“ACBK Centre for Conservation Biology” LLP

Biodiversity baseline field surveys within Mirny Project to identify the level of biodiversity value, main direct or indirect impacts to the local flora and fauna that could result from the proposed Project and determine possible mitigation measures during September 2024-August 2025

Final report

for September 2024 – August 2025

Almaty, 2025

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Introduction

The work was carried out by "ACBK Centre for Conservation Biology " LLP in accordance with the agreement with Total Eren No. 01 dated September 01, 2024 "**Biodiversity baseline field surveys within Mirny Project to identify the level of biodiversity value, main direct or indirect impacts to the local flora and fauna that could result from the proposed Project and determine possible mitigation measures during September 2024-August 2025**".

Research had to be conducted in accordance with International Finance Corporation (IFC) Performance Standards (PS), Equator Principals IV, National Legislative Requirements of Kazakhstan, Bird Life South Africa Guidance.

This interim report summarizes the information obtained from field surveys in the project area in September 2024 – August 2025. Project area was established in 2024 on the basis of new layout of the turbines.

Area for the survey and the turbine layout as of September 2024 is shown in Fig. 1.

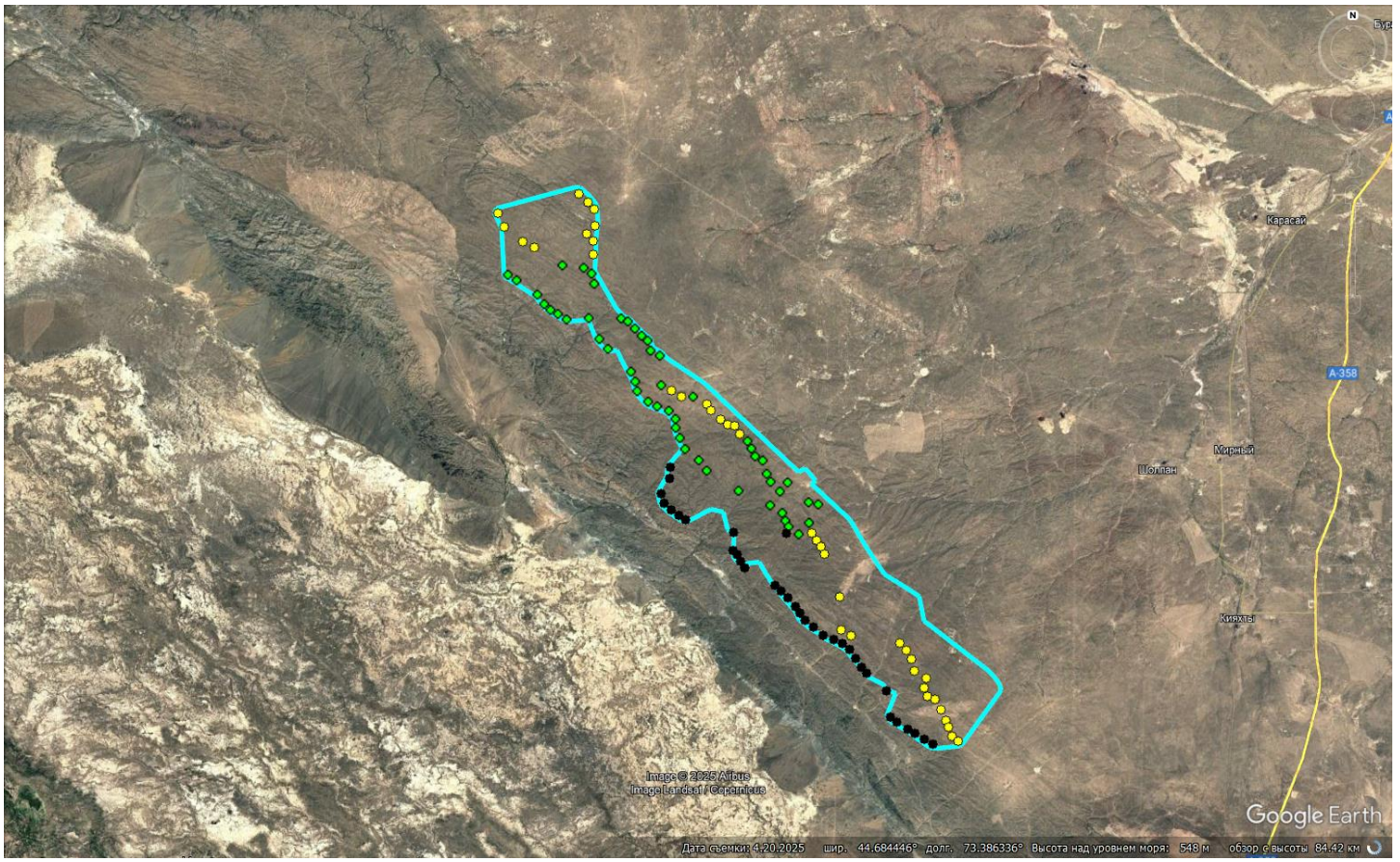


Fig. 1. Area for the survey and the turbine layout plan as of autumn 2024.

For different biodiversity components, in accordance with different data collection methods and different requirements for the volume of material, the degree of coverage was different. Study and data collection on insects, bats, plants and turtles supplemented by data obtained in 2023-2024 as a result of research on the previous version of the site ("southern area", or Area 2"). The survey periods for the biodiversity components are presented in Table 1.

Table 1. Coverage of turbine layout by different types of studies

Species / Taxonomic group	**2024**	**2025**
Argali	September 23 – December 22	January 18 – August 14
Invertebrates	–	June 18 – June 25
Bats	–	July 18 - July 23
Plants	–	June 12 – June 18
Birds, migrating or locally moved (VP)	September 23 – December 22	January 18– August 14
Birds, breeding (nests and transects)	September 23 – December 22	January 18– August 14
Turtles	–	April 11 – August 14
Other species	September 23 – December 22	January 18 – August 14

More detailed information on the coverage of the territory by observations is presented in the sections on the relevant scope of work.

The information is presented by the directions in which research was conducted, according to the Terms of Reference for the project.

1 General characteristics of the territory

Terrain and vegetation

The project area as a whole includes rubble piedmont plains and loamy plains with sparse saxaul forests, turning into xerophytic low mountains. The site lies entirely in the landscape zone of deserts.

Most of the northern section of the project area is occupied by plains with wormwood-saltwort vegetation and areas of saxaul forests. The southern section captures part of the Shu-Ilei low-mountain massif, which is a system of gentle ridges with leveled surfaces, sharply limited by steep slopes, and canyon-like valleys along watercourses. In the mountains, shrub thickets of meadowsweet (*Spiraea sp*.) and others are well developed; an abundance of cereals, legumes, and onions is characteristic, providing excellent food conditions for both ungulates and birds. Along the river beds, the most typical are *Haloxylon aphyllum, Tamarix sp., Atriplex caragana, Eurotia ceratoides, Nitraria schoberi, Artemizia sp., Limonium sp,* etc.

Preliminarily, in the course of field work in April-May, 5 main types of habitats were identified:

- xerophytic rocky low mountains
- outputs of flat granite slabs
- valley saxaul forests
- sagebrush and sagebrush deserts on gently undulating plains
- gently sloping solonchak depressions on the plains.

Descriptions and classification of habitats will be refined after the analysis of satellite images with the allocation of ecosystem contours and ground verification with the participation of geobotanist.

Presence of wetlands

Water spills have been noted near the road - apparently, temporary drying up; all waders recorded by us were observed near them. A number of low-water rivers that dry up in summer are noted. In dry areas of the northern section of the project area, a large amount of salt remains.

Presence of power lines

There are no power lines in the project territory. There are sections of lines not far from the sites. Moreover, before the start of autumn work, eight vantage points were added near existing power lines located outside the project site. The purpose of data collection at these vantage points is similar to that of work at fixed points within the site. A detailed description of the work is presented in Chapter 2

2 Bird surveys

Bird surveys were conducted in the September 23 – August 14 (Table 2).

Table 2. Timing and participants of bird studies

N	Dates	Participants
1	23.09.2024 – 10.10.2024	Satimetov S., Nukusbekov M., Amirekul K., Kisebaev T.
2	17.10.2024 – 24.10.2024	Satimetov S., Khrokov A., Amirekul K., Kisebaev T.
3	12.06.2023 – 04.07.2023	Satimetov S., Khrokov A., Amirekul K., Kisebaev T.
4	08.11.2024 – 22.11.2024	Satimetov S., Khrokov A., Amirekul K., Kisebaev T.
5	19.12.2024 – 22.12.2024	Satimetov S., Khrokov A., Amirekul K., Kisebaev T.
6	10.02.2025 – 13.02.2025	Satimetov S., Khrokov A., Amirekul K., Kisebaev T.
7	19.03.2025 – 12.03.2025	Satimetov S., Khrokov A., Amirekul K., Kisebaev T.
8	23.03.2025 – 26.03.2025	Satimetov S., Khrokov A., Amirekul K., Kisebaev T.
9	11.04.2025 – 22.04.2025	Satimetov S., Khrokov A., Amirekul K., Djaparov K., Belyaev A., Berdekulov B.
10	04.05.2025 – 14.05.2025	Kisebaev T., Belyaev A., Amirekul K., Tauanov Z., Amangeldiyev S., Duzenov B.
11	13.06.2025 – 23.06.2025	Kisebaev T., Belyaev A., Satimetov S., Tynysh R., Muhametkyzy A., Nurimanova D.
12	18.07.2025 – 26.07.2025	Alimgazin E., Kisebaev T., Amirekul K., Belyaev A., Khrokov A., Tynysh R.
13	13.04.2024 – 06.05.2024	Alimgazin E., Berdekulov B., Amirekul K., Belyaev A., Khrokov A., Tynysh R. Tauanov Z.,

The purpose of the field surveys was to conduct an ornithological survey of the project and adjacent territory, where the construction of a wind farm is planned. The surveys of the territory consisted in the search for nests of rare and endangered species of birds; the registration of birds on the migration was carried out, and the registration of birds at the vantage points (the longest and permanent part of the work). Additionally, findings of amphibians, reptiles and mammals were recorded, and, if possible, photographs of animals were taken. Some of the plant species were photographed.

The work was carried out entirely according to the methodology described in the Birds and Wind-Energy Best-Practice Guidelines (Compiled by: A.R. Jenkins, C.S. van Rooyen, J.J. Smallie, J.A. Harrison, M. Diamond, H.A. Smit-Robinson and S. Ralston).

During the field visit, a visual survey of landscapes, flora of higher plants and fauna of vertebrates of the project site for the placement of WPPs and the surrounding territory was carried out. Points for stationary observations (vantage points) were selected in December 2023 in accordance with new layout of turbines.

According to the methodological recommendations and the Terms of Reference, points for stationary observations (vantage points) were selected at project area in cooperation with WSP experts. The number of points on the areas had to be at least 30 in order to ensure the maximum possible coverage of the territory (at least 75%). The points were chosen taking into account accessibility, sufficient visibility, and the need to cover different types of landscapes. Since some of the vantage points from the spring 2024 survey fall within the current boundaries of the project site, it was decided to keep their location. They retained their previous names (24 selected points in the range M01-M32). In addition, six

additional observation points (P02, P06, P17, P24, X04, X05) were added to achieve 75% coverage. Photographs of the surrounding area were taken from the vantage points.

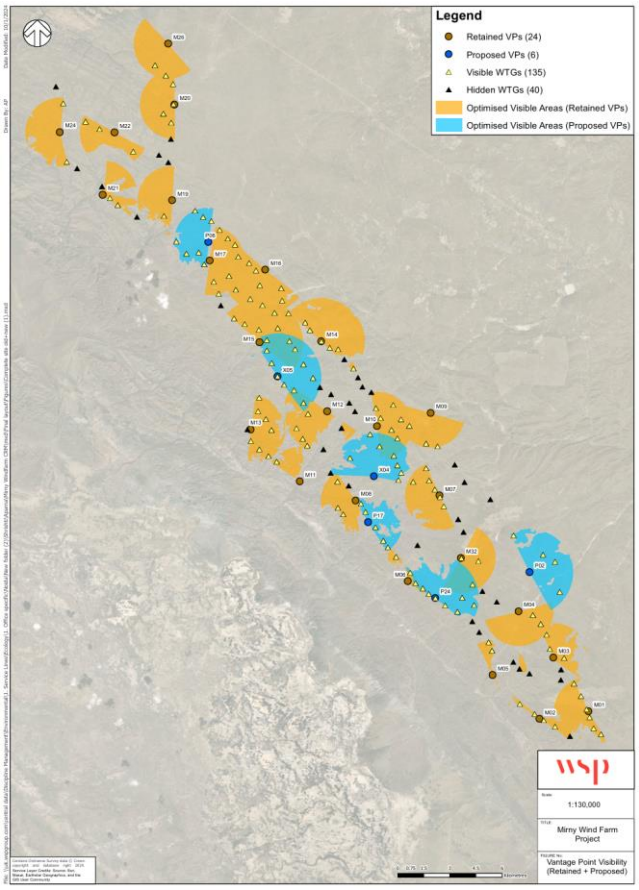


Fig. 2. Selected vantage points for project area

In addition, as mentioned above, ten vantage points were added near existing power lines located outside the project site (seven for autumn and winter surveys, 1 for spring survey and 2 vantage points as a replacement for two points out of original seven). These points were labeled as OHL_VP_1-10. Six vantage points of the total amount (OHL_VP_2-5; OHL_VP_9-10) are located nearby existing powerlines. The purpose of adding these vantage points is to collect data for collision risk modeling on the planned for construction power lines (the «North» line - to the electrical substation near the village of Ulken, the «South» line - to the electrical substation near the city of Shu, the «East» line - - to the electrical substation near Kiyakhty).

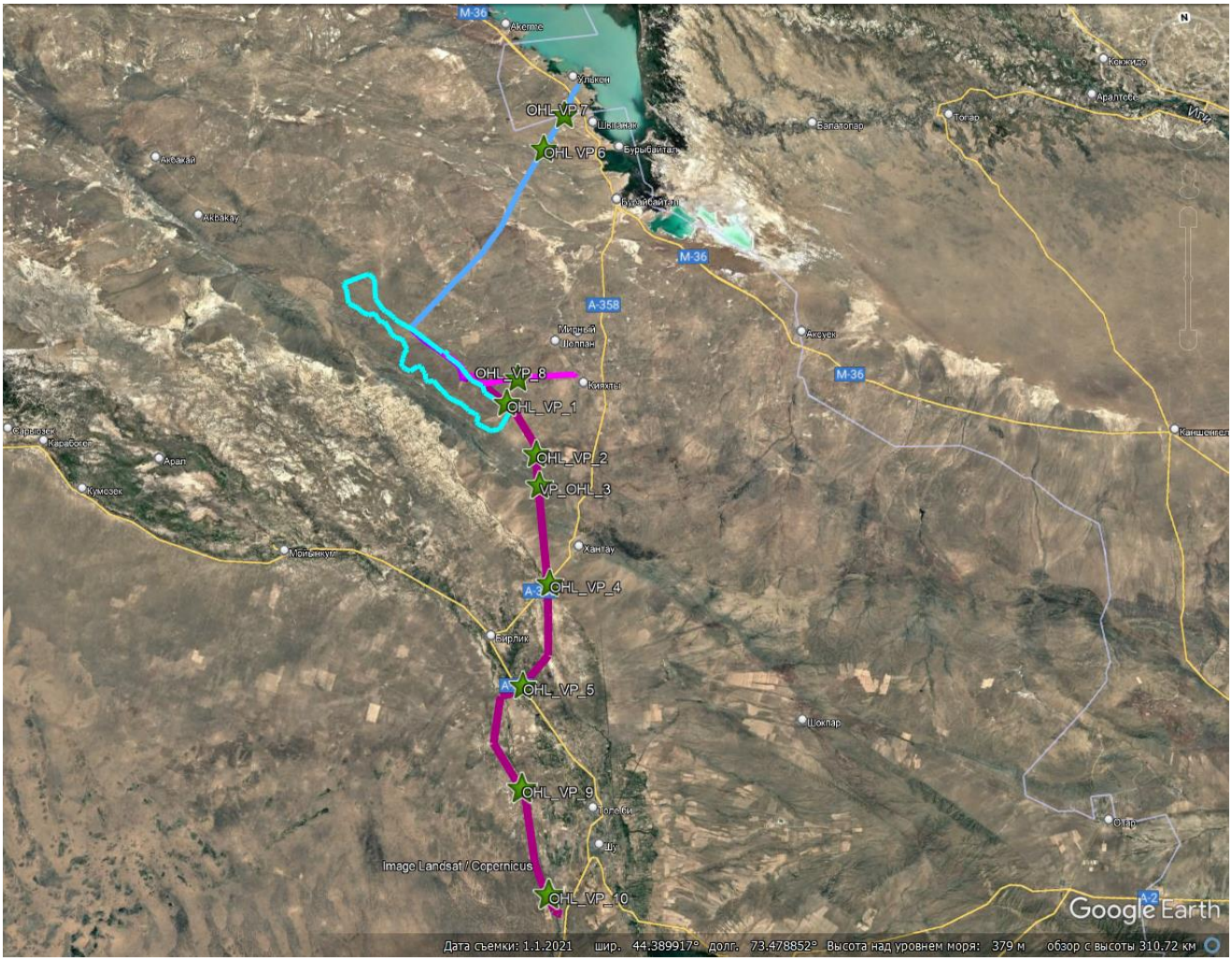


Fig. 3. Selected vantage points along planned powerlines (blue color – «North» line, pink color – «East line», purple color – «South» line

2.1 Autumn: September – November 2024

Scope and peculiarities of work

The work was carried out in three stages (Table 2), from the beginning of the active autumn migration to its end. It was completed on November 22; by this time, the migration of key groups in the south of Kazakhstan - birds of prey, bustards, cranes, etc. - ends, and only a few late-arriving passerines continue to fly in small numbers.

The collection of contextual data on migratory birds at the project sites has been carried out since spring 2023, some of which overlaps the current boundaries required for the final placement of the wind turbines. Data for the final option for the placement of the wind turbine has been collected specifically since March 2024, and this requires at least 12 continuous months of recording (a certain number of recording hours). A new cycle of work, after the approval of funding and the conclusion of an agreement with Aktas Energy LLC, began in September 2024. This report reflects the results obtained in the fall of 2024.

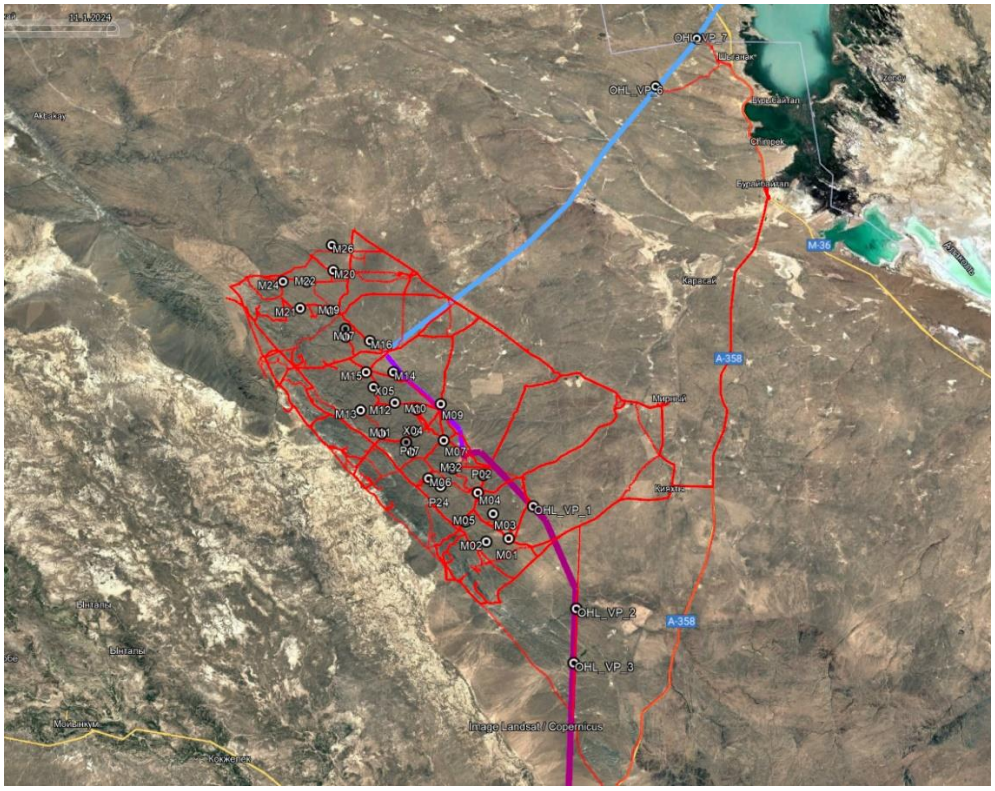


Fig. 4. Scheme of routes and points of field survey of the wind farm site and power transmission line route, autumn 2024 (north)

The work was carried out in accordance with the recommendations developed by Bullman, R. (WSP) based on the Scottish methodology "Recommended bird survey methods to inform impact assessment of onshore wind farms, ver. 2" (P. Whitfield, D. Jackson, B. Urquhart, 2017).

For a substantiated approval of territories for the installation of wind turbines, according to the methodology, it is not enough to only assess the density of the flight - it is necessary to accomplish the modeling of possible collisions of birds with wind turbines. For these purposes, together with accounting of the migratory species of birds, the time of stay of flying birds in observation radius was recorded in three altitude ranges: 0-20 m, 20-200 m and more than 200 m.

Due to the change in the planned location of the wind turbines from the beginning of 2024, other points of stationary observations were allocated for autumn works, with partial overlapping of the already existing points of the southern site (Fig. 4-5). Accordingly, autumn stationary observations of 2024 were carried out at 30 points. Due to the gradual decrease in daylight hours in the autumn period, September observations took place on average in the period from 08.00-10.00 to 17.00-18.00; October - from 08.00-10.00 to 16.30-17.30, November - from 08.30-09.00 to 16.30-17.00. Route observations were carried out during movements between the points of stationary observations.

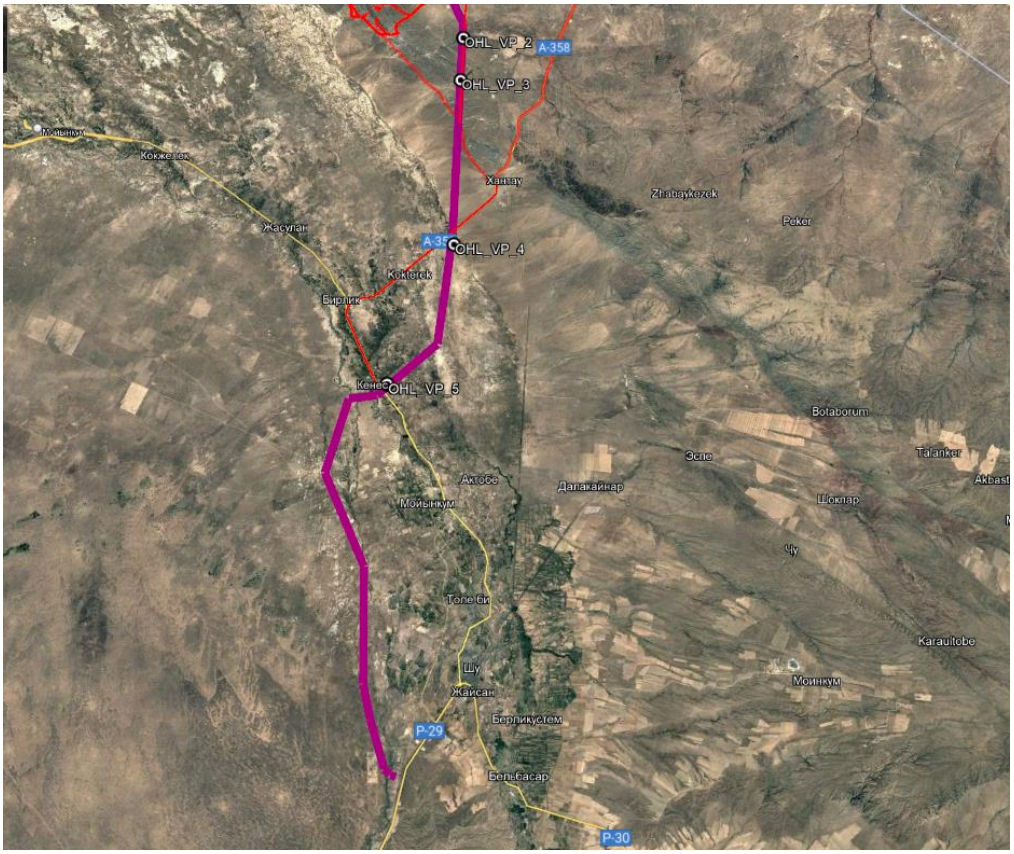


Fig.5. Scheme of routes and points of field survey of the wind farm site and power transmission line route, autumn 2024 (south)

Species composition of birds of prey.

In addition to local breeding species (long-legged buzzard Buteo rufinus, golden eagle Aquila chrysaetos, common kestrel Falco tinnunculus), a significant number of other species of birds of prey were observed migrating: steppe eagle Aquila nipalensis, short-toed eagle Circaetus gallicus, black kite Milvus migrans, white-tailed eagle Haliaeetus albicilla, common buzzard Buteo, harriers (pallid harrier Circus macrourus, hen harrier Circus cyaneus, Montagu's harrier Circus pygargus, marsh harrier Circus aeruginosus), sparrowhawk Accipiter nisus, hobby Falco subbuteo. The black vulture Aegypius monachus, imperial eagle Aquila heliaca and the saker falcon Falco cherrug were noted singly.

Density of birds of prey

The processed data allow us to judge to some extent the density of migration of birds of prey in certain ranges of distances and altitudes. For example, when recalculating the number of observed migratory individuals of the Falconiformes order per hour and per km2, we can estimate the average migratory load of the surveyed territory (Table 3).

Table 3. Migration density of birds of prey according to various indicators (birds/hour, birds/km^2)

VP	Total number of observation	Total number of registered	The main direction of	Observation's polygon area,	Number of birds per 1	Number of birds

	hours	raptors, ind.	flight	km^2	hour	per km^2
M01	15	22	SW	12,56	1,5	1,8
M02	18	28	SWW	12,56	1,6	2,2
M03	15	13	SW	12,56	0,9	1,0
M04	18	6	SW	12,56	0,3	0,5
M05	18	33	SW	12,56	1,8	2,6
M06	18	16	SW	12,56	0,9	1,3
M07	15	14	SW	12,56	0,9	1,1
M08	18	14	SW	12,56	0,8	1,1
M09	15	14	SWW	12,56	0,9	1,1
M10	15	58	SW	12,56	3,9	4,6
M11	18	13	SW	12,56	0,7	1,0
M12	15	115	SW	12,56	7,7	9,2
M13	18	11	SW	12,56	0,6	0,9
M14	12	13	SSW	19,63	1,1	0,7
M15	18	5	SW	19,63	0,3	0,3
M16	15	7	SW	19,63	0,5	0,4
M17	12	7	SW	12,56	0,6	0,6
M19	12	8	SW	12,56	0,7	0,6
M20	12	11	SW	12,56	0,9	0,9
M21	18	11	SWW	12,56	0,6	0,9
M22	12	2	W	12,56	0,2	0,2
M24	12	5	SW	12,56	0,4	0,4
M26	12	7	SW	12,56	0,6	0,6
M32	15	16	SW	12,56	1,1	1,3
P02	12	3	SW	19,63	0,3	0,2
P06	12	10	SW	12,56	0,8	0,8
P17	12	5	SWW	12,56	0,4	0,4
P24	12	10	SW	19,63	0,8	0,5
X04	12	4	SW	19,63	0,3	0,2
X05	12	68	SW	19,63	5,7	3,5

As can be seen in Fig. 5, certain parts of the polygons are distinguished, where, in general, low (0-1 ind./hour and ind./km2), medium (1.1-3 ind./hour and ind./km2) and high (>3.1 ind./hour and ind./km2) density of migratory predators, forming wide migratory corridors, was observed. The main direction of flight can be considered to be the southwest - it is dominant (83%, Fig. 6). The average range of flight altitudes is 20-200 m above the ground.

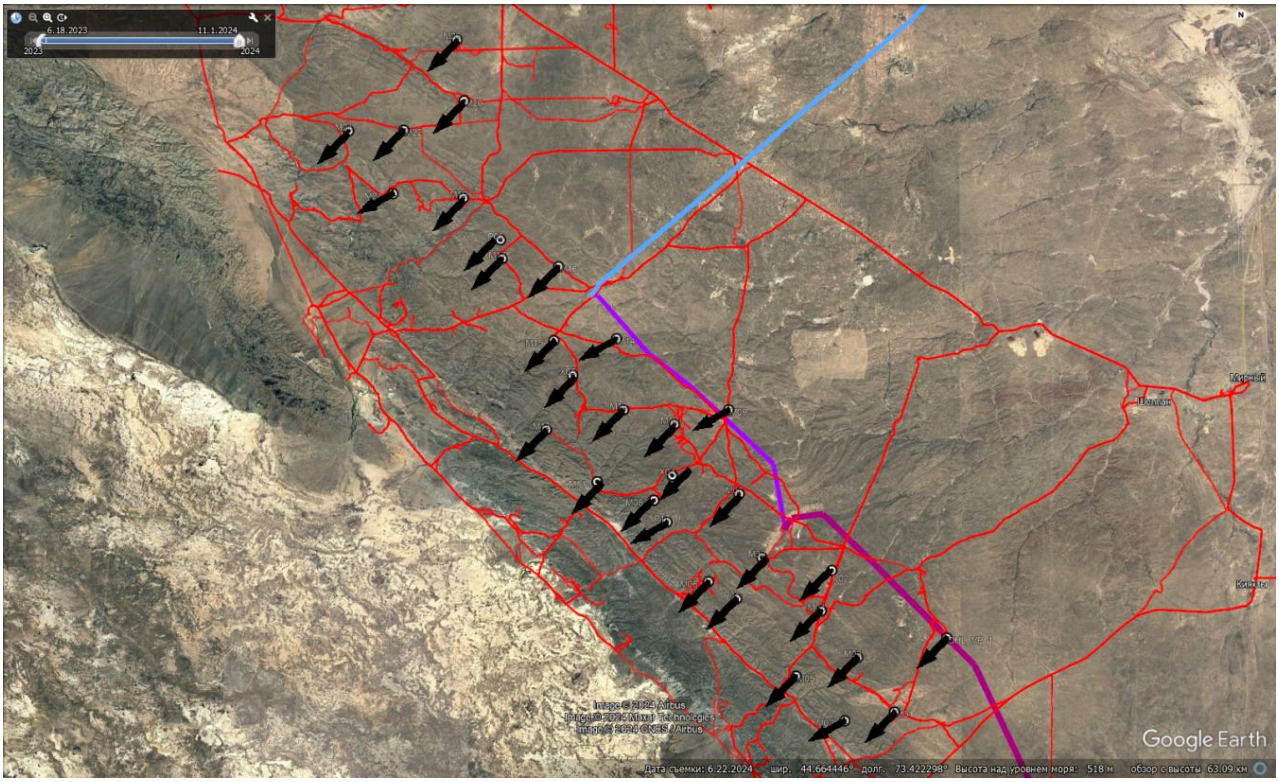


Fig. 6. General directions of flight of raptors at stationary observation points

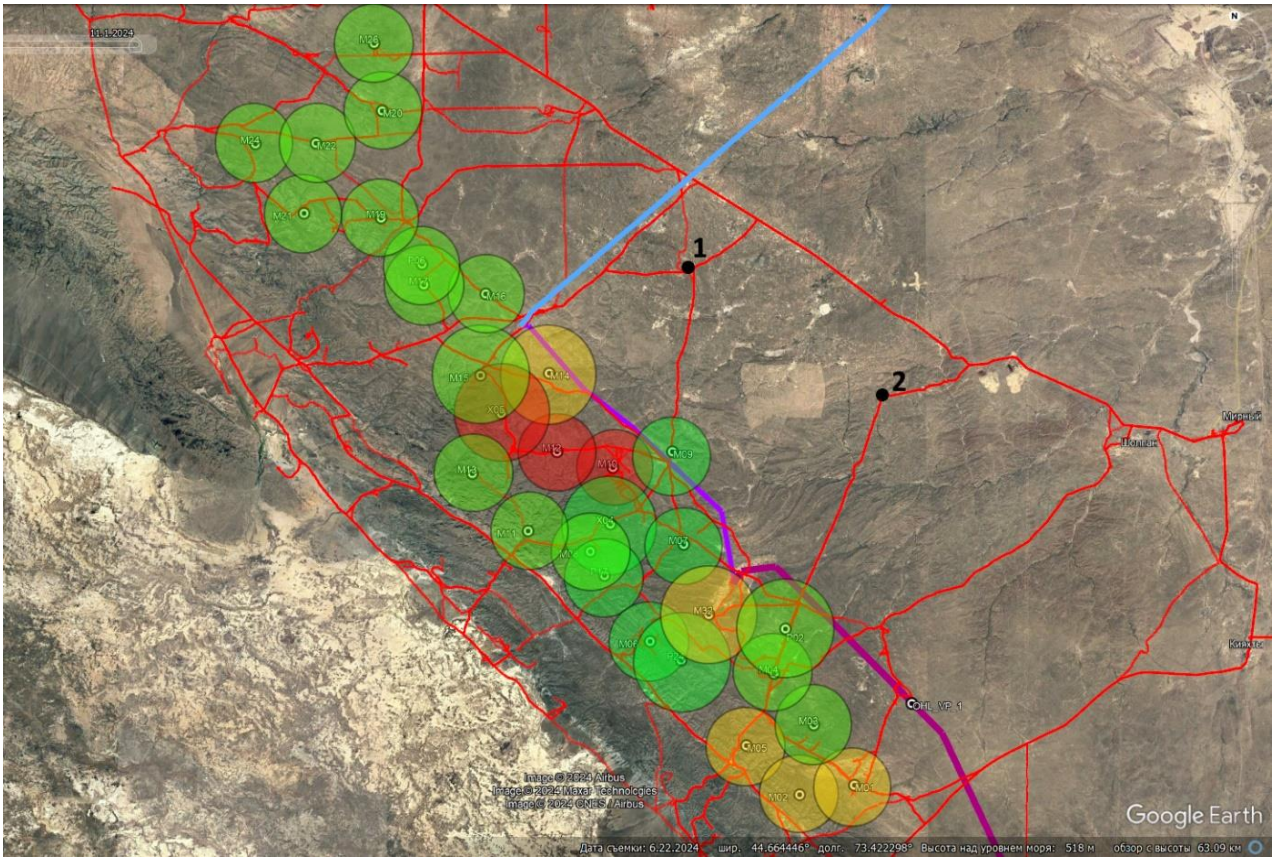


Fig. 7. Polygons with different density of raptors flight (ind./hour)

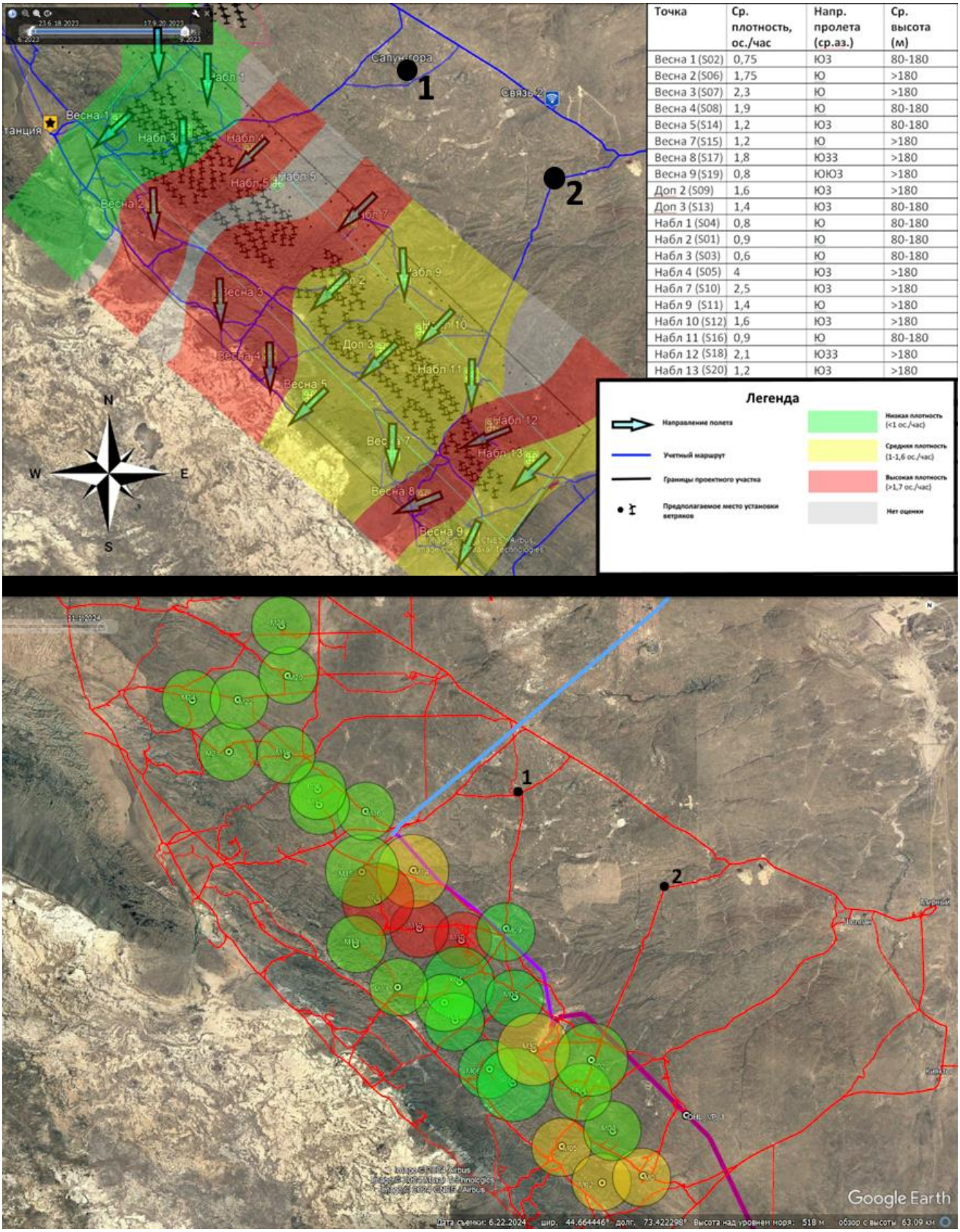


Fig. 8. Comparison of ranges of polygons of predator flight density (ind./hour), top – data of the 2023 analysis, bottom – data of the 2024 analysis

As a result of the analysis of autumn observation data in 2023, 2 corridors with a relatively higher number of birds on migration were also identified. At the same time, the identified migration corridors in the 2023-2024 observations are relatively similar (Fig. 8, see landmarks: 1 - Alatagyl Mountain; 2 - turn to the first substation). Note that in 2024, on average, 3-4 hours more were worked at each point per month than in 2023.

Species composition of waterbirds

During autumn stationary observations both the main migration and local movements were noted. Migratory species as such are: pelicans (white pelican Pelecanus onocrotalus, Dalmatian pelican Pelecanus crispus), whooper swan (Cygnus cygnus), black-headed gull (Chroicocephalus ridibundus), ruddy shelduck (Tadorna ferruginea), common merganser (Mergus merganser), great egret (Ardea alba), and yellow-legged gull (Larus cachinnans). Local movements of birds of the wetland complex: these are mainly movements of the gulls mentioned above and terns - gull-billed tern Gelochelidon nilotica and common tern Sterna hirundo. The main direction of flight can be considered to be south-southwest, and for local movements - northeast and southwest (which corresponds to the geographical location of large wetlands - Lake Balkhash and the Shu River valley, between which birds can move). The average range of flight altitudes for pelicans, ducks and herons is from 100 m to 1 km, for gulls and terns - up to 100 m above the ground.

Other birds and mammals

Other bird species of interest recorded during autumn work included demoiselle crane (Anthropoides virgo), greylag goose (Anser anser), houbara bustard (Chlamydotis macqueenii), desert raven (Corvus ruficollis), little owl (Athene noctua), black-bellied sandgrouse (Pterocles orientalis), and Pallas's sandgrouse (Syrrhaptes paradoxus).

As during other seasonal stationary surveys, rare ungulates were repeatedly recorded - goitered gazelle (Gazella subgutturosa) and argali (Ovis ammon). In general, the sightings were recorded within the previously known distribution boundaries.

A full list of recorded animals and birds is presented in the Appendix.

Surveys for the planned transmission line (OHL) North-South

The work was carried out in accordance with the recommendations prepared by Bullman, R. (WSP) based on the Scottish methodology "Recommended bird survey methods to inform impact assessment of onshore wind farms, ver. 2" (P. Whitfield, D. Jackson, B. Urquhart, 2017). Autumn stationary observations of 2024 on the projected power transmission line (North-South) were carried out at 7 vantage points. Due to the gradual decrease in daylight hours in the autumn, October observations took place on average from 08.00-10.00 - 16.30-17.30, November - from 08.30-09.00 - 16.30-17.00.

The specifics of the work at the observation points of the designed power transmission line involved counting migratory birds for the purpose of recording the flight time in the allocated altitude zones (0-20 m, 20-50 m and >50 m) within the established counting corridor (500 m to the left and 500 m to the right of the observation point, 2 and 2.5 km in the direction of the designed power transmission line from the observation point).

On the projected power transmission line (south), during breaks between three-hour observation sessions, walking transects were carried out near the existing power transmission line to search for facts of collisions and deaths of birds (for points OHL_VP_2, OHL_VP_3, OHL_VP_4 - 500 m in the northern direction, 500 m in the southern direction; OHL_VP_5 - 500 m in the north-eastern direction, 500 m in

the south-western direction). As a result of walking transects, facts of collisions of birds with the existing power transmission line and their deaths were not noted.

Species composition – birds of prey and waterbirds

In general, the same species were observed at the observation points of the designed power transmission line as at the points of the wind turbine construction site. Among the birds of prey, the following were observed: long-legged buzzard (Buteo rufinus), golden eagle (Aquila chrysaetos), common kestrel (Falco tinnunculus), steppe eagle (Aquila nipalensis), short-toed snake eagle (Circaetus gallicus), pallid harrier (Circus macrourus), hen harrier (Circus cyaneus), Montagu's harrier (Circus pygargus), marsh harrier (Circus aeruginosus) and white-tailed eagle (Haliaeetus albicilla). Among the birds of the wetland, the following were observed: black-headed gull (Chroicocephalus ridibundus), ruddy shelduck (Tadorna ferruginea), and gull-billed tern (Gelochelidon nilotica).

2.2 Winter: December 2024 – February 2025

Monitoring work in December was carried out over three days, from 9:00 a.m. to 5:00 p.m. Due to severe weather conditions (temperature, wind), 14 vantage points within the site and 4 power line vantage points were identified, evenly covering the project area. All 14 vantage points selected for stationary observations were covered, with the remaining territory covered by route observations. This made it possible to collect information on wintering bird species and, incidentally, on mammal encounters. Observations at each vantage point took 1 hour.

In January and February, the work was carried out according to the same scheme, with 16 stationary vantage points and 4 vantage points on power lines being worked on. As a result, fairly complete information was obtained about the ornithofauna of the site in the winter period, including quantitative indicators, as well as some information about animals, including rare species.

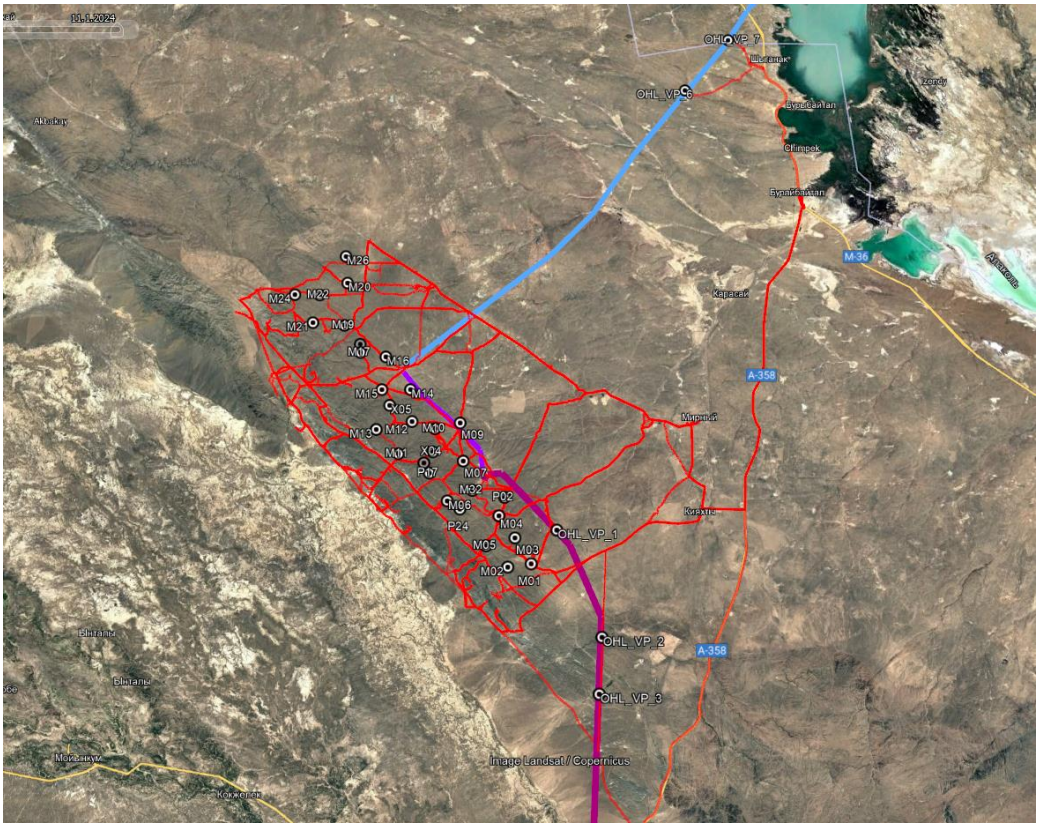


Fig. 9. Field survey map, winter 2024–2025 (north)

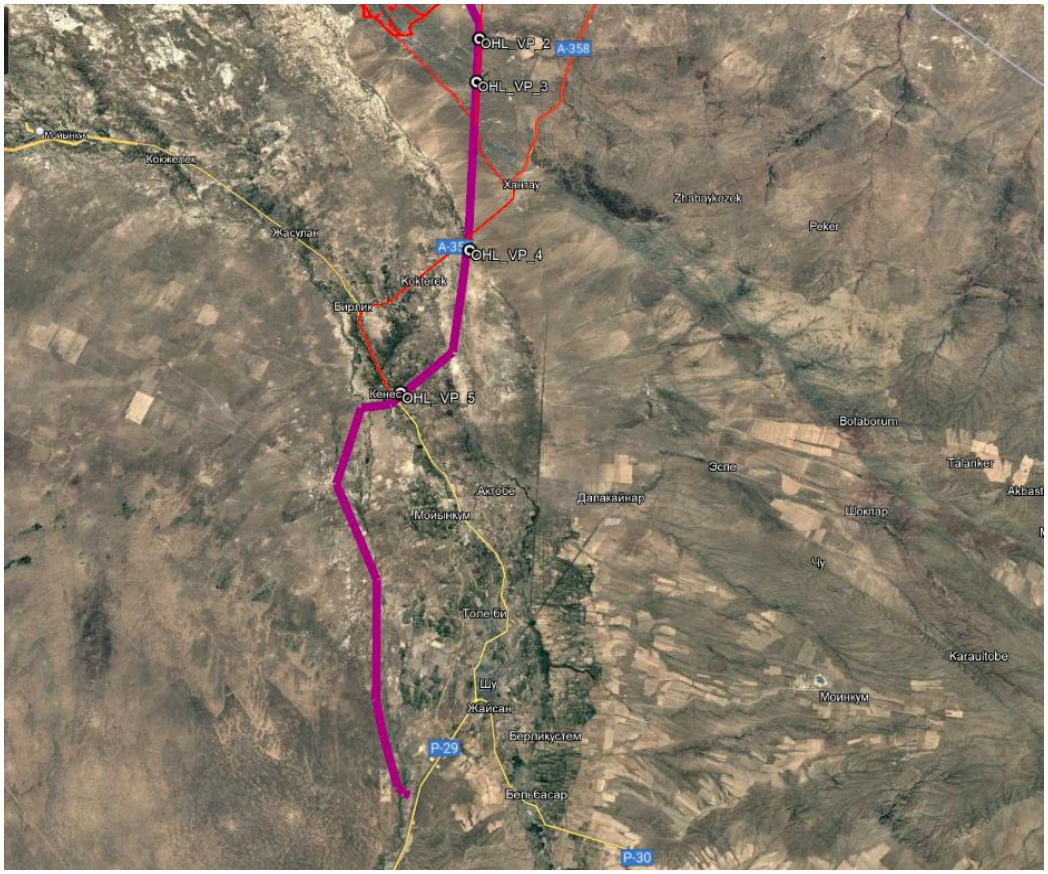


Fig. 10. Field survey map, winter 2024–2025 (south)

Brief overview of bird and animal species, December.

Traces of hares (Lepus tolai) were observed along virtually the entire route, both along the road and on transects. Fox (*Vulpes vulpes*) tracks were the second most common. Traces of small rodents (Rodentia; *Microtus arvalis*) were found periodically. There were isolated traces of unidentified mustelids (Mustelidae) and canids (Canidae). Gazelles (*Gazella subgutturosa*) and argali (*Ovis ammon*) were observed along the road routes.

The wintering of golden eagles (*Aquila chrysaetos*), long-legged buzzards (*Buteo rufinus*), short-eared owls (*Asio flammeus*), white-tailed eagles (*Haliaeetus albicilla*), rough-legged buzzards (*Buteo lagopus*) was confirmed, and saker falcons (*Falco cherrug*) were noted. Other wintering bird species observed included several species of larks (*Melanocorypha yeltoniensis, Eremophila alpestris, Melanocorypha calandra*), with the steppe lark (*Melanocorypha calandra*) predominating; chukar partridge (*Alectoris chukar*), Bokharian tit (*Parus bokharensis*), little owl (*Athene noctua*), hen harrier (*Circus cyaneus*), magpie (*Pica pica*), and common kestrel (*Falco tinnunculus*). Among the interesting observations was one steppe eagle (*Aquila nipalensis*) and one common quail (*Coturnix coturnix* – a very late sighting of a migratory species).

Brief overview of bird and animal species composition, January.

As in December, during the January surveys, traces of hares (*Lepus tolai*) were observed throughout the route surveys, both along the road tracks and on the transects. Fox (*Vulpes vulpes*) tracks were the second most frequently encountered. Traces of small rodents (Rodentia; *Microtus arvalis*) were found quite often. Several times, traces of unidentified mustelids (Mustelidae) and canids (Canidae) were found.

The wintering of golden eagles (*Aquila chrysaetos*), long-legged buzzards (*Buteo rufinus*), short-eared owls (*Asio flammeus*), white-tailed eagles (*Haliaeetus albicilla*), and rough-legged buzzards (*Buteo lagopus*) was confirmed. Other wintering bird species observed included several species of larks (*Melanocorypha yeltoniensis, Eremophila alpestris, Melanocorypha calandra*), with the steppe lark (*Melanocorypha calandra*) predominating; chukar partridge (*Alectoris chukar*), Bokharian tit (*Parus bokharensis*), and little owl (*Athene noctua*).

Brief overview of bird and animal species, February.

As in December and January, during the January surveys, traces of hares (*Lepus tolai*) were observed throughout the route surveys, both along the road tracks and on the transects. The second most frequently encountered traces were those of foxes (*Vulpes vulpes*). Traces of small rodents (Rodentia; *Microtus arvalis*) were also quite common. Several times, traces of unidentified mustelids (Mustelidae) and canids (Canidae) were found. Among the interesting observations was one steppe cat (*Felis silvestris lybica*) on the southern power line.

The wintering of golden eagles (*Aquila chrysaetos*), long-legged buzzards (*Buteo rufinus*), short-eared owls (*Asio flammeus*), white-tailed eagles (*Haliaeetus albicilla*), and rough-legged buzzards (*Buteo lagopus*) was confirmed. Other species of wintering birds observed included several species of larks (*Melanocorypha yeltoniensis, Eremophila alpestris, Melanocorypha calandra*), with a predominance of the calandra lark (*Melanocorypha calandra*); chukar partridge (*Alectoris chukar*), and common kestrel (*Falco tinnunculus*).

In general, by December, a fairly stable composition of wintering birds with low diversity and abundance is established, which persists throughout the winter, with the constant presence of two rare species (Red Book of Kazakhstan) – the golden eagle and the white-tailed eagle, and in December, another – the saker falcon.

2.3 Spring: March – May 2025

Field surveys of the project area were conducted in several stages. All visits were pre-approved by representatives of Total Energies (D. Khitsenko). The first field visit took place from March 9 to March 12, 2025. Initially, the trip was planned for March 9-23, 2025, but it had to be shortened due to the fact that heavy snowmelt and precipitation made movement around the site extremely difficult and, in some places, simply impossible (Figs. 11-14).

Figure 11-14. Road conditions at the site, March 9-12, 2025.

The second field trip took place from March 23 to March 26, 2025. This field trip in March was primarily necessary to clarify the conditions for effective work. It turned out that most of the moisture had gone into the soil, but the soil itself remained too wet for vehicles to travel on (Figs. 15-18).

Figure 15-18. Road conditions at the site, March 23-26, 2025.

The third (April 11 to April 22) and fourth field trips (May 4 to May 14) became full-fledged working trips in the spring of 2025. All assigned tasks were completed.

Due to the change in the location of the planned wind turbines from the beginning of 2024, other stationary observation points were selected for autumn work, partially overlapping the existing points on the southern site (Figs. 18 a-b). Accordingly, stationary observations in spring 2025 were carried out at 30 vantage points. Due to the gradual increase in daylight hours in the spring, April observations were conducted on average between 08:00-10:00 and 17:00-18:00; and in May from 07:00-10:00 to 18:00-19:00. Transect observations were carried out within the observation sites and on nesting monitoring routes. Route observations were carried out during movements between stationary observation points. The results of the field studies are presented in an Excel table in Appendix.

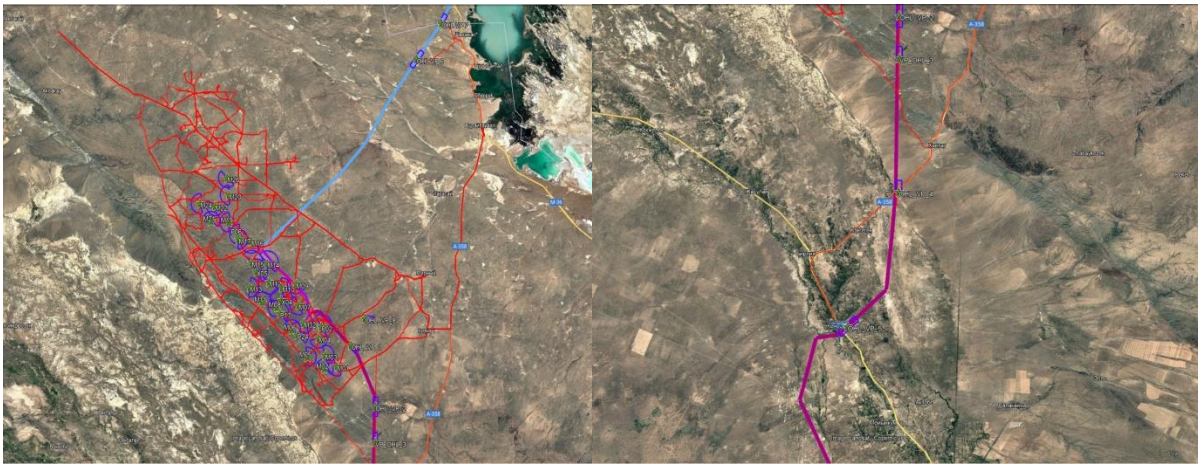


Fig. 18 a-b. Field survey maps, spring 2025 (Left to right: North-South)

Species composition (birds of prey)

In addition to nesting species (long-legged buzzard (*Buteo rufinus*); golden eagle (*Aquila chrysaetos*); common kestrel (*Falco tinnunculus*), a number of birds of the Accipitridae family were observed migrating – the steppe eagle (*Aquila nipalensis*), short-toed snake eagle (*Circaetus gallicus*), harriers – steppe harrier (*Circus macrourus*), the hen harrier (*Circus cyaneus*), the Montagu's harrier (*Circus pygargus*), the marsh harrier (*Circus aeruginosus*), the black kite (*Milvus migrans*), the white-tailed eagle (*Haliaeetus albicilla*), the common buzzard (*Buteo buteo*); honey buzzards (*Pernis apivorus*, *Pernis ptilorhynchus*); a number of birds of the hawk and falcon family – the sparrowhawk (*Accipiter nisus*), the common kestrel (*Falco subbuteo*). The imperial eagle (*Aquila heliaca*) and the booted eagle (*Hieraaetus pennatus*) were observed on rare occasions.

Density

The processed data allow us to judge, to some extent, the density of migratory birds of prey in certain ranges of distances and altitudes. For example, by calculating the number of falcon-like (migratory) birds seen per hour and per km2, it is possible to estimate the average migratory load of the study area (Table 4).

Table 4. Density of records by various indicators (individuals per hour, individuals per km², only migratory predators (see species composition).

VP number	Total number of hours logged, hours.	Total number of birds counted, individuals.	Main direction of flight, az.	Observation area, km2	Number of individuals/hour	Number of individuals per km2
M01	12	9	NE	12,56	0,8	0,7
M02	12	9	NE	12,56	0,8	0,7
M03	12	9	N	12,56	0,8	0,7
M04	12	0	-	12,56	-	-
M05	12	1	N	12,56	0,1	0,1
M06	12	0	-	12,56	-	-
M07	12	8	NE	12,56	0,7	0,6
M08	12	14	NE	12,56	1,2	1,1
M09	12	3	NE	12,56	0,3	0,2
M10	12	2	N	12,56	0,2	0,2
M11	12	9	N	12,56	0,8	0,7
M12	12	3	NE	12,56	0,3	0,2
M13	12	13	NE	12,56	1,1	1,0
M14	12	7	NNE	19,63	0,6	0,4
M15	12	2	NE	19,63	0,2	0,1
M16	12	10	NE	19,63	0,8	0,5
M17	12	2	NE	12,56	0,2	0,2
M19	12	4	NE	12,56	0,3	0,3
M20	18	4	NE	12,56	0,2	0,3
M21	12	1	NE	12,56	0,1	0,1
M22	12	2	N	12,56	0,2	0,2
M24	18	14	NE	12,56	0,8	1,1
M26	18	5	NE	12,56	0,3	0,4
M32	12	1	NE	12,56	0,1	0,1

P02	12	6	N	19,63	0,5	0,3
P06	12	1	N	12,56	0,1	0,1
P17	12	17	N	12,56	1,4	1,4
P24	12	5	NE	19,63	0,4	0,3
X04	12	6	NE	19,63	0,5	0,3
X05	12	6	NNE	19,63	0,5	0,3

The relatively low number of migratory predators is primarily due to the omission of accounting work in March, when the most massive migration is observed, as confirmed by the 2024 report. Nevertheless, it is still possible to distinguish the ranges of polygons by the parameter of individuals per hour.

Comparing the density of migrating predators with spring 2024, the ranges of the polygons should be equivalent. This means that the ranges should be reduced by 5.4 times (the total number of recorded predators during migration in 2024 was 935 individuals; in 2025 – 173 individuals). Accordingly, the ranges of the polygons in 2025 are: low (0 - 0.4 individuals/hour and individuals/km2), medium (0.5 – 0.7 individuals/hour and individuals/km2) and high (>0.8 individuals/hour; and individuals/km2) density of migratory predators (for comparison, the ranges of polygons in 2024: <2 individuals/hour and individuals/km2, 3 individuals/hour and individuals/km2, and >4 individuals/hour and individuals/km2, respectively). As in 2024, wide migration corridors are again forming (Fig. 22). The main direction of migration can be considered northeast – it is dominant (60%, Fig. 21). The average altitude range of migration is 20-200 m above the ground.

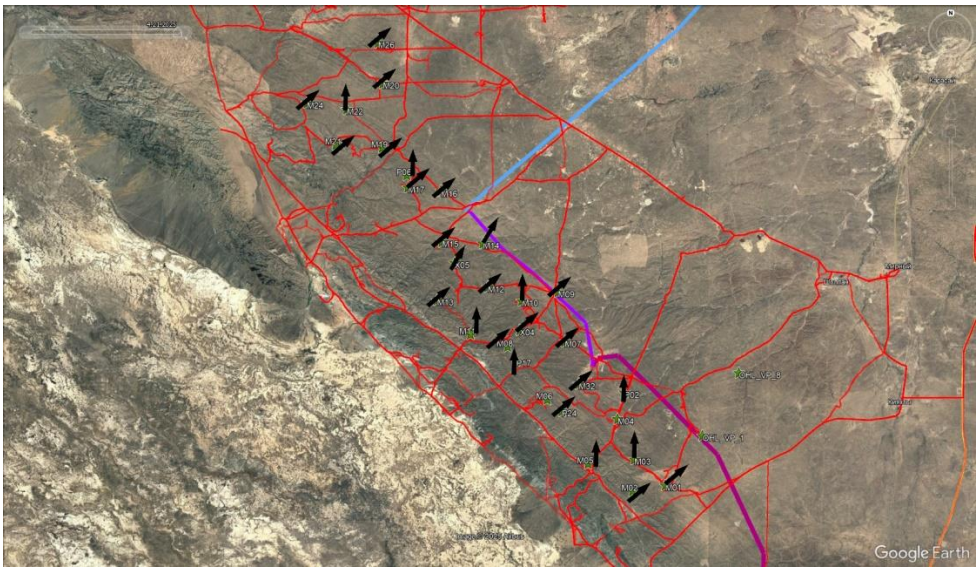


Fig. 21. General flight paths of predators at stationary observation points

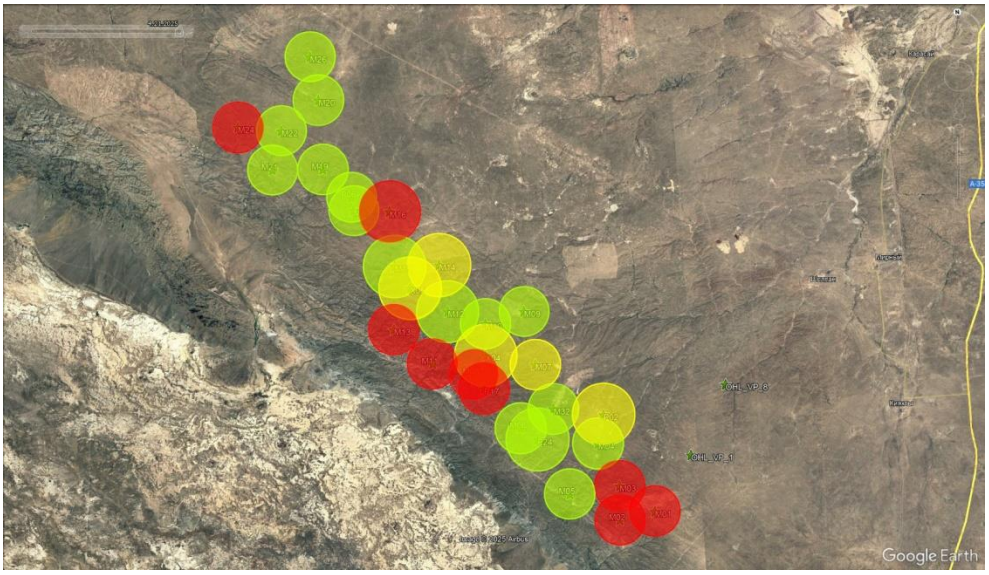
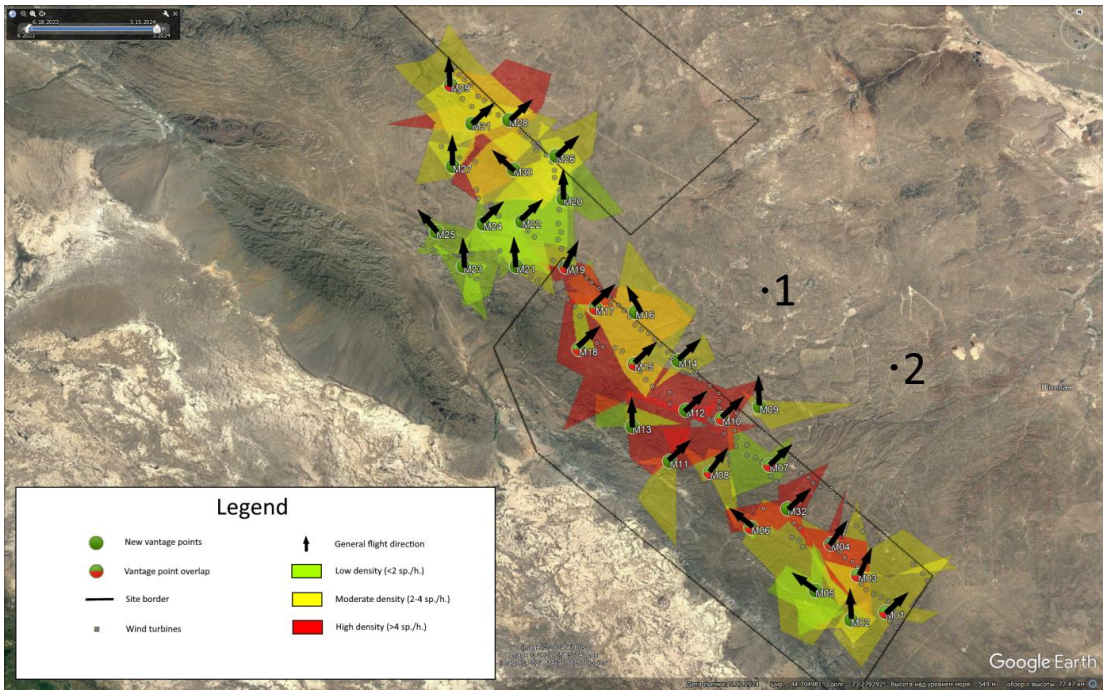


Fig. 22. Visualization of predator density ranges. Green - 0 - 0.2 individuals/hour and individuals/km2; yellow - 0.3 - 0.6 individuals/hour and individuals/km2; red - >0.7 individuals/hour and individuals/km2.

As a result of analyzing data from spring observations in 2024, three corridors with relatively high numbers of birds in migration were also identified (Fig. 23). The migration corridors identified in the 2024-2025 observations are relatively similar (Figs. 23-24, see landmarks: 1 - Mount Alatagyl; 2 - turn to the first substation). Given that the similarity in the location of migration corridors is also present in the autumn observations of 2023-2024, it can be confidently stated at this point that the relatively high density of migratory birds of prey in these corridors is quasi-stable from year to year.



