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04th February 2015.

Board of
UK Wolf Conservation Trust

Dear Tsa:

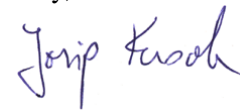
With gratitude for your support in 2014, here I attach our report.

Enclosed please find:

1. The report about the work on our project on wolves and lynx in 2014.
2. Financial accounting

PS: Our work is being funded from various sources. Here I present you the full report, which describes all of our activities. The contribution of "UKWCT" is outlined in the table showing the "Activities list" and in the Financial Accounting tables at the end of the report.

Sincerely,



Josip Kusak

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04th February 2015.

Board of
UK Wolf Conservation Trust

Project report for 2014

RESEARCH AND CONSERVATION OF WOLVES AND LYNX IN CROATIA

SUMMARY

Described are all activities related to wolf and lynx research, conservation and management in Croatia in the previous year. We were again internationally active (Bosnia and Herzegovina, Turkey, Poland, Greece, Georgia) what is described and illustrated here. In most cases, we were invited to speak and teach about our work on large carnivores in Croatia: monitoring system, emergency teams, trapping methods, health survey etc.

In Croatia, considerable efforts were invested to capture and collar new wolves resulting in two captured wolves. Supported with other data obtained by different means, the evidence of wolf population stagnation at the level same as it was documented in Croatia during the last year. The current estimate is 168 wolves (compared to 177 in 2013.). This finding lead to the important management decision not to allow any hunting quota for wolves this year. Much work and many new results arose from the use of camera traps. Part of genetic work was published (also with the team of world leading authority for Canidae genetics, dr. Robert Wayne). The cooperation with SloWolf project additionally helped to estimate wolf population in Slovenia and Croatia, with the new insight to gene flow and population structure, with the emphasizes to the appearance of wolf-dog hybrids. Published were 18 scientific papers and two reports (one on wolf and lynx each) in Croatian language.

Progress report

This yearly report is for the period from 08th November 2013 to 18th January 2015, a period of 436 days when we collected 277.4 field days and where one or two persons were simultaneously and independently doing the field work.

We continued with efforts of capturing and radio-tracking of wolves and lynx, collection and examination of dead carnivores, as well as direct application of our study results in management and protection. This year we were involved in training of students, researchers and large carnivore management professionals from Turkey, Poland, Georgia and Serbia. Researchers from the project were invited to present project results in Greece and Turkey. The radio tracking of remaining ungulates collared during 2006-2007 was finished during 2014.

Work overview

In the period from 08 November 2013 to 18 January 2015, (436 days) we worked 277.4 days on the project doing field work, checking cases of wolf mortality, performing necropsies of dead wolves, participating on workshops and meetings related to research and conservation of wolves and lynx in Croatia and other countries. Field work in other countries (Turkey, Bosnia and Herzegovina, Poland) lasted all together 46 days (plus 14 days in Poland - activities marked in gray in Table 2), leaving the remaining 217.4 days for the work in Croatia. Work in other countries included 42.8 days (Activity # 557 in Table 2) at KuezyDoga Society (Turkey) and helped with the continuation of large carnivores (wolf, bear and lynx) study in the Kars region, eastern Turkey. The other activities in other countries included 3.2 days (Activity # 556, Table 2) in Banja Luka area in B&H and 14 days in Poland in the Bieszczady Mountains.

Đuro Huber and Josip Kusak continued to help in research and monitoring of large carnivores in the area of newly established (in 2011) **National park “Una”**, at the border between Croatia and **Bosnia & Herzegovina**. In May 2014, they have found the first den of a bear collared in 2013 in B&H and captured another bear on 20.04.2014. Both animals are tracked since then.



Figure 1: Josip Kusak and Đuro Huber inside the den of bear Ljutoč from the winter 2013/2014. on 20.03.2014. (photo Haris Hadžihajdarević).



Figure 2: Additional drug administering to a bear captured on 20.04.2014 in NP Una, near Bihać (B&H). This was the second large carnivore ever collared in B&H (photo J. Kusak).

As a follow-up of Biodiversity week in Trebinje, researchers and NGO activists Dušan Toholj and Igor Trbojević, started a wolf telemetry project in B&H. Josip Kusak visited Igor Trbojević in his study area in the period from 07.05.2014 to 10.05.2014. The purpose of this field trip was advisory.



