



New Records of Birds in Bahr Al-Najaf Depression, Iraq

Ameen Sahib Abd Aljalil, Sadiq Kadhum lafta Al-Zurfi*

Departments of Ecology and Pollution, College of Science, University of Kufa, Iraq

*Corresponding author: sadiqk.alzurfi@uokufa.edu.iq

ARTICLE INFO

Article History:

Received: June 10, 2024

Accepted: June 23, 2024

Online: June 30, 2024

Keywords:

Aves,
Bahr,
Depression,
New record,
Survey

ABSTRACT

In this study, cross-sectional survey techniques and direct observation techniques were used to monitor birds in the Bahr al-Najaf depression and its significance as a home for several living organisms, including endemic and migratory birds. The aim of this paper was to document additional records of bird species in the Bahr Al-Najaf depression throughout a seven-month period from October 2023 to April 2024. Transect walks and direct observation methods were deployed for the birds' survey by using 8x42mm binoculars and an 8x spotting scope, while a Nikon Coolpix P1000 camera with a 24–3000mm lens was used to take pictures. Eight new migratory bird species have been discovered in the Bahr al-Najaf depression's water bodies. One of them is a new record in Iraq, which is the swan goose (*Anser cygnoides*). This raises the total number of birds known from the Bahr al-Najaf depression to 176.

INTRODUCTION

Iraq is among the top nations that have been identified as being particularly sensitive to climate change (Ararat *et al.*, 2023). Iraq's vast biodiversity is largely supported by its geological diversity, of which the diversity of its birds is a good example. Additionally, Iraq serves as a crucial stopover point for waterbird migration between Eurasia and Africa due to its advantageous location between the hemispheres (Boere & Stroud, 2006). Bahr Al-Najaf is located southwest and west of the city of Najaf Governorate, spanning 360–750 square kilometers and extending from northwest to southeast. It is around 11 meters above sea level (Longitude: 43° 40' - 44° 25' E; Latitude: 31° 40' - 32° 10' N) (Benni & Al-Tawash, 2011). It consists of a sizable area of semi-desert or desert with a small cultivated orchard situated beyond, encircling a lake or swamp-like setting. The area is acknowledged to be a part of the Arabian Desert and the Eastern Desert (Bachmann *et al.*, 2011).

In addition to resident breeding bird species, the diversity of habitats and landscapes contributes to the benefit of housing huge numbers of migratory birds during each migration season (Salim *et al.*, 2006). The wetlands found in central and southern Iraq are renowned for their biodiversity and are used by migratory water birds, as well as other migratory species as wintering and resting grounds (Garstecki & Amr, 2011).

Millions of birds use these wetlands as permanent habitats and as a route for migration between Siberia and Africa (**Hussein *et al.*, 2023**). A wide variety of bird species rely on these wetlands for resting, foraging, and nesting (**Salim & Porter, 2009**). A total of 395 bird species, comprising 265 migratory and 130 resident species, have been identified according to recent studies (**Salim & Porter 2009; Salim *et al.*, 2012**).

The Bahr al-Najaf depression has environmental importance. It contains organism biodiversity (plants and vertebrates), where it is found to comprise 104 vertebrate species, including 2 fish, 14 reptiles, 73 resident and migratory birds, and 15 mammals. The flora consists of 31 species, mainly plants well adapted to the desert conditions that dominate the area, as well as few examples of water plants (**Mohammad & Ali, 2013**).

Bahr Al-Najaf holds a significant number of bird species and according to the surveys and desktop studies, there are approximately 168 bird species (**Salim & Abed, 2017**). Bahr al-Najaf is one of these wetlands that are used as habitats for resident and migratory birds, as new migratory species have been recorded within this area. The aim of this paper was to document 8 additional records of bird species in the Bahr Al-Najaf depression.

