

BIRD MONITORING REPORT – PARAVANI TRANSMISSION LINE (Autumn 2016- First Survey Report)

1. Introduction

In accordance with monitoring schedule, field surveys were carried out on September 7, 8 and 9 of 2016.

Survey team: Gia Edisherashvili, Ornithologist, head of the group,
Tamaz Kobulashvili, driver, assistant.

Objective of the survey:

- Registration of local and migrant species (spring migration) encountered.
- Registration of birds (bird mortality, injury) caused by collision with OTL or electrocution

It was warm sunny weather during the survey period, variable clouds from time to time. Visibility – good.

Observation on birds' migration was carried out within the project zone (100% of the line covered). Impact of the line on birds was studied along 84% of the line. Despite of good weather some sites were not checked because of poor accessibility. Although part of these sections, which the team managed to reach, were checked.

Route of the transmission lines with indication of poorly accessible sections are shown in the Annex 1. List of species registered during the survey are given in Annex 2. Coordinates of the towers listed in Annex 3.

2. Results of Field Surveys

2.1. Migrant and local/migrating species

Width of the studied corridor is 50x50 m on the both sides of the OTL. Those areas, where considerable differences in height are observed due to the vertical fragmentation of the terrain between some certain towers, corridor width was increased up to 100x100 m (e.g. interval between #70 and #75 towers).

Special attention was paid to the potentially dangerous sections for birds, namely: crossings of the rivers and ravines, as well as crests of ridges (Figures 1 and 2), section of Mtkvari River (Figure 3), section of Paravani River (Figure 4), crest of a ridge between #98 and #101 towers at Agara village (Figure 5).

Except the walkover along the OTL route, two observations in the morning and in the evening were carried out.

All visible species, their number, height and direction of flight (so called "echelon") were recorded. The species registered along the corridor, perching on the nearby electrical transmission lines (Figure 60), in grass (Figure. 7), on stones (Figure 8), on trees and shrubs (Figure 9), on haystacks, etc., were also registered.

Migration activity of birds was less expressed, migrants were basically observed at the section of Mtkvari River crossings, Paravani River and Khizabavra village areas. Among migrating species European bee-eater (*Merops apiaster*) was dominating.

Large flocks of European bee-eaters were registered flying in the areas from the morning till the evening. The flight height was different – from high, when observation on birds is almost impossible without optics; to low - near the ground during. The low flying flocks were hunting or resting on tree branches or wires. (Migration of European bee-eaters, depending on the weather conditions may last from 3-8 August to 18-24 September.)

Other species observed were European rollers (*Coracias garrulus*). During three-hour observation period (from 10 am to 13 pm) 1200 units of European bee-eater and 63 units of European rollers were observed in vicinity of the Mtkvari River section.

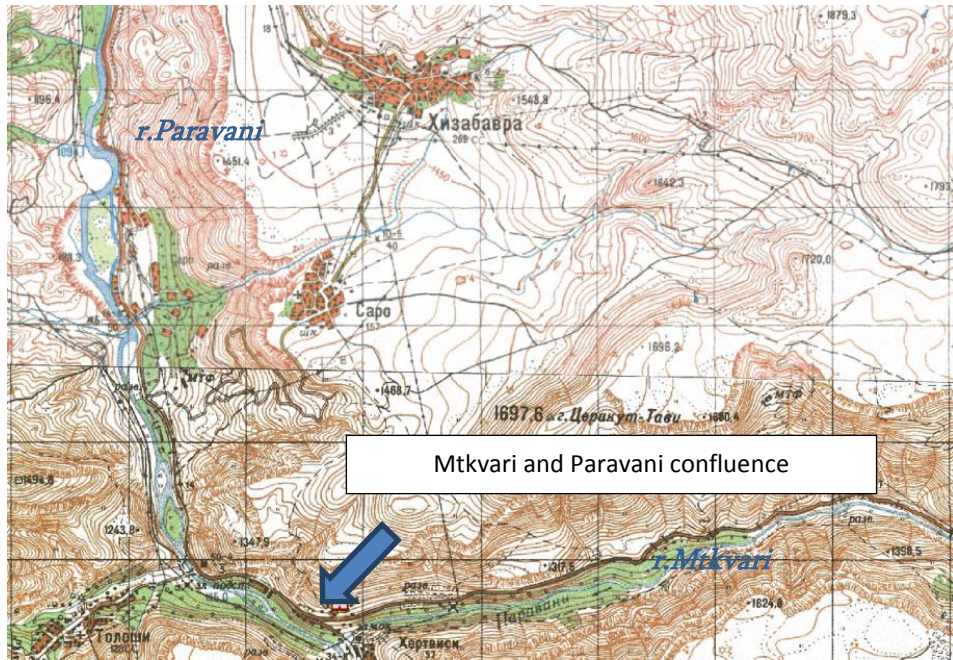
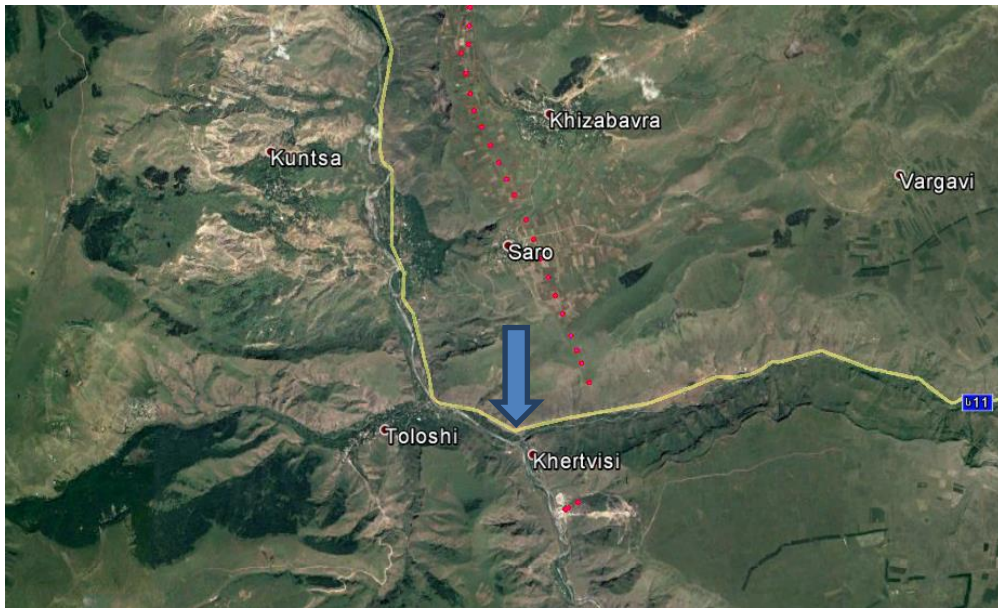