Figure 3 Josip Kusak and Igor Trbojević during the field trip in Manjača region in Croatia on 09.05.2014 (Photo by Unknown person)



Figure 4: landscape of Manjača region. A mosaic of forest and pastures with a combination of wild and domestic wolf prey animals (Photo by J. Kusak)

During the 42.8 days of fieldwork in Kars region, eastern **Turkey**, capture team lead by Josip Kusak, captured and collared three wolves, ten bears and three lynx. During the four years of the project, a total of ten wolves 26 bears and two lynx were collared. One lynx was captured but not collared due to lack of lynx collars! This project is giving the first results about spatial ecology of large carnivores in this part of the world.



Figure 5 Turkish field crew (Emrah Coban and Aysegul Coban) at the wolf captured on 12.06.2014 (Photo by J. Kusak)



Figure 6: Josip Kusak and Zati Vatanseve at the first lynx captured in Kars region on 04.06.2014. (Photo: Unknown).

John Linnell, researcher the Norwegian Institute for Nature Research, visited our project on 06.04.2014 and was in particular interested in the use of camera traps and possible future collaboration on the analysis of camera traps data.



Figure 7 and Figure 8: John Linnell, researcher from the Norwegian Institute for Nature Research, during the field trip in Gorski kotar on 06.04.2014 (Photo J. Kusak).

A delegation from Georgia, visited Croatia from 27 to 31 May 2014. It consisted of seven persons, including Ministry people, researcher and the NGO representatives: Shalva Amiredjibi – Deputy Minister, Zurab Kopadze Deputy Minister, Rati Japaridze – Head of Protected Areas Agency, Bejan Lortkipanidze – representative of NGO “Nacres”, Christian Goenner – team leader of GIZ project “Sustainable Management of Biodiversity in South Caucasus”, Giorgi Lebanidze – project expert from the same GIZ project, Mr. Ioseb Kartsivadze – Head of the Biodiversity Protection Service. They were interested about bear monitoring and management. As a follow up now, they are in the process of contracting Đuro Huber to facilitate those processes in Georgia.



Figure 9 and Figure 10: Delegation from Georgia in the Ministry for environment and nature protection on 27.05.2014. in the Velebit mountain on 30.05.2014.

A **delegation from Turkey**, came to Croatia on TAIEX grant from EC from 08th to 13th June 2014 consisting of three persons from the Ministry of forestry and water affairs: Cemal AKCAN, Cihangir ALTUN, and Dr. Fehmi ARIKAN. They came to learn about mitigation of adverse effects of motorways on wildlife, but expanded their interest on the general bear management. The contacts continued with the potential for more mutual involvement.



Figure 11 and Figure 12: Delegation from Turkey on 09.06.2014. in the headquarters of highway operators, and on 11.06.2014 at the green bridge looking at the devices for monitoring wildlife crossings.

Đuro Huber, Josip Kusak and Slaven Reljić participated at several international meetings about large carnivores (**Turkey, Greece, Slovenia and Italy**), where results from our projects were presented.



Figure 13: Josip Kusak was one of invited guest speakers at the “Turkey Wildlife Rescue and Rehabilitation Workshop”, organized by the University of Kars, Turkey in the period from 16.-17. October 2014.

On 05 December 2014 Đuro Huber participated in EC workshop in Brussels on “Working together for large carnivores” that resulted in production of the “Large carnivore platform”,



Figure 14 and Figure 15: EC workshop in Brussels on “Working together for large carnivores”.

On 02. April 2014 Đuro Huber presented in the Museum in Trento an invited speech on Bear management in Croatia to about 100 participants.

Đuro Huber attended the meeting on “Open borders for bears between Romanian and Ukrainian Carpathians” held on 23-25 April 2014 in Baia Mare (Romania) where he presented the case of Dinara-Pindos bear population.



Figure 16: Claudio Groff and the Trento Museum people hosted the event where on 2 April 2014 Đuro Huber presented on Croatian bear management.



Figure 17: Meeting on “Open borders for bears between Romanian and Ukrainian Carpathians” held on 23-25 April 2014 in Baia Mare (Romania).

In Thessaloniki (Greece) the 23rd IBA Conference was held from on 05 to 11 October 2014. Đuro Huber and Slaven Reljić attended. Đuro Huber was among the authors of 11 oral presentations or posters.



Figure 18: and Figure 19: Đuro Huber and Slaven Reljić giving presentations at the IBA conference, Greece in the period from 05 to 11 October 2014.

Đuro Huber and Slaven Reljić attended two workshops on “Problem bear definitions and management”. The first one in Ljubljana, Slovenia on 09.05.2014, and the second one on 04.07.2014. in Venzone, Italy. Guidelines to assess the type of problem in various situations will be produced.