MATERIALS AND METHODS

Bahr al-Najaf is comprised of a large tract of semi-desert or desert that surrounds a lake or swamp-like environment with a little cultivated orchard beyond. The region is recognized as belonging to both the Eastern and Arabian Deserts. Three sites were chosen for study within this region (Fig. 1). 14 visits were conducted to Bahr al-Najaf from October 2023 to April 2024, with two visits per month. The first site is a wide body of water with an area of approximately 5km² and no vegetation. It is located at the following coordinates: longitude 44° 17'25 E, latitude 31° 58'19 N. The second site consists of a body of water with an area estimated at approximately 8km², containing *Phragmites australis*, *Schoenoplectus*, *Cyperus*, *Typhy domingensis*, and *Tamarix* plants, and is located at the coordinates of: longitude 44° 12'51 E, latitude 31° 58'34 N. As for the third site, it consists of a large water depression with dry land estimated at an area of about 14km² and is located at the succeeding coordinates: longitude 44° 11'11 E, latitude 31° 57'5 N, and it contains plants of *Tamarix*, *Phragmites australis*, and *Schanginia*, as well as *Juncus*. Transect walks and direct observation methods were deployed for the birds' survey in addition to an 8× spotting scope, an 8× 42mm binocular, and a Nikon Coolpix P1000 camera with a 24– 3000mm lens used to capture images. Throughout the study area, a four-wheeled field vehicle was used to transport between sites; walking was used within each individual site.



Fig. 1. Satellite image by Google Earth showing the study area of Bahr Al-Najaf

RESULTS

Observations

Bridled Tern (*Sterna anaethetus*) Linnaeus, 1758

On March 15, 2024, during our bird survey proceedings, we observed and photographed a group of bridled terns (Image 1) in Bahr al-Najaf (31°58.34'N; 44°12.51'E). The group numbered 11 individuals and was found in a body of water. The bridled tern (*Sterna anaethetus*), a migratory seabird of tropical and subtropical oceans, typically breeds on offshore islands during the summer (Al-Sheikhly *et al.*, 2019). It belongs to the family Laridae. This medium-sized tern resembles the sooty tern (*Onychoprion fuscatus*), particularly the spectacled version found in the tropical Pacific, which has white underparts and dark gray upperparts. The bill and legs of the bridled tern are black, and it has a white forehead and eyebrows (Al-Sheikhly *et al.*, 2019). The International Union for Conservation of Nature (IUCN; BirdLife International 2022) classifies it as "Least Concern."



Image 1. The bridled tern (*Sterna anaethetus*)

Willow Warbler (*Phylloscopus trochilus*) Linnaeus, 1758

On October 12, 2023, during our bird survey proceedings, we observed and photographed an individual The willow warbler (Image 2) in Bahr al-Najaf (31°57.5'N; 44°17.11'E). It was found perched on plant branches, and there was only one individual. The willow warbler (*Phylloscopus trochilus*) resembles the common warbler but has longer wing feathers and a darker appearance overall. The flight feathers and tail are darker, while the underparts have a yellowish tinge on the throat and chest. It features a distinctive eyebrow and lighter-colored ear coverts. Its upperparts are olive-gray, and the underparts are whitish. It shares similarities with *Phylloscopus acredula* and *Phylloscopus yakutensis*, but *Phylloscopus trochilus* lacks the chest band seen in *Phylloscopus yakutensis*. The legs of the willow warbler are brown with a light pink hue. In its first winter, the willow warbler exhibits a more pronounced yellow coloration underneath. Vegetation cover is crucial for the presence of the willow warblers, which are commonly found in habitats with dense vegetation below 5 meters in height and sparse vegetation in taller trees (Bellamy *et al.*, 2009).



Image 2. The willow warbler (*Phylloscopus trochilus*)

Great white heron (*Egretta a. alba*) Linnaeus, 1758

On the 12th of October 2023, during our bird survey proceedings, we observed and photographed a group of the great white herons (Image 3) in Bahr al-Najaf (31°57.5'N; 44°17.11'E). The group consisted of 25 individuals and was located on a sea cliff. The great white heron (*Ardea alba*) is the largest egret species, characterized by its long, curved neck often extended upward. During the breeding season, it displays ornamental plumes on the shoulders. Its beak is black with a white base, and its legs are yellow, transitioning from brown above the joint. In winter, both adults and juveniles exhibit a yellow bill and legs that range from blackish-brown to green. The great white heron is medium-sized with a slender, elongated bill and distinctive facial markings extending beyond the eyes. It appears graceful yet deliberate in flight and movement on the ground (Grimmett *et al.*, 2014).