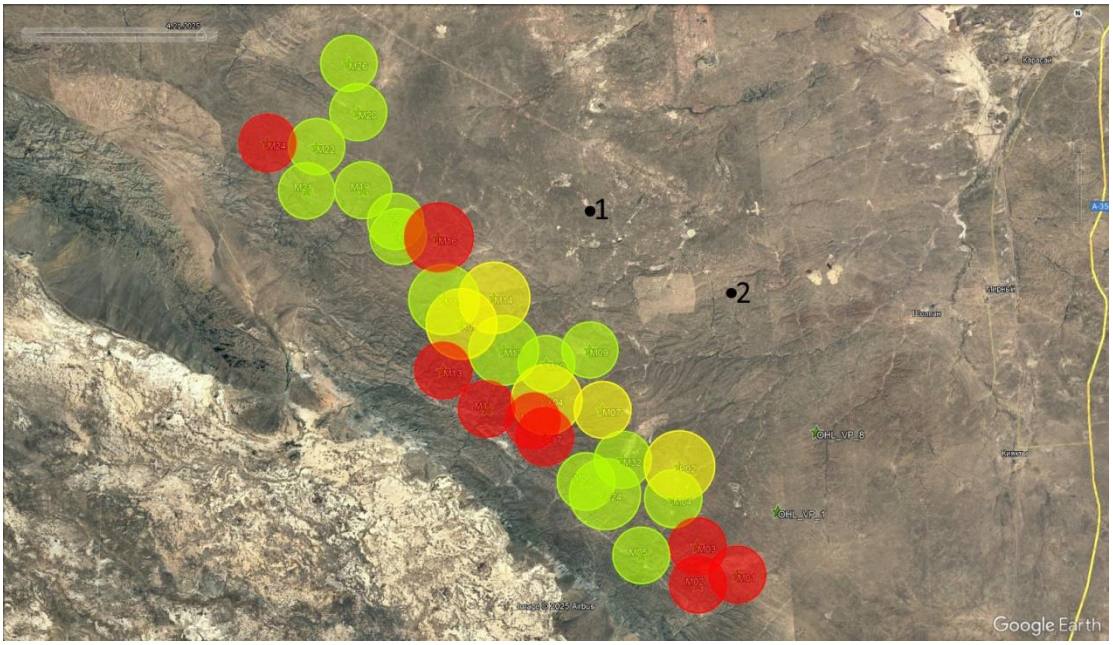


Fig. 23-24. Comparison of predator flight density polygon ranges (os/hour), top – data from the 2024 analysis, bottom – data from the 2025 analysis

In order to justify the selection of areas for the installation of wind turbines, according to the methodology, it is not sufficient to simply assess flight density—it is also necessary to analyze data from simulations of possible bird collisions during flight. For this purpose, taking into account migratory bird species, the flight time of birds within this radius was recorded in altitude zones of 0-20 m; 20-200 m; >200 m.

Species composition (waterbirds)

During spring stationary observations, the main migration was noted (Dalmatian pelican (*Pelecanus crispus*), black-headed gull (*Chroicocephalus ridibundus*), ruddy shelduck (*Tadorna ferruginea*), northern pintail (*Anas acuta*), black-headed gull (*Larus cachinnans*), as well as local movements of waterbirds (mainly movements of ruddy shelducks, black-headed gulls, and gull-billed terns (*Gelochelidon nilotica*). The main direction of migration can be considered north; northeast, and for local movements – northeast and southwest (which corresponds to the geographical location of large wetlands – Lake Balkhash and the Chu River valley). The average altitude range for the migration of pelicans, ducks, and herons is from 50 m to >1 km; for gulls and terns, it is up to 100 m above the ground.

Species composition (other animals and birds)

Among other interesting bird species recorded during spring work are the demoiselle crane (*Anthropoides virgo*), the Houbara bustard (*Chlamydotis macqueenii*, during migration), desert crow (*Corvus ruficollis*), little owl (*Athene noctua*), short-eared owl (*Asio flammeus*), and saiga antelope (*Syrrhaptes paradoxus*).

As during other seasonal stationary surveys, encounters with large mammals – gazelle (*Gazella subgutturosa*) and argali (*Ovis ammon*) – were repeatedly recorded. In general, encounters were recorded within previously known distribution limits. A complete list of recorded animals and birds is provided in Appendix.

Conducting stationary observations within the planned power line (North-South)

The work was carried out entirely in accordance with a special methodology developed by Bullman, R. (WSP) based on the Scottish methodology “Recommended bird survey methods to inform impact assessment of onshore wind farms, ver. 2” (P. Whitfield, D. Jackson, B. Urquhart, 2017)

Spring stationary observations in 2025 on the planned power line (North-South) were carried out at 8 points. Due to the gradual increase in daylight hours in the spring, April observations were conducted on average between 08:00-10:00 and 17:00-18:00; May observations were conducted between 07:00-10:00 and 18:00-19:00. On the planned power line (South), between three-hour observation sessions, walking transects were carried out near the existing power line (for points OHL_VP_1 and OHL_VP_8 – 500 m in a south-easterly direction, OHL_VP_3 and OHL_VP_4 - 500 m in a northern direction, OHL_VP_2 - 500 m in a northern and southern direction; OHL_VP_5, OHL_VP_6 – 500 m in the northeast and southwest directions, OHL_VP_7 – 500 m in the northeast direction). As a result of the walking transects, no collisions of birds with the existing power line were noted.

Species composition (birds of prey and waterbirds)

In general, the same species were observed at the observation points of the planned power line as at the construction site of the wind farm. Among the birds of prey, the following were observed: long-legged buzzard (*Buteo rufinus*); golden eagle (*Aquila chrysaetos*); common kestrel (*Falco tinnunculus*), steppe eagle (*Aquila nipalensis*), short-toed snake eagle (*Circaetus gallicus*), steppe harrier (*Circus macrourus*), hen harrier (*Circus cyaneus*), Montagu's harrier (*Circus pygargus*), marsh harrier (*Circus aeruginosus*), and white-tailed eagle (*Haliaeetus albicilla*). Among observed waterbirds were: black-headed gull (*Chroicocephalus ridibundus*), ruddy shelduck (*Tadorna ferruginea*), and gull-billed tern (*Gelochelidon nilotica*).

Density

The specific nature of the work at the observation points of the planned power line required the recording of migratory birds solely for the purpose of recording their flight times at specific altitudes (0-20 m; 20-50 m; >50 m) within a special accounting corridor (500 m to the left and 500 m to the right of the observation point, 2 and 2.5 km in the direction of the planned power line from the observation point). In this regard, and also in view of the total number of observation points of the planned power line (8) and their wide distribution within 133 km from north to south, calculating the flight density for these points is not practical.

Recording predator nesting in spring

Recording work in April 2025 included recording predator nesting within the project site and in a 2-kilometer buffer zone (Fig. 25; A – project site boundaries, B – buffer zone boundaries).

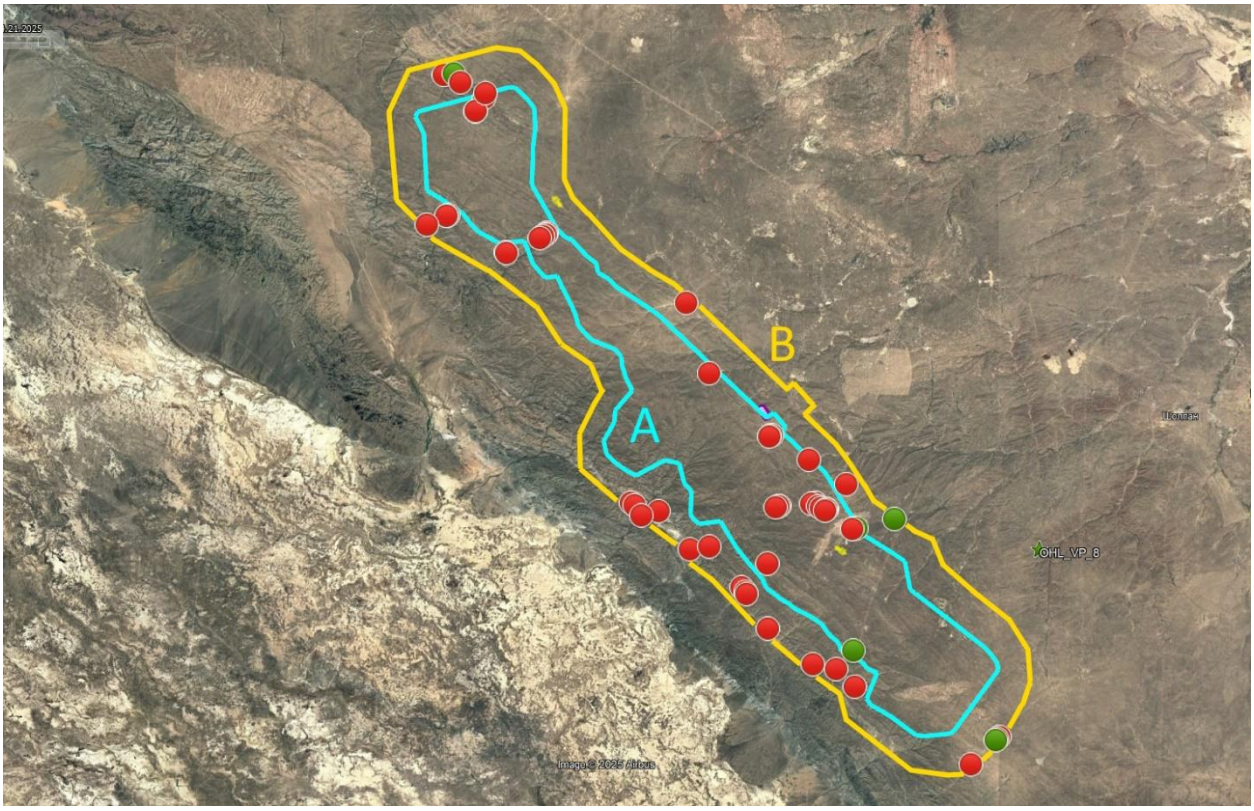


Fig. 25. Recorded predator nests (red dots – uninhabited nests, green dots – inhabited nests)

Work on recording predator nesting was carried out between April 19 and 22. The main biotopes surveyed were rocky formations (hills) in the south-southwest of the project site and within the buffer zone (golden eagle, saker falcon, steppe eagle), as well as saxaul forests and individual trees within the site and buffer zone (curlew, snake eagle, harrier). The survey was conducted by car with periodic stops to observe biotopes using optics. Walking transects were carried out when nests were found, as well as in the densest saxaul forests. The location of the nests was taken into account according to the records of I. Karyakin from 2023. When a nest was found, its location was described (on the ground or in a tree); if it was on the ground, the slope exposure and height from the top and from the beginning of the slope were also taken into account; if it was in a tree, the height from the ground and from the top of the crown was recorded. Additionally, the status (inhabited/uninhabited) and condition of the nest (new/old) were recorded. If inhabited, the number of eggs in the clutch and the presence of incubating birds nearby were also recorded. A table with a description is presented in Appendix 4.

As a result of the work, 59 nests of birds of prey were found within the survey boundaries, for a total of 63 nests. Of the 59 nests within the site, 5 were inhabited (marsh harrier, short-toed snake eagle).

It should be noted that during the three days of data collection, only part of the saxaul forests within the boundaries of the site and buffer zone were surveyed. To obtain a more complete set of data, it is necessary to increase the number of working hours allocated solely to surveying the territory for this purpose.

Fig. 26. Contents of a snake eater's nest

2.4 Summer: June – July 2025

Due to the change in the location of the planned wind turbines from the beginning of 2024, other stationary observation points were selected for the summer, partially overlapping the existing points on the southern site. Accordingly, stationary observations in the summer of 2025 were carried out at 30 points. All summer observations took place on average between 06:00-10:00 and 14:00-18:00. Transect observations were carried out in July and August, within the observation areas and on nesting monitoring routes, on average between 06:00 and 11:00. Route observations were carried out during movements between stationary observation points.

Summer stationary observations in 2025 on the planned power line (North-South) were carried out at a total of 8 points, with additional observations in June and August at 2 points on the planned power line (South), replacing the previously observed points (OHL_VP_1, OHL-VP_3) (Fig. 27-28). All summer observations were conducted on average between 06:00-10:00 and 14:00-18:00. On the planned power line (North-South), between three-hour observation sessions, walking transects were carried out near the existing power line. As a result of the walking transects, no bird collisions with the existing power line were noted. The results of the field studies are presented in an Excel table in Appendix.

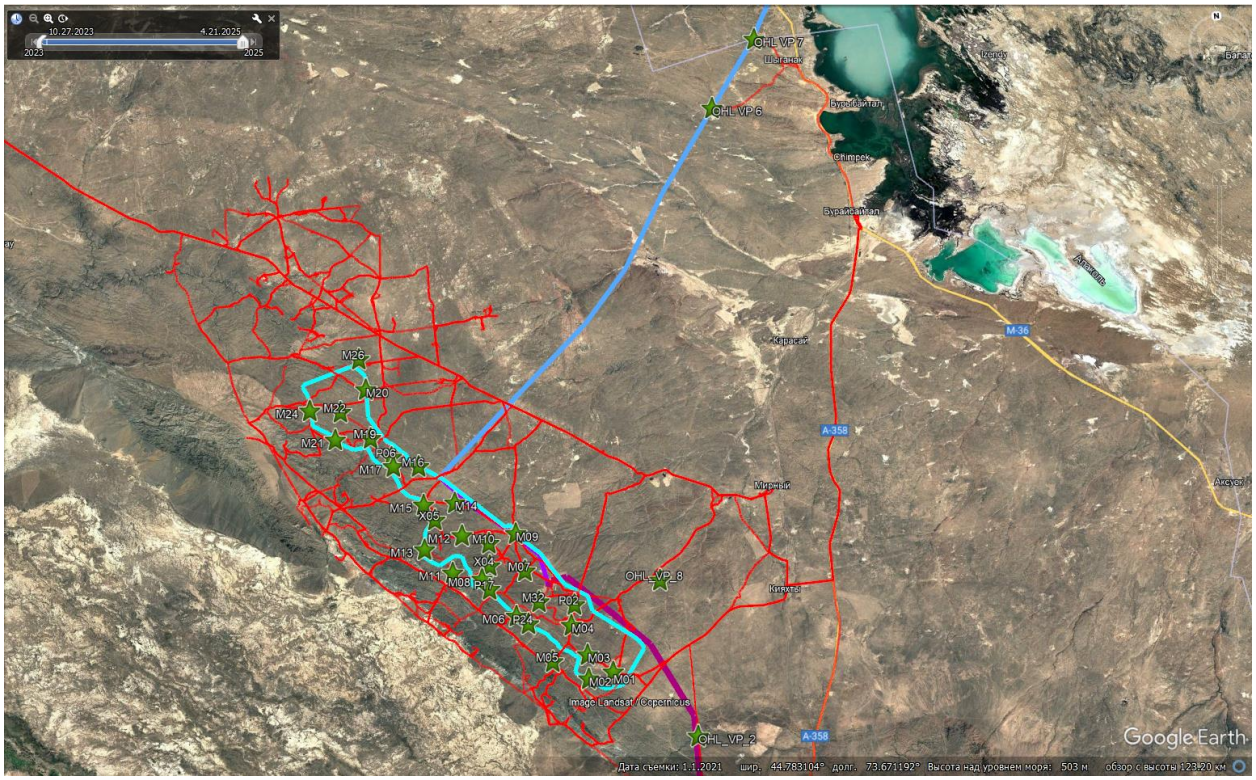


Fig. 27. Field survey map, summer 2025 (North; the planned power line is highlighted in blue, and the movement tracks are highlighted in red).

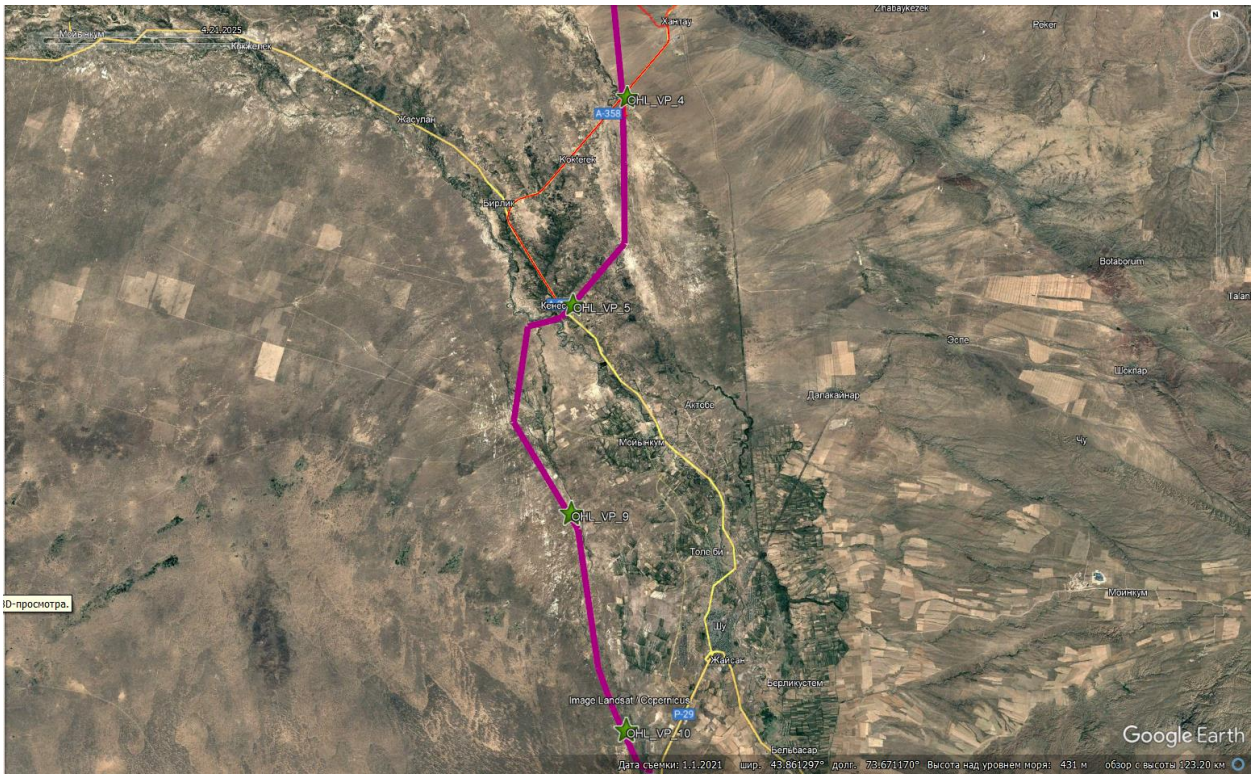


Fig. 28. Field survey map, summer 2025 (South; the planned power line is highlighted in purple, and the movement tracks are highlighted in red and yellow).

Species composition (birds). As expected, the vast majority of species recorded were local nesting species (long-legged buzzard (*Buteo rufinus*); golden eagle (*Aquila chrysaetos*); common kestrel (*Falco*

tinnunculus), short-toed snake eagle (*Circaetus gallicus*), black-bellied sandgrouse (*Pterocles orientalis*). The following species were observed sporadically: the steppe eagle (*Aquila nipalensis*), the imperial eagle (*Aquila heliaca*), the booted eagle (*Hieraaetus pennatus*), unidentified harriers (Pernis sp.), marsh harrier (*Circus aeruginosus*), black kite (*Milvus migrans*), birds of the hawk and falcon family – Turkestan sparrowhawk (*Tachyspiza badia*), common kestrel (*Falco subbuteo*). Among passerines and waterbirds, the following were observed in isolated cases: northern pintail (*Anas acuta*), great cormorant (*Phalacrocorax carbo*), Temminck's stint (*Calidris temmincki*), common sandpiper (*Actitis hypoleucos*), the green sandpiper (*Tringa ochropus*), the spotted crake (*Porzana porzana*), the black-winged stilt (*Himantopus himantopus*), the moorhen (*Gallinula chloropus*), the common tern (*Sterna hirundo*), the little owl (*Athene noctua*), Turkestan shrike (*Lanius phoenicuroides*), common kingfisher (*Alcedo atthis*), garden warbler (*Acrocephalus dumetorum*), common chiffchaff (*Curruca curruca*), western nightingale (*Luscinia megarhynchos*), two-spotted lark (*Melanocorypha bimaculata*), and blue rock thrush (*Rhodospiza obsolete*). A complete list of recorded animals and birds is provided in Appendix.

In general, the highest bird activity, both during stationary observations and during walking transects, was observed between 5:00 and 10:00 a.m. Midday and afternoon observations can generally be characterized as the least productive in terms of bird activity. For stationary observations, the dominant species are the black-bellied pipit, the common kestrel, and the common buzzard. For walking observations, the dominant species are mainly wheatears (*Oenanthe oenanthe, Oenanthe isabellina, Oenanthe deserti, Oenanthe pleschanka*) and larks (*Alauda leucoptera, Alauda arvensis, Calandrella brachydactyla, Melanocorypha calandra*).

Given the anticipated anthropogenic pressure in the region, it is interesting to assess the overall occurrence of golden eagles (the species most vulnerable to the installation of wind turbines) and seasonal observations between 2023 and 2025.

Data on golden eagle sightings in 2023 reflect both route encounters (by car, on foot transects) and observations from fixed observation points. In quantitative terms, 45 individuals were observed in 2023 (Fig. 29). It should be noted that this number does not reflect the exact number of individual birds, as it is likely that some individuals were observed several times throughout the year.

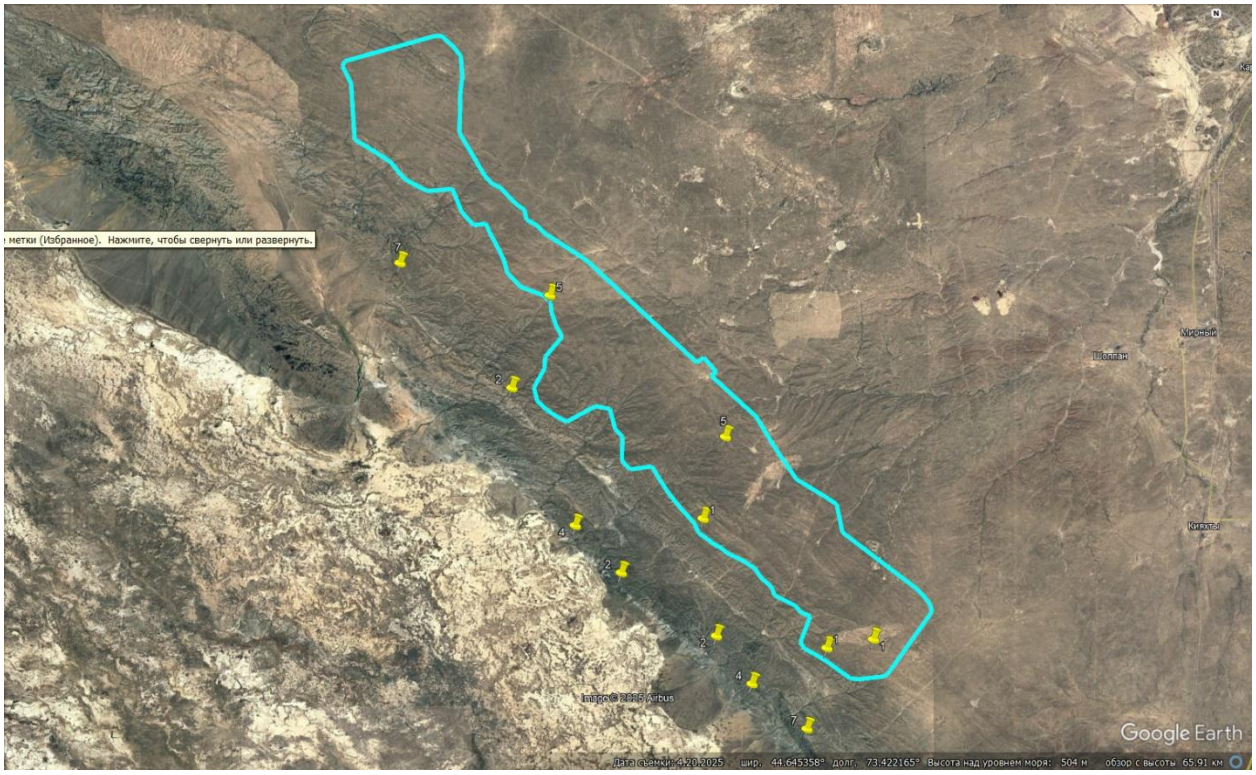


Fig. 29. Map of golden eagle sightings, 2023 (the project site boundary is shown in blue, and individual sightings are shown in yellow).

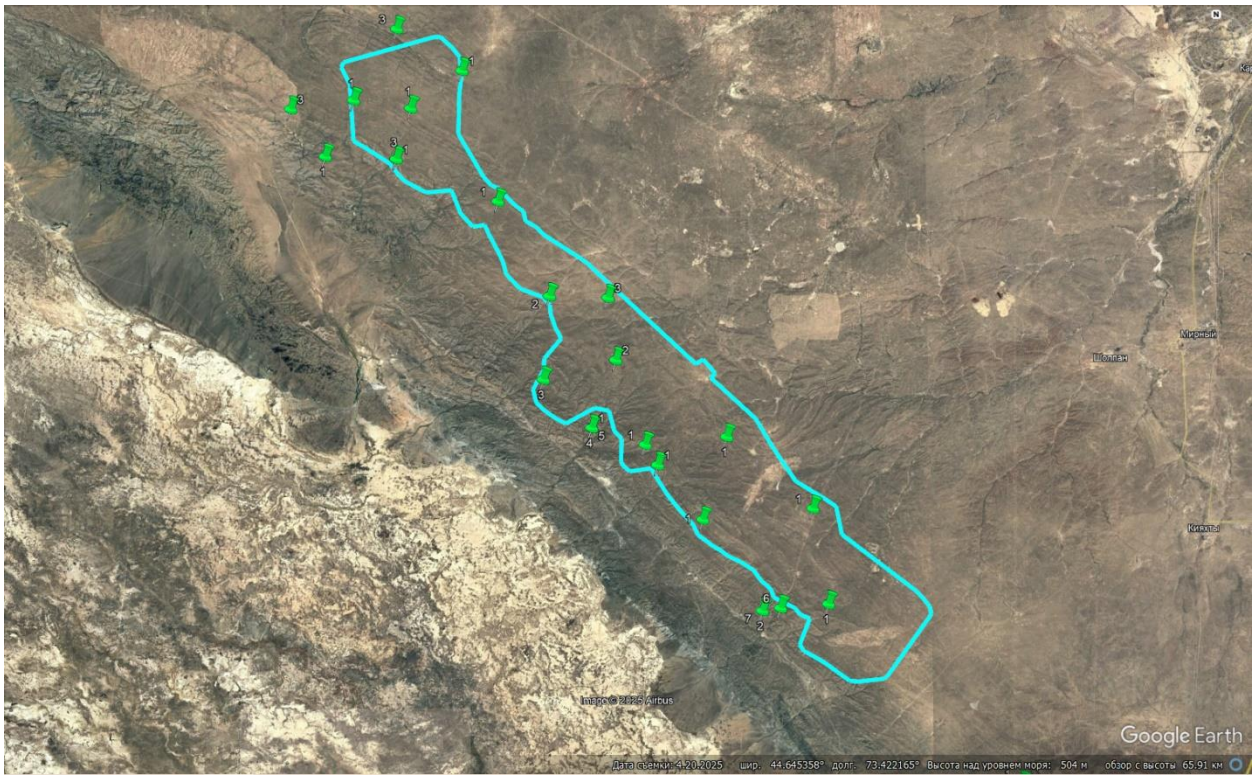


Fig. 30. Map of golden eagle sightings, 2024 (the project site boundary is shown in blue, and individual sightings are shown in green).

Data on golden eagle sightings in 2024 reflect both route encounters (by car, on foot transects) and observations from fixed observation points. In quantitative terms, 64 individuals were observed in 2024

(Fig. 30). As in the previous case, this figure does not reflect the exact number of individual birds, as it is likely that individual birds were observed several times throughout the year. In 2024, observations were carried out on the territory of two versions of the project sites, which, together with an increase in working hours and travel time between sites, explains the higher number of observed individuals.

Data on golden eagle sightings in 2024 reflect both route encounters (by car, on foot transects) and observations from fixed observation points. In quantitative terms, 34 individuals were observed in 2024 (Fig. 31). As in the previous case, this figure does not reflect the exact number of individual birds, as it is likely that individual birds were observed several times throughout the year. Considering that the average number of working hours and travel time by car is 25-30% less than in 2024 (due to the absence of autumn and winter observations in 2025), a decrease in the number of observed golden eagles should be expected (53% fewer individuals observed compared to 2024), which, in general, does not reflect the specific impact of increased anthropogenic pressure on the territory (including the work of geologists, archaeologists, mountaineers, etc.).

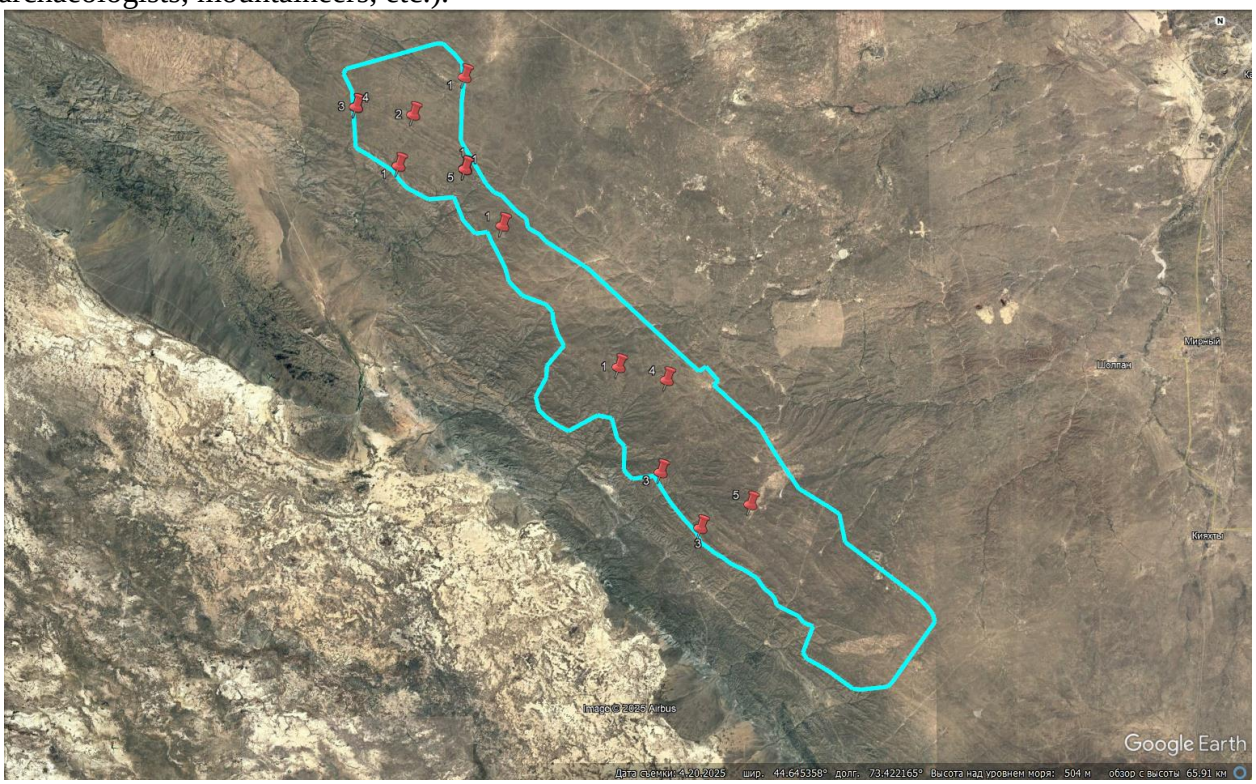


Fig. 31. Map of golden eagle sightings, 2025 (the project site boundary is shown in blue, and individual sightings are shown in red).

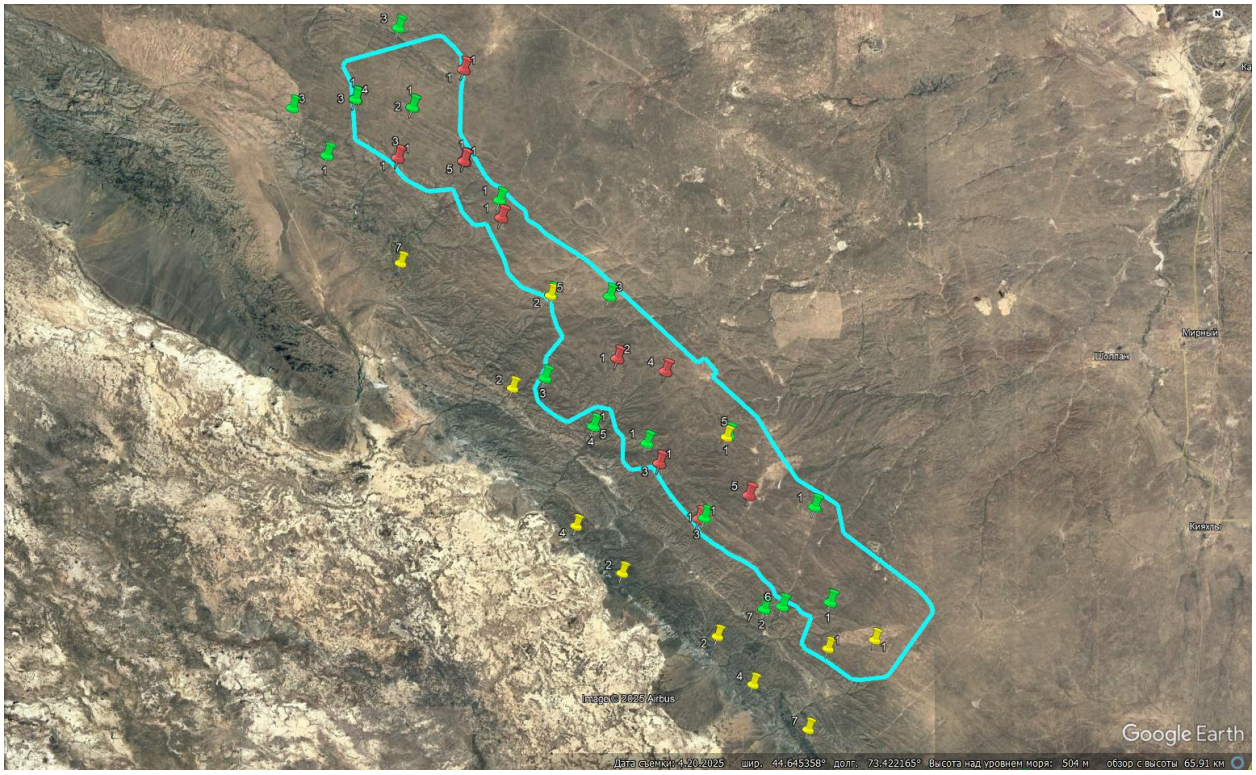


Fig. 32. Map of golden eagle sightings, 2023-2025 (the project site boundary is shown in blue, and individual sightings are shown in green, yellow, and red).

Species composition (animals)

As in the 2023-2025 observation period, species common to the region were recorded, such as the red fox (*Vulpes vulpes*), the Tola hare (*Lepus tolai*), the argali (*Ovis ammon*), gazelle (*Gazella subgutturosa*), greater jerboa (*Allactaga major*), common vole (*Microtus arvalis*), eastern blind mole rat (*Ellobius tancrei*), and greater gerbil (*Rhombomys opimus*). Among the interesting observations, we can note isolated encounters with such species as the golden jackal (*Canis aureus*), wild boar (*Sus scrofa*), Takyr round-headed lizard (*Phrynocephalus helioscopus*), colorful lizard (*Eremias arguta*), Central Asian tortoise (*Testudo horsfieldii*). The wild boar was encountered during a night transect based on bat signal recordings. The tortoise was spotted near the OHL_VP_7 power line stationary observation point. A complete list of recorded animals and birds is provided in Appendix.

During the summer observations of 2025, fewer individuals of vulnerable ungulate species such as the argali were recorded compared to previous observation periods. Given the upcoming anthropogenic pressure in the region, it is interesting to evaluate the total number of encounters and seasonal observations between 2023 and 2025.

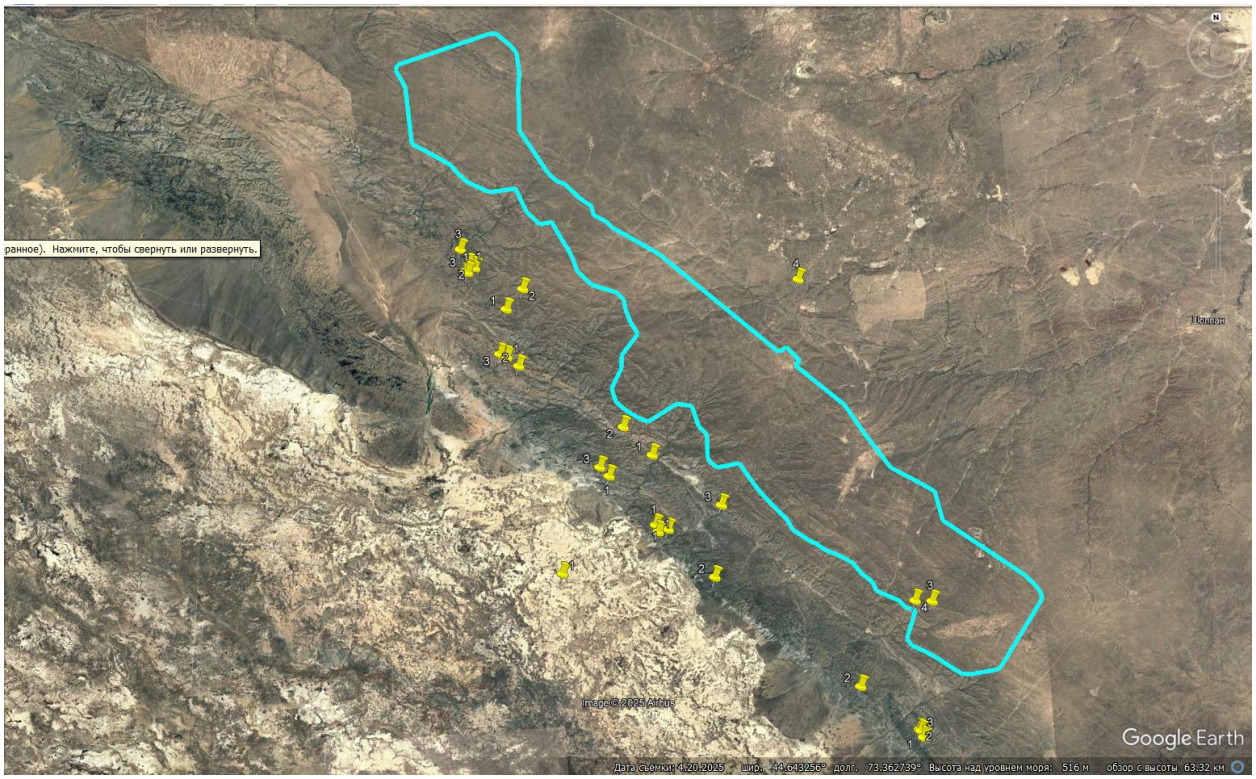


Fig. 33. Map of argali sightings, 2023 (the project site boundary is shown in blue, and individual sightings are shown in yellow).

Data on argali encounters in 2023 reflect both route encounters (by car, on foot transects) and observations from fixed observation points. Almost all encounters are outside the current project site, which is explained by a different project site in 2023. In quantitative terms, 58 individuals were observed in 2023 (Fig. 33).

Data on argali encounters in 2024 reflect both route encounters (car, walking transects) and observations from fixed observation points. In 2024, observations were made on the territory of two versions of the project sites, which, together with an increase in working hours and travel time between sites, explains the large number of argali encounters. In quantitative terms, 123 individuals were observed in 2024 (Fig. 34).

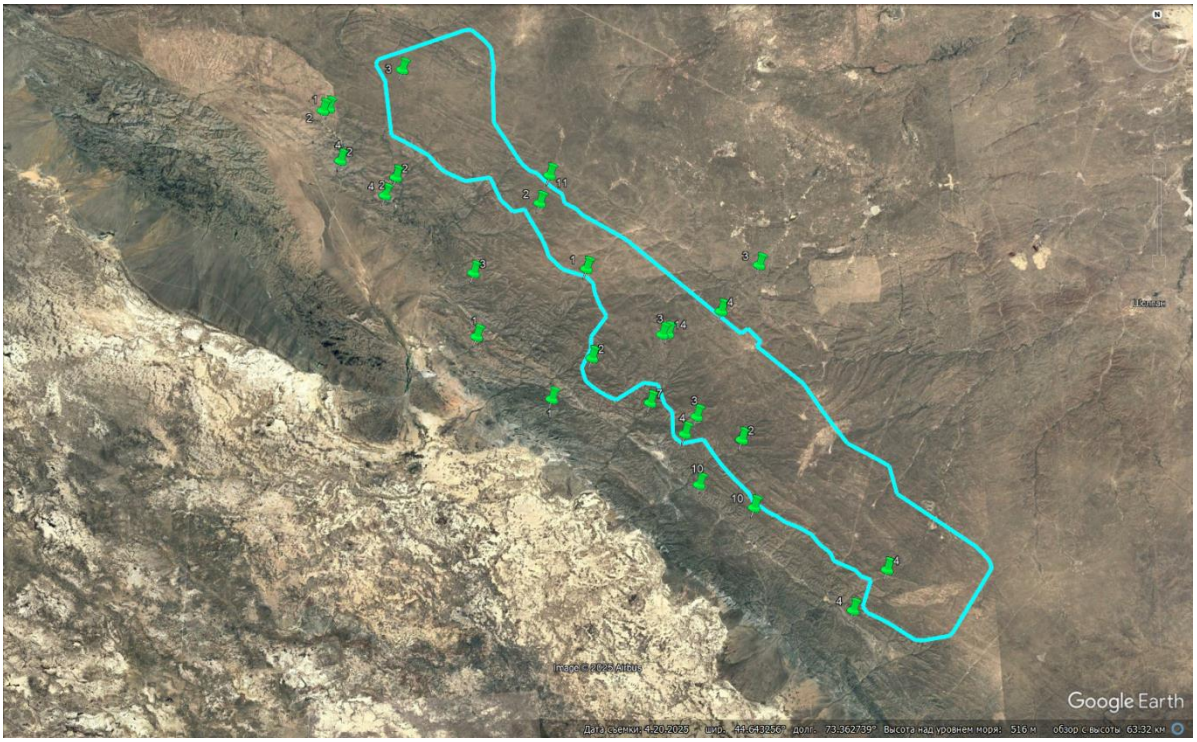


Figure 34. Map of argali sightings, 2024 (the project site boundary is shown in blue, and individual sightings are shown in green).

Fig. 35. Map of argali sightings, 2025 (the project site boundary is shown in blue, and individual sightings are shown in red).

Data on argali encounters in 2025 reflect both route encounters (vehicle, pedestrian transects) and observations from fixed observation points. In quantitative terms, only 17 individuals were observed in 2025 (Fig. 35). Considering that the average number of working hours and travel time by car is 25-30%

less than in 2024 (due to the absence of autumn and winter observations in 2025), a decrease in the number of observed argali should be expected, but not to such an extent (the observed number is only 13% of the observed number in 2024). Another explanation for the decline in the observed population could be the gradual increase in anthropogenic pressure on the territory (the work of geologists, archaeologists, mountaineers, etc.), which indirectly and directly affects the location and movement of argali within their habitat.

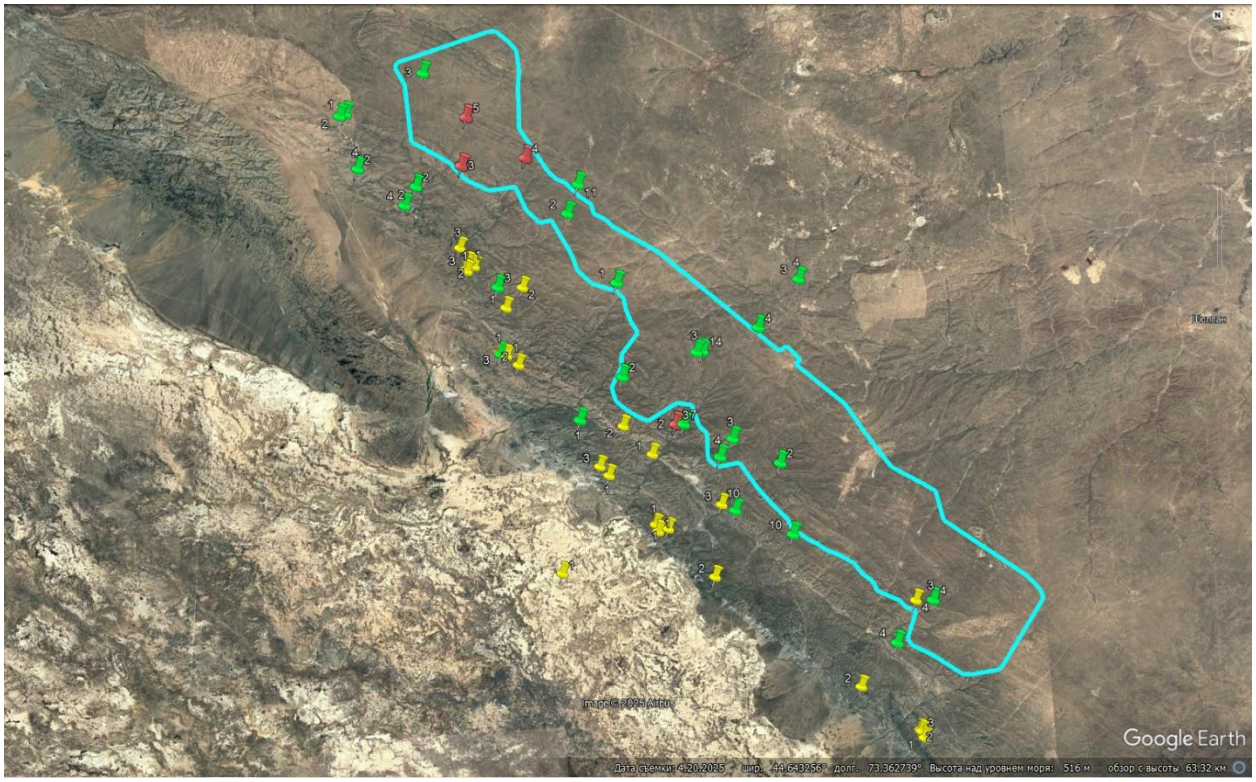


Fig. 36. Map of argali sightings, 2025 (the project site boundary is shown in blue, and individual sightings are shown in red).

3 Study of mammals

The main observations of mammals were conducted in 2023-24. The species composition and distribution across the project area were studied, the relative abundance of species was calculated, the expected impact of construction and operation of the facilities was assessed, the consequences for mammals were predicted, and recommendations were made to minimize the negative impact of the planned wind farm on animals.

3.1 Methods and study

As part of bird migration monitoring in the project area in April-May 2025, observation of mammals continued. All animal encounters were recorded. Particular attention was paid to the great sand vole and other rodents. On road routes, when moving between bird monitoring points, the coordinates of the burrows encountered were noted and, where possible, their habitability was determined. On foot routes, all burrows were also recorded, and in large diffuse settlements, the density of burrows per 1 ha, the habitability of colonies, and the number of animals per inhabited burrow were determined to calculate the population per unit area. The presence of other rodents was also noted on foot routes based on signs of their activity. Live traps were set at selected points to determine the species composition of rodents. As a result of monitoring, *Meriones libycus*, *Meriones tamariscinus,* and *Microtus socialis* were added to the list of mammals encountered in the project area during the 2023-2024 survey.

The greater gerbil

Rhombomys opimus Lichtenstein, 1823 (order Rodentia, family Cricetidae, subfamily Gerbillinae). This is a desert species (Fig. 37;38). The species' vast range covers the temperate desert zone, with large gerbil settlements extending into the semi-desert in the north. Preferred habitats are determined primarily by the suitability of the soil for burrowing, the micro-relief of the terrain, and the nature of the vegetation cover, as well as the depth of the water table. The large gerbil leads a family-colonial lifestyle and is active during the day throughout the year. The complex burrow of gerbils, which has been given the name “colony” in the literature, is a large and usually well-visible structure with a distinct ecological center and periphery, having up to several dozen exits located at varying distances from each other and a depth of up to 2.5-3 meters. The diameter of a colony on loose soil can reach 30-50 m or more, while on dense soil their size is significantly smaller. In addition to the greater sand vole, their burrows are used by other species of animals, from insects and reptiles to birds and mammals. Through its burrowing activity, the greater sand vole transforms the micro-relief and changes the species composition of vegetation. It actively colonizes anthropogenically altered landscapes. It is the main food source for medium-sized mammals (steppe polecat, ferret, corsac fox, fox, jackal), as well as a number of birds of prey. It is the main carrier of plague in the Central Asian desert plague focus.

It is distributed extremely unevenly across the project area. Not found in the northwest of the planned wind farm. In the rest of the settlement, it is of the beam and focal type. In the areas adjacent to the north in the eastern part of the project area, where the construction of power lines and access roads is planned, there are extensive diffuse settlements with a high density of dwellings.

Fig. 37. The greater gerbil

Fig. 38. A colony of large gerbils

The greater gerbil also inhabits the low-lying saxaul thickets within the project area unevenly. No colonies of the great gerbill were found in the northwestern part of the future wind farm. In the rest of the saxaul thickets that were surveyed, isolated colonies were noted, with only a few being fully inhabited.

In the vicinity of bird observation point OHL_VP_6, great gerbil settlements are diffuse in nature, with a density ranging from 0.3 to 4.0 per 1 ha, averaging 2.3. During the observation period (second ten days of April), the occupancy rate of the colonies was 91% (based on an inspection of 100 colonies), with an average of 2.2 animals per inhabited burrow before the young emerged. The total stock of large sand voles per 1 ha was 4.6, or 460 per 1 km².

At monitoring point OHL_VP_7, changes in the population of the area by sand voles in an anthropogenically altered microlandscape were examined. When a water pipeline was laid several years ago, a mound of clay soil was formed, which was subsequently colonized by large sand voles. During monitoring along a linear route along the embankment, 9 colonies were counted per km of the route, and 7 in the natural landscape. The difference was 30%, but the changes per unit area were less significant. At the same time, the habitability of the colonies and the number of animals per burrow were the same in both cases – 89% habitability of burrows and 8 animals per burrow (beginning of the second decade of May, emergence of young animals to the surface).

Based on the trench dug in previous years and the embankment of soil from it, passing through the bird observation points M04 and P02, the colonies are located at a distance of 20 to 200 m or more from each other. In the natural landscape of this area, isolated colonies have been noted at a considerable distance from each other. In both cases, burrows were found in loamy soil. No burrows were found in another section of this ditch with a rocky embankment stretching for 2 km.

Based on incomplete data, the distribution pattern of the great gerbil in the project area is shown in Figure 39.

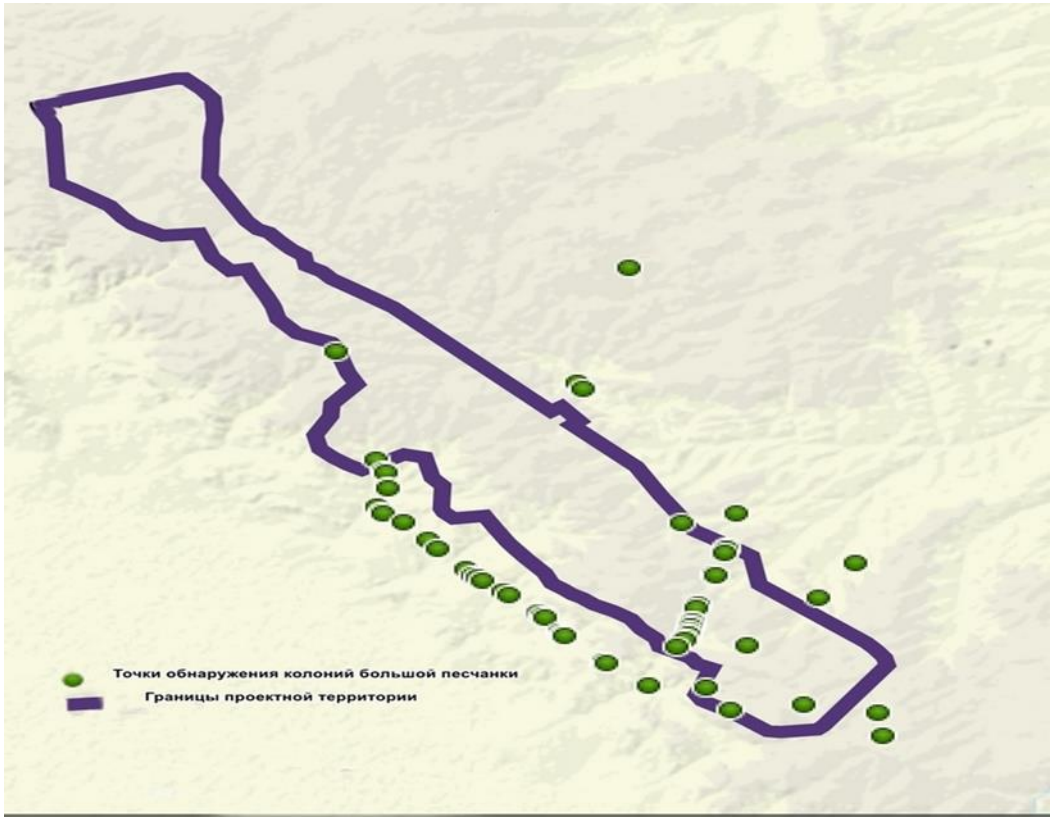


Fig. 39. Distribution map of large sand lizard colonies in the project area

The red-tailed or Libyan gerbil

Meriones libycus Lichtenschtein, 1823 (order Rodentia, family Cricetidae, subfamily Gerbillinae)

is widespread in Kazakhstan in clayey and gravelly deserts from the northeastern coast of the Caspian Sea to the southern part of the country. Cricetidae, subfamily Gerbillinae) is widespread in Kazakhstan in clayey and gravelly deserts from the northeastern coast of the Caspian Sea in the west to the border with China in the east. Throughout its range, the animal shows a clear preference for desert lowlands and foothills with clayey and clayey-gravelly soils. In different parts of its range, the living conditions for this rodent are extremely uneven, which explains the sharp variation in its distribution and abundance. The red-tailed gerbil inhabits settlements ranging from a few dozen square meters to very large areas. Like other gerbils, the animal is active all year round. It is typically active at dusk and at night. It builds a system of burrows with 5-25 entrance holes. Like the greater gerbil, it readily inhabits anthropogenically altered landscapes. It feeds on mixed foods and stores food for the winter. It is a secondary carrier of plague infection in the Central Asian desert plague focus.

According to the fragmentary data obtained, the red-tailed sand lizard inhabits most of the project area, excluding mountainous areas with exposed rock formations (Figs. 40; 41). It is distributed in a mosaic pattern and does not form large settlements. It occurs both together with the greater sand lizard and in areas where there are no colonies of the greater sand lizard. Settlements have been found in thickets of boilyach and in areas of grass, wormwood, and various herbs on rolling plains and hillsides, in valley saxaul thickets. During the survey, the average occupancy rate of burrows was 55-65%.

Fig. 40. Red-tailed sand lizard

Fig. 41. Burrows of the red-tailed sand lizard

When traveling by car between bird monitoring points and on walking routes, red-tailed sand lizard burrows were found at the following coordinates:

N 44,61246º; E 073,49424º

N 44,64787º; E 073,44789º

N 44,58019º; E 073,51054º

N 44,53920º; E 073.64265º

N 44.58432º; E 073.56760º

N 44.35521º; E 073.32345º

N 44,36402º; E 073,30332º

N 44, 36902º; E 073, 34250º

N 45,11688º; E 073,89950º

N 45,10488; E 073.88200º

N 44.57759º; E 073.85454º

N 44.58166º; E 073.85119º

N 44.59402º; E 073.52085º

N 44.65905º; E 073.47456º

N 44.73482º; E 073.51565º

N 44.55799º; E 073.61575º

N 44.81281º; E 073.29586º

N 44.61843º; E 073.39267º

N 44.12687º; E 073.90678º

The tamarisk gerbil

Meriones tamariscinus Pallas, 1773 (order Rodentia, family Cricetidae, subfamily Gerbillinae) is one of the most moisture-loving species among gerbils, preferring mesophytic habitats with succulent vegetation. Cricetidae, subfamily Gerbillinae) is one of the most moisture-loving species among gerbils, preferring mesophilic habitats with succulent vegetation. It is distributed mosaically but quite widely, from the northeastern Caucasus to northwestern China. Gerbillinae gerbils most readily settle in river floodplains, dry riverbeds, and in shallow, fixed sands with well-developed shrub and tall grass vegetation. They readily inhabit thickets of juniper bordered by salt marshes mixed with wormwood around salt lakes. Comb-toothed gerbils are generally solitary, active at dusk and at night.

In the project area, the crested sandpiper is sporadically found in low-lying areas with thickets of tamarisk, in saxaul thickets mixed with tamarisk, along streams in thickets of shrubs and weedy vegetation. Captured in a live trap in a tamarisk thicket among chia thickets at bird observation point M15, coordinates N 44.69027º; E 073.36129º, burrows and the animals themselves were found in low-lying areas of saxaul mixed with tamarisk, coordinates of the point - N 44.36902º; E 073.34250º; N 44.61843º; E 073.39267º.

The common vole

Microtus socialis Pallas, 1773 (order Rodentia, family Cricetidae, subfamily Arvicolinae) is distributed in Kazakhstan in isolated areas of dry grassland and grass-wormwood steppes and semi-deserts of plains and foothills. It forms colonial settlements with a system of shallow burrows with up to 40 entrance holes. It leads a mainly crepuscular and nocturnal lifestyle. Its population is subject to sharp fluctuations due to weather and climatic conditions. In years of high population, it is one of the main food sources for small terrestrial predators, as well as some birds of prey, such as the common and steppe buzzards, kestrels, and owls.

In the project area, it is found on the slopes of hills and on hilly plains with fine gravelly loam soil, both in thickets of boylyach and in wormwood-grass-mixed grass plant associations. During a partial survey of the settlement area, it was found at the following coordinates:

N 44,59402 º; E 073,52085 º

N 44,73482 º; E 073,51565 º

N 44,69137 º; E 073,40618 º

N 44,52936 º; E 073.57891 º

N 44.55303 º; E 073.55306 º

N 44.53920º; E 073.64265 º

It should be noted that this vole is more widespread across the territory of the proposed wind farm construction and its infrastructure facilities than the data above suggests.

3.2 Expected impact and predicted consequences for small mammals in the project area

During the construction of the wind farm and its infrastructure facilities, the topsoil will be disturbed, the burrows of small mammals (rodents) will be destroyed, and the animals themselves will be killed. This will result in a reduction in the number of rodents in the construction areas; it is not possible to quantify this reduction at this stage. After construction is completed, during the wind farm's operation, a partial recovery in the numbers of large and red-tailed sand voles should be expected. The piles of soil and trenches formed during construction may be actively colonized by these rodents, which may lead to a local increase in the abundance of these species. Due to the anthropogenically altered landscape, these rodents may penetrate into areas where they did not previously inhabit in the natural landscape. However, there is unlikely to be an overall increase in the number of large and red-tailed sand voles throughout the project area, the attractiveness of the area as hunting grounds for large birds of prey will not increase, and there will be no increase in the risk of these birds colliding with wind turbine blades. However, the probability of death from collision with turbine blades while hunting large sand voles and other rodents by birds of prey, including those listed in the Red Book, will remain.

Additional information

When designing, constructing, and operating a wind farm and its infrastructure facilities, it should be taken into account that the project area is located in the zone of active Betpakdala and Moyinkum plague foci (Passport of Kazakhstan regions for particularly dangerous infections - Quarantine and zoonotic infections in Kazakhstan No. 1, 2015). In the event of epizootics among rodents (large gerbils), there may be risks of infection for personnel.

The Moyinkum district, where the project area is located, is endemic for CCHF (Crimean-Congo hemorrhagic fever) (Passport...). The main source of this viral infection in this area are ticks of the genus *Dermacentor*. This infection may also pose a risk of infection to personnel.

4 Bat surveys

The above-mentioned work was carried out during a field trip in July, between July 18 and 23, 2025. Ultrasonic signals from bats were recorded using stationary and mobile detectors. The stationary detector was installed “overnight” at roosting sites (points M19, M07, M15, M11, M04, M01, OHL_VP_5) (Fig. 42).

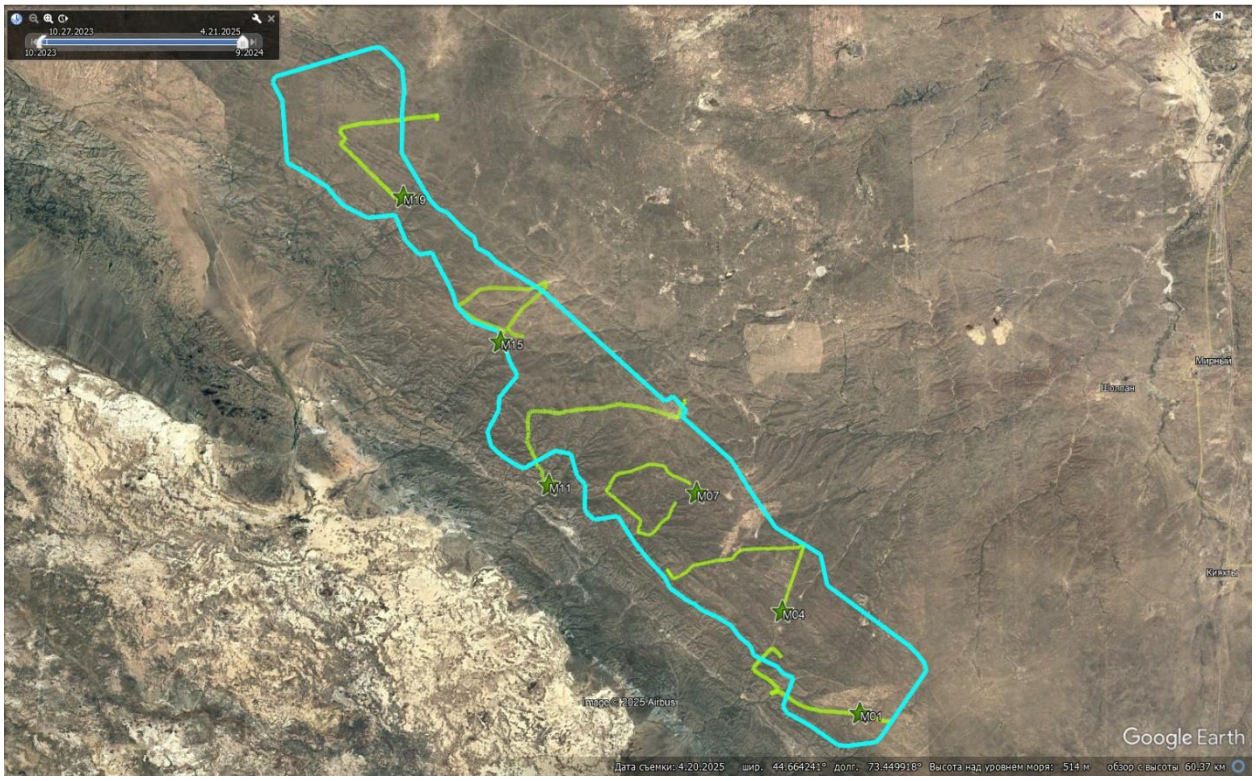


Fig. 42. Map of mobile recording routes for bat ultrasonic signals, summer 2025 (the project site boundary is shown in blue, and the routes themselves are shown in green).

The stationary detector settings were preset to record 30 minutes before sunset and 30 minutes after sunrise. The stationary detector microphone was installed at a height of 3 m above the ground.

The mobile detector was used for evening recording in a car. Recording began 30 minutes before sunset, followed by cycles of 15 minutes of recording while driving at a speed of 4-6 km/h and 5 minutes of recording while completely stopped, with the headlights and engine turned off. On average, the five recording sessions (Fig. 12) lasted 3.5 hours each and covered a total distance of 12-14 km. During this 3.5-hour period, an average of 10 cycles of 15- and 5-minute recordings were made. The recording session on July 20 had to be skipped due to adverse weather conditions (continuous wind with an average speed of 12 m/s at the start of observations and in the evening).

The data obtained still needs to be processed in order to clarify the distribution of bats within the project site during the recording period. However, despite the availability of “raw” data, the mobile recording method allows bat signals to be visually recorded on a mobile phone screen. Taking this into account, on July 18, four signals were recorded, with two individuals visually observed. On July 19, two signals were recorded, on July 21-22, no signals were recorded, and on July 23, one signal was recorded.

5. Reptiles and amphibians survey

5.1 Methods

The study of amphibians and reptiles was not a special task. Encounters of these animals were noted on automobile and pedestrian routes during the study of mammals and birds. Amphibians were noted based on visual observations and voice, reptiles – based on visual observations. Information on routes is contained in the corresponding subsections of the Mammals and Birds sections.

5.2 Results

The only amphibian species encountered in the area was Perrin's green toad, *Bufotes perrinii* (Fig. 58). This species was recently isolated from the collective species *Bufotes gr. viridis* and is known to be a typical inhabitant of the desert spaces of Central Asia (Dufresn et al. 2019). In the spring season, Perrin's green toad was encountered throughout the project area, and was especially numerous near temporary watercourses in the low-hill part. At this time, adult individuals were recorded both visually (encounters on foot and car routes) and by singing (noted in almost all visited valleys).

Ten species of reptiles from three orders were encountered: 1 species of turtle, 3 species of lizards and 2 species of snakes (Table 5).

Table 5. Reptiles encountered in the project area during the surveys in 2023-2024.

#	**Habitat**	**Hills with rocks, stony slopes and tops**	**Gently rolling and flat plains covered with zonal deserts**	**Dry valley saksaul woodlands**	**Rocks on valley slopes**
	Species richness				
1	Central Asian Tortoise – *Agrionemys (Testudo) horsfieldi*	++	+	+++	+
2	Такырная круглоголовка – *Phrynocephalus helioscopus*	-	+	-	-
3	Разноцветная ящурка – *Eremias arguta*	-	+	+	-
4	Быстрая ящурка – *Eremias velox*	-	+	+	-
5	Восточный удавчик – *Erix tataricus* *	-	+	-	-
6	Обыкновенный щитомордник – *Gloydius halys*	+	-	-	-

Rare species of reptiles and amphibians have not been found. The Steppe Tortoise *Testudo horsfieldi* has VU status on the IUCN Red List, and the tortoise and *Eryx miliaris* are included in

Annex II of CITES.

A characteristic feature of the entire territory, except for rocky areas, is the relatively high abundance of the Steppe Tortoise (on average 15 sightings per day with a run of 20-120 km/day). At the same time, many Steppe Tortoises were also encountered in April, but some of them also did not come out of hibernation on May (several buried tortoises were noted, obviously not yet coming out of hibernation) or even August (see summer bird observation section). In spring 2024, the turtle's occurrence was estimated on automobile routes 7-9 times for 10-20 km. On average, the occurrence was 1.5 individuals/km of route. The population density of reptiles of other species was not estimated quantitatively.

5.3 Expected impact and recommendations

In general, the impact of wind farms on amphibians and reptiles has been studied very little. In particular, there are virtually no data on the effects on the species present in the project area. In this regard, one can focus on data on closely related and ecologically similar species in similar arid ecosystems.

With regard to one species of land turtles in desert ecosystems (in the conditions of the Southwestern United States), there is evidence that the survival rate of adult animals in the territory of the wind farm during the entire long-term study period, almost 20 years, remained slightly, but significantly higher than in neighboring areas not affected by the wind farm (Agha et al. 2015). The supposed reasons for this are: there was less traffic on the roads inside the wind farm than on public roads in the vicinity (roadkill is an important factor in the mortality of land turtles in the desert); ruderal plants, preferred by turtles as food, developed in areas disturbed by the construction of wind turbines; The predator pressure in the wind farm area was lower than in the neighboring undeveloped areas. In particular, such an important predator of turtles as the golden eagle was reliably rarely encountered and attacked turtles even more rarely in the wind farm area, which the authors attribute to the increased mortality of the golden eagle at wind turbines and to the golden eagles avoiding this area (Agha et al. 2015). Almost all of these considerations can be applied to the project area.