Figure 20: and Figure 21: Workshops on problem bears held in Ljubljana (Slovenia) on 09.05.2014. and in Venzone (Italy) on 04.07.2014.

In Croatia, Josip Kusak (02.09.2014) and Đuro Huber (14.11. 2014) presented public talks on wolves and on bears, respectively, in the museum at the Brod na Kupa. Đuro Huber also had presentations in Premantura near Pula for the local NGO “Fenoliga” (20.02.2014.), in NP Risnjak for the international group of park rangers (IRF) (15.05.2014.), and in Zagreb for the program “Priroda uživo” (03.07.2014.).

The Veterinary faculty organized the international Wildlife summer school (11 participants) where Đuro Huber and Josip Kusak lectured one day each (02-03. 07.2014.).



Figure 22: Training for the Summer school students in the Črnovščak hunting ground near Zagreb on 02.07.2014.

Đuro Huber was training the Polish team about capturing and handling bears. He stayed in Poland in the Bieszczady Mountains from 18th to 31st October 2014. One bear capture occurred while he was there and two more in the foot snares after he left.



Figure 23: and Figure 24: Polish team including Agnieszka Sergiel and Tomasz Piasecki handling bears in Poland: bear Aga on 28.10.2014 and bear Djuro on 11.11.2014.

Đuro Huber continues with the duty of the chair and Josip Kusak as a member of the Committee for Large Carnivores. They markedly influence the management of wolves, lynx and bears in Croatia. In 2014, this Committee had three meetings. The Bear Management Committee is meeting regularly (Đuro Huber is the member) and has a special task this year to adapt the management to the new status of bear as a protected species after Croatia joined EU on 01 July 2013.

This year we performed a training workshop for Wolf and lynx emergency team and Bear emergency team, together with the training for Damage experts in Kuterevo on 05 to 08 May 2014. The workshop had the aim of further education on how to deal and act in situations when large carnivores are causing problems or when they get in trouble. The workshop consisted of two day of theoretical sessions and one day of practical training. On practical part of workshop, the measurements and taking samples of dead animals were trained.



Figure 25, Figure 26 and Figure 27: Theoretical and practical part of the Workshop for large carnivores' emergency teams and for damage inspectors, Kuterevo, Croatia 05.05.2014. to 08.05.2014.

Field work overview

Josip Kusak spent a total of 171.8 days doing the work on the project. Slaven Reljić, PhD student and veterinarian, who have been primary, contracted to work on bear part of our projects, spent 12.3 days, helping on the wolf and lynx work.

Other people that contributed are listed in Table 3. Majority of other persons participated in management meetings, and some contributed during field work.

A considerable contribution to the wolf field work in three study areas in Croatia, was given by Peter Haswell, Graduate teaching assistant and PhD researcher at School of Biological Sciences Prifysygol, Bangor University, UK. Peter started to collect field data in Gorski kotar, northern Velebit and Plitvice lakes NP for his PhD thesis. Peter Haswell will be examining interspecific interactions with the grey wolf, as part of his PhD study, which will be conducted under the guidance and supervision of prof. dr. Josip Kusak, and within the frame of Wolf research project at the Faculty of Veterinary Medicine of the University of Zagreb. Peter has spent 92 days including travel to-from

Bangor and field work in Croatia during 2014. Beside data collecting for his thesis, Peter was searching for signs of wolf presence in all three study areas used during 2014.



Figure 28: Peter Haswell preparing for the field work in the Velebit area on 06.07.2014.

Table 1: Summary table of work activities on the project in the period from 08 November 2013 to 18 January 2015, a period of 436 days when we collected 277.4 field days and when up to two persons were independently doing field work at the same time.

#	ACTIVITY DESCRIPTION	N ACTIVITIES	N DAYS
1	Animal handling	1	0.6
2	Entering data	6	23.4
3	Highway meeting	1	0.1
4	Highway survey	2	4.0
5	LC comity meeting	2	0.3
6	LC CRO emergency team meeting	1	1.4
7	Monitoring meeting	2	2.8
8	Project meeting	1	0.0
9	Telemetry	1	1.6
10	Trapping	14	151.3
11	Trapping course	1	3.2
12	Wolf autopsy	1	0.2
13	Wolf search	4	88.2
14	Wolf trapping	1	0.3
		38	277.4

Note: It is not entirely possible to accurately count all activities because often 2-3 or more things were done at once (Like: trapping and telemetry, collecting dead wolves, checking wildlife crossings places and telemetry during the same trip).