Image 3. The great white heron (*Egretta a. alba*)

Great white pelican (*Pelecanus onocrotalus*) Linnaeus, 1758

On January 2, 2024, during our bird survey proceedings, we observed and photographed a group of the great white pelicans (Image 4) in Bahr al-Najaf (31°58.19'N; 44°17.25'E). The group numbered 58 individuals and was observed in the water. The great white pelicans (*Pelecanus onocrotalus*) are large birds with a long wingspan. Adults are predominantly white with contrasting black flight feathers, especially noticeable underneath. During the breeding season, their white plumage can have a yellowish-rose tint. They have ash-gray wing coverts and a distinct pink facial patch around their black eyes. Their legs are flesh-colored and somewhat yellowish, and they have pointed feathers at the base of their bills, distinguishing them from similar species like the dalmatian pelican (*Pelecanus crispus*). The great white pelican's neck is white with a pale, dusky upper neck compared to the more uniform appearance of the dalmatian pelican. In flight, the great white pelicans use slow, powerful wingbeats followed by gliding. They typically fly in organized lines or circular formations (**Richard Porter *et al.*, 2004**).



Image 4. The great white pelican (*Pelecanus onocrotalus*)

Common raven (*Corvus corax*) Linnaeus, 1758

On October 20, 2023, during our shorebird survey, we observed and photographed an individual common raven (Image 5) in Bahr al-Najaf (31°57.5'N; 44°17.11'E). It was observed on land, and there was only one individual present. The common raven (*Corvus corax*) is a large, powerful bird similar to the carrion crow but larger, with broader wings, a larger head and beak, and looser feathers. It is distinguished from the carrion crow by its size and appearance. During the breeding season, the common ravens display oscillatory and circling movements in their flight, which is characteristic of their behavior. They are known for their distinctive vocalizations and intelligence, often adapting well to various habitats (insert any specific observations about habitat if known) (Richard Porter *et al.*, 2004).



Image 5. The common raven (*Corvus corax*)

Little stint (*Calidris Minuta*) Leisler, 1812

On the 15th of November 2023, during our shorebird survey, we observed and photographed an individual little stint (Image 6) in Bahr al-Najaf (31°58.34'N; 44°12.51'E). It was found in a body of water, and there was only one individual present. The little stint (*Calidris minuta*) is the smallest wader commonly found in the region. It has a dark beak and legs, distinguishing it from similar species like the temminck's stint. During the breeding season, its neck, face, chest, and shoulder plumage vary from light to dark warm orange, often displaying a V-shaped pattern on its breast and striped markings on its collar. In winter, its upperparts become grayish, with faint streaking on its feathers. The underparts are white, with a warm reddish tone on the breast sides, resembling the appearance of the red-necked stint (*Calidris ruficollis*) (Grimmett *et al.*, 2014).



Image 6. The Little stint (*Callidris Minuta*)

Tufted duck (*Aythya fuligula*) Linnaeus, 1758

On February 23, 2024, during our bird survey proceedings, we observed and photographed a group of the tufted ducks (Image 7) in Bahr al-Najaf (31°57.5'N; 44°17.11'E). There were five individuals observed in the water. The tufted duck (*Aythya fuligula*) is a small diving duck. The mature male is characterized by a small crest on the back of its head and is predominantly black, except for white flanks and a blue-grey bill with golden-yellow eyes. The species derives its name from the prominent head tuft displayed by males. The mature female tufted duck is primarily brown and can be more easily confused with other diving ducks. Some females may show a faint white patch around the base of their bills, reminiscent of the greater scaup (*Aythya marila*) although this white patch is never as extensive as in the scaups. The drake greater scaup is the only duck that bears any resemblance to the tufted duck in appearance (**Richard Porter *et al.*, 2004**).



Image 7. The tufted duck (*Aythya fuligula*)

Swan goose (*Anser cygnoides*) Alternative name: Chinese goose Linnaeus, 1758

On the 2nd of January 2024, during our bird survey proceedings, we observed and photographed a group of the Chinese geese (Image 8) in Bahr al-Najaf (31°57.5'N; 44°17.11'E). There were 7 individuals observed in the water. The Chinese geese are recognizable as 'grey' geese with a small head, slender neck, and long, deep black bill, giving them a slightly robust appearance. While much of their plumage is nondescript and similar to many other birds, their distinctive head and neck pattern includes a dark brown crown and nape contrasted with an extremely pale brown throat, sides of the head, and front neck. Close examination reveals a thick black bill with a faint white band around the base, absent in juveniles. They have orange legs. Domesticated varieties may display similar color patterns to wild birds but often appear plumper and lack the sleek appearance of wild individuals. They also frequently have a prominent knob at the base of the bill. Males typically appear larger and heavier-headed than females, with a prominent, heavy bill on a slender, notably whiter neck (**Porter *et al.*, 2004**).