Figure 1. Confluence of Mtkvari and Paravani Rivers

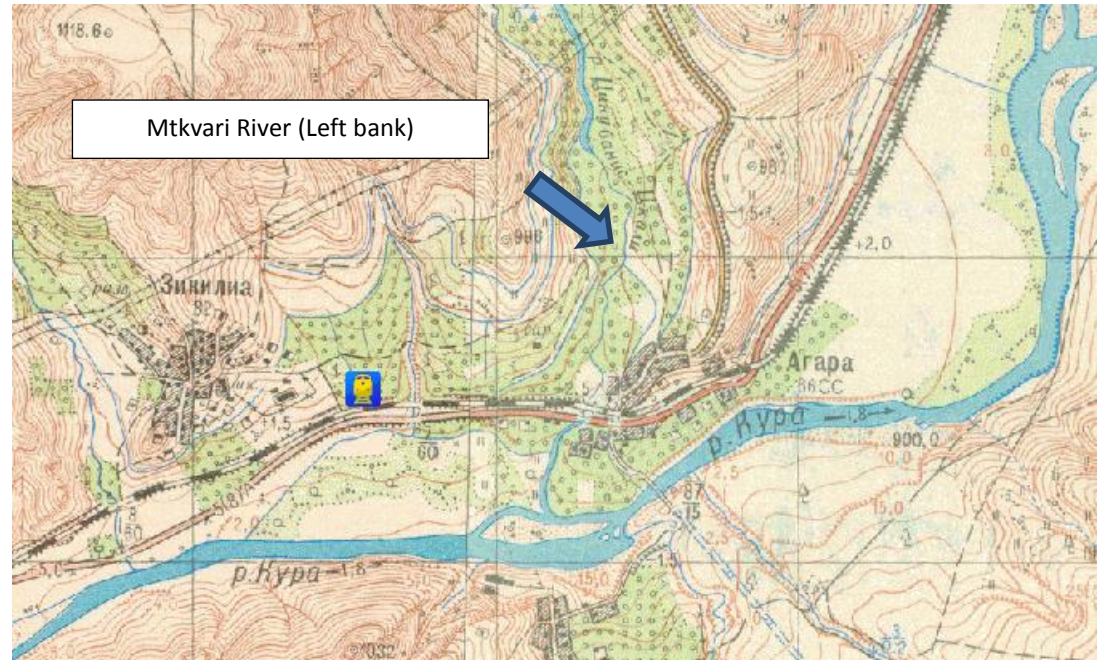


Figure 2. Agara and its surroundings



Figure 3. Section of Mtkvari River at Agara village



Figure 4. Section of Paravani River at Khertvisi village



Figure 5. Section of ridge crest near № 99 tower.



Figure 6. European bee-eater (*Merops apiaster*)



Figure 7. Woodlark (*Lullula arborea*)



Figure 8. Common buzzard (*Buteo buteo*)



Figure 9. Red-backed shrike (*Lanius collurio*)

Golden oriole (*Oriolus oriolus*) was also observed on the low height (12-15 m) at tower #95 in the floodplain of Mtkvari River. Migration period of this species was almost complete.

Significant number of Barn swallows (*Hirundo rustica*) was migrating as a wide flock, as for the Northern house-martin (*Delichon urbicum*) and Sand martin (*Riparia riparia*), small number was registered. Migration peak of these species was complete.

Of predators Common buzzard (*Buteo buteo*) (Figure 8) dominate in all sections. This species were registered on the ground, OTL towers (Figure 9) or branches (Figure 10) from where they observed their potential prey. In

total, 60 units were observed. Due to significant number of rodents and multiple colonies of voles observed this year, that attract Common buzzard and other predators (Figure 11), their migrations has prolonged until the winter period. In case of snowless winter, certain part of these birds will stay in the country.

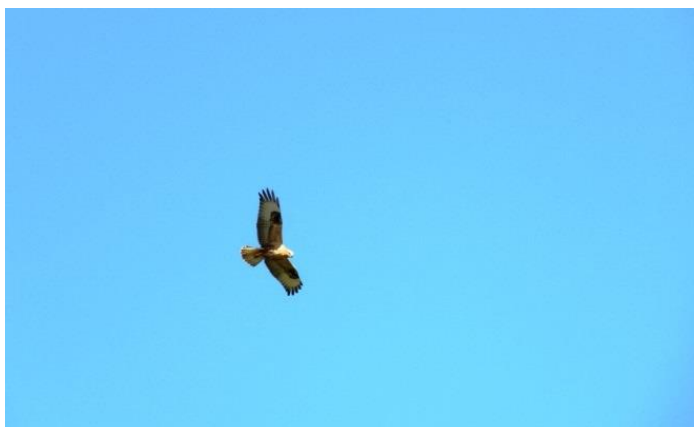


Figure 8. Common buzzard (*Buteo buteo*) at Mtkvari section

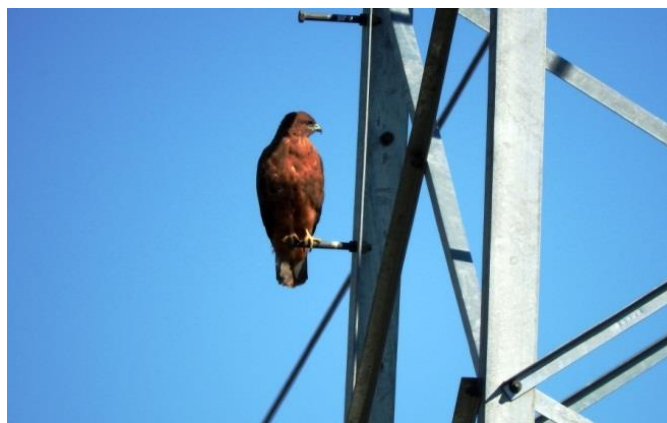


Figure 9. Common buzzard (*Buteo buteo*) on № 95 tower

Other birds of prey were also found, but their number is not considerable. Three units of Lesser spotted eagle (*Aquila pomarina*) (Figure 12) was recorded at Mtkvari section, between Sakuneti and Rustavi village and in Paravani River valley. One Short-toed snake-eagle (*Circaetus gallicus*) was found on the OTL tower in Aspindza, two units of Booted eagle (*Aquila pennata*) were registered in Damala village, small flock of Black kite (*Milvus migrans*) (7 units) - at Khizabavra village, Eurasian sparrowhawk (*Accipiter nisus*) was found on many sites, insignificant number of Common kestrel (*Falco tinnunculus*) – at Khizabavra village, one unit of Peregrine falcon (*Falco peregrinus*) flew over the towers #6 and #7.

It should be noted that migration of Black kite is quite prolonged in time and main migration period of this species is from the end of September to the first half of October.

Of small Passeriformes, except swallows, small flocks (40-60 units) of White wagtail (*Motacilla alba*) on considerable heights, as well as Eurasian skylark (*Alauda arvensis*), mixed flocks of Tree pipit (*Anthus trivialis*) and Meadow pipit (*Anthus pratensis*) were found. Several Northern wheatears *Oenanthe oenanthe*) and Black-eared wheatears (*Oenanthe hispanica*) (Figure 14) was found at Khizabavra village. There the team also came across of Whinchat (*Saxicola rubetra*) and Western rock-nuthatch (Figure 15).



Figure10. Common buzzard on the shrub at Rustavi village



Figure11. Holes of voles (*Microtus sp.*).