Table 2: Detailed table of work activities related to wolf and lynx work on the project in the period from 08 November 2013 to 18 January 2015, a period of 436 days when we collected 277.4 field days and where up to two persons were doing field work at the same time. Activities colored in blue were done with the use of UKWCT funding. The activity 558 is the entire field period of Pete Haswell. It is shown in blue since some of Pete expenses (five bills, 1243.37 HRK, see accounting tables) were funded from UKWCT money.

#	Activity ID	N periods	Activity main objective	Start	End	N days
1	3042	1	Wolf trapping	08.11.2013 07:13	08.11.2013 14:32	0.3
2	543	1	Wolf autopsy	20.12.2013 09:17	20.12.2013 13:30	0.2
3	544	1	Wolf search	21.12.2013 08:20	23.12.2013 23:20	2.6
4	545	1	Project meeting	20.01.2014 12:00	20.01.2014 12:14	0.0
5	546	1	LC comity meeting	28.01.2014 10:00	28.01.2014 12:30	0.1
6	547	1	Wolf search	06.02.2014 10:30	07.02.2014 20:15	1.4
7	548	1	Trapping	19.03.2014 06:20	20.03.2014 18:55	1.5
8	549	1	Telemetry	05.04.2014 06:30	06.04.2014 21:06	1.6
9	550	1	Highway meeting	09.04.2014 09:00	09.04.2014 11:00	0.1
10	551	1	Highway survey	10.04.2014 07:30	11.04.2014 18:07	1.4
11	552	1	Monitoring meeting	15.04.2014 10:00	15.04.2014 12:30	0.1
12	553	1	Animal handling	20.04.2014 10:15	20.04.2014 23:55	0.6
13	554	1	Trapping	01.05.2014 09:45	04.05.2014 15:44	3.2
14	555	1	LC CRO emergency team meeting	06.05.2014 05:35	07.05.2014 16:15	1.4
15	556	1	Trapping course	07.05.2014 16:15	10.05.2014 20:00	3.2
16	557	1	Trapping	18.05.2014 19:45	30.06.2014 14:00	42.8
17	558	1	Wolf search	03.07.2014 19:48	23.09.2014 10:07	81.6
18	559	1	Wolf search	04.07.2014 07:00	06.07.2014 19:52	2.5
19	560	1	Trapping	14.07.2014 08:30	20.07.2014 18:40	6.4
20	3043	1	Entering data	14.07.2014 11:42	14.07.2014 11:42	0.0
21	561	1	Trapping	23.07.2014 06:38	15.08.2014 20:15	23.6
22	562	1	Trapping	19.08.2014 10:30	30.08.2014 19:36	11.4
23	563	1	Trapping	02.09.2014 07:28	14.09.2014 21:16	12.6
24	564	1	Trapping	16.09.2014 15:00	01.10.2014 15:58	15.0
25	565	1	Trapping	04.10.2014 06:20	11.10.2014 20:23	7.6
26	566	1	Trapping	20.10.2014 07:29	08.11.2014 18:29	19.5
27	567	1	Highway survey	14.11.2014 07:00	16.11.2014 20:23	2.6
28	568	1	Trapping	27.11.2014 07:22	30.11.2014 15:24	3.3
29	569	1	LC comity meeting	10.12.2014 09:30	10.12.2014 14:00	0.2
30	3243	1	Entering data	10.12.2014 15:12	10.12.2014 19:12	0.2
31	570	1	Monitoring meeting	11.12.2014 05:30	13.12.2014 21:30	2.7
32	3244	1	Entering data	12.12.2014 15:32	12.12.2014 16:32	0.0
33	3245	1	Entering data	15.12.2014 09:33	15.12.2014 10:00	0.0
34	3246	1	Entering data	15.12.2014 10:01	15.12.2014 12:32	0.1
35	3046	1	Entering data	19.12.2014 15:23	11.01.2015 18:00	23.1
36	571	1	Trapping	20.12.2014 06:00	21.12.2014 18:02	1.5
37	572	1	Trapping	28.12.2014 09:58	29.12.2014 20:07	1.4
38	573	1	Trapping	17.01.2015 07:00	18.01.2015 19:30	1.5
						277.4

• Activities shaded in gray are not directly related to the project in Croatia, but were performed in other countries (Bosnia & Herzegovina and Turkey).

