**Appendix1.** **Investigated Waterfowl Numbers in Beijing Yeya Lake Wetlands**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Common Name** | **Scientific Name** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| 1 | Arctic Loon | *Gavia arctica* | 　 | 1 | 　 | 1 | 　 | 　 | 　 |
| 2 | Little Grebe | *Podiceps ruficollis* | 74 | 82 | 85 | 62 | 78 | 83 | 93 |
| 3 | Black-necked Grebe | *Podiceps nigricollis* | 　 | 　 | 35 | 60 | 32 | 56 | 12 |
| 4 | Great Creasted Grebe | *Podiceps cristatus* | 120 | 150 | 240 | 180 | 160 | 165 | 158 |
| 5 | Dalmatian Pelican | *Pelecanus crispus* | 6 | 　 | 　 | 　 | 　 | 　 | 　 |
| 6 | Great Cormorant | *Phalacrocorax carbo* | 420 | 430 | 360 | 540 | 450 | 550 | 492 |
| 7 | Lesser Frigatebird | *Fregata ariel* | 　 | 　 | 　 | 1 | 1 | 1 | 1 |
| 8 | Grey Heron | *Ardea cinerea* | 70 | 120 | 260 | 550 | 870 | 920 | 1120 |
| 9 | Purple Heron | *Ardea purpurea* | 180 | 186 | 140 | 180 | 170 | 190 | 130 |
| 10 | Chinese Pond-Heron | *Ardeola bacchus* | 600 | 620 | 560 | 670 | 650 | 660 | 620 |
| 11 | Great Egret | *Egretta alba* | 35 | 55 | 62 | 86 | 58 | 69 | 47 |
| 12 | Intermediate Egret | *Egretta intermedia* | 6 | 12 | 8 | 6 | 14 | 7 | 6 |
| 13 | Little Egret | *Egretta garzetta* | 345 | 362 | 420 | 430 | 380 | 447 | 340 |
| 14 | Cattle Egret | *Bubulcus ibis* | 42 | 36 | 15 | 34 | 42 | 23 | 16 |
| 15 | Striated Heron | *Butorides striata* | 4 | 6 | 7 | 3 | 6 | 4 | 4 |
| 16 | Black-crowned Night-Heron | *Nycticorax nycticorax* | 1800 | 1840 | 1860 | 2100 | 2150 | 2300 | 2230 |
| 17 | Yellow Bittern | *Ixobrychus sinensis* | 67 | 65 | 78 | 64 | 77 | 46 | 64 |
| 18 | Schrenck's Bittern | *Ixobrychus eurhythmus* | 12 | 6 | 14 | 12 | 7 | 9 | 14 |
| 19 | Cinnamon Bittern | *Ixobrychus cinnamomeus* | 2 | 1 | 　 | 　 | 　 | 　 | 　 |
| 20 | Great Bittern | *Botaurus stellaris* | 3 | 2 | 4 | 2 | 3 | 2 | 2 |
| 21 | Black Stork | *Ciconia nigra* | 3 | 5 | 2 | 5 | 3 | 4 | 2 |
| 22 | Oriental White Stork | *Ciconia boyciana* | 2 | 2 | 3 | 2 | 2 | 　 | 1 |
| 23 | Eurasian Spoonbill | *Platalea leucorodia* | 70 | 82 | 112 | 65 | 78 | 49 | 70 |
| 24 | Black-faced Spoonbill | *Platalea minor* | 　 | 　 | 　 | 　 | 2 | 　 | 　 |
| 25 | Whooper Swan | *Cygnus cygnus* | 264 | 226 | 281 | 265 | 320 | 246 | 210 |
| 26 | Tundra Swan | *Cygnus bewickii* | 76 | 48 | 86 | 46 | 65 | 58 | 75 |
| 27 | Mute Swan | *Cygnus olor* | 4 | 5 | 5 | 6 | 6 | 7 | 6 |
| 28 | Swan Goose | *Anser cygnoides* | 350 | 320 | 134 | 220 | 183 | 174 | 146 |
| 29 | Bean Goose | *Anser fabalis* | 1200 | 1150 | 1530 | 1668 | 1526 | 1680 | 1450 |
| 30 | Greylag Goose | *Anser anser* | 34 | 23 | 16 | 22 | 43 | 32 | 7 |
| 31 | Bar-headed Goose | *Anser indicus* | 4 | 3 | 2 | 4 | 4 | 2 | 3 |
| 32 | White-fronted Goose | *Anser albifrons* | 4 | 2 | 3 | 4 | 2 | 　 | 2 |
| 33 | Ruddy Shelduck | *Tadorna ferruginea* | 270 | 210 | 240 | 260 | 274 | 263 | 320 |
| 34 | Common Shelduck | *Tadorna tadorna* | 12 | 14 | 6 | 16 | 6 | 12 | 24 |
| 35 | Northern Pintail | *Anas acuta* | 12 | 23 | 8 | 10 | 6 | 28 | 16 |