Figure 12. Lesser spotted eagle (*Aquila pomarina*)

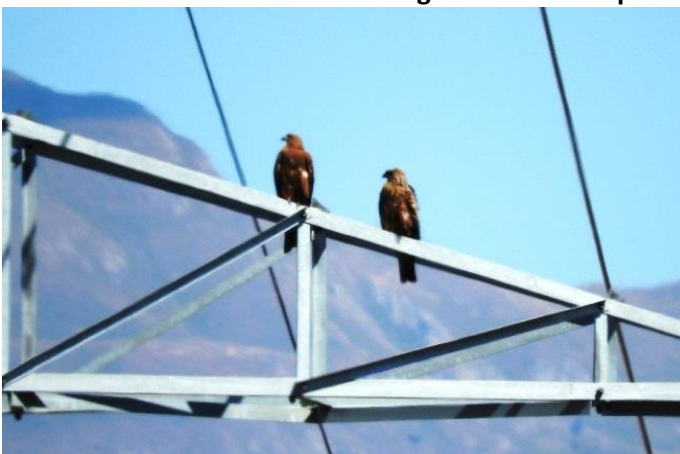


Figure 13. Black kite (*Milvus migrans*) on plateau at Khizabavra village



Figure 14. Black-eared wheatear (*Oenanthe hispanica*)



Figure 15. Western rock-nuthatch (*Sitta neumayer*)

2.2. Survey of OTL Impact

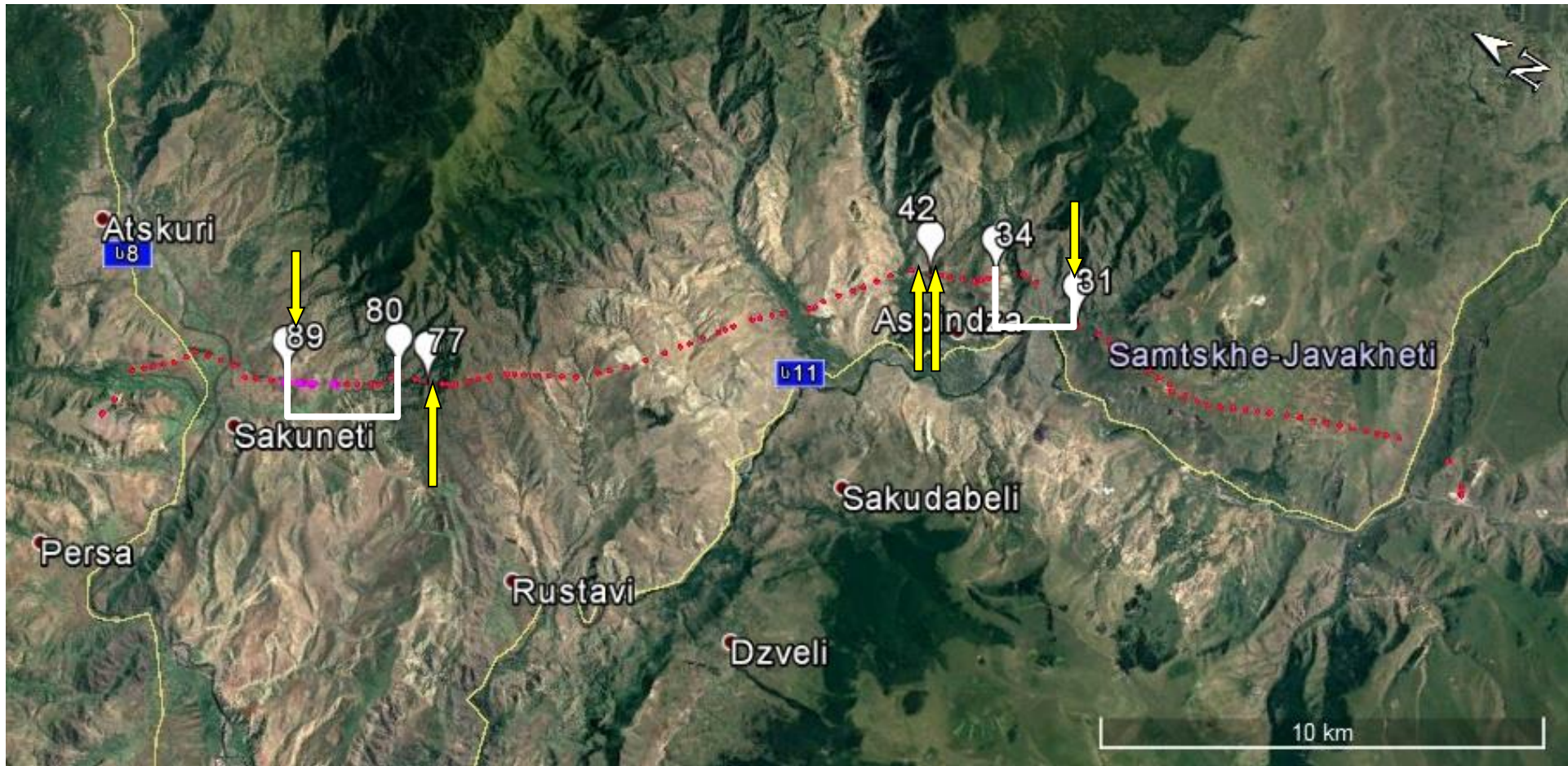
None of the facts of birds' mortality or/and injury caused by collision into the OTL or electrocution have been registered along Paravani OTL. No birds sitting on the wires were registered. Birds use to use only towers and less voltage lines for resting.

Conclusion

- No cases of bird collision or injury caused by the OTL were registered during the survey.
- No specific corrective action is required.

Giorgi Edisherashvili, Ornithologist
September, 2016.

Annex 1



Key:

White line and signs indicate those sites, which were inaccessible due to the poor terrain conditions. Yellow arrows indicate locations within the non-accessible areas checked by the team.

Tower coordinates

#	X	Y	N of towers
1	344173	4619289	103
2	344347	4619102	102
3	344482	4618944	101
4	344647	4618766	100
5	344818	4618569	99
6	345058	4618394	98
7	345266	4618303	97
8	345362	4617987	96
9	345399	4617705	95
10	345464	4617407	94
11	345401	4617250	93
12	345339	4617053	92
13	345471	4616807	91
14	345615	4616515	90
			#80-89
15	347333	4613855	79
16	347418	4613475	78
			#77
17	347618	4613076	76
18	347691	4612924	75
19	347921	4612697	74
20	348067	4612563	73
21	348250	4612371	72
22	348499	4612068	71
23	348589	4611915	70
24	348680	4611746	69
25	348828	4611500	68
26	348973	4611224	67
27	349103	4610987	66
28	349251	4610720	65
29	349592	4610336	64
30	349781	4610139	63
31	350022	4609860	62
32	355890	4604048	61
33	356009	4603933	60
34	356117	4603828	59
35	356147	4601704	58
36	351501	4608660	57
37	351789	4608502	56
38	351914	4608404	55
39	352073	4608284	54
40	352431	4608009	53
41	262547	4607881	52
42	352733	4607677	51

#	X	Y	N of towers
43	352899	4607498	50
44	353327	4607026	49
45	353405	4606949	48
46	353618	4606863	47
47	353849	4606675	46
48	354357	4606254	45
49	354620	4606074	44
50	354901	4605862	43
51	355216	4604802	41
52	355499	4604899	40
			42
53	355565	4604738	39
54	355675	4604457	38
			#31-37
55	356200	4601198	30
56	356196	4600914	29
57	356182	4600634	28
58	356149	4600334	27
59	356143	4600081	26
60	356131	4599803	25
61	356615	4599536	24
62	356097	4599260	23
63	355986	4599119	22
64	346044	4598833	21
65	356099	4598535	20
66	356147	4598279	19
67	356261	4598029	18
68	356384	4597766	17
69	356499	4597505	16
70	356615	3497255	15
71	356724	4597019	14
72	356884	4596644	13
73	356999	4596361	12
74	357107	4596071	11
75	357204	4595800	10
76	357005	4595525	9
77	357408	4595258	8
78	357532	4594920	7
79	357609	4594702	6
80	357676	4594520	5
81	357782	4594232	4

Note:
Greenish color indicates those towers, which couldn't be checked.

