



Report of



MONGOLIAN BIRD RINGING STATIONS 2021-22

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INTRODUCTION

The practice of bird ringing is a relatively new phenomenon in Mongolia, primarily due to centralized management and a shortage of human resources. Wildlife Science and Conservation Center (WSCC) is a non-governmental organization that coordinates three bird ringing stations in the country now.

In 2015, WSCC initiated migratory bird ringing activities at Khurkh Bird Ringing Station (Khurkh BRS), which was the first stationary bird ringing effort in Mongolia. Since then, the number of Mongolian bird ringing stations has gradually increased to five.

The main objectives of these stations are to generate long-term monitoring data to contribute to the study of wild bird populations and to provide field training opportunities for young biologists.

In this report, we present the 2021-2022 results from three WSCC's coordinated ringing stations: Khurkh, Khovd and Ugii. While some newly established stations are still undergoing site selection and operational processes, Khurkh BRS has standardized procedures and became fully operational. All three stations use mist-nets, which consist of 6-15 mist-nets with a total length of 150-200 meters each station. We rely heavily on the dedication of both foreign and local volunteers to operate these stations, and we are immensely grateful for their efforts.

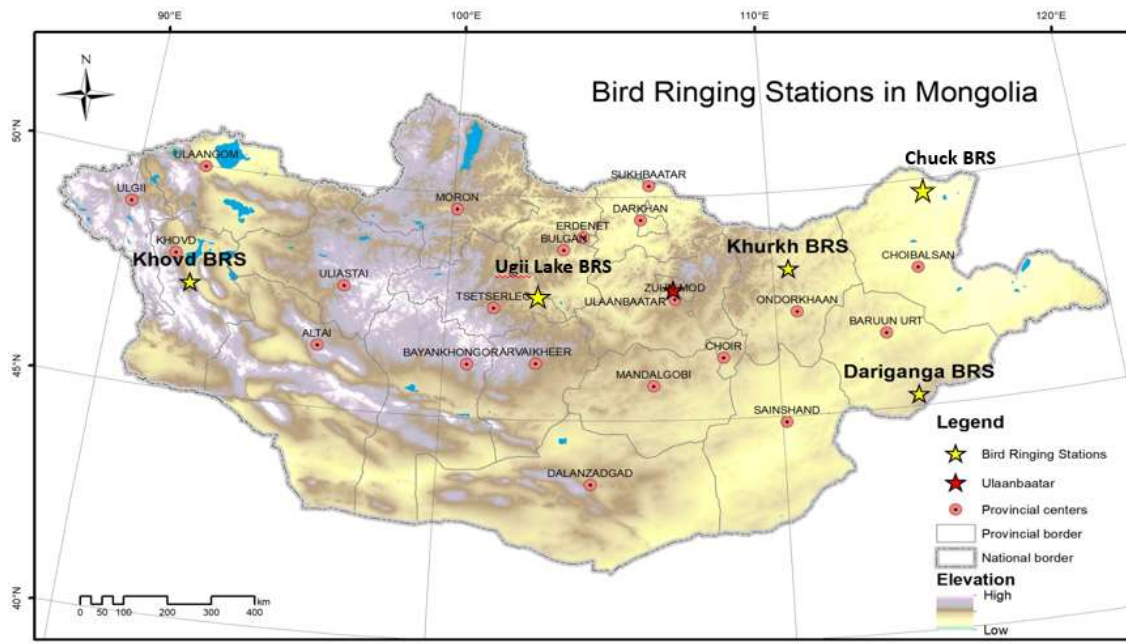


Figure 1. Locations of bird ringing stations in Mongolia

KHURKH BIRD RINGING STATION

The Khurkh Bird Ringing Station (Khurkh BRS) is located in the Khurkh River Valley in the southeast of the Khentii Mountain range, approximately 20 kilometers northeast from Khurkh village in Khentii province (N 48.28002°; E 110.49201°). The site's landscape features and position in the East Asia-Australasian Flyway makes it an exceptional location for avian research in Mongolia. It also offers excellent birding opportunities for observing migrating songbirds in eastern Khentii Mountains and

southern Siberia. The Khurkh Valley is renowned for its wetlands that support 7 species of cranes. These are White-naped (*Antigone vipio*), Common (*Grus grus*), Demoiselle (*Antropoides virgo*), Red-crowned (*Grus japonensis*), Hooded (*Grus monacha*), Siberian (*Leucogeranus leucogeranus*), and Sandhill (*Antigone canadensis*) cranes.

The Khurkh and Khuiten River Valley was designated as a Nature Reserve under state law in 2020. It is one of the Ramsar Sites and Important Bird Areas in Mongolia. There are about 250 avian species recorded as breeding and passage migrants in the area. Please refer to the following link for a full list of birds: <https://ebird.org/hotspot/L7563366>.

The initial two years of operation at Khurkh BRS were devoted to testing the site's suitability for a long-term bird ringing program. Due to promising results during this period, the station has been operating on a full season basis since 2017.

While Khurkh BRS is a relatively new ringing station compared to those in Europe and other countries, it has completed seven successful seasons with standardized procedures. Tuvshinjargal Erdenechimeg oversees the operations of the station, including coordinating volunteers, collecting data, and managing daily activities.

KHOVD BIRD RINGING STATION

The Khovd Bird Ringing Station (Khovd BRS) is located on the Tugrug river, 2 km south of the village Mankhan, Khovd province (N 47.458437°; E 92.228771°). This location is highly attractive to songbirds that need to re-fuel and rest while crossing wide semi-desert and arid steppe landscapes that lack forest patches for hiding and feeding places. The station is in the southwest corner of the Khar-Uls Lake National Park, which is the third largest lake in the country. The bird species found here are almost completely different from those found at the other two stations, as this site is situated on both the Central Asian and East-Asia Australasian Flyways. While most bird species passing through here are heading westward in fall season, a few remaining species of migrants may head directly south, crossing the Gobi Desert and other extreme passages. Please refer to the following link for a full list of birds: <https://ebird.org/hotspot/L9840865>.

The station is currently undergoing an experimental period to assess the suitability of the location for a longer-term bird ringing program in the region. We have used a set of 13 mist nets totaling 150 m in length, during both seasons. The station is led by Batmunkh Davaasuren and Khurelsukh Dulmaa, and they are responsible for logistics, volunteer coordination, data collection, and other day-to-day activities.

UGII LAKE BIRD RINGING STATION

The Ugii Lake Bird Ringing Station (Ugii Lake BRS) is located on the western shore of Ugii Lake, (N 47.76018°; E 102.74019°) Arkhangai province in central Mongolia. Ugii Lake is a designated East Asian-Australasian Flyway Network Site, Ramsar Site, Important Bird and Biodiversity Area, and is a famous birdwatching location for bird watchers and domestic tourists. The site is situated at the junction of both the Central Asian and East-Asia Australasian Flyways of shorebirds. The lake provides the best opportunity for breeding, molting and stopover sites for the many globally threatened species, including the Endangered Far Eastern Curlew (*Numenius madagascariensis*), Pallas's Fish Eagle (*Haliaeetus leucoryphus*), vulnerable Swan Goose (*Anser cygnoides*), Horned Grebe (*Podiceps auritus*), White-naped Crane (*A.*

vipio), Sharp-tailed Sandpiper (*Calidris acuminata*), near threatened Falcated duck (*Mareca falcata*), Ferruginous Duck (*Aythya nyroca*), Northern Lapwing (*Vanellus vanellus*), Curlew Sandpiper (*C. ferruginea*), Eurasian Curlew (*N. arquata*), Black-tailed Godwit (*Limosa limosa*), Red Knot (*C. canutus*), Red-necked Stint (*C. ruficollis*), Asian Dowitcher (*Limnodromus semipalmatus*), Grey-tailed Tattler (*Tringa brevipes*). Please refer to the following link for a full list of birds: <https://ebird.org/hotspot/L10409080>.

WSSC started conducting some shorebird ringing activities at the Ganga Lake in southeastern Mongolia in 2021. We found that the continuous pumping of groundwater into the lake, which was a government funded project to restore the lake water level, created unfavorable conditions for wading birds and rendered the site unsuitable for long-term monitoring.

In 2022, we conducted a pilot study to establish shorebird ringing station in Ugii Lake. We plan to establish a long-term monitoring program for waders at the site, covering the spring and autumn migration as well as the breeding population between April and October each year. We used a set of 13 special wader mist nets about 150 meters in total length and played tapes to attract shorebirds into the nets during the night. We collected birds every 30 minutes and stored them in cages overnight before processing them in the morning. The station was led by Batmunkh Davaasuren, who was responsible for logistics volunteer management, data collection, and other daily activities.



Figure 2. A view of the Khurkh BRS. Photo credits: Tuvshinjargal Erdenechimeg.



Figure 3. Aerial view of Khovd BRS from top of the mountains. Photo credits: Alexey Bezrukov



Figure 5. A view of Ugii Lake BRS camp. Photo credits: Batmunkh Davaasuren



Figure 4. Many thanks to all volunteers and students in 2021-22. Photos by Khambin Purevtogtokh, Tuvshinjargal Erdenchimeg and Alexey Bezrukov

RESULTS

Spring migration in Khurkh BRS - 2022

During the spring season of 2022, Khurkh BRS completed its seventh season of operation, following a cancellation in 2021 due to Covid-19 restrictions.

Between 21st of April and 11th of June 2022, a total of 1122 new birds (with an additional 130 recaptures from same season) of 62 species were ringed. The field team operated for 52 days, with an average of 24 birds ringed per day without the use of tape lures. This spring weather was cold and windy compared to previous years, resulting in some net closures.

The most frequently ringed species was Little Bunting (*Emberiza pusilla*) with 123 individuals which accounted for 10.9% of the total number of new birds caught in spring, followed by Taiga Flycatcher (*Ficedulla albicilla*) with 110 individuals (9.8%) and Daurian Redstart (*Phoenicurus auroreus*) with 98 birds (8.7%).

