1000					Brazil	1105
Netta erythrophthalma	Rosy-billed Pochard	B				700	870		Angola	266
Aythya ferina	Common Pochard	B	321	823		467	1240	W	France	223
Aythya valisineria	Canvasback	M	191	1252	124	850	1600	W	New York, USA	821
		F	54	1154	103	900	1530			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Aythya americana	Redhead	M	119	1118	65.4	925	1320	W	Texas, USA	1336
		F	92	1035	76.7	890	1245			
Aythya collaris	Ring-necked Duck	M	285	730			1090			894
		F	151	680			1180			
Aythya nyroca	Ferruginous Pochard	B	13	574		470	740	S	France; former USSR	223
Aythya innotata	Madagascar Pochard	M	1	685					captive	1143
Aythya baeri	Baer's Pochard	M	4	724		625	800		Hopei, China	1087
		F	3	641		594	730			
Aythya australis	White-eyed Duck	M	105	902		525	1100			745
		F	88	838		530	1060			
Aythya fuligula	Tufted Duck	M	343	723		400	950	W	France	223
		F	700	680		450	920			
Aythya novaeseelandiae	New Zealand Scaup	M	13	677	55.6	550	746		New Zealand	745
		F	3	687		600	742			
Aythya marila	Greater Scaup	M	345	1054	105	657	1316	W	Long Is. Sound, USA	631
		F	104	959	108	688	1210			
Aythya affinis	Lesser Scaup	M	112	850		620	1050			894
		F	118	790		540	960			
Somateria mollissima	Common Eider	M	22	2218		1384	2800	B	North Atlantic	62
		F	32	1915		1192	2895			
Somateria spectabilis	King Eider	M	41	1668				F	Alaska, USA	894
		F	141	1567						
Somateria fischeri	Spectacled Eider	M	53	1494	102	1275	1750	Sp		921
		F	11	1623	152	1300	1850			
Polysticta stelleri	Steller's Eider	M	48	773		628	900	B	Russia	894
		F	42	842		651	1000			
Camptorhynchus labradorius	Labrador Duck	M	1	865					extinct	186
		F	1	482						
Histrionicus histrionicus	Harlequin Duck	M	82	610		520	680		Alberta, Canada	1000
		F	23	517		480	571			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Clangula hyemalis	Long-tailed Duck	M	661	932				W	Michigan, USA	894
		F	636	814						
Melanitta nigra	Black Scoter	M	34	1117	102				Canada	93
		F	21	987	110					
Melanitta perspicillata	Surf Scoter	M	221	1148	104			W	California, USA	1049
		F	21	1047	101					
Melanitta fusca fusca	White-winged Scoter	B	12	1757		1519	1980	W	Denmark	223
Melanitta fusca deglandi	White-winged Scoter	M	29	1917		1388	2128	W	Alaska, USA	140
		F	10	1732		1566	1946			
Bucephala clangula	Common Goldeneye	M	47	1120	13	910	1329		Utah, USA	320
		F	48	711	14.1	600	760			
Bucephala clangula	Common Goldeneye	M	9	1136		966	1245	W	Denmark	320
		F	9	787		707	860			
Bucephala Is.ica	Barrow's Goldeneye	M	18	1130	79.3	980	1315	W	Washington, USA	321
		F	10	751	76.8	577	857			
Bucephala albeola	Bufflehead	M	29	473	32.8	424	551		Oregon	506
		F	16	334	23.2	297	374			
Mergellus albellus	Smew	M		652		540	825	F	Former USSR	223
		F		568		515	630			
Lophodytes cucullatus	Hooded Merganser	M	12	554		453	652			310
		F	19	680		595	879			
Mergus octosetaceus	Brazilian Merganser	U		983					estimated	700
Mergus serrator	Red-breasted Merganser	M	18	1135			1317			894
		F	17	908			1271			
Mergus merganser	Common Merganser	M	13	1709		1528	2054	F		894
		F	11	1232		1050	1362			
Mergus squamatus	Scaly-sided Merganser	U		1234					estimated	700
Mergus australis	Auckland Is. Merganser	U		898					estimated	700

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Heteronetta atricapilla	Black-headed Duck	M	11	513		434	580			592
		F	13	565		470	630			
Nomonyx dominicus	Masked Duck	M	19	385						592
		F	17	346						
Oxyura jamaicensis	Ruddy Duck	M	157	629	37.6			PB	Manitoba, Canada	143
		F	9	588	57					