Annex 2 Species registered during the site survey

	სახელწოდება ქართულ ენაზე Name in Georgian	სახელწოდება ინგლისურ ენაზე Name in English	ლათინური სახელწოდება Name in Latin	სტატუსი Status
1	კვირიონი	European bee-eater	<i>Merops apiaster</i>	IUCN_LC
2	ყაყაპებიც	European roller	<i>Coracias garrulus</i>	IUCN_LC
3	მოლალურმა	Golden oriole	<i>Oriolus oriolus</i>	IUCN_LC
4	სოფლის მერცხლები	Barn swallow	<i>Hirundo rustica</i>	IUCN_LC
5	ქალაქის მერცხალი	Northern house-martin	<i>Delichon urbicum</i>	IUCN_LC
6	მენაპირე მერცხალი	Sand martin	<i>Riparia riparia</i>	IUCN_LC
7	ჩვეულებრივი კაკაჩა	Common buzzard	<i>Buteo buteo</i>	IUCN_LC
8	მცირე მყივანი არწივი	Lesser spotted eagle	<i>Aquila pomarina</i>	IUCN_LC
9	გველიჭამია	Short-toed snake-eagle	<i>Circaetus gallicus</i>	IUCN_LC
10	ჩია არწივი	Booted eagle	<i>Aquila pennata</i>	-
11	მერა	Black kite	<i>Milvus migrans</i>	IUCN_LC
12	მიმინო	Eurasian sparrowhawk	<i>Accipiter nisus</i>	IUCN_LC
13	ჩვ. კირკიტა	Common kestrel	<i>Falco tinnunculus</i>	IUCN_LC
14	შავარდენი	Peregrine falcon	<i>Falco peregrinus</i>	IUCN_LC
15	თეთრი ბოლოქანქალა	White wagtail	<i>Motacilla alba</i>	IUCN_LC
16	მინდვრის ტოროლა	Eurasian skylark	<i>Alauda arvensis</i>	IUCN_LC
17	ტყის მწყერჩიტა	Tree pipit	<i>Anthus trivialis</i>	-
18	მდელოს მწყერჩიტა	Meadow pipit	<i>Anthus pratensis</i>	IUCN_NT
19	ჩვ.მეკენჭია	Northern wheatear	<i>Oenanthe oenanthe</i>	IUCN_LC
20	შავამლავი მეკენჭია	Black-eared wheatear	<i>Oenanthe hispanica</i>	IUCN_LC
21	მდელოს ოვსადები	Whinchat	<i>Saxicola rubetra</i>	IUCN_LC
22	მცირე კლდეცოცია	Western rock-nuthatch	<i>Sitta neumayer</i>	IUCN_LC

Note:

LC – Least concern; NT- Near threatened

**BIRD MONITORING REPORT – PARAVANI TRANSMISSION LINE
(Autumn 2016- Second Survey Report)**

1. Introduction

In accordance with monitoring schedule, field surveys were carried out on September 30 and October 1,2 of 2016.

Survey team: Gia Edisherashvili, Ornithologist, head of the group,
Alexander Balakhashvili, assistant,
Tamaz Kobulashvili, driver, assistant.

Objective of the survey:

- Registration of local and migrant species (spring migration) encountered.
- Registration of birds (bird mortality, injury) caused by collision with OTL or electrocution

Weather and visibility conditions:

Date	Description of weather conditions
September 30	Raining till the early morning. Light rain from time to time and cloudiness preserved till 14 pm, after that it was partly sunny weather.
October 1 and 2	Dry weather with variable cloudiness

Observation on birds' migration was carried out within the project zone (100% of the line covered). Impact of the line on birds was studied along 82% of the line. Some sites were not accessible because of weather conditions and landform complexity.

Route of the transmission lines with indication of poorly accessible sections are shown in the Annex 1. List of species registered during the survey are given in Annex 2. Coordinates of the towers listed in Annex 3.

2. Results of Field Surveys

2.1. Migration Survey

Considerable migration activity has been observed since early morning of September 30. Large flocks of Black kites (*Milvus migrans*) (Figure 1) and European Honey-buzzards (*Pernis apivorus*) were observed from time to time in the clouds along the entire route from Borjomi valley to Agara village. First observation was carried out on Mtkvari section and on the hill between Tsinubani and Agara villages, where last towers of the OTL are located (Figure 2). Basic mass of Black kites (*Milvus migrans*) (Figure 3) and European Honey-buzzards (*Pernis apivorus*) was found along the mentioned hill between #98 and #101 towers (Figure 4).



Figure 1. Fragment of Black kites (*Milvus migrans*) flock



Figure 2. Hill at Agara village

Within the observation period, between 10 a.m. and 13 p.m. about 800 Black kites were observed, out of which more than half flew over the areas till 11 a.m. Flight direction was toward south through Mtkvari River Valley and then to the west along the south slopes of Meskheti Range. Height of the flight was about 30-100 m. As for European Honey-buzzards, the same amount of this species was also observed, but due to the height of flight and cloudiness, presumably, we missed certain number of this bird.



Figure 3. Flock of Black kites (*Milvus migrans*) on the top of № 99 tower



Figure 4. Towers 98-101

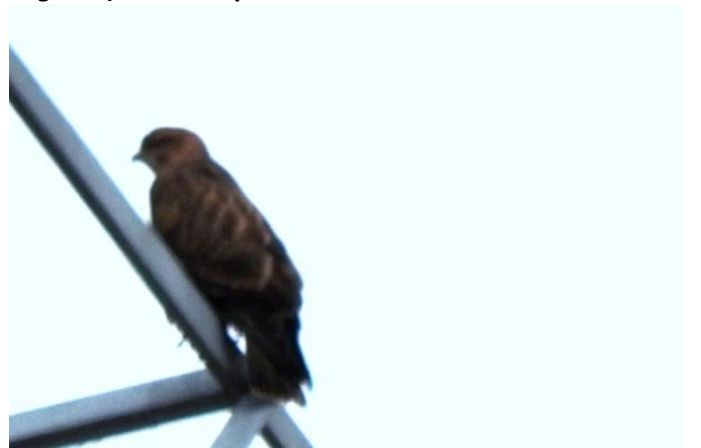


Figure 5. European Honey-buzzards (*Pernis apivorus*)

Following birds of prey were observed within this section:

- European honey buzzard (Figure 5) 1 unit,
- Egyptian vulture (*Neophron percnopterus*) 1 unit,
- Lesser spotted eagle (*Aquila pomarina*) 2 units,
- Booted eagle (*Aquila pennata*) 2 units,
- Common buzzard (*Buteo buteo*) 7 units,
- Long-legged buzzard (*Buteo rufinus*) – presumably, on long distance 1unit, another - on haystack (Figure 5),
- Eurasian sparrowhawk (*Accipiter nisus*) (Figure 6),
- Northern goshawk (*Accipiter gentilis*) (Figure 7) 1 unit,
- Eurasian hobby (*Falco subbuteo*) 7 units
- Peregrine falcon (*Falco peregrinus*) 1 unit.



Figure 6. Long-legged buzzard (*Buteo rufinus*)



Figure 7. Eurasian sparrowhawks (*Accipiter nisus*)

Flocks of Rooks (*Corvus frugilegus*) (Figure 8) were observed. From small Passeriformes Barn swallows (*Hirundo rustica*) were still migrating, but their number was not considerable. Mixed flocks of larks (*Alaudidae*), Finches (*Fringillidae*) and Buntings (*Ebberizidae*) were also observed in the area.