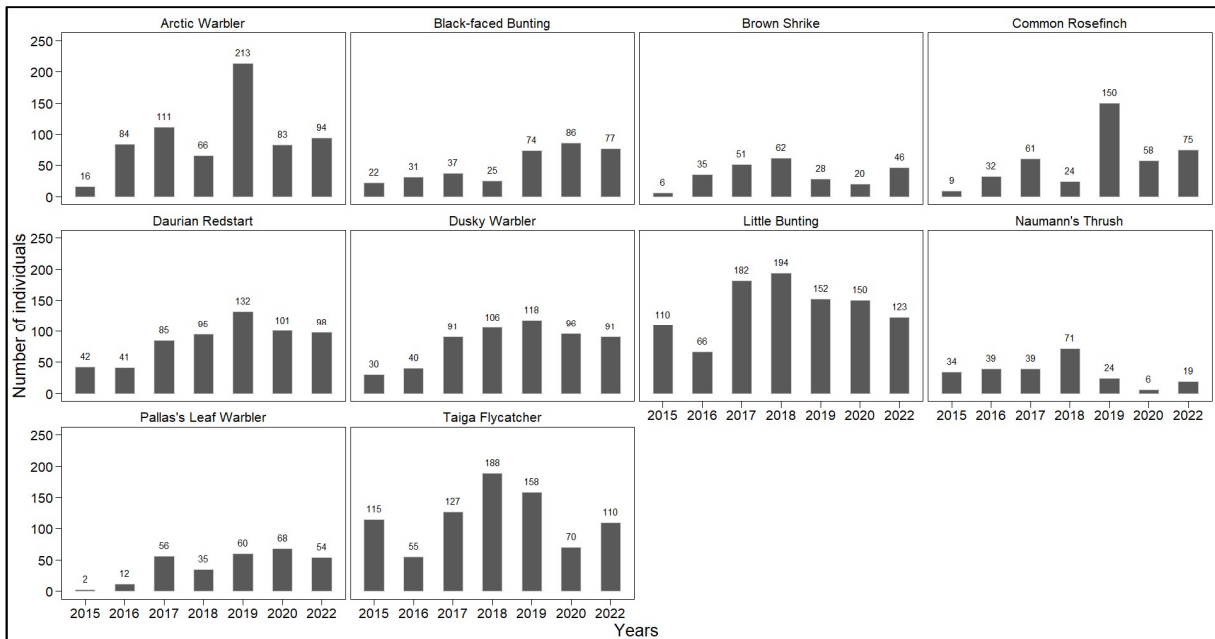


Figure 6. The most frequently banded birds in spring seasons at Khurkh BRS

Spring migration in Khovd BRS - 2022

Although the Khovd BRS's 2021 spring season was cancelled due to COVID restrictions, the ringing station carried out its second season this year.

In spring 2022, the team ringed 747 new birds (with an additional 66 recaptures) of 69 species between 30th of April and 6th of June. Over 36 ringing days, an average of 20 birds were ringed each day without use of any tape lures.

The most commonly ringed species was Paddyfield Warbler (*Acrocephalus agricola*) with 181 individuals (24.2% of new birds caught), followed by Hume's Warbler (*Phylloscopus humei*) with 163 individuals (21.8%) and Lesser Whitethroat (*Sylvia curruca*) with 40 birds (5.3%).

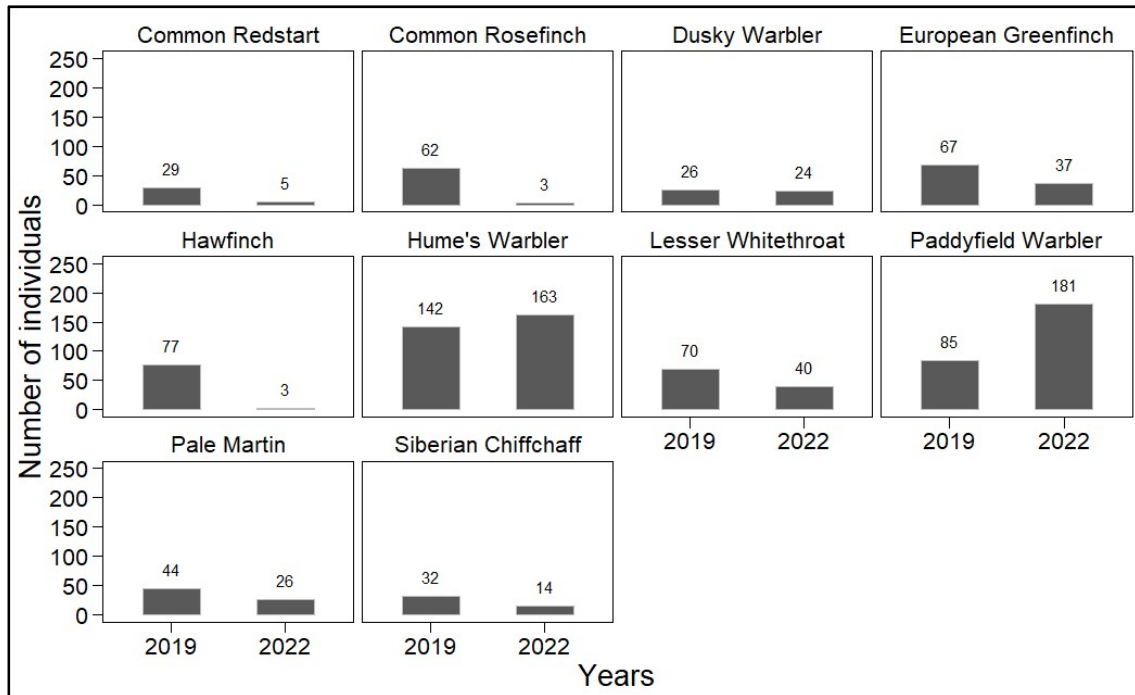


Figure 7. The most frequently banded birds in two spring seasons at Khovd BRS

Fall migration in Khurkh BRS - 2021

From 3rd August to 13th October 2021, the station held its fifth autumn season. A total of 5188 new birds were ringed during this period, along with 1027 recaptures, representing 88 different species. The ringing team operated for 72 days and captured an average of 72 birds per day.

September was the busiest month, accounting for 59.7% of the total number of birds ringed with an average daily capture of 103 birds. Little Bunting was the most frequently captured species with 815 individuals accounting for 15.7% of the total new birds caught in fall, followed by Black-faced Bunting (*Emberiza spodocephala*) with 672 individuals (12.9%). Yellow-browed Warbler (*Phylloscopus inornatus*) and Brown Shrike (*Lanius cristatus*) with 376 (7.2%) and 332 (6.3%) were third and fourth, respectively.

Fall migration in Khurkh BRS - 2022

During our sixth autumn season at the station, which ran from 9th August to 6th October 2022, we successfully ringed 5212 new birds and recaptured 992 birds from 42 species, bringing the total number of species to 113. Despite the cold and windy weather conditions, we managed to operate for 59 days and capture an average of 88 birds per day. However, we had to close operations a week early due to the extreme weather conditions.

In September, we ringed over 65.6 % of the birds with an average of 114 birds captured per day. The Little Bunting was the most frequently caught species, with 1180 individuals, which accounted for 22.6% of the total number of new birds caught in the autumn. The Black-faced Bunting came in second with 518 individuals (9.9%), while Yellow-browed Warbler with 276 birds (5.2%) and Pine Bunting (*Emberiza leucocephalos*) with 170 birds (3.2%) were the third

and fourth most frequently caught species, respectively.

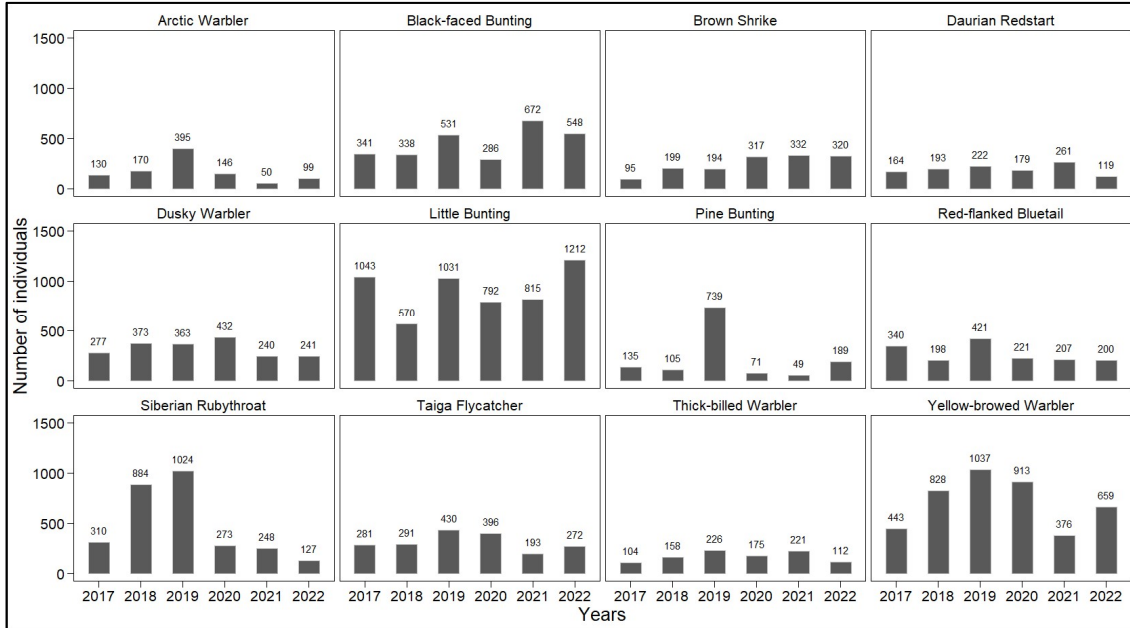


Figure 8. All autumn most frequently banded birds at Khurkh BRS

During the autumn season, four species were ringed for the first time at the ringing station, including one individual of each: Merlin (*Falco columbarius*), Asian Short-toed Lark (*Alaudala cheleensis*), Lapland Longspur (*Calcarius lapponicus*) and four individuals of Daurian Partridge (*Perdix dauurica*). Additionally, a hybrid between Pine Bunting and Yellow hammer (*Emberiza leucocephalos* x *Emberiza citronella*) was also recorded the first time.



Figure 9. The new species for the Khurkh BRS: Daurian Partridge, Merlin and Lapland Longspur

Fall migration in Khovd BRS - 2021

During our second autumn season from 13th August to 10th October 2021, we captured 4435 new birds (with 284 recaptures) of 74 species over 59 days, averaging 75 bird per day.

The most caught bird was the Hume's Warbler (*Phylloscopus humei*), making up 36.4% (1673 individuals) of the total number of new birds caught in the fall, followed by the Lesser Whitethroat (*Curruca curruca*) at 11.1% (495 individuals). White-winged Redstart (*Phoenicurus erythrogastrus*) and Siberian Chiffchaff (*Phylloscopus collybita tristis*) were the third and fourth most commonly caught birds, with 322 (7.2%) and 187 (4.2%) individuals captured, respectively.

Fall migration in Khovd BRS - 2022

During our third autumn season from 15th August to 9th October 2022, we ringed 4268 new birds (with an additional 654 recaptures) belonging to 100 different species. We conducted 56 ringing days, with an average capture rate of 76 birds per day.