Oxyura ferruginea	Andean Duck	M	5	784		688	850		Argentina	210, 546
Oxyura leucocephala	White-headed Duck	M	3	737		553	865	W	Pakistan	223
		F	3	593		539	631			
Oxyura maccoa	Maccoa Duck	M	1	820						592
		F	3	554		516	580			
Oxyura vittata	Lake Duck	M	8	663		600	850		Argentina	592, 776
		F	1	623						
Oxyura australis	Blue-billed Duck	F	47	798	16.8			Sp		745
Biziura lobata	Musk Duck	M	243	2398		1811	3120		Australia	745
		F	292	1551		993	1844			
Family Cathartidae										
Coragyps atratus atratus	Black Vulture	U	50	2159	130				Texas, USA	148
Coragyps atratus brasiliensis	Black Vulture	U	119	1640	100				Venezuela	148
Cathartes aura septentrionalis	Turkey Vulture	U	124	2006				M	Southern Florida, USA	635
Cathartes aura meridionalis	Turkey Vulture	U	130	1430	228			W	Venezuela	634
Cathartes aura ruficollis	Turkey Vulture	U	65	1220	80.6				Venezuela	634
Cathartes burrovianus	Lesser Yellow-headed Vulture	B	11	935		820	1272		Mexico; Suriname; Brazil	75, 498, 1202
Cathartes melambrotus	Greater Yellow-headed Vulture	B	8	1373		1130	1500		Ecuador, Suriname	498, 747

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Gymnogyps californianus	California Condor	M	13	8800		7900	9900		captive	1134
		F	15	8100		7000	8900			
Vultur gryphus	Andean Condor	M		12500		10900	13600			1269
		F		10100		9600	11400			
Sarcoramphus papa	King Vulture	B		3400		3100	3700			1269
Family Pandionidae										
Pandion haliaetus	Osprey	M	10	1403		1220	1600			138
		F	14	1568		1250	1900			
Family Accipitridae										
Aviceda cuculoides	African Cuckoo-Hawk	B	8	277		247	302		Ivory Coast	1213
Aviceda jerdoni	Jerdon's Baza	M	1	363					Philippines	954
Aviceda subcristata	Pacific Baza	M	10	307	34.5	259	357		Australia	745
		F	9	347		290	448			
Aviceda subcristata gurneyi	Pacific Baza	M	4	314		285	356		Solomon Is.	658
		F	2	324		319	330			
Aviceda leuphotes	Black Baza	B				168	224			358
Leptodon cayanensis	Gray-headed Kite	B	15	474		414	643			359, 489, 498, 613, 1027, 1219
Leptodon forbesi	White-collared Kite	B	3	577		550	600		Northeast Brazil	1203
Chondrohierax uncinatus	Hook-billed Kite	M	6	264					Panama; Venezuela; Mexico	296, 489, 640
		F	4	310						
Henicopernis longicauda	Long-tailed Honey-Buzzard	M	1	447						138
		F	1	730						
Pernis apivorus	European Honey-Buzzard	M	10	684		510	800			138
		F	8	832		625	1050			
Pernis celebensis	Barred Honey-Buzzard	B	2	722		692	752		Philippines	954

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Pernis ptilorhynchus	Oriental Honey-Buzzard	M	4	1069		986	1150		Hopei, China; Thailand	1087, 1287
		F	5	1304		950	1480			
Pernis ptilorhynchus	Oriental Honey-Buzzard	U	9	1066		750	1490		Kazakhstan	273
Lophoictinia isura	Square-tailed Kite	M	1	501					Australia	524, 746
		F	3	670		660	680			
Hamirostra melanosternon	Black-breasted Kite	M	2	1196		1150	1242		Australia	746
Elanoides forficatus	Swallow-tailed Kite	B	14	442		372	510			894
Elanoides forficatus	Swallow-tailed Kite	B	11	392		354	435		Suriname	498
Macheiramphus alcinus	Bat Hawk	U	1	650						139
Gampsonyx swainsonii	Pearl Kite	U	4	92.9		80.5	104			359, 498, 1215
Elanus caeruleus	Black-shouldered Kite	M		241		222	252		Ivory Coast	1213
		F		280		264	290			
Elanus axillaris	Australian Kite	M	11	249	39	181	295		Australia	746
		F	5	293		270	340			
Elanus leucurus	White-tailed Kite	B	33	346	23.3				California, USA	312
Elanus scriptus	Letter-winged Kite	U	45	316	67.4	160	420		Australia	746
Chelictinia riocourii	Scissor-tailed Kite	U	1	110					labeled as “fat”	358