Figure 8. Northern goshawk (*Accipiter gentilis*)



Figure 9. Flock of Rooks (*Corvus frugilegus*)

In addition to mentioned above, in early morning the towers located near the Mtkvari crossing were checked to reveal possible collision facts of night migrants (Quail, Western water rail, Common moorhen). No carcasses or injured species were found.

Because of sensitivity on the Paravani crossing (Figure 10) and plateau area in the neighborhood of Saro and Khizabavra villages (Figure 11).



Figure 10. Paravani section and Paravani River Valley from above



Large flocks of Eurasian crag martin (*Ptyonoprogne rupestris*) were observed in this area, especially, at Khertvisi Fortress. Due to the warm weathers, they have not migrated yet.



Figure 11. OTL section at Saro village



Figure 12. Short-toed snake-eagle (*Circaetus gallicus*)

Following species of birds of prey were found:

Lesser spotted eagle (*Aquila pomarina*) - 3 units, which flew over the right bank of Paravani River, at the edge of the plateau,

Short-toed snake-eagle (*Circaetus gallicus*) (Figure 12.) - 1 unit, H

en harrier (*Circus cianeus*) 1 unit,

Common buzzard (*Buteo buteo*) – several units in different areas,

Eurasian sparrowhawk (*Accipiter nisus*) (Figure 13.) - 4 units and

Common kestrel (*Falco tinnunculus*).

Large flocks of Armenian gulls (*Larus armenicus*) were found in Paravani and Mtkvari River valleys (Figure 14.), they land on the river valleys since summer from the lakes on Javakheti plateau.



Figure 13. Eurasian sparrowhawk (*Accipiter nisus*)



Figure14. Armenian gulls (*Larus armenicus*)

During the walkover of the rest of the line very few birds were found, namely:

several Common buzzard (*Buteo buteo*),

Eurasian jackdaw (*Corvus monedula*)

Hooded crow (*Corvus cornix*) and small Passeriformes.

2.3. Survey of OTL Impact

None of the facts of birds' mortality or/and injury caused by collision into the ETLs or electric shock have been registered.

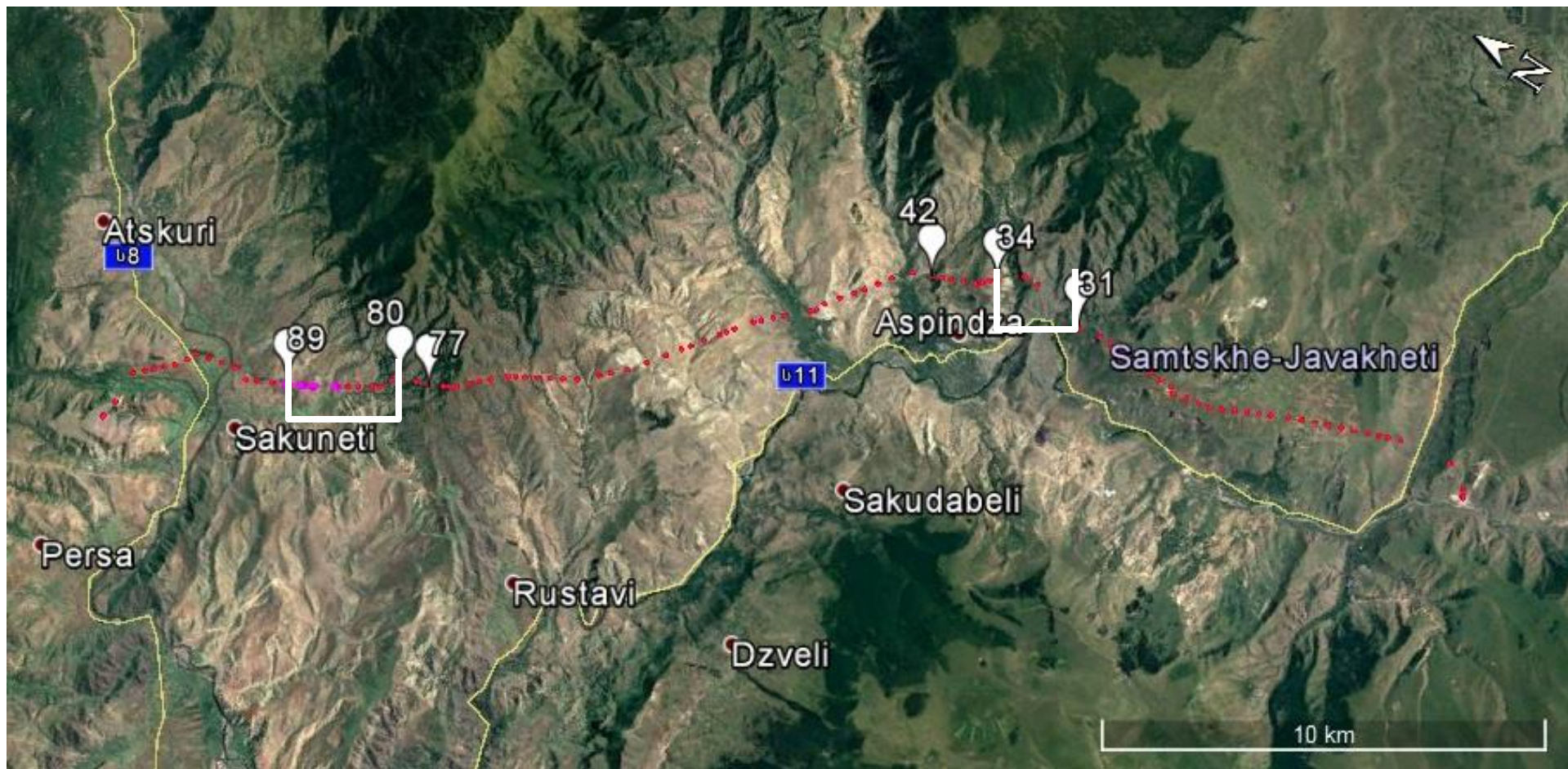
Conclusion

- No cases of bird collision or injury caused by the OTL were registered during the survey.
- No specific corrective action is required.

Giorgi Edisherashvili, Ornithologist

October, 2016

Annex 1



Key:
White line and signs indicate those sites, which were inaccessible due to the poor terrain conditions

Tower coordinates

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73	356999	4596361	12
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77	357408	4595258	8
78	357532	4594920	7
79	357609	4594702	6
80	357676	4594520	5
81	357782	4594232	4

Note:

Greenish color indicates those towers, which couldn't be checked.