Hume's Warbler was the most commonly caught species, with 865 individuals making up 20.2% of total number of new birds caught during the season. Siberian Chiffchaff was the second most caught bird with 482 individuals (11.2%), while Tree Sparrow (*Passer montanus*) and Lesser Whitethroat taxa were the third and fourth most frequently caught species, respectively, with 449 (10.5%), and 432 (10.1%) individuals.

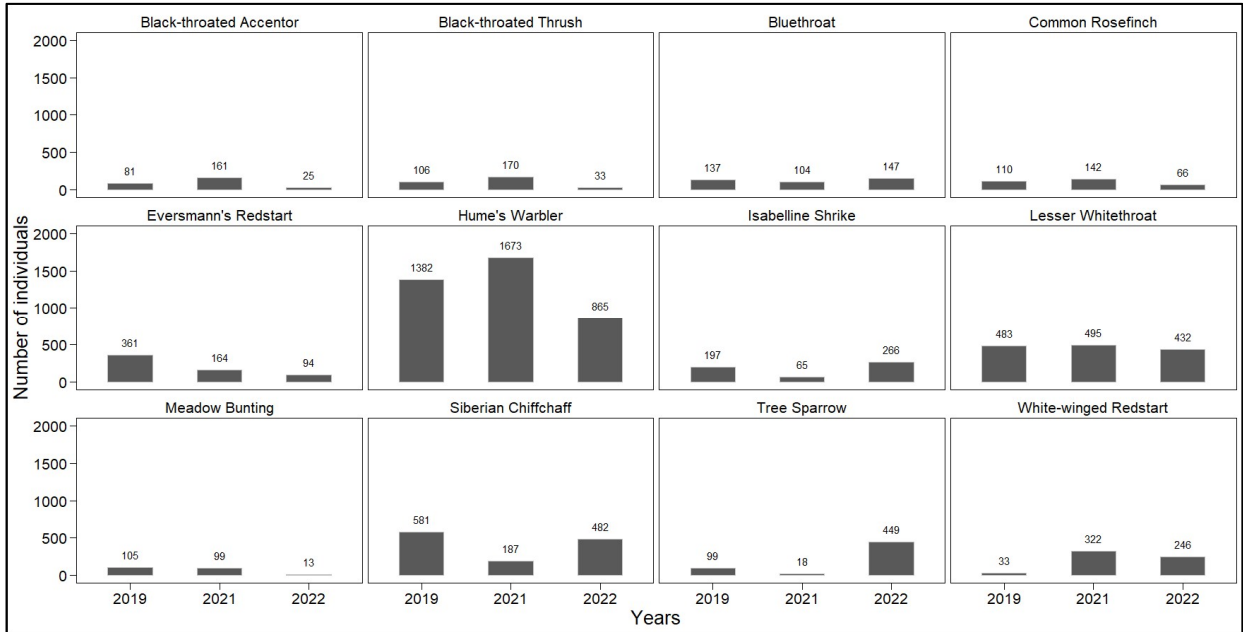


Figure 10. The most frequently banded birds at Khovd BRS

Pilot study in Ugii Lake BRS – 2022

During our pilot study from 5th August to 14th August 2022, we ringed a total of 442 new birds belonging to 29 different species, with 22 of them belonging to the wader group. We conducted bird ringing activities for 7 days, with an average capture of 63 birds per day. Additionally, we observed the bird movements of birds around the station site for two days before we setup the nets. Our setup was 150 meters wader nets of 3 sections from 7th Aug. All observed bird lists can be found in this link: <https://ebird.org/tripreport/74480>

The most frequently caught species during our pilot study was the Long-toed Stint (*Calidris subminuta*) with 83 individuals making up 18.7%% of total captures. This was followed by the Curlew Sandpiper (*C. ferruginea*) with 76 individuals (17.2%) and Little Ringed Plover (*Charadrius dubius*) with 49 birds (11.1%). We finished our survey within a week as we ran out of leg flags. We will need to purchase more leg flags for the 2023 season in order to cover the entire season.

Table 1. The list of banded birds in Ugii Lake BRS during our pilot study

SPECIES NAME	SCIENTIFIC NAME	2022 07 AUG- 14 AUG
Long-toed Stint	<i>Calidris subminuta</i>	83
Curlew Sandpiper	<i>Calidris ferruginea</i>	76
Little Ringed Plover	<i>Charadrius dubius</i>	49
Temminck's Stint	<i>Calidris temminckii</i>	31
Little Stint	<i>Calidris minuta</i>	30
Common Sandpiper	<i>Actitis hypoleucos</i>	26
Common Redshank	<i>Tringa totanus</i>	25
Wood Sandpiper	<i>Tringa glareola</i>	15
Pacific Golden Plover	<i>Pluvialis fulva</i>	13
Red-necked Phalarope	<i>Phalaropus lobatus</i>	12
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	10
Ruddy Turnstone	<i>Arenaria interpres</i>	8
Terek Sandpiper	<i>Xenus cinereus</i>	6
Swinhoe's Snipe	<i>Gallinago megala</i>	4
Black-tailed Godwit	<i>Limosa limosa</i>	4
Common Snipe	<i>Gallinago gallinago</i>	3
Pin-tailed Snipe	<i>Gallinago stenura</i>	2
Red-necked Stint	<i>Calidris ruficollis</i>	2
Kentish Plover	<i>Charadrius alexandrinus</i>	2
Little Curlew	<i>Numenius minutus</i>	1
Green Sandpiper	<i>Tringa ochropus</i>	1
Northern Lapwing	<i>Vanellus vanellus</i>	1
Non- shorebirds:		
Common Tern	<i>Sterna hirundo</i>	26
White-winged Tern	<i>Chlidonias leucopterus</i>	6
Common Teal	<i>Anas crecca</i>	2
Pallas's Gull	<i>Ichthyaeetus ichthyaeetus</i>	1
Common Shelduck	<i>Tadorna tadorna</i>	1
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1
Swan Goose	<i>Answer cygnoides</i>	1
TOTAL		442

Research activities at the stations

In addition to our standardized ringing, we conducted several other ornithological surveys and research activities at the station. Through collaborations with other researchers, we published three scientific articles between 2021 and 2022. Our long-awaited submission of first records of Korean Bush-warblers was published in the *Birding Asia* journal (Batmunkh et al., 2022), and our studies on Yellow-breasted Buntings contributed to two other articles (Bao et al., 2022; Beermann et al., 2021). Furthermore, we are collecting feather samples from taxonomically unresolved species/subspecies, such as, Lesser Whitethroats, Pallas's Buntings, and a few others. Below are brief notes on some of our small projects and activities.

Local breeding bird survey

At the Khurkh BRS, we have been monitoring the nests of raptors near our station for several years. This includes several species, such as a pair of Golden Eagles (*Aquila chrysaetos*), Saker Falcons (*Falco cherrug*), Upland Buzzard (*Buteo hemilasius*), Steppe Eagles (*Aquila nipalensis*), Cinereous Vultures (*Aegyphus monachus*), Black-eared Kites (*Milvus migrans lineatus*) and three pairs of Amur Falcons (*Falco amurensis*) all of which successfully bred this year. In addition to common breeders such as Brown-cheeked Rails (*Rallus indicus*), Baillon's Crakes (*Zapornia pusilla*), Common Magpies (*Pica pica*), Daurian Jackdaws (*Corvus dauuricus*), Red-billed Choughs (*Pyrrhocorax pyrrhocorax*), Dusky Warblers (*Phylloscopus fuscatus*), Pallas's Grasshopper Warbler (*Helopsaltes certhiola*), the most noteworthy breeding species were a pair each of White-naped Cranes and Yellow-breasted Buntings (*Emberiza aureola*) around the station.

At the Khovd BRS, we have been conducting breeding bird monitoring and have recorded several species, including Bar-headed Goose (*Anser indicus*), Black Stork (*Ciconia nigra*), Demoiselle Crane, Ruddy Shelduck (*Tadorna ferruginea*), Mallard (*Anas platyrhynchos*), Common Merganser (*Mergus merganser*), Common Sandpiper, Chukar (*Alectoris chukar*), Little Ringed Plover (*Charadrius dubius*), Booted Eagle (*Hieraaetus pennatus*), Black-eared Kite, Upland Buzzard, Eurasian Nightjar (*Caprimulgus europaeus*), Eurasian Hoopoe (*Upupa epops*), Pied Wheatear (*Oenanthe pleschanka*), White-crowned Penduline-Tit (*Remiz coronatus*), Bluethroat (*Luscinia svecica*), Eurasian Magpie, Common Raven (*Corvus corax*), Common House-Martin (*Delichon urbicum*), Mongolian Finch (*Bucanetes mongolicus*), Rock Sparrow (*Petronia petronia*), European Greenfinch (*Chloris chloris*), and Grey-necked Bunting (*Emberiza buchanani*). We will continue our efforts to monitor breeding birds at the station in the future.

Raptor Banding

We occasionally catch diurnal raptors at the ringing stations. Also, we used large-meshed raptor nets with a mouse sound to attract owls during dawn and dusk. Setting up nets on the nearby ridge at Khurkh BRS has always been helpful for catching diurnal raptors, particularly small falcons. Nevertheless, it is challenging to climb up there several times in row to extract the birds from the net immediately. At the other stations raptors are caught randomly in passerine nets. We have banded 328 individuals of 17 species of birds of prey in our ringing stations. Here, we summarize the total capture of the most banded raptors including owls, at the stations.