Recommendations

1. It is recommended to minimize the destruction and disturbance of habitats during the construction of the wind farm.

2. In order to reduce the negative impact on the turtle, as well as a number of other reptiles (steppe agama, lizard and all types of snakes) and the toad, it is necessary to develop measures to prevent these animals from getting onto the roads used during the construction and operation of the wind farm. At the same time, permanent roads should be equipped with crossings for amphibians and reptiles - probably in the form of pipes or wide passages under the roadbed. More specific designs of crossings should be developed later.

6 Invertebrates

6.1 Assessment of the current state

At the foot of the marginal ridges of the Northern Tien Shan, in the zone of foothill semi-deserts, wormwood-turf-grass plant communities prevail on northern (low-carbonate) sierozems. This zone is inhabited by desert and steppe fauna of foothill clay and loess plains. Its upper limit is at an absolute height of about 900 m above sea level. The invertebrate fauna is generally typical for northern-type deserts, quite rich and diverse, weakly affected by anthropogenic factors. According to preliminary estimates, the number of invertebrate species (*Invertebrata*) in the southeast and south of Kazakhstan approaches 100 thousand. And although it is believed that the invertebrate fauna has been poorly studied, and special reports devoted to this territory are absent, the presence of many unique, rare, endemic and relict species has been reliably established here. The extremely uneven state of knowledge does not allow us to give an exhaustive description, as does the great diversity of forms; we will focus only on some representatives of large detachments, using available indicative information on more or less studied groups.

6.2 Methods of collection and identification

Visual recording of large mobile arthropods (Arthropoda) was carried out on walking routes of at least 1.5 km, taking into account the coverage of all plant communities, relief features, and biotopes. A camera, binoculars, and GPS devices were used to accurately record the locations of the finds. The soil and vegetation were also examined for their detection, stones were turned over, and plant and organic remains were excavated. Invertebrates were collected manually, taking into account all major ecological groups: from the substrate using tweezers, from shelters and for sampling those with delicate and fragile coverings (accounting for coprobionts, campobionts, detritivores, cryptobionts), using nets for mowing (chortobionts, tamtobionts, phytophages) and entomological nets (aerobionts, pollinators) in various microhabitats: meadow vegetation, forest edges, shrubbery, forest litter. Particular attention was paid to representatives of the insect class (Insecta), including the orders Coleoptera, Hymenoptera, Lepidoptera (at the imago stage), as well as other groups of terrestrial invertebrates. Additional methods included catching phototaxons using a light source, setting Barber traps (necrophages, geobionts, cryptobionts), and fossobionts were counted by digging them up with an entomological shovel. For euthanasia (preservation and fixation) of the captured specimens, a 10% ammonia solution (ammonium hydroxide) was applied to cotton wool or paper towels in sealed containers (test tubes) or glass jars. The insects were placed inside for 10–20 minutes until completely fixed. This method ensures rapid immobilization with minimal damage to morphological features. For storage and initial processing after pickling, the specimens were placed on cotton wool pads in boxes or cuvettes. The optimal size of the pads is 10×21 cm, which allows preliminary viewing of specimens under a stereomicroscope without mounting and without repositioning. This method promotes gentle drying and prevents mechanical damage, especially to small forms during transportation. Materials on arachnids, isoptera, and parts of diptera insects, as well as larval stages, were fixed in 70% ethyl alcohol for morphological studies. Observations were recorded in a field diary, and part of the material selected in this way was fixed in a staining solution and transferred to entomological mattresses (arachnids collected in ethyl alcohol) for subsequent laboratory processing under a binocular microscope and determination of taxonomic affiliation. For identification and systematic processing, the collected samples were used keys and identifiers relevant to the fauna and adjacent regions [Ler, 2003; et al.]. All specimens were pre-sorted into taxonomic groups, taking into account morphological features visible at 10–40× magnification under a binocular (MBS-10 or similar) stereomicroscope. Particular attention was paid to diagnostic features such as antenna structure, wing venation, genitalia shape, and cuticular structure characteristics.

Field studies were conducted from July 18, 2025, to July 25, 2025. The coordinates of the sites are given in Table 6

Table 6 Coordinates of survey sites

№	№№ площадок	Дата	Время*	Широта	Долгота
1	M01	18.07.2025	5:00:26 PM	44.5024167	73.6055433
2	M02	19.07.2025	7:14:31 AM	44.497565	73.5698
3	M19	19.07.2025	1:10:33 PM	44.7632823	73.2956693
4	M21	19.07.2025	2:40:44 PM	44.7643835	73.2443563
5	M15	20.07.2025	11:47:38 AM	44.6902417	73.361275
6	M19	20.07.2025	9:32:28 AM	44.749618	73.294832
7	M11	21.07.2025	11:37:42 AM	44.6170307	73.3927136
8	M17	21.07.2025	7:21:21 AM	44.7320567	73.3238517
9	M07	22.07.2025	12:20:47 PM	44.612425	73.49396
10	P17	22.07.2025	7:27:12 AM	44.59784	73.4422867
11	M07	23.07.2025	6:57:09 AM	44.6124467	73.4938767
12	OHL VP 7	23.07.2025	5:10:21 PM	45.1268516	73.9067483
13	OHL VP 4	24.07.2025	12:33:00 PM	44.1438817	73.7098917
14	OHL VP 5	24.07.2025	7:41:10 PM	43.9532017	73.6044383
15	OHL VP 6	24.07.2025	6:20:40 AM	45.06092	73.83464
16	OHL VP1	25.07.2025	9:20:13 AM	43.7400833	73.574255

*Route start time

Worms (Vermes)

Of this huge group, consisting of 4 types (annelids - more than 100 species, nemerteans - several species, primary cavity worms - several hundred species, flatworms - more than 100 species). In the territory, only helminths parasitizing vertebrates have been more or less studied. Of the nematodes, second only to insects in the number of species, several dozen species are also known - agricultural pests.

Mollusks (*Mollusca*)

This group of invertebrates inhabiting terrestrial biotopes is numerous in terms of species and population density. In the southern half of Kazakhstan, there are about 300 species from 69 genera of 36 families (Увалиева, 1990). The heavily peneplained Shu-Ilei Mountains are inhabited by representatives of 27 species from 17 genera and 14 families. Of these, 9 species are widespread with a palearctic range and species from the families *Buliminidae* (4), *Dradybatnidae* (3), *Hygrominidae* (3 species). Representatives of two ecological groups of mollusks are found here: species living on rocks, rubble screes, among stone blocks overgrown with xerophilic shrubs, and species living in intrazonal biotopes with psychrophilic vegetation. The malacofauna of the semi-desert zone is similar in species composition to that of the steppe zone, but in a slightly different ratio and consists of 17 xerophytic species adapted to an extremely dry climate. There is not a single endemic genus here, and endemics of the species rank belong to the genera *Carychium, Lindholmomneme, Xerosecta*, while a characteristic feature of the shell of mollusks of arid landscapes is the presence of a mouth fittings in the species. Background species should be considered the most widespread species of mollusks, usually having a palearctic range and occurring in large quantities, such as *Bradybaena lantzi, Ponsadenia semenovi, Angiomphalia regeliana, Pseudonapaeus seculinus, Oxyloma sarsi, Zonitoides nitidus, Pupilla muscorum* (Увалиева, 1990: 38-39). Their distribution is very uneven and is determined by the conditions of specific habitats, so completely waterless and devoid of vegetation areas are not populated by mollusks. In dry habitats, they gravitate towards depressions in the relief and water sources, where they can form dense populations. For many species of both invertebrates and vertebrates, mollusks are food objects, play a role in soil formation. They are also known as carriers and transmitters of

various parasites, where they are included in extremely diverse epizootological chains, serve as the most important transit link in the transmission of parasitic diseases, game animals and humans.

Arachnida

Arachnida, the most famous representatives of this class, represented in arid areas are ticks, scorpions, solpugas and spiders. Not being photoxenous, many large active forms (solpugas) gather under artificial light sources, which is associated with food attraction.

Ticks (*Acari)*, only a relatively small number of species are parasites or carriers of human diseases, feeding on decomposing organic matter, they play an important role in the formation of soil humus, some representatives feed on the juice of cultivated plants and are considered agricultural pests.

Scorpions (*Scorpiones*), within the deserts and semi-deserts, only the *Buthidae* family is represented, consisting of 5 genera and 8 species. They are active at night and during the day they hide under stones, in cracks in the ground, destroyed buildings and other shelters. The food is most often insects, as well as arachnids, woodlice and other arthropods (*Arthropoda*).

Solpugas (*Solifugae*), are distributed mainly in desert, dry biotopes, the Asian fauna of which is characterized by the presence of 5 endemic genera (*Gylippus, Karschia, Gluviopsis, Triditarsus, Dinotrax*). Of the characteristic representatives, the genus *Galeodes* is especially numerous. They feed on insects and other invertebrates, and partly also small vertebrates, such as lizards.

Spiders (*Araneae*), the most numerous groups in the class, are able to react sensitively to the deterioration of the environmental situation due to pollution by industrial waste and can be successfully used as bioindicators. About 367 species of spiders, 127 genera and 32 families are classified as inhabitants of the desert and semi-desert zone (Виноградов, 1948). The largest number of species are cosmopolitan, or widely distributed forms. Notable are species of the *Lucosidae* families, smaller forms of *Gnaphosidae, Salticidae, Eresidae, Thomisidae*. As for the distribution of individual groups that make up the spider fauna of the desert zone, a significant enrichment of the species composition of spiders that constantly live in human dwellings is characteristic. In addition to the common genus *Tegenaria*, spiders of the *Lephthyphantes, Pholcidae, Uroctenidae, Agelinidae* and other families (Виноградов, 1948: 299).

Insecta

The most numerous groups of animals, and one of the most important for the circulation of substances in nature, and also playing a significant role in human life. The fauna of the group in Kazakhstan has not been studied enough, it consists of representatives of 28 orders, which is more than 550 families (Митяев, Казенас, Кащеев, 2005) and includes quite a lot of endemic, as well as relict species of scientific interest. According to the results of research in 2015, 459 species of insects belonging to 7 orders, 40 families, 253 genera were identified in the steppe zone (Кадырбеков, 2016). A striking example of ecological plasticity - the fauna of the southern semi-desert and desert regions is no less diverse, numerous groups are highly differentiated biologically, they are characterized by great morphological diversity, and the characteristic specific indicators are the features of the daily regime, behavior and seasonal cycle. According to preliminary forecast data, the fauna of terrestrial insects of the region includes at least 2000 species, including about 50 species of orthoptera, 150 species of homoptera, 200 species of hemiptera, 500 species of beetles, 400 species of hymenoptera, 350 species of lepidoptera, 300 species of diptera, and 50 species of all other insects (Мелдебеков et al., 2011).

Depending on the type of landscape, 5 main faunistic complexes can be distinguished: stony-desert, sandy-desert, clay-desert, saline and intrazonal meadow-steppe.

These complexes include all the main groups of invertebrates living in the desert zone.

However, the species composition of each complex is unique and depends on the ecological preferences of its representatives. Insects, for example, are tied to certain biotopes or groups of biotopes, which is determined by their connection with vegetation and microclimate, as well as the degree of ecological plasticity of the species.

A large group consists of species that live not only in one complex, but also in several, which is due to their more or less broad requirements for living conditions. At the same time, each section of any type of desert has small inclusions of other types, which allows the existence of species adapted to living in the conditions of these "alien deserts".

For example, in mountain rocky deserts there are small sandy, clayey or saline areas with characteristic species of invertebrates. Similar "alien" inclusions are also found in other deserts.

Typical species of invertebrates of the main ecosystem complexes

Stony-desert complex - *Amara aenea De Geer*, *Cleonis pigra* (Scopoli) -, *Mylabris sibirica* F.-W. , *Ocypus cupreus* (Rossi), *Prosodes rugulosa* Gebl , *Cicadatra querula* Pall., *Bembix bicolor* Rad. , *Cerceris flavicornis* Br., *Tachysphex incertus* Rad., *Cataglyphis aenescens* Nyl., *Formica pratensis* Retz., *Sphex funerarius* Guss., *Eumenes sareptanus* Andre, *Pontia daplidicae* (L.), *Euchloe pulverata* (Christoph), *Chazara enervata* (Alpheraky), *Melanargia russia* (Esper), *Oedipoda coerulescens* (L.), *Sphingonothus nebulosus* (Fischer-Waldh.), *Asiotmethis muricatus* (Pallas), *Decticus verrucivorus* (L.), *Mesobuthus eupaeus* Koch..

Sand-desert complex - *Julodis variolaris* Pall., *Scarites bucida* Pallas, *Lasiostola pubescens* (Pall.), *Opatrum sabulosum* L, *Carpocoris fuscipennis* Boheman, *Cicadatra querula* Pall., *Bembecinus tridens* (F.), *Bembix oculata* Panzer, *Bembix gracilis* Handl., *Oxybelus spp.*, *Sphecius lutescens* (Rad.), Tachysphex desertorum F.Mor., *Cataglyphis pallidus* (Mayr), *Podalonia tydei* (Guillou), *Prionyx niveatus* (Dufour), *Prionyx viduatus* Christ., *Katamenes dimidiatus dimidiatus* (Brullé), *Pontia* daplidicae (L.), *Myrmeleon formicarius* L, *Dericorys tibialis* (Pallas), *Ochrilidia hebetata* (Uvarov, 1926).

Clay-desert complex - *Harpalus distinguendus* (Duftschmied, *Chrysolina graminis* (L.), *Theone silphoides* Dalm, *Chrysochares asiatica orientalis* Lopatin, Cerocoma schreberi (F.), *Adesmia gebleri* Gebler, *Pimelia cephalotes* Pall., *Graphosoma lineatum* L., *Cicadatra querula* Pall., *Aphis craccivora* Koch, *Cerceris bupresticida* Duf., *Lindenius albilabris* (F.), *Bembix bicolor* Rad., *Cerceris flavicornis* Br., *Liris nigra* (Lind.), *Oxybelus mucronatus* (F.), *Tachysphex mediterraneus* Kohl, *Cataglyphis aenescens* Nyl., *Messor aralocaspius* Ruzsky, *Scolia (Scolioides) schrenckii* Eversmann, *Ammophila heydeni* Dahlbom, Prionyx kirbii (Lind.), *Prionyx subfuscatus* (Dahlb.), *Sphex flavipennis* Fabricius, *Polistes (s. str.) nimpha* (Christ), *Orgyja dubia* Tausch., *Tyta luctuosa* (Denis & Schiffermuller), Colias erate Esper., *Gonepteryx rhamni* (L.), *Pontia daplidicae* (L.), *Chazara enarvata* (Alpheraky), *Mantis religiosa* L., *Ascalaphus macaronius* Schneider, *Arcyptera microptera* (Fischer-Waldh.), *Calliptamus italicus* (L.) , Celes variabilis (Pallas), *Dociostaurus kraussi* (Ingen.), *Oedaleus decorus* (Germar), *Ramulus bituberculatus* Redt., *Latrodectus tredecimguttatus* (Rossi).

Salty-desert complex - *Chrysochares asiatica orientalis* Lopatin, *Cicindela littoralis conjunctaepustulata* Dokht., *Bulaea lichatshovi* Hum., *Chromosomus verrucosus* (Gebler), *Anechura asiatica* Semenov, *Cerceris rubida* Jur., *Vespula* (*Paravespula*) *germanica* (F.), *Eremochares dives* (Brulle), *Epacromius tergestinus* (Charpentier), *Sphingonothus halophilus* Bey-Bienko, *Gryllotalpa unispina* Saussure, *Chrotogonus turanicus* Kuthy, *Pyrgomorpha bispinosa* Walker; *Lycosa singoriensis*; *Hemilepistus sp.*.

Intrazonal meadow-steppe complex – *Calosoma sycophanta* L., *Plagionotus floralis* Pall., *Cetonia aurata* (L.), *Lipara lucens* Meigen, *Adelphocoris lineolatus* Goeze, *Lygus pratensis* L.,

Dolycoris baccarum L., *Aphis craccivora* Koch, *Bombus terrestris* L., Glyptomorpha discolor (Thunb.), *Cerceris tuberculata* Vill., *Trypoxylon scutatum* Chevrier, *Polistes dominula* Christ, *Vespula* (*Paravespula*) *germanica* (F.), *Lythria purpurata* (L.), *Carcharodus alceae* (Esper), *Thymelicus lineola* L., *Aricia agestis* (Denn. et Schiff.), *Eumedonia eumedon* Esper, *Lycaena phlaeas* (L.), *Polyommatus icarus* (Rott.), *Thersamonia thersamon* Esper, *Argynnis pandora* (Den. et Schiff.), *Issoria lathonia* (L.), *Nymphalis urticae* (L.), *Vanessa cardui* L., *Papilio machaon* L., *Anthocharis cardamines* (L.), *Aporia crataegi* L., *Colias erate* Esper, *Chorthippus biguttulus* (L.), *Melanogryllus desertus* (Pallas), *Gryllotalpa unispina* Saussure, *Platycleis intermedia* (Audinet-Serville), *Tettigonia caudata* (Charp.); *Thomisus onustus* Walckenaer.

In addition to the listed ecological complexes, the region also has a complex of invertebrates associated with aquatic biotopes. Dragonflies (*Odonata*), mayflies (E*phemeroptera*), stoneflies (*Plecoptera*), caddisflies (*Trichoptera*), some *Heteroptera*, beetles (*Coleoptera*), butterflies (*Lepidoptera*) and diptera live in aquatic biocenoses. Insect larvae sometimes make up a significant part of the population of water bodies, with diptera larvae and pupae forming a particularly large biomass. The composition of the inhabitants of water bodies depends on many factors, but primarily on the degree of water salinity.

A preliminary list of key indicator insect species of the region under consideration is presented in Annex.

It is important to note that many insect species are eurybionts, i.e. they can live in different conditions. They are usually polyphages, which can be part of several ecological complexes, and most species are background desert ones.

Rare and endangered species

According to the available preliminary data, there are 12 species listed in the Red Book from 7 orders (Red Data Book of RK, 2006):

a. Dragonflies (*Odonata*): *Calopteryx virgo* and *Anax imperator*;

b. Praying mantises (*Mantoptera*): *Bolivaria brachyptera*;

c. *Orthoptera*: *Saga pedo, Ceraeocercus fuscipennis*;

d. *Homoptera*: *Porphyrophora sophorae* and *Porphyrophora victoriae*;

e. *Coleoptera*: *Dorcadion balchashense, Chilocorus bipustulatus, Stethorus punctillum*;

f. *Hymenoptera: Sphex flavipennis*;

g. *Lepidoptera: Coenonympha mongolica*.

The lack of accurate data in this regard indicates the need for effective measures for the general conservation of all biodiversity.

6.3 Expected impact and recommendations

Potential negative local impact on invertebrates (*Invertebrata*) during construction and further operation of the facility may be associated with: removal of the fertile soil layer, cutting of topsoil, soil compaction and removal of flora that serve as a food source for the phytophagous group, attraction of some groups by artificial light sources.

The main impact factors include physical impact during collisions with turbines, blades and towers; disturbance of the habitat: disruption of the migration route; attraction of photoxenic

insects (organisms that have the ability to be attracted by a light source).

The species diversity of the animal world at the planned site of the facility is limited in species richness and insignificant in numbers. The mortality of invertebrates *(Lepidoptera*, etc.) as a result of collisions with the designed wind farm installation is insignificant, due to the low longitudinal-axial speeds of the blades.

These above impacts are classified as insignificant or of medium significance.

Recommendations for reducing the impact on rare and endangered species of biodiversity

The following are recommended measures to reduce the impact during the construction phase:

a. before the start of construction, in order to preserve and rationally use the fertile soil layer under the planned development, the fertile soil layer is cut off;

b. after the completion of construction, the fertile soil layer from the piles is moved back, the excess can be used for landscaping the adjacent territories;

c. use light sources with minimal glow in the UV region to illuminate work areas, during periods of mass emergence of some species, limit the duration of the glow (turn off for a period of about 2-3 hours, in the evening after sunset).

According to the results of the study of the zone of the planned activity, it was revealed that:

a. significant accumulations of invertebrates were not identified in the vicinity of this facility based on the studied materials;

b. the territory where the wind turbine is planned to be built is located outside the main migration routes of mass species of invertebrates.

Taking into account the above, the placement of wind turbines in the territory under consideration will not have a significant impact on the populations of protected animal species and the functioning of migration corridors of invertebrates (*Invertebrata*).

7 Plant survey

7.1 Introduction

The project involves the construction of six linear facilities (Fig. 1) in the Moinkumsky District of the Zhambyl Region. The work sites are adjacent to the wind farm site and are essentially a continuation of that project.

The linear facilities planned for construction include:

- A road from the village of Ulke leading to wind farms in the area south of and up to the village of Khanta (turquoise line)
- 35 kV power line to Kiyakhty 110 kV (green line)
- 35 kV power line to Kiyakhty 220 kV (lilac line)
- 500 kV power line from Mirny (PS-1) to YUKGRES (blue line)
- 500 kV power line from Mirny to Y Mirny (PS-1-PS-2) (yellow line)
- 500 kV power line route YM-Shu (orange line)

The technological process of construction and installation of these lines, as well as two substations (North and South) and a camp, involves partial or complete removal of the soil layer, movement of construction equipment, and temporary installation of construction material storage facilities. Thus, an impact on flora components is expected. In view of this, these comprehensive studies covered the planned construction sites in order to identify threats and the extent of the impact.

7.2 Information about collection sites, routes, and departure dates, as well as logistical support for research

Field research covered more than 200 km of the project area in the Zhambyl region.

To survey the site, work was carried out by car along the line of the specified objects. The survey route ran from the northern part of the planned road and the 500 kV power line to the south, covering the main directions of the planned work.

Stops were made along the route to inspect the site, describe the vegetation, and identify background landscape areas and areas with varying anthropogenic pressures on natural ecosystems. Where it was no longer possible to travel by car, the area was surveyed on foot.

During the botanical studies, descriptions were made to compile a floristic list of species growing in the project area, and a detailed route method was used to cover the maximum area to identify rare and endangered plant species, using a GPS navigator to pinpoint the coordinates of their exact location. The route survey also identified the main ecosystems within the specified lines.

Vegetation identification was carried out using:

- Illustrated Guide to the Plants of Kazakhstan (1969) Vol. 1, Vol. 2.
- Illustrated Guide to the Families and Genera of the Flora of Kazakhstan. Volume 1 (1999)
- The Identification Guide to the Plants of Central Asia (1968-1993),
- The online identification guide www.plantarium.ru.

The coordinates of the area were recorded using GPS devices and the Locus map program.

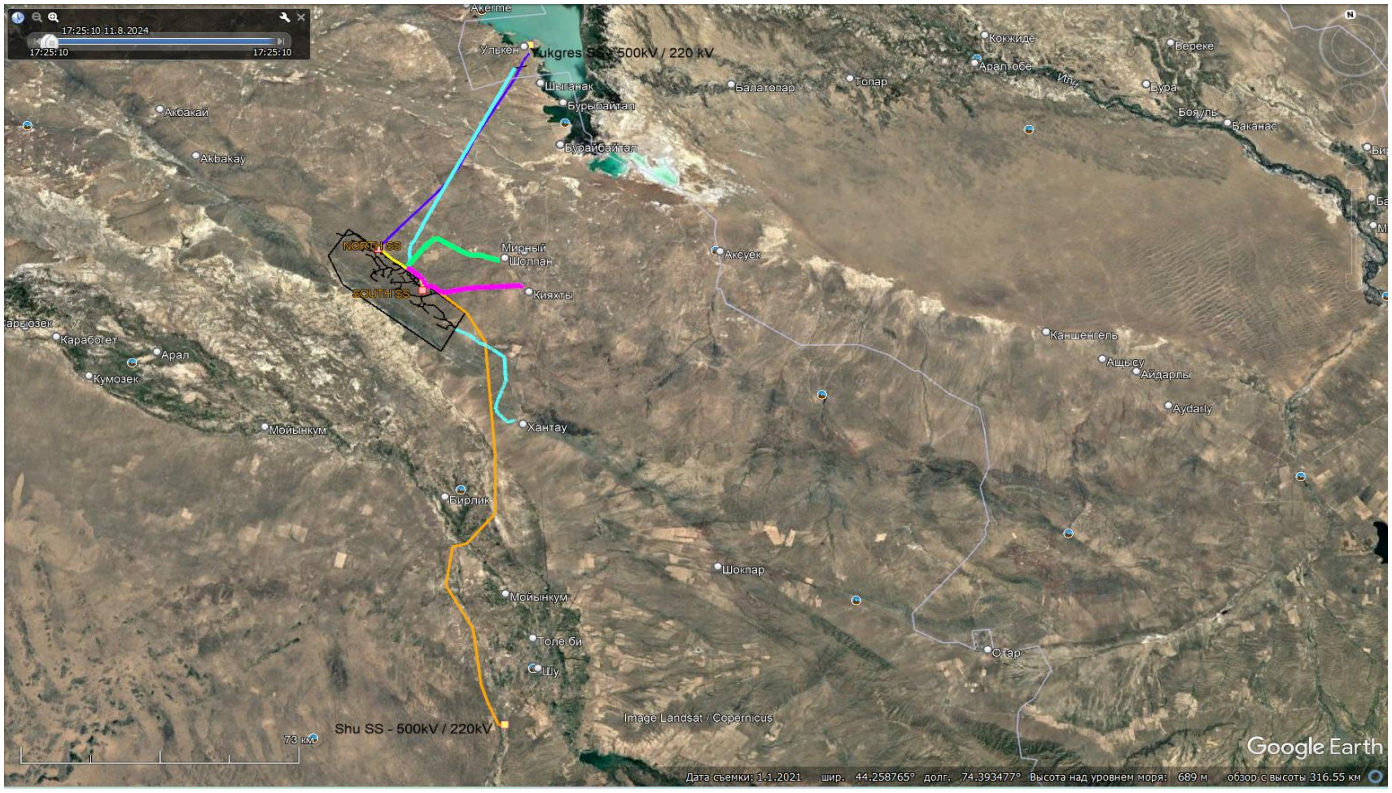


Fig. 43 – Satellite image showing the location of linear construction projects near the settlements of Ulke, Mirny, Kiyakhty, and Shu

7.3 Research result

The vegetation in the region under consideration belongs to several zonal groups, as the work site stretches from north to south for a distance of about 200 km and crosses them vertically.

The northernmost tip of the 500 kV power line route from Mirny (PS-1) YUKGRES and the new road from Ulke to PS Severnaya (Fig. 44) lies in a zone of rocky desert plains covered with wormwood and saltbush, including Anabasis salsa, Nanophyton erinaceum, Artemisia maritime, A. sublessingiana, and Salsola arbusculiformis. The site is part of the Aral-Balkhash soil province of flat territories with gray-brown desert soils. The predominant terrain here is arid denudation plains with shallow ridges.

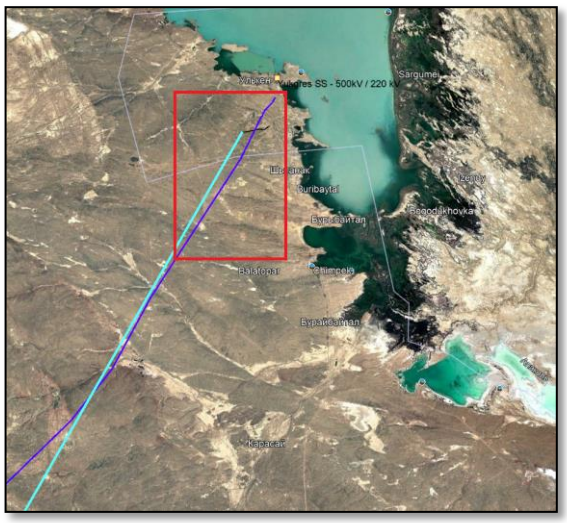


Fig. 44 – Northern section of the route

The central part of the site (includes the road, 500 kV power line from Mirny (PS-1) YUKGRES, 500 kV power line from Smirny to Yumirny (PS-1-PS-2), 35 kV power line to Kiyakhty 110 kV, 35 kV power line to Kiyakhty 220 kV, 500 kV power line YM-Shu and the wind farm site itself) (Fig. 45) mainly runs through a zone of complex grey wormwood-saltbush desert areas with a predominance of the grey wormwood-boialych complex (Artemisia terra-albae, Salsola arbusculiformis, Anabasis salsa, ephemerals), as well as wormwood-saltwort-grass rocky deserts (Artemisia maritima, Artemisia incana, A. terra-albae, Festuca sulcata, Poa bulbosa, Salsola arbusculiformis).

In this part of the site, as well as further north, loamy, gravelly, gray-brown desert soils with a clearly hilly relief prevail. As one moves southward, flat, undulating sandy-clay alluvial plains begin to form.

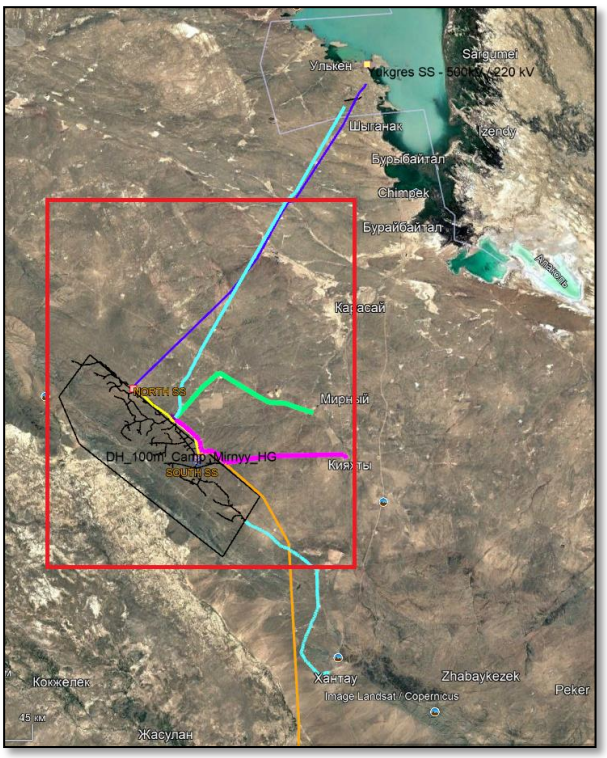


Fig. 45 – Middle section of works

The southern end of the work area (including the road and the 500 kV YUM-Shu power line) (Fig. 46) falls into the zone of gray wormwood deserts of the Northern Tien Shan (Artemisia terra-albae, ephemerals), and also affects the tugai-saltwort complex of the floodplains of the southern rivers: dzhigid-willow tugai forests, saltwort complexes, solonchak meadows, chia and tamarisk thickets in places of transition through floodplains and river beds. Here the Northern Tien Shan soil province with low-carbonate gray soils of the foothill semi-desert begins. The general relief of the area is formed by undulating-rolling clayey and loamy, in places gravelly foothill plains. Also indented floodplains of the Chu and Kuragata rivers.

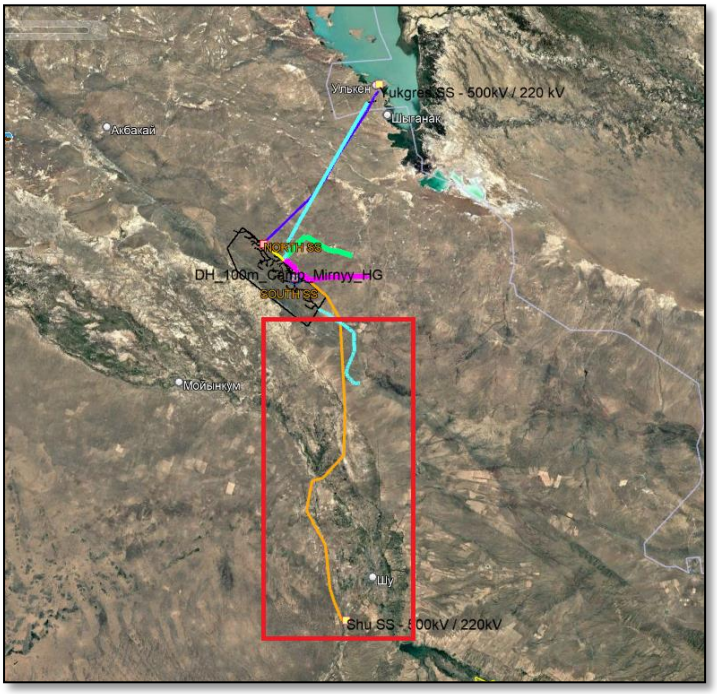


Fig. 46 – Southern part of the work site

In general, most of the territory is characterized by an active cenosis-forming species - the petrophyllous *Salsola arbusculiformis*. The most frequently encountered associations in the study area during the field trip were:

- Wormwood with ephemerals (*Tulipa biflora, Rheum tataricum, Artemisia turanica+A. terra-albae*),

- Boyalich with ephemerals on rubble outcrops (*Tulipa biflora, Rheum tataricum, Salsola arbusculiformis*)

- Wormwood-boyalych with ephemerals (*Tulipa Alberti, Tulipa behmiana, Rheum tataricum, Tulipa biflora, Salsola arbusculiformis+ Artemisia turanica*)

- Wormwood with teresken (*Kraschenikovia ceratoides+Artemisia terra-albae*)

- Saxaul forests (*Haloxylon aphyllum*)

- Kokpechniki (*Atriplex cana*)

Also, it is possible to separately highlight floodplain formations of the rivers crossing the planned lines. In the northern part of the route, they are crossed by low-water and sometimes drying up riverbeds of the Sarybastau, Karasai, Kiyakty, and Sarybulak rivers. Here, the vegetation is mainly represented by mesophilic meadow forms. To the south, the 500 kV YUM-Shu power transmission line crosses one of the largest transboundary rivers in the region, the Chu, and its left tributary, the Kuragaty River.

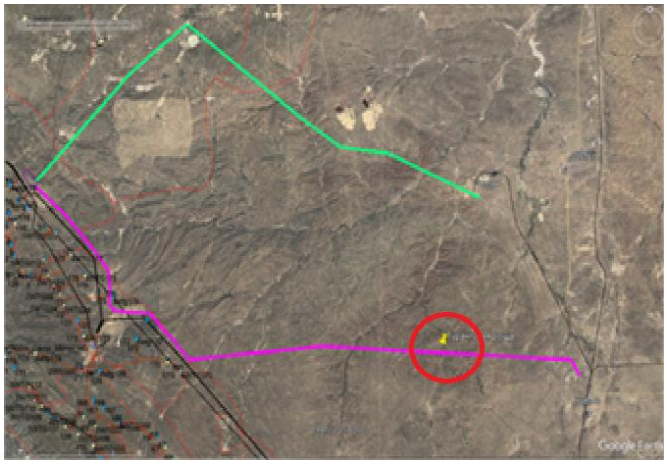
The Chu River valley (Fig. 47) has a rather complex relief, cut by numerous channels and stretches with sand deposits. At the place where the channel intersects with a line, the northern bank is more gentle, the southern bank is steep. The floodplain terrace is covered with saltwort complexes with the participation of *Anabasis salsa, Salsola lanata, Pyankovia brachiata, Halocnemum strobilaceum*. TPP - 30-40%. Takyrs are also noted here.

Fig, 47 – Chu River Valley at the points of intersection of the river with the 500 kV YUM-Shu power transmission line

The floodplain of the Kuragata River (Fig. 48) is represented by dense dzhigida-willow tugai forests on both sides (Salix sp + *Elaeagnus commutata*). The floodplain terrace is composed of complexes of white-earth wormwood-ephemeral (*Poa bulbosa + Artemisia terra-albae*), in places with saltwort (*Salsola lanata, Pyankovia brachiata*) and azhrek (*Aeluropus littoralis*) and zhantakovo-ephemeral (*Poa bulbosa + Alhagi pseudalhagi*), feather-grass-ephemeral-white-earth associations with a TPP of 40-60%.

Fig. 48 – Floodplain and above-floodplain terrace of the Kuragata River.

During the field inspection of the territory, a place where a turanga grove (*Populus diversifolia*) grows (about 30 trees) was also identified, 200 meters from the planned 35 kV line to Kiyakhty 220 kV (Fig. 49). Particular attention should be paid to this location during the construction period and field camps for workers, movement and stopping of equipment, construction of warehouses, etc. should not be allowed in this location, due to the fact that turanga is a relic with a limited habitat.



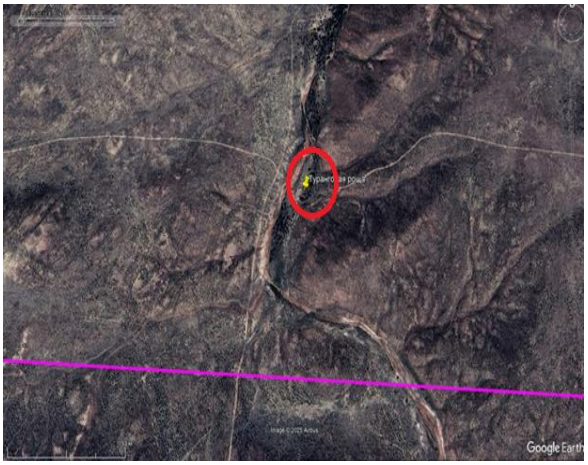


Fig. 49 – Satellite image of the location of the turanga grove near the 35 kV highway to Kiyakhty 220 kV

The areas planned for construction of the southern and northern substations and the camp were examined in detail. Since the construction of these facilities involves complete clearing of the upper soil and vegetation layer in some places, the territory will experience the greatest pressure and risks for rare flora.

Southern substation

Fig. 50 – South Substation Section

The construction site of the Southern substation is located on the flattened top of the hill. The southern and western slopes of the hill are composed of a bogbean-ephemeral-turf grass community (*Tulipa alberti + Allium sp + Ferula ovina + Poa bulbosa + Salsola arbusculiformis*) with a total projective cover of 60-70% along the slope, and 1-2% at the top of the hill. Here, a species listed in the Red Book of the Republic of Kazakhstan is noted - Albert tulip (*Tulipa alberti*). The abundance of Albert tulip on the site is in separate spots up to 6-7 pcs/m2 at the top of the hill, up to 12-13 pcs/m2 along the slope and below. The total area of \u200b\u200bTulipa alberti growing sites is about 10 m2 on average. The number of such growing areas here is about 10.

The northern and northwestern slopes are densely covered with bluegrass (*Poa bulbosa*) (TPC-80-90%), but unevenly and with separate spots with TPC - 10-20%.

The eastern slope is predominantly bluegrass with poppy (*Papaver pavoninum, Poa bulbosa*). The total projective cover is 50-60%.

«Camp» Site

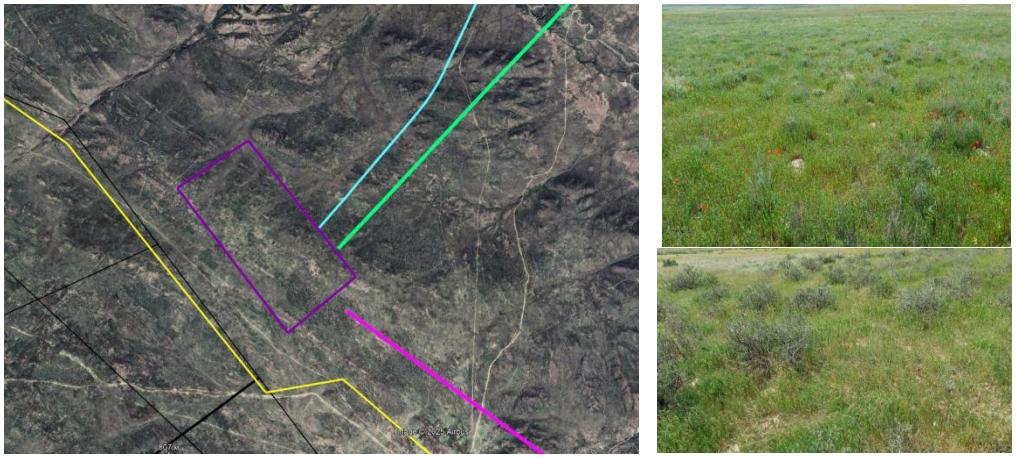


Fig. 51 – «Camp» Site

The plot is rectangular in shape, 900 m x 400 m, located on a gently undulating-sloping plain. On the territory of the Camp plot, the vegetation is represented by a complex of associations.

Most of the plot includes communities of ephemerals (*Papaver pavoninum* + *Poa bulbosa* + *Salsola arbusculiformis*), in places turning into bluegrass (*Poa bulbosa*). TPP is up to 40% and the grass height is 20-30 cm.

Also, significant areas within the Camp have a knocked-down nature of communities and are represented by wormwood-ruderal (*Eremopyrum triticeum* + *Descurainia Sophia* + *Artemisia terra-albae*) and mortuka patches (*Eremopyrum triticeum*) with TPP up to 60%. In some places, the weed species Descurainia Sophia is quite abundant, forming entire glades, not only on the site of the planned camp, but also beyond it. The greatest decorative value here is the peacock poppy (*Papaver pavoninum*), which forms entire scarlet glades in April-early May. The species is not listed in the Red Book of the Republic of Kazakhstan, but requires careful handling due to the ephemerality and decorative nature of the species.

Northern substation

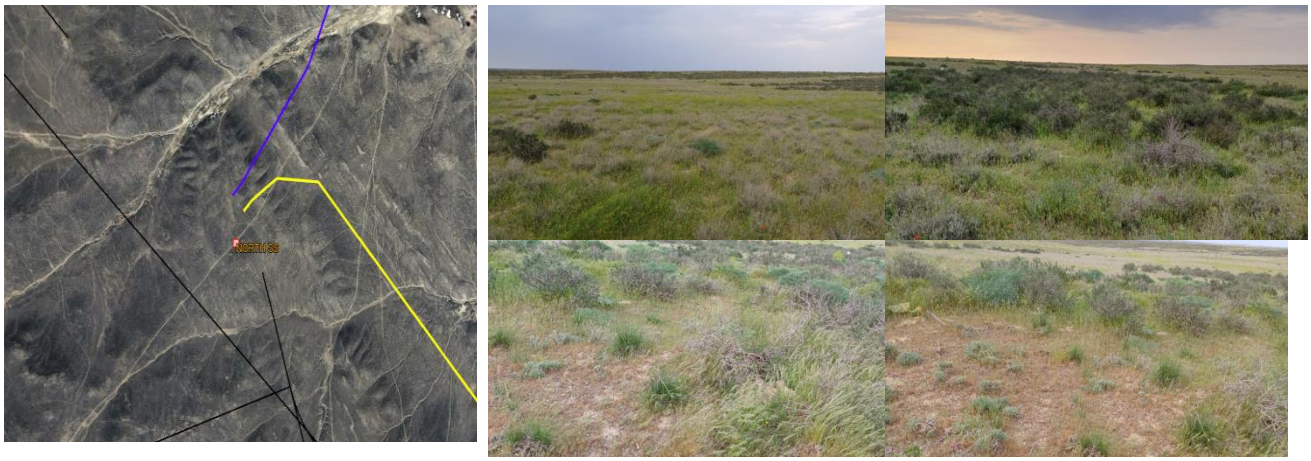


Figure 52 – Northern Substation Section

The construction site is a gently undulating, sloping plain.

The site is covered with wormwood and ephemerals (*Papaver pavoninum* + *Alyssum turcestanicum* + *Rheum tataricum* + *Poa bulbosa* + *Salsola arbusculiformis*) in combination with turf grass associations (Stipa sp. + *Anisantha tectorum*). OPP is 50-60%.

The complex also includes dense communities (*Descurainia Sophia* + *Artemisia terra-albae*), (*Ceratocephala orthoceras*).

Of the rare species on the site, the two-flowered tulip (Tulipa biflora) was noted; the species is listed in the Red Book of the Republic of Kazakhstan. The abundance of the species on the site is small - in several places, 1-2 pcs/m2. Also noted is the Alberta tulip (Tulipa alberti) – 3 pcs/m2 on a total growing area of 50 m2.

7.4 Rare species of flora at the work site

During the field survey of the territory, plant species listed in the Red Book of the Republic of Kazakhstan, the International Red List of IUCN (*), protected or requiring special attention during the work were identified in the areas of the planned works. Below is a list of species noted in the area.

Species	Species status, location
Tulip Alberta (*Tulipa alberti*) (Photo Senyak E.) 	**IUCN**  **Red Book of the Republic of Kazakhstan** **Endemic to the Balkhash region, Chu-Ili Mountains and Southern Kazakhstan.** The species was noted throughout the work area in all directions, with varying degrees of abundance. Most often in small, scattered groups.
Bema tulip (*Tulipa behmiana*) (Photo Senyak E.) 	**Endemic to the Balkhash region.** The species is noted in the northern part of the section of the planned road and the 500 kV power line from Mirny. Approximately from the village of Ulken and further south along the line for 30 km. It is found separately in separate groups of 10-15 pieces, or forms clearings in places, with a total area of 150-200 m2.
Biflora tulip (*Tulipa biflora*) (Photo Senyak E.)	**Red Book of the Republic of Kazakhstan**

	It is noted in the northern part of the planned road line and the 500 kV power transmission line from Mirny and on the site of the Northern substation. It is found singly, sporadically, in small abundance: 2-3 pcs/m2
Regel tulip (*Tulipa regelii*) (Photo E. Evdokimov) 	**IUCN**  **Red Book of the Republic of Kazakhstan** **Endemic to the Chu-Ili Mountains** The species was repeatedly noted during previous visits to the site, especially in its southeastern end, it affects sections of the 500 kV YUM-Shu power line, the 35 kV power line to Kiyakhty 220 kV, and roads. It is encountered sporadically.
Euphrates poplar (*Populus diversifolia*) (Photo Senyak E.)  	**Relict** It is a rare relict species. A small grove of about 30 trees has been noted 200 m north of the power transmission line in the floodplain terrace of the river crossing the eastern end of the 35 kV power transmission line to Kiyakhty 220 kV. Grove coordinates: 44.588721° 73.759841°
Black saxaul (*Haloxylon aphyllum*) (Photo Senyak E.)	**Moratorium on logging** **Order of the Minister of Ecology dated October 30, 2024 "On the ban on logging in saxaul forests in areas of the state forest fund" until December 31, 2028.** **Order of the Chairman of the Committee on Forestry and Wildlife of the Ministry of**

	**Agriculture of the Republic of Kazakhstan dated August 13, 2015 No. 211 "On the ban on logging in saxaul plantations in areas of the state forest fund"** Saxaul forests are noted everywhere on all sections of the planned lines. Below is an approximate calculation of the possible number of trees to be cut down on each section of work.

*Status of the species in the International Union for Conservation of Nature (IUCN) Red List:EX - Extinct;

EW - Extinct in the Wild
CR - Critically Endangered
EN - Endangered
VU - Vulnerable
NT - Near Threatened
LC - Least Concern
DD - Data Deficient
NE - Not Evaluated

Below are the coordinates of the areas where Black Saxaul (*Haloxylon aphyllum*) grows, which are subject to partial demolition during the construction of power transmission lines and roads, and the approximate number of trees to be demolished in a conventionally accepted 10-meter work strip.

Powerline	Coordinates	Number of trees to be removed
500 kV VL Mirny (PS-1) YUKGRES	45.030010° 73.802799°	About 820 pcs.
500 kV VL Mirny (PS-1) YUKGRES	44.995024° 73.765839°	About 15 pcs.
500 kV VL Mirny (PS-1) YUKGRES	44.968342° 73.739604°	About 150 pcs.
500 kV VL Mirny (PS-1) YUKGRES	44.927272° 73.703063°	About 20 pcs.
500 kV VL Mirny (PS-1) YUKGRES	44.751501° 73.446741°	About 7 pcs.
500 kV VL Mirny (PS-1) YUKGRES	44.726451° 73.405342°	About 7 pcs.
Road	44.878516° 73.649427°	About 11 pcs.
Road	44.800106° 73.576186°	About 260 pcs.
Road	44.673919° 73.488583°	About 35 pcs.
Road	44.716838° 73.498908°	About 11 pcs.
Road	44.729498° 73.514535°	About 305 pcs.
Road	44.742662° 73.524983°	About 55 pcs.
35 kV power transmission line to	44.584076°	About 46 pcs.

Kiyakhty 220 kV	73.834745°	
35 kV power transmission line to Kiyakhty 220 kV	44.586181° 73.775124°	About 105 pcs.
35 kV power transmission line to Kiyakhty 220 kV	44.584690° 73.597946°	About 22 pcs.
35 kV power transmission line to Kiyakhty 220 kV	44.596115° 73.568095°	About 30 pcs.
35 kV power transmission line to Kiyakhty 220 kV	44.600978° 73.561481°	About 17 pcs.
35 kV power transmission line to Kiyakhty 220 kV	44.603917° 73.549209°	About 10 pcs.
35 kV power transmission line to Kiyakhty 220 kV	44.636539° 73.510338°	About 35 pcs.
35 kV power transmission line to Kiyakhty 220 kV	44.650548° 73.489773°	About 10 pcs.
500 kV VL Mirny-Yu Mirny (PS-1-PS-2)	44.693385° 73.416618°	About 11 pcs.
500 kV VL Mirny-Yu Mirny (PS-1-PS-2)	44.682693° 73.430279°	About 15 pcs.
500 kV power line YUM-Shu	44.558181° 73.615882°	About 15 pcs.
35 kV power transmission line to Kiyakhty 110 kV	44.670594° 73.491996°	About 600 pcs.
35 kV power transmission line to Kiyakhty 110 kV	44.679290° 73.504225°	About 20 pcs.
35 kV power transmission line to Kiyakhty 110 kV	44.703465° 73.538036°	About 57 pcs.
35 kV power transmission line to Kiyakhty 110 kV	44.723693° 73.573760°	About 230 pcs.
35 kV power transmission line to Kiyakhty 110 kV	44.724609° 73.588974°	About 120 pcs.

Also, according to literary data, the territory in question is conditionally included in the habitat of the endemic and relict of the Tertiary period - Nedzvetskya semirechenskaya (Incarvillea semiretschenskia B. Fedtsch.). The species is included in the IUCN Red List with the EN status, and is included in the Red Book of the Republic of Kazakhstan.

Fig. 53 - Nedzvetsky Semirechensk (Incarvillea semiretschenskia B. Fedtsch.) (photo V.Epiktetov)

At the moment, only a few locations of growth of this species are reliably known. New points, conventionally called in the circle of scientists: "Rusanov-Belyalova Point", "Suvorov Point" and "Belyalova Point" required confirmation. In the summer of 2024, these points were successfully confirmed by a research expedition of the Institute of Botany and Phytointroduction of the Republic of Karelia. According to the expedition track, the areas of growth of Nedzvetskii Semirechenskii are not included in the boundaries of the construction site. Below is a screenshot of the expedition track with confirmed locations of growth of the relic (Fig. 12).

However, despite the carefully conducted cartographic and space surveys throughout the Chu-Ili Mountains, according to Wintergoller B.A. (2015), there is no definitive idea of the range of Nedzvetskii Semirechenskii yet. In this case, the hypothetical probability of its growth near the work site remains. And if plants are discovered during construction work, it is necessary to immediately suspend all activities and report the discovery to the chief ecologist of the enterprise, as well as notify representatives of the Institute of Botany and Phytointroduction!

7.5 Identified threats to the area flora

Construction period

The construction process involves:

- complete removal of the PSP (and vegetation along with it),
- arrangement of warehouses for building materials and removed PSP,
- clearing the territory of trees in the places necessary for that,
- movement of construction equipment (both physical and chemical impact on vegetation and soils),
- dusting from equipment.

The situation is also complicated by the lack of field roads along the lines under construction, as a result of which the equipment will move across virgin territories. Thus, during the construction of the specified linear facilities, the vegetation will experience excessively high loads, up to complete destruction in the areas of laying the roadbed, construction of the southern and northern substation, camp, as well as in certain areas of installation of power transmission line facilities.

Due to the discovery of rare and endangered plants in the work areas, damage may be caused to populations of such species as: Albert tulip, Boehm tulip, two-flowered tulip, Regel tulip, black saxaul.

In accordance with the legislation of the Republic of Kazakhstan, for damage caused to red-listed and rare species, the nature user is obliged to compensate for the damage in the amount of the approved rates of payment at the current moment for each individual or specimen. When making a decision on the removal of rare and endangered plant species from the natural environment, their parts or derivatives, the volumes of such removals, the amount of payment and the term of its payment are established in each individual case by the Government of the Republic of Kazakhstan (Tax Code of the Republic of Kazakhstan).

It is also recommended to be guided by the following documents:

- Order of the Minister of Ecology and Natural Resources of the Republic of Kazakhstan dated February 23, 2023 No. 60 "On approval of standards for compensation for losses of flora"
- Order of the Minister of Ecology and Natural Resources of the Republic of Kazakhstan dated February 23, 2023 No. 61 "On approval of base rates for calculating the amount of damage caused by violation of the legislation of the Republic of Kazakhstan in the field of protection, protection, restoration and use of flora"
- Order of the Minister of Ecology and Natural Resources of the Republic of Kazakhstan dated February 23, 2023 No. 63 "On approval of the Rules for the transfer of naturally growing rare and endangered plant species under the protection of land owners, land users and water users".

Also, in view of the possible large volumes of felling of trees and shrubs (Black saxaul (Haloxylon aphyllum)), and the presence of the Zhusandalinskaya state nature reserve zone (GZZ) (without the status of a legal entity) - sections of the 35 kV power transmission line to Kiyakhty 220 kV (partially affects the

GZZ), the road (the southern part of the road is completely in the GZZ), the 500 kV YUM-Shu power transmission line (the northern part is in the GZZ) (Fig. 13), it is worth considering that according to Article 13 Establishment of a restriction (suspension) of the right to use wild plants of the Law "On the Plant World" In order to preserve the plant world, state bodies and local executive bodies, within their competence, may establish a restriction (suspension) of the right to use wild plants in the following cases:

1) in case of threats to individual plant species, their populations, communities and habitats, preservation of the plant gene pool;

2) to maintain the unique species diversity of the territory, as well as a rare or typical natural landscape;

3) on land plots reserved for the creation or expansion of specially protected natural areas, as well as located in the security zones of specially protected natural areas, in accordance with the legislation of the Republic of Kazakhstan in the field of specially protected natural areas;

4) on plots of the state forest fund in accordance with the forest legislation of the Republic of Kazakhstan;

5) on plots of land, water bodies with rare and endangered, endemic and relict plant species;

6) on plots of land provided and used for scientific research;

7) on plots of land with plants that have undergone degradation and require work to restore them;

8) in other cases established by the legislation of the Republic of Kazakhstan.

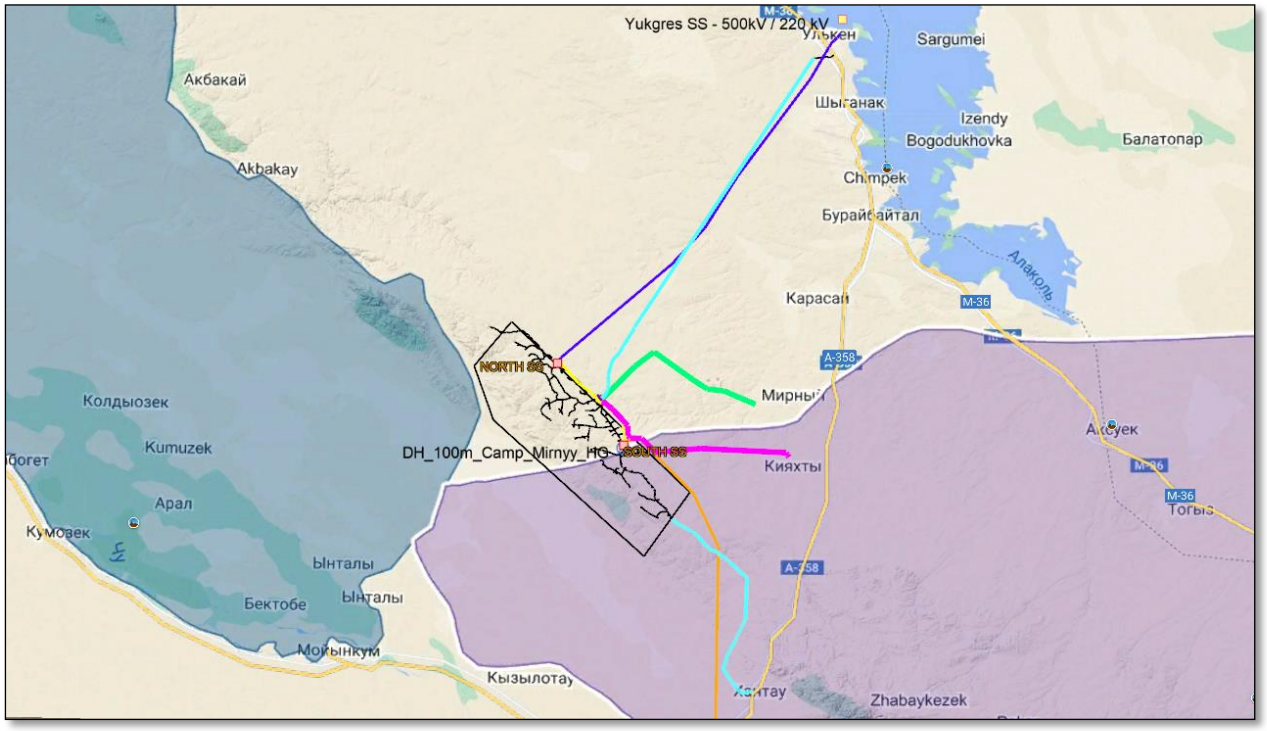


Figure 54 – Scheme of the boundaries of the Zhusandalinsky state nature reserve zone (light lilac area) and planned construction sites.

In general, disturbance of the vegetation cover to one degree or another is expected over an area of about 200 km2 (length – 200 km, width of the boundaries of the zone of influence – 1 km (500 m on both sides of the line)).

Among the disturbed and removed communities, the most prevalent are the boyalych and wormwood-boyalych formations with ephemerals.

Operation period

During the operation of the road and high-voltage lines, some impact on flora components is also expected.

Chemical pollution of air and soil by exhaust gases and technical fluids of cars, particles of worn tires and road surfaces together with rainwater and dust get into the ground. Vegetation near roads actively accumulates heavy metals. Which gradually leads to a weakening of plant productivity, premature aging, an increase in damage to vegetation by various diseases and pests.

Power transmission lines (PTL) can have a negative impact on flora. Under the influence of electromagnetic radiation from PTL, functional and structural changes occur at the molecular level, which disrupt the processes of plant growth and development. For example, in the zone of influence of PTL, the concentration of the main pigments of photosynthesis in plant tissues changes, oxidative stress develops.

Also, in the protected zones of PTL, a gradual change in the species composition of vegetation occurs. This leads to the depletion of biodiversity and disruption of food chains.