Annex 2 Species found during the expedition and their status

	სახელწოდება ქართულ ენაზე/Name in Georgian	სახელწოდება ინგლისურ ენაზე/Name in English	ლათინური სახელწოდება Name in Latin	სტატუსი Status
1	ძერა	Black kite	<i>Milvus migrans</i>	IUCN_LC
2	კრაზანაჭამიების	European Honey-buzzard	<i>Pernis apivorus</i>	IUCN_LC
3	ფასკუნჯი	Egyptian vulture	<i>Neophron percnopterus</i>	IUCN_EN, Red List_VU
4	მცირე მყივანი არწივი	Lesser spotted eagle	<i>Aquila pomarina</i>	IUCN_LC
5	ჩია არწივი	Booted eagle	<i>Aquila pennata</i>	-
6	ჩვეულებრივი კაკაჩა	Common buzzard	<i>Buteo buteo</i>	IUCN_LC
7	ველის კაკაჩა	Long-legged buzzard	<i>Buteo rufinus</i>	IUCN_LC, Red list_VU
8	მიმინო	Eurasian sparrowhawk	<i>Accipiter nisus</i>	IUCN_LC
9	ქორი	Northern goshawk	<i>Accipiter gentilis</i>	IUCN_LC
10	მარჯანი	Eurasian hobby	<i>Falco subbuteo</i>	IUCN_LC
11	შავარდენი	Peregrine falcon	<i>Falco peregrinus</i>	IUCN_LC
12	ჭილყვავი	Rook	<i>Corvus frugilegus</i>	IUCN_LC
13	სოფლის მერცხალი	Barn swallow	<i>Hirundo rustica</i>	IUCN_LC
14	მწყერი	Common quail	<i>Coturnix coturnix</i>	IUCN_LC
15	ლაინა	Western water rail	<i>Rallus aquaticus</i>	IUCN_LC
16	წყლის ქათამურა	Common moorhen	<i>Gallinula chloropus</i>	IUCN_LC
17	კლდის მერცხალი	Eurasian crag martin	<i>Ptyonoprogne rupestris</i>	IUCN_LC
18	პატარა მყივანი არწივი	Lesser spotted eagle	<i>Aquila pomarina</i>	IUCN_LC
19	გველიჭამია	Short-toed snake-eagle	<i>Circaetus gallicus</i>	IUCN_LC
20	მდელოს ბოლობეჭედა	Hen harrier	<i>Circus cyaneus</i>	IUCN_LC
21	კაკაჩა	Common buzzard	<i>Buteo buteo</i>	IUCN_LC
22	მიმინო	Eurasian sparrowhawk	<i>Accipiter nisus</i>	IUCN_LC
23	ჩვეულებრივი კირკიტა	Common kestrel	<i>Falco tinnunculus</i>	IUCN_LC
24	სომხური თოლია	Armenian gull	<i>Larus armenicus</i>	IUCN_NT
25	ჭკა	Eurasian jackdaw	<i>Corvus monedula</i>	IUCN_LC
26	ყვავი	Hooded crow	<i>Corvus cornix</i>	-

Note:

LC – Least concern; VU - Vulnerable; NT- Near threatened; CR – Critically endangered; EN- Endangered

BIRD MONITORING REPORT – PARAVANI TRANSMISSION LINE (Autumn 2016- Third Survey Report)

1. Introduction

In accordance with monitoring schedule, field surveys were carried out on October 28-29 of 2016.

Survey team: Gia Edisherashvili, Ornithologist, head of the group,
Aleksandre Balakhashvili, assistant,
Tamaz Qobulashvili, driver, assistant.

Objective of the survey:

- Registration of local and migrant species (spring migration) encountered.
- Registration of birds (bird mortality, injury) caused by collision with OTL or electrocution

During the survey it was warmer weather, but snow was already observed on the surrounding mountains, on Meskheti (Figure1) and Trialeti ranges (Figure 2). It was rather cold in the morning and evening. Good visibility conditions.

Observation on birds' migration was carried out within the project zone (100% of the line covered). Impact of the line on birds was studied along 83% of the line. Despite of good weather some sites were not checked because of poor accessibility. Although part of these sections, which the team managed to reach, were checked.

Route of the transmission lines with indication of poorly accessible sections are shown in the Annex 1. List of species registered during the survey are given in Annex 2. Coordinates of the towers listed in Annex 3.



Figure 1. OTL section at Agara village



Figure 2. Snowy Trialeti Range

2. Results of Field Surveys

2.1. Migration Survey

Birds' migration activity significantly decreased compared to the previous observation periods. Migrants were still observed at Mtkvari River section and in the vicinities of Paravani River and Khizabavra village (Figure 3).

Just several units or small flocks of migrants were found. Larger flocks of Stock dove (*Columba oenas*) and Common woodpigeon (*Columba palumbus*) (Figure 4) were observed on Idumala-Damala section (Figure 4). Number of birds in the flocks varied between 300-400. Flight height was 100-300 m from the ground surface.

Several Common buzzards (*Buteo buteo*) (Figure 6) and Black kites (*Milvus migrans*) (Figure 7) were observed. These species are characterised with prolonged migration.

Crested larks (*Galerida cristata*) chased by Eurasian sparrowhawk (*Accipiter nisus*) were observed along the roadside on the same section.

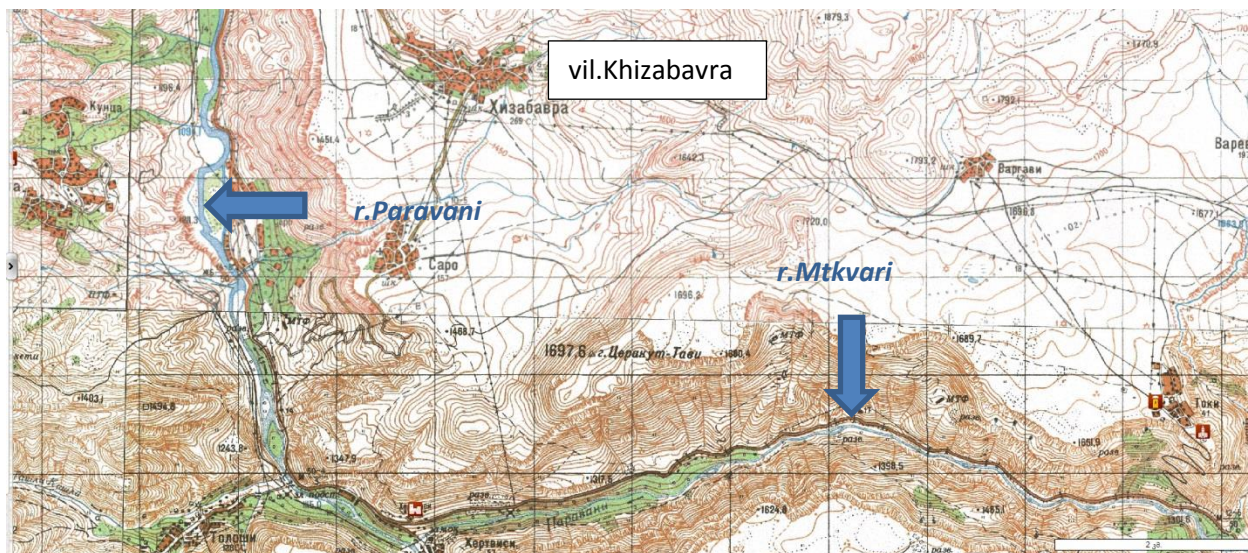


Figure 3

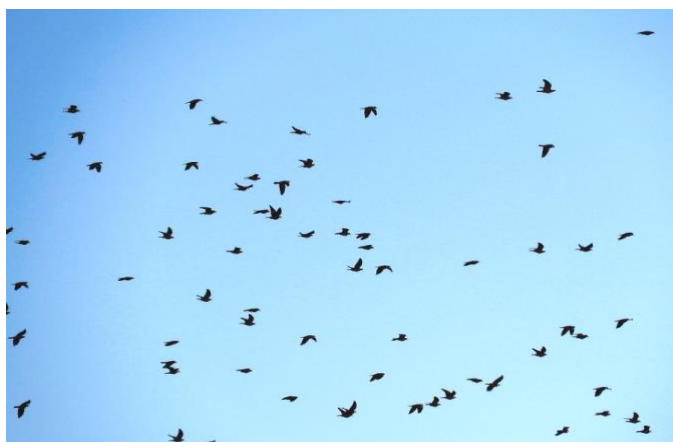


Figure 4. Flock of Common woodpigeon (*Columba palumbus*).