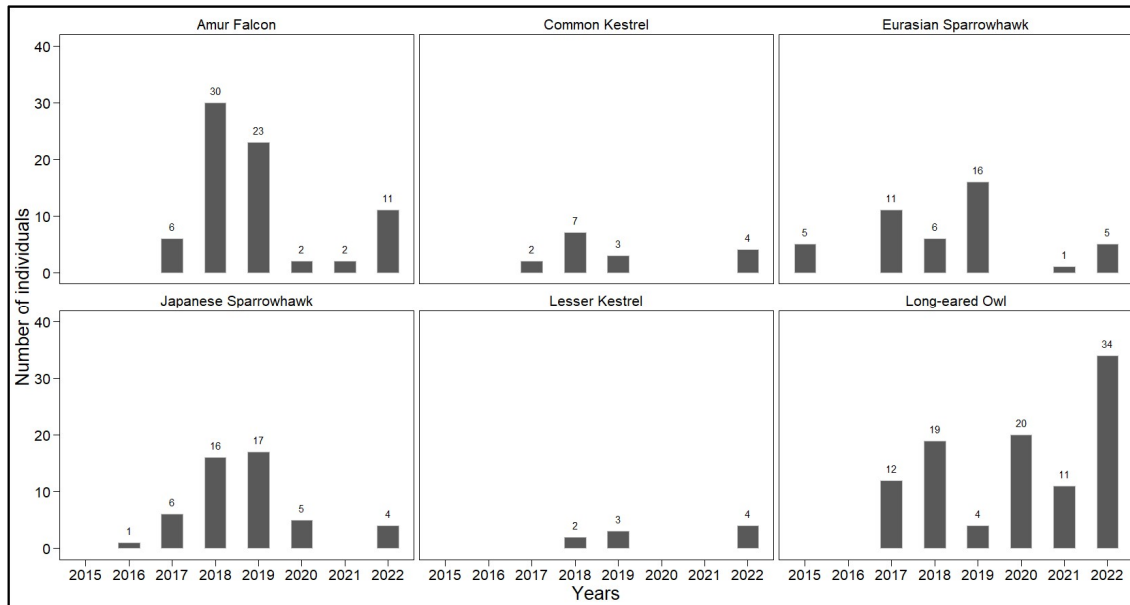


Figure 11. Most frequently banded raptors at the stations

Shorebird leg-flagging

During the 2021-2022 field season, we ringed a total 31 individuals of 5 different Charadriiformes species, bringing our total capture of these species to 154 individuals from 12 different species at the Khurkh BRS between 2016 and 2022. Pin-tailed Snipe (*Gallinago stenura*) were the most numerous waders captured, with a total of 15 individuals, followed by Common Snipe with 8 individuals and Swinhoe's Snipe (*Gallinago megala*) with 6 individuals in 2021-2022. We chose not to use leg-flags on the snipes this year as re-sighting is not as effective as with other waders.

As per our previous proposal, we conducted wader ringing at Dariganga, and in August and September 2021, we captured and released 145 individuals of 19 wader species. The most commonly banded species was the Wood Sandpiper (*Tringa glareola* n=47), followed by the Common Sandpiper (*Actitis hypoleucos* n=15) and Sharp-tailed Sandpiper (*Calidris acuminata* n=13). Despite facing logistical challenges and other factors, we were unfortunately unable to conduct wader ringing at Dariganga in 2022 and instead focused our efforts on Ugii Lake. As we have already presented the results from Ugii Lake, we will not repeat them here.

At the Khovd BRS, we successfully banded 37 individuals of 6 wader species during the field season. The most banded species were Pin-tailed Snipe with a total of 13 individuals, followed by Common Sandpiper with 8 individuals banded.

We kindly request your assistance in identifying any blue/green flagged birds and reporting them to us.



Figure 12. Mist net setup at Ugii Lake BRS for the wader catching. Photo credits: Batmunkh Davaasuren

Yellow-breasted Bunting project

We have been monitoring the Yellow-breasted Buntings (*Emberiza aureola*) – a bird that was once superabundant across Northern Eurasia and a common sight in bushy areas in central to northern parts of Mongolia. Unfortunately, it is now listed as Critically Endangered on the IUCN Red List due to large-scale illegal trapping during migration and on wintering grounds in China. We are continuing our efforts to monitor and protect this species.

During the autumn of 2021, we were able to band 12 new Yellow-breasted Buntings and recapture 2 individuals. In 2022, we successfully banded 15 new birds, bringing our total number of banded individuals to 103. We have observed two singing males that were banded in 2017 and 2018 respectively, indicating that this species continues to breed near our station every year. Additionally, we conducted monitoring surveys of breeding sites of Yellow-breasted Buntings in a 3 km transect along the Khurkh River Valley. We are grateful for the contributions of our volunteer, Magnus Bladth from Sweden, who conducted two transect surveys along the Khurkh River and detected a total 15 singing males and one female.

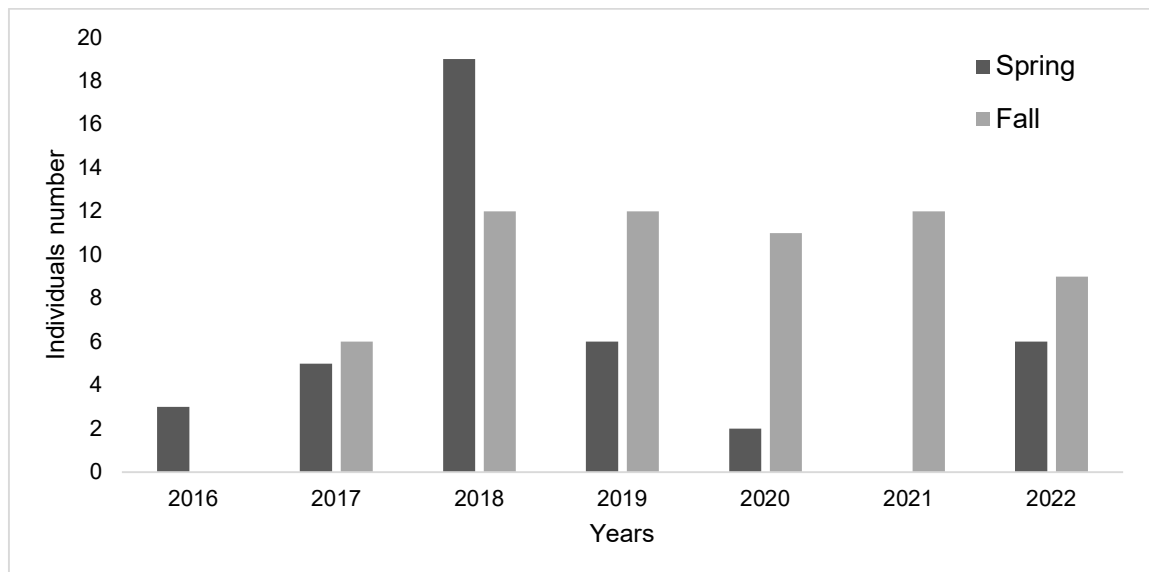


Figure 13. Number of Yellow-breasted buntings ringed in monitoring site and Khurkh BRS

We are excited to share that our collaboration with international ornithologists has resulted in a new publication. The paper focuses on sound analyses of Yellow-breasted Buntings across its range and compares the songs of different subspecies and populations. You can find more information about this project in the publication by (Bao et al., 2022). If you are interested in learning more about our work and supporting our efforts to protect this critically endangered species, please do not hesitate to contact us.

Ring recoveries

We are thrilled to report that we have received our second and third ring recovery of birds that were originally ringed at Khurkh BRS and later recaptured abroad. The first of these recoveries is an Arctic Warbler with ring “V180564” that was originally ringed on 16 Aug 2019 at Khurkh BRS. This bird was recaptured in Russia after 668 days by the Mirnoye Biological Research Station in Krasnoyarsk on 13 Aug 2021. The second recovery is a Black-faced Bunting with ring number “MN02692” that was originally ringed on 15 September in 2019 at Khurkh BRS. This individual was recaptured in Russia after 1084 days by our colleagues at Baikal BRS on 2 Sep 2022. These recoveries provide valuable insights into the movements and migration patterns of these species, and we are grateful for the collaborative efforts of our international partners.

At the Ugii Lake BRS, our friend, Andreas Buchheim has observed a Curlew Sandpiper that had been ringed in Mumbai, India, as well as another individual from Victory, Australia. These sightings suggest that the migratory paths of this species intersect at Ugii Lake. In addition, we have received reports of two Curlew Sandpipers that we had banded being recovered at Roebuck Bay and Piccaninnie Ponds Conservation Park, Southern Australia. Additionally, a Little Ringed Plover that we had banded was recently spotted in Beijing.

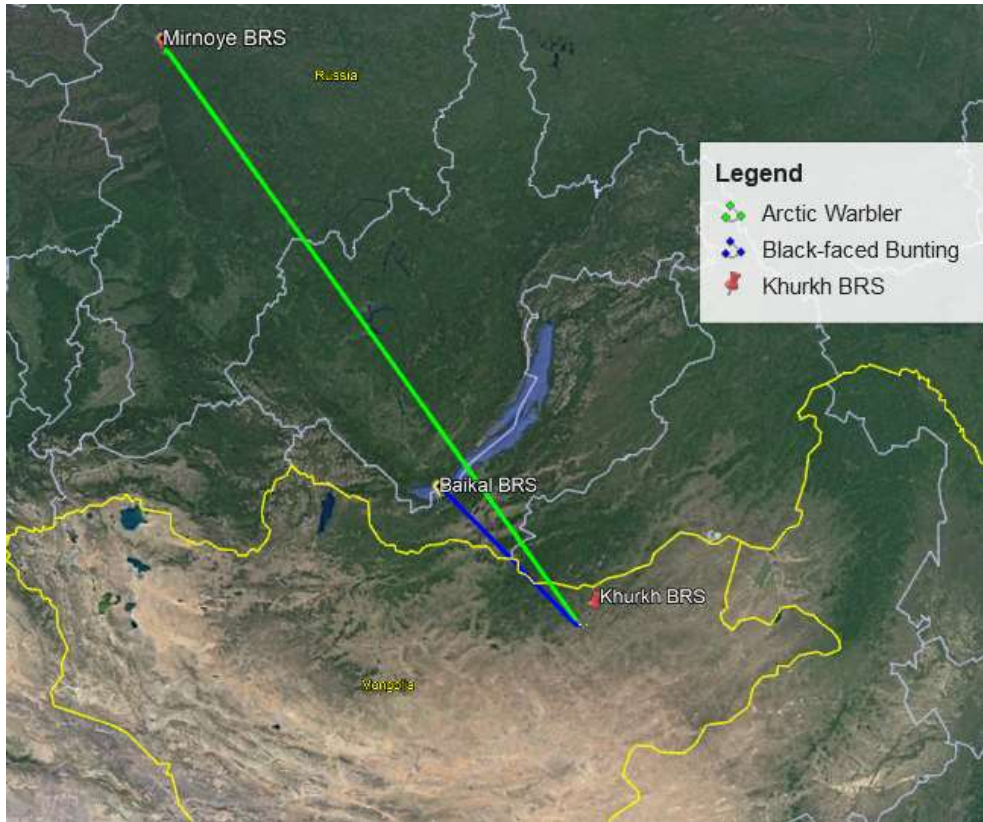


Figure 14. Ring recoveries of Khurkh BRS in 2021-22

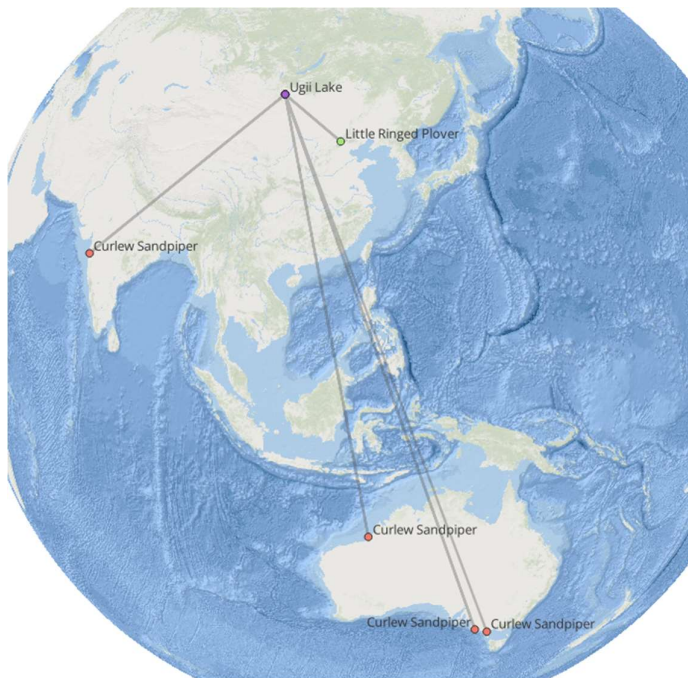


Figure 15. Resighting of the leg-flags ringed at Ugii Lake Ringing Station

In addition to the long-distance recoveries of our banded birds, we also recaptured some of our previously ringed birds during our monitoring efforts, which emphasizes the importance of our long-term monitoring program.