RECOMMENDATIONS FOR REDUCING THE LOAD ON FLORA COMPONENTS

Type of activity	Activity	Expected effect
Movement of construction equipment	Prevent spills of fuel and building materials at the construction site	Prevention of chemical impact on flora and soil
	Moistening of dusty surfaces of roads and warehouses of PSP and building materials	Исключение запыленности поверхности листовых пластинок растений.
Removal of the fertile soil layer	In areas where rare tulips and poppies grow abundantly, as well as on the construction sites of the Southern and Northern substations and the camp, the fertile soil layer should be removed to a depth of 15-20 cm in June-July (after sowing the seeds from the boxes). The soil with the seeds is transported to a safe distance in similar conditions, poured out and leveled manually. DO NOT REUSE! Thus, the plants will be transplanted to a safe similar place.	Elimination of dustiness of the surface of plant leaf blades.
Workers' activities	Prohibition of burning dry grass	Compliance with fire safety regulations
	Ban on picking wild berries and mushrooms	Compliance with safety regulations
	Storage of waste in strictly designated and regulated places	Предотвращение захламление территории прилегающей к трассе бытовыми и строительными отходами
	Prohibition of discharge of wastewater onto terrain and into water bodies	Preventing littering of the area adjacent to the highway with household and construction waste
	Ban on washing equipment in nearby bodies of water	
	Installation of bio-toilets for workers	

Demolition of trees	According to Article 36 of the Law "On the Plant World" dated January 2, 2023, compensatory plantings are provided in the following amounts: 1. In case of cutting down of green spaces with the permission of the local executive body, as well as their death on the territory adjacent to buildings, structures owned or used by individuals or legal entities - in a 10-fold amount; 2. In case of illegal removal (cutting) of green spaces or their damage leading to their death - in a 50-fold amount. In case of illegal removal (cutting) of green spaces included in the list of rare and endangered plant species, or their damage leading to their death, compensatory plantings are carried out in a 100-fold amount.	Restoration of green spaces along the projected lines

Annexes

Annex 1.1 Observations with vantage points in September-November 2024, Project area

Point №	Date	Time	Temperature	Wind speed, m/s	Wind direction	Cloudiness, %	Species	Bird count	Time of flight	Flight height, m	Flight direction	Band 1 (<20 m),m.s	Band 2 (20-200 m),m.s	Band 3 (>200 m),m.s	Note
M01	04.10.2024	15.00-18.00	22	5.2	NEE	0	Circus sp.	1	15.00	20	E	1.25			500 m NE/ 211
M01	04.10.2024	15.00-18.00	22	5	NEE	0	Buteo sp.	1	15.10	50	NEE		1.47		500 m E/ 87
M01	04.10.2024	15.00-18.00	18	5	NEE	0	Buteo sp.	1	15.13	30	NE		2.56		500 m NE/ 50
M01	04.10.2024	15.00-18.00	18	5	NEE	0	Buteo sp.	1	15.20	40	NW		3.28		500 NW/ 315
M01	04.10.2024	15.00-18.00	18	6.7	NEE	10	Buteo sp.	1	16.11	10	NE	2.44	2.21		500 m E/ 109
M01	04.10.2024	15.00-18.00	16	4.6	NEE	10	Aquila nipalensis	1	17.03	30	N	0.08	0.09		1000 m NE/ 70
M01	04.10.2024	15.00-18.00	16	4.8	NEE	10	Pterocles orientalis	4	17.22	10	N	0.45			300 m SW/ 233
M01	06.10.2024	08.00-11.00	15	4.2	S	100	Aquila nipalensis	1	10.05	20	SE	0.24			1000 m S/ 240
M01	06.10.2024	08.00-11.00	17	4	S	100	Pterocles orientalis	1	10.20	10	SSE	1.56			1500 m SE/ 145
M01	24.09.2024	08.00-11.00	17	2	E	0	Pterocles orientalis	1	08.07	7	N		0.45		on the point
M01	24.09.2024	08.00-11.00	17	2.1	E	0	Pterocles orientalis	2	08.12	12	NW	1.00			on the point
M01	24.09.2024	08.00-11.00	18	2.2	E	0	Falco tinnunculus	1	08.52	100	N	0.48			2000 m W/ 280
M01	24.09.2024	08.00-11.00	18	2,1	E	0	Falco tinnunculus	1	09.13	20	E		3.30		1500 m NW/ 225
M01	24.09.2024	08.00-11.00	20	2	E	0	Pterocles orientalis	1	09.21	10	SW		04.01		on the point
M01	24.09.2024	08.00-11.00	24	2.5	E	0	Accipiter nisus	1	09.33	150	SW		3.13		1500 m NWW/ 290
M01	24.09.2024	08.00-11.00	25	2.1	E	0	Falco tinnunculus	1	09.57	50	SWW		1.41		500 m NNW/ 240
M01	24.09.2024	08.00-11.00	27	2	NEE	0	Buteo rufinus	1	10.03	50	circle		5.11		2000 m SE/ 125
M01	24.09.2024	08.00-11.00	27	2.4	NEE	0	Pterocles orientalis	1	10.10	10	Sitting				200 m E/ 82
M01	24.09.2024	08.00-11.00	27	2.7	NEE	0	Falco tinnunculus	1	10.18	150	circle		3.30		2000 m N/ 8
M01	24.09.2024	08.00-11.00	27	2.7	NEE	0	Buteo rufinus	1	10.20	150	circle		2.32		15000 m NNE/ 20

M01	24.09.2024	08.00-11.00	27	2.7	NEE	0	Pterocles orientalis	1	10.32	10	Sitting				on the point
M01	24.09.2024	08.00-11.00	28	2.2	NEE	0	Falco tinnunculus	1	10.35	150	circle		3.11		500 m NW/ 315
M01	30.09.2024	08.00-11.00	9	5	SW	30	Aquila sp.	1	08.12	100	SW		01.32		on the point
M01	30.09.2024	08.00-11.00	12	5	W	30	Falco tinnunculus	1	09.19	30	SW		01.25		on the point
M01	30.09.2024	08.00-11.00	12	5	W	30	Aquila sp.	1	09.21	150	circle		01.49		1000 m SW/ 217
M01	30.09.2024	08.00-11.00	12	5	W	30	Aquila nipalensis	1	09.28	200	W			2.33	on the point
M01	30.09.2024	08.00-11.00	17	5	SW	30	Aquila sp.	1	10.38	200	circle			0.54	1000 m SW/ 234
M01	09.11.2024	09.50-11.50	3	3.5	SSW	100	Circus sp.	1	09.59	20-	SW	0.36			100 m NW
M01	09.11.2024	09.50-11.50	3	3	SSW	100	Grus sp.	3	10.35	50-100	SW		0.48		1500 m SW
M01	09.11.2024	09.50-11.50	4	3.2	SSW	100	Tadorna ferruginea	5	10.47	20-50	SSW		0.32		1000 m SE
M01	09.11.2024	13.10-14.10	4	6.2	SSW	100	Circus sp.	1	13.12	40-60	S	0.15	0.18		1800 m W
M01	12.11.2024	11.50-14.50	3	1.5	NE	100	Anatidae	6	11.50	100-150	W		1.30		1000 m NE
M01	12.11.2024	11.50-14.50	3	2.1	NE	100	Anser anser	60	12.05	200+	SW			1.24	700 m N
M01	12.11.2024	11.50-14.50	3	1.4	NE	100	Anatidae	24	13.39	150-180	W		0.24		500 m N
M02	06.10.2024	15.00-18.00	24	1	SW	90	Falco tinnunculus	1	15.01	40	E		3.11		on the point
M02	06.10.2024	15.00-18.00	22	1,5	SW	90	Buteo sp.	1	15.28	100	W		1.55		on the point
M02	07.10.2024	08.00-11.00	11	4	SE	20	Falco tinnunculus	1	08.41	40	circle		3.42		700 m N
M02	07.10.2024	08.00-11.00	12	4	SE	20	Pterocles orientalis	1	08.42	20	NE	0.20			200 m N
M02	07.10.2024	08.00-11.00	16	5	SE	20	Falco tinnunculus	1	10.09	10	E	4.15			100 m NE
M02	16.11.2024	9.30-12.30	–2	3.7	NEE	50	Aquilla sp.	1	10.55	100-150	SW		1.05		2000 m / 106
M02	16.11.2024	9.30-12.30	–2	4.1	NEE	30	Buteo sp. / photo	1	11.28	100-150	SW		1.18		2000 m / 5
M02	16.11.2024	9.30-12.30	–2	4.2	NEE	30	Haliaeetus albicilla / photo	1	11.42	150→10→100	S	1.25	3.06		2000 m / 355 (over the VP h=30m)
M02	16.11.2024	9.30-12.30	–2	4.0	NEE	20	Aquilla sp.	1	12.29	100-150	SWW		3.40		2000 m / 102
M02	16.11.2024	13.00-16.00	–2	4.3	NEE	20	Aquilla sp.	1	13.03	150-200	SW		1.22		2000 m / 100

M02	16.11. 2024	13.00-16.00	–2	3.5	NEE	30	Aquila nipalensis / photo	1	13.08	150	SWW		9.09		2000 m / 40
M02	16.11. 2024	13.00-16.00	–2	3.5	NEE	30	Haliaeetus albicilla / photo	1	13.12	150	SW		2.01		1000 m / 25
M02	16.11. 2024	13.00-16.00	–2	3.3	NEE	30	Anser albifrons / photo	28	13.28	200-300	SWW			1.35	1000 m / 10
M02	16.11. 2024	13.00-16.00	–2	3.6	NE	30	Aquilla sp. / photo	1	13.41	50	SSW		1.05		1500 m / 110
M02	16.11. 2024	13.00-16.00	–2	3.7	NE	30	Aquilla sp. / photo	1	13.47	150-200	SWW		2.43		2000 m / 97
M02	16.11. 2024	13.00-16.00	–2	3.7	NE	30	Aquila nipalensis / photo	1	13.50	150	SW		2.44		2000 m / 95
M02	16.11. 2024	13.00-16.00	–2	3.6	NEE	50	Aquila nipalensis / photo	1	14.20	200	SSW		5.52		2000 m / 40
M02	16.11. 2024	13.00-16.00	–2	3.6	NEE	50	Aquilla sp.	1	14.22	150	SSW		3.49		2000 m / 45
M02	16.11. 2024	13.00-16.00	–2	3.5	NE	50	Aquila nipalensis / photo	1	14.50	50-100	NWW		7.55		500 m / 345
M02	16.11. 2024	13.00-16.00	–2	3.5	NE	60	Aquila nipalensis / photo	1	15.24	50	SW		6.44		1000 m / 312 soared then flew southwest
M02	16.11. 2024	13.00-16.00	–2	3.5	NE	60	Aquila heliaca ? / photo	1	15.24	50	SW		6.44		1000 m / 312 soared then flew southwest
M02	16.11. 2024	13.00-16.00	—	—	—	—	Argali	5	15.29	—	—	—	—	—	1000 m / 310
M02	24.09. 2024	14.40-17.40	27	—	—	5	Falco tinnunculus	1	17.18	15	circle	0.27			100 m NEE/ 75
M02	24.09. 2024	14.40-17.40	24	—	—	40	Pterocles orientalis	4	17.23	150	SSW		0.32		1500 m NNW/ 335
M02	25.09. 2024	08.10-11.10	16	3.5	NE	90	Falco tinnunculus	1	08.13	10	NW	7.22			on the point
M02	25.09. 2024	08.10-11.10	16	4.1	NE	90	Buteo rufinus	1	09.11	150	NW		4.02		800 m N/ 355
M02	25.09. 2024	08.10-11.10	16	3.8	NE	95	Buteo rufinus	1	09.29	150	circle		0.40		2000 m NNW/ 340
M02	25.09. 2024	08.10-11.10	16	3.8	NE	95	Pterocles orientalis	1	09.30	100	E		0.25		1500 m NNW/ 340
M02	25.09. 2024	08.10-11.10	16	4.4	NE	95	Falco sp	1	09.52	15	S	0.15			on the point
M02	25.09. 2024	08.10-11.10	16	4	NE	95	Buteo rufinus	2	10.09	150	NE		2.05		2000 m NW/ 310
M02	25.09. 2024	08.10-11.10	16	4	NE	100	Pterocles orientalis	1	10.15	50	NWW		0.35		1000 m NEE/ 60
M02	25.09. 2024	08.10-11.10	16	3.9	NEE	100	Buteo rufinus	2	10.30	150	E		4.30		2000 m NWW/ 309
M03	04.10. 2024	14.45-17.45	18	7.7	NEE	0	Aquila chrysaetos	1	15.17	150-500	SW		4.10	0.25	2000 m NNE/ 12
M03	04.10. 2024	14.45-17.45	18	7.7	NEE	0	Circus sp.	1	15.22	100	SW		1.48		1500 m N/ 350

M03	04.10. 2024	14.45-17.45	18	8	NEE	0	Circaetus gallicus	1	15.51	20-0-100	SW	0.17	2.41		100 m SEE/ 105
M03	04.10. 2024	14.45-17.45	18	7.1	NEE	0	Aquilla sp.	1	17.09	15	circle	0.15			800 m E/ 88
M03	04.10. 2024	14.45-17.45	16	7.1	NEE	0	Aquila nipalensis	1	17.09	15	SWW	4.29			800 m E/ 88
M03	06.10. 2024	08.00-11.00	21	2.1	SE	100	Buteo sp.	1	09.46	50	W		3.49		1000 m NE
M03	09.11. 2024	10.00-11.40	—	—	—	—	—	—	—	—	—	—	—	—	—
M03	09.11. 2024	13.00-14.20	6	5.5	SSW	100	Grus grus / photo	16	13.00	200-500	W			7.30	10000 m / 345
M03	12.11. 2024	12.10-15.10	2	0.5	NNE	100	Anas platyrhynchos / photo	67	13.02	200→300	SWW			1.49	1500 m / 70
M03	12.11. 2024	12.10-15.10	4	1.2	NEE	100	Raptor	1	13.21	150	SE		0.53		2000 m / 11
M03	12.11. 2024	12.10-15.10	4	1.5	NEE	100	Circus sp. ♀ / photo	2	14.35	100→5	SSE		6.36	2.36	1000 m / 355
M03	24.09. 2024	08.20-11.20	12	2	SW	30	Falco tinnunculus	1	10.13	100	circle		0.30		250 m NW/ 333
M03	24.09. 2024	08.20-11.20	12	2	W	30	Falco tinnunculus	1	11.34	100	circle		2.37		100 m NW/ 225
M03	24.09. 2024	08.20-11.20	13	2	W	30	Aquila sp.	1	11.26	630	NW			0.43	on the point
M03	30.09. 2024	08.05-11.05	12	7.7	NE	5	raptor	1	09.46	20	SW	1.10			on the point
M04	07.10. 2024	15.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M04	08.10. 2024	08.00-11.00	13	2.6	NE	0	Syrrhaptes paradoxus	8	08.10	10	E	1.47			
M04	08.10. 2024	08.00-11.00	18	2	NE	0	Buteo rufinus	1	08.20	30	SW	2.51	1.56		1500 m SW/ 227
M04	24.09. 2024	15.00-18.00	28	3	S	30	Aquila sp.	1	14.33	655	W			0.15	on the point
M04	24.09. 2024	15.00-18.00	26	3	S	30	Aquila sp.	1	15.20	700	N			1.08	1500 m NW/300
M04	24.09. 2024	15.00-18.00	26	1,5	SE	30	Aegypius monachus	1	15.35	750	SE			3.10	1500 m S/ 345
M04	24.09. 2024	15.00-18.00	23	0,5	E	50	Pterocles orientalis	5	17.22	5	NW	0.12	01.25		300 m N/ 345
M04	25.09. 2024	08.00-11.00	22	3	SE	100	Pterocles orientalis	2	09.48	30	SE		0.58		100 m S/ 172
M04	09.11. 2024	09.35-12.35	7	2	SW	100	Buteo sp.	1	10.15	100	SW		01.32		
M04	12.11. 2024	11.15-14.15	2	4	SW	100	Pterocles orientalis	2	11.37	20-	W	1.00			
M04	12.11. 2024	11.15-14.15	2	4	SW	100	Anatidae	60	13.06	100	W		1.57		

M04	12.11. 2024	11.15-14.15	2	4	SW	100	Anatidae	80	13.35	300	SW			2.27	
M04	12.11. 2024	11.15-14.15	2	4	SW	100	Anatidae	25	13.41	200+	SW			3.45	
M04	12.11. 2024	11.15-14.15	2	4	SW	100	Falco tinnunculus	1	13.53	100	SW		2.01		
M05	06.10. 2024	15.00-18.00	23	5.5	SW	40	Aquila chrysaetos	1	15.39	400	NW			3.22	1000 m NW/ 307
M05	06.10. 2024	15.00-18.00	17	1.2	SW	90	Grus sp.	30	18.00	300	E			2.96	on the point
M05	06.10. 2024	08.00-11.00	13	2,2	SW	10	Pterocles orientalis	2	08.50	20	N	1.41			500 m NE/ 40
M05	06.10. 2024	08.00-11.00	13	2.1	SW	10	Pterocles orientalis	8	09.10	15	E	2.18			500 m S/ 188
M05	06.10. 2024	08.00-11.00	14	2	SW	10	Pterocles orientalis	1	09.17	10	NE	1.14			100 m NE/ 53
M05	06.10. 2024	08.00-11.00	16	2	SW	0	Aquila chrysaetos	1	10.33	50	NNW	2.35	3.54		1500 m N/ 8
M05	06.10. 2024	08.00-11.00	16	2	SW	0	Aquila chrysaetos	1	10.34	20	NNW	2.35			1500 m N/ 8
M05	24.09. 2024	15.00-18.00	27	1.1	NE	0	Pterocles orientalis	5	17.24	50	SSW		2.08		1500 m SE/ 129
M05	24.09. 2024	15.00-18.00	27	1.2	NE	0	Pterocles orientalis	7	17.37	70	SSW		5.62		100 m NE/ 52
M05	25.09. 2024	08.00-11.00	15	4	E	70	Pterocles orientalis	2	09.37	10	NW	0.25			500 m NNW/ 352
M05	25.09. 2024	08.00-11.00	16	—	—	50	Pterocles orientalis	1	09.41	6	NE	2.01			100 m NE/ 45
M05	25.09. 2024	08.00-11.00	21	3.6	NE	40	Buteo rufinus	2	10.33	150	SEE		1.02		2000 m NNE/ 31
M05	16.11. 2024	09.20-12.20	-2	4.5	NE	80	raptor	1	09.35	20-50	SW		1.18		1600 m N
M05	16.11. 2024	09.20-12.20	-2	4.4	NE	80	raptor	1	09.41	20-50	SW		1.33		1400 m NNE
M05	16.11. 2024	09.20-12.20	-2	4.7	NE	80	raptor	1	09.59	20-100	SW		1.01		1000 m NEE
M05	16.11. 2024	09.20-12.20	-2	4.3	NE	80	Aquila sp.	1	10.10	20-150	SW		1.34		1500 m NNW
M05	16.11. 2024	09.20-12.20	-2	4.8	NE	80	Aquila sp.	1	10.15	20-80	SW		1.56		1800 m NNE
M05	16.11. 2024	09.20-12.20	-2	4.4	NE	80	Aquila chrysaetos	2	10.19	-20-200+	SW	0.45	2.18	1.11	2000 m N
M05	16.11. 2024	09.20-12.20	-2	3.6	NE	80	Aquila sp.	1	10.39	20-100	W		2.51		2000 m E
M05	16.11. 2024	09.20-12.20	-2	3.1	NE	50	Aquila nipalensis	1	11.23	100-150	SW		1.16		2000 m NEE
M05	16.11. 2024	09.20-12.20	-2	2.5	NE	50	Aquila nipalensis	1	11.24	100-150	SW		1.21		2000 m NEE

M05	16.11. 2024	09.20-12.20	-2	2.8	NE	50	Haliaeetus albicilla	1	11.25	100-150	SW		2,12		2000 m NEE
M05	16.11. 2024	09.20-12.20	-1	2.6	NE	50	Aquila nipalensis	1	11.29	20-100	SW		1.44		2000 m SEE
M05	16.11. 2024	09.20-12.20	-1	2.1	NE	50	Aquila nipalensis	2	11.37	50-150	SW		1.25		2000 m SEE
M05	16.11. 2024	09.20-12.20	-1	1.8	NE	50	Aquila nipalensis	1	11.37	20-180	SW		2.28		2000 m SEE
M05	16.11. 2024	09.20-12.20	-1	1.9	NE	50	Aquila sp.	1	11.49	50-80	SW		0.45		2000 m SEE
M05	16.11. 2024	09.20-12.20	-1	2.1	NE	50	Aquila nipalensis	2	11.51	20-150	SW		1.17		2000 m NEE
M05	16.11. 2024	09.20-12.20	-1	2.4	NE	30	Aquila nipalensis	2	12.07	30-80	SW		2.23		2000 m NE
M05	16.11. 2024	09.20-12.20	-1	2.5	NE	30	Aquila sp.	1	12.10	100-200	SW		1.06		1400 m E
M05	16.11. 2024	09.20-12.20	-1	2.4	NE	30	Aquila nipalensis	1	12.15	50-200	SW		1.35		1500 m NE
M05	16.11. 2024	12.50-15.50	-1	3.2	NE	30	raptor	1	12.51	100-200	SW		1.01		1000 m NNW
M05	16.11. 2024	12.50-15.50	-1	3.4	NE	50	Aquila nipalensis	1	12.55	50-200	SW		0.48		1800 m NNW
M05	16.11. 2024	12.50-15.50	-1	3.6	NE	50	Aquila nipalensis	1	13.03	150-50	SW		1.20		1800 m NEE
M05	16.11. 2024	12.50-15.50	-1	3.8	NE	80	Anatidae	34	13.39	200-300	SW			0.49	1000 m N
M05	16.11. 2024	12.50-15.50	-1	3.9	NE	80	Aquila nipalensis	2	13.53	100-200	SW		03.11		2000 m N
M05	16.11. 2024	12.50-15.50	-1	2.9	NE	80	Aquila nipalensis	1	14.28	100-200	SW		0.49		1500 m NNW
M05	16.11. 2024	12.50-15.50	-1	2.5	NE	80	Aquila nipalensis	1	14.29	100-200	SW		2.43		2000 m NNE
M05	16.11. 2024	12.50-15.50	-1	2.4	NE	80	Aquila nipalensis	1	14.29	100-200	SW		3.38		2000 m NNE
M06	03.10. 2024	15.00-18.00	23	4	SW	30	Aquilla sp.	1	17.19	10	circling, sits	0.40			1000 m SW/ 203
M06	03.10. 2024	15.00-18.00	22	4	SW	40	Circus sp.	1	17.30	10	W	0.30			500 m SE/ 195
M06	03.10. 2024	08.00-11.00	17	7	W	10	Aquilla sp.	1	09.00	10	SW	0.22	03.02	0.35	300 m SE/ 128
M06	03.10. 2024	08.00-11.00	17	7	W	10	Buteo sp.	1	10.16	100	W		0.30		on the point
M06	03.10. 2024	08.00-11.00	17	8	SW	10	Buteo rufinus	2	10.32	50	circle	0.27	06.26	01.44	300 m NW/ 313
M06	03.10. 2024	08.00-11.00	17	8	SW	10	Aquila nipalensis	1	10.37	160	S		0.20		on the point
M06	25.09. 2024	14.30-17.30	19	4.5	NE	100	Aquila chrysaetos	1	15.14	50	SW		5.58		100 m NNW/ 340

M06	25.09. 2024	14.30-17.30	17	4.6	NE	100	Pterocles orientalis	1	15.47	50	SW		2.21		800 m SE/ 135
M06	26.09. 2024	08.00-11.00	11	4.4	NEE	100	Pterocles orientalis	6	08.59	150	W		0.45		1000 m S/ 172
M06	26.09. 2024	08.00-11.00	11	5.7	NEE	100	Falco tinnunculus	2	10.12	100	SSW		1.49		1000 m NEE/ 75
M06	18.11. 2024	09.20-12.20	2	1.4	E	80	Buteo sp.	1	10.31	50-100	SW		1.41		2000 m N
M06	18.11. 2024	09.20-12.20	2	1.2	E	90	Aquila nipalensis	1	10.44	100-200	SW		1.25		2000 m NE
M06	18.11. 2024	09.20-12.20	2	3.1	SW	90	Aquila nipalensis	1	11.09	100-200	SWW		1.34		2000 m NEE
M06	18.11. 2024	09.20-12.20	3	3.5	SW	100	Aquila sp.	1	12.11	200+	SW			2.49	2000 m NEE
M06	18.11. 2024	12.50-15.50	3	—	—	90	Aquila nipalensis	1	13.47	50-100	SWW		0.54		2000 m NEE
M06	18.11. 2024	12.50-15.50	3	—	—	90	Falco tinnunculus	1	14.28	20-50	S		1.44		700 m N
M07	03.10. 2024	15.00-18.00	26	2	NE	40	Buteo rufinus	1	15.03	50	SEE		3.20		500 m SE/ 209
M07	03.10. 2024	15.00-18.00	27	2.7	NE	30	Buteo rufinus	1	15.22	150	S		2.40		1500 m S/ 187
M07	04.10. 2024	08.00-11.00	12	5.5	NEE	0	Buteo rufinus	1	08.45	20	SW	1,35			500 m S
M07	04.10. 2024	08.00-11.00	15	6.5	NEE	0	Circus sp.	1	09.03	5	S	0.59			1000 m SSE/ 194
M07	25.09. 2024	15.00-18.00	18	3	E	100	Falco sp	1	15.14	150	E		2.36		100 m W/ 270
M07	25.09. 2024	15.00-18.00	18	3	E	100	Falco sp	1	15.15	150	SE		0.48		on the point
M07	26.09. 2024	08.00-11.00	13	3	SW	100	Pterocles orientalis	3	08.38	40	S		0,40		500 m S/ 187
M07	26.09. 2024	08.00-11.00	13	3	SW	100	Falco sp	1	08.39	30	SW		02.56		500 m / SW
M07	26.09. 2024	08.00-11.00	14	3	S	100	Falco tinnunculus	1	09.46	30	circle	06.56	04.01		100 m NW/ 330
M07	26.09. 2024	08.00-11.00	14	3	SE	100	Falco tinnunculus	2	10.10	50	circle		4.45		200 m N/ 3
M07	18.11. 2024	08.40-11.40	7	4	NE	80	Circus sp.	1	11.19	60	SW		1.05		
M07	18.11. 2024	08.40-11.40	8	5	NE	100	Aquila chrysaetos	1	11.23	50	E		3.20		
M07	18.11. 2024	11.40-13.40	8	5	NE	100	Circus sp.	1	11.49	40-50	W		0.35		
M07	18.11. 2024	11.40-13.40	7	4	NE	100	Buteo sp.	1	13.41	60	S		0.20		
M08	02.10. 2024	15.00-18.00	26	2.2	W	30	Falco tinnunculus	1	16.23	20-50	circle, SWW		4.25		500 m N/ 0

M08	03.10.2024	08.00-11.00	18	—	—	30	Pterocles orientalis	3	08.09	100	SW		0.50		1000 m SE/ 140
M08	03.10.2024	08.00-11.00	18	—	—	30	Pterocles orientalis	3	08.12	100	SW		0.30		1000 m SE/ 140
M08	03.10.2024	08.00-11.00	18	—	—	30	Pterocles orientalis	4	08.13	50	SW		0.30		1000 m SE/ 140
M08	03.10.2024	08.00-11.00	18	—	—	20	Pterocles orientalis	2	08.19	50	SW		0.28		1000 m SSE/ 195
M08	03.10.2024	08.00-11.00	18	—	—	20	Pterocles orientalis	3	08.21	50	SW		0.20		1000 m E/
M08	03.10.2024	08.00-11.00	18	—	—	20	Pterocles orientalis	1	08.23	100	SW		0.20		300 m SEE/ 110
M08	03.10.2024	08.00-11.00	18	—	—	20	Pterocles orientalis	5	08.24	15	SSW	0.30			300 m W/ 280
M08	03.10.2024	08.00-11.00	18	—	—	20	Pterocles orientalis	1	08.33	50	NE		0.38		700 m S/ 170
M08	03.10.2024	08.00-11.00	18	—	—	15	Pterocles orientalis	3	08.34	50	SW		0.55		1500 m NEE/ 75
M08	03.10.2024	08.00-11.00	18	—	—	15	Pterocles orientalis	19	08.40	50	NNE		0.32		1000 m SE/ 135
M08	03.10.2024	08.00-11.00	18	1,5	S	15	Pterocles orientalis	14	08.49	50	NNE		0.46		700 m S/ 190
M08	03.10.2024	08.00-11.00	18	1,8	S	10	Falco tinnunculus	1	09.00	50	circle		2.33		800 m SSW/ 208
M08	03.10.2024	08.00-11.00	18	2	SSE	10	Pterocles orientalis	2	09.02	50	SSE		0.21		500 m SSE/ 165
M08	03.10.2024	08.00-11.00	18	2	SSE	10	Pterocles orientalis	5	09.17	50	N		0.38		on the point
M08	03.10.2024	08.00-11.00	18	2.2	SSE	5	Falco tinnunculus	1	09.24	50	W		1.28		2000 m NW/ 325
M08	03.10.2024	08.00-11.00	18	1.7	SSE	5	Falco tinnunculus	1	09.36	100	circle		3.08		1500 m S/ 172
M08	03.10.2024	08.00-11.00	18	2	SSE	5	Falco tinnunculus	1	09.51	50-100	circle		6.36		500 m NWW/ 292
M08	03.10.2024	08.00-11.00	18	—	—	5	Aquila chrysaetos	1	10.09	200-300	circle			6.39	2500 m SWW/ 252
M08	03.10.2024	08.00-11.00	19	—	—	0	Falco tinnunculus	1	10.58	50	circle		2.12		1000 m SWW/ 250
M08	18.11.2024	9.45-12.45	6	2.4	E	80	Raptor	1	10.15	230	SWW			1.46	1500 m / 230
M08	18.11.2024	9.45-12.45	6	1.3	E	60	Aquilla sp.	1	11.11	150-200	SW		3.47		2000 m / 140
M08	18.11.2024	9.45-12.45	—	—	—	—	Argali	3	11.55	—	—	—	—	—	2000 m / 0
M08	18.11.2024	13.15-16.15	6	1.0	SSE	100	Aquilla sp.	1	13.20	100	SWW		2.59		1700 m / 330
M08	18.11.2024	13.15-16.15	6	0	—	90	Aquilla sp. / photo	2	14.59	0	—				2000 m / 50

M08	18.11. 2024	13.15-16.15	6	0	—	90	Aquilla sp. / photo	1	14.01	5→0	Landed	0.10			2000 m / 50
M08	27.09. 2024	15.00-18.00	10	8.1	E	0	Pterocles orientalis	11	08.18	50	N		0.53		500 m SEE/ 115
M08	28.09. 2024	08.00-11.00	12	7.4	E	0	Pterocles orientalis	1	09.22	100	SSW		0.20		1000 m SEE/ 120
M08	28.09. 2024	08.00-11.00	15	6.7	NEE	0	raptor	1	09.17	200	circle		0.30		2000 m NEE/ 65
M09	08.10. 2024	15.00-18.00	17	2	SE	100	Buteo sp.	1	08.17	50	E		2.13		on the point
M09	09.10. 2024	08.00-11.00	18	2.2	SE	100	Pterocles orientalis	4	08.42	20	W	1.38			1000 m NE
M09	18.11. 2024	08.30-14.30	10	1	W	100	Buteo lagopus	1	10.33	50	S		02.00		on the point
M09	18.11. 2024	08.30-14.30	7	1	W	80	Aquila nipalensis	1	10.57	50	W		05.06		300 m NW | 320
M09	18.11. 2024	08.30-14.30	8	1	W	80	Haliaeetus albicilla	1	11.17	100	W		01.00		on the point
M09	18.11. 2024	08.30-14.30	9	1	W	100	Buteo lagopus	1	12.33	100	E		05.45		1,5 km SW | 230
M09	18.11. 2024	08.30-14.30	10	1	W	100	Buteo sp.	1	14.08	100	circle		01.36		2 km W | 265
M09	26.09. 2024	15.00-18.00	15	3.7	NEE	80	Pterocles orientalis	1	15.12	40	SWW		3.15		1000 m NNW/ 340
M09	26.09. 2024	15.00-18.00	15	3.4	NEE	80	Circaetus gallicus	1	15.22	500	NW			3.18	2000 m SWW/ 240
M09	26.09. 2024	15.00-18.00	15	3.2	NEE	70	raptor	6	15.44	500	NWW			3.11	2000 m S / 190
M09	26.09. 2024	15.00-18.00	15	3.4	E	80	Pterocles orientalis	1	16.03	50	SW		1.21		500 m NW/ 322
M09	26.09. 2024	15.00-18.00	15	3.4	NEE	95	Pterocles orientalis	1	16.07	150	SW		1.47		1000 m E/ 85
M09	26.09. 2024	15.00-18.00	15	3.6	NEE	95	Pterocles orientalis	1	16.23	100	SWW		3.02		1500 m / NEE
M09	26.09. 2024	15.00-18.00	14	3	E	95	Pterocles orientalis	1	16.45	50	SW		2,40		800 m W/ 280
M09	26.09. 2024	15.00-18.00	14	2.6	E	95	Aquila nipalensis	1	16.58	500	SWW			4.43	2000 m NEE/ 57
M10	03.10. 2024	14.45-17.45	24	1	SEE	0	Falco tinnunculus	2	15.20	50	SSW		4.43		500 m SSE/ 25
M10	03.10. 2024	14.45-17.45	20	2.7	NE	0	Pterocles orientalis	5	17.07	5	E	0.27			500 m NW/ 315
M10	04.10. 2024	08.00-11.00	10	5.5	E	0	Pterocles orientalis	2	08.08	20	S	0.15			1500 m SWW/ 253
M10	04.10. 2024	08.00-11.00	10	5.5	E	0	Pterocles orientalis	3	08.09	30	S	0.05	0.46		800 m SE/ 126
M10	04.10. 2024	08.00-11.00	10	6.4	E	0	Aquilla sp.	1	08.33	20-30	S		5.39		1000 m N/ 358

M10	04.10.2024	08.00-11.00	10	6.5	E	0	Pterocles orientalis	5	08.34	20-150	NE	0.10			1000 m NW/ 315
M10	04.10.2024	08.00-11.00	10	6.4	E	0	Pterocles orientalis	1	08.43	15	NNE	0.07			1000 m NNE/ 20
M10	04.10.2024	08.00-11.00	10	6.7	E	0	Pterocles orientalis	2	08.49	5-0	N	0.29			on the point
M10	04.10.2024	08.00-11.00	10	5.8	E	0	Aquila nipalensis	1	09.35	10	W		3.51		1000 m E/ 80
M10	04.10.2024	08.00-11.00	10	5.8	E	0	Aquilla sp.	2	09.35	100-200	circle			1.48	2000 m SEE/ 105
M10	04.10.2024	08.00-11.00	10	5.8	E	0	Aquilla sp.	1	09.39	200-300	W		2.43		1000 m SEE/ 100
M10	04.10.2024	08.00-11.00	10	6.1	E	0	Aquilla sp.	3	09.47	50-100	W			3.45	2000 m E/ 100
M10	04.10.2024	08.00-11.00	10	6	E	0	Aquilla sp.	1	09.54	300-500	circle		1.05		1500 m SE/ 125
M10	04.10.2024	08.00-11.00	10	5.3	E	0	Pterocles orientalis	5	10.06	100	SE	1.11			700 m NWW/ 275
M10	04.10.2024	08.00-11.00	10	5.6	E	0	Falco tinnunculus	1	10.41	10-20	SE	3.11	1.50		300 m SEE/ 110
M10	16.11.2024	09.00-15.00	-1	3	W	90	Haliaeetus albicilla	1	09.30	100	SW		00.59		500 m S | 150
M10	16.11.2024	09.00-15.00	-1	3,3	W	90	Haliaeetus albicilla	2	09.50	200	S		05.05		1 km E | 95
M10	16.11.2024	09.00-15.00	-1	3,3	W	90	Aquila nipalensis	1	09.56	50	W		01.07		on the point
M10	16.11.2024	09.00-15.00	-1	3,3	W	90	Aquila sp.	1	10.00	50	SW		02.26		1 km E | 105
M10	16.11.2024	09.00-15.00	-1	3,3	W	90	Haliaeetus albicilla	1	10.04	50	SW		02.33		500 m E | 70
M10	16.11.2024	09.00-15.00	-1	4,3	W	90	Haliaeetus albicilla	3	10.08	300	SW			07.39	2 km E | 65
M10	16.11.2024	09.00-15.00	-1	4,3	W	90	Anser anser	6	10.12	50	W				2 km E | 65
M10	16.11.2024	09.00-15.00	-1	4,3	W	90	Haliaeetus albicilla	1	10.22	100	SW		06.33		500 m NE | 55
M10	16.11.2024	09.00-15.00					raptor	7	10.34		S				2 km SE | 120
M10	16.11.2024	09.00-15.00					raptor	1	10.34	50	S		06.59		500 m SE | 120
M10	16.11.2024	09.00-15.00					Aquila sp.	1	10.52	50	SW		04.05		500 m E | 70
M10	16.11.2024	09.00-15.00	0	3,5	W	80	Haliaeetus albicilla	1	11.05	50	W		03.22		1 km N | 20
M10	16.11.2024	09.00-15.00	0	3,5	W	80	raptor	1	11.13	50	SW		01.02		1 km SE | 135
M10	16.11.2024	09.00-15.00	0	3,3	W	80	Aquila nipalensis	1	11.18	50	SW		04.56		500 m NE | 30

M10	16.11. 2024	09.00-15.00	1	2	W	80	Haliaeetus albicilla	1	11.47	100	SW		04.12		1,5 km NE | 50
M10	16.11. 2024	09.00-15.00	2	4,7	SW	80	Haliaeetus albicilla	1	11.57	100	W		02.17		500 m E | 95
M10	16.11. 2024	09.00-15.00	2	4,7	SW	80	Aquila nipalensis	3	12.00	50	W		05.47		500 m NW | 335
M10	16.11. 2024	09.00-15.00					Circus cyanus	1	12.16	50	W		02.11		on the point
M10	16.11. 2024	09.00-15.00	3	3,6	SW	80	raptor	1	13.29	200	W		02.48		2 km S | 175
M10	16.11. 2024	09.00-15.00	2	2,7	SW	80	raptor	1	14.00	100	SW		01.59		500 m S | 175
M10	16.11. 2024	09.00-15.00	2	2,7	SW	80	raptor	2	14.07	200	W		09.34		1 km E | 105
M10	26.09. 2024	15.00-18.00	15	3	SE	80	Aquila sp.	1	15.17	300	S			03.56	700 m W/ 247
M10	26.09. 2024	15.00-18.00	14	3	W	90	Aegypius monachus	1	15.56	500	W			03.27	1500 m NW/ 333
M10	26.09. 2024	15.00-18.00	14	3	W	90	Pterocles orientalis	18	16.06	150	N			0.43	2500 m N/ 0
M10	26.09. 2024	15.00-18.00	14	2	W	90	Falco tinnunculus	1	16.21	50	W		05.51		on the point
M10	26.09. 2024	15.00-18.00	14	2	SW	90	Falco tinnunculus	2	16.36	50	SW		04.40		400 m W/ 250
M10	26.09. 2024	15.00-18.00	14	1.5	SW	100	Pterocles orientalis	3	16.47	10	SW	0.22			1000 m NW/ 335
M10	26.09. 2024	15.00-18.00	13	1.5	SW	80	Pterocles orientalis	3	17.22	10	NE	0.24			on the point
M10	26.09. 2024	15.00-18.00	12	2	SW	80	Aquila sp.	1	17.36	70	SW		01.52		on the point
M11	02.10. 2024	15.00-18.00	29	3	SSW	30	Falco tinnunculus	1	15.00	30	SSW		3.17		on the point
M11	02.10. 2024	15.00-18.00	28	2	SW	5	Aquila chrysaetos	1	15.50	100	S		4.06		1500 m SSW
M11	03.10. 2024	08.00-11.00	18	—	—	10	Falco cherrug	1	09.20	10	SEE	2.40			20 m SE/ 127
M11	27.09. 2024	15.00-18.00	15	3	NW	30	Falco tinnunculus	1	16.57	100	circle		02.34		2000 m S/ 170
M11	28.09. 2024	08.00-11.00	13	5	SW	40	Falco tinnunculus	1	08.40	15	circle		0.50		on the point
M11	28.09. 2024	08.00-11.00	14	5	SW	30	Pterocles orientalis	50	09.32	500	W			12.55	3000 m SW/ 224
M11	17.11. 2024	09.00-12.00	8	4	NE	10	Pterocles orientalis	14	11,44	50-60	NE		0.25		
M11	17.11. 2024	09.00-12.00	8	4	NE	10	raptor	2	11.46	100	SW		2.58		
M11	17.11. 2024	12.00-15.00	8	4	NE	10	Haliaeetus albicilla	1	12.07	100	S		1.21		

M11	17.11. 2024	12.00-15.00	8	4	NE	10	Aquila chrysaetos	1	12.35	100	S		2.25		
M11	17.11. 2024	12.00-15.00	9	3	NE	10	raptor	1	13.23	100	S		0.55		
M11	17.11. 2024	12.00-15.00	9	3	NE	10	Circus sp.	1	13.24	50-60	S		2.28		
M11	17.11. 2024	12.00-15.00	9	3	NE	10	Haliaeetus albicilla	1	13.30	50	S		0.34		
M11	17.11. 2024	12.00-15.00	9	3	NE	10	Aquila chrysaetos	1	14.11	60	S		0.52		
M12	02.10. 2024	15.00-18.00	24	—	—	10	Pterocles orientalis	3	16.55	20	circle	00.53			1000 m W/ 290
M12	03.10. 2024	08.00-11.00	18	—	—	50	Pterocles orientalis	6	08.00	10	NW	0.49	1.04		on the point
M12	03.10. 2024	08.00-11.00	18	2	NW	40	Pterocles orientalis	16	08.56	10	E	1.11			500 m SW/ 208
M12	03.10. 2024	08.00-11.00	18	2	NW	30	Falco tinnunculus	1	09.22	50	circle	0.16	1,24		1500 m SW/ 276
M12	03.10. 2024	08.00-11.00	21	1	NW	30	Aquila nipalensis	1	10.34	200	NE		03.39		500 m N/ 346
M12	26.09. 2024	15.00-18.00	15	4	NE	100	Falco tinnunculus	1	15.36	15	S	2.40			1000 m SW/ 216
M12	26.09. 2024	15.00-18.00	14	4.5	NE	100	Falco tinnunculus	1	15.50	20	W	3.30			500 m SWW/ 258
M12	16.11. 2024	09.00-12.00	3	4	NE	90	Aquila chrysaetos	1	09.38	100	S		2.00		
M12	16.11. 2024	09.00-12.00	3	4	NE	90	Aquila chrysaetos	1	09.41	100	SW		2.00		
M12	16.11. 2024	09.00-12.00	3	4	NE	90	Anser anser	6	10.12	200	S		2.50		
M12	16.11. 2024	09.00-12.00	3	4	NE	90	Circus sp.	1	10.32	20-30	SW		0.20		
M12	16.11. 2024	09.00-12.00	3	4	NE	90	Anser anser	8	10.38	100	S		0.50		
M12	16.11. 2024	09.00-12.00	3	4	NE	90	raptor	3	10.40	200	S		1.33		
M12	16.11. 2024	09.00-12.00	3	4	NE	90	raptor	2	10.42	200	SW		2.53		
M12	16.11. 2024	09.00-12.00	3	4	NE	90	raptor	4	10.45	200	S		2.28		
M12	16.11. 2024	09.00-12.00	3	4	NE	90	raptor	2	10.46	200	S		2.05		
M12	16.11. 2024	09.00-12.00	3	4	NE	90	Aquila nipalensis	2	10.48	100	S		1.24		
M12	16.11. 2024	09.00-12.00	3	4	NE	90	raptor	1	10.53	500	S		2.06		
M12	16.11. 2024	09.00-12.00	3	4	NE	90	raptor	1	10.55	500	SW		1.53		

M12	16.11.2024	09.00-12.00	3	4	NE	90	Haliaeetus albicilla	1	10.58	300	S		1.50		
M12	16.11.2024	09.00-12.00	3	4	NE	90	Aquila nipalensis	2	11.00	200	S		3.15		
M12	16.11.2024	09.00-12.00	3	4	NE	90	Circus sp.	1	11.02	600	S		1.50		
M12	16.11.2024	09.00-12.00	3	4	NE	90	raptor	1	11.02	200	S		0.40		
M12	16.11.2024	09.00-12.00	3	4	NE	90	Aquila nipalensis	2	11.05	200	S		3.00		
M12	16.11.2024	09.00-12.00	3	3	NE	90	Aquila nipalensis	1	11.11	50	S		1.00		
M12	16.11.2024	09.00-12.00	3	3	NE	90	Aquila nipalensis	1	11.11	100	S		0.50		
M12	16.11.2024	09.00-12.00	3	3	NE	90	Aquila nipalensis	2	11.15	30	S		0.30		
M12	16.11.2024	09.00-12.00	3	3	NE	90	Aquila nipalensis	1	11.16	100-200	S		2.10		
M12	16.11.2024	09.00-12.00	3	3	NE	90	Aquila nipalensis	10	11.20	30	S		1.11		
M12	16.11.2024	09.00-12.00	3	3	NE	90	Aquila nipalensis	1	11.22	50	S		0.53		
M12	16.11.2024	09.00-12.00	3	3	NE	90	raptor	1	11.25	200	S		0.30		
M12	16.11.2024	09.00-12.00	3	3	NE	90	Aquila nipalensis	3	11.26	100	SW		3.12		
M12	16.11.2024	09.00-12.00	3	3	NE	90	Aquila nipalensis	1	11.28	100	S		3,57		
M12	16.11.2024	09.00-12.00	3	3	NE	90	Aquila nipalensis	2	11.33	100	SW		2,05		
M12	16.11.2024	09.00-12.00	3	3	NE	90	Aquila nipalensis	8	11.34	100	SW		6,58		
M12	16.11.2024	09.00-12.00	3	2	NE	90	Aquila nipalensis	1	11.35	100	S		1.00		
M12	16.11.2024	09.00-12.00	3	2	NE	90	Aquila nipalensis	1	11.43	100	SW		6.39		
M12	16.11.2024	09.00-12.00	3	2	NE	50	Aquila nipalensis	2	11.51	100	S		1.53		
M12	16.11.2024	09.00-12.00	3	2	NE	50	raptor	7	11.53	180-200	W		5.07		
M12	16.11.2024	09.00-12.00	3	2	NE	50	raptor	2	11.56	100	SW		1.00		
M12	16.11.2024	09.00-12.00	3	2	NE	50	raptor	2	11.59	80-100	SW		5.57		
M12	16.11.2024	12.00-15.00	3	2	NE	50	Aquila nipalensis	1	12.01	100	SW		2.00		
M12	16.11.2024	12.00-15.00	3	2	NE	50	Aquila nipalensis	3	12.03	80-100	W		2.50		

M12	16.11. 2024	12.00-15.00	3	2	NE	50	raptor	7	12.07	100-200	SW		6.48		
M12	16.11. 2024	12.00-15.00	3	2	NE	50	raptor	1	12.08	80-100	SW		1.00		
M12	16.11. 2024	12.00-15.00	3	2	NE	50	Aquila nipalensis	1	12.11	50	SW		1.00		
M12	16.11. 2024	12.00-15.00	3	2	NE	50	Aquila nipalensis	2	12.13	100	SW		2.00		
M12	16.11. 2024	12.00-15.00	3	2	NE	50	Aquila nipalensis	1	12.16	100	SW		3.00		
M12	16.11. 2024	12.00-15.00	3	3	NE	50	raptor	3	12.18	100-	SW		5.31		
M12	16.11. 2024	12.00-15.00	3	3	NE	50	raptor	2	12.20	100	SW		2.00		
M12	16.11. 2024	12.00-15.00	3	3	NE	50	Aquila nipalensis	1	12.37	100	SW		4.15		
M12	16.11. 2024	12.00-15.00	3	3	NE	50	Aquila nipalensis	1	12.40	100	SW		2.26		
M12	16.11. 2024	12.00-15.00	3	3	NE	50	raptor	1	12.47	60	S		3.06		
M12	16.11. 2024	12.00-15.00	3	3	NE	50	Aquila nipalensis	1	12.57	60	SW		0.40		
M12	16.11. 2024	12.00-15.00	3	3	NE	50	Aquila nipalensis	2	12,59	100	SW		4.12		
M12	16.11. 2024	12.00-15.00	3	3	NE	50	raptor	1	13.01	100	NE		5.10		
M12	16.11. 2024	12.00-15.00	2	3	NE	50	raptor	1	13.04	60	NE		4.00		
M12	16.11. 2024	12.00-15.00	2	3	NE	50	Haliaeetus albicilla	1	13.06	100	S		1.10		
M12	16.11. 2024	12.00-15.00	2	3	NE	50	raptor	1	13.29	200	SW		4.33		
M12	16.11. 2024	12.00-15.00	2	3	NE	50	raptor	1	13.45	200	SW		2.11		
M12	16.11. 2024	12.00-15.00	2	3	NE	50	Aquila nipalensis	1	14.05	200	SW		5.25		
M12	16.11. 2024	12.00-15.00	2	3	NE	50	raptor	4	14.06	200	SW		4.00		
M12	16.11. 2024	12.00-15.00	2	3	NE	70	Haliaeetus albicilla	1	14.20	100	SW		3.30		
M12	16.11. 2024	12.00-15.00	2	3	NE	70	Aquila nipalensis	1	14.35	100	SW		2.00		
M12	16.11. 2024	12.00-15.00	2	5	NE	70	raptor	1	14.43	200	SW		2.27		
M12	16.11. 2024	12.00-15.00	2	5	NE	70	raptor	1	14.45	50	SW		2.45		
M13	01.10. 2024	15.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	—

M13	02.10.2024	08.00-11.00	17	—	—	100	Pterocles orientalis	8	08.27	50	SE		01.33		600 m SW/ 216
M13	17.11.2024	08.40-14.40	10	0		30	Buteo sp.	1	08.40	0	сидит				on the point
M13	17.11.2024	08.40-14.40	5	1	N	30	Buteo lagopus	1	10.42	50	S		01.49		300 m NE | 35
M13	17.11.2024	08.40-14.40	8	1	N	30	Aquila heliaca	1	11.28	50	S		02.53		on the point
M13	17.11.2024	08.40-14.40	7	2	W	30	raptor	1	13.00	400	S			02.31	1 km E | 110
M13	17.11.2024	08.40-14.40	8	2,8	W	30	Aquila heliaca	2	13.44	300	circle			11.38	2 km W | 290
M13	28.09.2024	14.45-17.45	16	5.7	NEE	0	Aquila chrysaetos	1	15.08	50	NNE		2.05		2000 m SWW/ 255
M13	28.09.2024	14.45-17.45	16	6.8	NEE	0	Aquila sp.	1	15.43	50	S		0.20		2000 m NWW/ 297
M13	28.09.2024	14.45-17.45	16	8	NEE	0	Aquila sp.	1	15.45	0	Sitting				2000 m NWW/ 295
M13	28.09.2024	14.45-17.45	15	8	NEE	0	Aquila sp.	1	16.23	200	SE		02.37	1.25	1500 m W/ 264
M13	29.09.2024	08.00-11.00	15	9.1	NEE	0	Aquila chrysaetos	1	10.25	100	SSW		2.12		2000 m NNW/ 332
M14	01.10.2024	15.00-18.00	22	—	—	50	Syrrhaptes paradoxus	4	15.10	30	NEE		0.45		300 m SSE/ 160
M14	01.10.2024	15.00-18.00	22	—	—	50	Pterocles orientalis	3	15.17	10	NNE		0.14		700 m NNW/ 331
M14	01.10.2024	15.00-18.00	22	—	—	50	Pterocles orientalis	1	15.19	50	circle		0.41		2000 m E/ 82
M14	01.10.2024	15.00-18.00	22	—	—	60	Aquila nipalensis	1	15.40	300-500	SW			4.29	2000 m N/ 0
M14	01.10.2024	15.00-18.00	22	—	—	60	Aquilla sp.	1	15.48	200	circle		0.53		1500 m W/ 272
M14	02.10.2024	08.00-11.00	15	—	—	95	Pterocles orientalis	5	08.03	30	W		5.52		1000 m NE/ 45
M14	02.10.2024	08.00-11.00	15	—	—	95	Pterocles orientalis	2	08.30	20	NWW	1.18	1.18		2000 m NWW/ 295
M14	02.10.2024	08.00-11.00	15	—	—	100	Pterocles orientalis	2	08.35	150	N		0.26		1500 m W/ 272
M14	02.10.2024	08.00-11.00	15	—	—	100	Pterocles orientalis	1	08.41	20-0	E	0.35			1000 m NNW/ 335
M14	02.10.2024	08.00-11.00	15	—	—	100	Pterocles orientalis	1	09.21	30	circle		0.15		500 m NW/ 311
M14	02.10.2024	08.00-11.00	15	—	—	90	Pterocles orientalis	2	09.35	20-0	NE		1.21		300 m NE/ 35
M14	02.10.2024	08.00-11.00	15	—	—	90	Pterocles orientalis	1	09.38	20-30	SE	0.10			1000 m W/ 260
M14	02.10.2024	08.00-11.00	15	—	—	90	Aquila nipalensis	1	09.59	50	SE		1.17		500 m SWW/ 240

M14	02.10. 2024	08.00- 11.00	15	—	—	80	Falco tinnunculus	1	10.23	50	N		4.02		700 m W/ 350
M14	02.10. 2024	08.00- 11.00	15	—	—	80	Falco tinnunculus	1	10.37	20-30	SW		2.47		1000 m NNE/ 13
M14	02.10. 2024	08.00- 11.00	15	2.1	S	70	Aquilla sp.	1	10.45	50	circle		2.05		1000 m S/ 185
M14	02.10. 2024	08.00- 11.00	15	2,1	S	70	Aquilla sp.	1	10.49	100	circle		2.20		2000 m E/ 95
M14	10.11. 2024	9.40- 12.40	5	2.7	SW	100	Circus sp. / photo	1	9.54	5-10	SSE	1.20			700 m / 245
M14	10.11. 2024	9.40- 12.40	5	2.5	SW	100	Larus sp. / photo	1	10.15	10-20	W	2.34			800 m / 48
M14	10.11. 2024	9.40- 12.40	5	3.0	SW	100	Larus sp. / photo	3	10.32	50	SSW		6.38		1000 m / 60
M14	10.11. 2024	9.40- 12.40	6	2.3	SW	100	Larus sp. / photo	16	10.39	50	SSW		2.42		1000 m / 98
M14	10.11. 2024	9.40- 12.40	7	2.5	SW	95	Larus sp. / photo	19	11.10	50	SSW		2.29		1500 m / 107
M14	10.11. 2024	9.40- 12.40	7	2.5	SW	95	Larus sp. / photo	10	11.14	50	SSW		2.39		1700 m / 83
M14	10.11. 2024	9.40- 12.40	6	3.3	SWW	90	Aquila chrysaetos / photo	2	13.21	200→100	NEE		19.57		2500 m / 224
M14	10.11. 2024	9.40- 12.40	6	2.8	SW	30	Aquila chrysaetos / photo	1	14.39	50	SW		1.35		1000 m / 104
M14	10.11. 2024	9.40- 12.40	6	2.8	SW	30	Aquilla sp. / photo	1	14.44	30	SWW		0.41		1000 m / 327
M14	10.11. 2024	9.40- 12.40	6	2.5	SWW	10	Aquilla sp. / photo	1	14.55	50	SWW		1.26		1200 m / 319
M14	10.11. 2024	9.40- 12.40	6	1.7	SWW	0	Gazelle / photo	4	15.50	—	—	—	—	—	8000 m / 165
M14	29.09. 2024	14.00- 17.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M15	01.10. 2024	15.00- 18.00	30	1	NEE	40	Pterocles orientalis	4	16.10	5	SWW	1.54			500 m SW/ 204
M15	02.10. 2024	08.00- 11.00	15	1	SW	80	Pterocles orientalis	7	08.40	5	SE	2.11			1000 m N/ 171
M15	02.10. 2024	08.00- 11.00	17	3	NNW	100	Circus sp.	1	09.00	5	SW	3.00			300 m SW/ 229
M15	02.10. 2024	08.00- 11.00	17	4	NNW	100	Pterocles orientalis	6	09.20	10	NW	3.12			500 m NNW/ 330
M15	28.09. 2024	15.00- 18.00	16	4	W	20	Grus grus	70	16.00	1000	W			03.23	on the point
M15	29.09. 2024	08.00- 11.00	17	4	S	30	Pterocles orientalis	100	09.39	700	S			02.23	1000 m E/ 92
M15	10.11. 2024	09.30- 12.30	5	4.6	SSW	100	Buteo rufinus	1	10.29	-20-50	W	0.30	0.46		1100 m N
M15	10.11. 2024	09.30- 12.30	6	5.6	SW	100	Circus sp.	1	11.32	20-	SSW	0.49			1200 m NEE

M15	10.11. 2024	13.00-16.00	7	5.8	SW	100	raptor	1	13.03	20-100	SW		1.49		1800 m E
M15	10.11. 2024	13.00-16.00	7	5.8	SW	100	raptor	1	13.04	-20-100	SW	0.45	1,31		1800 m E
M16	01.10. 2024	08.30-11.30	12	1.2	NEE	60	Falco tinnunculus	1	09.22	20-100	S	0.15	06.35		1000 m NWW/ 225
M16	08.10. 2024	14.30-17.30	21	5.5	E	0	Falco tinnunculus	1	15.40	50	NE		7.18		on the point
M16	08.10. 2024	14.30-17.30	20	6	E	0	Pterocles orientalis	4	16.39	20	NE	1.26			2000 m SW
M16	08.10. 2024	14.30-17.30	18	6.1	E	0	Pterocles orientalis	2	17.00	50	NE	1.53			2000 m S
M16	29.09. 2024	14.00-17.00	18	6.6	NEE	0	Falco tinnunculus	1	14.48	50	circle		1.13		700 m SE/ 145
M16	29.09. 2024	14.00-17.00	17	5,3	NEE	0	Falco tinnunculus	1	15.29	150	S		0.39		1000 m SWW/ 245
M16	29.09. 2024	14.00-17.00	17	5,6	NEE	0	Buteo rufinus	1	15.50	50	N		3.17		1500 m SE/ 140
M16	15.11. 2024	08.40-11.40	0	1.8	NNE	0	Cygnus olor	4	10.03	200+	SWW			0.41	1500 m SE
M16	15.11. 2024	08.40-11.40	0	3.5	NNE	0	Cygnus olor	6	10.26	200+	SW			0.38	1900 m NWW
M16	15.11. 2024	08.40-11.40	1	3.8	NNE	0	Haliaeetus albicilla	1	11.40	150-200+	SWW		0.30	1.21	1800 m SEE
M16	15.11. 2024	12.10-15.10	1	3	NNE	0	Cygnus sp.	7	12.11	200+	SW			0.29	700 m SE
M16	15.11. 2024	12.10-15.10	2	3.4	NNE	0	Falco tinnunculus	1	13.26	150-180	SW		0.29		800 m SE
M16	15.11. 2024	12.10-15.10	1	4.5	NNE	0	Anser anser	50	14.06	200+	SW			0.39	1800 m SE
M17	01.10. 2024	08.20-11.20													
M17	05.10. 2024	13.00-16.00	24			90	Circus sp.	1	13.42	20	SE	1.14			on the point
M17	15.11. 2024	09.00-15.00		2	W	30	Cygnus olor	8	09.35	100	SW		01.00		500 m NW | 320
M17	15.11. 2024	09.00-15.00		2	W	30	raptor	1	09.42	100			04.13		2 km SW | 215
M17	15.11. 2024	09.00-15.00		2	W	30	Circus sp.	1	09.50	5		01.23			1 km E | 100
M17	15.11. 2024	09.00-15.00		2	W	30	Aquila sp.	1	10.00	200	circle		03.37		1,5 km NW | 320
M17	15.11. 2024	09.00-15.00		3	W	30	Cygnus olor	6	10.25	100	SW				on the point
M17	15.11. 2024	09.00-15.00		3	SW	30	Aquila nipalensis	1	13.04	300	SW			02.22	1 km NW | 330
M17	15.11. 2024	09.00-15.00		2	SW	30	Aquila sp.	2	13.44	500	SW			06.28	1 km E | 90

M19	01.10.2024	08.00-11.00	19	1	W	60	Buteo rufinus	1	09.59	0	Sitting		05.12		1500 m S/ 172
M19	01.10.2024	08.00-11.00	20	1	W	70	Accipiter nisus	1	10.24	400	S		02.35		300 m SW/ 234
M19	01.10.2024	08.00-11.00	25	1	NW	70	Circus pygargus	2	11.00	200	S		04.18		2000 m NE/ 64
M19	05.10.2024	13.00-16.00	24	2.2	S	50	Falco tinnunculus	1	15.15	40	NE		05.49		1000 m E/ 94
M19	05.10.2024	13.00-16.00	24	2	S	70	Accipiter nisus	1	15.33	10	SSE		1.04		300 m S/ 170
M19	05.10.2024	13.00-16.00	20	0.9	S	100	Chlamydotis macqueenii	1	16.00	0	SE	0.50			300 m W/ 221
M19	11.11.2024	9.10-12.10	5	4.1	SW	80	Raptor / photo	1	9.28	20-40	NE		1.19		1000 m / 335
M19	11.11.2024	9.10-12.10	6	4.6	SWW	95	Falco tinnunculus/naumanni / photo	1	11.21	10-50	SW	2.05	2.05		1000 m / 0
M19	11.11.2024	12.40-15.40	—	—	—	—	—	—	—	—	—	—	—	—	—
M20	20.10.2024	08.35-11.35	6	4.2	E	20	Pterocles orientalis	7	08.52	20-30	S		0.36		200 m E
M20	20.10.2024	08.35-11.35	7	2.4	E	20	Pterocles orientalis	2	09.28	20-70	SW		0.44		150 m E
M20	20.10.2024	08.35-11.35	7	3.9	E	20	Larus sp.	2	09.51	20	NEE	0.49			700 m S
M20	20.10.2024	08.35-11.35	7	4.6	E	20	Pterocles orientalis	2	09.55	20-50	SE	0.51			500 m E
M20	20.10.2024	08.35-11.35	8	4.4	E	20	Aquila nipalensis	1	10.04	100-150	NWW		1.54		1000 m NEE
M20	20.10.2024	08.35-11.35	8	5.4	E	20	raptor	1	10.44	150-200	W		0.50	0.26	1000 m SEE
M20	20.10.2024	08.35-11.35	8	5.2	E	20	raptor	1	10.51	200+	SWW			0.21	1500 m SEE
M20	20.10.2024	08.35-11.35	9	5.7	E	20	Pterocles orientalis	7	11.10	20	NE	0.24			1000 m SEE
M20	21.10.2024	12.25-15.25	20	2.1	E	60	raptor	1	12.37	200+	SWW			0.18	1500 m SE
M20	21.10.2024	12.25-15.25	20	1.5	E	60	Pterocles orientalis	9	12.40	20	NE	0.21			1000 m SE
M20	21.10.2024	12.25-15.25	20	1.5	E	60	raptor	1	12.48	200+	NE	0.17			1900 m SE
M20	21.10.2024	12.25-15.25	20	1	E	60	Pterocles orientalis	5	13.26	20-50	N		0.20		1500 m E
M20	21.10.2024	12.25-15.25	19	0.6	E	80	Aquila chrysaetos	1	14.05	200+	cicle, S			3.49	2000 m S
M20	21.10.2024	12.25-15.25	19	1.4	E	90	raptor	2	14.11	200+	SWW			1.31	1800 m S
M20	21.10.2024	12.25-15.25	18	1	E	100	Haliaeetus albicilla / photo	1	14.57	80-0	Sitting	0.06	0.18		1500 m SE

M20	10.11. 2024	09.05-12.05	1	4	W	100	Anser anser	80	11.22	200+	SW			03.43	
M20	10.11. 2024	09.05-12.05	1	5	W	100	Circus sp.	1	11.56	5-	SW	0.42			
M20	10.11. 2024	12.05-15.05	1	5	W	100	Circus sp.	1	13.33	20-30	SW	2.13			
M21	20.10. 2024	14.15-17.15	13	9.4	NE	60	Pterocles orientalis	8	14.34	20	SW	0.15	0.31		1000 m N
M21	20.10. 2024	14.15-17.15	11	7.2	NE	40	Aquila nipalensis	1	16.02	100-120	SWW		0.52		1500 m E
M21	20.10. 2024	14.15-17.15	11	7.8	NE	40	Aquila chrysaetos	1	16.08	80-120	SWW		0.45	2.13	1000 NW
M21	20.10. 2024	14.15-17.15	11	8.1	NE	40	raptor	1	16.10	50-100	W		0.18		1000 m NW
M21	21.10. 2024	08.00-11.00	9	4.1	NE	70	Pterocles orientalis	7	09.03	20	NW	0.44			1000 m NNE
M21	21.10. 2024	08.00-11.00	12	3.1	NE	30	Aquila chrysaetos	1	09.24	0-20-200	NW	0.30	1.15	3.16	1000 m E
M21	11.11. 2024	08.55-11.55	2	6.2	SW	80	Circus sp.	1	09.47	20-	S	0.41			1000 m NNW
M21	11.11. 2024	08.55-11.55	3	6.5	SW	80	Aquila chrysaetos	1	10.42	100-200+	SW		2.59	2.16	1500 m N
M21	11.11. 2024	08.55-11.55	3	7.4	SW	80	Circus sp.	1	10.59	20-	S	1.18			150 m N
M21	11.11. 2024	08.55-11.55	3	7.4	SW	90	Falco tinnunculus	1	10.59	20-	SE	1.34			150 m NW
M21	11.11. 2024	12.25-15.25	6	8.5	SW	100	Falco tinnunculus	1	14.27	20-50	SSE		4.03		100 m SE
M22	20.10. 2024	8.45-11.45	10	5.5	E	10	Pterocles orientalis	~40	8.45	15	Short flight	0.10			600 m / 25
M22	20.10. 2024	8.45-11.45	9	7.1	E	20	Pterocles orientalis	1	10.00	50→0	NW	0.05	0.43		500 m / 5
M22	20.10. 2024	8.45-11.45	10	6.6	E	20	Aquilla sp. / photo	1	10.05	100→200	W		3.45		1000 m / 150
M22	21.10. 2024	12.40-15.40	21	0	—	80	Aquila chrysaetos	1	14.11	150→500	W		13.19	4.31	2000 m / 90
M24	20.10. 2024	14.15-17.15	12	5.5	NEE	50	Aquilla sp. / photo	1	15.16	100-200	SSW		3.52		1500 m / 100
M24	21.10. 2024	8.05-11.05	10	0	—	10	Pterocles orientalis	8	10.49	30→10	NEE	0.08	0.35		1000 m / 322
M24	11.11. 2024	09.10-12.10	2	2	SW	90	Aquila nipalensis	1	09.18	100	W		4.50		
M24	11.11. 2024	09.10-12.10	2	2	SW	90	Anser anser	50	09.52	200+	W			6.18	
M24	11.11. 2024	09.10-12.10	5	2	SW	90	Aquila chrysaetos	1	10.41	100	SW		2.04		
M24	11.11. 2024	09.10-12.10	7	2	SW	90	Haliaeetus albicilla	1	11.36	3	W	0.44			

M24	11.11. 2024	12.10-15.10	7	3	SW	90	Aquila chrysaetos	1	12.19	100	S		2.50		
M26	10.11. 2024	09.00-15.00	6	4,9	E	100	Circus cyanus	1	11.43	5	E	03.03			300 m W | 270
M26	10.11. 2024	09.00-15.00	4	5,1	E	100	Falco tinnunculus	1	12.18	10	сел	02.15			on the point
M26	10.11. 2024	09.00-15.00	4	4,8	E	100	Accipiter nisus	1	13.06	50	SE		02.15		200 m N | 150
M26	10.11. 2024	09.00-15.00	4	5	E	95	Haliaeetus albicilla	1	13.35	100	SW		06.01		100 m NW | 305
M26	20.10. 2024	08.15-11.15	9	8,1	SW	80	Aquila nipalensis	3	11.02	500	SW			03.28	500 m NE | 55
M32	07.10. 2024	15.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M32	08.10. 2024	08.00-11.00	10	4	SE	0	Buteo sp.	2	08.02	50	SSE		3.32		on the point
M32	08.10. 2024	08.00-11.00	20	4	E	0	Pterocles orientalis	2	08.49	10	S	0.42			on the point
M32	19.11. 2024	08.30-14.30	4	2,4	W	60	Syrrhaptes paradoxus	1	09.04	30	NE		00.30		200 m W | 290
M32	19.11. 2024	08.30-14.30	4	2,4	W	70	Falco tinnunculus	1	10.08	30	S		07.52		200 m NE | 45
M32	19.11. 2024	08.30-14.30	8	3,5	W	60	Haliaeetus albicilla	4	12.50	150	S		06.03		1 km SE |125
M32	19.11. 2024	08.30-14.30	8	4,4	W	40	Aquila nipalensis	1	13.30	150	SW		04.24		on the point
M32	25.09. 2024	15.00-18.00	19	5	NNE	100	Falco tinnunculus	1	15.03	150	SEE		0,40		2000 m SE/ 127
M32	25.09. 2024	15.00-18.00	19	5	NE	100	Falco tinnunculus	1	15.35	100	NEE		1.01		700 m NEE/ 72
M32	25.09. 2024	15.00-18.00	13	4	NE	100	Aquila nipalensis	1	17.15	20	E	0,59			1000 m NE/ 53
M32	25.09. 2024	15.00-18.00	12	4	NE	100	Buteo rufinus	1	17.50	100	NE		0.11		1000 m NE/ 318
M32	26.09. 2024	08.00-11.00	10	4	NEE	100	Pterocles orientalis	6	08.10	10	SE	0.10			100 m SE/ 135
M32	26.09. 2024	08.00-11.00	10	4	NEE	100	Circus pygargus	1	09.05	5	NWW	0.05			150 m NW/ 12
M32	26.09. 2024	08.00-11.00	10	4	NEE	100	Accipiter nisus	1	09.40	150	NWW		0.13		500 m SWW/ 244
M32	26.09. 2024	08.00-11.00	10	5	NNE	100	Falco tinnunculus	1	10.05	10	NNE	0.38			700 m N/ 4
M32	26.09. 2024	08.00-11.00	11	5	NEE	100	Falco tinnunculus	1	10.15	10	SE	0.25			500 m SE/ 79
N2	24.10. 2024	09.40-12.40	12	2,9	N	100	Circus aeroginosus	1	09.40	0	0		0		700 m E | 100
N2	24.10. 2024	09.40-12.40	13	2,9	N	70	Aquila sp.	1	11.30	150	circle		13.16		1500 m E | 75

N2	24.10. 2024	09.40-12.40	12	4,9	N	90	Aquila sp.	1	11.45	50	0		05.00		1500 m NW | 310
N2	24.10. 2024	09.40-12.40	12	4,9	N	90	Buteo sp.	1	11.45	50	circle				1500 m NW | 310
N2	24.10. 2024	09.40-12.40	11	3,8	N	90	Aquila sp.	1	12.20	200-300	circle		02.38	14.44	1 km NW | 300
N2	24.10. 2024	13.10-16.10	12	4	NE	90	Buteo sp.	1	13.20	50	W		11.56		700 m W | 290
N2	24.10. 2024	13.10-16.10	12	4,3	NE	90	Aquila sp.	1	13.40	150	0		05.25		2 km NE | 40
N2	24.10. 2024	13.10-16.10	13	5,9	NE	90	Aquila sp.	1	13.59	50	circle		02.02		2 km NW | 325
N2	24.10. 2024	13.10-16.10	12	4,1	NE	100	Buteo rufinus	1	14.32	20	0		00.42		1 km NW | 310
P02	23.10. 2024	09.40-12.40	10	3.8	SW	100	Aquila chrysaetos	1	11.18	200+	circle, SSW			3.16	2300 m NNE
P02	23.10. 2024	09.40-12.40	10	3.8	SW	100	raptor	1	11.26	200+	circle, E			4.24	2300 m NNE
P02	23.10. 2024	09.40-12.40	10	4.1	SW	100	Circus sp.	1	12.07	20	SEE	2.41			500 m NNE
P02	23.10. 2024	13.40-16.40	—	—	—	—	—	—	—	—	—	—	—	—	—
P06	20.10. 2024	14.00-17.00	16	5,8	SW	80	Falco tinnunculus	1	14.22	150	SW		00.28		on the point
P06	20.10. 2024	14.00-17.00	17	7,2	SW	70	Buteo rufinus	1	15.09	300	SW			01.10	on the point
P06	20.10. 2024	14.00-17.00	15	3,8	SW	70	Aquila nipalensis	1	15.46	30	W		04.10		300 m E | 88
P06	20.10. 2024	14.00-17.00	16	4,6	SW	70	Aquila nipalensis	1	16.03	50	W		01.45		500 m SE | 120
P06	21.10. 2024	08.00-11.00	10	3,5	W	30	Pterocles orientalis	9	08.32	30	S			00.20	500 m E | 85
P06	21.10. 2024	08.00-11.00	17	3,2	W	50	Haliaeetus albicilla	1	10.07	100	W		04.45		1 km N | 20
P06	21.10. 2024	08.00-11.00	20	1,3	W	50	Aquila nipalensis	1	10.31	200	S		02.24		on the point
P06	15.11. 2024	09.00-12.00	-3	2	NE	0	Aquila nipalensis	1	09.50	100-150	W		01.37		
P06	15.11. 2024	09.00-12.00	-3	3	NE	0	Aquila chrysaetos	1	09.50	150-200+	W		3.00	09.49	
P06	15.11. 2024	09.00-12.00	-3	3	NE	0	Circus sp.	1	10.06	40-50	W		0.49		
P06	15.11. 2024	09.00-12.00	-1	2	NE	0	Aquila nipalensis	1	12.39	50-60	SW		0,35		
P17	22.10. 2024	8.00-11.00	15	0.5	SWW	100	Aquila chrysaetos	1	10.46	20-40	SWW		3.39		1700 m / 97
P17	22.10. 2024	12.00-15.00	17	1.4	SWW	90	Aquila nipalensis / photo	1	12.11	200-500	W			4.53	1500-2000 m / 140

P17	17.11. 2024	08.55-11.55	0	1,4	E	5	raptor	1	11.41	200+	SWW			1.48	
P17	17.11. 2024	12.25-15.25	1	3.2	E	20	raptor	1	13.01	150-200	SW		2.14		
P17	17.11. 2024	12.25-15.25	1	2.9	E	20	raptor	1	13.39	100-150	SWW		2.26		
P24	17.11. 2024	9.15-12.15	5	0	—	5	Aquilla sp.	1	9.50	150	SWW		1.57		2000 m / 80
P24	17.11. 2024	9.15-12.15	—	—	—	—	Argali	5	10.43	—	—	—	—	—	5000 m / 300
P24	17.11. 2024	9.15-12.15	6	1.7	NEE	10	Aquilla sp. / photo	1	11.38	50-100	SW		7.32		2000 m / 85
P24	17.11. 2024	9.15-12.15	6	2.1	NEE	15	Aquilla sp. / photo	1	12.00	100-150	W		8.31		2500 m / 32
P24	17.11. 2024	12.45-15.45	6	1.6	NEE	20	Aquila nipalensis / photo	1	12.48	100→50 →150	SWW		16.17		2000 m / 46
P24	17.11. 2024	12.45-15.45	6	2.0	NEE	25	Buteo rufinus / photo	2	13.25	50	W		3.54		1300 m / 33
P24	17.11. 2024	12.45-15.45	6	2.1	NEE	25	Aquila nipalensis / photo	1	13.36	50	SW		3.51		800 m / 38
P24	17.11. 2024	12.45-15.45	6	2.1	NEE	25	Aquilla sp. / photo	1	13.36	50	SWW		4.17		2000 m / 38
P24	17.11. 2024	12.45-15.45	6	2.3	NEE	30	Haliaeetus albicilla / photo	1	13.47	50	SW		3.38		2500 m / 75
P24	17.11. 2024	12.45-15.45	6	2.3	NEE	30	Aquilla sp.	1	13.52	100	SWW		2.04		1500 m / 350
P24	17.11. 2024	12.45-15.45	—	—	—	—	Argali	5	14.05	—	—	—	—	—	4000 m / 154
P24	17.11. 2024	12.45-15.45	5	2.5	NEE	30	Cygnus sp. / photo	24	15.19	300	SWW			3.23	2500 m / 350
X04	22.10. 2024	08.00-11.00	—	—	—	—	—	—	—	—	—	—	—	—	—
X04	22.10. 2024	12.10-15.10	—	—	—	—	—	—	—	—	—	—	—	—	—
X04	19.11. 2024	09.00-12.00	7	4	NE	80	Haliaeetus albicilla	1	11.46	200+				0.43	
X04	19.11. 2024	09.00-12.00	7	4	NE	80	Haliaeetus albicilla	2	11.50	100			1.45		
X04	19.11. 2024	09.00-12.00	7	4	NE	80	Aquila nipalensis	1	11.52	200+				0,50	
X04	19.11. 2024	12.00-15.00	—	—	—	—	—	—	—	—	—	—	—	—	—
X05	15.11. 2024	9.10-12.10	–3	3.1	NE	0	Aquilla sp.	1	9.34	250	SW			3.27	1000 m / 108
X05	15.11. 2024	9.10-12.10	–3	3.1	NEE	0	Aquilla sp.	1	9.38	150	SW		2.21		1000 m / 148
X05	15.11. 2024	9.10-12.10	–3	3.1	NEE	0	Aquilla sp.	2	9.39	250	SW			3.34	2000 m / 78