Image 8. The swan goose (*Anser cygnoides*) Alternative name: The Chinese goose

Acknowledgment

We thank the Ecology Department at the University of Kufa for supporting this work, and we thank Prof. Dr. Salwan Ali Abed for continuing and helping identify the birds.

REFERENCES

- AL-Sheikhly, Y. O. F.; Al-Dirawi, A. M. and Al-Barazengy, A. N.** (2019). First confirmed occurrence of Bridled Tern *Onychoprion anaethetus* and Sandwich Tern *Thalasseus sandvicensis* in Iraq. "Mar. Ornithol., 47:1-3
- Ararat , K. A.; Mukhtar, H.; Al-Sheikhly ,O.; Haloob ,A.; Faza , N.A. and Majeed, S.** (2023) Biodiversity of Al Jadriyah and Umm Al-Khanazeer. Iraqi Ministry of Environmen.319pp.

- Bachmann, A.; Chappell, B.; Elliott, N. and Matti, N.** (2011). Key biodiversity survey of Iraq, 2010 site review. Nature Iraq and Iraq Ministry of Environment, Sulaimani, Kurdistan,.100pp.
- Bellamy, P. E.; Hill, R. A.; Rothery, P.; Hinsley, S. A.; Fuller, R. J. and Broughton, R. K.** (2009). Willow Warbler *Phylloscopus trochilus* habitat in woods with different structure and management in southern England. *Bird Study*,. 56(3): 338-348
- Benni, T. J. and Al-Tawash, B. S.** (2011). Palynological evidences on paleoclimate and paleoenvironmental changes during Late Quaternary of Bahr Al-Najaf depression, Central Iraq. *Iraqi Bull. Geolog. and Mining*, .7(2): 1-28.
- Garstecki, T.; and Amr, Z.** (2011). Biodiversity and Ecosystem Management in the Iraqi Marshlands. Screening Study on Potential World Heritage Nomination. IUCN,.Pp:189.
- Grimmett, R.; Inskipp, C. and Inskipp, T.** (2014).Birds of the Indian Subcontinent. Christopher Helm London ,Digital edition. Holland Publishers (UK) Ltd.Pp:505
<https://www.natureclubsurat.org/wp-content/uploads/Birds-of-Indian-Subcontinent.pdf>
- Hussein, I. O.; Aliabadian, M.; Mirshamsi, O. and Mohammadiankalat, T.** (2023). Prevalence of Avian Haemosporidian Parasites: A Comparative Study between Resident and Migratory Birds of Iraq. *Iran. J. of Anim. Biosyst.*,. 19(2): 115-126.
- Madge, S.** (2010). Wildfowl: an identification guide to the ducks, geese and swans of the world. Bloomsbury Publishing.298pp.
- Mohammad, M. K. and Ali, H. H.** (2013). The biodiversity of Bahr Al-Najaf depression, Al-Najaf Al-Ashraf Province. *Bull.Iraq Nat. Hist. Mus.*, 12(3): 21-30.
- Porter R.; Christensen, S. and Schermecker-Hansen , B.**(2004) Field Guide to the Birds of the Middle East (Princeton Field Guides, 4). First edition. 496pp .
- Salim, M. A. and Abed, S. A.** (2017). Avifauna diversity of Bahr Al-Najaf wetlands and the surrounding areas, Iraq. *Jordan J. Biol. Sci.*, 10(3):167-176.
- Salim, M. A.; Al-Sheikhly, O. F.; Majeed, K. A. and Porter, R. F.** (2012). An annotated checklist of the birds of Iraq. *Sandgrouse*, 34(1): 3-44
- Salim, M.; Porter, R.; and Rubec, C.** (2009). A summary of birds recorded in the marshes of southern Iraq, 2005-2008. *BioRisk*, 3. :205-219
- Salim, M.A.; Porter, R.; Christensen, S.; Schiermacker-Hansen, P. and Al-Jbour, S.,** (2006). Field Guide to the birds of Iraq. Amman: Nature Iraq and Bird Life International. (In Arabic).285pp.