Tick collections

We joined a research project headed by Prof. Bjorn Olsen from Uppsala University, Sweden to investigate avian ticks that are carried by migratory birds from their wintering grounds to their breeding areas. The project aims to identify potential tick-borne diseases that may be transmitted by migratory birds in our flyway. We have recently expanded our collaboration by partnering with Dr. Chang Yong Choi from Seoul National University, South Korea. Therefore, collecting ticks from birds in Mongolia is of utmost importance and will contribute to a better understanding of the epidemiology of these pathogens. At Khurkh BRS, ticks are frequently observed on birds during the autumn migration. However, this year, the weather has been colder than usual, and we have had fewer birds with ticks.

International bird banding training

In autumn 2022, we organized a "Ageing and Sexing East Asian Migratory Passerines" training program in collaboration with Ottenby Bird Observatory from Sweden, marking the first of its kind in Mongolia. The program was a great success, with weekly training sessions held at both Khurkh and Khovd BRS and attended by professional and amateur ornithologists from various organizations including the Baikal Bird Ringing Stations, Russia, Mongolian Bird Conservation Center, Saraana Nature Conservation Foundation, Mongolian Academy of Science, National University of Mongolia, Mongolian State University of Education, and Khovd University. The training was attended by 40 participants from Mongolia, Netherlands, Denmark, Russia, including 2 trainees from Ottenby Bird Observatory, and was highly valuable and timely for the future generation of Mongolian ornithologists. Additionally, Ottenby Bird Observatory donated us two photo laboratory sets and several books for both Khurkh and Khovd BRS, which will invaluablely be useful in our future development of the stations.



Figure 16. The training activities and participants. Photos by Jugdernamjil Nergui

Student practice

At our stations, we prioritize providing practical training to students in the field of ornithology and biology. In 2021-22, we supervised three bachelor's thesis students who successfully defended their degrees. Additionally, we trained 43 students from various universities in Mongolia during the spring and fall ringing seasons. These students were taught bird identification, capturing, safe handling, measuring and ringing techniques. We also provided lectures on avian biology, migration research methods and wildlife conservation. After passing a paper examination, students who qualified received a certificate of participation from the ringing stations. (Figure 10). The students were highly motivated and gained a lot of knowledge, with some even deciding to write their coursework using data from our stations. We are grateful to the teachers who encourage their students to participate in our studies and enable them to visit us. We extend a special thanks to Professor Ariunbold Jargalsaikhan, Soddelgerekh Bayargur of the Mongolian State University of Education, Tegshjargal Nanzadorj and Burmaa Zambuu of the Khovd University, and Magsarjav Erdenebat of the Mongolian University of Life Science.



Figure 17. Students always learn a lot at the stations. Photo credits: Mungunjiguur Enkhee and Alexey Berzukhov

Public awareness and outreach activities

We successfully celebrated the World Migratory Bird Day (WMBD) by organizing several simultaneous events from 12-18 May 2022. We reached out to more than 1000 school children, their teachers and parents, and some national park rangers, university students from Khurkh, Binder, Mankhan villages and Khovd city. (Figure 12). Our station coordinators visited local schools and universities to deliver lectures on bird migration, conservation and demonstrated bird ringing techniques to the children and participants. The school children were also invited to visit ringing stations and were thrilled to release the processed birds and learn about their names and migratory journeys. We plan to celebrate WMBD every year, and the East Asia Australasian Flyway Partnership (EAAFP) and WSCC have been providing regular support for our activities.



Figure 18. Childrens from local schools were always happy with the participation of the WMBD event in 2021-222. Photo credits: Nyambayar Batbayar

Conclusions

In the 2021-2022 ringing season, a total of 24,605 birds from 213 species were captured and marked at the three stations, with the Little Bunting, Hume's Leaf-warbler, Black-faced Bunting, Yellow-browed Warbler and Dusky Warbler being the top five most frequently ringed species. To date, our stations have ringed 70,014 individuals of 252 species.

After two years of autumn bird ringing at the Dariganga BRS, we have decided to relocate our wader ringing station to Ugii Lake in Central Mongolia, with plans to fully operate it from 2023.

After Covid-related restrictions, we resumed our bird ringing operation at Khovd BRS and completed the full season for the second year. Unfortunately, we faced some challenges with cattle destroying our mist nets during both the spring and autumn seasons.

During the bird ringing operation, we had the opportunity to train 43 students in basic bird ringing and ornithology research techniques. We are pleased to note that some of the students have expressed interest in continuing their studies in songbird migration, ecology, and conservation, and we are excited to encourage them as future ornithologists in the country.

To maintain effective monitoring of Yellow-breasted Bunting populations, it is recommended to continue regular monitoring activities using transect counts and playback methods to identify singing males. The number of territorial males can be used as an indicator of populations size, and therefore should be regularly monitored. Additionally, consistent efforts should be made each year to locate territorial males, in order to ensure that population trends can be accurately assessed over time.

The stations have presented the preliminary results and outcomes of several small projects at national and international conferences and meetings. The new discoveries and collaborations have also been published in scientific journals, with some more currently being prepared for submission.

We are pleased with our results for the 2021-2022 season and are eager to share our follow up station reports with the public, our supporters, donors, students, and volunteers who have been integral to our work.

We have listed our desired activities for future work, and we would greatly appreciate any help or support. Your donations and contributions are essential for us to continue conducting important research on avian migration in Mongolia. Please refer to Table 2 for cost estimate information.

Wish list

- Our team has identified a need to update our basic ringing equipment, including pliers and calipers. Additionally, we are hoping to add a high-flyer capture system and extend our poles at the Khovd BRS, as well as create or purchase walk-in traps at the Ugii lake BRS.
- We need new and high- quality mist nets for our stations, or financial donations to purchase them along with leg-flags for shorebirds.
- We are interested in establishing a partnership laboratory capable of analyzing DNA from feather samples.
- We would like to establish a scholarship program to support students who wish to study birds and related topics at our stations. This scholarship would assist with their transportation and local living expenses during the project.
- If you would like to support us in this, please do not hesitate to contact us.

Table 2. List of equipment required for the ringing stations.

Necessary items	Counts	Required amount
Ringing guides and bird id books for use and training	5	€500
Mist-nets	20	€1200
Leg-flags for waders	3000	€5000
Big clap-nets for raptor and wader catch	1	€200
New accommodation for western ringing station	1	€3000
Scholarship for students	2	€3000
Total		€12900

List of publications resulted from Mongolian BRS

- Bao, W., Kathait, A., Li, X., Ozaki, K., Hanada, Y., Thomas, A., Carey, G. J., Gou, J., Davaasuren, B., Hasebe, M., Holt, P. I., Pelikan, L., Fan, Z., Wang, S., & Xing, X. (2022). Subspecies Taxonomy and Inter-Population Divergences of the Critically Endangered, Yellow-Breasted Bunting: Evidence from Song Variations. In *Animals* (Vol. 12, Issue 17). <https://doi.org/10.3390/ani12172292>
- Batmunkh, D., Buchheim, A., Tuvshinjargal, E., & Thomas, J. S. (2022). Korean Bush-warbler *Horornis borealis*: First record for Mongolia. *BirdingASIA*, 37, 107–109.
- Beermann, I., Thomas, A., Anisimov, Y., Bastardot, M., Batbayar, N., Davaasuren, B., Gerasimov, Y., Hasebe, M., Nakul, G., Nergui, J., Ktitorov, P., Kulikova, O., & Heim, W. (2021). Range-wide breeding habitat use of the critically endangered, Yellow-breasted Bunting *Emberiza aureola* after population collapse. *Ecology and Evolution*, 11(13), 8410–8419. <https://doi.org/10.1002/ece3.7668>
- Davaasuren, Batmunkh., Tuvshinjargal, E., Andreas, B., & Nyambayar, B. (2019). The history of bird banding in Mongolia and Khurkh Bird ringing station activities. *3rd International Bird Observatory Conference*.
- Eilts, H. J., Feuerbach, N., Round, P. D., Bourski, O., Allcock, J., Leader, P., Davaasuren, B., Erdenechimeg, T., Park, J. G., & Heim, W. (2021). Complex postbreeding molt strategies in a songbird migrating along the East Asian Flyway, the Pallas's Grasshopper Warbler *Locustella certhiola*. *Ecology and Evolution*, 11(1), 11–21. <https://doi.org/10.1002/ece3.7098>
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- Melville, D. S., Batmunkh, D., & Tuvshinjargal, E. (2019). First sub-lingual oral fistula reported in a Swinhoe's Snipe *Gallinago megala*. *Wader Study*, 126(1), xx–xx.
- Nyambayar, B., Tuvshinjargal, E., David, W., Otgonbayar, T., & Tseveenmyadag, N. (2016). A contribution to the research on bird migration in Mongolia. *Toodog*, 2, 10–16.