Rostrhamus sociabilis plumbeus	Snail Kite	M	28	394	22.8	360	440		Florida, USA	1194
		F	29	446	47.8	350	570			
Rostrhamus sociabilis sociabilis	Snail Kite	M	7	308		225	383			1194
		F	6	335		268	416			
Rostrhamus hamatus	Slender-billed Kite	M	10	420		377	448		Suriname	498
		F	13	431		367	485			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Harpagus bidentatus	Double-toothed Kite	M	6	181		165	210		Costa Rica; Panama; Peru; Belize	370, 379, 489, 1027
		F	2	256		206	305			
Harpagus diodon	Rufous-thighed Kite	F	1	200					Bolivia	1143
Ictinia mississippiensis	Mississippi Kite	M	11	245		216	269	B	Oklahoma, USA	894
		F	5	311		278	339			
Ictinia plumbea	Plumbeous Kite	M	16	243		190	297		Suriname	498
		F	7	257		232	294			
Milvus milvus	Red Kite	M	10	947		802	1052	Sp		223
		F	4	1213		1140	1298			
Milvus migrans	Black Kite	B	96	567	83.8	360	775		Northern Terr., Australia	746
Milvus migrans lineatus	Black Kite	M	4	870		800	920		China	925, 1087
		F	6	802		680	920			
Haliastur sphenurus	Whistling Kite	U	452	753	94.9	480	1050		Northern Terr., Australia	746
Haliastur indus	Brahminy Kite	B	17	529		434	673			292, 658, 746, 954
Haliaeetus leucogaster	White-bellied Sea-Eagle	M	10	2400	220	2120	2900		Australia; Papua New Guinea	746
		F	12	3330	290	3000	3900			
Haliaeetus sanfordi	Solomon Sea-Eagle	M	1	1980					male is subadult	138, 658
		F	3			2300	2500			
Haliaeetus vocifer	African Fish-Eagle	M	3			1928	2497			223
		F	2	3400		3170	3630			
Haliaeetus vociferoides	Madagascar Fish-Eagle	F		3000					Madagascar	1279
Haliaeetus leucoryphus	Pallas' Fish-Eagle	M	10	2597		2040	3278		Mongolia	223, 926
		F	9	3207		2100	3700			
Haliaeetus albicilla	White-tailed Eagle	M	12	4014	755	3075	5430			223
		F	18	5572	980	4080	6920			
Haliaeetus leucocephalus	Bald Eagle	M	35	4130		3637	4819		Alaska, USA	894
		F	37	5350		4631	6400			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Haliaeetus pelagicus	Steller's Sea-Eagle	B	3	7757		6800	8970			273
Ichthyophaga humilis	Lesser Fish-Eagle	U	2	782		780	785			358
Ichthyophaga ichthyaetus	Gray-headed Fish-Eagle	M	1	1590						138
		F				2270	2700			
Gypohierax angolensis	Palm-nut Vulture	U	6	1600		1361	1712			133
Necrosyrtes monachus	Hooded Vulture	U	7	2043		1900	2250		Southern Africa	1036
Gypaetus barbatus	Lammergeier	U	10	5680		5000	6750		Europe	273
Gypaetus barbatus	Lammergeier	U	5	5710		5200	6250		South Africa	1036
Neophron percnopterus	Egyptian Vulture	B	7	2082		1829	2400			223
Gyps africanus	White-backed Vulture	U	44	5433		4500	7200		Southern Africa	1036
Gyps bengalensis	White-rumped Vulture	B	29	4385		3500	5560			7
Gyps indicus	Long-billed Griffon	B	5	5515		5540	6250			7
Gyps rueppellii	Rueppell's Griffon	U		7400						538
Gyps himalayensis	Himalayan Griffon	U				8000	12000			138
Gyps fulvus	Eurasian Griffon	B	15	7436		6200	8500		SE Europe	223
Gyps coprotheres	Cape Griffon	U	3	8177		7587	8575		South Africa	647
Aegypius monachus	Cinereous Griffon	M	20			7000	11500		Romania	273
		F	21			7500	12500			
Torgus tracheliotus	Lappet-faced Vulture	U	21	6969		5400	8500		Southern Africa	1036
Trigonoceps occipitalis	White-headed Vulture	U	5	3016		2120	4600		Zimbabwe	1036

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Sarcogyps calvus	Red-headed Vulture	B				3700	5400			358
Circaetus gallicus	Short-toed Eagle	M	10	1664	293	1180	2000			223
		F	12	1735	350	1304	2324			
Circaetus pectoralis	Black-breasted Snake-Eagle	B		1500		1200	2300			358