Table 3: List of persons participating on the project in the period from 08 November 2013 to 18 January 2015, a period of 436 days. During this time a total of 54 different persons participated in project activities, resulting in 365.6 person-days.

#	Person	N Activities	Duration
1	Alibabić, Vildana	1	0.21
2	Bakliža Berislav	1	0.08
3	Bosiljevac, Damir	1	1.29
4	Desnica, Sonja	1	0.13
5	Domazetović, Zrinka	3	1.68
6	Fontana Pudić, Karmela	1	0.10
7	Franković, Matija	2	0.29
8	Gomerčić, Ana	1	0.01
9	Grgas, Ana	1	1.29
10	Habazin, Marina	2	0.18
11	Hadžihajdarević, Haris	4	2.51
12	Hamidović, Danijela	3	0.40
13	Haswell, Peter	4	92.00
14	Hipolito, Dario	6	3.29
15	Huber, Đuro	11	5.85
16	Huber, Juraj	1	0.20
17	Ilić, Milovan	2	17.46
18	Ines, pripravnica u NPSV	1	0.14
19	Jasmina, pripravnica u NPSV	1	0.18
20	Jelenčić, Maja	1	0.10
21	Jelenić, Ivana	2	0.29
22	Jeremić, Jasna	8	4.76
23	Kokić, Stipe	1	1.29
24	Kusak, Josip	29	171.84
25	Kusak, Josipa	1	3.25
26	Kusak, Pavao	1	6.22
27	Kusak, Tanja	3	7.31
28	Lazarus, Maja	2	2.37
29	Linnell, John D. C.	1	1.61
30	Lupret-Obradović, Svjetlana	2	0.29
31	Ljubičić, Marko	1	1.29
32	Magdić, Nikola	2	0.17
33	Matovina, Ivica	1	0.33
34	Modrić, Marko	3	6.97
35	Modrušan, Miroslav	1	0.04
36	Novosel, Dinko	1	1.29
37	Poklar, Marina	1	1.29
38	Poučki, Helena	1	1.19
39	Reljić, Slaven	10	12.35
40	Sindičić, Magda	1	0.01
41	Slijepčević, Vedran	6	1.95
42	Stipić, Mateja	2	1.61
43	Škapur, Vedad	1	0.21
44	Štrbenac, Ana	1	0.10
45	Šupe, Ivica	1	1.29
46	Švast, Mladen	1	0.38
47	Tomaić, Josip	1	0.13
48	Tomljanović, Marko	3	0.40
49	Trbojević, Igor	1	1.24
50	Urli, Lucija	3	1.50
51	Vivoda, Bojan	4	1.76
52	Vugrinec, Ines	1	3.25
53	Wolf-Kramarić, Sandra	1	0.08
54	Žarko, pripravnik u NPSV	1	0.14
			365.63



Figure 29: Milovan Ilić, a biologist from Serbia, participated in the field work in the Velebit and Plitvice area during 17.5 days.

FIELD WORK ON WOLVES IN CROATIA

The work in the northern Velebit study area was given the priority, followed by the beginning of wolf telemetry work in Plitvice Lakes National Park. Gorski kotar area was given tertiary priority, without capturing attempts, but with the continuation of wolf and ungulates tracking and with the intensive use of automatic cameras. We use automatic camera to check for the presence of wolves in the area and to document all other facts, like reproduction, presence of other wild animals, primary lynx.

Searches for signs of wolf and lynx presence

During 2014, searching for signs of wolf presence was done in Gorski kotar, northern Velebit area and inside Plitvice lakes NP.

The search for the presence of wolves started during the spring and was continued during the summer. The most intensive searching for wolf signs was performed in the northern part of Velebit and in Plitvice Lakes National Park. For the first time, wolf survey was conducted inside Plitvice lakes NP. The use of automatic cameras to augment searches for the presence of wolves was continued in Gorski kotar and northern Velebit but has also been started in Plitvice area.