APPENDIX 1. RINGING REPORT OF FOUR STATIONS IN 2021-2022

Scientific Name	Species Name	Khurkh BRS	Khovd BRS	Dariganga BRS	Ugii Lake BRS	Total
<i>Emberiza pusilla</i>	Little Bunting	2150	85	1088		3323
<i>Phylloscopus humei</i>	Hume's Leaf-warbler		2701			2701
<i>Emberiza spodocephala</i>	Black-faced Bunting	1297	21	433		1751
<i>Phylloscopus inornatus</i>	Yellow-browed Warbler	1045	24	149		1218
<i>Phylloscopus fuscatus</i>	Dusky Warbler	572	136	374		1082
<i>Curruca curraca</i> sspec.	Lesser Whitethroat sspec.	49	967	9		1025
<i>Lanius cristatus</i>	Brown Shrike	698	22			720
<i>Passer montanus</i>	Eurasian Tree Sparrow	222	485			707
<i>Phylloscopus tristis</i>	Siberian Chiffchaff	4	683	5		692
<i>Ficedula albicilla</i>	Taiga Flycatcher	575	17	13		605
<i>Phoenicurus erythrogastus</i>	Güldenstädt's Redstart		568			568
<i>Carpodacus erythrinus</i>	Common Rosefinch	347	211			558
<i>Phoenicurus aureus</i>	Daurian Redstart	478	1	78		557
<i>Aegithalos caudatus</i>	Long-tailed Tit	532	10			542
<i>Phylloscopus proregulus</i>	Pallas's Leaf Warbler	251	3	278		532
<i>Tarsiger cyanurus</i>	Red-flanked Bluetail	411	19	72		502
<i>Calliope calliope</i>	Siberian Rubythroat	399	4			403
<i>Lanius isabellinus</i>	Isabelline Shrike	16	351			367
<i>Arundinax aedon</i>	Thick-billed Warbler	342	3			345
<i>Luscinia svecica</i> sspec.	Bluethroat sspec.	16	254	1		271
<i>Emberiza leucocephalos</i>	Pine Bunting	241	7	17		265
<i>Phylloscopus borealis</i>	Arctic Warbler	243	7	15		265
<i>Phoenicurus erythronotus</i>	Eversmann's Redstart		258			258
<i>Fringilla montifringilla</i>	Brambling	37	133	80		250
<i>Acrocephalus agricola</i>	Paddyfield Warbler	3	240	1		244
<i>Emberiza cioides</i>	Meadow Bunting	106	112	6		224
<i>Turdus atrogularis</i>	Black-throated Thrush		203			203
<i>Prunella atrogularis</i>	Black-throated Accentor		187			187
<i>Helopsaltes certhiola</i>	Pallas's Grasshopper Warbler	222	6			228
<i>Saxicola stejnegeri</i>	Amur Stonechat	160				160
<i>Emberiza schoeniculus</i>	Reed Bunting sspec.	82	27	50		159
<i>Emberiza pallasi</i>	Pallas's Bunting	91	20	19		130
<i>Muscicapa striata</i>	Spotted Flycatcher		128			128
<i>Carpodacus sibiricus</i>	Long-tailed Rosefinch	15	106			121
<i>Cyanistes cyaneus</i>	Azure Tit	22	95			117
<i>Prunella montanella</i>	Siberian Accentor	109	3	2		114
<i>Anthus hodgsoni</i>	Olive-backed Pipit	108	5			113
<i>Motacilla cinerea</i>	Gray Wagtail	96	8			104
<i>Caprimulgus europaeus</i>	European Nightjar	9	79			88
<i>Fringilla coelebs</i>	Common Chaffinch	2	84			86
<i>Anthus trivialis</i>	Tree Pipit		84			84
<i>Calidris subminuta</i>	Long-toed Stint			1	83	84
<i>Sylvia communis</i>	Common Whitethroat	33	48			81
<i>Motacilla citreola</i>	Citrine Wagtail	61	15	2		78
<i>Calidris ferruginea</i>	Curlew Sandpiper				76	76
<i>Spinus spinus</i>	Eurasian Siskin	5	67	2		74
<i>Muscicapa dauurica</i>	Asian Brown Flycatcher	71	1			72
<i>Pica pica</i>	Eurasian Magpie	64	5			69
<i>Chloris chloris</i>	European Greenfinch		62			62
<i>Tringa glareola</i>	Wood Sandpiper			47	15	62
<i>Anthus spinoletta</i>	Water Pipit	3	57	1		61
<i>Phylloscopus trochiloides</i>	Greenish Warbler		60			60
<i>Regulus regulus</i>	Goldcrest	4	55			59
<i>Charadrius dubius</i>	Little Ringed Plover			9	49	58
<i>Parus major</i>	Great Tit	45	11			56
<i>Carpodacus rhodochlamys</i>	Red-mantled Rosefinch		56			56
<i>Tringa totanus</i>	Common Redshank			26	25	51
<i>Emberiza godlewskii</i>	Godlewskii's Bunting	1	50			51
<i>Actitis hypoleucos</i>	Common Sandpiper		8	15	26	49
<i>Phylloscopus plumbeitarsus</i>	Two-barred Warbler	46	1			47
<i>Acrocephalus dumetorum</i>	Blyth's Reed Warbler		47			47
<i>Asio otus</i>	Long-eared Owl	43	1	1		45
<i>Oenanthe oenanthe</i>	Northern Wheatear	35	8			43
<i>Phoenicurus [ochruros] phoenicuroides</i>	Eastern Black Redstart		40			40
<i>Lanius phoenicuroides</i>	Red-tailed Shrike		40			40

Scientific Name	Species Name	Khurkh BRS	Khovd BRS	Dariganga BRS	Ugii Lake BRS	Total
<i>Gallinago stenura</i>	Pin-tailed snipe	15	13	7	2	37
<i>Petronia petronia</i>	Rock Sparrow		37			37
<i>Turdus ruficollis</i>	Red-throated Thrush	30	6			36
<i>Prunella fluvescens</i>	Brown Accentor		36			36
<i>Calidris temminckii</i>	Temminck's Stint			3	31	34
<i>Corvus dauuricus</i>	Daurian Jackdaw	31				31
<i>Parus montanus</i>	Willow Tit	30				30
<i>Calidris minuta</i>	Little Stint				30	30
<i>Upupo epops</i>	Eurasian Hoopoe	18	9	1		28
<i>Emberiza aureola</i>	Yellow-breasted Bunting	27				27
<i>Bucanetes mongolicus</i>	Mongolian Finch		26			26
<i>Sterna hirundo</i>	Common Tern				26	26
<i>Riparia diluta</i>	Pale Martin		26			26
<i>Remiz coronatus</i>	White-crowned Penduline-tit	10	14	1		25
<i>Emberiza rutila</i>	Chestnut Bunting	23	1	1		25
<i>Jynx torquilla</i>	Eurasian Wryneck	4	20			24
<i>Turdus naumanni</i>	Naumann's Thrush	23				23
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper			13	10	23
<i>Gallinago gallinago</i>	Common Snipe	8		11	3	22
<i>Anthus [rufescens] japonicus</i>	Siberian Pipit	17		3		20
<i>Curruca nisoria</i>	Barred Warbler		19			19
<i>Saxicola maurus</i>	Siberian Stonechat		17	2		19
<i>Emberiza hortulana</i>	Ortolan Bunting		19			19
<i>Emberiza chrysophrys</i>	Yellow-browed Bunting	6	1	12		19
<i>Locustella lanceolata</i>	Lanceolated Warbler	13	1	4		18
<i>Iduna caligata</i>	Booted Warbler		17			17
<i>Phylloscopus sibilatrix</i>	Wood Warbler		17			17
<i>Gallinago megala</i>	Swinhoe's Snipe	6	1	5	4	16
<i>Parus ater</i>	Coal Tit	14	1			15
<i>Corvus frugilegus</i>	Rook	15				15
<i>Motacilla alba sspec.</i>	White Wagtail sspec.	7		7		14
<i>Prunella koslowi</i>	Mongolian Accentor		14			14
<i>Plivialis fulva</i>	Pacific Golden Plover				13	13
<i>Locustella tacsanowskia</i>	Chinese Bush-warbler	13				13
<i>Falco amurensis</i>	Amur Falcon	13				13
<i>Oenanthe pleschanka</i>	Pied Wheatear	2	11			13
<i>Anthus richardi</i>	Richard's Pipit	3	9	1		13
<i>Locustella luscinioides</i>	Savi's Warbler		13			13
<i>Hirundo rustica sspec.</i>	Barn Swallow sspec.	1	11			12
<i>Acrocephalus arundinaceus</i>	Great Reed Warbler		12			12
<i>Motacilla tschutschensis sspec.</i>	Eastern Yellow Wagtail sspec.	12				12
<i>Locustella naevia</i>	Common Grasshopper-warbler		12			12
<i>Phalaropus lobatus</i>	Red-necked Phalarope				12	12
<i>Emberiza rustica</i>	Rustic Bunting	9		2		11
<i>Tringa erythropus</i>	Spotted Redshank			10		10
<i>Emberiza tristrami</i>	Tristram's Bunting	3		6		9
<i>Dendrocopos minor</i>	Lesser Spotted woodpecker	9				9
<i>Xenus cinereus</i>	Terek Sandpiper			3	6	9
<i>Troglodytes troglodytes</i>	Eurasian Wren	7		2		9
<i>Limosa limosa</i>	Black-tailed Godwit			5	4	9
<i>Sturnus vulgaris</i>	Common Starling	2	7			9
<i>Tringa stagnatilis</i>	Marsh Sandpiper			8		8
<i>Arenaria interpres</i>	Ruddy Turnstone				8	8
<i>Phoenicurus phoenicurus</i>	Common Redstart	1	7			8
<i>Muscicapa sibirica</i>	Dark-sided Flycatcher	8				8
<i>Motacilla personata</i>	Masked Wagtail		8			8
<i>Chlidonias leucopterus</i>	White-winged Tern			1	6	7
<i>Phylloscopus schwarzi</i>	Radde's Warbler	5	1	1		7
<i>Tringa ochropus</i>	Green Sandpiper	2	2	2	1	7
<i>Rallus indicus</i>	Brown-cheeked Rail	7				7
<i>Riparia riparia</i>	Sand Martin		7			7
<i>Turdus obscurus</i>	Eyebrowed Thrush	7				7
<i>Accipiter nisus</i>	Eurasian Sparrowhawk	2	4			6
<i>Pyrrhocorax pyrrhocorax</i>	Red-billed Chough	6				6
<i>Larvivora cyane</i>	Siberian Blue Robin	5		1		6
<i>Ficedula zanthopygia</i>	Yellow-rumped Flycatcher	5				5
<i>Coccothraustes coccothraustes</i>	Hawfinch	2	3			5
<i>Turdus naumanni x eunomus</i>	Naumann's Thrush X Dusky Thrush	5				5