X05	15.11. 2024	9.10-12.10	–3	3.1	NEE	0	Aquilla sp.	2	9.41	200	SW		1.45		2000 m / 62
X05	15.11. 2024	9.10-12.10	–3	3.4	NEE	0	Aquila nipalensis / photo	1	9.45	150	W		2.53		700 m / 13
X05	15.11. 2024	9.10-12.10	–3	3.4	NEE	0	Cygnus olor / photo	15	9.47	200	SW		3.10		1000 m / 310
X05	15.11. 2024	9.10-12.10	–3	3.4	NEE	5	Haliaeetus albicilla / photo	1	9.50	100	W		2.01		1000 m / 56
X05	15.11. 2024	9.10-12.10	–3	3.5	E	0	Aquilla sp.	1	10.32	150	SW		3.49		1500 m / 105
X05	15.11. 2024	9.10-12.10	–3	3.4	E	0	Aquilla sp.	1	10.56	200	W		0.47		2000 m / 7
X05	15.11. 2024	9.10-12.10	–3	2.9	E	0	Aquilla sp. / photo	1	11.08	250	SWW			2.08	1000 m / 14
X05	15.11. 2024	9.10-12.10	–3	2.6	NEE	0	Aquila nipalensis / photo	1	11.20	100	SWW		3.03		700 m / 65
X05	15.11. 2024	9.10-12.10	–3	3.5	NEE	0	Pterocles sp.	4	11.39	10	SEE	0.25			200 m / 33
X05	15.11. 2024	9.10-12.10	–3	2.7	NEE	0	Haliaeetus albicilla / photo	2	11.48	200→100	SWW		2.44		1000 m / 44
X05	15.11. 2024	9.10-12.10	–3	2.9	NEE	0	Haliaeetus albicilla / photo	1	11.57	100→150	SSW		5.03		1000 m / 47
X05	15.11. 2024	9.10-12.10	–3	3.0	NEE	0	Aquilla sp. / photo	1	12.07	50	SWW		0.43		2300 m / 7
X05	15.11. 2024	9.10-12.10	–3	3.0	NEE	0	Haliaeetus albicilla / photo	3	12.13	50→200	SW		2.38		600 m / 115
X05	15.11. 2024	9.10-12.10	–3	3.0	NEE	0	Aquila nipalensis / photo	1	12.15	300→150	SW		2.49	2.06	1000 m / 60
X05	15.11. 2024	9.10-12.10	–3	2.9	NEE	0	Pelecanus onocrotalus / photo	7	12.33	100	SWW		3.55		1000 m / 5
X05	15.11. 2024	9.10-12.10	–3	3.2	NEE	0	Aquilla sp.	26	12.48-13.10	200-500	SW			3.00-5.00	2000-2500 m / 30-40
X05	15.11. 2024	9.10-12.10	–3	3.0	NEE	0	Aquilla sp.	1	13.10	200	SW		1.55		2000 m / 113
X05	15.11. 2024	9.10-12.10	–3	3.3	NEE	0	Aquila nipalensis / photo	1	13.12	250→150	SW		1.12	1.36	2000 m / 71
X05	15.11. 2024	9.10-12.10	–3	2.8	NEE	0	Aquilla sp.	1	13.24	300	SW			1.05	2500 m / 30
X05	15.11. 2024	9.10-12.10	–3	3.0	NEE	0	Aquilla sp. / photo	1	13.25	200	SW		1.31		2000 m / 30
X05	15.11. 2024	9.10-12.10	–3	2.7	NEE	0	Aquilla sp.	1	13.31	150	SW		2.48		1000 m / 5
X05	15.11. 2024	9.10-12.10	–3	3.0	NEE	0	Aquila nipalensis / photo	1	13.38	300	SWW			4.00	1500 m / 48
X05	15.11. 2024	9.10-12.10	–3	3.4	NEE	0	Aquila nipalensis	1	14.23	250→100	SWW		3.18	1.40	2000 m / 50
X05	15.11. 2024	9.10-12.10	–3	2.8	NEE	0	Aquilla sp.	9	14.44	200-300	SWW			3.39	1500 m / 15

X05	15.11. 2024	9.10-12.10	–3	2.7	NEE	0	Falco tinnunculus/naumanni / photo	1	14.53	50→0	Hunting		3.48	0.07	600 m / 313
X05	15.11. 2024	9.10-12.10	–3	2.5	NEE	0	Falco tinnunculus/naumanni	1	15.06	30-50	Hunting		7.10		300 m / 300
X05	15.11. 2024	9.10-12.10	–3	2.7	NEE	0	Aquilla sp.	1	15.10	100	SW		0.57		1500 m / 330
X05	22.20. 2024	08.00-11.00	17	0,2	NW	90	Accipiter nisus	1	10.23	2	SE	00.30			300 m E | 70
X05	22.20. 2024	12.00-15.00	22	1,4	SE	80	Aquila sp.	1	13.06	300	SW			03.11	1 km SE | 115
X05	22.20. 2024	12.00-15.00	23	1,4	SE	100	Falco tinnunculus	1	13.50	20	0	00.10			200 m W | 280

Annex 1.2 Observations with vantage points in September-November 2024, Power lines

Point №	Date	Time	Temperature	Wind speed, m/s	Wind direction	Cloudiness, %	Species	Bird count	Time of flight	Flight height, m	Flight direction	Band 1 (<20 m),m.s	Band 2 (20-50 m),m.s	Band 3 (>50 m),m.s	Note
OHL_VP_1/SE	23.10. 2024	10.15-13.15	10	2.5	NWW	100	Aquila chrysaetos / photo	1	10.15	0	—				1000 m / 57
OHL_VP_1/SE	23.10. 2024	10.15-13.15	11	2.8	NWW	80	Pterocles orientalis	4	10.57	50	NE		0.27		800 m / 118 R→L h=50m
OHL_VP_1/SE	23.10. 2024	10.15-13.15	11	3.0	NWW	80	Aquila chrysaetos / photo	1	11.07	0→300	NEE	0.10	3.15	0.46	1000 m / 57 RF
OHL_VP_1/SE	23.10. 2024	10.15-13.15	11	2.6	W	80	Aquilla sp. / photo	1	11.22	300→150 →300	SW		3.06	5.44	1500 m / 88 L→R h=300m
OHL_VP_1/SE	23.10. 2024	10.15-13.15	11	2.6	W	80	Aquilla sp. / photo	1	11.22	500	SW			7.15	2000 m / 88 L→R h=500m
OHL_VP_1/SE	23.10. 2024	10.15-13.15	12	2.3	W	70	Buteo rufinus / photo	1	11.48	40	—		6.14		500 m / 36 RF
OHL_VP_1/SE	23.10. 2024	10.15-13.15	12	2.3	W	70	Tadorna ferruginea / photo	2	11.54	100	NE		0.35		1000 m / 155 R→L h=100m
OHL_VP_1/SE	23.10. 2024	13.50-16.50	13	2.0	SWW	70	Falco tinnunculus/naumanni	1	13.56	20	NW	0.25			2000 m / 65
OHL_VP_1/SE	23.10. 2024	13.50-16.50	1.7	1.7	SWW	70	Circus sp. / photo	1	14.27	2	SE	3.16		OH	500 m / 288 L→R h=2m
OHL_VP_1/SE	23.10. 2024	13.50-16.50	1.5	1.5	SWW	70	Falco tinnunculus/naumanni / photo	1	14.40	50	SE		3.31		800 m / 68
OHL_VP_1/SE	19.11. 2024	08.45-11.45	2	0	—	70	—	—	—	—	—	—	—	—	—
OHL_VP_1/SE	19.11. 2024	12.00-15.00	7	1.5	NEE	30	Haliaeetus albicilla ad.+juv. / photo	2	12.09	80	SSW			2.05	500 m / 52 L→R h=80m
OHL_VP_1/SE	19.11. 2024	12.00-15.00	7	3.1	NEE	20	Circus sp. / photo	1	12.40	5-20	Hunting	0.43			500 m / 60 RF

OHL_VP _1/SE	19.11. 2024	12.00-15.00	7	3.5	NEE	10	Aquila nipalensis / photo	1	13.22	200	SW			2.15	2000 m / 125 L→R h=200m
OHL_VP _1/SE	19.11. 2024	12.00-15.00	7	3.0	NEE	10	Haliaeetus albicilla juv. / photo	1	13.27	150	SW			3.09	500 m / 71 L→R h=150m
OHL_VP _2/N	18.10. 2024	08.10-11.10	7	6.1	E	0	Buteo rufinus	2	09.15	100-150	W			0.48	2000 m N, R→L
OHL_VP _2/N	18.10. 2024	08.10-11.10	7	5.8	E	0	Aquila nipalensis	1	09.20	100-120	SW			1.01	200 m NE, R→L
OHL_VP _2/N	18.10. 2024	08.10-11.10	7	6.2	E	0	Aquila nipalensis	1	09.41	80-100	SW			3.18	2000 m NNE, R→L
OHL_VP _2/N	19.10. 2024	13.45-16.45	13	7.1	NE	10	raptor	1	14.07	100-200	NW			0.16	2000 m NEE ↑ S
OHL_VP _2/N	19.10. 2024	13.45-16.45	13	7.3	NE	10	raptor	1	14.09	100-200	NW			0.25	2000 m NE ↑ S
OHL_VP _2/N	19.10. 2024	13.45-16.45	13	6.8	NE	10	raptor	1	14.17	100-120	S			1.38	1000 m NW ↑ S
OHL_VP _2/N	20.11. 2024	08.30-11.30	5	2.7	SW	100	Circus sp.	1	09.11	-20	S	0.48			1700 m N ↑ S
OHL_VP _2/N	20.11. 2024	08.30-11.30	5	2.4	SW	100	Circus sp.	1	09.24	-20	SWW	0.31			1000 m NEE R→L
OHL_VP _2/N	20.11. 2024	11.30-14.30	4	4.8	SW	100	Haliaeetus albicilla	1	13.18	50+	SW			1.34	1500 m NE R→L
OHL_VP _2/N	20.11. 2024	11.30-14.30	4	5.1	SW	100	Haliaeetus albicilla	1	13.48	50+	SW			1.40	700 m NE R→L
OHL_VP _2/S	18.10. 2024	8.10-11.10	7	4.4	NEE	0	Aquilla sp.	1	9.03	100	N				2000 m W / 274
OHL_VP _2/S	18.10. 2024	8.10-11.10	7	3.6	NEE	0	Buteo rufinus / photo	1	9.13	100	SSW				2000 m NWW / 292
OHL_VP _2/S	18.10. 2024	8.10-11.10	7	3.6	NEE	0	Aquila nipalensis ? / photo	1	9.16	50	SSW				2000 m NW / 312
OHL_VP _2/S	18.10. 2024	8.10-11.10	7	4.1	NEE	0	Aquila nipalensis ? / photo	1	9.22	80	SSW			2.20	L→R h=80m
OHL_VP _2/S	18.10. 2024	8.10-11.10	7	4.7	NEE	0	Aquila nipalensis / photo	1	10.10	150	SWW			2.24	1000 m E / 96 L→R h=150m
OHL_VP _2/S	19.10. 2024	13.45-16.45	13	6.6	NEE	20	Buteo rufinus / photo	2	14.40	200→300	SSW			1.46	2000 m E / 80
OHL_VP _2/S	19.10. 2024	13.45-16.45	13	5,6	NEE	30	Aquila chrysaetos / photo	2	15.04	200→100	NW			7.43	2000 m SEE / 114
OHL_VP _2/S	19.10. 2024	13.45-16.45	13	6.7	NEE	30	Aquilla sp. / photo	1	15.20	200→300	W			4.17	1500 m SEE / 110 L→K h=250m
OHL_VP _2/S	19.10. 2024	13.45-16.45	12	6.0	NEE	40	Aquilla sp. / photo	1	16.07	10	SWW	3.52			2000 m SEE / 105 L→K h=10m
OHL_VP _2/S	19.10. 2024	13.45-16.45	12	6.0	NEE	40	Aquila nipalensis / photo	1	16.12	100	W			5.11	1000 m SEE / 112 L→R p=100m
OHL_VP _2/S	20.11. 2024	08.30-11.30	5	2.7	SW	100	Circus sp.	1	09.12	-20	S	0.37			on the point, ↑ S
OHL_VP _2/S	20.11. 2024	08.30-11.30	5	2.4	SW	100	Circus sp.	1	09.24	-20	SWW	2.24			on the point, L→R

OHL_VP_2/S	20.11.2024	11.30-14.30	4	4.8	SW	100	Haliaeetus albicilla	1	13.20	50+	SW			1.21	on the point, L→R
OHL_VP_2/S	20.11.2024	11.30-14.30	4	5.1	SW	100	Haliaeetus albicilla	1	13.49	50+	SW			1.37	on the point, L→R
OHL_VP_3/N	18.10.2024	08.30-11.30	10	5	NW	10	Chrociocephalus ridibundus	3	08.36	50	W				E to W
OHL_VP_3/N	18.10.2024	08.30-11.30	10	5	NW	10	Aquila nipalensis	1	08.38	0	N				Sitting on the pole, then fly away
OHL_VP_3/N	18.10.2024	08.30-11.30	9	7,2	W	10	Aquila sp.	2	09.06	150	W		01.56		2 km N | 359 | E to W
OHL_VP_3/N	18.10.2024	08.30-11.30	10	3,6	W	20	Aquila chrysaetos	1	09.53	20	E				500 m NW | 323 | W to E
OHL_VP_3/N	18.10.2024	08.30-11.30	10	4	W	20	Falco tinnunculus	1	11.14	10	E				50 m NW | 322 | W to E
OHL_VP_3/N	19.10.2024	13.30-16.30	14	5,5	W	30	Aquila nipalensis	1	13.54	500	W			02.25	NE to W
OHL_VP_3/N	19.10.2024	13.30-16.30	14	5	W	30	Aquila sp.	1	14.12	800	W			01.15	NE to W
OHL_VP_3/N	19.10.2024	13.30-16.30	13	5,2	W	40	Aquila heliaca	1	14,48	500	W			02.08	E to W
OHL_VP_3/N	19.10.2024	13.30-16.30	12	5,8	W	40	Aquila nipalensis	1	15.00	800	SW			01.52	500 m N | 353 | N to SW
OHL_VP_3/N	19.10.2024	13.30-16.30	12	4,3	SW	40	Buteo rufinus	1	15.49	200	W		01.13		500 m NE | 24 | E to W
OHL_VP_3/N	19.10.2024	13.30-16.30	12	6,6	SW	40	Accipiter gentilis	1	16.00	150	SW		01.34		E to SW
OHL_VP_3/N	20.11.2024	08.45-11.45	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_3/N	20.11.2024	11.45-14.45	5	2	SW	80	Falco tinnunculus/naumanni	1	13.19	20-40	S		2.30		on the point, ↑ S
OHL_VP_4/N	18.10.2024	14.00-17.00	17	3,7	W	10	Aquila heliaca	1	14.05	150	SW		00.31		NE to SW
OHL_VP_4/N	18.10.2024	14.00-17.00	15	3,5	W	10	Aquila nipalensis	1	14.20	200	W		03.23		1 km NE | 24 | E to W
OHL_VP_4/N	18.10.2024	14.00-17.00	14	4	W	10	Falco tinnunculus	1	14.45	5		00.47			200 m N | 5
OHL_VP_4/N	18.10.2024	14.00-17.00	15	3,9	W	10	Aquila nipalensis	1	14.55	500	W			03.05	NE to W
OHL_VP_4/N	18.10.2024	14.00-17.00	14	4,5	W	10	Aquila heliaca	1	15.02	500	W			03.58	500 m N | 3 | N to W
OHL_VP_4/N	18.10.2024	14.00-17.00	14	4,5	W	10	Clanga clanga	3	15.02	500	W				
OHL_VP_4/N	18.10.2024	14.00-17.00	14	4,5	W	10	Aquila nipalensis	3	15.03	500	W				
OHL_VP_4/N	18.10.2024	14.00-17.00	14	3,2	W	10	Falco tinnunculus	1	15.17	100	W		00.54		100 m NE | 22 | NE to W
OHL_VP_4/N	18.10.2024	14.00-17.00	14	3,9	W	10	Aquila nipalensis	1	15.28	700	W			04.11	500 m N | 15 | E to W

OHL_VP_4/N	18.10.2024	14.00-17.00	14	3,9	W	10	Buteo rufinus	1	15.32	200	SW		00.58		500 m N | 15 | E to W
OHL_VP_4/N	18.10.2024	14.00-17.00	14	3,9	W	10	Aquila heliaca	2	15.34	700	W			02.08	500 m N | 15 | E to W
OHL_VP_4/N	18.10.2024	14.00-17.00	13	3,7	W	10	Buteo rufinus	1	15.45	10	W	03.34			200 m N | 347
OHL_VP_4/N	18.10.2024	14.00-17.00	12	3,3	W	30	Falco subbuteo	1	16.19	20	SW		00.39		100 m N | 350 | E to W
OHL_VP_4/N	18.10.2024	14.00-17.00	11	1,9	W	30	Buteo rufinus	2	16.38	200	W		02.36		E to W
OHL_VP_4/N	19.10.2024	08.00-11.00	12	4,4	W	20	Falco tinnunculus	1	08.58	50	S		01.17		50 m W | 275 | N to S
OHL_VP_4/N	19.10.2024	08.00-11.00	13	4,5	W	20	Buteo rufinus	1	09.20	100	SW		01.57		200 m E | 111 | E to SW
OHL_VP_4/N	19.10.2024	08.00-11.00	15	6,7	SW	30	Aquila nipalensis	2	10.47	300	W			02.43	500 m N | 350 | NE to W
OHL_VP_4/N	20.11.2024	09.00-15.00	9	1,6	E	40	Aquila heliaca	2	13.52	200	W		08.37		E to W
OHL_VP_4/N	20.11.2024	09.00-15.00	9	1,6	E	40	Aquila sp.	1	13.59	20	W				сидит
OHL_VP_4/N	20.11.2024	09.00-15.00	9	1,6	E	40	Aquila nipalensis	1	14.00	100	W		02.23		300 m E | 70 | E to W
OHL_VP_4/N	20.11.2024	09.00-15.00	9	1,6	E	40	Aquila sp.	4	14.15	50-500	W		00.50	04.24	500 m N | 345 | E to W
OHL_VP_4/N	20.11.2024	09.00-15.00	9	1,6	E	40	Aquila sp.	2	14.20	500	W			04.34	2 km NE | 35
OHL_VP_5/NE	18.10.2024	14.15-17.15	11	4.7	NEE	0	raptor	1	16.04	50-100	SWW		0.28		500 m S ↑ N
OHL_VP_5/NE	18.10.2024	14.15-17.15	10	4.1	NEE	0	raptor	1	16.18	100-200	SW		1.08		900 m S ↑ N
OHL_VP_5/NE	19.10.2024	08.10-11.10	9	4.5	NE	0	Pterocles orientalis	9	08.25	70-100	S			0.45	500 m ↑ SW
OHL_VP_5/NE	19.10.2024	08.10-11.10	9	3.9	NE	0	Circus sp.	1	08.43	20-50	SW		0.20		500 m ↑ SW
OHL_VP_5/NE	19.10.2024	08.10-11.10	9	4	NE	0	Haliaeetus albicilla	2	09.03	200+	SWW			4.06	2000 m NNE, out of corridor
OHL_VP_5/NE	19.10.2024	08.10-11.10	9	3.5	NE	0	Haliaeetus albicilla	1	09.05	200+	SWW			4.16	2000 m NNE, out of corridor
OHL_VP_5/NE	19.10.2024	08.10-11.10	9	3.4	NE	0	Tadorna ferruginea	12	09.16	50-100	SWW			0.31	500 m NE ↑ SW
OHL_VP_5/NE	19.10.2024	08.10-11.10	9	3.6	NE	0	Haliaeetus albicilla	1	09.21	50-100	SW			1.49	1300 m NEE↑ SW
OHL_VP_5/NE	19.10.2024	08.10-11.10	10	3.5	NE	0	Circus sp.	1	09.25	20-	SW	0.15			400 NE ↑ SW
OHL_VP_5/NE	19.10.2024	08.10-11.10	10	3.3	NE	0	Haliaeetus albicilla	1	10.16	50-100	SWW			3.41	2000 NW out of corridor
OHL_VP_5/NE	19.10.2024	08.10-11.10	11	3.8	NE	0	raptor	1	11.01	100-150	SW			0.14	2000 m N out of corridor

OHL_VP_5/NE	19.10.2024	08.10-11.10	11	3,1	NE	0	raptor	1	11.07	200+	SWW			0.23	2000 m N out of corridor
OHL_VP_5/NE	19.10.2024	08.10-11.10	11	3	NE	0	Haliaeetus albicilla	1	11.10	100-120	SW			0.34	600 m NE ↑ SW
OHL_VP_5/SW	18.10.2024	14.15-17.15	11	4.2	NEE	0	Aquila nipalensis / photo	1	14.58	70	SWW			1.36	300 m NE / 40 ↑↑ SW
OHL_VP_5/SW	18.10.2024	14.15-17.15	11	3.3	NEE	0	Aquila chrysaetos / photo	1	16.04	200	SW			2.15	1500 m NW / 310
OHL_VP_5/SW	18.10.2024	14.15-17.15	11	3.0	NEE	0	Aquila nipalensis ? / photo	1	16.18	150	SW			1.08	1500 m NW / 310
OHL_VP_5/SW	19.10.2024	8.10-11.10	9	2.3	SEE	0	Buteo rufinus	1	8.39	80-200	SW			2.27	400 m W / 275 ↑↑SW
OHL_VP_5/SW	19.10.2024	8.10-11.10	9	2.3	SEE	0	Circus sp. / photo	1	8.44	60→150	SW			2.49	50 m W / 275 ↑↑SW
OHL_VP_5/SW	19.10.2024	8.10-11.10	9	2.9	SEE	10	Circaetus gallicus / photo	2	9.13	100	SW			22.18	1500 m W / 275 ↑↑SW
OHL_VP_5/SW	19.10.2024	8.10-11.10	9	2.5	SEE	10	Tadorna ferruginea / photo	12	9.21	150				0.34	100 m W / 275 L→R h=150m
OHL_VP_5/SW	19.10.2024	8.10-11.10	9	3.4	SEE	10	Circus sp. / photo	1	9.26	5→20	SW	3.21			200 m W / 280 ↑↑SW
OHL_VP_5/SW	19.10.2024	8.10-11.10	9	4.0	SEE	10	Circaetus gallicus	1	10.01	100	NE			4.38	2000 m W / 280
OHL_VP_5/SW	19.10.2024	8.10-11.10	15	2.1	SEE	5	Aquilla sp.	1	10.31	150	SW			2.11	2000 m S / 128
OHL_VP_5/SW	19.10.2024	8.10-11.10	10	3.3	SEE	5	Falco tinnunculus/naumanni	1	10.58	50	Random flight		3.12		700 m SWW / 242 hunting
OHL_VP_5/SW	19.10.2024	8.10-11.10	10	3.5	SEE	5	Aquila nipalensis	1	10.09	500	SW			0.56	500 m W / 280
OHL_VP_5/SW	20.11.2024	9.50-12.50	8	1.6	W	100	Buteo rufinus	1	11.05	0	—				1200 m / 235
OHL_VP_5/SW	20.11.2024	9.50-12.50	8	1.4	W	100	Falco tinnunculus/naumanni	1	11.12	40-50	RF		1.54		400 m / 220 RF
OHL_VP_5/SW	20.11.2024	9.50-12.50	8	1.4	W	100	Ardea alba / photo	1	11.19	100	RF			1.14	1800 m / 225 RF
OHL_VP_5/SW	20.11.2024	9.50-12.50	8	1.7	W	100	Falco tinnunculus/naumanni	1	11.30	50→40	RF		0.53		500 m / 225 RF R→landed on a pylon
OHL_VP_5/SW	20.11.2024	9.50-12.50	8	0.5	NWW	90	Falco tinnunculus/naumanni	1	12.48	2-50	RF	5.10			400 m / 225 RF, R→L h=15m
OHL_VP_5/SW	20.11.2024	13.20-16.20	8	0.5	SSW	10	Aquilla sp.	1	15.57	50	SEE		1.06		700 m / 245 R→pylon
OHL_VP_6/N	14.11.2024	09.20-12.20	-3	2.1	SW	80	Aquila nipalensis	1	09.34	20-50	SW		0.24		400 m NW ↑ S
OHL_VP_6/N	14.11.2024	09.20-12.20	-3	2.8	SW	80	Aquila nipalensis	1	09.43	20-50	S		0.29		300 m N L→R
OHL_VP_6/N	14.11.2024	09.20-12.20	-3	2.5	SW	80	Circus sp.	1	09.41	50-100	SW		0.48		300 m NNW ↑ S
OHL_VP_6/N	14.11.2024	09.20-12.20	-3	2.8	SW	80	Syrrhaptes paradoxus	3	10.34	20-50	SW		0.24		400 m NNW ↑ S

OHL_VP_6/N	14.11.2024	09.20-12.20	-2	2.1	SW	60	Circus sp.	1	11.11	40	SWW	0.05			40 m NW ↑ S
OHL_VP_6/N	14.11.2024	09.20-12.20	-2	2.9	SW	70	Circus sp.	1	11.31	20-	SWW	0.42			60 m N ↑ S
OHL_VP_6/N	14.11.2024	09.20-12.20	-2	2.8	SW	30	raptor	1	12.22	200+	SSE			1.31	2000 m NE ↑ S
OHL_VP_6/SW	24.10.2024	9.40-12.40	10	3.9	SW	100	Buteo rufinus	1	10.10	0	—				1500 m / 255 Sitting
OHL_VP_6/SW	24.10.2024	9.40-12.40	13	2.8	SW	90	Aquila nipalensis / photo	1	11.15	150→500	SW		4.36	3.33	1000 m / 215
OHL_VP_6/SW	24.10.2024	9.40-12.40	13	2.8	SW	90	Buteo rufinus	1	11.24	150→250	Circling		1.05	3.28	1000 m / 254
OHL_VP_6/SW	24.10.2024	9.40-12.40	12	3.0	SW	100	Aquila nipalensis / photo	2	11.37	150→500	SSW		0.47	6.45	1000 m / 214
OHL_VP_6/SW	24.10.2024	9.40-12.40	12	3.1	SW	100	Buteo rufinus / photo	1	11.57	50-150	NE		5.15		1500 m / 250
OHL_VP_6/SW	24.10.2024	9.40-12.40	12	4.5	SW	95	Aquila nipalensis / photo	1	12.27	100-50	NE		6.29		1500 m / 230
OHL_VP_6/SW	24.10.2024	9.40-12.40	12	5.2	SW	90	Circus sp. / photo	1	12.36	500	SSE			1.45	Over the VP
OHL_VP_6/SW	24.10.2024	9.40-12.40	13	4.6	SSW	90	Aquila nipalensis / photo	1	13.21	50-200	SW		17.05	11.03	1000 m / 110 L→R h=50m, RF
OHL_VP_6/SW	24.10.2024	9.40-12.40	12	4.9	SW	95	Buteo rufinus	1	14.19	40-50	SE		2.35		300 m / 313 R→L h=40m
OHL_VP_6/SW	24.10.2024	9.40-12.40	12	4.9	SW	95	Aquilla sp. / photo	1	14.36	50→0	NWW	0.06	3.10		1000 m / 208
OHL_VP_6/SW	24.10.2024	9.40-12.40	12	5.3	SW	95	Aquilla sp. / photo	1	15.16	0→30→0	S		1.58		1000 m / 300
OHL_VP_6/SW	14.11.2024	9.20-12.20					Haliaeetus albicilla / photo	1	9.44	50→0					1000 m / 305
OHL_VP_6/SW	14.11.2024	9.20-12.20	–3	2.1	SW	80	Aquila nipalensis / photo	1	9.44	50→100	S		0.05	0.44	Over the VP R→L h=50m
OHL_VP_6/SW	14.11.2024	9.20-12.20	–3	2.4	SW	85	Circus sp. ♂ / photo	1	9.47	50→100	SW		1.22		300 m / 310 ↑↑ SW
OHL_VP_6/SW	14.11.2024	9.20-12.20	–3	2.8	SW	80	Pterocles orientalis / photo	3	9.54	40	SW		0.48		400 m / 310 ↑↑ SW
OHL_VP_6/SW	14.11.2024	9.20-12.20					Aquila heliaca / photo	1	10.25	200	SW				1500 m / 290
OHL_VP_6/SW	14.11.2024	9.20-12.20	–2	3.0	SW	60	Circus sp. ♂	1	11.12	1-2	SWW	0.36			100 m / 310 ↑↑ SW
OHL_VP_6/SW	14.11.2024	9.20-12.20					Aquilla sp.	1	11.15	300	SW				2500 m / 298
OHL_VP_6/SW	14.11.2024	9.20-12.20	–2	2.9	SW	80	Circus sp. ♂	1	11.31	1-2	SWW	0.57			150 m / 310 ↑↑ SW
OHL_VP_6/SW	14.11.2024	9.20-12.20					Haliaeetus albicilla / photo	1	11.37	200	SW				1500 m / 295
OHL_VP_6/SW	14.11.2024	9.20-12.20					Aquilla sp.	1	12.12		SW				2500 m / 300

OHL_VP_6/SW	14.11.2024	9.20-12.20	–2	3.0	SW	20	Aquila nipalensis / photo	1	12.13	150	SSW		3.40		600 m / 142 ↑↑ SW
OHL_VP_6/SW	14.11.2024	9.20-12.20	–2	2.8	SW	20	Aquila heliaca / photo	1	12.24	250	SW			1.12	100 m / 130 ↑↑ SW
OHL_VP_6/SW	14.11.2024	12.50-15.50	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_7/N	24.10.2024	09.00-12.00	9	4.2	SW	100	Circus sp.	1	10.21	20-	W	1.34			1000 m E L→R
OHL_VP_7/N	24.10.2024	09.00-12.00	10	3.1	SW	100	raptor	1	11.18	50-70	SW			2.16	1000 m NE L→R
OHL_VP_7/N	14.11.2024	08.50-11.50	-3	3	SW	70	Circus sp.	1	09.36	3	SW	0.44			400 m NNW ↑ S
OHL_VP_7/N	14.11.2024	08.50-11.50	-3	3	SW	70	Aquila nipalensis	1	09.57	100	S		3.50		500 m E L→R
OHL_VP_7/N	14.11.2024	08.50-11.50	-3	2	SW	70	Haliaeetus albicilla	1	09.59	100	E		2.28		500 m E L→R
OHL_VP_7/N	14.11.2024	11.50-14.50	—	—	—	—	—	—	—	—	—	—	—	—	—

Annex 2.1 Observations with vantage points in December 2024 – February 2025, Project area

Point №	Date	Time	Temperature	Wind speed, m/s	Wind direction	Cloudiness, %	Species	Bird count	Time of flight	Flight height, m	Flight direction	Band 1 (<20 m),m.s	Band 2 (20-200 m),m.s	Band 3 (>200 m),m.s	Note
M04	20.12.2024	09.40-10.40	-5	1,5	S	100	Buteo lagopus	1	09.44	Sitting	Sitting	—	—	—	3000 m/ 14
M04	19.01.2025	09.10-10.10	—	—	—	—	—	—	—	—	—	—	—	—	—
M04	11.02.2025	10.58-11.58	—	—	—	—	—	—	—	—	—	—	—	—	—
M05	20.12.2024	10.00-11.00	1	5,4	SWW	100	Aquila chrysaetos	1	10.21	50	S	—	—	—	2300 m/ 145, out of Radius
M05	20.12.2024	10.00-11.00	0	7,6	SWW	100	Aquila chrysaetos	3	10.29	50-150	Circling	—	—	—	4000 m/ 152,out of Radius
M05	20.12.2024	10.00-11.00	0	7,5	SWW	100	Aquila chrysaetos	1	10.37	50-150	Circling	—	—	—	5000 m/ 152, out of Radius
M05	20.12.2024	10.00-11.00	0	7,2	SWW	90	Aquila chrysaetos	1	10.46	50	Circling	—	—	—	4000 m/ 152, out of Radius
M05	20.12.2024	10.00-11.00	0	6,3	SWW	80	Aquila chrysaetos	1	10.49	50-100	Circling	—	—	—	3000 m/ 162, out of Radius
M05	19.01.2025	09.25-10.25	—	—	—	—	—	—	—	—	—	—	—	—	—
M05	11.02.2025	11.10-12.10	—	—	—	—	—	—	—	—	—	—	—	—	—
M06	20.12.2024	11.25-12.25	—	—	—	—	—	—	—	—	—	—	—	—	—
M06	19.01.2025	10.50-11.50	—	—	—	—	—	—	—	—	—	—	—	—	—

M06	11.02.2025	13.20-14.20	—	—	—	—	—	—	—	—	—	—	—	—	—
M07	19.01.2025	13.45-14.45	—	—	—	—	—	—	—	—	—	—	—	—	—
M07	11.02.2025	16.12-17.12	-4	2,8	NEE	0	Buteo lagopus	1	17.05	40	NW	—	—	—	1000 m/ 38, out of Radius
M08	20.12.2024	13.10-14.10	—	—	—	—	—	—	—	—	—	—	—	—	—
M08	19.01.2025	12.25-13.25	—	—	—	—	—	—	—	—	—	—	—	—	—
M08	11.02.2025	14.52-15.52	—	—	—	—	—	—	—	—	—	—	—	—	—
M09	20.12.2024	13.58-14.58	—	—	—	—	—	—	—	—	—	—	—	—	—
M09	19.01.2025	14.20-15.20	—	—	—	—	—	—	—	—	—	—	—	—	—
M09	11.02.2025	16.30-17.30	—	—	—	—	—	—	—	—	—	—	—	—	—
M11	20.12.2024	12.10-13.10	-1	6,8	W	95	Buteo sp.	1	12.12	50	NE		0.55		500 m/ 118
M11	20.12.2024	12.10-13.10	-3	6,9	W	95	Aquila chrysaetos	1	12.24	200-300	NEE			0.31	2000 m/ 16
M11	20.12.2024	12.10-13.10	-3	6,7	W	95	Aquila chrysaetos	1	12.27	150-10	NEE	0.13	0.37		1700 m/ 45
M11	20.12.2024	12.10-13.10	-3	5,6	W	100	Haliaeetus albicilla	1	12.38	50-100	SSW		1.04		1500m/ 81
M11	20.12.2024	12.10-13.10	-4	5	W	100	Aquila chrysaetos	1	13.00	30	Circling		0.40		2000 m/ 88
M11	20.12.2024	12.10-13.10	-4	5,4	W	100	Aquila chrysaetos	1	13.03	50	NW		5.18		1500 m/ 60
M11	19.01.2025	11.20-12.20	2	1,9	NEE	100	Raptor	1	11.21	30-60	SW		0.30		2000 m/ 91
M11	19.01.2025	11.20-12.20	2	2,1	NEE	100	Falco tinnunculus	1	11.23	40	SWW		0.14		On VP
M11	11.02.2025	13.35-14.35	-3	5,5	SW	20	Buteo sp.	1	13.50	100-150	Circling, NE		4.16		2000 m/ 30
M11	11.02.2025	13.35-14.35	-3	5,5	SW	20	Aquila sp.	1	13.55	100-150	Circling, NW	—	—	—	2000 m/ 81, out of Radius
M12	21.12.2024	14.20-15.20	5	2.5	SW	100	Haliaeetus albicilla	1	14.25	300-400	SW			2.25	on VP
M12	21.12.2024	14.20-15.20	5	2.5	SW	100	Haliaeetus albicilla	1	14.30	50	SW		2.30		400 m/ 98
M12	20.01.2025	14.30-15.30	—	—	—	—	—	—	—	—	—	—	—	—	—
M12	12.02.2025	14.05-15.05	-3	4,1	W	100	Aquila chrysaetos	1	14.05	50-30	S		2.00		800 m/ 225
M13	19.01.2025	12.42-13.42	—	—	—	—	—	—	—	—	—	—	—	—	—

M13	11.02.2025	14.55-15.55	—	—	—	—	—	—	—	—	—	—	—	—	—
M14	21.12.2024	15.05-16.05	—	—	—	—	—	—	—	—	—	—	—	—	—
M14	20.01.2025	15.40-16.40	—	—	—	—	—	—	—	—	—	—	—	—	—
M14	12.02.2025	14.15-15.15	—	—	—	—	—	—	—	—	—	—	—	—	—
M15	21.12.2024	13.05-14.05	—	—	—	—	—	—	—	—	—	—	—	—	—
M15	21.12.2024	13.05-14.05	—	—	—	—	—	—	—	—	—	—	—	—	—
M15	20.01.2025	13.10-14.10	—	—	—	—	—	—	—	—	—	—	—	—	—
M15	12.02.2025	12.45-13.45	—	—	—	—	—	—	—	—	—	—	—	—	—
M17	21.12.2024	13.40-14.40	—	—	—	—	—	—	—	—	—	—	—	—	—
M17	20.01.2025	14.20-15.20	2	3,2	S	80	Buteo lagopus	1	14.25	70-20	SW		2.48		800 m/ 130
M17	20.01.2025	14.20-15.20	2	1,1	S	90	Circus sp.	1	15.09	15-20	E	2.12			500 m/ 0
M17	20.01.2025	14.20-15.20	2	0,8	S	90	Circus sp.	1	15.14	5-15	Circling, NNE	3.43			500 m/ 0
M17	12.02.2025	12.45-13.45	—	—	—	—	—	—	—	—	—	—	—	—	—
M19	21.12.2024	11.40-12.40	4	—	—	50	Aquila sp.	1	11.50	100-150	N	—	—	—	1000 m/ 85, out of Radius
M19	20.01.2025	11.40-12.40	5	1.5	E	80	Buteo sp.	1	11.51	100-150	NE	—	—	—	4000 m/ 91, out of Radius
M19	20.01.2025	11.40-12.40	5	3.2	E	80	Circus sp.	1	12.12	2-10	NEE	—	—	—	3000 m/ 44, out of Radius
M19	12.02.2025	11.16-12.16	-4	3,7	SW	95	Aquila chrysaetos	1	11.16	30-80	NW		3.17		500 m/ 109
M19	12.02.2025	11.16-12.16	-4	2,6	SW	75	Haliaeetus albicilla	1	11.42	50-70	NNW		3.02		1500 m/ 167
M22	21.12.2024	10.20-11.20	—	—	—	—	—	—	—	—	—	—	—	—	—
M22	20.01.2025	10.20-11.20	—	—	—	—	—	—	—	—	—	—	—	—	—
M22	12.02.2025	10.06-11.06	—	—	—	—	—	—	—	—	—	—	—	—	—
M24	21.12.2024	11.50-12.50	—	—	—	—	—	—	—	—	—	—	—	—	—
M24	20.01.2025	12.50-13.50	3	2,7	S	95	Circus sp.	1	13.44	10-15	NWW	0.15			1000 m/ 195
M24	12.02.2025	11.20-12.20	—	—	—	—	—	—	—	—	—	—	—	—	—

M26	21.12.2024	10.10-11.10	-3	1	NNW	30	Buteo lagopus	1	10.19	50-100	SWW	0.15	2.59		400 m/ 105
M26	21.12.2024	10.10-11.10	-3	1,4	NNW	30	Buteo lagopus	1	10.21	Sitting	Sitting	—	—	—	1000 m/ 229
M26	21.12.2024	10.10-11.10	-4	1,5	NNW	15	Buteo lagopus	1	10.45	100-150	SW	—	—	—	4000 m/ 130, out of Radius
M26	20.01.2025	11.30-12.30	—	—	—	—	—	—	—	—	—	—	—	—	—
M26	12.02.2025	9.55-10.55	-4	2,4	NE	100	Raptor	1	10.49	100	Circling, E		2.14		1000 m/ 200

Annex 2.2 Observations with vantage points in December 2024 – February 2025, Power lines

Point №	Date	Time	Temperature	Wind speed, m/s	Wind direction	Cloudiness, %	Species	Bird count	Time of flight	Flight height, m	Flight direction	Band 1 (<20 m),m.s	Band 2 (20-50 m),m.s	Band 3 (>50 m),m.s	Note
OHL_VP_2/N	22.12.2024	09.30-10.30	-8	2,2	SW	90	Aquila chrysaetos	1	09.32	50	SW		1.25		1000 m/ 290
OHL_VP_2/N	21.01.2025	09.35-10.35	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_2/N	13.02.2025	08.55-09.55	-3	—	—	0	Aquila sp.	2	09.12	50	—	—	—	—	1700 m/ 358, sitting on pole
OHL_VP_2/S	22.12.2024	09.30-10.30	-8	2,2	SW	90	Haliaeetus albicilla	1	09.32	40	SSW		1.53		On VP, L→R
OHL_VP_2/S	21.01.2025	09.35-10.35	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_2/S	13.02.2025	08.55-09.55	-3	2,5	NE	0	Aquila chrysaetos	1	09.52	30	Random flight			0.40	1700 m/ 24
OHL_VP_2/S	13.02.2025	08.55-09.55	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_3/N	22.12.2024	09.45-10.45	-12	1,2	SW	50	Haliaeetus albicilla	1	09.47	300	W	—	—	—	2000 m/ 311, out of Radius
OHL_VP_3/N	22.12.2024	09.45-10.45	-12	1,2	SW	50	Falco cherrug	1	10.00	70	Sitting, NE		1.12		500 m/ 175
OHL_VP_3/N	21.01.2025	09.50-10.50	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_3/N	13.02.2025	09.05-10.05	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_4/N	22.12.2024	11.20-12.20	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_4/N	21.01.2025	11.30-12.30	4	2,4	S	90	Haliaeetus albicilla	1	11.42	100	Random flight, SW	—	—	—	2000 m/ 272, out of Radius
OHL_VP_4/N	13.02.2025	10.45-11.45	7	1,2	N	10	Haliaeetus albicilla	1	11.05	200	SE			1.05	300 m/ 5, RF
OHL_VP_5/NE	22.12.2024	12.00-13.00	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_	21.01.2	11.55-	—	—	—	—	—	—	—	—	—	—	—	—	—

5/NE	025	12.55													
OHL_VP_5/NE	13.02.2025	11.22-12.22	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_5/SW	22.12.2024	12.00-13.00	-8	—	—	40	Haliaeetus albicilla	1	12.16	20-40	SSE		0.33		300 m/ 204
OHL_VP_5/SW	22.12.2024	12.00-13.00	-8	—	—	40	Falco tinnunculus	1	12.10	Sitting	—	—	—	—	400 m/ 152, out of Radius
OHL_VP_5/SW	22.12.2024	12.00-13.00	-8	—	—	40	Aquila sp.	1	12.23	20-50	NW		0.11		1500 m/ 202
OHL_VP_5/SW	22.12.2024	12.00-13.00	-8	—	—	40	Aquila sp.	1	12.38	>50	SE	—	—	—	2000 m/ 202, out of Radius
OHL_VP_5/SW	22.12.2024	12.00-13.00	-8	—	—	40	Aquila sp.	1	12.41	100-150	Random flight, SE	—	—	—	3000 m/ 194, out of Radius
OHL_VP_5/SW	22.12.2024	12.00-13.00	-7	—	—	40	Falco tinnunculus	1	12.58	30	Random flight		0.10		1000 m/ 200
OHL_VP_5/SW	21.01.2025	11.55-12.55	9	—	—	20	Aquila heliaca	1	12.03	50-150	Random flight	—	—	—	1500 m/ 265, out of Radius
OHL_VP_5/SW	21.01.2025	11.55-12.55	9	—	—	20	Aquila heliaca	1	12.05	50-150	Random flight	—	—	—	1500 m/ 265, out of Radius
OHL_VP_5/SW	21.01.2025	11.55-12.55	9	1,2	E	20	Aquila sp.	1	12.49	50	Random flight	—	—	—	1800 m/ 245, out of Radius
OHL_VP_5/SW	21.01.2025	11.55-12.55	9	1,2	E	20	Aquila sp.	1	12.50	50	Random flight	—	—	—	1500 m/ 230, out of Radius
OHL_VP_5/SW	13.02.2025	11.22-12.22	2	—	—	5	raptor	1	11.55	50-300	SE			1.45	1500 m/253, R→L

Annex 2.3 Observations with vantage points in December 2024 – February 2025, En-route observation

Species	Date	Time	Count	Coordinates
Ovis ammon	20.12.2024	12.54	10	N44.57893 E73.37457
Ovis ammon	20.12.2024	08.51	7	N44.61836 E73.39842
Raptor (bird)	20.12.2024	09.32	1	N44.51087 E73.52670
Vulpes vulpes	20.12.2024	09.34	1	N44.53324 E73.48825
Melanocorypha yeltoniensis	20.12.2024	09.51	50-70	N44.55807 E73.45516
Ovis ammon	20.12.2024	11.13	14	N44.65541 E73.41589
Parus major	20.12.2024	11.30	14	N44.83845 E73.24554
Falco tinnunculus	20.12.2024	11.39	1	N44.83732 E73.24741
Vulpes vulpes	20.12.2024	11.43	1	N44.77467 E73.24222
Aquila chrysaetos	20.12.2024	11.54	1	N44.42302 E73.71679
Ovis ammon	20.12.2024	13.34	10	N44.55761 E73.47197

Ovis ammon	20.12.2024	13.41	4	N44.60008 E73.42328
Aquila sp.	20.12.2024	15.37	1	N44.65572 E73.76991
Asio flammeus	20.12.2024	15.41	1	N44.55546 E73.57477
Vulpes vulpes	20.12.2024	15.49	1	N44.55546 E73.57477
Alectoris chukar	20.12.2024	15.55	60-70	N44.52535 E73.53224
Alectoris chukar	20.12.2024	15.56	31	N44.52049 E73.52969
Haliaeetus albicilla	20.12.2024	16.03	1	N44.55255 E73.46377
Raptor (bird)	20.12.2024	16.06	1	N44.57978 E73.42335
Ovis ammon	20.12.2024	08.51	10	N44.57201 E73.43146
Raptor (bird)	20.12.2024	08.51	1	N44.60383 E73.40333
Gazella subgutturosa	20.12.2024	09.25	2	N44.62355 E73.44575
Gazella subgutturosa	20.12.2024	09.35	4	N44.64299 E73.47688
Falco tinnunculus	20.12.2024	11.08	1	N44.68381 E73.48937
Ovis ammon	20.12.2024	12.37	3	N44.68962 E73.49004
Gazella subgutturosa	20.12.2024	13.02	1	N44.70492 E73.49448
Athene noctua	20.12.2024	15.27	1	N44.72274 E73.49939
Alectoris chukar	20.12.2024	15.37	23	N44.72458 E73.49951
Parus major	20.12.2024	15.55	6	N44.67447 E73.48892
Circus sp.	20.12.2024	15.55	1	N44.76219 E73.54128
Buteo sp.	20.12.2024	16.07	1	N44.83976 E73.35010
Falco tinnunculus	20.12.2024	16.21	1	N44.83819 E73.27278
Falco tinnunculus	20.12.2024	16.31	1	N44.76748 E73.22964
Falco tinnunculus	21.12.2024	09.09	1	N44.83378 E73.25253
Aquila sp.	21.12.2024	09.19	1	N44.83408 E73.25235
Parus major	21.12.2024	13.10	7	N44.83420 E73.25235
Buteo lagopus	21.12.2024	12.55	1	N44.76632 E73.24098
Pica pica	21.12.2024	12.57	1	N44.76632 E73.24098
Buteo lagopus	21.12.2024	12.58	1	N44.52168 E73.72086
Aquila chrysaetos	21.12.2024	13.14	2	N44.37885 E73.71420
Buteo lagopus	21.12.2024	13.14	1	N44.00763 E73.54940
Aquila nipalensis	21.12.2024	08.55	1	N44.65832, E73.77400

Eremophila alpestris	21.12.2024	09.02	9	N44.65832, E73.77400
Buteo lagopus	21.12.2024	09.02	1	N44.56305, E73.58887
Asio flammeus	21.12.2024	12.55	1	N44.55541, E73.57566
Alectoris chukar	21.12.2024	12.55	19	N44.53982, E73.47958
Alectoris chukar	21.12.2024	15.44	28	N44.56114, E73.45686
Coturnix coturnix	21.12.2024	16.10	1	N44.61225, E73.41654
Parus major	22.12.2024	09.07	7	N44.67085, E73.49362
Falco tinnunculus	22.12.2024	10.44	1	N44.68320, E73.48928
Alectoris chukar	22.12.2024	11.51	18	N44.72231, E73.49938
Athene noctua	22.12.2024	09.01	1	N44.72231, E73.49938
Circus cyaneus	22.12.2024	09.04	1	N44.76198, E73.54114
Athene noctua	22.12.2024	09.23	1	N44.70158, E73.66665
Athene noctua	22.12.2024	11.01	1	N44.67597, E73.77233
Aquila sp.	19.01.2025	11.25	1	N44.80734, E73.44322
Alauda leucoptera	19.01.2025	10.39	8	N44.82934, E73.40167
Eremophila alpestris	19.01.2025	10.48	11	N44.82934, E73.40167
Alauda leucoptera	19.01.2025	10.55	20	N44.71879, E73.39427
Melanocorypha yeltonisensis	19.01.2025	14.03	44	N44.71879, E73.39427
Athene noctua	19.01.2025	11.04	1	N44.72428, E73.49953
Athene noctua	19.01.2025	12.27	1	N44.70158, E73.66665
Buteo lagopus	19.01.2025	08.23	1	N44.53591, E73.75363
Buteo lagopus	19.01.2025	10.20	1	N44.52247, E73.72297
Alectoris chukar	19.01.2025	15.50	48	N44.43016, E73.71503
Alauda leucoptera	20.01.2025	10.41	15	N44.26065, E73.73172
Melanocorypha yeltonisensis	20.01.2025	10.44	12	N44.66282, E73.81631
Alectoris chukar	20.01.2025	12.37	43	N44.52252, E73.52977
Melanocorypha yeltonisensis	20.01.2025	16.18	33	N44.66191, E73.81978
Melanocorypha yeltonisensis	20.01.2025	17.00	31	N44.73726, E73.47218
Buteo rufinus	21.01.2025	09.30	1	N44.66290, E73.84860
Alauda leucoptera	11.02.2025	10.44	12	44.59037, 73.66131
Alectoris chukar	11.02.2025	12.32	38	44.52003, 73.52981

Haliaeetus albicilla	11.02.2025	12.32	1	44.52003, 73.52981
Asio flammeus	11.02.2025	13.04	1	44.52349, 73.50244
Asio flammeus	11.02.2025	16.10	1	44.65483, 73.39272
Asio flammeus	11.02.2025	16.15	1	44.65654, 73.42159
Athene noctua	12.02.2025	08.32	1	44.66730, 73.78251
Melanocorypha yeltonisensis	12.02.2025	09.06	8	44.83979, 73.35163
Melanocorypha yeltonisensis	12.02.2025	09.10	11	44.83885, 73.30979
Melanocorypha yeltonisensis	12.02.2025	10.47	18	44.844, 73.291
Alauda leucoptera	12.02.2025	15.48	9	44.73800, 73.48668
Falco tinnunculus	12.02.2025	16.16	1	44.67423, 73.77432
Melanocorypha yeltonisensis	13.02.2025	08.15	4	44.55194, 73.82681
Melanocorypha yeltonisensis	13.02.2025	08.18	5	44.55280, 73.79134
Haliaeetus albicilla	13.02.2025	11.33	1	44.14360, 73.71034
Haliaeetus albicilla	11.02.2025	12.38	1	44.53010, 73.57663
Asio flammeus	11.02.2025	13.02	1	44.52269, 73.50452
Alectoris chukar	11.02.2025	14.40	40	44.60720, 73.38293
Asio flammeus	11.02.2025	16.00	1	44.62338, 73.44244
Vulpes vulpes	11.02.2025	17.52	1	44.74024, E73.50109
Asio flammeus	11.02.2025	17.58	1	44.76073, 73.54614
Buteo lagopus	12.02.2025	08.40	1	44.70962, 73.65370
Raptor (bird)	12.02.2025	09.06	2	44.83981, 73.35144
Buteo lagopus	12.02.2025	09.54	1	44.82292, 73.25041
Vulpes vulpes	12.02.2025	10.03	1	44.79869, 73.24523
Aquila chrysaetos	12.02.2025	11.17	1	44.76324, 73.29570
Buteo lagopus	13.02.2025	08.18	3	44.55297, 73.80227
Felis lybica	13.02.2025	08.45	1	44.44864, 73.71570
Alectoris chukar	13.02.2025	08.50	4	44.43157, 73.71424

Annex 3.1 Observations with vantage points in March 2025 – May 2025, Project area

Point №	Date	Time	Temperature	Wind speed, m/s	Wind direction	Cloudiness, %	Species	Bird count	Time of flight	Flight height, m	Flight direction	Band 1 (<20 m),m.s	Band 2 (20-200 m),m.s	Band 3 (>200 m),m.s	Note

M01	05.05.2025	08.42-11.42	20	3	S	5	Milvus migrans	5	08.47	21	NE		7.00		1500 m / 200
M01	05.05.2025	08.42-11.42	20	3	S	5	Circus sp.	1	08.57						1500 m / 200
M01	09.05.2025	15.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M01	12.04.2025	08.40-11.40	24	0.4	N	0	Tetrax tetrax	1	09.26	Sitting	—	—	—	—	500 m/ 235
M01	12.04.2025	08.40-11.40	24	0.4	N	0	Grus virgo	41	09.50	200-500	NEE			1.10	Over the VP
M01	12.04.2025	08.40-11.40	22	2.5	N	0	Buteo rufinus	1	09.50	15	E	0.22			Over the VP
M01	12.04.2025	08.40-11.40	22	1.5	N	0	Milvus migrans	1	10.02	200	E		0.27		500 m/ 182
M01	17.04.2025	12.50-15.50	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M01	17.04.2025	13.10-16.10	21	5.3	N	40	Buteo rufinus	1	14.10	200-300	NE			2.40	Over the VP
M02	05.05.2025	08.50-11.50	25	3.2	NW	20	Milvus migrans	1	8.50	30	SE		0.25		on the point
M02	05.05.2025	08.50-11.50	28	1.7	NW	20	Falco tinnunculus	2	13.40	30	SEE		0.25		100 m / 330
M02	09.05.2025	15.15-18.15	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M02	12.04.2025	9.10-12.10	23	1.7	NE	0	Grus virgo	47	9.24	150	NEE		0.43		1500m / 125°
M02	12.04.2025	9.10-12.10	23	0	—	0	Milvus migrans	6	9.38	100	NE		4.33	4.20	Over the VP
M02	12.04.2025	9.10-12.10	23	0	—	0	Buteo hemilasius	1	9.40	150	NE		4.33	4.20	Over the VP
M02	12.04.2025	9.10-12.10	23	0	—	0	Buteo rufinus	1	9.42	150	E		2.05		Over the VP
M02	12.04.2025	9.10-12.10	23	0	—	0	Pterocles orientalis	2	9.46	50	SWW		0.38		600m / 350°
M02	12.04.2025	9.10-12.10	24	0	—	0	Falco tinnunculus/naumanni	1	10.00	20	NE		2.48		50m / 333°
M02	12.04.2025	9.10-12.10	24	0	—	0	Falco tinnunculus/naumanni	2	10.17	30	NE		2.58		150m / 42°
M02	12.04.2025	9.10-12.10	25	1.5	N	0	Falco tinnunculus/naumanni	1	11.19	100	E		6.14		1000m / 330°
M02	17.04.2025	13.15-16.15	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M03	05.05.2025	09.10-12.10	25	2	NE	10	Falco tinnunculus	1	10.06	3	W	0.43			100 m/ 90
M03	05.05.2025	09.10-12.10	26	2	NE	10	Buteo rufinus	1	10.06	50	W		1.25	0.55	400 m/ 70

M03	09.05.2025	14.50-17.50	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M03	12.04.2025	08.55-11.55	23	2.3	N	10	Milvus migrans	2	09.38	5	N	2.13	4.48		200 m/ 90
M03	12.04.2025	08.55-11.55	23	2.3	N	10	Falco tinnunculus	1	09.46	50	Circling		2.37		on the VP
M03	12.04.2025	08.55-11.55	26	0	N	10	Circus aeruginosus	1	10.27	100	N		1.44		on the VP
M03	12.04.2025	08.55-11.55	26	0	N	10	Milvus migrans	1	10.27	100	N		0.40		on the VP
M03	12.04.2025	08.55-11.55	27		N	10	Falco tinnunculus	1	11.23	50	Hunting		3.54		100 m/ 320
M03	12.04.2025	08.55-11.55	28	2.9	N	10	Grus virgo	1	11.45	300	S		0.30		on the VP
M03	17.04.2025	12.30-15.30	20	3	NE	90	Raptor	1	13.41	50-100	Circling		5.32		on the VP
M03	17.04.2025	12.30-15.30	20	3	NE	90	Raptor	2	13.43	300	Circling			5.32	on the VP
M03	17.04.2025	12.30-15.30	21	1	NE	90	Buteo rufinus	1	15.26	20	Circling	0.10	5.18		500 m/ 44
M04	05.05.2025	09.10-12.10	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M04	09.05.2025	15.00-18.00	27.6	4.7	NE	50	Pterocles orientalis	2	15.10	100	E		14.26		150 m / 90
M04	16.04.2025	14.30-17.30	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M04	17.04.2025	09.20-12.20	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M05	05.05.2025	09.00-12.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M05	09.05.2025	14.45-17.45	25	3	S	100	Buteo rufinus	1	16.37	50	N		1.00		on the point
M05	09.05.2025	14.45-17.45	25	3	S	100	Falco tinnunculus	1	16.43	50	Circling		0.57		300 m / 300
M05	16.04.2025	14.30-17.30	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M05	17.04.2025	09.00-12.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M06	08.05.2025	15.10-18.10	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M06	09.05.2025	07.00-10.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M06	15.04.2025	13.00-16.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M06	16.04.2025	08.50-11.50	14	2.4	SW	60	Pterocles orientalis	3	08.51	10-20	SW	0.30			1800m/ 125
M06	16.04.2025	08.50-11.50	14	1,8	SW	70	Aquila chrysaetos	1	09.00	100-500+	Circling, N		2.18	4.46	1500m/ 123

M06	16.04.2025	08.50-11.50	14	1,7	SW	70	Aquila chrysaetos	1	09.11	200-500	Circling, NE			4.08	Over the VP
M06	16.04.2025	08.50-11.50	14	1,9	SW	70	Pterocles orientalis	2	09.31	20-30	NE		0.24		100m/ 115
M06	16.04.2025	08.50-11.50	14	2,4	SW	70	Aquila chrysaetos	1	09.50	300-500	NEE			2.41	Over the VP
M06	16.04.2025	08.50-11.50	15	1.1	SW	80	Falco tinnunculus/naumanni	1	10.47	30-60	NNW		0.32		Over the VP
M07	08.05.2025	14.30-17.30	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M07	09.05.2025	06.30-09.30	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M07	15.04.2025	14.00-17.00	22	2	SW	40	Buteo sp.	1	15.57	200	NE		4.26		1500 m/ 240
M07	15.04.2025	14.00-17.00	22	2	SW	40	Pterocles orientalis	6	16.05	—	—	—	—	—	out of radius
M07	15.04.2025	14.00-17.00	22	2	SW	40	Tetrax tetrax	2	16.05	—	—	—	—	—	out of radius
M07	16.04.2025	07.30-10.30	11	3,7	NW	10	Grus virgo	10	08.11	500	S			6.47	1000 m/ 280
M07	16.04.2025	07.30-10.30	11	3	NW	30	Pterocles orientalis	1	08.45	5	NW	0.30			200 m/ 80
M07	16.04.2025	07.30-10.30	11	3	NW	30	Pterocles orientalis	7	09.06	20	NW	0.36			Over the VP
M07	16.04.2025	07.30-10.30	11	2	NW	50	Circaetus gallicus	7	10.08	60	NE		1.15		Over the VP
M08	07.05.2025	15.00-18.00	32	7.2	E	10	raptor	1	17.32	600	W			15.13	1500 m/ 195
M08	07.05.2025	15.00-18.00	33	6.4	E	10	Falco tinnunculus	1	17.37	20	E		2.42		50 m/ 32
M08	08.05.2025	07.00-10.00	26	5.5	NE	5	Falco tinnunculus	1	08.46	50	NE	12.34			100 m/ 42
M08	08.05.2025	07.00-10.00	26	5.8	NE	5	Falco tinnunculus	2	09.58	500	W			12.01	1000 m/ 245
M08	15.04.2025	8.30-11.30	21	0.5	SWW	20	Pterocles orientalis	4	8.40	40	W		1.07		600m / 145°
M08	15.04.2025	8.30-11.30	21	0.5	SWW	20	Falco tinnunculus/naumanni	1	8.42	20	Hunting		0.15		800m / 226°
M08	15.04.2025	8.30-11.30	21	0.9	SWW	40	Aquila sp.	1	9.22	100	SEE		0.30		1500m / 180°
M08	15.04.2025	8.30-11.30	20	1.4	NWW	10	Buteo sp.	1	9.39	300	SE			1.51	1500m / 170°
M08	15.04.2025	8.30-11.30	21	1.5	NWW	10	Pterocles orientalis	8	9.49	80	E		0.43		1000m / 228°
M08	15.04.2025	8.30-11.30	21	0.5	NWW	5	Buteo buteo	10	10.16	200→500	NEE		0.25	4.33	1500m / 294°

M08	15.04.2025	8.30-11.30	21	0.5	NWW	5	Buteo rufinus	1	10.25	100	E		1.39		1000m / 300°
M08	18.04.2025	10.50-13.50		3.0	N	10	Falco tinnunculus/naumanni	1	10.51	5→150	Hunting	1.12	2.05		150m / 40°
M09	08.05.2025	15.45-18.45	30	1	W	70	Buteo rufinus	1	16.02	150	NE		01.19	8.43	50m / 55
M09	09.05.2025	07.00-10.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M09	16.04.2025	08.30-11.30	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M09	15.04.2025	14.30-17.30	24	4	W	40	Buteo rufinus	1	15.05	100	NE		1.15		Over the VP
M09	15.04.2025	14.30-17.30	21	6	W	40	Buteo rufinus	1	15.45	15	W	0.45			Over the VP
M09	15.04.2025	14.30-17.30	21	6	W	40	Falco tinnunculus	1	16.00	10	E	1.00			Over the VP
M10	08.05.2025	15.00-18.00	25	0.5	W	30	Pterocles orientalis	1	15.00	2	W	0.30			600 m/ 90
M10	08.05.2025	15.00-18.00	27	0.3	W	30	Pterocles orientalis	3	15.49	3	SW	1.00			650 m/ 70
M10	08.05.2025	15.00-18.00	27	0.3	W	35	Falco sp.	1	16.11	500-100	NW		0.13		1200 m/ 300
M10	09.05.2025	06.45-09.45	10	6.2	W	35	Tetrax tetrax	1	06.39	2	W	0.30			900 m/ 85
M10	09.05.2025	06.45-09.45	15	8.5	W	35	Buteo rufinus	1	08.35	40-50	N		0.30		900 m/ 330
M10	15.04.2025	14.20-17.20	22	3.1	W	30	Falco tinnunculus	1	16.10	20	W	0.25			50 m/ 270
M10	16.04.2025	08.20-11.20	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M11	07.05.2025	14.30-17.30	20	5	NE	70	Pernis sp.	1	15.28	100	W		10.00		1700 m/ 310
M11	07.05.2025	14.30-17.30	20	5.5	NE	75	Milvus migrans	5	17.04	90	N		10.00		1000 m/ 300
M11	08.05.2025	07.00-10.00	14	9	NE	75	Pernis sp.	2	08.23	80	NW		10.00		1000 m/ 330
M11	14.04.2025	14.00-17.00	24	1.5	SW	20	Caprimulgus europaeus	1	15.07	—	—	—	—	—	Voice
M11	14.04.2025	14.00-17.00	25	2	SW	20	Falco sp.	1	15.38	50	Circling		04.25		1500 m/ 350
M11	15.04.2025	07.10-10.10	21	2	SW	50	Circus sp.	1	09.05	50	N		04.04		Over the VP
M12	07.05.2025	15.00-18.00	23	5.6	E	25	Buteo rufinus	1	15.46	60	N		2.24		800 m/ 180
M12	08.05.2025	07.00-10.00	28	4.5	NEE	5	Pernis ptilorhynchus	1	09.10	20-50	E		0.36		500 m/ 225
M12	14.04.2025	13.30-16.30	26	2.2	N	0	Pterocles orientalis	2	15.26	15	NE	0.20			100 m/ 5

M12	14.04.2025	13.30-16.30	26	2.2	N	0	Accipiter nisus	1	15.30	40	NE		0.30		150 m/ 47
M12	15.04.2025	08.10-11.10	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M13	07.05.2025	15.00-18.00	32	6	NE	70	Milvus migrans	5	15.38	500	SE			5.00	2000 m/ 150
M13	07.05.2025	15.00-18.00	32	6	NE	70	Accipiter nisus	1	15.39	20	Circling	0.30			on the point
M13	07.05.2025	15.00-18.00	33	6	NE	70	Pernis sp.	1	15.40	50	Circling		0.30		on the point
M13	07.05.2025	15.00-18.00	33	5	NE	70	Accipiter nisus	1	16.00	20	NE	2.00			on the point
M13	07.05.2025	15.00-18.00	33	5	NE	70	Falco tinnunculus	2	16.05	50	SW		0.53		500 m/ 80
M13	07.05.2025	15.00-18.00	31	6	NE	70	Aquila nipalensis	1	16.44	200	NE		1.13		1000 m/ 200
M13	07.05.2025	15.00-18.00	31	6	NE	70	Accipiter nisus	2	16.46	50	W		0.38		300 m/ 200
M13	08.05.2025	07,15-10,15	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M13	14.04.2025	14.00-17.00	21	6	W	40	Buteo rufinus	1	14.40	200	N			2.30	on the VP
M13	14.04.2025	14.00-17.00	22	5	W	40	Tetrax tetrax	2	15.10	5	W	0.30			on the VP
M13	15.04.2025	08.20-11.20	18	1.8	SWW	40	Buteo rufinus	1	10.15	200	E			1.45	on the VP
M14	07.05.2025	06.45-09.45	21	6.2	NEE	10	Gelochelidon nilotica	20	07.45	10	E	0.36			800 m / 45
M14	07.05.2025	06.45-09.45	21	6.8	NEE	10	Tetrax tetrax	1	08.13	20	NE	0.25			300 m / 15
M14	07.05.2025	06.45-09.45	21	6.4	NEE	10	Pterocles orientalis	4	08.15	20	NW	0.15			200 m / 50
M14	07.05.2025	06.45-09.45	21	6.4	NEE	10	Gelochelidon nilotica	5	08.30	5	NE	0.22			200 m / 5
M14	07.05.2025	06.45-09.45	24	4.2	NEE	10	Falco tinnunculus	1	09.20	5	NEE	1.12			50 m / 315
M14	06.05.2025	14.40-17.40	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M14	13.04.2025	14.00-17.00	21	2	W	85	Pterocles orientalis	4	16.16	20-40	SEE		0.41		600 m / 190
M14	14.04.2025	08.00-11.00	16	4.5	W	90	Falco sp.	1	08.28	40-10	NNE	0.16	0.41		100 m / 130
M14	14.04.2025	08.00-11.00	17	3.9	W	70	Buteo rufinus	1	09.09	70-100	NNE		1.14		1800 m / 129
M14	14.04.2025	08.00-11.00	20	2.8	W	30	Aquila sp.	1	10.32	200-300	NEE			2.44	1000 m / 193
M14	14.04.2025	08.00-11.00	20	2.9	W	30	raptor	4	10.39	500	NE			3.01	1200 m / 194