Circaetus cinereus	Brown Snake-Eagle	U	26	2048		1540	2465			139
Circaetus fasciolatus	Fasciated Snake-Eagle	M	2	934		908	960			139
		F	1	1100						
Terathopius ecaudatus	Bateleur	U	10	2200		1800	3000			358
Spilornis cheela burmanicus	Crested Serpent-Eagle	U		900						138
Spilornis cheela asturinus	Crested Serpent-Eagle	M	1	420						358
		F	1	565						
Spilornis cheela pallidus	Crested Serpent-Eagle	U				675	925			358
Spilornis holospilus	Philippine Serpent-Eagle	B	7	705		603	858		Philippines	436, 954
Circus aeruginosus	Western Marsh-Harrier	M	213	609	55.1	460	750	Y	Western France	52a
		F	121	814	77.6	640	1030			
Circus ranivorus	African Marsh-Harrier	U	21	507		382	606			133
Circus spilonotus	Eastern Marsh-Harrier	M	2	502		480	525		Northern China	925
		F	2	622		585	660			
Circus approximans	Swamp Harrier	M	54	640	50.7	520	720		New Zealand	746
		F	66	870	64.9	700	1035			
Circus maillardi maillardi	Reunion Harrier	F		573					estimated	1111
Circus maillardi macrosceles	(Madagascar) Reunion Harrier	M		600						1111
		F		850						
Circus buffoni	Long-winged Harrier	M	11	420		390	464		Suriname	358, 498
		F	5	613		579	645			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Circus assimilis	Spotted Harrier	M	6	465		412	537		Australia	746
		F	5	671		530	745			
Circus maurus	Black Harrier	U	8	509		350	760		South Africa	1036
Circus cinereus	Cinereous Harrier	M	4	337		315	359		Tierra del Fuego; Chile	546, 570
		F	4	474		427	510			
Circus cyaneus hudsonius	Northern Harrier	M	186	359	39.9	283	472	F	New Jersey, USA	166
		F	174	515	54.6	375	661			
Circus cyaneus cyaneus	Hen (Northern) Harrier	M	3	300		290	320		Northern China	925
		F	1	430						
Circus macrourus	Pallid Harrier	M	4	332		311	374			273
		F	17	445		402	550			
Circus melanoleucos	Pied Harrier	M		290						1111
		F		390						
Circus pygargus	Montagu's Harrier	M	13	261		227	305		Britain, UK	223
		F	6	370		319	445			
Polyboroides typus	African Harrier-Hawk	M		564		500	710		Ivory Coast	1213
		F		711		580	820			
Kaupifalco monogrammicus	Lizard Buzzard	M		251		220	275		Ivory Coast	1213
		F		310		282	340			
Melierax metabates	Dark Chanting-Goshawk	B	35			500	910		Angola	266
Melierax poliopterus	Eastern Chanting-Goshawk	M	7	548		514	581			358
		F	3	724		673	802			
Melierax canorus	Pale Chanting-Goshawk	B	12			550	800		Angola	266
Micronisus gabar	Gabar Goshawk	B	30			125	230		Angola	266
Accipiter trivirgatus	Crested Goshawk	M		199						400
		F		353						
Accipiter toussenelii	Red-chested Goshawk	M	2	164		148	185		DR Congo	707
		F	4	306		257	340			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Accipiter griseiceps	Sulawesi Goshawk	M	1	212						358
		F	1	299						
Accipiter tachiro	African Goshawk	M	4	202		192	218		Zimbabwe	562, 563, 566
		F	1	381						
Accipiter castanilius	Chestnut-flanked Sparrowhawk	M	5			135	150			139
		F	7			152	200			
Accipiter badius	Shikra	M		122		100	150		Ivory Coast	1213
		F		141		130	150			
Accipiter brevipes	Levant Sparrowhawk	M	362	168	20.9	108	268	M	Israel	1351
		F	263	207	35.7	110	290			
Accipiter soloensis	Chinese Sparrowhawk	M	2	150		140	159		Philippines	138, 436, 437
		F	2	181		158	204			
Accipiter francesii	France's Goshawk	M	13	117	9.3	104	140		Madagascar	957
		F	4	160		112	185			
Accipiter trinotatus	Spot-tailed Goshawk	U	2	146		135	158		Sulawesi, Indonesia	1272
Accipiter hiogaster dampieri	Variable Goshawk	M	3	183		175	197		New Britain	427
		F	2	334		304	365			
Accipiter hiogaster pulchellus	Variable Goshawk	F	1	280					Guadalcanal	399