Scientific Name	Species Name	Khurkh BRS	Khovd BRS	Dariganga BRS	Ugii Lake BRS	Total
<i>Calidris ruficollis</i>	Red-necked Stint			2	2	4
<i>Cuculus canorus</i>	Common Cuckoo	1	3			4
<i>Accipiter gularis</i>	Japanese Sparrowhawk	3	1			4
<i>Turdus eunomus</i>	Dusky Thrush	4				4
<i>Himantopus himantopus</i>	Black-winged Stilt			4		4
<i>Falco tinnunculus</i>	Common Kestrel	4				4
<i>Poecile palustris</i>	Marsh Tit	4				4
<i>Delichon urbicum</i>	Common House Martin		4			4
<i>Panurus biarmicus</i>	Bearded Reedling		4			4
<i>Falco naumanni</i>	Lesser Kestrel	4				4
<i>Perdix dauurica</i>	Daurian Partridge	4				4
<i>Otus scops</i>	European Scops-owl		3			3
<i>Carduelis sinica</i>	Oriental Greenfinch	3				3
<i>Turdus philomelos</i>	Song Thrush		3			3
<i>Calcarius lapponicus</i>	Lapland Longspur	1	2			3
<i>Monticola saxatilis</i>	Rufous-tailed Rock-Thrush		3			3
<i>Zoothera dauma</i>	White's Thrush		3			3
<i>Asio flammeus</i>	Short-eared Owl	3				3
<i>Linaria flavirostris</i>	Twite		3			3
<i>Mareca strepera</i>	Gadwall			3		3
<i>Anas platyrhynchos</i>	Mallard	1		2		3
<i>Turdus ruficollis x atrogularis</i>	Red-throated Thrush x Black-throated Thrush	3				3
<i>Charadrius alexandrinus</i>	Kentish Plover			1	2	3
<i>Acrocephalus orientalis</i>	Oriental Reed Warbler	2				2
<i>Carpodacus roseus</i>	Pallas's Rosefinch		2			2
<i>Anthus cervinus</i>	Red-throated Pipit	2				2
<i>Vanellus vanellus</i>	Northern Lapwing			1	1	2
<i>Tringa nebularia</i>	Common Greenshank			2		2
<i>Emberiza buchanani</i>	Grey-necked Bunting		2			2
<i>Athene noctua</i>	Little Owl		2			2
<i>Ptyloscopus trochilus</i>	Willow Warbler		2			2
<i>Columba livia</i>	Rock Dove		2			2
<i>Gallinago solitaria</i>	Solitary Snipe		2			2
<i>Ficedula hypoleuca</i>	European Pied Flycatcher		2			2
<i>Limnodromus semipalmatus</i>	Asian Dowitcher			2		2
<i>Tadorna ferruginea</i>	Ruddy Shelduck			2		2
<i>Streptopelia orientalis</i>	Oriental Turtle-Dove	1	1			2
<i>Alcedo atthis</i>	Common Kingfisher	1	1			2
<i>Circus cyaneus</i>	Hen Harrier	1	1			2
<i>Corvus [corone] orientalis</i>	Carrion Crow	1	1			2
<i>Oenanthe isabellina</i>	Isabelline Wheatear		2			2
<i>Mareca falcata</i>	Falcat Duck			2		2
<i>Sitta europaea</i>	Eurasian Nuthatch	2				2
<i>Acrocephalus bistrigiceps</i>	Black-browed Reed Warbler	1		1		2
<i>Anas crecca</i>	Green-winged Teal				2	2
<i>Locustella davidi</i>	Baikal Bush-warbler			1		1
<i>Falco columbarius</i>	Merlin	1				1
<i>Ichthyaeus ichthyaeus</i>	Pallas's Gull				1	1
<i>Pastor roseus</i>	Rosy Starling		1			1
<i>Dendrocopos major</i>	Great Spotted Woodpecker	1				1
<i>Spatula clypeata</i>	Northern Shoveler			1		1
<i>Oriolus oriolus</i>	Eurasian Golden Oriole		2			2
<i>Numenius minutus</i>	Little Curlew				1	1
<i>Spodiopsar cineraceus</i>	White-cheeked Starling			1		1
<i>Alaudala rufescens sspec.</i>	Asian Short-toed Lark	1				1
<i>Coturnix japonica</i>	Japanese Quail	1				1
<i>Scolopax rusticola</i>	Eurasian Woodcock	1				1
<i>Curruca nana</i>	Asian Desert Warbler		1			1
<i>Cuculus saturatus</i>	Oriental Cuckoo		1			1
<i>Eremophila alpestris</i>	Horned Lark			1		1
<i>Caprimulgus jotaka</i>	Gray Nightjar	1				1
<i>Motacilla flava</i>	Western Yellow Wagtail		1			1
<i>Sylvia borin</i>	Garden Warbler		1			1
<i>Dendrocopos leucotos</i>	White-backed Woodpecker	1				1
<i>Picoides tridactylus</i>	Eurasian Three-toed Woodpecker	1				1
<i>Tadorna tadorna</i>	Common Shelduck				1	1
<i>Emberiza fucata</i>	Chestnut-eared Bunting	1				1

Scientific Name	Species Name	Khurkh BRS	Khovd BRS	Dariganga BRS	Ugii Lake BRS	Total
<i>Zapornia pusilla</i>	Baillon's Crake	1				1
<i>Fulica atra</i>	Eurasian Coot			1		1
<i>Emberiza leucocephalos x citrinella</i>	Pine Bunting x Yellowhammer	1				1
<i>Passer montanus x domesticus</i>	Tree Sparrow x House Sparrow		1			1
<i>Calidris falcinellus</i>	Broad-billed Sandpiper			1		1
<i>Milvus migrans</i>	Black-eared Kite			1		1
<i>Chroicocephalus ridibundus</i>	Black-headed Gull				1	1
<i>Ptyonoprogne rupestris</i>	Eurasian Crag Martin		1			1
<i>Answer cygnoides</i>	Swan Goose				1	1
<i>Mareca penelope</i>	Eurasian Wigeon			1		1
<i>Turdus merula</i>	Eurasian Blackbird		1			1
<i>Streptopelia decaocto</i>	Eurasian Collared-Dove	1				1
	Total	11777	9449	2937	442	24605

APPENDIX 2. RINGING TOTALS OF KHURKH BRS

Species name	2022	2021	2020	2019	2018	2017	2016	2015	Grand Total
Little Bunting	1335	815	942	1183	764	1225	66	110	6440
Yellow-browed Warbler	669	376	952	1078	832	449	37	25	4418
Black-faced Bunting	625	672	372	605	363	378	31	22	3068
Siberian Rubythroat	151	248	279	1092	917	346	10	7	3050
Taiga Flycatcher	382	193	466	588	479	408	55	115	2686
Dusky Warbler	332	240	528	481	479	368	40	30	2498
Daurian Redstart	217	261	280	354	288	249	41	42	1732
Brown Shrike	366	332	337	222	261	146	35	6	1705
Arctic Warbler	193	50	229	608	236	241	84	16	1657
Red-flanked Bluetail	204	207	228	424	202	343	1	2	1611
Pine Bunting	192	49	72	743	193	148	27	13	1437
Pallas's Leaf Warbler	151	100	172	314	189	181	12	2	1121
Common Rosefinch	177	170	166	278	133	108	32	9	1073
Thick-billed Warbler	121	221	192	240	168	122			1064
Tree Sparrow	145	77	170	154	329	96	20	15	1006
Long-tailed Tit	253	279	21	226	9	59			847
Pallas's Grasshopper Warbler	52	102	88	222	130	100			694
Meadow Bunting	77	29	102	145	49	128	6		536
Siberian Accentor	80	29	54	90	65	132	1	15	466
Olive-backed Pipit	63	45	98	82	89	46	11	1	435
Amur Stonechat	75	85	76	60	53	21	4	6	380
Gray Wagtail	34	62	54	92	64	55	3	4	368
Pallas's Bunting	56	35	39	61	32	53	12	13	301
Common Magpie	13	51	15	62	82	59	7	5	294
Brambling	13	24	28	63	72	91			291
Reed Bunting	41	41	44	61	51	32	2		272
Asian Brown Flycatcher	43	28	67	52	23	41	11		265
Naumann's Thrush	19	4	8	26	75	55	39	34	260
Lesser Whitethroat	23	26	35	51	47	31	14	9	236
Willow Tit	30			150	1	44			225
Eurasian Siskin	3	2	29	137	3	49			223
Two-barred Warbler	33	13	38	44	34	29			191
Common Whitethroat	25	8	19	34	47	29	5	11	178
Daurian Jackdaw	26	5	2	41	80	10			164
Red-throated Thrush	22	8	8	34	40	46	4	1	163
Eurasian Nuthatch		2		140	5	4			151
Citrine Wagtail	19	42	31	28	10	7		1	138
Coal Tit	10	4	8	7	2	98			129
Dusky Thrush	4		1	7	35	30	12	15	104
Long-tailed Rosefinch	9	6	6	19	6	56		1	103
Yellow-breasted Bunting	15	12	13	18	31	11	2		102
Long-eared Owl	33	10	20	4	19	12			98
Lanceolated Warbler	6	7	4	33	15	29			94
Great Tit	27	18	20	11	7	9			92
Eye-browed Thrush	7		3	16	4	22	6	32	90
Dark-sided Flycatcher	7	1	14	29	20	11			82