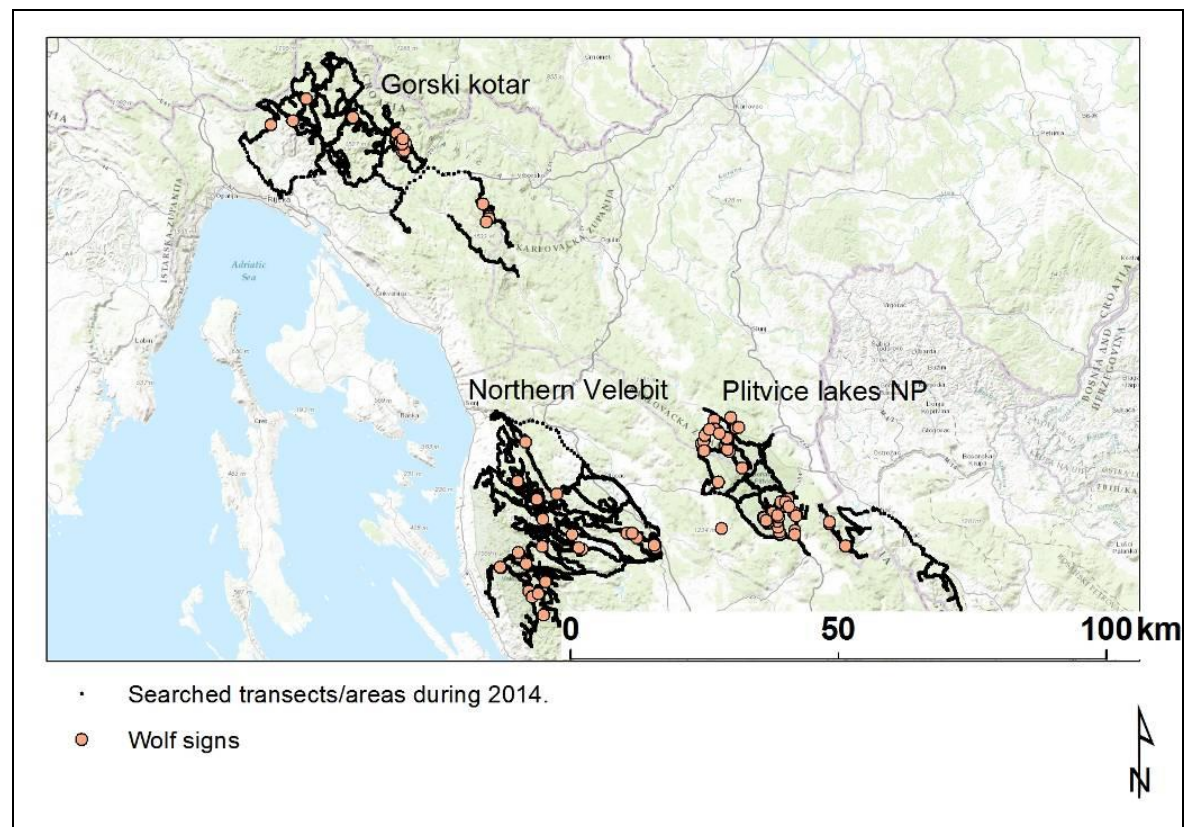


Figure 30: Three study areas (Gorski kotar, northern Velebit and Plitvice lakes NP) with shown track-logs and wolf signs found in Croatia during 2014.

Signs of wolf presence (footprints, scats, howling, and scratch markings) were found on 145 sites (Table 4). Twenty three of these signs were found in Gorski kotar, 32 in northern Velebit region and 89 more in Plitvice lakes NP area. The lowest density of wolf signs was found in northern Velebit area, in spite that the search effort was the most intensive there. In the same time, signs of dogs and jackals were found in the same area. Both observations (low wolf signs and evidence of dogs and jackals) in the area, indicates that wolf presence in Velebit area was low, most likely without established pack during 2014. On a contrary, in the

Plitvice lakes NP area, rather high density of wolf signs was found! The most surprising was very frequent scratch marking by wolves (N=25)! The frequency and intensity of wolf scratch marking in the PLNP was the highest ever documented in Croatia and is comparable to scratch marking intensity of wolves in Sarikamis forest of eastern Turkey, where at least three wolf pack fight for rather small (350 sq km) patch of forest! It may be that forests of Plitvice lakes NP provide good and quiet habitat for wolves, and that at least two packs try to hold it!



Figure 31: Wolf scratch marking was frequently found in Plitvice lakes NP during 2014. (Photo J. Kusak).

Low number of wolf sign in the northern Velebit indicated low wolf density and the absence of established pack. This was further confirmed with unsuccessful capture result.

Beside wolf signs, two lynx and two wild cat observations were also documented.

Table 4: Signs of wolf, lynx and some other species recorded in the study areas during 2014 surveys.