Accipiter hiogaster leucosomus	Variable Goshawk	M	1	247						358
		F	1	439						
Accipiter novaehollandiae	Gray Goshawk	M	5	356		238	422		Australia	746
		F	11	720	103	530	894			
Accipiter novaehollandiae	Gray Goshawk	M	2	180		172	187		Solomon Is.	658
		F	1	245						
Accipiter fasciatus fasciatus	Brown Goshawk	M	15	359	27.4	320	425	F	Victoria, Australia	746
		F	30	592	44.4	535	700			
Accipiter fasciatus didimus	Brown Goshawk	M	8	227		200	268		Northwest Australia	746
		F	8	343		310	390			

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Accipiter melanochlamys	Black-mantled Goshawk	B	3	265		244	294			138, 387, 428
Accipiter albogularis	Pied Goshawk	M	3	221		181	265			138, 399
		F	1	280						
Accipiter haplochrous	New Caledonian Goshawk	M	3	155		152	162		New Caledonia	1017
		F	3	254		227	268			
Accipiter rufitorques	Fiji Goshawk	M	1	209					Fiji	1196c
Accipiter luteoschistaceus	Slaty-mantled Goshawk	M	2	214		205	222		both immatures	427
Accipiter imitator	Imitator Goshawk	M	1	208						138, 658
		F	2	238		225	250			
Accipiter poliocephalus	Gray-headed Goshawk	M	3	205		200	210			138
		F	1	225						
Accipiter superciliosus	Tiny Hawk	M	3	73.9		61.5	86.2		Colombia; Brazil; Peru; Ecuador	370, 747, 1037, 1160
		F	3	134		116	152			
Accipiter erythropus	Red-thighed Sparrowhawk	M	3	84.7		78	94			139
		F	3	146		132	170			
Accipiter minullus	Little Sparrowhawk	M	2	75.7		75.3	76.1		Zimbabwe	564
		F	1	101						
Accipiter gularis	Japanese Sparrowhawk	M	7	104		90	142			138, 241, 436
		F	15	140		111	192			
Accipiter virgatus	Besra	M	10	100		83.3	142			273, 775, 954
		F	3	143		103	192			
Accipiter virgatus confusus	Besra	M				83	99			358
		F				131	140			
Accipiter virgatus affinis	Besra	M	1	112						358
Accipiter erythrauchen	Rufous-necked Sparrowhawk	M	1	156						138
Accipiter cirrocephalus	Collared Sparrowhawk	M	16	126	14.2	101	156		Australia	746
		F	23	218	31.4	162	300			
Accipiter brachyurus	New Britain Sparrowhawk	M	1	142					New Ireland	1148

Body Masses of World Birds (continued)

Species Name	Common Name	Sex	N	Mean	S.D.	Min	Max	Season	Location	Source #
Accipiter rhodogaster	Vinous-breasted Sparrowhawk	M	1	113					juveniles	358
		F	1	264						
Accipiter madagascariensis	Madagascar Sparrowhawk	M	6	158		108	200		Madagascar	957
		F	4	206		141	285			
Accipiter ovampensis	Ovampo Sparrowhawk	U		195		119	305			139
Accipiter nisus	Eurasian Sparrowhawk	M	70	150	8.9			B	Scotland, UK	850
		F	246	325	26.3					
Accipiter rufiventris	Rufous-chested Sparrowhawk	U	2	198		185	210			139
Accipiter striatus	Sharp-shinned Hawk	M	435	103	6.4	82	125	F	Wisconsin, USA	825
		F	487	174	10.4	144	208			
Accipiter striatus venator	Sharp-shinned Hawk	M	13	94.9					Puerto Rico	271
		F	11	171						
Accipiter ventralis	Plain-breasted Hawk	F	2	233		224	242		Venezuela	1042
Accipiter erythronemius	Rufous-thighed Hawk	F	1	125				B	Bolivia	1143
Accipiter cooperii	Cooper's Hawk	M	51	349	19.6	297	380	F	Wisconsin, USA	826
		F	57	529	36.1	460	588			
Accipiter gundlachi	Gundlach's Hawk	F	1	675					Cuba	19
Accipiter bicolor	Bicolored Hawk	M	7	212		150	250			211, 489, 498, 657, 796, 910a
		F	5	390		300	454			
Accipiter chilensis	Chilean Hawk	F	4	368		275	415		Chile	570
Accipiter melanoleucus	Black Goshawk	U	19	699		476	980			139
Accipiter henstii	Henst's Goshawk	F	2	1050		960	1140		Madagascar	957
Accipiter gentilis	Northern Goshawk	M	77	912	14.9	735	1099	F	Wisconsin, USA	824
		F	103	1137	18.6	845	1364			