M15	13.04.2025	14.00-17.00	27	1.7	SE	85	Tetrax tetrax	1	14.30	50	SE		0.22		800 m/ 325
M15	13.04.2025	14.00-17.00	27	1.6	SE	85	Falco tinnunculus	1	14.43	150	NNW		6.10		1000 m/ 320
M15	13.04.2025	14.00-17.00	23	0.6	SE	100	Pterocles orientalis	1	16.31	50	SW		0.15		500 m/ 350
M15	13.04.2025	14.00-17.00	22	—	—	100	Pterocles orientalis	2	16.50	50	NE		0.25		500 m/ 10
M15	14.04.2025	09.00-12.00	16	4.2	SW	30	Raptor	1	09.20	350	NE			2.20	2000 m/ 10
M15	14.04.2025	09.00-12.00	16	3.7	SW	20	Falco tinnunculus	1	09.32	300	E		4.15	1.32	500 m/ 350
M15	14.04.2025	09.00-12.00	16	4.2	SW	10	Tetrax tetrax	2	10.08	100	E		1.08		300 m/ 25
M15	14.04.2025	09.00-12.00	17	3.2	SW	5	Circus aeruginosus	1	11.01	5	SW	0.56			100 m/ 320
M15	06.05.2025	14.43-17.43	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M15	07.05.2025	07.10-10.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M16	06.05.2025	15.00-18.00	29.5	5.5	SW	10	Tetrax tetrax	2	15.10	5	S	3.02			150 m / 220
M16	07.05.2025	07.00-10.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M16	13.04.2025	13.30-16.30	—	—	—	—	Corvus ruficollis	1	14.25	100	—	—	—	—	—
M16	13.04.2025	13.30-16.30	25	1.5	S	90	Aquila sp.	1	15.09	200	N			2.11	500 m / 300
M16	13.04.2025	13.30-16.30	25	1.5	S	90	Pterocles orientalis	2	15.18	10	E	0.51			300 m / 160
M16	13.04.2025	13.30-16.30	25	1.5	S	90	Coturnix coturnix	1	15.19	—	—	—	—	—	voice
M16	13.04.2025	13.30-16.30	22	2	S	100	Corvus ruficollis	3	16.21	100	SE	—	—	—	on the VP
M16	14.04.2025	08.00-11.00	14	4	W	60	Buteo rufinus	1	08.08	5	SW	1.34			300 m / 160
M16	14.04.2025	08.00-11.00	14	3.8	W	60	Coturnix coturnix	1	08.09	—	—	—	—	—	voice
M16	14.04.2025	08.00-11.00	13	4	W	80	Pterocles orientalis	1	08.17	30	SW		0.30		on the point
M16	14.04.2025	08.00-11.00	12	4.3	W	90	Buteo sp.	1	08.27	150	NE		2.44		500 m / 220
M16	14.04.2025	08.00-11.00	13	5.5	SW	50	Pterocles orientalis	1	09.04	20	NE	0.30			on the point
M16	14.04.2025	08.00-11.00	15	3.5	W	20	Buteo sp.	1	10.11	100	S		6.08		500 m 130
M16	14.04.2025	08.00-11.00	15	4.1	W	10	Aquila nipalensis	1	10.19	200	NE		3.30		on the point

M16	14.04.2025	08.00-11.00	15	4.1	W	10	Milvus migrans	2	10.19	200	NE		3.30		on the point
M16	14.04.2025	08.00-11.00	15	4.1	W	10	Accipiter nisus	2	10.19	200	NE		3.30		on the point
M16	14.04.2025	08.00-11.00	15	3	W	10	Buteo buteo	1	10.56	150	E		2.40		on the point
M17	13.04.2025	14.00-17.00	26	1.3	SE	30	Buteo rufinus	1	14.30	>200	NE			1.50	on the VP
M17	14.04.2025	08.30-11.30	16	4.3	W	60	Aquila chrysaetos	1	10.03	>200	W			2.30	on the VP
M17	06.05.2025	15.10-18.10	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M17	07.05.2025	07.15-10.15	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M19	06.05.2025	06.45-09.45	15	12	NE	5	Milvus migrans	1	09.32	20	N		1.15		800 m / 265
M19	05.05.2025	16.00-19.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M19	12.04.2025	15.35-18.35	24	1.9	E	25	Aquila chrysaetos	2	15.39	50-150	SE		1.56		1500 m / 203
M19	12.04.2025	15.35-18.35	24	1.1	E	25	Circus sp.	1	15.51	10-15	NNW	0.34			800 m / 225
M19	12.04.2025	15.35-18.35	23	2.4	E	15	Aquila chrysaetos	1	16.48	150-200	NW		1.02	1.51	1800 m / 207
M19	12.04.2025	15.35-18.35	23	1.4	E	10	Falco tinnunculus	1	16.59	5-15	NEE	0.28			500 m / 258
M19	12.04.2025	15.35-18.35	21	0.9	E	10	Falco tinnunculus	1	17.29	30-40	E		0.18		400 m / 221
M19	12.04.2025	15.35-18.35	19	—	—	30	Pterocles orientalis	2	18.15	20-40	SWW				300 m / 301
M19	13.04.2025	08.10-11.10	16	—	—	30	Falco sp.	1	08.13	20-40	NEE		0.24		500 m / 212
M19	13.04.2025	08.10-11.10	17	1.2	SE	50	Pterocles orientalis	3	08.52	10-20	NW	0.31			300 m / 235
M19	13.04.2025	08.10-11.10	18	1.1	SE	50	Aquila chrysaetos	2	09.09	50-150	SWW		2.14		1800 m / 201
M19	13.04.2025	08.10-11.10	18	1.1	SE	50	Falco sp.	1	09.12	40-80	W		1.18		1000 m / 230
M19	13.04.2025	08.10-11.10	18	1.5	SE	50	Pterocles orientalis	2	09.14	5-20	NW	0.19			1000 m / 223
M20	05.05.2025	15.40-18.40	26	4.2	NE	50	Raptor	1	17.43	5	NW	1.12			1500 m / 290
M20	05.05.2025	15.40-18.40	26	2.7	NE	50	Pterocles orientalis	2	18.10	20	SW		0.25		500 m / 220
M20	06.05.2025	08.47-10.13	22	4.7	SW	10	Falco tinnunculus	2	09.05	10	E		3.10		150 m / 345
M20	06.05.2025	08.47-10.13	25	4.5	SW	10	Aquila chrysaetos	1	10.12	25	N	4.13			200 m / 200

M20	10.03.2025	11.34-17.34	6	4.2	NE	0	Haliaeetus albicilla	1	13.24	500	NE			4.03	1500 m/ 220
M20	10.03.2025	11.34-17.34	6	4	NE	10	Buteo rufinus	1	16.24	50	NE		2.04		500 m/ 210
M20	10.03.2025	11.34-17.34	5	3.1	NE	10	Circus sp.	1	16.46	5	S	1.22			500 m/ 260
M20	12.04.2025	16.00-19.00	25	3.1	NE	0	Pterocles orientalis	2	16.45	100	NEE		0.32		200 m/ 180
M20	12.04.2025	16.00-19.00	25	1.7	NE	0	Pterocles orientalis	2	17.13	150	NE		0.28		500 m/ 300
M20	12.04.2025	16.00-19.00	25	2.4	NE	0	Falco tinnunculus	1	17.17	15	NE	0.40			50 m/ 310
M20	12.04.2025	16.00-19.00	25	1.7	NE	5	Pterocles orientalis	2	17.22	50	NE		0.56		50 m/ 195
M20	13.04.2025	08.30-11.30	17	1.3	SEE	30	Pterocles orientalis	1	08.33	100	E		0.20		100 m/ 185
M20	13.04.2025	08.30-11.30	23	0.8	SEE	30	Pterocles orientalis	1	08.50	70	SE		0.32		on the VP
M20	13.04.2025	08.30-11.30	23	1	SEE	20	Pterocles orientalis	7	09.30	150	NW		0.55		500 m/ 200
M20	13.04.2025	08.30-11.30	25	2	SEE	30	Falco tinnunculus	1	09.55	150	NW		4.22		1600 m/ 275
M20	13.04.2025	08.30-11.30	26	2.7	SEE	70	Pterocles orientalis	3	10.29	100	SE		0.30		300 m/ 300
M20	13.04.2025	08.30-11.30	26	3	SEE	70	Pterocles orientalis	2	11.10	100	SE		0.22		300 m/ 290
M21	05.05.2025	16.00-19.00	25	4	N	40	Pterocles orientalis	2	17.31	30	S		0.20		on the point
M21	06.05.2025	07.15-10.15	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M21	12.04.2025	15.30-18.30	24	4	NE	10	Falco naumanni	2	16.22	100	E		1.59		1000 m / 350
M21	12.04.2025	15.30-18.30	24	4	NE	10	Falco naumanni	1	16.28	15	E	0.38			on the point
M21	12.04.2025	15.30-18.30	24	1	NE	10	Falco naumanni	6	16.46	100	circle		4.08		1000 m / 350
M21	12.04.2025	15.30-18.30	24	1	NE	10	Alectoris chukar	2	17.49	—	—	—	—	—	voice
M21	12.04.2025	15.30-18.30	23	1	NE	10	Pterocles orientalis	1	18.15	—	—	—	—	—	voice
M21	13.04.2025	06.30-09.30	13	1	NE	10	Pterocles orientalis	1	07.04	—	—	—	—	—	voice
M21	13.04.2025	06.30-09.30	14	1	NE	10	Apus apus	1	07.12	—	—	—	—	—	voice
M21	13.04.2025	06.30-09.30	16	2	E	20	Falco naumanni	1	07.48	100	circle		2.19		1000 m / 350
M21	13.04.2025	06.30-09.30	16	0.5	E	20	Falco sp.	1	09.06	50	NE		0.54		300 m / 355

M22	13.04.2025	15.00-18.00	18	1,6	N	0	Accipiter nisus	1	17.10	100	N		0.15		100 m/ 10
M22	14.04.2025	08.02-11.02	19	3,4	N	0	Buteo rufinus	1	10.36	100	NW		4.00		100 m/ 5
M22	14.04.2025	08.02-11.02	19	3,4	N	0	Pterocles orientalis	4	10.40	10	SE	0.20			100 m/ 137
M22	05.05.2025	15.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M22	06.05.2025	07.00-10.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M24	05.05.2025	16.00-19.00	25	4.4	NE	10	Pterocles orientalis	1	16.43	40	NW	0.40			600 m / 150
M24	06.05.2025	07.00-10.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M24	10.03.2025	11.40-17.40	2	1.6	E	0	Aquila chrysaetos/ photo	1	11.49	100-150	NNW		3.15		700 m/ 288
M24	10.03.2025	11.40-17.40	2	0.5	E	0	Aquila chrysaetos	1	12.01	150->200	NW		4.18	1.01	1500m/ 217
M24	10.03.2025	11.40-17.40	3	0.7	E	0	Aquila chrysaetos/ photo	1	12.20	150-200	NNW		3.57		300 m/ 227
M24	10.03.2025	11.40-17.40	5	2.4	E	0	Aquila chrysaetos/ photo	1	14.00	>200	SWW			1,57	1500 m/ 220
M24	10.03.2025	11.40-17.40	5	1.8	E	0	Haliaeetus albicilla / photo	1	14.04	80-100	N		2.28		2000 m/ 227
M24	10.03.2025	11.40-17.40	5	1.8	E	0	Buteo rufinus/ photo	1	14.04	80-100	NNE		0.47		2000 m/ 227
M24	10.03.2025	11.40-17.40	5	1.3	E	0	Larus sp.	26	14.34	20-40	NNE		0.34		2000 m/ 223
M24	10.03.2025	11.40-17.40	5	0.8	E	0	Asio flammeus	1	15.16	<20	SSW	1.41			1000 m/ 280
M24	10.03.2025	11.40-17.40	4	1.2	E	15	Circus sp.	1	15.25	<20	N	0.44			1000 m/ 275
M24	10.03.2025	11.40-14.40	2	0	—	0	Pterocles orientalis	1	12.07	30	NWW		0.26		800m / 325°
M24	10.03.2025	11.40-14.40	2	0	—	0	Aquila sp.	3	12.07	200-300	Soaring			0.50	2000m / 155°
M24	10.03.2025	11.40-14.40	2	0	—	0	Buteo rufinus	1	12.57	40	N		2.24		1000m / 242°
M24	10.03.2025	14.40-17.40	3	1.6	NE	5	Circus macrourus	1	15.02	3	NNE	1.03			700m / 305°
M24	10.03.2025	A	3	1.2	E	5	Anatidae	14	15.34	50	SW		2.15		Over the VP
M24	10.03.2025	14.40-17.40	3	0.8	E	5	Aquila heliaca	1	16.32	0	—				1500m / 135°
M24	10.03.2025	14.40-17.40	3	0.8	E	5	Aquila heliaca	1	16.38	0→10	NE	0.10			1500m / 135°
M24	10.03.2025	14.40-17.40	3	0	—	5	Haliaeetus albicilla	1	16.41	50	NE		0.38		800m / 235°

M24	12.04.2025	16.25-19.25	19	2	N	10	Grus virgo	2	16.50	200	N			1.58	on the VP
M24	13.04.2025	08.20-11.20	21	1.1	E	30	Buteo rufinus	2	09.15	200	NWW			1.40	on the VP
M26	10.03.2025	11.10-17.10	4	2.2	SW	20	Haliaeetus albicilla	1	11.32	50	NE		5.24		1000 m/ 55
M26	10.03.2025	11.10-17.10	3	2.5	NW	20	Anas acuta	30	12.03	50	W		0.20		on the VP
M26	10.03.2025	11.10-17.10	3	2.5	W	20	Buteo sp (black)	1	12.10	100	Circling		3.47		500 m/ 85
M26	10.03.2025	11.10-17.10	3	2	W	30	Pterocles orientalis	1	12.13	50	SE	—	—	—	on the VP, voice
M26	10.03.2025	11.10-17.10	3	2	W	30	Aquila sp.	1	15.09	500	NE			1.18	500 m/ 50
M26	10.03.2025	11.10-17.10	3	2	W	30	Larus cachinnans	5	16.05	30	E		0.30		500 m/ 300
M26	10.03.2025	11.10-17.10	3	2	W	30	Larus cachinnans	30	16.20	50	NE		0.30		500 m/ 300
M26	05.05.2025	16.00-19.00	25	4	NE	30	Falco tinnunculus	1	17.45	2	N	0.25			on the point
M26	06.05.2025	07.20-10.20	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M26	12.04.2025	9.10-12.10	24	1.4	E	10	Circus aeruginosus ♀	1	16.45	5	NEE	0.51			800m / 180°
M26	12.04.2025	9.10-12.10	24	1.3	E	10	Falco tinnunculus/naumanni	1	17.12	10	NEE	1.39			700m / 130°
M26	12.04.2025	9.10-12.10	24	1.3	E	10	Tetrax tetrax	1	17.40	Sitting	—	—	—	—	1000m / 200°
M26	12.04.2025	9.10-12.10	17	0	—	10	Falco tinnunculus/naumanni	1	18.31	20	NE	0.20			800m / 203°
M26	13.04.2025	8.45-11.45	24	0.7	SEE	20	Falco tinnunculus/naumanni	1	8.47	10	NNE		2.33		300m / 231°
M26	13.04.2025	8.45-11.45	24	0.7	SEE	20	Milvus migrans	1	8.49	40	NW		1.26		150m / 320°
M32	08.05.2025	15.00-18.00	33	2.7	W	10	Pterocles orientalis	4	16.26	10-15	NE		0.33		80 m/ 42
M32	09.05.2025	07.00-10.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
M32	15.04.2025	12.40-15.40	24	2.7	SW	25	Tetrax tetrax	1	12.40	0-10	SW	0.20			on the VP
M32	15.04.2025	12.40-15.40	23	4.1	SW	30	Aquila chrysaetos	1	15.19	20-30	SW		0.22		200 m/ 135
M32	16.04.2025	08.40-11.40	12	4	NW	30	Pterocles orientalis	2	08.42	20-30	NE		0.19		200 m/ 130
M32	16.04.2025	08.40-11.40	12	2.7	NW	40	Aquila chrysaetos	1	08.57	50-100	NE		0.22		400 m/ 70

M32	16.04.2025	08.40-11.40	12	2.7	NW	40	Aquila chrysaetos	1	09.03	300	NE			1.07	500 m/ 220
M32	16.04.2025	08.40-11.40	12	3.8	NW	40	Aquila chrysaetos	1	09.15	300	NE			0.49	on the VP
M32	16.04.2025	08.40-11.40	13	3.5	NW	40	Aquila chrysaetos	1	09.52	150	NE		0.36		on the VP
M32	16.04.2025	08.40-11.40	13	3.7	NW	40	Pterocles orientalis	2	10.16	20-30	E		0.14		200 m/ 132
M32	16.04.2025	08.40-11.40	14	2	NW	50	Raptor	1	10.36	500	NW			2.11	2000 m/ 240
P02	05.05.2025	09.20-12.20	25				Pterocles orientalis	2	9.51	5	W				on the point
P02	05.05.2025	09.20-12.20	25	3	W	20	Buteo rufinus	1	11.05	30	S		3.35		on the point
P02	09.05.2025	14.30-17.30	25	4.2	SW	30	Buteo rufinus	1	14.30	80	S		1.11		500 m / 210
P02	09.05.2025	14.30-17.30	25	4	SW	30	Pterocles orientalis	4	14.41	10	S	0.20			150 m / 180
P02	09.05.2025	14.30-17.30	25	4.3	SW	30	Pterocles orientalis	3	14.50	10	NE	0.25			15 m / 180
P02	09.05.2025	14.30-17.30	25	4	SW	35	Pterocles orientalis	2	15.05	10	NE	0.25			40 m / 240
P02	09.05.2025	14.30-17.30	25	5.1	SW	50	Pterocles orientalis	2	16.00	3	NE	0.05			60 m / 230
P02	09.05.2025	14.30-17.30	15	5.5	SW	95	Aquila sp.	1	16.20	60	SE		2.14		250 m / 120
P02	09.05.2025	14.30-17.30	15	6	SW	95	Aquila nipalensis	1	16.20	90	SE		2.34		250 m / 110
P02	09.05.2025	14.30-17.30	15	4.9	SW	95	Tadorna ferruginea	3	17.00	20	SE	0.41			1700 m / 130
P02	13.04.2025	08.20-11.20	19	1,5	N	0	Buteo rufinus	2	09.40	150	N		3.00		300 m/ 5
P02	13.04.2025	15.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
P02	14.04.2025	08.20-11.20	19	1,5	N	0	Falco tinnunculus/naumanni	1	09.50	100	N		2.00		200 m/ 350
P06	06.05.2025	15.00-18.00	15	5.4	E	20	Circaetos gallicus	1	17.13	30	N		0.07		on the point
P06	07.05.2025	09.10-12.10	10	6.1	E	15	Sterninae	3	09.50	3	NE	0.06			50 m / 210
P06	16.04.2025	14.20-17.20	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
P06	17.04.2025	08.20-11.20	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
P17	07.05.2025	15.30-18.30	30	5.4	NE	80	Falco tinnunculus	1	16.35	3	E	1.43			100 m/ 94
P17	07.05.2025	15.30-18.30	31	5	NE	80	Pernis sp.	4	16.42	150	W		0.55		50 m/ 46

P17	07.05.2025	15.30-18.30	31	5	NE	80	Milvus migrans	1	16.43	50	N		0.30		200 m/ 4
P17	07.05.2025	15.30-18.30	31	5.1	NE	80	Milvus migrans	4	16.47	50	N		2.10		200 m/ 94
P17	07.05.2025	15.30-18.30	32	5.1	NE	80	Falco tinnunculus	1	16.55	20	NW	0.43			100 m/ 54
P17	07.05.2025	15.30-18.30	32	5	NE	80	Falco subbuteo	1	16.59	20	E	0.35			1000 m/ 136
P17	07.05.2025	15.30-18.30	32	5,2	NE	80	Buteo rufinus	2	17.53	100	E		2.45		on the point
P17	08.05.2025	07.00-10.00	23	6.4	NE	0	Pterocles orientalis	4	07.41	50	NW		0.35		500 m/ 144
P17	08.05.2025	07.00-10.00	23	6.6	NE	10	Buteo rufinus	1	07.36	50	NE		0.37		1200 m/ 130
P17	08.05.2025	07.00-10.00	24	6	NE	10	Pterocles orientalis	2	09.00	10	SE	1.05			50 m/ 4
P17	15.04.2025	08.30-11.30	16	0.8	S	40	Milvus migrans	1	08.39	10-30	E	0.19	1.14		300 m / 341
P17	15.04.2025	08.30-11.30	16	1.4	S	30	Aquila chrysaetos	1	09.10	500	SE			3.24	1500 m / 136
P17	15.04.2025	08.30-11.30	17	1.6	S	50	Corvus ruficollis	1	09.24	20	SWW				700 m / 148
P17	15.04.2025	08.30-11.30	17	1.4	S	40	Aquila sp.	1	09.34	200	NEE			2.31	on the point
P17	15.04.2025	08.30-11.30	18	1.6	S	30	Aquila sp.	1	09.50	200	N			1.19	1500 m / 350
P17	15.04.2025	08.30-11.30	18	1.5	S	30	Falco tinnunculus	1	09.56	30-60	E		0.44		1000 m / 9
P17	15.04.2025	08.30-11.30	20	1.4	S	10	Falco sp.	1	10.49	150-200	SWW		0.24	2.13	1800 m / 125
P17	15.04.2025	08.30-11.30	21	0.8	S	10	Buteo sp.	1	11.00	100-150	SEE		3.10		1000 m / 346
P17	15.04.2025	08.30-11.30	22	1.8	S	10	Pelecanus sp.	14	11.24	500	NEE			3.51	1700 m / 130
P17	18.04.2025	10.30-13.30	14	1.2	SW	20	Aquila chrysaetos	1	10.49	200-300	N			4.41	1000 m / 141
P17	18.04.2025	10.30-13.30	14	2.4	SW	20	Aquila chrysaetos	1	11.21	500	SE			6.18	70 m / 13
P24	08.05.2025	15.15-18.15	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
P24	09.05.2025	07.05-10.05	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
P24	15.04.2025	13.00-16.00	23	3.1	W	30	Tetrax tetrax	1	13.00	2	Short flight	0.10			300m / 322°
P24	15.04.2025	13.00-16.00	23	3.1	W	30	Raptor	1	13.13	100	Soaring		1.42		1800m / 50°
P24	15.04.2025	13.00-16.00	23	3.1	W	30	Falco tinnunculus/naumanni	1	13.21	50	Hunting		1.01		700m / 315°

P24	15.04.2025	13.00-16.00	24	3.3	NWW	25	Buteo buteo	1	13.49	150→300	E		1.38	1.57	1500m / 323°
P24	15.04.2025	13.00-16.00	24	2.5	NWW	15	Raptor	1	14.03	500	NE			1.00	1000m / 339°
P24	15.04.2025	13.00-16.00	23	2.0	NWW	10	Falco tinnunculus/naumanni	1	14.41	30	NE		0.23		1500m / 316°
P24	15.04.2025	13.00-16.00	23	2.1	NWW	15	Falco tinnunculus/naumanni	1	14.56	40	NE	1.06	2.41		300m / 120°
P24	15.04.2025	13.00-16.00	22	1.9	NWW	15	Buteo sp.	1	15.06	150	SSW		3.10		1500m / 69°
P24	16.04.2025	9.05-12.05	14	2.0	NWW	50	Aquila sp.	1	09.48	500	NEE			1.44	2000m / 307°
P24	16.04.2025	9.05-12.05	15	1.5	NWW	50	Pterocles orientalis	2	10.08	40	SEE		0.25		600m / 360°
P24	16.04.2025	9.05-12.05	16	1.3	W	50	Pterocles orientalis	2	10.23	30	SE		0.40		1000m / 58°
X04	07.05.2025	15.00-18.00	31	4.4	NEE	95	Circaetus gallicus	1	15.38	50-100	NW		2.32		700 m/ 70
X04	07.05.2025	15.00-18.00	32	4.5	NEE	95	Falco subbuteo	1	16.10	20-50	E		0.26		300 m/ 275
X04	07.05.2025	15.00-18.00	33	5.2	NEE	95	Buteo rufinus	1	16.23	20-50-0	NW	0.10	0.15		500 m/ 350
X04	07.05.2025	15.00-18.00	35	3.7	NEE	80	Buteo rufinus	1	16.55	50-100	SW		0.22		500 m/ 280
X04	08.05.2025	06.45-09.45	15	6.3	NE	20	Buteo rufinus	1	06.50	80-90	NW		0.31		600m/ 0
X04	14.04.2025	14.30-17.30	22	2.8	W	30	Tetrax tetrax	1	15.01	10-20	SE	0.11			200 m/ 92
X04	14.04.2025	14.30-17.30	22	3.1	W	30	Falco tinnunculus	1	15.44	<20	NE	0.56			400 m/ 37
X04	15.04.2025	08.15-11.15	14	1.7	SW	25	Tetrax tetrax	1	08.21	20	NE	0.20			400 m/ 320
X04	15.04.2025	08.15-11.15	15	1.7	SW	25	Corvus ruficollis	1	08.33	30	E		0.36		on the VP
X04	15.04.2025	08.15-11.15	17	0.8	SW	30	Hieraaetus pennatus	1	08.52	100	NE		1.22		1000 m/ 315
X04	15.04.2025	08.15-11.15	22	2.2	SW	5	Buteo rufinus	1	10.45	300	NE			4.02	2000 m/ 330
X05	06.05.2025	14.45-17.45	25	4	NE	80	Falco tinnunculus	1	16.52	4	NE	0.51			300 m/ 94
X05	06.05.2025	14.45-17.45	25	4	NE	80	Pterocles orientalis	2	17.00	10	NE	0.30			on the point
X05	06.05.2025	14.45-17.45	—	—	—	—	Tetrax tetrax	2	17.05	Sitting	—	—	—	—	100 m/ 14
X05	07.05.2025	07.00-10.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted

X05	13.04.2025	14.10-17.10	26	1.4	SW	95	Falco tinnunculus/naumanni	1	15.22	20	NEE		1.35		1000m / 135°
X05	13.04.2025	14.10-17.10	26	1.4	SW	95	Pterocles orientalis	5	15.23	30	NEE		0.52		800m / 130°
X05	13.04.2025	14.10-17.10	26	1.5	SW	95	Pterocles orientalis	3	15.41	20	NW		1.48		800m / 81°
X05	13.04.2025	14.10-17.10	26	1.5	SW	95	Pterocles orientalis	2	15.42	10	SE	1.13			1000m / 30°
X05	14.04.2025	8.35-11.40	15	2	SWW	50	Aquila nipalensis	1	8.35	50	SEE		1.21		800m / 145°
X05	14.04.2025	8.35-11.40	15	2	SWW	50	Tetrax tetrax	1	8.49	3	Short flight	0.15			700m / 327°
X05	14.04.2025	8.35-11.40	15	1.8	SWW	15	Aquila sp.	1	9.59	300	NNE			3.10	2000m / 132°
X05	14.04.2025	8.35-11.40	15	1.7	SWW	15	Aquila sp.	1	10.02	200	Soaring			2.24	1500m / 148°
X05	14.04.2025	8.35-11.40	15	2	SWW	10	Circaetus gallicus	1	10.24	300	SE			0.40	2000m / 327°
X05	14.04.2025	8.35-11.40	16	2.4	SWW	10	Aquila sp.	1	10.33	50	NNE		1.51		500m / 160°
X05	14.04.2025	8.35-11.40	17	2.6	SWW	10	Buteo rufinus	1	11.37	100	NNW		2.19		1000m / 85°

Annex 3.2 Observations with vantage points in March 2025 – May 2025, Power lines

Point №	Date	Time	Temperature	Wind speed, m/s	Wind direction	Cloudiness, %	Species	Bird count	Time of flight	Flight height, m	Flight direction	Band 1 (<20 m),m.s	Band 2 (20-50 m),m.s	Band 3 (>50 m),m.s	Note
OHL_VP_1/ SW	10.05.2025	07.30-10.30	21	2.7	SSW	5	Circaetus gallicus	1	07.45	50-70	SW			2.15	700 m/ 280, ↑ NW
OHL_VP_1/ SW	10.05.2025	07.30-10.30	21	2.7	SSW	5	Pterocles orientalis	2	07.55	20-30	SW		0.16		300 m/ 225 ↑ NW
OHL_VP_1/ SW	10.05.2025	07.30-10.30	22	2.2	SSW	5	Buteo rufinus	1	08.10	20-50	SWW		2.23		Over the VP, R→L
OHL_VP_1/ SW	10.05.2025	07.30-10.30	22	2.2	SSW	5	Pterocles orientalis	3	08.10	5-10	SW		0.10		200 m/ 50, R→L
OHL_VP_1/ SW	10.05.2025	07.30-10.30	26	2.5	SSW	5	Pterocles orientalis	2	09.00	5-10	NEE	0.08			100 m/ 270, L→R
OHL_VP_1/ SW	10.05.2025	14.15-17.15	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_1/ SW	18.04.2025	08.00-11.00	11	2.8	NE	5	Pterocles orientalis	1	08.11	10-20	NE	0.11			Over the VP, R→L
OHL_VP_1/ SW	18.04.2025	08.00-11.00	12	3.4	NE	5	Pterocles orientalis	2	08.30	10-20	NEE	0.16			300 m/ 135, RF
OHL_VP_1/ SW	18.04.2025	08.00-11.00	12	3.6	NE	5	Pterocles orientalis	2	08.44	10-20	SE	0.22			200 m/ 66, RF
OHL_VP_1/ SW	18.04.2025	08.00-11.00	14	2.4	NE	5	Pterocles orientalis	30	09.10	0-20	SE	0.15			250 m/ 65, RF

OHL_VP_1/ SW	18.04.2025	08.00-11.00	14	2.2	NE	5	Pterocles orientalis	8	09.28	0-20	E	0.28			400 m/ 70, RF
OHL_VP_1/ SW	18.04.2025	08.00-11.00	15	2.2	NE	5	Buteo rufinus	1	09.32	20-50	NW	0.46			50 m/ 70, RF
OHL_VP_1/ SW	18.04.2025	08.00-11.00	15	2.8	NE	5	Aquila nipalensis	1	10.45	50-100	N			2.49	500 m/ 170, R→L
OHL_VP_1/ SW	18.04.2025	14.00-17.00	18	3.5	NE	10	Circaetus gallicus	2	14.02	50	NW		0.13		200 m/ 195
OHL_VP_1/ SW	18.04.2025	14.00-17.00	18	1.8	NE	10	Falco tinnunculus/naumanni	1	14.25	10-50	NE	0.10	0.08	0.08	Over the VP, R→L
OHL_VP_1/ SW	18.04.2025	14.00-17.00	15	2.2	NE	20	Pterocles orientalis	1	15.58	20-50	NW	4.38	2.24		500 m/ 185, R→L
OHL_VP_1/ SW	18.04.2025	14.00-17.00	14	2.7	NE	60	Pterocles orientalis	2	16.12	20-50	SW		0.20		400 m/ 65, RF
OHL_VP_1/ SW	18.04.2025	14.00-17.00	14	2.4	NE	80	Pterocles orientalis	2	16.25	10-20	SW	0.17			300 m/ 45, RF
OHL_VP_2/ N	10.05.2025	07.30-10.30	28	4	SW	0	Falco tinnunculus	1	10.01	150	W			1.55	Over the VP, R→L
OHL_VP_2/ N	10.05.2025	14.15-17.15	30	3.9	SW	15	Pterocles orientalis	3	13.48	3	N	0.50			Over the VP, R→L
OHL_VP_2/ S	10.05.2025	07.30-10.30	20	4	SW	5	Circaetus gallicus	1	07.50	55	SE			1.48	Over the VP, R→L
OHL_VP_2/ S	10.05.2025	07.30-10.30	21	2	SW	5	Buteo rufinus	1	08.09	25	SW	1.58			Over the VP, R→L
OHL_VP_2/ S	10.05.2025	07.30-10.30	21	2	SW	5	Pterocles orientalis	6	08.10	5	SW	0.10			Over the VP, L→R
OHL_VP_2/ S	10.05.2025	07.30-10.30	25	2.5	SW	5	Pterocles orientalis	2	09.06	7	SE	0.10			Over the VP, L→R
OHL_VP_2/ S	10.05.2025	07.30-10.30	25	2.5	SW	5	Pterocles orientalis	2	09.55	10	E	0.20			Over the VP, L→R
OHL_VP_2/ S	10.05.2025	14.15-17.15	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_2/N	18.04.2025	08.25-11.25	22	5.4	N	25	Buteo rufinus	1	10.40	50	NW			0.40	300 m/ 330, L→R
OHL_VP_2/N	18.04.2025	08.25-11.25	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_2/S	18.04.2025	14.15-17.15	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_3/ N	10.05.2025	08.45-11.45	28	1.5	S	10	Buteo rufinus	1	10.04	50	E		02.01		500 m N, 350, R→L
OHL_VP_3/ N	10.05.2025	13.00-16.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_3/ N	17.04.2025	15.20-18.20	19	7.1	NE	100	Falco tinnunculus/naumanni	1	16.01	—	—	—	—	—	Out of radius
OHL_VP_3/ N	18.04.2025	08.50-11.50	11	3	E	20	Aquila chrysaetos	1	09.25	200	NW		1.11		Over the VP, R→L

OHL_VP_3/ N	18.04.2025	08.50-11.50	11	2	NE	20	Falco sp.	1	11.18	15	E	0.40			Over the VP, R→L
OHL_VP_4/N	11.05.2025	06.30-09.30	23	—	—	10	Buteo rufinus	2	08.05	400	SE			10.11	800 m/ 50, RF
OHL_VP_4/N	11.05.2025	11.30-14.30	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_4/N	12.03.2025	12.30-18.30	10	—	—	0	Buteo sp.	4	13.23	100	E			2.14	on point, RF
OHL_VP_4/N	12.03.2025	12.30-18.30	10	—	—	0	Buteo rufinus	1	13,45	100	Sitting	—	—	—	300 m/ 270
OHL_VP_4/N	12.03.2025	12.30-18.30	10	—	—	10	Chroicocephalus ridibundus	5	13.47	100	SE			2.36	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	10	1.5	SW	10	Aquilla sp.	2	14.06	1000	NE			2.12	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	10	2.6	SW	10	Haliaeetus albicilla	1	14.14	800	Circling			3.19	1000 m/120, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	10	—	—	0	Aquila nipalensis	4	14.19	1000	NE			3.17	1000 m/ 320, L→R
OHL_VP_4/N	12.03.2025	12.30-18.30	10	—	—	0	Aquila nipalensis	3	14.23	1000	NE			2.49	on point, L→R
OHL_VP_4/N	12.03.2025	12.30-18.30	10	—	—	0	Aquila nipalensis	8	14.27	1000	NE			2.24	on point, L→R
OHL_VP_4/N	12.03.2025	12.30-18.30	10	3	SW	0	Aquila nipalensis	3	14.31	1000	NE			0.52	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	10	3	SW	0	Aquila nipalensis	5	14.34	1000	NE			1.15	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	10	3	SW	0	Aquila nipalensis	1	14.39	1000	NE			1.49	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	10	3	SW	0	Aquila nipalensis	3	14.44	1000	NE			1.33	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	9	3	SW	0	Aquila nipalensis	1	14.49	1000	NE			0.58	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	9	2.5	SW	0	Aquila nipalensis	1	14.54	1000	NE			1.31	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	9	2.5	SW	0	Aquila nipalensis	1	14.57	1000	E			1.37	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	9	2.5	SW	0	Aquila nipalensis	2	15.00	1000	NE			1.31	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	10	2.5	SW	0	Buteo rufinus	1	15.02	200	NE			1.01	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	10	3	SW	0	Aquila nipalensis	1	15.04	1000	NE			0.57	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	9	4.5	SW	0	Aquila nipalensis	1	15.12	1000	NE			0.34	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	9	4.5	SW	0	Aquila nipalensis	1	15.13	1000	NE			0.43	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	9	4.5	SW	0	Aquila nipalensis	1	15.15	1000	NE			1.23	on point, ↑ N

OHL_VP_4/N	12.03.2025	12.30-18.30	9	5	SW	0	Aquila nipalensis	2	15.22	1000	NE			1.10	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	9	5	SW	0	Aquila nipalensis	2	15.27	1000	NE			1.23	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	8	5	SW	0	Buteo sp.	1	15.27	1000	NE			1.23	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	8	4	SW	0	Aquila nipalensis	1	15.29	1000	NE			1.09	on point, ↑ N
OHL_VP_4/N	12.03.2025	12.30-18.30	8	5.5	SW	10	Pterocles orientalis	3	15.34	50	NE			0.57	on point, L→R
OHL_VP_4/N	12.03.2025	12.30-18.30	8	4.7	SW	10	Aquilla sp.	1	15.43	1000	NE			1.45	2000 m/ 320, L→R
OHL_VP_4/N	12.03.2025	12.30-18.30	8	6.4	SW	10	Aquila nipalensis	1	16.19	500	W			2.03	on point, L→R
OHL_VP_4/N	18.04.2025	08.50-11.50	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_4/N	18.04.2025	11.50-14.50	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_5/NE	11.05.2025	07.00-10.00	26	3	S	10	Pernis sp.	1	07.45	150	W		2.00		100 m/ 30, L→R
OHL_VP_5/NE	11.05.2025	07.00-10.00	25	3	S	10	Buteo rufinus	1	08.30	50	W	3.20			700 m/ 270, R→L
OHL_VP_5/NE	11.05.2025	07.00-10.00	30	3	S	10	Buteo rufinus	1	09.45	60	SW		2.09		800 m/ 330, L→R
OHL_VP_5/NE	11.05.2025	12.00-15.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_5/NE	12.03.2025	12.20-18.20	10	4.9	NE	0	Aquila nipalensis	1	13.39	50-60	E			0.15	on point, ↑ NE
OHL_VP_5/NE	12.03.2025	12.20-18.20	10	5.8	NE	0	Falco tinnunculus	1	14.09	5-10	N	0.10			100 m/ 99, R→L
OHL_VP_5/NE	12.03.2025	12.20-18.20	9	6.7	NE	0	Aquila nipalensis / photo	1	16.00	>150	N			1.44	300 m/ 110, RF
OHL_VP_5/NE	12.03.2025	12.20-18.20	7	4.8	NE	0	Falco tinnunculus	1	16.53	40-50	W		0.24		400 m/ 47, ↑ SW
OHL_VP_5/NE	12.03.2025	12.20-18.20	5	5.1	NE	0	Tadorna ferruginea	14	17.40	30-50	NNW		0.11		100 m/ 143, R→L
OHL_VP_5/NE	12.03.2025	12.25-15.25	9	3.8	E	0	Falco tinnunculus/naumanni	1	12.56	40	NW		0.17		500m / 190° L→R h=40m
OHL_VP_5/NE	12.03.2025	12.25-15.25	10	3.9	NE	0	Tadorna ferruginea	2	13.44	60	SSE			0.44	100m / 310° R→L h=60m
OHL_VP_5/NE	12.03.2025	15.25-18.25	10	3.8	NE	0	Falco tinnunculus/naumanni	1	14.00	40	RF		1.53		200m / 200° RF, sat on a pylon
OHL_VP_5/NE	12.03.2025	15.25-18.25	9	4.4	NEE	0	Aquila nipalensis	1	16.06	200	NW			0.39	500m / 187° L→R h=200m
OHL_VP_5/NE	12.03.2025	15.25-18.25	7	3.8	NEE	0	Larus sp.	8	17.06	60	NW			0.26	800m / 210° L→R h=60m

OHL_VP_5/NE	19.04.2025	10.00-13.00	22	3.8	N	50	Falco tinnunculus	1	11.11	10	N	0.15			50 m/ 11, RF
OHL_VP_5/NE	19.04.2025	10.00-13.00	24	2.3	N	50	Falco tinnunculus	3	11.27	25	E		0.25		30 m/ 99, RF
OHL_VP_5/NE	19.04.2025	10.00-13.00	26	1.1	N	50	Falco tinnunculus	1	12.04	20	N		0.20		40 m/ 9, RF
OHL_VP_5/NE	19.04.2025	13.40-16.40	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_5/SW	11.05.2025	07.00-10.00	23	2.7	S	20	Falco tinnunculus	2	08.29	30	N	0.12			100 m/ 60, RF
OHL_VP_5/SW	11.05.2025	07.00-10.00	24	2	S	20	Buteo rufinus	1	08.30	150	Circling			10.18	700 m/ 150, RF
OHL_VP_5/SW	11.05.2025	07.00-10.00	24	4.8	S	15	Falco tinnunculus	3	09.18	25	S		0.14		150 m/ 180, RF
OHL_VP_5/SW	11.05.2025	07.00-10.00	27	4.7	S	10	Falco tinnunculus	1	10.19	15	S	0.10			50 m/ 240, RF
OHL_VP_5/SW	11.05.2025	12.00-15.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_5/SW	19.04.2025	10.00-13.00	22	3.6	N	50	Falco tinnunculus	1	11.00	15	S	0.10			50 m/180, L→R
OHL_VP_5/SW	19.04.2025	13.40-16.40	24	1.6	N	30	Falco tinnunculus	1	14.41	10	NW	0.20			50 m/180, L→R
OHL_VP_5/SW	12.03.2025	12.25-15.25	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_5/SW	12.03.2025	15.25-18.25	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_6/NE	11.03.2025	12.15-15.15	5	1.0	NNE	0	Aquila nipalensis	2	13.21	200	RF			2.32	500m / 60° RF
OHL_VP_6/NE	11.03.2025	12.15-15.15	5	1.0	NNE	0	Buteo rufinus	1	13.21	200	RF			2.32	500m / 60° RF
OHL_VP_6/NE	11.03.2025	12.15-15.15	5	1.0	NNE	0	Aquila nipalensis	1	13.23	100	TY			2.82	50m / 327° ↑↑NE
OHL_VP_6/NE	11.03.2025	12.15-15.15	6	0.7	NNE	0	Aquila nipalensis	1	13.45	150	SEE			0.24	200m / 317° L→R h=150m
OHL_VP_6/NE	11.03.2025	12.15-15.15	6	2.1	NNE	0	Aquila nipalensis	1	14.31	500	NNE			0.51	300m / 339° RF
OHL_VP_6/NE	11.03.2025	12.15-15.15	6	1.5	NNE	0	Aquila nipalensis	1	14.37	50	RF			6.44	500m / 356° L→R h=50m, R→L h=100m
OHL_VP_6/NE	11.03.2025	12.15-15.15	5	2.4	NNE	0	Circus sp.	1	14.52	30	RF		2.48		500m / 32° L→R h=30m, RF
OHL_VP_6/NE	11.03.2025	12.15-15.15	5	2.4	NNE	0	Pelecanus crispus	15	14.55	300	NE			1.30	400m / 320° ↑↑NE
OHL_VP_6/NE	11.03.2025	15.15-18.15	6	2.5	NNE	0	Buteo rufinus	1	15.22	40	N		1.33		200m / 122° R→L h=50m
OHL_VP_6/NE	11.03.2025	15.15-18.15	4	2.8	NNE	0	Aquila nipalensis	1	15.30	100	NNE			0.29	100m / 325° ↑↑NE
OHL_VP_6/NE	11.03.2025	15.15-18.15	4	2.5	NNE	5	Aquila nipalensis	1	15.40	100	NNE			0.31	200m / 320° ↑↑NE

OHL_VP_6/NE	11.03.2025	15.15-18.15	4	2.5	NNE	5	Aquila nipalensis	1	15.41	50	NEE		0.43		Over the VP, L→R h=50m
OHL_VP_6/NE	11.03.2025	15.15-18.15	1	2.1	NNE	20	Aquila nipalensis	1	17.07	50	NW		0.58		1000m / 57° R→L h=30m
OHL_VP_6/NE	11.05.2025	08.20-11.20	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_6/NE	11.05.2025	13.00-16.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_6/NE	11.03.2025	12.15-15.15	5	1.0	NNE	0	Buteo rufinus	1	13.13	40	NE		1.45		400m / 140° ↑↑NE
OHL_VP_6/NE	16.04.2025	16.00-19.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_6/NE	17.04.2025	09.05-12.05	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_6/SW	11.03.2025	12.15-18.15	5	1.5	N	0	raptor	1	13.15	60	E			0.41	800 m/ 220, R→L
OHL_VP_6/SW	11.03.2025	12.15-18.15	5	0.5	N	0	Aquila nipalensis	1	13.23	60-80	NE			0.59	700 m/ 237, ↑ NE
OHL_VP_6/SW	11.03.2025	12.15-18.15	6	1.1	N	0	Aquila nipalensis	1	13.44	100-150	NE			1.29	500 m/ 250, ↑ NE
OHL_VP_6/SW	11.03.2025	12.15-18.15	6	1.6	N	0	Aquila nipalensis	1	14.21	>200	E			1.21	500 m/ 252, R→L
OHL_VP_6/SW	11.03.2025	12.15-18.15	6	1	N	0	Aquilla sp.	1	14.32	>200	SEE			0.36	300 m/ 300, R→L
OHL_VP_6/SW	11.03.2025	12.15-18.15	6	2.4	N	0	Aquila nipalensis	1	14.45	100-120	SW			0.29	400 m/ 300, ↑ SW
OHL_VP_6/SW	11.03.2025	12.15-18.15	6	2.6	N	0	Pelecanus sp.	15	14.56	>200	NE			0.16	500 m/ 300, ↑ NE
OHL_VP_6/SW	11.03.2025	12.15-18.15	5	3.5	N	0	Aquilla sp.	1	15.31	100-120	N			0.10	200 m/ 270, ↑ NE
OHL_VP_6/SW	11.03.2025	12.15-18.15	4	3.9	N	0	Aquila nipalensis	1	15.40	70-100	NE			0.15	on point, RF
OHL_VP_6/SW	11.03.2025	12.15-18.15	4	3.9	N	0	Aquila nipalensis	1	15.42	20-40	NEE		0.10		100 m/ 300, R→L
OHL_VP_6/SW	11.03.2025	12.15-18.15	2	5.5	N	0	Aquilla sp.	1	16.32	>200	SEE			0.34	2000 m/ 228, RF
OHL_VP_6/SW	11.03.2025	12.15-18.15	2	4.8	N	0	Anatinae	6	17.02	80-100	SW			0.18	on point, ↑ SW
OHL_VP_6/SW	11.03.2025	12.15-18.15	2	4	N	0	Pterocles orientalis	2	17.05	30-50	SWW		0.23		1500 m/ 220, R→L
OHL_VP_6/SW	11.05.2025	08.20-11.20	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_6/SW	11.05.2025	13.00-16.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_6/SW	16.04.2025	16.00-19.00	19	3.5	NE	5	Aquila sp.	1	16.55	150	RF			0.40	2000m / 220° RF
OHL_VP_6/SW	17.04.2025	09.05-12.05	18	3.2	SEE	60	Aquila heliaca	1	9.18	80	RF			0.45	1300m / 233° RF

OHL_VP _6/SW	17.04. 2025	09.05- 12.05	16	4.1	NEE	70	Aquila nipalensis	1	11.00	150	R→L			1.51	1500m / 232° R→L h=150m
OHL_VP _6/SW	17.04. 2025	09.05- 12.05	17	4.3	NEE	50	Aquila nipalensis	1	11.16	40	R→L		1.22		1500m / 226° R→L h=40m
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	5	2	N	0	Aquilla sp.	1	11.49	100	NW			1.10	on point, L→R
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	5	0.9	N	20	Aquilla sp.	1	13.19	50-300	Circling			7.10	2000 m/ 55, RF
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	5	0.9	N	20	Circus cyaneus	1	13.24	1-5	E	0.30			on point, L→R
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	6	—	—	20	Aquila nipalensis	2	13.42	>200	E			05.58	on point, L→R
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	7	1.6	NE	5	Buteo rufinus	1	14.04	100	E			0.39	on point, L→R
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	7	1.6	NE	5	Circus cyaneus	1	14.18	100	E			1.31	on point, L→R
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	7	1.6	NE	5	Aquila nipalensis	1	14.23	100	S			1.24	on point, ↑ NE
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	7	3.5	NE	5	Larus cachinnans	14	15.38	20	E		1.10		on point, L→R
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	5	3	N	10	Circus airuginosus	1	15.54	30	E	0.49			on point, L→R
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	5	3.5	N	10	Aquilla sp.	1	16.26	5	N			1.39	on point, ↑ NE
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	5	3	N	10	Circus airuginosus	1	16.39	100	NE	0.59			on point, L→R
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	5	3	N	10	Falco tinnunculus	1	16.58	10	E		0.55		on point, RF
OHL_VP _7/NE	11.03. 2025	11.40- 17.40	3	3	N	10	Falco tinnunculus	1	17.37	20	E		0.43		on point, RF
OHL_VP _7/NE	11.05. 2025	05.45- 08.45	21	1.7	SWW	20	Pterocles orientalis	1	06.41	20-50	NWW		0.25		Over the VP, R→L
OHL_VP _7/NE	11.05. 2025	05.45- 08.45	21	1.7	SWW	20	Larus cachinnans	2	06.49	50-70	NE			0.17	Over the VP, R→L
OHL_VP _7/NE	11.05. 2025	05.45- 08.45	26	0.9	SWW	30	Pterocles orientalis	1	07.46	20-50	SW		0.12		100 m/ 15, RF
OHL_VP _7/NE	11.05. 2025	05.45- 08.45	27	1.2	SWW	40	Milvus migrans	1	08.00	20-50	NWW		0.40		Over the VP, RF
OHL_VP _7/NE	11.05. 2025	05.45- 08.45	29	1.2	SWW	50	Circaetus gallicus	1	08.08	20-50	W		0.27		500 m/ 80, R→L
OHL_VP _7/NE	11.05. 2025	05.45- 08.45	30	2.4	SWW	50	Buteo rufinus	1	08.40	20-50	NEE		0.55		300 m/ 100, Rf
OHL_VP _7/NE	11.05. 2025	08.45- 11.45	30	1.3	SWW	50	Milvus migrans	1	09.02	20-50	NW		1.18		300 m/ 270, RF
OHL_VP _7/NE	11.05. 2025	08.45- 11.45	31	1.5	SWW	50	Buteo rufinus	1	09.25	10-30	NW	0.20	0.08		200 m/ 345, RF
OHL_VP _7/NE	11.05. 2025	08.45- 11.45	31	2,2	SWW	85	Buteo rufinus	1	10.35	20-100	NE	0.12	2.20	1.37	500 m / 45, RF

OHL_VP_7/NE	16.04.2025	15.40-18.40	15	2.5	NE	0	Larus sp.	4	16.01	20-30	SW		0.24		1000 m/ 38, ↑ SW
OHL_VP_7/NE	16.04.2025	15.40-18.40	15	2.8	NE	0	Pterocles orientalis	3	16.58	<20	W	0.14			600 m/ 50, L→R
OHL_VP_7/NE	16.04.2025	15.40-18.40	14	3.1	NE	0	Larus sp.	5	17.11	<20	SW		0.19		300 m/ 30, ↑ SW
OHL_VP_7/NE	16.04.2025	15.40-18.40	14	2.7	NE	0	Tadorna ferruginea	12	17.24	20-50	SWW		0.21		500 m/ 80, L→R
OHL_VP_7/NE	17.04.2025	08.30-11.30	13	1.8	NEE	40	Aquila nipalensis	1	08.34	100-150	NNE			1.04	300 m/ 10, ↑ NE
OHL_VP_7/NE	17.04.2025	08.30-11.30	14	1.9	NEE	40	Tadorna ferruginea	2	08.45	20-30	W		0.26		500 m/ 35, L→R
OHL_VP_7/NE	17.04.2025	08.30-11.30	13	2.3	NEE	40	Tadorna ferruginea	2	08.52	<20	NWW	0.17			400 m/ 285, RF
OHL_VP_7/NE	17.04.2025	08.30-11.30	14	2.4	NEE	40	Tadorna ferruginea	5	08.54	20-30	SEE		0.31		400 m/ 270, R→L
OHL_VP_7/NE	17.04.2025	08.30-11.30	14	2.8	NEE	40	Tadorna ferruginea	2	09.03	30-50	NE		0.28		200 m/ 310, R→L
OHL_VP_7/NE	17.04.2025	08.30-11.30	16	2.1	NEE	40	Pernis sp.	2	10.20	>200	NE			2.44	Over the VP, ↑ NE
OHL_VP_7/NE	17.04.2025	08.30-11.30	17	2.3	NEE	40	raptor	2	10.46	300-500				1.41	Over the VP, ↑ NE
OHL_VP_8/E	10.05.2025	07.45-10.45	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_8/E	10.05.2025	14.30-17.30	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted
OHL_VP_8/E	21.04.2025	12.00-15.00	21	4.1	NE	90	Falco tinnunculus	1	12.44	20-40	NNE		0.39		400 m/ 139, R→L
OHL_VP_8/E	21.04.2025	12.00-15.00	21	3.8	NE	90	Circus sp.	1	14.28	10-20	N	0.31			200 m/ 124, R→L
OHL_VP_8/E	21.04.2025	12.00-15.00	21	2.4	NE	90	Milvus migrans	1	14.32	50-80	NE			1.25	300 m/ 166, R→L
OHL_VP_8/E	21.04.2025	12.00-15.00	20	3.1	NE	90	Falco subbuteo	1	14.44	20-60	NE		0.38	0.11	300 m/ 137, R→L
OHL_VP_8/E	21.04.2025	12.00-15.00	20	2.4	NE	90	Larus sp.	3	14.47	20-50	NEE		0.21		1500 m/ 137, R→L
OHL_VP_8/E	21.04.2025	12.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	No bird spotted

Annex 3.3 En-route observations in March 2025 – May 2025

Date	Coordinates	Species	Count	Other information
17.04.2025	N44.535111 E73.545314	Alectoris chukar	24	
14.04.2025	N44.620499 E73.437510	Perdix perdix	7	
13.04.2025	N44.746789 E73.578621	Gallinago gallinago	4	
13.04.2025	N44.746789 E73.578621	Charadrius dubius	3	
09.05.2025	N44.580173 E73.510716	Merops apiaster	6	
17.05.2025	N44.430060 E73.713772	Alectoris chukar	13	
13.05.2025	N44.688937 E73.405962	Testudo horsfieldi	4	10 m
13.05.2025	N44.763014 E73.295618	Testudo horsfieldi	1	10 m
13.05.2025	N44.763014 E73.295618	Ovis ammon	4	2500 m S
15.04.2025	N44.621765 E73.446383	Testudo horsfieldi	2	10 m
14.04.2025	N44.690080 E73.361339	Testudo horsfieldi	9	15 m
20.04.2025	N44.651681 E73.480708	Motacilla flava	3	
08.05.2025	N44.596048 E73.467724	Emberiza bruniceps	2	
19.04.2025	N44.54534 E03.47318	Testudo horsfieldi	1	5 m
19.04.2025	N44.54990 E73.46818	Testudo horsfieldi	1	5 m
19.04.2025	N44.56122 E73.45751	Tetrax tetrax	1	
19.04.2025	N44.58345 E73.47251	Buteo rufinus	1	
19.04.2025	N44.59385 E73.44670	Pterocles orientalis	10	
19.04.2025	N44.62098 E073.43786	Testudo horsfieldi	1	5 m
19.04.2025	N44.62383 E73.44708	Testudo horsfieldi	2	5 m
19.04.2025	N44.681855 E73.48812	Testudo horsfieldi	1	5 m
19.04.2025	N44.58264 E73.57555	Testudo horsfieldi	1	5 m
19.04.2025	N44.57837 E73.59782	Lepus tolai	1	
19.04.2025	N44.57494 E73.61213	Tetrax tetrax	1	
19.04.2025	N44.55340 E73.62918	Testudo horsfieldi	1	5 m
19.04.2025	N44.54508 E73.64091	Testudo horsfieldi	1	5 m
20.04.2025	N44.61057 E73.50722	Testudo horsfieldi	1	5 m

20.04.2025	N44.63268 E73.48670	Falco vespertinus	1	
20.04.2025	N44.64311 E73.48511	Pterocles orientalis	4	
20.04.2025	N44.68704 E73.40399	Tetrax tetrax	1	
20.04.2025	N44.73301 E73.32293	Testudo horsfieldi	1	5 m
20.04.2025	N44.76918 E73.28101	Testudo horsfieldi	1	5 m
20.04.2025	N44.76393 E73.23629	Testudo horsfieldi	1	5 m
20.04.2025	N44.76290 E73.23048	Testudo horsfieldi	2	5 m
20.04.2025	N44.76648 E73.21576	Testudo horsfieldi	1	5 m
20.04.2025	N44.79296 E73.20851	Rhodospiza obsoleta	1	
20.04.2025	N44.79444 E73.24370	Testudo horsfieldi	1	5 m
20.04.2025	N44.79925 E73.24203	Testudo horsfieldi	2	5 m
20.04.2025	N44.80266 E73.23773	Circus pygargus	1	
20.04.2025	N44.81634 E73.24561	Testudo horsfieldi	1	5 m
20.04.2025	N44.83022 E73.25728	Testudo horsfieldi	1	5 m
20.04.2025	N44.84275 E73.23200	Testudo horsfieldi	1	5 m
21.04.2025	N44.71557 E73.40233	Testudo horsfieldi	1	5 m
21.04.2025	N44.69563 E73.40156	Pterocles orientalis	16	
21.04.2025	N44.68046 E73.43801	Sterna hirundo	1	
21.04.2025	N44.66183 E73.46624	Tetrax tetrax	2	
21.04.2025	N44.64450 E73.48625	Tetrax tetrax	2	
21.04.2025	N44.621 E73.51652	Pterocles orientalis	2	
21.04.2025	N44.61053 E73.52690	Pterocles orientalis	4	
21.04.2025	N44.60697 E73.53480	Pterocles orientalis	2	
21.04.2025	N44.59766 E73.53642	Pterocles orientalis	4	
21.04.2025	N44.58809 E73.55205	Testudo horsfieldi	1	5 m
21.04.2025	N44.58673 E73.56012	Testudo horsfieldi	1	5 m
21.04.2025	N44.58380 E73.57301	Turdus atrogularis	1	
24.03.2025	N44.55246 E73.81055	Chlamydotis macqueenii	2	
24.03.2025	N44.54457 E73.76767	Tetrax tetrax	1	
24.03.2025	N44.54457 E73.76767	Larus cachinnans	1	
24.03.2025	N44.54071 E73.76117	Chlamydotis macqueenii	1	

24.03.2025	N44.53575 E73.75341	Tetrax tetrax	5	
24.03.2025	N44.52587 E73.73314	Tetrax tetrax	11	
24.03.2025	N44.52585 E73.73307	Tetrax tetrax	3	
24.03.2025	N44.52074 E73.64563	Alectoris chukar	2	
24.03.2025	N44.52074 E73.64563	Pterocles orientalis	12	
24.03.2025	N44.52074 E73.64563	Circus pygargus	1	
24.03.2025	N44.58761 E73.65111	Gazella subgutturosa	3	
24.03.2025	N44.58761 E73.65111	Tetrax tetrax	1	
25.03.2025	N44.655825 E73.769343	Anatidae	51	
25.03.2025	N44.78715 E73.46716	Circus pygargus	1	
25.03.2025	N44.74677 E73.51784	Buteo rufinus	1	
12.04.2025	44.56916, 73.87030	Upupa epops	1	
12.04.2025	44.55258, 73.83608	Buteo rufinus	1	
12.04.2025	44.50760, 73.59662	Pterocles orientalis	3	
12.04.2025	44.76190, 73.30933	Circaetus gallicus	1	
12.04.2025	44.76508, 73.23899	Upupa epops	1	
14.04.2025	44.72300, 73.37316	Tetrax tetrax	1	
16.04.2025	44.61262, 73.50334	Circaetus gallicus	1	
17.04.2025	44.51769, 73.61922	Tetrax tetrax	1	
18.04.2025	44.53935, 73.64315	Tetrax tetrax	1	
18.04.2025	44.50965, 73.61568	Oenanthe isabellina	2	
18.04.2025	44.36265, 73.71532	Aquila chrysaetos	1	
18.04.2025	44.41094, 73.71468	Alectoris chukar	14	
18.04.2025	44.48482, 73.71722	Buteo rufinus	1	
18.04.2025	44.48482, 73.71722	Corvus ruficollis	1	
18.04.2025	44.49025, 73.65990	Corvus ruficollis	1	
18.04.2025	44.48360, 73.65035	Buteo rufinus	1	
18.04.2025	44.48360, 73.65035	Anthus campestris	1	
18.04.2025	44.502, 73.605	Tetrax tetrax	1	
18.04.2025	44.50840, 73.55907	Pterocles orientalis	4	
18.04.2025	44.50840, 73.55907	Oenanthe isabellina	1	

18.04.2025	44.50893, 73.53445	Alectoris chukar	8	
18.04.2025	44.52888, 73.53671	Saxicola maurus	1	
18.04.2025	44.52888, 73.53671	Lanius excubitor pallidirostris	1	
18.04.2025	44.562, 73.557	Accipiter nisus	1	
18.04.2025	44.5612,73.6225	Anthus trivialis	1	
05.05.2025	44.55209, 73.83117	Buteo rufinus	1	
05.05.2025	44.51838, 73.57177	Emberiza bruniceps	1	
05.05.2025	44.53148, 73.54034	Pastor roseus	38	
05.05.2025	44.53148, 73.54034	Buteo rufinus	1	
05.05.2025	44.77494, 73.27314	Perdix perdix	2	
05.05.2025	44.78580, 73.21176	Lanius excubitor pallidirostris	1	
05.05.2025	44.76462, 73.23504	Upupa epops	1	
05.05.2025	44.76462, 73.23504	Otus scops	1	
05.05.2025	44.77167, 73.22219	Accipiter nisus	1	
05.05.2025	44.78640, 73.21139	Lanius excubitor pallidirostris	1	
05.05.2025	44.78640, 73.21139	Melanocorypha calandra	4	
05.05.2025	44.77168, 73.27763	Tetrax tetrax	1	
05.05.2025	44.763, 73.296	Caprimulgus europaeus	1	
06.05.2025	44.78714, 73.21156	Lanius excubitor pallidirostris	1	
06.05.2025	44.77851, 73.21178	Melanocorypha bimaculata	2	
06.05.2025	44.77851, 73.21178	Melanocorypha calandra	3	
06.05.2025	44.70921, 73.33496	Tetrax tetrax	1	
06.05.2025	44.70258, 73.34119	Tetrax tetrax	1	
07.05.2025	44.73210, 73.32394	Tadorna ferruginea	4	
07.05.2025	44.73210, 73.32394	Apus apus	2	
07.05.2025	44.73210, 73.32394	Merops apiaster	2	
07.05.2025	44.73210, 73.32394	Emberiza calandra	1	
07.05.2025	44.73210, 73.32394	Pastor roseus	14	
07.05.2025	44.73210, 73.32394	Melanocorypha calandra	1	
07.05.2025	44.64975, 73.37896	Hirundo rustica	1	
07.05.2025	44.61607, 73.39131	Streptopelia orientalis	2	

07.05.2025	44.61607, 73.39131	Iduna rama	1	
07.05.2025	44.61607, 73.39131	Cercotrichas galactotes	1	
07.05.2025	44.61607, 73.39131	Luscinia svecica	1	
07.05.2025	44.62667, 73.38701	Alectoris chukar	5	
07.05.2025	44.617, 73.392	Caprimulgus europaeus	1	
08.05.2025	44.617, 73.392	Buteo rufinus	1	
08.05.2025	44.617, 73.392	Cercotrichas galactotes	1	
08.05.2025	44.65579, 73.38365	Streptopelia orientalis	2	
08.05.2025	44.64856, 73.48342	Pastor roseus	11	
08.05.2025	44.64856, 73.48342	Passer hispaniolensis	2	
08.05.2025	44.64856, 73.48342	Coracias garrulus	2	
08.05.2025	44.61708, 73.49076	Saxicola maurus	1	
08.05.2025	44.65280, 73.45445	Melanocorypha calandra	3	
08.05.2025	44.65382, 73.48555	Lanius phoenicuroides	1	
08.05.2025	44.64981, 73.48412	Melanocorypha bimaculata	2	
08.05.2025	44.64981, 73.48412	Melanocorypha calandra	1	
08.05.2025	44.64981, 73.48412	Alaudala heinei	1	
08.05.2025	44.64981, 73.48412	Passer hispaniolensis	1	
08.05.2025	44.63040, 73.48797	Lanius excubitor pallidirostris	1	
08.05.2025	44.63040, 73.48797	Lanius phoenicuroides	1	
09.05.2025	44.64018, 73.45284	Pterocles orientalis	1	
09.05.2025	44.64018, 73.45284	Tetrax tetrax	1	
09.05.2025	44.652, 73.488	Cercotrichas galactotes	1	
09.05.2025	44.61577, 73.49059	Corvus ruficollis	1	
09.05.2025	44.52084, 73.53360	Streptopelia orientalis	1	
09.05.2025	44.52084, 73.53360	Buteo rufinus	1	
09.05.2025	44.52084, 73.53360	Falco tinnunculus	1	
09.05.2025	44.55302, 73.55296	Caprimulgus europaeus	1	
09.05.2025	44.55304, 73.55298	Burhinus oedicnemus	1	
10.05.2025	44.49415, 73.63915	Corvus ruficollis	1	
10.05.2025	44.48360, 73.65035	Passer hispaniolensis	1	

10.05.2025	44.48360, 73.65035	Buteo rufinus	1		
10.05.2025	44.49654, 73.66749	Buteo rufinus	1		
10.05.2025	44.46056, 73.71584	Corvus ruficollis	1		
10.05.2025	44.36265, 73.71532	Alectoris chukar	2		
10.05.2025	44.36265, 73.71532	Buteo rufinus	1		
10.05.2025	44.37155, 73.71403	Luscinia megarhynchos	1		
10.05.2025	44.32781, 73.71302	Corvus ruficollis	1		
10.05.2025	44.27649, 73.72235	Pterocles orientalis	4		
10.05.2025	44.23215, 73.76288	Pterocles orientalis	5		
10.05.2025	44.23215, 73.76288	Buteo rufinus	1		
10.05.2025	43.96009, 73.59905	Tadorna ferruginea	3		
10.05.2025	43.96009, 73.59905	Burhinus oedicnemus	1		
10.05.2025	43.96009, 73.59905	Tachyspiza badia	1		
10.05.2025	43.96009, 73.59905	Corvus frugilegus	2		
10.05.2025	44.14360, 73.71034	Buteo rufinus	1		
16.04.2025	44.61017, 73.49243	Gloydius halys	1		
09.05.2025	44.552975, 73.5529472222	Elaphe dione	1		
10.05.2025	44.3610415601, 73.713351063	Eremias velox	1		
11.05.2025	43.9552111111, 73.6041805556	Eremias velox	1		
16.04.2025	44.6601458658, 73.5463102821	Meriones libycus	5		
16.04.2025	44.5566347073, 73.5548057305	Allactaga major	1		
18.04.2025	44.53935, 73.64315	Meriones libycus	2		
08.05.2025	44.6129722222, 73.4950027778	Ellobius tancrei	1		
10.05.2025	44.3791527141, 73.7143261496	Spermophilus fulvus	1		