Species name	2022	2021	2020	2019	2018	2017	2016	2015	Grand Total
Common Snipe	1	7	6	11	22	35			82
Amur Falcon	11	2	2	23	30	6			74
Chestnut Bunting	13	10	9	8	10	8	1	1	60
Radde's Warbler	2	3	10	15	15	15			60
Buff-bellied Pipit	3	14	13	8	13	7			58
Bluethroat	8	8	11	8	10	12	1		58
Hawfinch	2		4	22	25	4			57
Chinese Bush-Warbler	9	4	4	27	4	9			57
Azure Tit	11	11				31			53
Northern Wheatear	6	29	4	7	4	1	1		52
Eastern Yellow Wagtail	4	8	9	7	12	11			51
Dusky Thrush x Naumann's Thrush	2	3	8	16	8	10			47
Siberian Blue Robin	5		5	16	7	11	3		47
Isabelline Shrike	3	13	13	3	5	2			39
Pin-tailed Snipe	6	9	4	10	1	3	1		34
White Wagtail	1	6	7	3	9	6			32
Siberian Chiffchaff	3	1	9	6	3	8			30
Japanese Sparrowhawk	3		1	12	6	6	1		29
Eurasian Hoopoe	5	13	1		8	2			29
Eurasian Sparrowhawk	2			6	4	11		5	28
White-crowned Penduline-Tit	5	5	1	10	2	3			26
Lesser Spotted Woodpecker	8	1		8	7	1			25
Rustic Bunting	8	1		4	3	9			25
Richard's Pipit		3	2	1	4	8	4	2	24
Eurasian Wryneck	2	2	2	8	4	2	3	1	24
Common Redpoll			1	16		6			23
Paddyfield Warbler		3	5	5	2	4	1		20
Rook	13	2		1	4				20
Eurasian Wren	4	3	2	4	2	2			17
Oriental Greenfinch	2	1	4	2	7	1			17
White's Thrush			1	9	1	3	1	2	17
Eurasian Nightjar	1	8	2	3	2				16
Common Cuckoo		1	1	6	6	2			16
Blyth's Pipit				2	2	12			16
Common Kestrel	4			3	7	2			16
Black-throated Thrush			1	2	9	3			15
Swinhoe's Snipe	2	4	1	3	4				14
Red-billed Chough	4	2		2	5				13
Water Pipit	2	1	2	2	3	2			12
Green Sandpiper	2		2	2	2	4			12
Common Chaffinch	1	1	4	2	1	2			11
Carrion Crow	1			2	8				11
Yellow-browed Bunting	2	4		2	1	2			11
Common Redstart	1		1	4	1	2	2		11
Red-throated Thrush x Black-throated Thrush	3			1	2	5			11
Lesser Kestrel	4			3	2				9
Goldcrest	3	1	1	1		3			9
Oriental Turtle-Dove		1	3	3	1	1			9
Pallas's Rosefinch				1		8			9
Brown-cheeked Rail	2	5	1	1					9
Yellow-rumped Flycatcher	5			1	1	1			8
Great Spotted Woodpecker	1		1	3	1	2			8
Hen Harrier	1				2	5			8
Baillon's Crake	1			1		6			8
Eurasian Treecreeper			1	1		5			7
Tristram's Bunting	2	1	3		1				7
White-backed Woodpecker		1	3		2	1			7
Naumann's Thrush x Red-throated Thrush			1	1	1	3			6
Common Starling	1	1	1			2			5
Marsh Tit	4				1				5
Barn Swallow	1			1		2	1		5
Isabelline Wheatear			1	4					5
Common Redshank					3	1			4
Oriental Cuckoo				2	1	1			4
Blyth's Reed Warbler			4						4

Species name	2022	2021	2020	2019	2018	2017	2016	2015	Grand Total
Chestnut-eared Bunting		1	2		1				4
Eurasian Skylark					4				4
Common Kingfisher	1			1	1	1			4
Short-eared Owl	3				1				4
Daurian Partridge	4								4
Northern Hobby				1	2	1			4
Mallard	1					2			3
Wood Sandpiper					3				3
Eurasian Jay				2	1				3
Nightjar sp.			3						3
Tree Pipit					1	2			3
Cuckoo sp.					2	1			3
White-winged Tern					3				3
Black-browed Reed Warbler		1			1	1			3
Willow Warbler				3					3
Eurasian Woodcock	1			1		1			3
Oriental Reed Warbler	2			1					3
White-cheeked Starling					3				3
Godlewski's Bunting	1			1	1				3
Redwing			1	1		1			3
Pied Wheatear		2			1				3
Japanese Quail	1				2				3
Azure-winged Magpie					2				2
Baikal Bush-Warbler				2					2
Eurasian Collared Dove	1				1				2
Saker Falcon					2				2
Red-throated Pipit	1	1							2
Siberian Thrush				2					2
Black Woodpecker					1	1			2
Spotted Flycatcher					1		1		2
Three-toed Woodpecker		1			1				2
Grey-streaked Flycatcher				1					1
Solitary Snipe			1						1
Mongolian Lark					1				1
Bohemian Waxwing			1						1
Grey Nightjar	1								1
Spotted Redshank					1				1
Red-necked Stint					1				1
Fieldfare				1					1
Naumann's Thrush x Black-throated Thrush						1			1
Black-eared Kite					1				1
Common Greenshank					1				1
Korean Bush-warbler					1				1
Red Crossbill			1						1
Chinese Grey Shrike						1			1
Merlin	1								1
Common Quail			1						1
Lapland Bunting	1								1
Brown Accentor								1	1
Eastern Buzzard				1					1
Asian Short-toed Lark	1								1
Blackcap						1			1
Black-tailed Godwit					1				1
Pine Bunting x Yellowhammer	1								1
Ruff					1				1
Little Owl			1						1
Grand Total	6589	5188	6513	10762	7377	6535	651	574	44189

APPENDIX 3. RINGING TOTALS OF KHOVD BRS

Species Name	2022	2021	2019	Grand Total
Hume's Warbler	1028	1673	1524	4225
Lesser Whitethroat	472	495	553	1520
Siberian Chiffchaff	496	187	613	1296
Eversmann's Redstart	94	164	361	619
Tree Sparrow	467	18	125	610
White-winged Redstart	246	322	33	601
Isabelline Shrike	286	65	206	557
Bluethroat	150	104	137	391
Common Rosefinch	69	142	172	383
Paddyfield Warbler	234	6	130	370
Black-throated Thrush	33	170	108	311
Dusky Warbler	91	45	151	287
Spotted Flycatcher	76	52	146	274
Black-throated Accentor	26	161	81	268
Brambling	43	90	89	222
Meadow Bunting	13	99	105	217
Greenish Warbler	19	41	119	179
Common Chaffinch	34	50	74	158
Eurasian Nightjar	58	21	76	155
European Greenfinch	53	9	78	140
Tree Pipit	73	11	55	139
Azure Tit	28	67	38	133
Black Redstart	29	11	77	117
Little Bunting	45	40	32	117
White-crowned Penduline-Tit	14		99	113
Long-tailed Rosefinch	66	40	3	109
Blyth's Reed Warbler	19	28	57	104
Eurasian Siskin	33	34	29	96
Goldcrest	54	1	26	81
Ortolan Bunting	17	2	61	80
Hawfinch	3		77	80
Pale Martin	26		45	71
Godlewski's Bunting	4	46	19	69
Black-throated Thrush x Red-throated Thrush			66	66
Common Whitethroat	19	29	15	63
Water Pipit	55	2	3	60
Red-mantled Rosefinch	18	38	4	60
Yellow-browed Warbler	23	1	30	54
Brown Accentor	13	23	14	50
Taiga Flycatcher	12	5	31	48
Pallas's Bunting	20		28	48
Turkestan Shrike	25	15	5	45
Barn Swallow	11		34	45
Red-flanked Bluetail	8	11	24	43
Pied Wheatear	9	2	31	42
Reed Bunting	27		13	40
Eurasian Wryneck	12	8	18	38
Rock Sparrow	37			37
Common Redstart	6	1	29	36
Eurasian Hoopoe	9		22	31
Wood Warbler	10	7	14	31
Mongolian Finch	26		5	31
Barred Warbler	8	11	11	30
Brown Shrike	3	19	6	28
Siberian Stonechat	16	1	11	28
Black-faced Bunting	21		2	23
Booted Warbler	13	4	5	22
Pine Bunting	2	5	14	21
Arctic Warbler	1	6	13	20
Mongolian Accentor	12	2	5	19
Citrine Wagtail	15		2	17
Great Reed Warbler	12		5	17
Pin-tailed Snipe	13		4	17
Common Grasshopper Warbler	4	8	4	16

Species Name	2022	2021	2019	Grand Total
Great Tit	6	5	5	16
Northern Wheatear	8		8	16
Common Cuckoo		3	12	15
Savi's Warbler	11	2	2	15
Gray Wagtail	4	4	6	14
Richard's Pipit	9		5	14
Common Magpie	3	2	8	13
Grey-necked Bunting	2		10	12
Red-throated Thrush	4	2	6	12
Pallas's Grasshopper Warbler	3	3	6	12
Olive-backed Pipit	4	1	7	12
Eurasian Sparrowhawk	3	1	8	12
Long-tailed Tit	6	4		10
Common Sandpiper	8		2	10
Masked Wagtail	8			8
Willow Warbler	1	1	5	7
Common Starling	7			7
Pallas's Leaf Warbler	2	1	4	7
Oriental Cuckoo	1		6	7
Sand Martin	7			7
House Sparrow			6	6
Eurasian Scops Owl	3		3	6
Isabelline Wheatear	2		3	5
Common House Martin	4		1	5
White's Thrush	3		2	5
Siberian Accentor	3		2	5
Green Sandpiper	2		2	4
Eurasian Crag Martin	1		3	4
Common Rock Thrush	3		1	4
Bearded Reedling	4			4
Twite	2	1	1	4
Siberian Rubythroat	4			4
Song Thrush	1	2	1	4
Thick-billed Warbler	1	2	1	4
Eurasian Golden Oriole	1		2	3
White Wagtail			3	3
Rosy Starling		1	2	3
Hill Pigeon			3	3
Japanese Sparrowhawk	1		2	3
Temminck's Stint			3	3
European Pied Flycatcher	1	1	1	3
Desert Wheatear			3	3
Two-barred Warbler	1		1	2
Yellow-browed Bunting	1		1	2
Rock Dove	2			2
Pine Bunting x Yellowhammer			2	2
Pallas's Rosefinch		2		2
Oriental Turtle-Dove	1		1	2
Little Owl	2			2
Solitary Snipe	2			2
Booted Eagle			2	2
Lapland Bunting	2			2
Garden Warbler		1		1
Rustic Bunting			1	1
Coal Tit		1		1
Common Kingfisher	1			1
Carrion Crow		1		1
Long-eared Owl	1			1
Naumann's Thrush x Dusky Thrush			1	1
Chestnut Bunting	1			1
Asian Brown Flycatcher		1		1
Eurasian Blackbird	1			1
Yellow-breasted Bunting			1	1
Hen Harrier	1			1
Red-headed Bunting			1	1
Sulphur-bellied Warbler			1	1

Species Name	2022	2021	2019	Grand Total
Mugimaki Flycatcher			1	1
Swinhoe's Snipe	1			1
Western Yellow Wagtail	1			1
Black Stork			1	1
Asian Short-toed Lark			1	1
Mistle Thrush			1	1
Lanceolated Warbler	1			1
Radde's Warbler		1		1
Asian Desert Warbler	1			1
Red Crossbill			1	1
Laughing Dove			1	1
Eye-browed Thrush			1	1
Daurian Redstart	1			1
Tree Sparrow x House Sparrow	1			1
Grand Total	5014	4435	6131	15580