Figure 5. ETL section at Damala village.

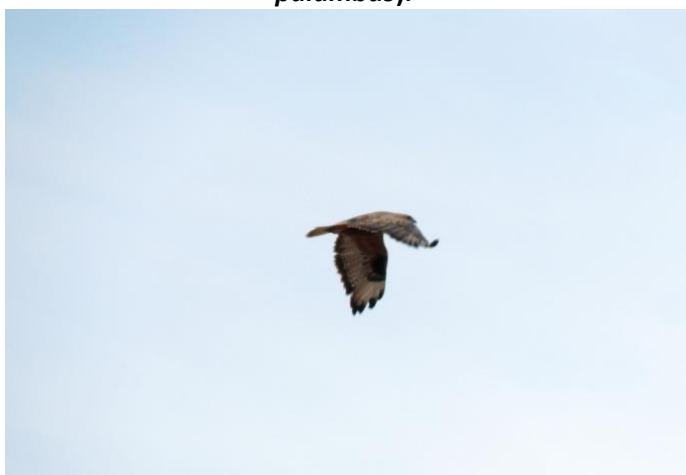


Figure 6. Common buzzard (*Buteo buteo*)

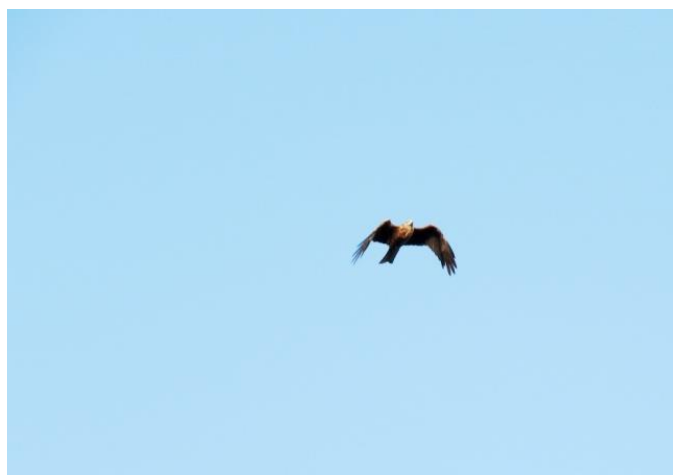


Figure 7. Black kite (*Milvus migrans*)

Following birds of prey were registered: Lesser spotted eagle (*Aquila pomarina*) (Figure 8.) - 2 units at Mtkvari River section and 3 units on Paravani River valley, in addition, Greater spotted eagle (*Pomarina clanga*) presumably, flew over Paravani River section (It was flying extremely high and identification the species was too difficult). 2 Steppe Eagles (*Aquila nipalensis*) (Figure 9) and 1 Imperial eagle (*Aquila heliaca*) (Figure 10.) were found at Sakuneti village.

Compared to other sections, Common buzzard (*Buteo buteo*) (Figure 11.) was more frequent at Khizabavra village; large colonies of rodents attract the mentioned species and they use OTL towers for watching the prey.

From other birds small flock of Demoiselle cranes (*Grus virgo*) (Figure 13.) and one White stork *Ciconia ciconia*) (Figure 14.) are noteworthy.



Figure 8. Lesser spotted eagle (*Aquila pomarina*).



Figure 9. Steppe Eagle (*Aquila nipalensis*).

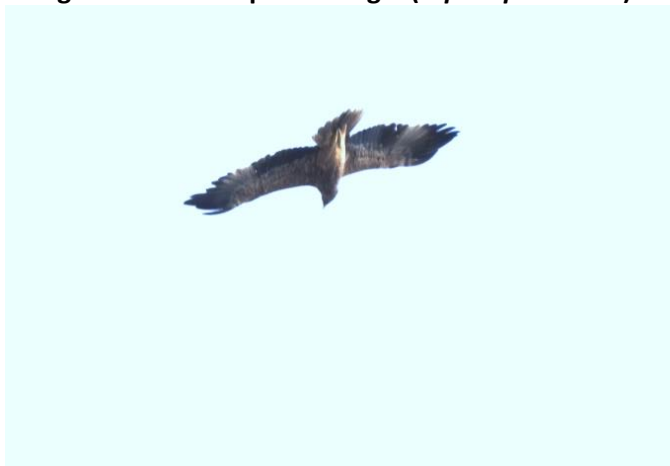


Figure 10. Imperial eagle (*Aquila heliaca*)

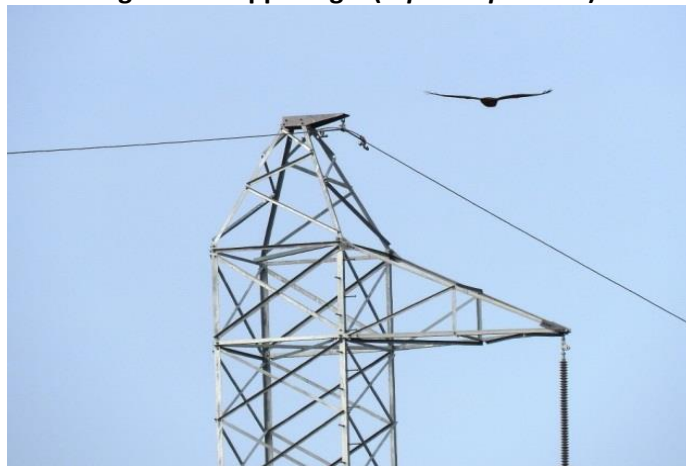


Figure11. Common buzzard (*Buteo buteo*) at ETL tower.



Figure 12. Demoiselle crane (*Grus virgo*)

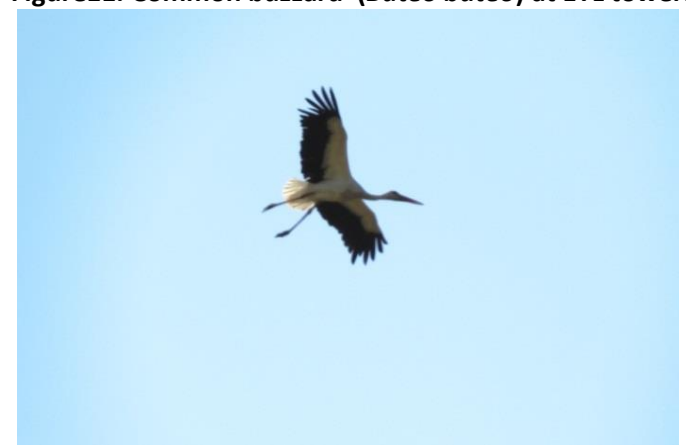


Figure 13. White stork (*Ciconia ciconia*)