Annex 3.4 Transect observations in March 2025 – May 2025

Transect Name	Date	Start time	Transect Length (km)	Transect Time (min)	Species (in order of detection)	Count	Age/Sex	Other information
M03	12.04.2025	12:01	1,7	30	—	—	—	—

M21	13.04.2025	9:39	0,9	30	Testudo horsfieldi	1	adult	10 m
M21	13.04.2025	9:39	0,9	30	Testudo horsfieldi	1	juvenile	1 m
M21	13.04.2025	9:39	0,9	30	Testudo horsfieldi	1	adult male	1 m
M21	13.04.2025	9:39	0,9	30	Testudo horsfieldi	1	adult male	1 m
M21	13.04.2025	9:39	0,9	30	Testudo horsfieldi	1	adult male	1 m
M21	13.04.2025	9:39	0,9	30	Testudo horsfieldi	1	adult female	12 m
M21	13.04.2025	9:39	0,9	30	Testudo horsfieldi	1	adult female	4 m
M21	13.04.2025	9:39	0,9	30	Alectoris chukar	1		
M21	13.04.2025	9:39	0,9	30	Upupa epops	1		
M21	13.04.2025	9:39	0,9	30	Oenanthe oenanthe	1		
M21	13.04.2025	9:39	0,9	30	Oenanthe pleschanka	5		
M16	14.04.2025	11:01	0,9	30	Corvus ruficollis	1		
M16	14.04.2025	11:01	0,9	30	Alauda arvensis	Nest		
M07	16.04.2025	10:59	1,7	30	Testudo horsfieldi	1	adult male	2 m
M07	16.04.2025	10:59	1,7	30	Testudo horsfieldi	1	adult female	10 m
M07	16.04.2025	10:59	1,7	30	Testudo horsfieldi	1	adult female	1 m
M07	16.04.2025	10:59	1,7	30	Gloydius caraganus	1		
M07	16.04.2025	10:59	1,7	30	Alauda arvensis	Nest		
M05	17.04.2025	12:00	0,6	30	Testudo horsfieldi	1	adult male	5 m
M05	17.04.2025	12:00	0,6	30	Testudo horsfieldi	1	adult female	10 m
OHL_VP_3	18.04.2025	11:50	1,3	30	Testudo horsfieldi	1	juvenile	5 m
OHL_VP_3	18.04.2025	11:50	1,3	30	Testudo horsfieldi	1	adult female	10 m
OHL_VP_3	18.04.2025	11:50	1,3	30	Testudo horsfieldi	1	adult female	10 m
OHL_VP_3	18.04.2025	11:50	1,3	30	Testudo horsfieldi	1	juvenile	20 m
OHL_VP_3	18.04.2025	11:50	1,3	30	Testudo horsfieldi	1	adult female	10 m
OHL_VP_3	18.04.2025	11:50	1,3	30	Testudo horsfieldi	1	juvenile	5 m
OHL_VP_3	18.04.2025	11:50	1,3	30	Testudo horsfieldi	1	adult male	5 m
OHL_VP_3	18.04.2025	11:50	1,3	30	Testudo horsfieldi	1	adult female	10 m
OHL_VP_3	18.04.2025	11:50	1,3	30	Testudo horsfieldi	1	adult male	10 m
OHL_VP_4	19.04.2025	13:31	0,5	30	—	—	—	—
M01	12.04.2025	11:41	0,9	30	Grus sp.	38		

M01	12.04.2025	11:41	0,9	30	Oenanthe oenanthe	2	Male and female	
M01	12.04.2025	11:41	0,9	30	Alaudidae	3		
M01	12.04.2025	11:41	0,9	30	Alaudidae	2		
M01	12.04.2025	11:41	0,9	30	Milvus migrans	1		
M01	12.04.2025	11:41	0,9	30	Eremias arguta	1		
M19	13.04.2025	11:11	0,8	30	Alaudidae	4		
M19	13.04.2025	11:11	0,8	30	Curruca nana	1		
M19	13.04.2025	11:11	0,8	30	Oenanthe pleschanka	1	Male	
M19	13.04.2025	11:11	0,8	30	Oenanthe deserti	1	Male	
M19	13.04.2025	11:11	0,8	30	Testudo horsfieldi	1	Adult	1 m
M19	13.04.2025	11:11	0,8	30	Testudo horsfieldi	1	Adult	1 m
M14	14.04.2025	11:01	1,5	30	Testudo horsfieldi	1	Juvenile	1 m
M14	14.04.2025	11:01	1,5	30	Oenanthe oenanthe	1	Male	
M14	14.04.2025	11:01	1,5	30	Oenanthe oenanthe	1	Female	
M14	14.04.2025	11:01	1,5	30	Alaudidae	2		
M14	14.04.2025	11:01	1,5	30	Alaudidae	Nest		
M14	14.04.2025	11:01	1,5	30	Testudo horsfieldi	1	juvenile	1 m
M14	14.04.2025	11:01	1,5	30	Testudo horsfieldi	1	Adult	1 m
M14	14.04.2025	11:01	1,5	30	Testudo horsfieldi	1	Adult	1 m
M14	14.04.2025	11:01	1,5	30	Eremias arguta	1		
M14	14.04.2025	11:01	1,5	30	Testudo horsfieldi	1	Adult	1 m
M14	14.04.2025	11:01	1,5	30	Testudo horsfieldi	1	Adult	1 m
P17	18.04.2025	13:31	2,1	30	Alaudidae	1		
P17	18.04.2025	13:31	2,1	30	Alaudidae	4		
P17	18.04.2025	13:31	2,1	30	Testudo horsfieldi	1	Adult	1 m
P17	18.04.2025	13:31	2,1	30	Oenanthe oenanthe	1		
P17	18.04.2025	13:31	2,1	30	Alaudidae	3		
P17	18.04.2025	13:31	2,1	30	Testudo horsfieldi	1	Adult	1 m
M06	16.04.2025	11:51	1,4	30	Alaudidae	1		
M06	16.04.2025	11:51	1,4	30	Alaudidae	2		
M06	16.04.2025	11:51	1,4	30	Alaudidae	8		

M06	16.04.2025	11:51	1,4	30	Alaudidae	Nest		
M06	16.04.2025	11:51	1,4	30	Curruca nana	1		
OHL_VP_8	21.04.2025	12:01	0,6	30	Alaudidae	2		
OHL_VP_8	21.04.2025	12:01	0,6	30	Oenanthe deserti	1	Male	
OHL_VP_8	21.04.2025	12:01	0,6	30	Oenanthe oenanthe	1	Male	
OHL_VP_8	21.04.2025	12:01	0,6	30	Testudo horsfieldi	1	Juvenile	1 m
OHL_VP_8	21.04.2025	12:01	0,6	30	Alaudidae	1		
OHL_VP_8	21.04.2025	12:01	0,6	30	Oenanthe pleschanka	1	Male	
OHL_VP_8	21.04.2025	12:01	0,6	30	Upupa epops	1		
OHL_VP_8	21.04.2025	12:01	0,6	30	Testudo horsfieldi	1	Adult	1 m
OHL_VP_8	21.04.2025	12:01	0,6	30	Testudo horsfieldi	1	Adult	1 m
OHL_VP_8	21.04.2025	12:01	0,6	30	Testudo horsfieldi	1	Adult	1 m
OHL_VP_7	17.04.2025	11:31	2	30	Curruca nana	1		
OHL_VP_7	17.04.2025	11:31	2	30	Alaudidae	1		
OHL_VP_7	17.04.2025	11:31	2	30	Alaudidae	2		
OHL_VP_7	17.04.2025	11:31	2	30	Testudo horsfieldi	1	Adult	1 m
OHL_VP_7	17.04.2025	11:31	2	30	Alaudidae	3		
OHL_VP_7	17.04.2025	11:31	2	30	Oenanthe oenanthe	2	Male	
OHL_VP_7	17.04.2025	11:31	2	30	Oenanthe oenanthe	1	Female	
OHL_VP_7	17.04.2025	11:31	2	30	Alaudidae	1		
OHL_VP_1	18.04.2025	11:01	0,6	30	Saxicola rubicola	3		
OHL_VP_1	18.04.2025	11:01	0,6	30	Buteo rufinus	1		
OHL_VP_1	18.04.2025	11:01	0,6	30	Anthus campestris	1		
OHL_VP_1	18.04.2025	11:01	0,6	30	Calandrella brachydactyla	3		
OHL_VP_1	18.04.2025	11:01	0,6	30	Corvus ruficolis	1		
OHL_VP_1	18.04.2025	11:01	0,6	30	Melanocorypha calandra	10		
OHL_VP_1	18.04.2025	11:01	0,6	30	Alauda arvensis	10		
OHL_VP_1	18.04.2025	11:01	0,6	30	Lacertilia	3		
OHL_VP_1	18.04.2025	11:01	0,6	30	Testudo horsfieldi	1		10 m
OHL_VP_1	18.04.2025	11:01	0,6	30	Testudo horsfieldi	1		10 m
OHL_VP_1	18.04.2025	11:01	0,6	30	Testudo horsfieldi	1		10 m

OHL_VP_1	18.04.2025	11:01	0,6	30	Testudo horsfieldi	1		10 m
OHL_VP_3	17.04.2025	14:50	0,6	30	Testudo horsfieldi	1		1 m
OHL_VP_3	17.04.2025	14:50	0,6	30	Testudo horsfieldi	1		1 m
OHL_VP_3	17.04.2025	14:50	0,6	30	Testudo horsfieldi	1		1 m
OHL_VP_3	17.04.2025	14:50	0,6	30	Testudo horsfieldi	1		1 m
OHL_VP_3	17.04.2025	14:50	0,6	30	Melanocorypha calandra	3		
OHL_VP_3	17.04.2025	14:50	0,6	30	Alauda arvensis	4		
OHL_VP_3	17.04.2025	14:50	0,6	30	Corvus ruficolis	2		
OHL_VP_6	16.04.2025	15:30	0,8	30	Testudo horsfieldi	1		1 m
OHL_VP_6	16.04.2025	15:30	0,8	30	Melanocorypha calandra	8		
OHL_VP_6	16.04.2025	15:30	0,8	30	Alauda arvensis	4		
OHL_VP_6	16.04.2025	15:30	0,8	30	Testudo horsfieldi	1		1 m
OHL_VP_6	16.04.2025	15:30	0,8	30	Testudo horsfieldi	1		1 m
M32	16.04.2025	11:41	0,9	30	Curruca nana	1		
M32	16.04.2025	11:41	0,9	30	Oenanthe deserti	2		
M32	16.04.2025	11:41	0,9	30	Melanocorypha calandra	10		
M32	16.04.2025	11:41	0,9	30	Alauda arvensis	6		
M32	16.04.2025	11:41	0,9	30	Lepus tolai	1		
M20	13.04.2025	9:31	1	30	Testudo horsfieldi	1		1 m
M20	13.04.2025	9:31	1	30	Melanocorypha calandra	12		
M20	13.04.2025	9:31	1	30	Alauda arvensis	6		
M20	13.04.2025	9:31	1	30	Tetrax tetrax	1		
M20	13.04.2025	9:31	1	30	Oenanthe isabellina	3		
M20	13.04.2025	9:31	1	30	Gazella subgutturosa	3	2 juvenile 1 adult female	
M15	14.04.2025	12:01	1	30	Testudo horsfieldi	1		1 m
M15	14.04.2025	12:01	1	30	Testudo horsfieldi	1		1 m
M15	14.04.2025	12:01	1	30	Testudo horsfieldi	1		1 m
M15	14.04.2025	12:01	1	30	Testudo horsfieldi	1		1 m
M15	14.04.2025	12:01	1	30	Testudo horsfieldi	1		1 m
M15	14.04.2025	12:01	1	30	Oenanthe isabellina	1		
M15	14.04.2025	12:01	1	30	Oenanthe isabellina	1		

M15	14.04.2025	12:01	1	30	Oenanthe isabellina	3		
M15	14.04.2025	12:01	1	30	Melanocorypha calandra	3		
M15	14.04.2025	12:01	1	30	Alauda arvensis	3		
X04	15.04.2025	11:16	0,6	30	Pterocles orientalis	2		
X04	15.04.2025	11:16	0,6	30	Testudo horsfieldi	1		1 m
X04	15.04.2025	11:16	0,6	30	Curruca nana	1		
X04	15.04.2025	11:16	0,6	30	Anthus campestris	2		
X04	15.04.2025	11:16	0,6	30	Oenanthe deserti	2		
X04	15.04.2025	11:16	0,6	30	Melanocorypha calandra	5		
X04	15.04.2025	11:16	0,6	30	Alauda arvensis	2		
X04	15.04.2025	11:16	0,6	30	Oenanthe pleschanka	1		
OHL_VP_5	19.04.2025	13:31	0,6	30	Alaudidae	4		
OHL_VP_5	19.04.2025	13:31	0,6	30	Alaudidae	2		
OHL_VP_5	19.04.2025	13:31	0,6	30	Oenanthe	2		
OHL_VP_5	19.04.2025	13:31	0,6	30	Oenanthe	1		
OHL_VP_2	18.04.2025	11:26	0,9	30	Testudo horsfieldi	1		1 m
OHL_VP_2	18.04.2025	11:26	0,9	30	Alaudidae	4		
OHL_VP_2	18.04.2025	11:26	0,9	30	Testudo horsfieldi	1		1 m
OHL_VP_2	18.04.2025	11:26	0,9	30	Oenanthe	6		
OHL_VP_2	18.04.2025	11:26	0,9	30	Testudo horsfieldi	1		1 m
OHL_VP_2	18.04.2025	11:26	0,9	30	Testudo horsfieldi	1		1 m
M10	16.04.2025	11:21	0,6	30	Alaudidae	8		
M10	16.04.2025	11:21	0,6	30	Alaudidae	Nest		
M10	16.04.2025	11:21	0,6	30	Testudo horsfieldi	1		1 m
M10	16.04.2025	11:21	0,6	30	Testudo horsfieldi	1		1 m
M10	16.04.2025	11:21	0,6	30	Testudo horsfieldi	1		1 m
M22	13.04.2025	14:30	0,7	30	Oenanthe	4		
M22	13.04.2025	14:30	0,7	30	Alaudidae	3		
M22	13.04.2025	14:30	0,7	30	Alaudidae	7		
M22	13.04.2025	14:30	0,7	30	Testudo horsfieldi	1		1 m
P02	14.04.2025	11:21	0,6	30	Alaudidae	1		

P02	14.04.2025	11:21	0,6	30	Alaudidae	14		
P02	14.04.2025	11:21	0,6	30	Alaudidae	2		
P02	14.04.2025	11:21	0,6	30	Oenanthe	3		
P02	14.04.2025	11:21	0,6	30	Alaudidae	Nest		
M12	15.04.2025	11:11	0,7	30	Oenanthe	1		
M12	15.04.2025	11:11	0,7	30	Oenanthe	1		
M12	15.04.2025	11:11	0,7	30	Alaudidae	11		
M12	15.04.2025	11:11	0,7	30	Testudo horsfieldi	1		1 m
M12	15.04.2025	11:11	0,7	30	Testudo horsfieldi	1		1 m
M12	15.04.2025	11:11	0,7	30	Testudo horsfieldi	1		1 m
M12	15.04.2025	11:11	0,7	30	Testudo horsfieldi	1		1 m
M12	15.04.2025	11:11	0,7	30	Testudo horsfieldi	1		1 m
M12	15.04.2025	11:11	0,7	30	Testudo horsfieldi	1		1 m
M12	15.04.2025	11:11	0,7	30	Testudo horsfieldi	1		1 m
M12	15.04.2025	11:11	0,7	30	Testudo horsfieldi	1		1 m
M12	15.04.2025	11:11	0,7	30	Alaudidae	Nest		

Annex 3.5 Observations during nest count in March 2025 – May 2025

Start coordinates	**Date**	**Species**	**Count**	**Age/Sex**	**Other information**
N44.61274 E73.38913	19.04.2025	Testudo horsfieldi	1		1 m
N44.61274 E73.38913	19.04.2025	Testudo horsfieldi	1		1 m
N44.61274 E73.38913	19.04.2025	Testudo horsfieldi	1		1 m
N44.56225 E73.46029	19.04.2025	Testudo horsfieldi	1		1 m
N44.56225 E73.46029	19.04.2025	Testudo horsfieldi	1		1 m
N44.56225 E73.46029	19.04.2025	Testudo horsfieldi	1		1 m
N44.56225 E73.46029	19.04.2025	Lanius meridionalis	1		
N44.58645 E73.43401	19.04.2025	Testudo horsfieldi	1		1 m
N44.58645 E73.43401	19.04.2025	Eremophila alpestris	5		
N44.58645 E73.43401	19.04.2025	Testudo horsfieldi	1		1 m
N44.58645 E73.43401	19.04.2025	Testudo horsfieldi	1		1 m

N44.60703 E73.38114	19.04.2025	Testudo horsfieldi	1		1 m
N44.60931 E73.48268	19.04.2025	Testudo horsfieldi	1		1 m
N44.60931 E73.48268	19.04.2025	Testudo horsfieldi	1		1 m
N44.60931 E73.48268	19.04.2025	Testudo horsfieldi	1		1 m
N44.60931 E73.48268	19.04.2025	Testudo horsfieldi	1		1 m
N44.60931 E73.48268	19.04.2025	Gazella subgutturosa	2		
N44.76148 E73.30993	20.04.2025	Testudo horsfieldi	1		1 m
N44.76148 E73.30993	20.04.2025	Testudo horsfieldi	1		1 m
N44.76148 E73.30993	20.04.2025	Testudo horsfieldi	1		1 m
N44.76148 E73.30993	20.04.2025	Testudo horsfieldi	1		1 m
N44.76148 E73.30993	20.04.2025	Lanius meridionalis	2		
N44.83241 E73.25511	20.04.2025	Testudo horsfieldi	1		1 m
N44.83241 E73.25511	20.04.2025	Testudo horsfieldi	1		1 m
N44.83241 E73.25511	20.04.2025	Testudo horsfieldi	1		1 m
N44.83241 E73.25511	20.04.2025	Testudo horsfieldi	1		1 m
N44.83241 E73.25511	20.04.2025	Testudo horsfieldi	1		1 m
N44.83241 E73.25511	20.04.2025	Testudo horsfieldi	1		1 m
N44.83241 E73.25511	20.04.2025	Testudo horsfieldi	1		1 m
N44.83241 E73.25511	20.04.2025	Testudo horsfieldi	1		1 m
N44.84254 E73.23304	20.04.2025	Testudo horsfieldi	1		1 m
N44.84254 E73.23304	20.04.2025	Testudo horsfieldi	1		1 m
N44.84254 E73.23304	20.04.2025	Testudo horsfieldi	1		1 m
N44.84254 E73.23304	20.04.2025	Lanius meridionalis	1		
N44.84254 E73.23304	20.04.2025	Lanius meridionalis	1		
N44.84254 E73.23304	20.04.2025	Testudo horsfieldi	1		1 m
N44.84254 E73.23304	20.04.2025	Testudo horsfieldi	1		1 m
N44.84254 E73.23304	20.04.2025	Testudo horsfieldi	1		1 m
N44.84254 E73.23304	20.04.2025	Gazella subgutturosa	3		
N44.84254 E73.23304	20.04.2025	Phrynocephalus helioscopus	1		
N44.84254 E73.23304	20.04.2025	Anthus trivialis	1		
N44.84254 E73.23304	20.04.2025	Circus pygargus	1		

N44.84254 E73.23304	20.04.2025	Coturnix coturnix	2		
N44.84254 E73.23304	20.04.2025	Phasianus colchicus	1		Voice
N44.84254 E73.23304	20.04.2025	Eryx tataricus	1		In the nest (Circaetus gallicus)
N44.84254 E73.23304	20.04.2025	Gloydius halys	1		In the nest (Circaetus gallicus)

Annex 3.6 Nest count in March 2025 – May 2025

Date	Coordinates	Species	Description (ENG)	Description (RUS)
19.04.2025	44.579127° 73.475887°	Buteo rifinus	Old nest, 1 m above the ground (falling down)	Старое гнездо курганника на скасауле, 1 м от земли (сползло)
19.04.2025	44.610631° 73.374448°	Buteo rifinus	Uninhabited nest, 3 m above the ground on a saxaul tree	Нежилое гнездо курганника, 3м от земли на саксауле
19.04.2025	44.609716° 73.482058°	Buteo rifinus	A half-ruined nest on a saxaul tree 2 m above the ground	Полуразрушенное гнездо на саксауле 2 м от земли
19.04.2025	44.758364° 73.306679°	Buteo rifinus	A destroyed nest, 2 meters above the ground on a skasaul	Разрушенное гнездо курганника, 2м от земли на скасауле
19.04.2025	44.756532° 73.303742°	Buteo rifinus	Uninhabited old nest, 2 m above the ground on a saxaul tree	Нежилое старое, 2 м от земли на саксауле
19.04.2025	44.767394° 73.229949°	Buteo rifinus	An old uninhabited nest by the road, 2.5 m above the ground.	Старое нежилое гнездо курганника у дороги, 2,5 м от земли
19.04.2025	44.767471° 73.230134°	Buteo rifinus	Old uninhabited nest 2.5 m from the ground saxaul tree	Старое нежилое гнездо курганника на саксауле 2.5 м
19.04.2025	44.824065° 73.251654°	Buteo rifinus	Old nest, uninhabited, saxaul 3 m above the ground, 1 m from the top	Старое гнездо курганника, нежилое, саксаул выс от земли 3 м, 1м от верха
19.04.2025	44.824357° 73.251987°	Buteo rifinus	Old nest on a saxaul tree, uninhabited, 2.5 m above the ground, 1 m from the top.	Старое гнездо курганника на саксауле, нежилое, выс 2.5 от земли 1м от верха
19.04.2025	44.485073° 73.652692°	Buteo rifinus	Uninhabited nest of the curlew on the top of a saxaul tree on the roadside	Нежилое гнездо курганника на вершине саксаула на обочине дороги
19.04.2025	44.484057° 73.650839°	Buteo rifinus	Old nest on a saxaul tree	Старое гнездо курганника на саксауле
19.04.2025	44.483328° 73.649938°	Buteo rifinus	The nesting site on the saxaul tree, 4 eggs in the clutch	Жилое гнездо курганника на саксауле, 4 яица в кладке
19.04.2025	44.470167° 73.630915°	Buteo rifinus	Old nest on a saxaul tree	Старое гнездо курганника на саксауле
19.04.2025	44.521820° 73.528380°	Aquila chrysaetos	An old nest on a rock ledge, with fresh turtle shells broken by the bird.	Старое гнездо беркута на полке скалы, есть свежие черепахи разбитые птицей
19.04.2025	44.512290° 73.542540°	Aquila chrysaetos	An old nest on a rock ledge, on a cliff. At a height of 2 m, 3 m from the top.	Старое гнездо беркута на полке скалы, на скале. На высоте 2м в 3 м от верха
19.04.2025	44.524437° 73.510625°	Aquila chrysaetos	Old nest on a cliff on a shelf	Старое гнездо беркута на скале на полке
19.04.2025	44.543820° 73.476280°	Aquila nipalensis	An old nest at a height of 2.5 m, 3 m from the top.	Старое гнездо степного орла на высоте 2,5 м в 3 м от верха
19.04.2025	44.566186° 73.456182°	Buteo rifinus	Old nest of on a rock in a semi-niche at a height of 10 m, 2 m from the top.	Старое гнездо курганника на скале в полунише на высоте 10 м в 2 м от верха

19.04.2025	44.563770° 73.459240°	Buteo rifinus	An old nest on a rock ledge at a height of 5 m, 5 m from the top.	Старое гнездо курганника на полке скалы на высоте 5м в 5 м от верха
19.04.2025	44.562570° 73.459910°	Buteo rifinus	An old collapsed nest on a rock shelf at a height of 1.5 m, 1.5 m from the top.	Старое развал гнездо курганника на полке скалы на высоте 1,5 м в 1,5 м от верха
19.04.2025	44.588305° 73.431541°	Aquila chrysaetos	An old nest on a rock ledge 2 m high, 2 m from the top of the mountain.	Старое гнездо беркута на скале на полке на высоте 2 м в 2 м от верха в верхней части горы
19.04.2025	44.610375° 73.484045°	Buteo rifinus	Old nest on a saxaul tree at a height of 2 m, 0.5 m from the top	Старое гнездо курганника на саксауле на высоте 2 м в 0,5 м от верха
19.04.2025	44.610437° 73.485095°	Buteo rifinus	Old nest on a saxaul tree at a height of 2 m, 0.7 m from the top. Female on the nest.	Старое гнездо курганника на саксауле на высоте 2 м в 0,7 м от верха. самка на гнезде
19.04.2025	44.605100° 73.379630°	Aquila chrysaetos	An old nest in a rock niche in the upper third of the cliff, 8 m high and 3 m from the top.	Старое гнездо беркута в полунише на скале в верхней трети на выс 8 м в 3 м от верха
19.04.2025	44.607440° 73.392750°	Aquila chrysaetos	Old nest in a niche in the lower third of the rock, 3 m and 6 m	Старое гнездо беркута в нише в нижней трети скалы 3 м и 6 м
19.04.2025	44.586773° 73.416735°	Aquila chrysaetos	An old nest in a rock niche at a height of 3 m, 7 m from the top in the upper third of the mountain.	Старое гнездо беркута в нише скалы на высоте 3 м в 7 м от верха в верхней трети горы
19.04.2025	44.747335° 73.275928°	Aquila nipalensis	An old nest on top of a rock at the upper third of a hill, height 0.2 m	Старое гнездо степного орла на вершине скалы выхода верхней трети сопки, высота 0.2 м
19.04.2025	44.747769° 73.275365°	Aquila nipalensis	An old nest in the upper third of the cliff at a height of 3 m, 1 m from the top sk in the upper third of the slope of the ravine	Старое гнездо степного орла в верхней трети скалы на высоте 3 м в 1 м от верха ск в верхней трети склона лога
19.04.2025	44.755498° 73.301413°	Buteo rifinus	An old nest, 2 m high on a saxaul tree, 0.8 m from the top.	Старое гнездо курганника высотой на саксауле выс 2 м в 0.8 м от верха
19.04.2025	44.756543° 73.303632°	Buteo rifinus	Old nest on a saxaul tree	Старое гнездо курганника на саксауле
19.04.2025	44.757404° 73.305860°	Buteo rifinus	Old nest on a saxaul tree at a height of 2 m, 1 m from the top.	Старое гнездо курганника на саксауле на высоте высоте 2 м в 1 м от верха
20.04.2025	44.843847° 73.227475°	Buteo rifinus	Old uninhabited nest, height 4 m, 1 m from the crown	Старое нежилое гнездо курганника, выс 4 м, от кроны 1м
20.04.2025	44.844236° 73.234759°	Buteo rifinus	A partially destroyed nest on a saxaul tree, 2 m above the ground, 2 m from the top.	Полуразрушенное гнездо курганника на саксауле, высота над землёй 2м, от верха 2м
20.04.2025	44.844596° 73.235213°	Circaetus gallicus	A nest on a saxaul tree, 3.5 m above the ground, 0.5 m from the crown, 1 egg in the clutch, 2 snakes (photo)	Жилое гнездо змееяда на саксауле, от земли 3.5 м от кроны 0.5 м, 1 яицо в кладке, 2 змеи (фото)
20.04.2025	44.839851° 73.240208°	Buteo rifinus	Old uninhabited nest on a saxaul tree, 3 m above the ground, 0.5 m from the crown.	Старое нежилое гнездо курганника на саксауле, выс 3 м от земли, 0.5 м от кроны
20.04.2025	44.834035° 73.259408°	Buteo rifinus	Old uninhabited nest on a saxaul tree, height 2 m, 0.5 m from the crown.	Старое нежилое гнездо курганника на саксауле, выс 2м , от кроны 0.5 м
20.04.2025	44.831453° 73.258472°	Buteo rifinus	An old uninhabited nest on a saxaul tree, 5 m above the ground, in the crown at the top.	Старое нежилое гнездо на саксауле, высота 5м над землёй, в кроне на верхушке
20.04.2025	44.377810° 73.714490°	Aquila chrysaetos	Old uninhabited nest on power line, 30 m, 5 m from top	Старое нежилое гнездо на ЛЭП, 30 м, 5 м от верха
20.04.2025	44.438450° 73.713860°	Buteo rifinus	Uninhabited nest on a saxaul tree, 3 m above the ground, 0.5 m from the top.	Нежилое гнездо курганника на саксауле, 3м от земли 0.5 от верха
20.04.2025	44.531930° 73.541520°	Buteo rifinus	The nesting site on a saxaul tree, 2.5 meters above the ground.	Жилое гнездо курганника на саксауле, 2.5 метра от земли
20.04.2025	44.757631° 73.306200°	Buteo rifinus	An old, dilapidated nest on a saxaul tree at a height of 2.5 m and 1 m from the top.	Старое разваливающееся гнездо курганника на саксауле на высоте 2,5м и в 1 м от верха
20.04.2025	44.611972° 73.371707°	Buteo rifinus	Old nest on a saxaul tree at a height of 1.5 m, 0.4 m from the top.	Старое гнездо курганника на саксауле на высоте 1,5м в 0,4 м от верха

20.04.2025	44.762500° 73.214980°	Unidentified	On the hill, an old nest right on the ground behind a bush	На сопке старое гнездо прямо на земле за кустом
20.04.2025	44.767727° 73.231399°	Buteo rifinus	Old nest on a saxaul tree	Старое гнездо курганника на саксауле
20.04.2025	44.720537° 73.413448°	Pica Pica	Old nest, 1.5 m above the ground on a non-inhabited saxaul tree, 0.5 m from the top	Старое гнездо сороки, 1.5 м от земли на саксаул нежилое, 0.5 м от верха
21.04.2025	44.682381° 73.431128°	Buteo rifinus	Old uninhabited nest on a saxaul tree, 1.5 m above the ground, 0.5 m from the top	Старое нежилое гнездо курганника на саксауле, выс от земли 1.5 м, от верха 0.5 м
21.04.2025	44.576697° 73.635605°	Buteo rifinus	The nest, inhabited, on a saxaul tree at a height of 2 m. The female is sitting on the nest.	Гнездо курганника, жилое, на саксауле на высоте 2м. Самка сидит на гнезде
21.04.2025	44.578957° 73.631898°	Buteo rifinus	Nest, uninhabited, this year's branches	Гнездо курганика, нежилое, ветки этого года
21.04.2025	44.597937° 73.540540°	Buteo rifinus	An old, half-collapsed nest on a saxaul tree at a height of 1.5 m.	Старое полуобвалившееся гнездо курганника на саксауле на высоте 1,5м
21.04.2025	44.598383° 73.543755°	Buteo rifinus	The nest is inhabited, located on a saxaul tree at a height of 2 m. Three eggs, a pair circling in the air.	Гнездо курганника жилое, на саксауле на высоте 2м. 3 яйца, пара кружит в воздухе
21.04.2025	44.622248° 73.535988°	Buteo rifinus	The nest is uninhabited, located on a saxaul tree at a height of 2 m.	Гнездо курганника нежилое, на саксауле на высоте 2м
21.04.2025	44.635477° 73.507377°	Buteo rifinus	A nest, uninhabited, saxaul, height 2 m	Гнездо курганника, нежилое, саксаул, высота 2м
21.04.2025	44.648567° 73.477495°	Buteo rifinus	A nest, inhabited, on a saxaul tree at a height of 3.5 m. Four eggs. The bird is nearby.	Гнездо курганника, жилое, на саксауле на высоте 3,5м. 4 яйца. Птица рядом
21.04.2025	44.648812° 73.479173°	Buteo rifinus	A nest, uninhabited, old, on a saxaul tree at a height of 3 m.	Гнездо курганника, нежилое, старое, на саксауле на высоте 3м
21.04.2025	44.648106° 73.477129°	Buteo rifinus	A nest, uninhabited, on a saxaul tree at a height of 3 m.	Гнездо курганника, нежилое, на саксауле на высоте 3м
21.04.2025	44.611652° 73.509282°	Buteo rifinus	A nest, uninhabited, on a saxaul tree at a height of 2 m.	Гнездо курганника, нежилое, на саксауле на высоте 2м
21.04.2025	44.611970° 73.512733°	Unidentified	The nest is small, empty, on the remains of a saxaul tree, at a height of 2 m.	Гнездо небольшое, пустое, на остатке саксаула, на высоте 2м
21.04.2025	44.610293° 73.514580°	Buteo rifinus	Nest, uninhabited, on a saxaul tree at a height of 2 m	Гнездо, курганника, нежилое, на саксауле на высоте 2м
21.04.2025	44.609368° 73.516652°	Buteo rifinus	An old, uninhabited nest on a saxaul tree at a height of 2 m.	Гнездо курганника, старое, нежилое, на саксауле на высоте 2м
21.04.2025	44.607935° 73.519818°	Buteo rifinus	A nest, uninhabited, on a saxaul tree at a height of 2.5 m.	Гнездо курганника, нежилое, на саксауле на высоте 2,5м
21.04.2025	44.608643° 73.520518°	Buteo rifinus	A nest, uninhabited, on a saxaul tree at a height of 2 m.	Гнездо курганника, нежилое, на саксауле на высоте 2м
21.04.2025	44.608680° 73.521315°	Buteo rifinus	A nest, uninhabited, on a saxaul tree at a height of 1.5 m.	Гнездо курганника, нежилое, на саксауле на высоте 1,5м
21.04.2025	44.603368° 73.572790°	Buteo rifinus	A nest, inhabited, on a saxaul tree at a height of 3 m. Five eggs, a pair of birds nearby.	Гнездо курганника, жилое, на саксауле на высоте 3м. 5 яиц, пара птиц рядом

Annex 4.1 Observations with vantage points in June-August 2025, Project area

Point №	Date	Time	Temperature	Wind speed, m/s	Wind direction	Cloudiness, %	Species	Bird count	Time of flight	Flight height, m	Flight direction	Band 1 (<20 m),m.s	Band 2 (20-200 m),m.s	Band 3 (>200 m),m.s	Note

M01	06.08.2025	14.00-17.00	28	4	E	0	Aquila sp.	1	14.03	30	NE		00.32		500 m 247
M01	06.08.2025	14.00-17.00	28	4	E	0	Pterocles orientalis	5	14.48	2	N	00.15			on the point
M01	06.08.2025	14.00-17.00	28	4	E	0	Pterocles orientalis	3	16.16	1	N	01.27			700 m 347
M01	07.08.2025	07.45-10.45	20	3	E	0	Pterocles orientalis	10	07.47	40	SW		00.28		200 m 239
M01	07.08.2025	07.45-10.45	20	3	E	0	Pterocles orientalis	1	07.49	12	E	00.21			300 m 104
M01	07.08.2025	07.45-10.45	20	3	E	0	Pterocles orientalis	1	08.03	1	E	00.22			400 m 114
M01	07.08.2025	07.45-10.45	20	3	E	0	Pterocles orientalis	5	08.09	15	W	00.41			600 m 273
M01	07.08.2025	07.45-10.45	20	3	E	0	Aquila sp.	1	08.22	150					1200 m
M01	07.08.2025	07.45-10.45	20	3	E	0	Pterocles orientalis	2	08.23	15	S	00.24			700 m 170
M01	07.08.2025	07.45-10.45	20	3	E	0	Aquila sp.	1	08.41	160	N		04.47		180 m
M01	07.08.2025	07.45-10.45	20	3	E	0	Buteo rufinus	1	09.49	180	NE		03.43		500 m 215
M01	18.07.2025	17.00-20.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M01	19.07.2025	07.00-10.00	28	4.5	SSW	0	Pterocles orientalis	2	07.00	20-50	NNE		0.18		500 m/ 201
M01	15.06.2025	07.05-10.05	29	3.9	S	5	Pterocles orientalis	1	08.04	5	SW	0.34			30 m/ 227
M01	20.06.2025	14.45-17.45	39	3.7	W	65	Pterocles orientalis	1	17.28	4	SSE	0.17			on the point
M02	05.08.2025	16.15-19.15	28	6	S	0	Buteo rufinus	1	16.12	50	NE		04.08		50 m | 30
M02	06.08.2025	08.28-11.28	27	9	SW	0	Pterocles orientalis	3	08.28	100	NE		00.05		100 m | 60
M02	18.07.2025	15.50-18.50	36	4.8	NE	0	Circaetus gallicus	1	18.09	150-200	N		08.14		1500 m/ 10
M02	19.07.2025	07.15-10.15	31	3.1	SW	5	Pterocles orientalis	1	07.40	20-50	NNE		0.24		200 m/ 100
M02	19.07.2025	07.15-10.15	33	2.7	SW	5	Pterocles orientalis	5	07.58	20-50	NW		0.12		300 m/ 315
M02	19.07.2025	07.15-10.15	34	2.7	SW	5	Pterocles orientalis	1	08.17	20-50	S		0.16		500 m/ 90
M02	15.06.2025	07.15-10.15	—	—	—	—	—	—	—	—	—	—	—	—	—
M02	20.06.2025	14.45-17.45	—	—	—	—	—	—	—	—	—	—	—	—	—
M03	05.08.2025	14.30-17.30	—	—	—	—	—	—	—	—	—	—	—	—	—

M03	06.08.2025	07.30-10.30	25	4	NE	10	Aquila heliaca	1	07.35	100	WE		03.22		500 m NE | 30
M03	06.08.2025	07.30-10.30	25	4	NE	10	Pterocles orientalis	5	07.41	500	E	00.15			100 m N | 355
M03	06.08.2025	07.30-10.30	25	4	NE	10	Pterocles orientalis	2	07.53	5	circle	00.10			200 m N | 350
M03	06.08.2025	07.30-10.30	25	4	NE	10	Circaetus gallicus	1	08.59	150			07.04		200 m E | 110
M03	19.07.2025	07.00-10.00	32	2.2	E	0	Pterocles orientalis	4	07.02	5	SW-N	0.41			100 m/ 220
M03	19.07.2025	07.00-10.00	33	2	E	0	Pterocles orientalis	2	07.05	5	SW-NE	0.22			50 m/ 243
M03	19.07.2025	07.00-10.00	33	2	E	0	Pterocles orientalis	1	07.08	12	N-S	0.19			120 m/ 13
M03	19.07.2025	07.00-10.00	33	2	E	0	Larus sp.	20	07.12	30	E-W		2.20		40 m/ 102
M03	19.07.2025	07.00-10.00	33	2	E	0	Pterocles orientalis	1	07.27	20	N-SW	0.23			250 m/ 254
M03	19.07.2025	07.00-10.00	33	2	E	0	Pterocles orientalis	2	07.38	30	SW-NE		0.57		120 m/ 237
M03	19.07.2025	07.00-10.00	33	2	E	0	Falco tinnunculus	1	08.00	140	W-NW		1.43		20 m/ 240
M03	19.07.2025	07.00-10.00	35	2	E	0	Falco tinnunculus	1	08.37	150	NE-SW		2.00		700 m/ 316
M03	19.07.2025	07.00-10.00	36	2	E	0	Pterocles orientalis	1	08.51	40	N-W	0,42			1000 m/ 232
M03	19.07.2025	07.00-10.00	37	2	E	0	Pterocles orientalis	2	09.50	20	N	0,30			200 m/ 250
M03	18.07.2025	16.45-19.45	38	5.2	N	0	Pterocles orientalis	1	16.46	3	N-E	0.22			5 m/ 101
M03	18.07.2025	16.45-19.45	36	4	N	0	Circaetus gallicus	1	17.57	40	N-NE		3.42		1000 m/ 329
M03	18.07.2025	16.45-19.45	36	4,7	N	0	Pterocles orientalis	1	18.13	50	S-N		01.12		400 m/ 13
M03	18.07.2025	16.45-19.45	36	4	N	0	Buteo rufinus	1	18.29	70	S-NE		03.47		200 m/ 59
M03	18.07.2025	16.45-19.45	36	4.1	N	0	Pterocles orientalis	1	18.35	30	W-E		0.42		200 m/ 15
M03	18.07.2025	16.45-19.45	36	4	N	0	Pterocles orientalis	2	18.54	7	NE-SE	0.20			800 m/ 145
M03	20.06.2025	15.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M03	15.06.2025	07.30-09.30	28	4.7	S	5	Pterocles orientalis	1	07.50	20-30	SE		0.40		200 m/ 65
M03	15.06.2025	07.30-09.30	29	4.7	S	5	Pterocles orientalis	1	08.07	30-50	SE		0.22		100 m/ 25
M03	15.06.2025	07.30-09.30	30	5.2	S	5	Pterocles orientalis	1	08.30	30-50	NE		0.28		300 m/ 315

M04	05.08.2025	14.30-17.30	—	—	—	—	—	—	—	—	—	—	—	—	—
M04	06.08.2025	07.20-08.00	20	4	NE	0	Pterocles orientalis	2	07.22	10	E	00.07	00.21		100 m 175
M04	06.08.2025	07.20-08.00	21	4	NE	0	Pterocles orientalis	3	07.41	20	SE		00.49		on the point
M04	06.08.2025	07.20-08.00	21	4	NE	0	Pterocles orientalis	6	07.54	20	SW		00.31		100 m 110
M04	06.08.2025	08.30-09.50	24	4	NE	0	Pterocles orientalis	6	08.52	20	SSW	00.20			on the point
M04	06.08.2025	08.30-09.50	24	4	NE	0	Aquila sp.	1	09.12	200	E			01.14	1800 m 155
M04	18.07.2025	16.50-19.50	—	—	—	—	—	—	—	—	—	—	—	—	—
M04	19.07.2025	07.05-10.05	35	1,5	SE	20	Pterocles orientalis	1	07.26	20	S	0.54			on the point
M04	19.07.2025	07.05-10.05	35	1	S	20	Buteo rufinus	1	09.25	50	W		03.09		300 m/ 210
M04	15.06.2025	07.40-10.40	30	3.7	SSW	5	Pterocles orientalis	1	07.52	100	NE		0,53		1000 m/ 156
M04	20.06.2025	15.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M05	05.08.2025	14.20-17.20	28	6	NE	0	Buteo rufinus	1	15.30	500	NE			06.00	1 km | 220
M05	05.08.2025	14.20-17.20	28	6	NE	0	Aquila nipalensis	1	15.30	300	NE			06.00	800 m | 210
M05	06.08.2025	07.30-10.30	27	6	NE	0	Buteo rufinus	1	07.40	400	SE			01.13	750 m | 150
M05	06.08.2025	07.30-10.30	27	6	NE	0	Pterocles orientalis	1	08.06	70	W				80 m | 285
M05	19.07.2025	16.30-19.30	—	—	—	—	—	—	—	—	—	—	—	—	—
M05	19.07.2025	07.40-10.40	—	—	—	—	—	—	—	—	—	—	—	—	—
M05	15.06.2025	07.40-10.40	—	—	—	—	—	—	—	—	—	—	—	—	—
M05	20.06.2025	15.05-18.05	—	—	—	—	—	—	—	—	—	—	—	—	—
M06	06.08.2025	14.30-17.30	—	—	—	—	—	—	—	—	—	—	—	—	—
M06	07.08.2025	07.00-10.00	30	3	W	50	Pterocles orientalis	1	07.26	15	E	00.09			on the point
M06	22.07.2025	15.25-18.25	—	—	—	—	—	—	—	—	—	—	—	—	—
M06	23.07.2025	07.30-10.30	29	10	NE	10	Raptor	2	07.45	50	W		02.48		300 m/ 340
M06	23.07.2025	07.30-10.30	30	10	NE	10	Pterocles orientalis	2	08.08	10	SW	0.20			on the point

M06	19.06.2025	14.00-17.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M06	20.06.2025	06.30-09.30	28	—	—	35	Pterocles orientalis	1	06.30	20-50	SW		0.15		100 m/ 20
M06	20.06.2025	06.30-09.30	28	—	—	35	Pterocles orientalis	1	06.40	20-50	W		0.22		150 m/ 25
M06	20.06.2025	06.30-09.30	28	—	—	35	Pterocles orientalis	2	06.50	10-20	SW	0.37			400 m/ 45
M06	20.06.2025	06.30-09.30	28	—	—	5	Pterocles orientalis	8	06.55	20-30	SW		0.33		600 m/ 35
M06	20.06.2025	06.30-09.30	29	—	—	40	Pterocles orientalis	2	07.01	30-50	SW		0.24		300 m/ 15
M06	20.06.2025	06.30-09.30	29	—	—	40	Pterocles orientalis	1	07.06	20-50	SW		0.16		300 m/ 100
M06	20.06.2025	06.30-09.30	29	—	—	40	Pterocles orientalis	2	07.15	20-50	SW		0.48		500 m/ 35
M06	20.06.2025	06.30-09.30	29	1.6	W	40	Pterocles orientalis	1	07.20	10-20	SW	0.22			300 m/ 95
M06	20.06.2025	06.30-09.30	29	0,8	W	40	Pterocles orientalis	1	07.33	20-50	SW		1.06		700 m/ 45
M06	20.06.2025	06.30-09.30	30	0.7	W	40	Pterocles orientalis	1	08.04	10-20	SW	0.20			200 m/ 45
M06	20.06.2025	06.30-09.30	30	0.8	W	40	Pterocles orientalis	2	08.09	20-50	SW		0.47		600 m/ 80
M06	20.06.2025	06.30-09.30	30	0.8	W	40	Pterocles orientalis	1	08.11	20-50	SW		0.40		600 m/ 80
M06	20.06.2025	06.30-09.30	31	—	—	40	Pterocles orientalis	3	08.21	20-5	NE		1.11		200 m/ 130
M06	20.06.2025	06.30-09.30	31	1.1	W	40	Pterocles orientalis	1	08.26	10-20	NE		0.50		on the point
M06	20.06.2025	06.30-09.30	31	2.2	W	30	Pterocles orientalis	1	08.43	10-20	SW	0.32			500 m/ 30
M06	20.06.2025	06.30-09.30	32	1.4	W	10	Pterocles orientalis	1	09.16	20-50	E		0.52		50 m/ 330
M07	06.08.2025	14.00-17.00	31	2	NE	0	Pterocles orientalis	2	14.20	10	E	00.12			400 m 270
M07	07.08.2025	07.30-10.30	25	2	NE	90	Pterocles orientalis	1	07.33	10	N	00.22			300 m 300
M07	07.08.2025	07.30-10.30	25	2	NE	90	Pterocles orientalis	1	07.37	20-50	SW		00.25		400 m 195
M07	07.08.2025	07.30-10.30	26	3	NE	90	Pterocles orientalis	2	07.39	10	SW	00.10			500 m 180
M07	07.08.2025	07.30-10.30	26	3	NE	90	Pterocles orientalis	5	07.41	20-50	SW		00.14		500 m 180
M07	07.08.2025	07.30-10.30	27	3	NE	90	Pterocles orientalis	1	08.11	10	NE	00.20			30 m 180
M07	07.08.2025	07.30-10.30	28	2	NE	90	Pterocles orientalis	1	08.25	10	SW	00.22			100 m 170

M07	07.08.2025	07.30-10.30	28	2	NE	90	Pterocles orientalis	1	08.31	10	NE	00.12			100 m 325
M07	07.08.2025	07.30-10.30	29	2	NE	90	Pterocles orientalis	1	08.49	10	SW	00.26			on the point
M07	07.08.2025	07.30-10.30	30	5	NE	90	Pterocles orientalis	1	09.27	10	NE	00.15			100 m 120
M07	22.07.2025	14.50-17.50	—	—	—	—	—	—	—	—	—	—	—	—	—
M07	23.07.2025	06.50-09.50	24	7.4	E	0	Pterocles orientalis	2	07.16	10-20	E	0.20			200 m/ 245
M07	23.07.2025	06.50-09.50	24	7.6	E	0	Pterocles orientalis	1	07.23	10-20	SW	0.17			150 m/ 200
M07	23.07.2025	06.50-09.50	26	6.8	E	0	Pterocles orientalis	2	07.56	10-20	SW	0.15			300 m/ 250
M07	23.07.2025	06.50-09.50	26	6.8	E	0	Pterocles orientalis	1	08.02	10-20	NW	0.20			50 m/ 260
M07	23.07.2025	06.50-09.50	28	8.4	E	0	Pterocles orientalis	1	08.41	10-20	NE	0.27			300 m/ 250
M07	19.06.2025	15.10-18.10	32	6.2	NNW	90	Pterocles orientalis	1	17.52	50	NNE		0.38		400 m/ 200
M07	20.06.2025	07.00-10.00	29	—	—	50	Pterocles orientalis	1	07.08	50	SSW		1.01		100 m/ 330
M07	20.06.2025	07.00-10.00	29	—	—	50	Pterocles orientalis	2	07.10	10	SW	0.57			200 m/ 150
M07	20.06.2025	07.00-10.00	29	—	—	40	Pterocles orientalis	1	07.31	30	SEE		0.29		1000 m/ 186
M07	20.06.2025	07.00-10.00	29	—	—	30	Pterocles orientalis	1	07.54	20	SW		0.40		100 m/ 150
M07	20.06.2025	07.00-10.00	29	—	—	30	Pterocles orientalis	1	07.55	50	SW		1.12		150 m/ 150
M07	20.06.2025	07.00-10.00	29	—	—	20	Pterocles orientalis	2	08.10	50	NW		0.40		1000 m/ 192
M07	20.06.2025	07.00-10.00	29	—	—	20	Pterocles orientalis	2	08.11	30	SWW		0.27		500 m/ 320
M07	20.06.2025	07.00-10.00	30	—	—	20	Pterocles orientalis	1	08.45	10	NNE	0,32			800 m/ 257
M07	20.06.2025	07.00-10.00	30	—	—	20	Pterocles orientalis	8	08.46	30	E		0.41		1000 m/ 195
M07	20.06.2025	07.00-10.00	30	—	—	20	Pterocles orientalis	1	08.53	30	E		0.25		700 m/ 188
M07	20.06.2025	07.00-10.00	30	—	—	20	Pterocles orientalis	1	08.55	100	SW		0.19		1000 m/ 270
M07	20.06.2025	07.00-10.00	30	—	—	20	Pterocles orientalis	2	09.10	40	SEE		0.33		500 m/ 192
M08	06.08.2025	14.20-17.20	29	4	NE	0	Pterocles orientalis	1	14.32	20	SE	00.23			on the point
M08	06.08.2025	14.20-17.20	29	2	NE	0	Falco sp.	1	14.39	20	N	00.11			on the point

M08	06.08.2025	14.20-17.20	28	3	NE	0	Buteo rufinus	1	16.40	100	SSE		00.31	01.18	1000 m 256
M08	07.08.2025	07.05-08.05	21	2	NE	75	Pterocles orientalis	2	07.36	20-50	SW		00.35		500 m 155
M08	07.08.2025	07.05-08.05	21	3	NE	75	Pterocles orientalis	4	07.39	20-80	SWW		00.42		500 m 198
M08	07.08.2025	07.05-08.05	22	3	NE	85	Pterocles orientalis	6	07.51	50	SW		00.34		1000 m 194
M08	07.08.2025	08.35-10.35	24	4	NE	70	Pterocles orientalis	1	09.31	20-40	W		00.28		300 m 185
M08	21.07.2025	14.20-17.20	—	—	—	—	—	—	—	—	—	—	—	—	—
M08	22.07.2025	07.20-10.20	—	—	—	—	—	—	—	—	—	—	—	—	—
M08	18.06.2025	14.10-17.10	—	—	—	—	—	—	—	—	—	—	—	—	—
M08	19.06.2025	06.50-09.50	29	2	W	15	Aquila sp.	1	07.19	60	SSE		2.30		1000 m/ 159
M09	08.08.2025	07.25-10.25	—	—	—	—	—	—	—	—	—	—	—	—	—
M09	07.08.2025	14.10-17.10	22	3	NE	25	Pterocles orientalis	8	14.10	3		00.03			on the point
M09	22.07.2025	15.00-18.00	37	6.6	NE	0	Pterocles orientalis	1	15.03	8	S-NE	0.19			400 m/ 163
M09	22.07.2025	15.00-18.00	37	6.6	NE	0	Pterocles orientalis	2	15.15	5	NE-SW	0.37			20 m/ 55
M09	22.07.2025	15.00-18.00	37	6.6	NE	0	Pterocles orientalis	1	16.42	4	E-S	0.10			400 m/ 179
M09	23.07.2025	07.05-10.05	24	5.3	NE	0	Pterocles orientalis	2	07.08	15	S-NE	0.33			40 m/ 157
M09	23.07.2025	07.05-10.05	24	5.3	NE	0	Circus cyaneus	1	07.35	20	N-S		0.51		60 m/ 183
M09	23.07.2025	07.05-10.05	24	5.3	NE	0	Circus cyaneus	1	09.02	20	S-NE	0.43			200 m/ 161
M09	18.06.2025	14.50-17.50	41	1	N	0	Pterocles orientalis	2	17.36	50	S		0.25		on the point
M09	19.06.2025	07.05-10.05	30	8	S	0	Circaetus gallicus	1	07.36	100	SW	1.10	5.18		on the point
M09	19.06.2025	07.05-10.05	30	7	S	0	Buteo rufinus	1	07.48	30	E		1.59		on the point
M09	19.06.2025	07.05-10.05	36	5	S	0	Pterocles orientalis	2	09.12	50	E		0.40		on the point
M10	07.08.2025	14.00-17.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M10	08.08.2025	07.15-10.15	30	1	N	20	Pterocles orientalis	2	07.19	20	S		00.30		300 m 350
M10	08.08.2025	07.15-10.15	30	1	SW	40	Falco tinnunculus	1	08.05	10	W	00.45			100 m 340

M10	22.07.2025	15.05-18.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—
M10	23.07.2025	07.10-10.10	30	9	NE	0	Pterocles orientalis	1	08.29	30	S		0.47		on the point
M10	18.06.2025	14.35-17.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—
M10	19.06.2025	07.00-10.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—
M11	08.08.2025	13.45-16.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—
M11	09.08.2025	07.40-10.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—
M11	21.07.2025	15.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—
M11	22.07.2025	07.00-10.00	28				Falco tinnunculus	1	07.11	50-80	NWW		0.30		300 m/ 330
M11	22.07.2025	07.00-10.00	31				Falco tinnunculus	1	08.29	20-50	NW		0.41		500 m/ 350
M11	22.07.2025	07.00-10.00	33				Aquila chrysaetos	2	09.18	200+	circle, N			6.14	1300 m/ 312
M11	17.06.2025	14.00-17.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—
M11	18.06.2025	07.00-10.00	29	—	—	10	Pterocles orientalis	1	07.49	12	NW	0.27			on the point
M11	18.06.2025	07.00-10.00	30	—	—	10	Pterocles orientalis	4	08.13	30	SE		0.39		60 m/ 139
M11	18.06.2025	07.00-10.00	33	—	—	10	Pterocles orientalis	1	09.03	50	N		0.37		40 m/ 19
M11	18.06.2025	07.00-10.00	34	—	—	10	Pterocles orientalis	1	09.27	80	NNW		0.23		60 m/ 327
M12	07.08.2025	14.00-17.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—
M12	08.08.2025	07.50-10.50	28	1	E	0	Pterocles orientalis	4	07.10	100	SW		00.16		200 m 225
M12	08.08.2025	07.50-10.50	28	2	E	0	Pterocles orientalis	6	07.24	100	S		00.08		300 m 160
M12	21.07.2025	14.10-17.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—
M12	22.07.2025	07.46-10.46	—	—	—	—	—	—	—	—	—	—	—	—	—	—
M12	17.06.2025	14.30-17.30	38	—	—	15	Pterocles orientalis	1	14.55	5	SWW	0.10			500 m/ 330
M12	17.06.2025	14.30-17.30	35	—	—	10	Pterocles orientalis	1	17.17	5	NE	0.25			800 m/ 270
M12	18.06.2025	11.00-14.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—
M13	08.08.2025	07.00-10.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—

M13	07.08.2025	13.35-16.35	33	5	NE	70	Falco sp.	1	15.25	20-150	N		04.49		200 m 245
M13	21.07.2025	14.00-17.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M13	22.07.2025	07.25-10.25	29	7	NE	10	Pterocles orientalis	1	09.45	15	S	0.20			on the point
M13	17.06.2025	14.15-17.15	—	—	—	—	—	—	—	—	—	—	—	—	—
M13	18.06.2025	10.50-13.50	—	—	—	—	—	—	—	—	—	—	—	—	—
M14	07.08.2025	14.18-17.18	—	—	—	—	—	—	—	—	—	—	—	—	—
M14	08.08.2025	07.30-10.30	—	—	—	—	—	—	—	—	—	—	—	—	—
M14	20.07.2025	14.35-17.35	—	—	—	—	—	—	—	—	—	—	—	—	—
M14	21.07.2025	07.05-10.05	—	—	—	—	—	—	—	—	—	—	—	—	—
M14	17.06.2025	14.50-17.50	—	—	—	—	—	—	—	—	—	—	—	—	—
M14	18.06.2025	06.40-09.40	28	—	—	5	Pterocles orientalis	1	07.03	100	SE		0.20		on the point
M14	18.06.2025	06.40-09.40	28	—	—	5	Pterocles orientalis	3	07.11	50	S		0.30		on the point
M15	08.08.2025	14.00-17.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M15	09.08.2025	07.20-09.20	—	—	—	—	—	—	—	—	—	—	—	—	—
M15	20.07.2025	14.30-17.30	—	—	—	—	—	—	—	—	—	—	—	—	—
M15	21.07.2025	07.15-10.15	—	—	—	—	—	—	—	—	—	—	—	—	—
M15	16.06.2025	14.30-17.30	33	6.5	NNE	5	Raptor	1	16.14	50	NE		06.20		1000 m/ 156
M15	17.06.2025	06.35-09.35	29	—	—	0	Pterocles orientalis	1	07.18	10	SW		0.10		150 m/ 260
M15	17.06.2025	06.35-09.35	32	—	—	0	Pterocles orientalis	1	07.47	30-0	NWW	0.04	0.26		1000 m/ 105
M15	17.06.2025	06.35-09.35	32	—	—	0	Pterocles orientalis	1	07.50	10-0	NW	0.27			300 m/ 77
M15	17.06.2025	06.35-09.35	32	—	—	0	Pterocles orientalis	1	07.57	30	SW		0.05		100 m/ 32
M15	17.06.2025	06.35-09.35	35	—	—	5	Pterocles orientalis	1	09.18	5	SWW	0.13			200 m/ 22
M16	08.08.2025	14.00-17.00	34	1	E	0	Pterocles orientalis	2	14.24	20	S	00.40			300 m 260
M16	08.08.2025	14.00-17.00	34	1	E	10	Pterocles orientalis	3	15.47	20-40	E		00.24		200 m 152

M16	09.08.2025	07.20-10.20	28	3	SSW	0	Pterocles orientalis	2	07.32	20	NWW	00.30			50 m 202
M16	09.08.2025	07.20-10.20	28	3	SSW	0	Pterocles orientalis	2	07.41	20-50	W		00.55		700 m 122
M16	09.08.2025	07.20-10.20	29	2	SSW	0	Pterocles orientalis	6	07.48	20-60	W		01.01		400 m 170
M16	21.07.2025	06.45-09.45	—	—	—	—	—	—	—	—	—	—	—	—	—
M16	20.07.2025	14.30-17.30	—	—	—	—	—	—	—	—	—	—	—	—	—
M16	21.07.2025	07.05-10.05	23	9.4	NE	5	Pterocles orientalis	5	07.11	10-20	N	0.25			1000 m/ 270
M16	21.07.2025	07.05-10.05	24	10,8	NE	5	Pterocles orientalis	3	07.49	10-20	SSE	0.31			700 m/ 208
M16	21.07.2025	07.05-10.05	26	9.1	NE	0	Circus sp.	1	08.01	10-20	SEE	0.30			200 m/ 180
M16	21.07.2025	07.05-10.05	28	10	NE	0	Buteo rufinus	1	08.48	10-20	SE	1.01			500 m/ 154
M16	16.06.2025	14.00-17.00	40	2.4	N	25	Pterocles orientalis	1	14.54	4	SE	1.13			15 v/ 115
M16	16.06.2025	14.00-17.00	40	2.4	N	25	Aquila sp.	1	16.44	40	SSE		0.16		1000 m/ 166
M16	17.06.2025	06.30-09.30	27	—	—	0	Pterocles orientalis	1	06.34	4	S	0.20			25 m/ 178
M16	17.06.2025	06.30-09.30	28	—	—	0	Pterocles orientalis	2	06.39	4	SSW	0.42			40 m/ 205
M16	17.06.2025	06.30-09.30	30	—	—	0	Pterocles orientalis	1	07.26	6	NW	0.32			30 m/ 329
M16	17.06.2025	06.30-09.30	32	—	—	0	Pterocles orientalis	1	08.28	5	SE	0.17			15 m/ 139
M17	08.08.2025	13.40-16.40	—	—	—	—	—	—	—	—	—	—	—	—	—
M17	09.08.2025	07.55-10.55	28	3	S	0	Pterocles orientalis	2	08.16	5	NW	00.36			50 m 180
M17	09.08.2025	07.55-10.55	34	3	S	0	Pterocles orientalis	2	09.54	10-20	SW	00.14			150 m 70
M17	20.07.2025	14.45-17.45	—	—	—	—	—	—	—	—	—	—	—	—	—
M17	21.07.2025	07.20-10.20	24	6.4	NE	5	Pterocles orientalis	1	08.22	5-20	N	0.25			200 m/ 115
M17	16.06.2025	14.30-17.30	—	—	—	—	—	—	—	—	—	—	—	—	—
M17	17.06.2025	06.00-09.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M19	09.08.2025	07.00-10.00	25	2	S	0	Pterocles orientalis	2	07.30	50	N		00.70		100 m 20
M19	09.08.2025	07.00-10.00	27	2	S	0	Pterocles orientalis	1	08.27	100	S		00.10		100 m 180

M19	08.08.2025	14.00-17.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M19	09.08.2025	06.00-09.00	25	1	W	5	Pterocles orientalis	1	06.32	40	SE		00.19		600 m 124
M19	09.08.2025	06.00-09.00	27	1	W	5	Pterocles orientalis	2	06.58	60	S		00.24		200 m 21
M19	09.08.2025	06.00-09.00	27	1	W	5	Aquila nipalensis	1	07.42	200	SE			12.00	
M19	19.07.2025	14.30-17.30	41	2	NW	50	Pterocles orientalis	1	14.54	10-20	NNW	0.20			300 m/ 270
M19	19.07.2025	14.30-17.30	39	2.8	NW	70	Pterocles orientalis	2	15.37	20-50	SW		0.16		100 m/ 225
M19	20.07.2025	06.50-09.50	29	4.6	NE	40	Pterocles orientalis	2	07.15	20-50	SW		0.12		150 m/ 315
M19	20.07.2025	06.50-09.50	29	5.2	NE	40	Pterocles orientalis	1	07.20	10-20	NW	0.10			200 m/ 270
M19	20.07.2025	06.50-09.50	29	5.2	NE	40	Pterocles orientalis	1	07.22	10-20	NE	0.25			100 m/ 200
M19	20.07.2025	06.50-09.50	30	6.2	NE	25	Aquila sp.	1	08.05	200+	SW			04.02	2000 m/ 220
M19	20.07.2025	06.50-09.50	31	5.6	NE	20	Pterocles orientalis	1	08.22	10-20	N	0.12			100 m/ 225
M19	16.06.2025	14.15-17.15	—	—	—	—	—	—	—	—	—	—	—	—	—
M19	17.06.2025	06.25-09.25	—	—	—	—	—	—	—	—	—	—	—	—	—
M20	09.08.2025	14.00-17.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M20	10.08.2025	05.40-09.40	19	2	NE	5	Anatidae	10	05.48	50	NEE		01.14		500 m 253
M20	19.07.2025	14.30-17.30	41	2	W	30	Pterocles orientalis	2	16.29	20-25	E		0.24		300 m/ 272
M20	20.07.2025	07.10-10.10	32	5.8	E	40	Tetrax tetrax	2	07,21	10-15	SWW	0.31			700 m/ 206
M20	20.07.2025	07.10-10.10	33	6.4	E	40	Circaetus gallicus	2	07.50	200+	Circle, NE			07.24	2000 m/ 285
M20	15.06.2025	15.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M20	16.06.2025	06.15-09.15	—	—	—	—	—	—	—	—	—	—	—	—	—
M21	08.08.2025	14.00-17.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M21	09.08.2025	07.00-10.00	30	1	S	10	Larus sp.	4	08.06	50	SW		00.45		400 m 100
M21	19.07.2025	16.30-19.30	—	—	—	—	—	—	—	—	—	—	—	—	—
M21	20.07.2025	07.00-10.00	—	—	—	—	—	—	—	—	—	—	—	—	—

M21	15.06.2025	14.55-17.55	35	4.5	NW	5	Aquila chrysaetos	1	16.05	100	SSE		1.22		1700 m/ 280
M21	16.06.2025	06.55-09.55	—	—	—	—	—	—	—	—	—	—	—	—	—
M22	09.08.2025	14.20-17.20	34	1	E	50	Aquila chrysaetos	2	16.20	200					
M22	10.08.2025	05.55-09.55	19	2	NE	5	Falco sp.	1	06.15	10					
M22	10.08.2025	05.55-09.55	19	2	NE	5	Pterocles orientalis	2	07.25	20					
M22	10.08.2025	05.55-09.55	19	2	NE	5	Pterocles orientalis	4	08.04	20					
M22	19.07.2025	15.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M22	20.07.2025	07.10-10.10	—	—	—	—	—	—	—	—	—	—	—	—	—
M22	15.06.2025	15.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M22	16.06.2025	06.30-09.30	26	1.2	NNW	0	Pterocles orientalis	5	07.06	10-20	NE	0.46			300 m/ 260
M22	16.06.2025	06.30-09.30	26	1.2	NNW	0	Pterocles orientalis	1	07.12	10-20	NE	0.16			250 m/ 270
M22	16.06.2025	06.30-09.30	28	1.8	NNW	0	Pterocles orientalis	1	07.38	20-50	SE	0.24			400 m/ 250
M24	08.08.2025	14.15-17.15	—	—	—	—	—	—	—	—	—	—	—	—	—
M24	09.08.2025	07.10-10.10	25	3	SW	0	Pterocles orientalis	2	07.21	1	NE	00.06			30 m 30
M24	20.07.2025	07.10-10.10	29	4.2	N	45	Pterocles orientalis	1	07.19	6	NE-W	0.12			12 m/ 253
M24	20.07.2025	07.10-10.10	29	4.2	N	45	Pterocles orientalis	1	07.54	7	S-NW	0.31			30 m/ 291
M24	20.07.2025	07.10-10.10	30	4.3	N	45	Pterocles orientalis	1	08.51	3	W-NW	0.19			40 m/ 275
M24	20.07.2025	07.10-10.10	31	4	N	45	Pterocles orientalis	2	10.08	10	N-SW	0.39			70 m/ 173
M24	19.07.2025	14.55-17.55	40	1,3	E	40	Pterocles orientalis	1	16.06	20	E-SW	0.42			1000 m/ 209
M24	19.07.2025	14.55-17.55	40	1,3	E	40	Pterocles orientalis	1	16.23	15	W-E	0.27			5 m/ 257
M24	19.07.2025	14.55-17.55	38	1,3	E	40	Pterocles orientalis	1	17.34	2	SE-SW	0.05			70 m/ 137
M24	16.06.2025	06.45-09.45	26	0.8	NE	0	Pterocles orientalis	1	07.12	4	NW	2.45			40 m/ 306
M24	16.06.2025	06.45-09.45	28	—	—	0	Pterocles orientalis	1	07.42	6	W	2.02			on the point
M24	16.06.2025	06.45-09.45	30	—	—	0	Aquila chrysaetos	1	08.21	120	W		1.36		1500 m/ 265