#	SPECIES	N OBSERVATIONS
1	Dog	6
2	Jackal	9
3	Lynx	2
4	Pine marten	2
5	Wild cat	2
6	Wolf	145
	TOTAL	166

Thirteen different sites were used for trapping on northern Velebit during 2014. All trap sites were outside of Northern Velebit national park and even outside of Velebit Nature park and close to the highway since only there some higher density of wolf signs was found.

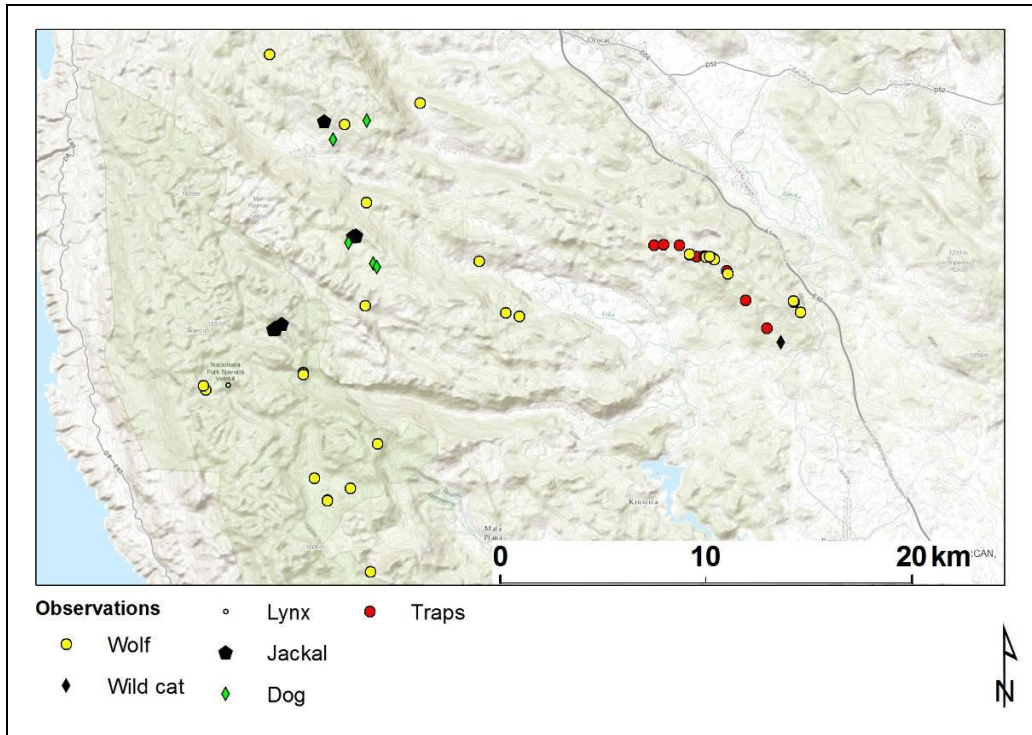


Figure 32: The area of northern Velebit, signs of carnivores and wolf traps during 2014.

Wolf sign searching in Plitvice lakes National park

After the initial wolf survey in 2013, we have intensified wolf study in this area during 2014. A significant contribution to wolf signs searching was made by Peter Haswell, who came first in the area and got the impression that the situation with wolves was good there and that there might be two wolf packs using the NP area since wolf signs were aggregated in two areas.