| 36 | Common Teal | *Anas crecca* | 540 | 440 | 540 | 650 | 440 | 632 | 740 |
| 37 | Baikal Teal | *Anas formosa* | 760 | 680 | 550 | 320 | 480 | 430 | 350 |
| 38 | Falcated Duck | *Anas falcata* | 1530 | 1220 | 1300 | 2300 | 2100 | 2600 | 2800 |
| 39 | Mallard | *Anas platyrhynchos* | 5200 | 4600 | 5700 | 8900 | 6321 | 6540 | 18000 |
| 40 | Spot-billed Duck | *Anas poecilorhyncha* | 240 | 223 | 318 | 265 | 306 | 298 | 470 |
| 41 | Gadwall | *Anas strepera* | 2100 | 2300 | 1900 | 2150 | 2180 | 2540 | 3500 |
| 42 | Eurasian Wigeon | *Anas penelope* | 46 | 65 | 34 | 67 | 47 | 35 | 140 |
| 43 | Garganey | *Anas querquedula* | 6 | 18 | 12 | 9 | 5 | 14 | 6 |
| 44 | Northern Shoveler | *Anas clypeata* | 34 | 23 | 45 | 16 | 28 | 42 | 46 |
| 45 | Red-crested Pochard | *Netta rufina* | 8 | 12 | 16 | 22 | 17 | 21 | 28 |
| 46 | Common Pochard | *Aythya ferina* | 230 | 120 | 340 | 780 | 450 | 320 | 600 |
| 47 | Baer's Pochard | *Aythya baeri* | 　 | 1 | 2 | 4 | 7 | 2 | 2 |
| 48 | Tufted Duck | *Aythya fuligula* | 23 | 5 | 12 | 19 | 14 | 15 | 56 |
| 49 | Ferruginous Duck | *Aythya nyroca* | 34 | 23 | 42 | 36 | 45 | 51 | 70 |
| 50 | Greater Scaup | *Aythya marila* | 2 | 6 | 4 | 8 | 3 | 　 | 4 |
| 51 | Long-tailed Duck | *Clangula hyemalis* | 　 | 　 | 1 | 　 | 　 | 　 | 　 |
| 52 | Mandarin Duck | *Aix galericulata* | 36 | 32 | 21 | 26 | 12 | 18 | 23 |
| 53 | Common Goldeneye | *Bucephala clangula* | 5 | 8 | 21 | 12 | 23 | 34 | 41 |
| 54 | Smew | *Mergus albellus* | 44 | 34 | 54 | 67 | 45 | 64 | 56 |
| 55 | Red-breasted Merganser | *Mergus serrator* | 　 | 　 | 　 | 2 | 3 | 2 | 2 |
| 56 | Common Merganser | *Mergus merganser* | 28 | 34 | 22 | 34 | 29 | 32 | 62 |
| 57 | Scaly-sided Merganser | *Mergus squamatus* | 　 | 2 | 　 | 　 | 　 | 　 | 　 |
| 58 | Yellow-legged Buttonquail | *Turnix tanki* | 2 | 　 | 　 | 1 | 　 | 　 | 　 |
| 59 | Siberian Crane | *Leucogeranus leucogeranus* | 3 | 　 | 　 | 　 | 　 | 　 | 　 |
| 60 | Demoiselle Crane | *Grus virgo* | 　 | 　 | 1 | 　 | 　 | 　 | 　 |
| 61 | Common Crane | *Grus grus* | 4625 | 4251 | 4316 | 4325 | 4212 | 3473 | 3100 |
| 62 | White-naped Crane | *Grus vipio* | 8 | 16 | 32 | 14 | 21 | 23 | 24 |
| 63 | Red-crowned Crane | *Grus japonensis* | 　 | 　 | 　 | 　 | 　 | 　 | 2 |
| 64 | Hooded Crane | *Grus monacha* | 1 | 1 | 1 | 1 | 1 | 1 | 4 |
| 65 | Swinhoe's Rail | *Coturnicops exquisitus* | 　 | 　 | 　 | 　 | 　 | 1 | 　 |
| 66 | White-breasted Waterhen | *Amaurornis thoenicurus* | 2 | 　 | 2 | 2 | 2 | 　 | 2 |
| 67 | Water Rail | *Rallus aquaticus* | 2 | 2 | 1 | 2 | 1 | 1 | 1 |
| 68 | Watercock | *Gallicrx cinerea* | 2 | 1 | 　 | 1 | 　 | 　 | 　 |
| 69 | Common Moorhen | *Gallinula chloropus* | 5 | 2 | 12 | 15 | 25 | 37 | 30 |
| 70 | Common Coot | *Fulica atra* | 420 | 365 | 419 | 384 | 452 | 364 | 450 |
| 71 | Black-winged Stilt | *Himantopus himantopus* | 540 | 412 | 160 | 130 | 150 | 245 | 210 |
| 72 | Pied Avocet | *Recurvirostra avosetta* | 14 | 8 | 7 | 15 | 4 | 11 | 44 |
| 73 | Oriental Pratincole | *Glareola maldivarum* | 21 | 26 | 32 | 13 | 22 | 19 | 8 |