M24	16.06.2025	06.45-09.45	31	—	—	0	Aquila chrysaetos	2	08.29	120	SWW		5.29		1500 m/ 245
M24	17.06.2025	14.45-17.45	—	—	—	—	—	—	—	—	—	—	—	—	—
M26	09.08.2025	14.00-17.00	—	—	—	—	—	—	—	—	—	—	—	—	—
M26	10.08.2025	06.00-09.00	20	5	NE	5	Pernis sp.	2	06.46	200	SW			04.12	1000 m 130
M26	10.08.2025	06.00-09.00	21	5	NE	10	Aquila sp.	1	07.11	0-900	E	00.15	04.48		1500 m 200
M26	10.08.2025	06.00-09.00	25	4	NE	20	Hieraetos pennatus	1	08.34	100-200	circle		03.16		1500 m 160
M26	19.07.2025	15.00-18.00	41	3	E	40	Pterocles orientalis	2	15.58	5	S	0.50			100 m 205
M26	20.07.2025	07.25-10.25	—	—	—	—	—	—	—	—	—	—	—	—	—
M26	15.06.2025	15.15-18.15	—	—	—	—	—	—	—	—	—	—	—	—	—
M26	16.06.2025	06.25-09.25	—	—	—	—	—	—	—	—	—	—	—	—	—
M32	06.08.2025	14.00-17.00	35	3	NE	0	Raptor	1	14.48	100	N		00.15		1000 m 60
M32	07.08.2025	07.00-10.00	26	3	E	5	Pterocles orientalis	7	07.52	100	E	00.46			300 m 90
M32	07.08.2025	07.00-10.00	33	6	N	5	Falco sp.	1	09.45	150	S		00.14		200 m 180
M32	22.07.2025	14,40-17,40	—	—	—	—	—	—	—	—	—	—	—	—	—
M32	23.07.2025	07.15-10.15	—	—	—	—	—	—	—	—	—	—	—	—	—
M32	19.06.2025	14.50-17.50	—	—	—	—	—	—	—	—	—	—	—	—	—
M32	20.06.2025	06.25-09.25	27	1.7	E	40	Pterocles orientalis	1	06.37	60	SW		0.40		80 m/ 184
M32	20.06.2025	06.25-09.25	27	1	NW	60	Pterocles orientalis	2	06.58	70	SW		0.38		100 m/ 190
M32	20.06.2025	06.25-09.25	28	—	—	60	Pterocles orientalis	2	07.19	70	E		0.36		70 m/ 85
M32	20.06.2025	06.25-09.25	36	2.3	SW	50	Pterocles orientalis	3	08.22	80	E		0.30		100 m/ 116
M32	20.06.2025	06.25-09.25	40	1.7	SW	10	Buteo rufinus	1	09.32	120	S		1.30		600 m/ 150
P02	05.08.2025	14.35-17.35	—	—	—	—	—	—	—	—	—	—	—	—	—
P02	06.08.2025	07.25-10.25	18	4	NE	0	Pterocles orientalis	6	07.26	10	SEE	00.16			300 m 105
P02	06.08.2025	07.25-10.25	21	4	NE	0	Pterocles orientalis	1	08.01	10	SE	00.12			150 m 70

P02	06.08.2025	07.25-10.25	22	4	NE	0	Pterocles orientalis	4	08.13	20	SE		00.20		500 m 90
P02	18.07.2025	16.30-19.30	—	—	—	—	—	—	—	—	—	—	—	—	—
P02	19.07.2025	07.15-10.15	36	2.5	S	0	Pterocles orientalis	1	08.27	30	SW		0.27		on the point
P02	19.07.2025	07.15-10.15	36	2.5	S	0	Pterocles orientalis	1	08.44	30	NE		0.39		on the point
P02	19.06.2025	15.05-18.05	34	6	N	90	Buteo rufinus	1	17.29	50	N		0.25		1000 m/ 90
P02	20.06.2025	06.35-09.35	29	2	E	50	Pterocles orientalis	1	07.10	50	N		0.40		on the point
P02	20.06.2025	06.35-09.35	29	2	E	50	Pterocles orientalis	3	07.13	50	S		0.45		on the point
P02	20.06.2025	06.35-09.35	30	—	—	40	Pterocles orientalis	1	07.31	20	NE	0.29			on the point
P06	08.08.2025	13.35-16.35	—	—	—	—	—	—	—	—	—	—	—	—	—
P06	09.08.2025	07.20-09.20	—	—	—	—	—	—	—	—	—	—	—	—	—
P06	21.07.2025	07.45-10.45	—	—	—	—	—	—	—	—	—	—	—	—	—
P06	20.07.2025	14.50-17.50	—	—	—	—	—	—	—	—	—	—	—	—	—
P06	16.06.2025	14.10-17.10	35	3.3	NE	5	Pterocles orientalis	2	16.39	5-10	NW	0.22			300 m/ 105
P06	17.06.2025	06.10-09.10	25	1.2	NE	0	Pterocles orientalis	2	06.21	20-30	N		0.25		400 m/ 245
P06	17.06.2025	06.10-09.10	29	1.7	NE	0	Pterocles orientalis	2	07.24	10-20	N	0.16			500 m/ 270
P06	17.06.2025	06.10-09.10	30	1.1	NE	0	Pterocles orientalis	2	08.04	5-20	SE	0.44			350 m/ 290
P06	17.06.2025	06.10-09.10	31	2	NE	0	Pterocles orientalis	2	08.39	5-20	SE	0.56			300 m/ 230
P06	17.06.2025	06.10-09.10	33	0.8	NE	0	Pterocles orientalis	2	08.50	5-10	N	0.27			250 m/ 270
P06	17.06.2025	06.10-09.10	34	1	NE	0	Pterocles orientalis	1	09.00	5-10	NE	0.20			150 m/ 260
P06	17.06.2025	06.10-09.10	34	1	NE	0	Pterocles orientalis	1	09.05	0-5	SW	0.15			200 m/ 185
P06	17.06.2025	06.10-09.10	34	1	NE	0	Pterocles orientalis	2	09.06	5-10	SE	0.33			300 m/ 190
P17	06.08.2025	14.25-17.25	—	—	—	—	—	—	—	—	—	—	—	—	—
P17	07.08.2025	07.15-10.15				80	Pterocles orientalis	4	07.43	30	N		0.15		on the point
P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	4	07.50	30	N		0.15		on the point

P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	3	08.01	30	S		0.15		on the point
P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	2	08.07	30	N		0.15		on the point
P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	1	08.26	30	N		0.15		on the point
P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	2	08.30	30	S		0.15		on the point
P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	1	08.31	30	S		0.15		on the point
P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	2	08.42	20	S		0.15		on the point
P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	1	09.13	20	S		0.15		on the point
P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	1	09.15	30	S		0.15		on the point
P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	3	09.22	30	N		0.15		on the point
P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	1	09.23	20	N		0.15		on the point
P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	1	09.29	20	N		0.15		on the point
P17	07.08.2025	07.15-10.15	33	5	NE	70	Pterocles orientalis	1	09.47		N		0.15		on the point
P17	21.07.2025	14.20-17.20	—	—	—	—	—	—	—	—	—	—	—	—	—
P17	22.07.2025	07.25-10.25	26	13	NE	0	Pterocles orientalis	2	07.27	40	N		01.24		on the point
P17	22.07.2025	07.25-10.25	26	13	NE	0	Pterocles orientalis	1	07.41	100	E		0.30		on the point
P17	22.07.2025	07.25-10.25	26	13	NE	0	Pterocles orientalis	2	07.57	30	NE		0.34		on the point
P17	22.07.2025	07.25-10.25	26	13	NE	0	Pterocles orientalis	1	08.02	30	W		0.25		on the point
P17	22.07.2025	07.25-10.25	27	13	NE	0	Pterocles orientalis	1	08.03	40	W		0.10		on the point
P17	22.07.2025	07.25-10.25	30	13	NE	0	Pterocles orientalis	1	08.14	20	SE		0.27		on the point
P17	22.07.2025	07.25-10.25	30	13	NE	0	Pterocles orientalis	1	08.17	20	N		0.21		on the point
P17	22.07.2025	07.25-10.25	30	13	NE	0	Pterocles orientalis	1	08.20	20	N		0.25		on the point
P17	22.07.2025	07.25-10.25	30	13	NE	0	Pterocles orientalis	1	08.34	40	N		0.35		on the point
P17	22.07.2025	07.25-10.25	30	14	NE	0	Pterocles orientalis	1	08.47	20	NE		0.25		on the point
P17	22.07.2025	07.25-10.25	30	14	NE	0	Pterocles orientalis	1	08.52	10	SW	0.15			on the point

P17	22.07.2025	07.25-10.25	30	14	NE	0	Pterocles orientalis	1	09.06	50	N		0.13		on the point
P17	22.07.2025	07.25-10.25	30	14	NE	0	Pterocles orientalis	2	09.13	50	SE		0.05		on the point
P17	22.07.2025	07.25-10.25	30	13	NE	0	Pterocles orientalis	2	09.15	50	E		0.15		on the point
P17	22.07.2025	07.25-10.25	30	13	NE	0	Pterocles orientalis	1	09.18	30	SE		0.16		on the point
P17	22.07.2025	07.25-10.25	30	13	NE	0	Pterocles orientalis	1	09.22	30	NE		0.05		on the point
P17	22.07.2025	07.25-10.25	30	13	NE	0	Pterocles orientalis	6	09.31	20	N		0.30		on the point
P17	22.07.2025	07.25-10.25	33	13	NE	0	Pterocles orientalis	2	10.12	20	S		0.30		on the point
P17	18.06.2025	15.15-18.15	—	—	—	—	—	—	—	—	—	—	—	—	—
P17	19.06.2025	06.50-09.50	30	2.7	SSW	5	Raptor	1	06.55	40	NE		0.05		200 m/ 40
P17	19.06.2025	06.50-09.50	30	2.7	SSW	5	Pterocles orientalis	2	07.12	50	SSW		0.18		200 m/ 33
P17	19.06.2025	06.50-09.50	32	2.9	SSE	5	Pterocles orientalis	1	07.40	40	SW		0.05		300 m/ 1-3
P17	19.06.2025	06.50-09.50	33	3	SSE	5	Pterocles orientalis	1	08.04	30	SWW		0.21		200 m/ 47
P17	19.06.2025	06.50-09.50	33	3	SSE	5	Pterocles orientalis	3	08.05	50	NE		0.52		300 m/ 330
P24	06.08.2025	14.30-17.30	—	—	—	—	—	—	—	—	—	—	—	—	—
P24	07.08.2025	07.20-10.20	26		NE	40	Pterocles orientalis	2	07.30	4		00.07			100 m 240
P24	22.07.2025	15.30-18.30	—	—	—	—	—	—	—	—	—	—	—	—	—
P24	23.07.2025	07.35-10.35	—	—	—	—	—	—	—	—	—	—	—	—	—
P24	19.06.2025	14.50-17.50	—	—	—	—	—	—	—	—	—	—	—	—	—
P24	20.06.2025	06.35-09.35	34	—	—	45	Pterocles orientalis	1	06.38	4	NEE	0.12			60 m/ 78
P24	20.06.2025	06.35-09.35	34	—	—	45	Pterocles orientalis	1	06.49	4	SWW	0.28			40 m/ 257
P24	20.06.2025	06.35-09.35	34	—	—	45	Pterocles orientalis	1	07.06	4	SEE	0.19			45 m/ 104
P24	20.06.2025	06.35-09.35	34	—	—	45	Pterocles orientalis	1	07.16	7	SE	0.22			80 m/ 135
P24	20.06.2025	06.35-09.35	35	—	—	40	Pterocles orientalis	1	07.39	4	SEE	0.07			20 m/ 113
P24	20.06.2025	06.35-09.35	35	—	—	30	Pterocles orientalis	1	07.42	8	SSW	0.19			80 m/ 207

P24	20.06.2025	06.35-09.35	35	—	—	30	Pterocles orientalis	1	07.45	12	E	0.10			100 m/ 113
P24	20.06.2025	06.35-09.35	35	—	—	20	Pterocles orientalis	1	07.58	7	NEE	0.31			80 m/ 89
P24	20.06.2025	06.35-09.35	37	—	—	20	Pterocles orientalis	2	08.10	6	SEE	0.12			100 m/ 113
P24	20.06.2025	06.35-09.35	38	—	—	20	Pterocles orientalis	1	09.18	4	NWW	0.17			40 m/ 283
X04	07.08.2025	14.00-17.00	—	—	—	—	—	—	—	—	—	—	—	—	—
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	4	07.38	25	SW		00.10		600 m 280
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	1	07.44	15	SW	00.08			25 m 205
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	3	07.47	20	N	00.12			200 m 175
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	1	07.54	15	E	00.09			200 m 196
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	2	07.54	50	NW		00.22		300 m 335
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	1	07.59	20	S	00.13			200 m 199
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	2	08.00	75	SW		00.32		200 m 345
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	1	08.35	40	N		00.14		20 m 175
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	3	08.36	30	SW		00.17		300 m 209
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	2	08.43	10	S	00.07			15 m 190
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	4	08.52	40	NW		00.39		1000 m 333
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	1	09.24	15	N	00.14			3 m 20
X04	08.08.2025	07.35-10.35	26	3	E	80	Pterocles orientalis	1	10.30	15	S	00.09			70 m 192
X04	21.07.2025	14.05-17.05	—	—	—	—	—	—	—	—	—	—	—	—	—
X04	22.07.2025	07.10-10.10	—	—	—	—	—	—	—	—	—	—	—	—	—
X04	19.06.2025	06.45-09.45	33	3.2	SW	5	Pterocles orientalis	2	08.40	20-50	NW		0.46		100 m/ 45
X04	18.06.2025	15.30-18.30	37	—	—	5	Pterocles orientalis	1	18.20	30	E		1.26		1000 m/ 300
X05	07.08.2025	14.00-17.00	—	—	—	—	—	—	—	—	—	—	—	—	—
X05	08.08.2025	07.50-10.50	27	1	NW	0	Pterocles orientalis	2	07.50	20-50	SW		00.16		200 m 350

X05	08.08.2025	07.50-10.50	28	2	NW	0	Pterocles orientalis	2	08.20	10-20	NW	00.12			500 m 350
X05	08.08.2025	07.50-10.50	31	1	NW	0	Pterocles orientalis	1	09.37	10-20	SW	00.30			400 m 45
X05	08.08.2025	07.50-10.50	34	1	NW	0	Falco tinnunculus	1	10.34	200	W		02.50		1500 m 90
X05	20.07.2025	14.25-17.25	37	5	N	10	Aquila sp.	1	15.34	200	W		0.30		on the point
X05	21.07.2025	06.55-09.55	30	5	NE	10	Pterocles orientalis	1	07.00	10	S	0.30			on the point
X05	17.06.2025	14.35-17.35	40	3.3	NE	50	Raptor	1	15.57	200	N			1.20	300 m/ 64
X05	18.06.2025	06.25-09.25	30	—	—	10	Pterocles orientalis	2	06.48	40	SE		0.40		60 m/ 36
X05	18.06.2025	06.25-09.25	33	—	—	15	Pterocles orientalis	1	07.06	70	E		0.40		100 m/ 33
X05	18.06.2025	06.25-09.25	38	—	—	15	Pterocles orientalis	2	07.49	20	E	1.32			30 m/ 30

Annex 4.2 Observations with vantage points in June-August 2025, Power lines

Point №	Date	Time	Temperature	Wind speed, m/s	Wind direction	Cloudiness, %	Species	Bird count	Time of flight	Flight height, m	Flight direction	Band 1 (<20 m),m.s	Band 2 (20-50 m),m.s	Band 3 (>50 m),m.s	Note
OHL_VP_8 (W)	05.08.2025	15.00-18.00	28	1	SE	0	Aquila nipalensis	1	15.23	20	N		02.11		on the point
OHL_VP_8 (W)	06.08.2025	07.15-10.15	22	2	NE	0	Buteo rufinus	1	09.16	50	S		05.00		1500 m 270, RF
OHL_VP_8 (W)	06.08.2025	07.15-10.15	22	2	NE	0	Buteo rufinus	1	09.23	50	S		05.00		1500 m 270
OHL_VP_9 (NW)	11.08.2025	07.30-13.30	28	1	SE	0	Accipiter badius	1	08.20	50			00.26		on the point
OHL_VP_9 (NW)	11.08.2025	07.30-13.30	29	1	SE	0	Calidris temmincki	4	08.33	30			02.12		on the point
OHL_VP_9 (NW)	11.08.2025	07.30-13.30	31	1	SE	0	Falco sp.	1	09.30	10	NW		00.32		100 m 313, RF
OHL_VP_6 (NE)	09.08.2025	14.15-17.15	37	4	W	15	Buteo rufinus	1	14.34	25	S		03.35		100 m 310, RF
OHL_VP_6 (NE)	10.08.2025	06.25-09.25	24	5	NE	10	Circus macrourus	1	07.32	30	E		02.15		1000 m 350, RF
OHL_VP_6 (NE)	10.08.2025	06.25-09.25	24	5	NE	20	Buteo rufinus	2	09.19	40			02.39		700 m 115, RF
OHL_VP_6 (NE)	10.08.2025	06.25-09.25	24	5	NE	20	Aquila nipalensis	1	09.25	500			02.05		on the point
OHL_VP_6 (SW)	09.08.2025	14.15-17.15	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_6 (SW)	10.08.2025	06.25-09.25	—	—	—	—	—	—	—	—	—	—	—	—	—

OHL_VP_5 (NE)	10.08.2025	12.40-18.40	42	1	NW	70	Actitis hypoleucos	1	15.11	0					on the point
OHL_VP_5 (NE)	10.08.2025	12.40-18.40	42	1	NW	70	Aquila nipalensis	1	15.55	400				04.51	1000 m 225, RF
OHL_VP_5 (SW)	10.08.2025	12.40-18.40	38	1	NW	70	Accipiter badius	1	16.33	40	N			03.47	600 m 270, RF
OHL_VP_5 (SW)	10.08.2025	12.40-18.40	38	1	NW	70	Circus aeruginosus	1	16.39	20	SW		02.00		25 m 150, RF
OHL_VP_5 (NE)	10.08.2025	12.40-18.40	38	1	NW	70	Gallinula chloropus	1	16.39	20	SW				on the point
OHL_VP_5 (NE)	10.08.2025	12.40-18.40	36	1	NW	70	Aquila nipalensis	1	17.00	400	R			01.44	on the point
OHL_VP_5 (NE)	10.08.2025	12.40-18.40	36	1	NW	60	Aquila nipalensis	1	17.37	55	NE		01.33		on the point
OHL_VP_5 (SW)	10.08.2025	12.40-18.40	36	1	NW	60	Accipiter badius	1	17.40	10	N	01.00			on the point
OHL_VP_5 (NE)	10.08.2025	12.40-18.40	34	0	NW	10	Falco tinnunculus	1	18.14	20	W		00.20		on the point
OHL_VP_5 (NE)	10.08.2025	12.40-18.40	34	0	NW	10	Circaetos gallicus	2	18.30	40			00.30		on the point
OHL_VP_7 (NE)	09.08.2025	13.45-16.45	40	4	N	55	Aquila nipalensis	5	13.18	120			09.47		on the point
OHL_VP_7 (NE)	09.08.2025	13.45-16.45	40	2	NE	50	Aquila nipalensis	1	13.47	80	SE		04.37		700 m 156, RF
OHL_VP_7 (NE)	09.08.2025	13.45-16.45	40	3	NE	50	Buteo rufinus	1	13.47	45	SE		01.42		150 m 142, RF
OHL_VP_7 (NE)	10.08.2025	06.25-09.25	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_4 (NW)	10.08.2025	12.00-18.00	38	3	NNW	50	Falco sp.	1	16.34	10-20	S	00.20			150 m 337, RF
OHL_VP_4 (NW)	10.08.2025	12.00-18.00	38	2	NNW	50	Falco sp.	1	16.41	10-20	S	00.09			330 m 50, RF
OHL_VP_10 (NW)	11.08.2025	08.00-14.00	28	1	SE	0	Falco sp.	1	08.06	25	W		01.42		400 m 303, RF
OHL_VP_10 (SE)	11.08.2025	08.00-14.00	28	2	SE	0	Pterocles orientalis	2	08.11	220	NEE	00.18			300 m 181, RF
OHL_VP_10 (SE)	11.08.2025	08.00-14.00	29	1	SE	0	Falco sp.	1	08.19	20-40	N		01.18		50 m 170, RF
OHL_VP_10 (SE)	11.08.2025	08.00-14.00	30	1	SE	0	Pterocles orientalis	3	09.09	20-50	SWW		00.20		150 m 83, RF
OHL_VP_2 (N)	10.08.2025	12.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_2 (S)	10.08.2025	12.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_1 (SE)	25.07.2025	08.30-14.30	28	1,4	NE	0	Aquila heliaca	1	08.36	65	N-W		06.43		500 m/ 160, RF
OHL_VP_1 (SE)	25.07.2025	08.30-14.30	27	1	NE	0	Aquila sp.	1	08.51	100	NW-E		0.10		300 m/ 330, RF

OHL_VP_4 (NW)	24.07.2025	12.35-18.35	34	3	E	0	Falco tinnunculus	1	16.47	—	sitting	—	—	—	200 m/ 341, RF
OHL_VP_4 (NW)	24.07.2025	12.35-18.35	34	3	E	0	Buteo rufinus	1	16.49	10	E-W	0.50			1500 m/ 350, RF
OHL_VP_4 (NW)	24.07.2025	12.35-18.35	34	3	E	0	Tetrax tetrax	3	17.03	22	N-W	1.43			500 m/ 342, RF
OHL_VP_7 (NE)	23.07.2025	15.36-18.36	37	6	E	0	Buteo rufinus	1	14.47	30	E-S		1.42		500 m/ 73, RF
OHL_VP_7 (NE)	24.07.2025	06.00-09.00	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	36	—	—	0	Buteo rufinus	1	09.31	20	NW	0.48			100 m/ 300, ↑ N
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	36	—	—	0	Sterna hirundo	2	09.23	20	SW	0.11			50 m/ 12, ↑ S
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	36	—	—	0	Charadrii	5	09.36	15	NW	0.31			150 m/ 345, ↑ N
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	36	—	—	0	Alaudidae	3	09.39	20-50	NE		0.34		1500 m/ 305, R→L
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	36	—	—	0	Sterna hirundo	1	09.42	10-20	Circling, NW	0.28			100 m/ 15, RF
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	36	—	—	0	Circus aeruginosus	1	09.43	50	SW		1.24	0.30	300 m/ 305, R→L
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	36	—	—	0	Falco tinnunculus	1	09.52	10-20	NNW	0.25			200 m/ 17, ↑ N
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	36	—	—	0	Circus aeruginosus	1	09.53	10-20	NW	0.53			100 m/ 33, ↑ N
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	36	—	—	0	Falco tinnunculus	1	10.07	20-0	Circling	0.24			50 m/ 260, R→L
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	36	—	—	0	Sterna hirundo	1	10.09	20-30	NW		0.38		300 m/ 12, ↑ N
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	37	—	—	0	Falco tinnunculus	1	10.27	0-20	hunting	0.13			50 m/ 12, R→L
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	38	—	—	0	Sterna hirundo	1	10.55	10-20	SE	0.32			200 m/ 352, ↑ S
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	38	—	—	0	Falco tinnunculus	1	11.01	20-0-20	hunting	0.18			50 m/ 12, R→L
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	38	—	—	0	Charadrii	2	11.08	15	NW	0.11			200 m/ 330, ↑ N
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	40	—	—	0	Falco tinnunculus	1	11.29	20	hunting		0.27		on the point, R→L
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	42	—	—	0	Falco tinnunculus	1	11.44	20	hunting	0.16			on the point, ↑ N
OHL_VP_9 (NW)	25.07.2025	09.20-15.20	42	—	—	0	Sterna hirundo	1	14.08	10-20	SE	0.20			on the point, ↑ N
OHL_VP_6 (NE)	23.07.2025	15.50-18.50	38	8	NE	10	Buteo rufinus	1	16.44	100	N		01.12		500 m/ 340, R→L
OHL_VP_6 (NE)	24.07.2025	06.20-09.20	24	4.3	E	25	Buteo rufinus	1	07.42	50	N		0.22		on the point, ↑ NE

OHL_VP_6 (NE)	24.07.2025	06.20-09.20	24	4.2	E	5	Buteo rufinus	1	08.03	10-0	N	10.02			300 m/ 20, ↑ NE
OHL_VP_6 (NE)	24.07.2025	06.20-09.20	25	4.6	E	0	Aquila sp.	1	08.18	70	N			2.00	on the point, RF
OHL_VP_6 (NE)	24.07.2025	06.20-09.20	27	4.8	E	0	Buteo rufinus	2	08.35	80	SW			1,07	1000 m/ 213, R→L
OHL_VP_6 (SW)	24.07.2025	06.20-09.20	24	4.3	E	25	Aquila sp.	1	07.51	20-0	N	03.40			1000 m/ 245, RF
OHL_VP_6 (SW)	24.07.2025	06.20-09.20	25	4.6	E	0	Aquila sp.	1	08.15	100	N			03.29	on the point, RF
OHL_VP_6 (SW)	24.07.2025	06.20-09.20	27	4.6	E	0	Aquila sp.	1	08.32	80	SW			08.12	on the point, RF
OHL_VP_6 (SW)	24.07.2025	06.20-09.20	27	4.6	E	0	Pterocles orientalis	1	08.36	40	W		0.33		300 m/ 262, RF
OHL_VP_6 (SW)	23.07.2025	15.50-18.50	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_5 (NE)	24.07.2025	16.30-18.30	34	3	E	0	Falco tinnunculus	1	17.59	20	N		0.45		on the point, R→L
OHL_VP_5 (NE)	24.07.2025	16.30-18.30	32	3	E	0	Falco tinnunculus	1	19.24	20	N		01.07		on the point, R→L
OHL_VP_5 (NE)	24.07.2025	16.30-18.30	34	3	E	0	Falco tinnunculus	1	17.20	50	NE		01.50		on the point, ↑ SW
OHL_VP_5 (NE)	24.07.2025	16.30-18.30	34	3	E	0	Phalacrocorax carbo	1	17.30	—	sitting	—	—	—	100 m/ 170
OHL_VP_5 (NE)	25.07.2025	05.00-08.00	20	—	—	0	Buteo rufinus	1	05.16	20-30	NE		0.44		on the point, R→L
OHL_VP_5 (NE)	25.07.2025	05.00-08.00	21	—	—	0	Falco tinnunculus	1	05.46	20	NW	0.18			200 m/ 133, R→L
OHL_VP_5 (NE)	25.07.2025	05.00-08.00	22	—	—	0	Falco tinnunculus	1	06.10	20	SE	0.15			50 m/ 347, R→L
OHL_VP_5 (NE)	25.07.2025	05.00-08.00	23	—	—	0	Anas acuta	3	06.34	10-20	SE	0.26			300 m/ 15, R→L
OHL_VP_5 (NE)	25.07.2025	05.00-08.00	23	—	—	0	Buteo rufinus	1	06.37	10-20	SE	1.18			1000 m/ 33, R→L
OHL_VP_5 (NE)	25.07.2025	05.00-08.00	24	—	—	0	Tadorna ferruginea	3	06.51	20-30	SW		0.17		300 m/ 115, ↑ SW
OHL_VP_5 (NE)	25.07.2025	05.00-08.00	25	—	—	0	Falco tinnunculus	1	07.07	10-20	S	0.22			300 m/ 20, L→R
OHL_VP_5 (NE)	25.07.2025	05.00-08.00	27	—	—	0	Falco tinnunculus	1	07.18	10-20	SE	0.16			300 m/ 30, L→R
OHL_VP_5 (NE)	25.07.2025	05.00-08.00	30	—	—	0	Falco tinnunculus	1	07.33	10-20	S	0.30			300 m/ 250, L→R
OHL_VP_2 (S)	24.07.2025	08.25-14.25	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_2 (N)	24.07.2025	08.25-14.25	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_5 (SW)	24.07.2025	16.30-19.30	36	2	NE	0	Anatinae	3	16.34	50-100	S			0.24	2000 m/ 245, R→L

OHL_VP_5 (SW)	24.07.2025	16.30-19.30	36	2.5	NE	0	Raptor	1	16.50	Sitting	—	—	—	—	400 m/ 205
OHL_VP_5 (SW)	24.07.2025	16.30-19.30	35	2	NE	0	Anatinae	3	17.02	50-100	S			0.31	2000 m/ 260, R→L
OHL_VP_5 (SW)	24.07.2025	16.30-19.30	34	1.5	NE	0	Falco tinnunculus	1	17.20	40	N		0.18		300 m/ 185, L→R
OHL_VP_5 (SW)	24.07.2025	16.30-19.30	33	1	NE	0	Actitis hypoleucos	1	17.49	15	E	0.03			on the point, L→R
OHL_VP_5 (SW)	24.07.2025	16.30-19.30	33	1	NE	0	Gallinula chloropus	1	17.50	Voice	—	—	—	—	50 m/ 90
OHL_VP_5 (SW)	24.07.2025	16.30-19.30	32	1.5	NE	0	Hirundo rustica	1	18.33	15	E	0.07			on the point, L→R
OHL_VP_5 (SW)	25.07.2025	05.00-08.00	19	—	—	0	Milvus migrans	1	05.20	20-50	W		01.20		500 m/ 260, RF
OHL_VP_5 (SW)	25.07.2025	05.00-08.00	20	—	—	0	Anatinae	6	05.38	100	S			0.24	1500 m/ 250, R→L
OHL_VP_5 (SW)	25.07.2025	05.00-08.00	20	—	—	0	Raptor	1	05.47	50	S			01.18	1800 m/ 225, RF
OHL_VP_5 (SW)	25.07.2025	05.00-08.00	22	—	—	0	Porzana porzana	5	05.56	10-20	SE	0.20			200 m/ 311, R→L
OHL_VP_5 (SW)	25.07.2025	05.00-08.00	22	—	—	0	Circus aeruginosus	1	06.04	5-25	NW	0.21	0.08		700 m/ 207, L→R
OHL_VP_5 (SW)	25.07.2025	05.00-08.00	22	—	—	0	Tringa ochropus	2	06.11	10-20	NW	0.15			on the point, R→L
OHL_VP_5 (SW)	25.07.2025	05.00-08.00	23	—	—	0	Anas platyrhynchos	4	06.24	10-20	S	0.21			200 m/ 305, R→L
OHL_VP_5 (SW)	25.07.2025	05.00-08.00	23	—	—	0	Apus apus	2	06.39	—	—	—	—	—	—
OHL_VP_5 (SW)	25.07.2025	05.00-08.00	25	—	—	0	Falco tinnunculus	1	07.03	10	NE	0.25			200 m/ 160, R→L
OHL_VP_5 (SW)	25.07.2025	05.00-08.00	30	—	—	0	Anas platyrhynchos	1	07.47	10	SE	0.12			150 m/ 135, RF
OHL_VP_5 (SW)	25.07.2025	05.00-08.00	30	—	—	0	Falco tinnunculus	1	07.52	10-20	SEE	0.16			50 m/ 180, R→L
OHL_VP_8 (W)	24.07.2025	07.30-10.30	25	4.5	E	0	Pterocles orientalis	2	07.37	15-20	S	0.19			150 m/ 75, L→R
OHL_VP_8 (W)	24.07.2025	11.00-14.00	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_10 (NW)	25.07.2025	10.00-16.00	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_10 (SE)	25.07.2025	10.00-16.00	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_7 (NE)	14.06.2025	09.40-15.40	35	3.2	E	15	Buteo rufinus	1	11.43	5-10	NW	5.14			300 m/ 80
OHL_VP_7 (NE)	14.06.2025	09.40-15.40	35	3.2	E	15	Buteo rufinus	1	12.10	5-10	SE	2.07			150 m/ 90
OHL_VP_4 (NW)	21.06.2025	09.00-15.00	33	0.7	SSE	15	Buteo rufinus	1	11.10	50-100	NW			2.10	200 m/ 280

OHL_VP_2 (S)	21.06.2025	08.00-14.00	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_2 (N)	21.06.2025	08.00-14.00	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_1 (SE)	21.06.2025	07.45-13.45	29	2	S	0	Pterocles orientalis	1	08.08	20	E	0.19			on the point, R→L
OHL_VP_1 (SE)	21.06.2025	07.45-13.45	30	—	—	—	Circaetus gallicus	1	08.41	200	SW			4.03	on the point, L→R
OHL_VP_1 (SE)	21.06.2025	07.45-13.45	37	1,5	N	0	Circaetus gallicus	1	10.20	200	SW			4.39	on the point, L→R
OHL_VP_6 (SW)	14.06.2025	10.15-16.15	35	4.8	NE	20	Buteo rufinus	3	11.50	50	N		3.40	1.08	on the point, ↑ SW
OHL_VP_6 (SW)	14.06.2025	10.15-16.15	37	4.4	NE	40	Buteo rufinus	1	12.22	200	SW			2.16	500 m 60 RF
OHL_VP_6 (SW)	14.06.2025	10.15-16.15	37	6.5	NE	80	Buteo rufinus	3	13.24	120	W			1.40	on the point, L→R
OHL_VP_6 (SW)	14.06.2025	10.15-16.15	37	3.5	NE	70	Buteo rufinus	1	13.50	120	W			03.00	on the point, L→R
OHL_VP_6 (SW)	14.06.2025	10.15-16.15	35	3.9	NE	80	Buteo rufinus	1	15.56	20	SE			01.00	on the point, L→R
OHL_VP_6 (NE)	14.06.2025	14.06.2025	33	3	NE	0	Aquila nipalensis	1	10.30	60	NE			3.41	on the point, ↑ NE
OHL_VP_6 (NE)	14.06.2025	14.06.2025	33	4.1	NE	20	Buteo rufinus	3	11.51	200	N			1.00	on the point, ↑ NE
OHL_VP_6 (NE)	14.06.2025	14.06.2025	35	3.5	NE	50	Buteo rufinus	1	14.00	10	N	0.49			on the point, R→L
OHL_VP_5 (SW)	21.06.2025	09.55-15.55	34	—	—	0	Falco tinnunculus	1	10.01	50	RF		04.08		1500 m/ 228, RF
OHL_VP_5 (SW)	21.06.2025	09.55-15.55	34	—	—	0	Falco tinnunculus	1	10.44	100	RF			01.12	500 m/ 180, RF
OHL_VP_5 (SW)	21.06.2025	09.55-15.55	36	—	—	0	Falco tinnunculus	1	13.12	60-100	RF			02.05	200 m/ 181, L→R
OHL_VP_5 (NE)	21.06.2025	09.55-15.55	34	—	—	0	Falco tinnunculus	1	10.35	0-20	NNW	1.38			500 m/ 45, RF
OHL_VP_5 (NE)	21.06.2025	09.55-15.55	34	—	—	0	Falco tinnunculus	1	11.11	10-50	RF	1.08	03.37		700 m/ 74, RF
OHL_VP_5 (NE)	21.06.2025	09.55-15.55	36	—	—	0	Falco tinnunculus	1	12.16	70-100	SSE			03.18	300 m/ 48, RF
OHL_VP_8 (W)	14.06.2025	12.00-18.00	—	—	—	—	—	—	—	—	—	—	—	—	—
OHL_VP_3 (N)	21.06.2025	08.10-14.10	31	—	—	0	Buteo rufinus	1	08.10	100	NEE			3.00	700 m/ 343, RF
OHL_VP_3 (N)	21.06.2025	08.10-14.10	33	—	—	0	Buteo rufinus	1	08.34	50	NE-W			4.12	300 m/ 334, RF
OHL_VP_3 (N)	21.06.2025	08.10-14.10	35	—	—	0	Buteo rufinus	1	08.35	50	N-NW				400 m/ 267, RF
OHL_VP_3 (N)	21.06.2025	08.10-14.10	37	—	—	0	Buteo rufinus	1	09.19	10	NE-E			06.45	1000 m/ 239, RF

OHL_VP_3 (N)	21.06.2025	08.10-14.10	39	—	—	0	Buteo rufinus	1	09.56	50	SW	4.10			200 m/ 90, RF

Annex 4.3 En route observations in June-August 2025

Date	Coordinates	Species	Count	Other information
13.05.2025	N44.588496 E73.697997	Testudo horsfieldi	1	10 m
10.08.2025	N43.952151 E73.605428	Alcedo atthis	1	
10.08.2025	N43.952151 E73.605428	Acrocephalus dumetorum	1	
10.08.2025	N43.952151 E73.605428	Luscinia megarhynchos	1	
20.07.2025	N44.761034 E73.247972	Ovis ammon	3	
24.07.2025	N43.952151 E73.605428	Perdix perdix	1	
24.07.2025	N43.952151 E73.605428	Canis aureus	1	
19.07.2025	N44.786570 E73.253714	Ovis ammon	5	
24.07.2025	N44.454131 E73.738608	Gazella subgutturosa	1	
19.07.2025	N44.509627 E73.567554	Cercotrichas galactotes	1	
20.07.2025	N44.736724 E73.343595	Gazella subgutturosa	4	
21.07.2025	N44.736724 E73.343595	Gazella subgutturosa	2	
25.07.2025	N43.952151 E73.605428	Canis aureus	1	
19.07.2025	N44.76194 E73.30798	Circaetus gallicus	1	
20.07.2025	N44.73626 E73.34974	Melanocorypha calandra	1	
23.07.2025	N44.67597 E73.77233	Himantopus himantopus	1	
09.08.2025	N44.72662 E73.42126	Alauda leucoptera	1	
09.08.2025	N45.07117 E73.90201	Accipiter nisus	1	
10.08.2025	N45.08792 E73.93450	Buteo rufinus	1	
10.08.2025	N43.952151 E73.605428	Tachyspiza badia	1	
24.07.2025	N43.952151 E73.605428	Motacilla feldegg	1	
10.08.2025	N44.735787 E73.599566	Charadrius dubius	4	
17.06.2025	N44.832419 E73.255874	Parus major	2	
17.06.2025	N44.832419 E73.255874	Parus bokharensis	4	
10.08.2025	N44.663048 E73.848617	Acridotheres tristis	2	
10.08.2025	N44.663048 E73.848617	Sturnus vulgaris	1	

10.08.2025	N44.663048 E73.848617	Pastor roseus	34	
10.08.2025	N44.663048 E73.848617	Passer domesticus	4	
21.07.2025	N44.616166 E73.391810	Fringilla montifringilla	4	
21.07.2025	N44.762774 E73.311746	Sus scrofa	1	
22.07.2025	N44.618432 E73.392667	Ovis ammon	3	
18.06.2025	N44.618432 E73.392667	Ovis ammon	2	

Annex 4.4 Transect observations in June-August 2025

Transect Name	Date	Start time	Transect Length (km)	Transect Time (min)	Species (in order of detection)	Count	Age/Sex	Other information
M04	19.07.2025	10:02	1,56	46	Curruca nana	5	—	—
M04	19.07.2025	10:02	1,56	46	Cercotrichas galactotes	1	—	—
M04	19.07.2025	10:02	1,56	46	Athene noctua	1	—	—
M04	19.07.2025	10:02	1,56	46	Oenanthe isabellina	10	—	—
M04	19.07.2025	10:02	1,56	46	Oenanthe pleschanka	2	—	—
X05	20.07.2025	9:55	1,6	30	Curruca nana	3	—	—
X05	20.07.2025	9:55	1,6	30	Oenanthe pleschanka	1	—	—
X05	20.07.2025	9:55	1,6	30	Oenanthe isabellina	2	—	—
X05	20.07.2025	9:55	1,6	30	Oenanthe deserti	2	—	—
X05	20.07.2025	9:55	1,6	30	Melanocorypha calandra	8	—	—
X05	20.07.2025	9:55	1,6	30	Anthus campestris	4	—	—
M15	21.07.2025	10:15	1,5	30	Pterocles orientalis	6	—	—
M15	21.07.2025	10:15	1,5	30	Oenanthe deserti	2	—	—
M15	21.07.2025	10:15	1,5	30	Curruca nana	4	—	—
M15	21.07.2025	10:15	1,5	30	Oenanthe isabellina	2	—	—
M15	21.07.2025	10:15	1,5	30	Oenanthe pleschanka	2	—	—
M15	21.07.2025	10:15	1,5	30	Curruca nana	4	—	—
M13	22.07.2025	10:26	2,39	32	Alectoris chukar	10	—	—
M06	23.07.2025	10:25	2,25	32	—	—	—	—
OHL_VP_06	23.07.2025	15:00	1,7	40	Anthus campestris	4	—	—
OHL_VP_06	23.07.2025	15:00	1,7	40	Oenanthe deserti	1	—	—

OHL_VP_06	23.07.2025	15:00	1,7	40	Curruca nana	2	—	—
OHL_VP_06	23.07.2025	15:00	1,7	40	Pterocles orientalis	2	—	—
OHL_VP_06	23.07.2025	15:00	1,7	40	Oenanthe isabellina	3	—	—
OHL_VP_06	23.07.2025	15:00	1,7	40	Melanocorypha calandra	4	—	—
OHL_VP_07	24.07.2025	9:04	1,75	31	Oenanthe deserti	2	—	—
OHL_VP_07	24.07.2025	9:04	1,75	31	Caprimulgus europaeus	1	—	—
OHL_VP_07	24.07.2025	9:04	1,75	31	Lepus tolai	1	—	—
M03	06.08.2025	7:03	1,5	30	Curruca nana	2	—	—
M03	06.08.2025	7:03	1,5	30	Alaudala heinei	5	—	—
M03	06.08.2025	7:03	1,5	30	Athene noctua	1	—	—
M03	06.08.2025	7:03	1,5	30	Lepus tolai	1	—	—
M06	06.08.2025	17:56	1,82	35	Calandrella brachydacryla	5	—	—
M21	08.08.2025	17:24	1,19	32	Oenanthe pleschanka	5	—	—
M21	08.08.2025	17:24	1,19	32	Alectoris chukar	10	—	—
M10	08.08.2025	10:15	1,2	30	Oenanthe isabellina	4	—	—
M10	08.08.2025	10:15	1,2	30	Oenanthe pleschanka	2	—	—
M10	08.08.2025	10:15	1,2	30	Curruca nana	1	—	—
M10	08.08.2025	10:15	1,2	30	Oenanthe deserti	1	—	—
M10	08.08.2025	10:15	1,2	30	Pterocles orientalis	2	—	—
OHL_VP_06	10.08.2025	9:25	1,5	30	Pterocles orientalis	1	—	—
OHL_VP_06	10.08.2025	9:25	1,5	30	Oenanthe deserti	1	—	—
OHL_VP_06	10.08.2025	9:25	1,5	30	Curruca nana	3	—	—
OHL_VP_06	10.08.2025	9:25	1,5	30	Oenanthe isabellina	2	—	—
OHL_VP_06	10.08.2025	9:25	1,5	30	Oenanthe pleschanka	1	—	—
OHL_VP_05	10.08.2025	18.40	2,25	40	Curruca nana	2	—	—
OHL_VP_05	10.08.2025	18.40	2,25	40	Calidris temmincki	2	—	—
OHL_VP_05	10.08.2025	18.40	2,25	40	Phrynocephalus helioscopus	1	—	—
OHL_VP_05	10.08.2025	18.40	2,25	40	Actitis hypoleucos	4	—	—
OHL_VP_9	25.07.2025	11:30	1,9	40	Curruca nana	2	—	—
OHL_VP_9	25.07.2025	11:30	1,9	40	Falco tinnunculus	1	—	—
OHL_VP_9	25.07.2025	11:30	1,9	40	Sterna hirundo	8	—	—

OHL_VP_9	25.07.2025	11:30	1,9	40	Anatinae	11	—	—
OHL_VP_9	25.07.2025	11:30	1,9	40	Circus aeruginosus	1	—	—
OHL_VP_9	25.07.2025	11:30	1,9	40	Charadrii	14	—	—
OHL_VP_9	25.07.2025	11:30	1,9	40	Alaudidae	7	—	—
OHL_VP_9	25.07.2025	11:30	1,9	40	Oenanthe deserti	2	—	—
OHL_VP_5	25.07.2025	5:00	1,6	30	Anatinae	15	—	—
OHL_VP_5	25.07.2025	5:00	1,6	30	Curruca nana	2	—	—
OHL_VP_5	25.07.2025	5:00	1,6	30	Anatinae	8	—	—
OHL_VP_5	25.07.2025	5:00	1,6	30	Oenanthe	3	—	—
OHL_VP_5	25.07.2025	5:00	1,6	30	Falco tinnunculus	1	—	—
OHL_VP_5	25.07.2025	5:00	1,6	30	Buteo rufinus	1	—	—
OHL_VP_8	24.07.2025	10:30	1,2	30	Saxicola maurus	1	—	—
OHL_VP_8	24.07.2025	10:30	1,2	30	Oenanthe isabellina	2	—	—
OHL_VP_8	24.07.2025	10:30	1,2	30	Curruca nana	4	—	—
OHL_VP_8	24.07.2025	10:30	1,2	30	Alaudidae	4	—	—
OHL_VP_8	24.07.2025	10:30	1,2	30	Gerbillinae		—	burrows, 10-15, inhabited
OHL_VP_8	24.07.2025	10:30	1,2	30	Alectoris chukar	18	—	—
OHL_VP_8	24.07.2025	10:30	1,2	30	Upupa epops	1	—	—
OHL_VP_8	24.07.2025	10:30	1,2	30	Oenanthe pleschanka	2	—	—
M32	23.07.2025	10:15	2,5	60	Alaudidae	14	—	—
M32	23.07.2025	10:15	2,5	60	Oenanthe	8	—	—
M32	23.07.2025	10:15	2,5	60	Curruca nana	2	—	—
M32	23.07.2025	10:15	2,5	60	Oenanthe pleschanka	2	—	—
M11	22.07.2025	10:00	1,6	30	Alaudidae	34	—	—
M11	22.07.2025	10:00	1,6	30	Oenanthe	12	—	—
M11	22.07.2025	10:00	1,6	30	Cercotrichas galactotes	1	—	—
M16	21.07.2025	10:05	1,2	30	Alaudidae	4	—	—
M16	21.07.2025	10:05	1,2	30	Curruca nana	1	—	—
M16	21.07.2025	10:05	1,2	30	Lanius meridionalis	1	—	—
M16	21.07.2025	10:05	1,2	30	Oenanthe oenanthe	2	—	—
M20	20.07.2025	10:10	1,9	40	Oenanthe deserti	2	—	—

M20	20.07.2025	10:10	1,9	40	Alaudidae	7	—	—
M20	20.07.2025	10:10	1,9	40	Oenanthe isabellina	2	—	—
M20	20.07.2025	10:10	1,9	40	Circaetus gallicus	1	—	—
M20	20.07.2025	10:10	1,9	40	Oenanthe oenanthe	2	—	—
M20	20.07.2025	10:10	1,9	40	Hirundo rustica	1	—	—
M01	19.07.2025	10:00	1,2	30	Alaudidae	4	—	—
M01	19.07.2025	10:00	1,2	30	Oenanthe	2	—	—
M01	19.07.2025	10:00	1,2	30	Eremias arguta	1	—	—
M01	19.07.2025	10:00	1,2	30	Vulpes vulpes	1	—	—
M20	10.08.2025	7:00	1,2	30	Oenanthe oenanthe	4	—	—
M20	10.08.2025	7:00	1,2	30	Alaudidae	25	—	—
M20	10.08.2025	7:00	1,2	30	Lanius meridionalis	2	—	—
M20	10.08.2025	7:00	1,2	30	Falco subbuteo	1	—	—
M20	10.08.2025	7:00	1,2	30	Curruca nana	5	—	—
M20	10.08.2025	7:00	1,2	30	Oenanthe deserti	2	—	—
M20	10.08.2025	7:00	1,2	30	Saxicola maurus	2	—	—
M20	10.08.2025	7:00	1,2	30	Rhodospiza obsoleta	1	—	—
M20	10.08.2025	7:00	1,2	30	Coturnix coturnix	2	—	—
M16	09.08.2025	10:20	1,8	40	Oenanthe	4	—	—
M16	09.08.2025	10:20	1,8	40	Alaudidae	8	—	—
M16	09.08.2025	10:20	1,8	40	Curruca nana	6	—	—
M16	09.08.2025	10:20	1,8	40	Pterocles orientalis	5	—	—
M16	09.08.2025	10:20	1,8	40	Lanius meridionalis	2	—	—
M16	09.08.2025	10:20	1,8	40	Saxicola maurus	1	—	—
M13	08.08.2025	10:35	2,6	39	Oenanthe isabellina	2	—	—
M13	08.08.2025	10:35	2,6	39	Oenanthe deserti	2	—	—
M13	08.08.2025	10:35	2,6	39	Athene noctua	1	—	—
M08	07.08.2025	7:05	1,1	60	Oenanthe deserti	2	—	—
M08	07.08.2025	7:05	1,1	60	Oenanthe deserti	2	—	—
M08	07.08.2025	7:05	1,1	60	Oenanthe deserti	4	—	—
M08	07.08.2025	7:05	1,1	60	Alaudidae	3	—	—

M08	07.08.2025	7:05	1,1	60	Alaudidae	4	—	—
M08	07.08.2025	7:05	1,1	60	Curruca nana	2	—	—
M08	07.08.2025	7:05	1,1	60	Lanius meridionalis	1	—	—
M04	06.08.2025	7:20	1,4	34	Pterocles orientalis	4	—	—
M04	06.08.2025	7:20	1,4	34	Motacilla alba	1	—	—
M04	06.08.2025	7:20	1,4	34	Oenanthe isabellina	2	—	—
M04	06.08.2025	7:20	1,4	34	Alaudidae	4	—	—
M04	06.08.2025	7:20	1,4	34	Alaudidae	2	—	—
M04	06.08.2025	7:20	1,4	34	Alaudidae	1	—	—
M04	06.08.2025	7:20	1,4	34	Alaudidae	1	—	—
M04	06.08.2025	7:20	1,4	34	Oenanthe oenanthe	1	—	—
M04	06.08.2025	7:20	1,4	34	Curruca nana	1	—	—
M04	06.08.2025	7:20	1,4	34	Aquila nipalensis	1	—	—
M04	06.08.2025	7:20	1,4	34	Gerbillinae			burrows, 10-15, inhabited
M02	19.07.2025	10:23	1,5	40	Melanocorypha calandra	3	—	—
M02	19.07.2025	10:23	1,5	40	Alauda arvensis	8	—	—
M02	19.07.2025	10:23	1,5	40	Calandrella brachydactyla	8	—	—
M02	19.07.2025	10:23	1,5	40	Oenanthe pleschanka	12	—	—
M02	19.07.2025	10:23	1,5	40	Curruca nana	1	—	—
M02	19.07.2025	10:23	1,5	40	Alectoris chukar		—	Sound
M19	20.07.2025	9:50	1,8	45	Calandrella brachydactyla	14	—	—
M19	20.07.2025	9:50	1,8	45	Emberiza bruniceps	4	—	—
M19	20.07.2025	9:50	1,8	45	Curruca nana	1	—	—
M19	20.07.2025	9:50	1,8	45	Cercotrichas galactotes	1	—	—
M19	20.07.2025	9:50	1,8	45	Curruca curruca	1	—	—
M19	20.07.2025	9:50	1,8	45	Anthus campestris	1	—	—
M17	21.07.2025	10:20	1,5	30	Melanocorypha calandra	3	—	—
M17	21.07.2025	10:20	1,5	30	Alauda arvensis	6	—	—
M17	21.07.2025	10:20	1,5	30	Calandrella brachydactyla	1	—	—
M17	21.07.2025	10:20	1,5	30	Alaudidae	6	—	—
M17	21.07.2025	10:20	1,5	30	Anthus campestris	4	—	—

M17	21.07.2025	10:20	1,5	30	Oenanthe pleschanka	4	—	—
M17	21.07.2025	10:20	1,5	30	Emberiza bruniceps	2	—	—
M17	21.07.2025	10:20	1,5	30	Pterocles orientalis	4	—	—
M08	22.07.2025	10:20	1,5	40	Curruca nana	1	—	—
M08	22.07.2025	10:20	1,5	40	Calandrella brachydactyla	2	—	—
M08	22.07.2025	10:20	1,5	40	Emberiza bruniceps	2	—	—
M08	22.07.2025	10:20	1,5	40	Anthus campestris	2	—	—
M08	22.07.2025	10:20	1,5	40	Alaudidae	3	—	—
M08	22.07.2025	10:20	1,5	40	Alauda arvensis	3	—	—
M08	22.07.2025	10:20	1,5	40	Oenanthe deserti	4	—	—
M08	22.07.2025	10:20	1,5	40	Oenanthe	3	—	—
M07	23.07.2025	9:50	1,5	40	Gerbillinae		—	burrows, inhabited, unhabited
M07	23.07.2025	9:50	1,5	40	Calandrella brachydactyla	10	—	—
M07	23.07.2025	9:50	1,5	40	Alauda arvensis	1	—	—
M07	23.07.2025	9:50	1,5	40	Melanocorypha calandra	4	—	—
M07	23.07.2025	9:50	1,5	40	Alaudidae	15	—	—
M07	23.07.2025	9:50	1,5	40	Curruca nana	3	—	—
M07	23.07.2025	9:50	1,5	40	Lanius meridionalis	1	—	—
M07	23.07.2025	9:50	1,5	40	Lanius phoenicuroides	3	—	—
M07	23.07.2025	9:50	1,5	40	Oenanthe deserti	5	—	—
OHL_VP_2	24.07.2025	11:25	1,5	40	Gerbillinae		—	burrows, inhabited, unhabited
OHL_VP_2	24.07.2025	11:25	1,5	40	Curruca nana	1	—	—
OHL_VP_2	24.07.2025	11:25	1,5	40	Anthus campestris	4	—	—
OHL_VP_2	24.07.2025	11:25	1,5	40	Oenanthe pleschanka	5	—	—
OHL_VP_2	24.07.2025	11:25	1,5	40	Alectoris chukar	51	—	—
P02	06.08.2025	6:50	1,5	30	Pterocles orientalis	4	—	—
P02	06.08.2025	6:50	1,5	30	Pterocles orientalis	6	—	—
P02	06.08.2025	6:50	1,5	30	Pterocles orientalis	9	—	—
P02	06.08.2025	6:50	1,5	30	Alauda arvensis	2	—	—
P02	06.08.2025	6:50	1,5	30	Alauda arvensis	2	—	—
P02	06.08.2025	6:50	1,5	30	Alauda arvensis	4	—	—

P02	06.08.2025	6:50	1,5	30	Oenanthe isabellina	2	—	—
P02	06.08.2025	6:50	1,5	30	Oenanthe pleschanka	2	—	—
P02	06.08.2025	6:50	1,5	30	Oenanthe pleschanka	2	—	—
P02	06.08.2025	6:50	1,5	30	Curruca nana	3	—	—
P02	06.08.2025	6:50	1,5	30	Curruca nana	2	—	—
P02	06.08.2025	6:50	1,5	30	Melanocorypha calandra	1	—	—
P02	06.08.2025	6:50	1,5	30	Melanocorypha calandra	4	—	—
P02	06.08.2025	6:50	1,5	30	Melanocorypha calandra	2	—	—
P02	06.08.2025	6:50	1,5	30	Calandrella brachydactyla	6	—	—
P02	06.08.2025	6:50	1,5	30	Calandrella brachydactyla	2	—	—
P02	06.08.2025	6:50	1,5	30	Calandrella brachydactyla	2	—	—
P02	06.08.2025	6:50	1,5	30	Calandrella brachydactyla	4	—	—
P02	06.08.2025	6:50	1,5	30	Calandrella brachydactyla	2	—	—
P02	06.08.2025	6:50	1,5	30	Oenanthe deserti	1	—	—
P02	06.08.2025	6:50	1,5	30	Oenanthe deserti	2	—	—
P02	06.08.2025	6:50	1,5	30	Oenanthe deserti	2	—	—
P02	06.08.2025	6:50	1,5	30	Oenanthe deserti	3	—	—
P02	06.08.2025	6:50	1,5	30	Oenanthe deserti	2	—	—
P02	06.08.2025	6:50	1,5	30	Lanius meridionalis	1	—	—
P02	06.08.2025	6:50	1,5	30	Anthus campestris	1	—	—
P02	06.08.2025	6:50	1,5	30	Anthus campestris	1	—	—
P02	06.08.2025	6:50	1,5	30	Anthus campestris	2	—	—
P02	06.08.2025	6:50	1,5	30	Gerbillinae		—	burrows, 11, inhabited
P02	06.08.2025	6:50	1,5	30	Arvicolinae		—	burrows, inhabited, unhabited
M07	07.08.2025	6:35	1,5	30	Ellobius		—	burrows
M07	07.08.2025	6:35	1,5	30	Gerbillinae		—	burrows, 26, inhabited
M07	07.08.2025	6:35	1,5	30	Calandrella brachydactyla	6	—	—
M07	07.08.2025	6:35	1,5	30	Calandrella brachydactyla	4	—	—
M07	07.08.2025	6:35	1,5	30	Calandrella brachydactyla	2	—	—
M07	07.08.2025	6:35	1,5	30	Calandrella brachydactyla	1	—	—
M07	07.08.2025	6:35	1,5	30	Calandrella brachydactyla	8	—	—

M07	07.08.2025	6:35	1,5	30	Alaudidae	25	—	—
M07	07.08.2025	6:35	1,5	30	Melanocorypha calandra	4	—	—
M07	07.08.2025	6:35	1,5	30	Melanocorypha bimaculata	8	—	—
M07	07.08.2025	6:35	1,5	30	Anthus campestris	9	—	—
M07	07.08.2025	6:35	1,5	30	Curruca nana	7	—	—
M07	07.08.2025	6:35	1,5	30	Lanius meridionalis	6	—	—
M07	07.08.2025	6:35	1,5	30	Pterocles orientalis	11	—	—
M07	07.08.2025	6:35	1,5	30	Cercotrichas galactotes	3	—	—
X05	08.08.2025	7:18	1,5	30	Ellobius		—	burrows
X05	08.08.2025	7:18	1,5	30	Gerbillinae		—	burrows, inhabited, unhabited
X05	08.08.2025	7:18	1,5	30	Allactaga major		—	burrows, inhabited, 2
X05	08.08.2025	7:18	1,5	30	Corvus ruficollis	2	—	—
X05	08.08.2025	7:18	1,5	30	Pterocles orientalis	8	—	—
X05	08.08.2025	7:18	1,5	30	Alaudidae	50	—	—
X05	08.08.2025	7:18	1,5	30	Anthus campestris	8	—	—
X05	08.08.2025	7:18	1,5	30	Curruca nana	3	—	—
X05	08.08.2025	7:18	1,5	30	Melanocorypha calandra	8	—	—
X05	08.08.2025	7:18	1,5	30	Oenanthe deserti	7	—	—
X05	08.08.2025	7:18	1,5	30	Melanocorypha bimaculata	4	—	—
X05	08.08.2025	7:18	1,5	30	Lanius meridionalis	1	—	—
M17	09.08.2025	7:03	2,2	50	Gerbillinae		—	burrows, inhabited, unhabited
M17	09.08.2025	7:03	2,2	50	Pterocles orientalis	11	—	—
M17	09.08.2025	7:03	2,2	50	Alectoris chukar	20	—	—
M17	09.08.2025	7:03	2,2	50	Lanius phoenicuroides	3	—	—
M17	09.08.2025	7:03	2,2	50	Emberiza bruniceps	2	—	—
M17	09.08.2025	7:03	2,2	50	Curruca nana	6	—	—
M17	09.08.2025	7:03	2,2	50	Oenanthe deserti	8	—	—
M17	09.08.2025	7:03	2,2	50	Melanocorypha calandra	12	—	—
M17	09.08.2025	7:03	2,2	50	Alaudidae	51	—	—
M17	09.08.2025	7:03	2,2	50	Anthus campestris	6	—	—
M26	10.08.2025	5:20	1,5	35	Anthus campestris	7	—	—

M26	10.08.2025	5:20	1,5	35	Curruca nana	6	—	—
M26	10.08.2025	5:20	1,5	35	Curruca curruca	1	—	—
M26	10.08.2025	5:20	1,5	35	Melanocorypha calandra	7	—	—
M26	10.08.2025	5:20	1,5	35	Alaudidae	9	—	—
M26	10.08.2025	5:20	1,5	35	Saxicola maurus	1	—	—
M26	10.08.2025	5:20	1,5	35	Oenanthe deserti	7	—	—
M02	06.08.2025	11:30	0,85	30	Alaudidae	16	—	—
M02	06.08.2025	11:30	0,85	30	Oenanthe	7	—	—
M02	06.08.2025	11:30	0,85	30	Curruca nana	1	—	—
M32	07.08.2025	10.00	1,1	30	Alaudidae	7	—	—
M32	07.08.2025	10.00	1,1	30	Oenanthe	11	—	—
M32	07.08.2025	10.00	1,1	30	Pterocles orientalis	4	—	—
M12	08.08.2025	10.00	1,8	40	Alaudidae	18	—	—
M12	08.08.2025	10.00	1,8	40	Oenanthe	11	—	—
M12	08.08.2025	10.00	1,8	40	Pterocles orientalis	21	—	—
M19	09.08.2025	10.00	1,6	30	Pterocles orientalis	2	—	—
M19	09.08.2025	10.00	1,6	30	Alaudidae	11	—	—
M19	09.08.2025	10.00	1,6	30	Oenanthe	4	—	—
OHL_VP_1	25.07.2025	08.00	1,4	30	Alaudidae	18	—	—
OHL_VP_1	25.07.2025	08.00	1,4	30	Oenanthe	8	—	—
OHL_VP_1	25.07.2025	08.00	1,4	30	Pterocles orientalis	2	—	—
OHL_VP_6	24.07.2025	9:20	1,8	35	Oenanthe isabellina	1	—	—
OHL_VP_6	24.07.2025	9:20	1,8	35	Oenanthe pleschanka	2	—	—
OHL_VP_6	24.07.2025	9:20	1,8	35	Alaudidae	1	—	—
OHL_VP_6	24.07.2025	9:20	1,8	35	Oenanthe oenanthe	1	—	—
OHL_VP_6	24.07.2025	9:20	1,8	35	Anthus campestris	6	—	—
OHL_VP_7	10.08.2025	9:25	2	40	Alaudidae	22	—	—
OHL_VP_7	10.08.2025	9:25	2	40	Oenanthe deserti	2	—	—
OHL_VP_7	10.08.2025	9:25	2	40	Oenanthe	13	—	—
OHL_VP_7	10.08.2025	9:25	2	40	Curruca nana	4	—	—
OHL_VP_4	10.08.2025	18.00	2	40	Oenanthe	4	—	—

OHL_VP_4	10.08.2025	18.00	2	40	Alaudidae	8	—	—
M11	09.08.2025	7:00	2,2	40	Oenanthe	15	—	—
M11	09.08.2025	7:00	2,2	40	Alaudidae	13	—	—
M11	09.08.2025	7:00	2,2	40	Pterocles orientalis	4	—	—
M11	09.08.2025	7:00	2,2	40	Curruca nana	3	—	—
M11	09.08.2025	7:00	2,2	40	Apus apus	8	—	—
M11	09.08.2025	7:00	2,2	40	Upupa epops	1	—	—
M11	09.08.2025	7:00	2,2	40	Alectoris chukar	21	—	—
X04	08.08.2025	7:35	1,6	30	Oenanthe	5	—	—
X04	08.08.2025	7:35	1,6	30	Pterocles orientalis	17	—	—
X04	08.08.2025	7:35	1,6	30	Alaudidae	7	—	—
X04	08.08.2025	7:35	1,6	30	Anthus campestris	1	—	—
P06	08.08.2025	16:35	1,8	40	Oenanthe isabellina	4	—	—
P06	08.08.2025	16:35	1,8	40	Oenanthe deserti	12	—	—
P06	08.08.2025	16:35	1,8	40	Curruca nana	6	—	—
P06	08.08.2025	16:35	1,8	40	Apus apus	3	—	—
P06	08.08.2025	16:35	1,8	40	Alaudidae	1	—	—
M01	07.08.2025	7:10	1,3	30	Caprimulgus europaeus	1	—	—
M01	07.08.2025	7:10	1,3	30	Pterocles orientalis	2	—	—
M01	07.08.2025	7:10	1,3	30	Alaudidae	2	—	—
M01	07.08.2025	7:10	1,3	30	Oenanthe	2	—	—
OHL_VP_10	11.08.2025	18:00	1,8	30	Oenanthe	18	—	—
OHL_VP_10	11.08.2025	18:00	1,8	30	Alaudidae	4	—	—
OHL_VP_10	11.08.2025	18:00	1,8	30	Curruca nana	1	—	—
OHL_VP_10	11.08.2025	18:00	1,8	30	Oenanthe isabellina	1	—	—
OHL_VP_4	24.07.2025	18.30	1,8	40	Alaudidae	24	—	—
OHL_VP_4	24.07.2025	18.30	1,8	40	Oenanthe	11	—	—
M09	23.07.2025	10:05	1,4	30	Anthus campestris	1	—	—
M09	23.07.2025	10:05	1,4	30	Melanocorypha calandra	7	—	—
M09	23.07.2025	10:05	1,4	30	Melanocorypha calandra	1	—	—
M09	23.07.2025	10:05	1,4	30	Melanocorypha calandra	1	—	—

M09	23.07.2025	10:05	1,4	30	Anthus campestris	20	—	—
M09	23.07.2025	10:05	1,4	30	Alaudidae	10	—	—
X04	22.07.2025	10:10	1,6	30	Oenanthe isabellina	2	—	—
X04	22.07.2025	10:10	1,6	30	Oenanthe oenanthe	1	—	—
X04	22.07.2025	10:10	1,6	30	Oenanthe oenanthe	1	—	—
M16	21.07.2025	9:45	1,2	30	Curruca nana	1	—	—
M16	21.07.2025	9:45	1,2	30	Oenanthe isabellina	2	—	—
M16	21.07.2025	9:45	1,2	30	Oenanthe deserti	1	—	—
M16	21.07.2025	9:45	1,2	30	Pterocles orientalis	4	—	—
M16	21.07.2025	9:45	1,2	30	Alaudidae	24	—	—
M16	21.07.2025	9:45	1,2	30	Oenanthe	7	—	—
M24	20.07.2025	10:10	1,5	40	Alaudidae	11	—	—
M24	20.07.2025	10:10	1,5	40	Oenanthe	5	—	—
M24	20.07.2025	10:10	1,5	40	Curruca nana	2	—	—
M24	20.07.2025	10:10	1,5	40	Pterocles orientalis	4	—	—
M03	19.07.2025	10:10	1,6	40	Pterocles orientalis	2	—	—
M03	19.07.2025	10:10	1,6	40	Alaudidae	11	—	—
M03	19.07.2025	10:10	1,6	40	Oenanthe	3	—	—
OHL_VP_10	11.08.2025	18:00	2	50	Oenanthe	11	—	—
OHL_VP_10	11.08.2025	18:00	2	50	Alaudidae	18	—	—
OHL_VP_10	11.08.2025	18:00	2	50	Curruca nana	5	—	—
OHL_VP_10	11.08.2025	18:00	2	50	Oenanthe isabellina	2	—	—
OHL_VP_10	11.08.2025	18:00	2	50	Pterocles orientalis	1	—	—