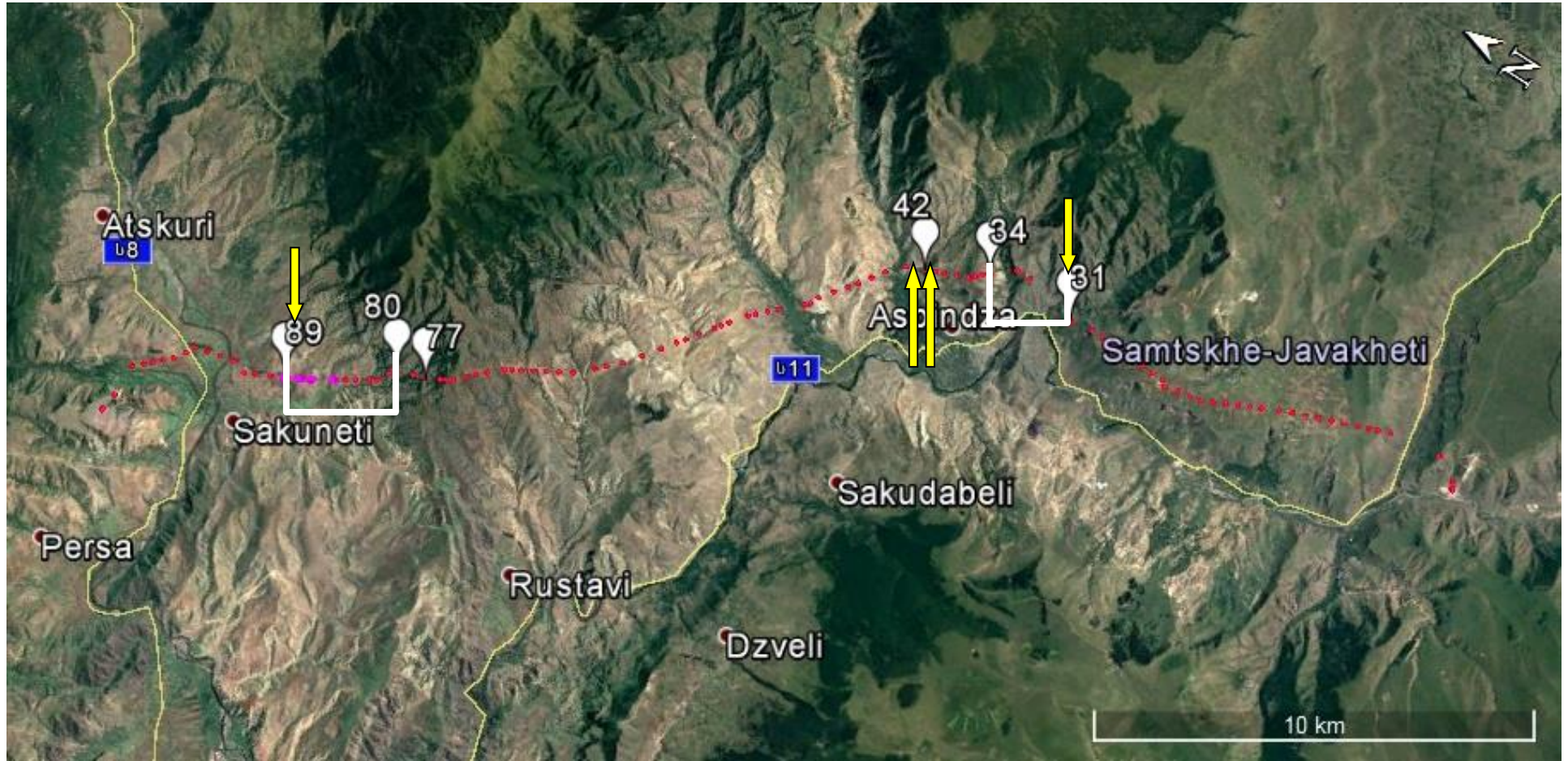
2.2. Survey of ETL Impact

In frames of the autumn monitoring, within the last surveys none of the facts of birds' mortality or/and injury caused by collision with the OTLs or electric shock have been registered.

Conclusion

- No cases of bird collision or injury caused by the OTL were registered during the survey.
- No specific corrective action is required.

Annex 1



Key:

White line and signs indicate those sites, which were inaccessible due to the poor terrain conditions. Yellow arrows indicate locations within the non-accessible areas checked by the team.

Tower coordinates

#	X	Y	N of towers
1	344173	4619289	103
2	344347	4619102	102
3	344482	4618944	101
4	344647	4618766	100
5	344818	4618569	99
6	345058	4618394	98
7	345266	4618303	97
8	345362	4617987	96
9	345399	4617705	95
10	345464	4617407	94
11	345401	4617250	93
12	345339	4617053	92
13	345471	4616807	91
14	345615	4616515	90
			#80-89
15	347333	4613855	79
16	347418	4613475	78
			#77
17	347618	4613076	76
18	347691	4612924	75
19	347921	4612697	74
20	348067	4612563	73
21	348250	4612371	72
22	348499	4612068	71
23	348589	4611915	70
24	348680	4611746	69
25	348828	4611500	68
26	348973	4611224	67
27	349103	4610987	66
28	349251	4610720	65
29	349592	4610336	64
30	349781	4610139	63
31	350022	4609860	62
32	355890	4604048	61
33	356009	4603933	60
34	356117	4603828	59
35	356147	4601704	58
36	351501	4608660	57
37	351789	4608502	56
38	351914	4608404	55
39	352073	4608284	54
40	352431	4608009	53
41	262547	4607881	52
42	352733	4607677	51

#	X	Y	N of towers
43	352899	4607498	50
44	353327	4607026	49
45	353405	4606949	48
46	353618	4606863	47
47	353849	4606675	46
48	354357	4606254	45
49	354620	4606074	44
50	354901	4605862	43
51	355216	4604802	41
52	355499	4604899	40
			42
53	355565	4604738	39
54	355675	4604457	38
			#31-37
55	356200	4601198	30
56	356196	4600914	29
57	356182	4600634	28
58	356149	4600334	27
59	356143	4600081	26
60	356131	4599803	25
61	356615	4599536	24
62	356097	4599260	23
63	355986	4599119	22
64	346044	4598833	21
65	356099	4598535	20
66	356147	4598279	19
67	356261	4598029	18
68	356384	4597766	17
69	356499	4597505	16
70	356615	3497255	15
71	356724	4597019	14
72	356884	4596644	13
73	356999	4596361	12
74	357107	4596071	11
75	357204	4595800	10
76	357005	4595525	9
77	357408	4595258	8
78	357532	4594920	7
79	357609	4594702	6
80	357676	4594520	5
81	357782	4594232	4

Note:

Greenish color indicates those towers, which couldn't be checked.

Annex 2 Species found during the expedition and their status

	სახელწოდება ქართულ ენაზე/Name in Georgian	სახელწოდება ინგლისურ ენაზე/Name in English	ლათინური სახელწოდება Name in Latin	სტატუსი Status
1	გვიძინი	Stock dove	Columba oenas	IUCN_LC
2	ქედანი	Common woodpigeon	Columba palumbus	IUCN_LC
3	ჩვეულებრივი კაკაჩა	Common buzzard	<i>Buteo buteo</i>	IUCN_LC
4	ძერა	Black kite	Milvus migrans	IUCN_LC
5	ქოჩორა ტოროლა	Crested lark	Galerida cristata	IUCN_LC
6	მიმინო	Eurasian sparrowhawk	Accipiter nisus	IUCN_LC
7	მცირე მყვანი არწივი	Lesser spotted eagle	Aquila pomarina	IUCN_LC
8	დიდი მყვანა არწივი	lesser spotted eagle	Lesser spotted eagle	IUCN_LC
9	ველის არწივი	Steppe Eagle	Aquila nipalensis	IUCN_LC
10	ზეგობის არწივი	Imperial eagle	<i>Aquila heliaca</i>	IUCN_VU
11	ჩვ. კაკაჩა	Common buzzard	Buteo buteo	IUCN_LC
12	წერო-ტურფა	Demoiselle crane	Grus virgo	IUCN_LC
13	ლაკლაკი	White stork	Ciconia ciconia	IUCN_LC

Note:

LC – Least concern; VU – Vulnerable.