| 74 | Northern Lapwing | *Vanellus vanellus* | 180 | 143 | 211 | 240 | 132 | 274 | 160 |
| 75 | Grey-headed Lapwing | *Vanellus cinereus* | 6 | 4 | 14 | 7 | 12 | 9 | 8 |
| 76 | Grey Plover | *Pluvialis squatarola* | 3 | 1 | 3 | 　 | 　 | 　 | 2 |
| 77 | Pacific Golden Plover | *Pluvialis fulva* | 14 | 12 | 13 | 16 | 7 | 　 | 23 |
| 78 | Kentish Plover | *Charadrius alexandrinus* | 4 | 8 | 12 | 3 | 11 | 15 | 12 |
| 79 | Greater Sand Plover | *Charadrius leschenaultii* | 1 | 　 | 　 | 　 | 　 | 　 | 2 |
| 80 | Oriental Plover | *Charadrius veredus* | 　 | 2 | 　 | 　 | 　 | 　 | 　 |
| 81 | Little Ringed Plover | *Charadrius dubius* | 12 | 6 | 14 | 11 | 6 | 15 | 22 |
| 82 | Common Snipe | *Gallinago gallinago* | 43 | 21 | 45 | 23 | 34 | 31 | 140 |
| 83 | Bar-tailed Godwit | *Limosa lapponica* | 14 | 16 | 7 | 5 | 6 | 4 | 4 |
| 84 | Whimbrel | *Numenius phaeopus* | 2 | 4 | 5 | 2 | 2 | 3 | 3 |
| 85 | Far Eastern Curlew | *Numenius madagascariensis* | 3 | 2 | 2 | 3 | 5 | 4 | 6 |
| 86 | Spotted Redshank | *Tringa erythropus* | 3 | 2 | 140 | 12 | 4 | 2 | 12 |
| 87 | Common Redshank | *Tringa totanus* | 12 | 15 | 6 | 3 | 4 | 6 | 4 |
| 88 | Common Greenshank | *Tringa nebularia* | 　 | 　 | 1 | 　 | 　 | 　 | 2 |
| 89 | Marsh Sandpiper | *Tringa stagnatilis* | 45 | 30 | 73 | 121 | 55 | 67 | 80 |
| 90 | Green Sandpiper | *Tringa ochropus* | 34 | 19 | 12 | 41 | 23 | 42 | 26 |
| 91 | Wood Sandpiper | *Tringa glareola* | 112 | 87 | 120 | 93 | 140 | 130 | 160 |
| 92 | Common Sandpiper | *Actitis hypoleucos* | 2 | 4 | 3 | 1 | 1 | 3 | 4 |
| 93 | Red Knot | *Calidris canutus* | 2 | 　 | 7 | 3 | 　 | 　 | 2 |
| 94 | Dunlin | *Calidris alpina* | 　 | 　 | 8 | 5 | 　 | 　 | 1 |
| 95 | Rufous-necked Stint | *Calidris ruficollis* | 　 | 　 | 　 | 2 | 3 | 　 | 　 |
| 96 | Eurasian Woodcock | *Scolopax rusticola* | 2 | 3 | 1 | 4 | 3 | 2 | 1 |
| 97 | Ibisbill | *Ibidorhyncha struthersii* | 1 | 　 | 1 | 　 | 　 | 　 | 　 |
| 98 | Parasitic Jaeger | *Stercorarius parasiticus* | 　 | 2 | 2 | 　 | 　 | 　 | 　 |
| 99 | Herring Gull | *Larus vegae* | 3 | 2 | 2 | 3 | 4 | 3 | 4 |
| 100 | Brown-headed Gull | *Larus brunnicephalus* | 23 | 6 | 　 | 　 | 　 | 　 | 　 |
| 101 | Black-tailed Gull | *Larus crassirostris* | 5 | 4 | 4 | 　 | 　 | 　 | 2 |
| 102 | Mew Gull | *Larus canus* | 8 | 6 | 2 | 2 | 　 | 　 | 12 |
| 103 | Black-headed Gull | *Larus ridibundus* | 830 | 210 | 430 | 2466 | 163 | 327 | 450 |
| 104 | Relict Gull | *Larus relictus* | 　 | 　 | 12 | 6 | 11 | 　 | 6 |
| 105 | Caspian Tern | *Hydroprogne caspia* | 　 | 　 | 1 | 1 | 1 | 　 | 　 |
| 106 | White-winged Tern | *Chlidonias leucopterus* | 　 | 　 | 12 | 34 | 　 | 　 | 　 |
| 107 | Whiskered Tern | *Chlidonias hybrida* | 22 | 36 | 45 | 21 | 14 | 28 | 36 |
| 108 | Common Tern | *Sterna hirundo* | 130 | 110 | 150 | 140 | 220 | 68 | 35 |
| 109 | Little Tern | *Sterna albifrons* | 6 | 4 | 3 | 8 | 2 | 　 | 2 |
| 110 | Pheasant-tailed Jacana | *Hydrophasianus chirurgus* | 2 | 　 | 　 | 　 | 　 | 　 | 　 |
|  |  | Total | 24126 | 21776 | 23854 | 31440 | 25976 | 26985 | 39773 |