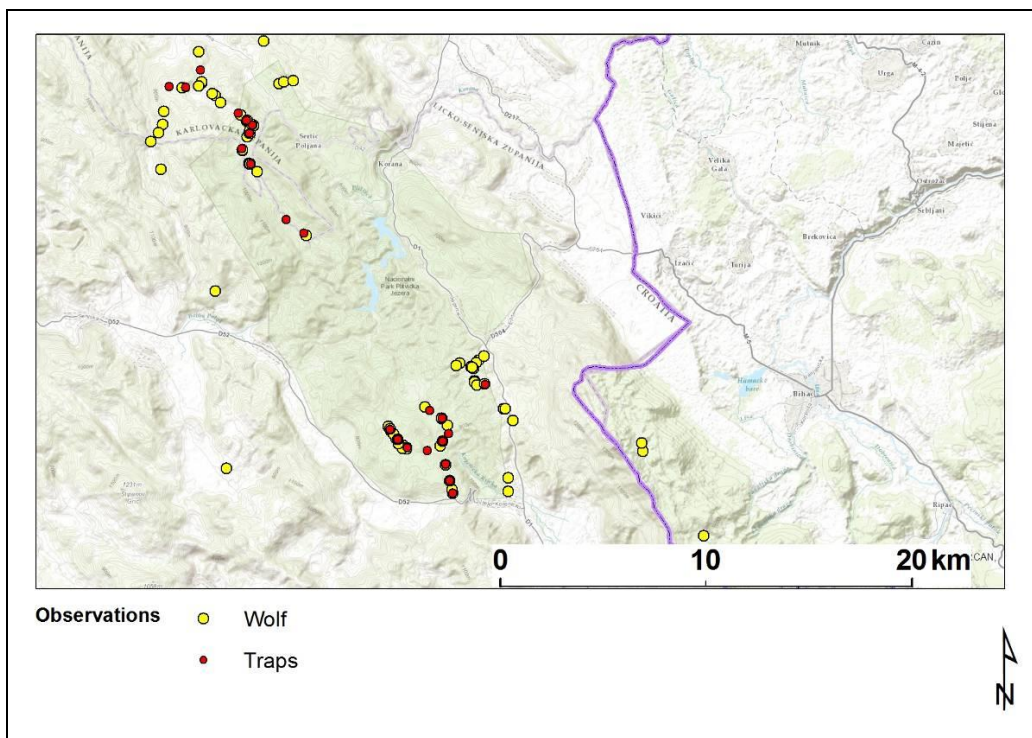


Figure 33: Wolf signs found in Plitvice lakes NP during 2014.

For this reason, we have set wolf traps in two areas, following the concentration of wolf signs.

Wolves were never studied in the central Lika area. The area is also close to B&H and to Una NP on the other side of the border. We already have good cooperation with people from Bihać (NP Una and University of Bihać). Wolf signs were also found on the Bosnian side of the border, during one short and casual visit to the area. Starting a wolf study in Plitvice lakes NP would be good for wolf conservation in Croatia and would hopefully help to initiate similar process in the neighboring B&H.

Wolf trapping on northern Velebit

Activities to radio-collar new wolves in Velebit area started in August, when the first trap was set on 29.08.2014. Traps were set on the edge of Krasno pack territory where at least some wolf signs were found. There were no signs indicating the presence of the whole pack and no signs of reproduction, but only signs which indicated the existence of maximum two wolves which occasionally pass by.

In the period from 05.09.2014 to 28.09.2014., with the use of 13 traps, a total of 245 trap-nights were invested in wolf trapping in Velebit area. Traps were checked 266 times. Various events happened while the traps were active. They are listed in Table 5. The visit of wolves happened two times, but without capture.

During the whole trapping season driving was about 700 km/week for searching wolf signs and checking traps. Unfortunately, no wolves were captured during this year's trapping attempt in Velebit area.

The only real chance for wolf capture was when a wolf kill was found (roe deer carcass). Josip has set two traps around the kill and blocked the access from other sided. A wolf did not show up for three days, but when it returned, it took the carcass reaching over/under the obstacles and avoiding to go to the carcass from the easy side! If it was a lynx, the story would most likely be different!



Figure 34: Wolf killed roe deer found in northern Velebit area on 06.09.2014. Two traps were set, but a wolf managed to pull out the carcass under stones and branches, which covered them.

Table 5: List of events on traps during 2014 trapping season in Velebit, in the period from 05.09.2014 to 28.09.2014.

EVENT	N
a man on site	1
fox visit	4
marten visit	11
nothing	246
rain	2
wolf visit	2
TOTAL	266

Wolf trapping in Plitvice lakes National park (PLNP)

After rather promising findings of many wolf signs in the PLNP, it was rather tempting to try capturing of some wolves in this area! First traps were set on 29.09.2014, and were activated on 06.10.2014. A total of 25 traps was set in two distinctive areas, separated 15 km (airline) from each other. The total daily driving for checking of all traps was 164 km. A total of 245 trap nights were invested in wolf capturing in Plitvice area in the period from 06.10.2014 to 08.11.2014. We observed very low density of bears in the area (beech crop was low this year), what luckily resulted in only one bear visit to our traps. Wolves visited traps on seven occasions and two wolves were captured!

Table 6: List of events on traps during 2014 trapping season in Plitvice area, in the period from 06.10.2014 to 08.11.2014.

EVENT	N
bear pull out	1
fox visit	2
hunters on site	1
marten visit	18
nothing	321
unknown visit	4
wolf capture	2
wolf visit	5
TOTAL	354

The first wolf captured in the Plitvice area was a female pup (age 0.5 years, mass 21 kg). That wolf was captured on 26.10.2014 and was named W30-Ivanka.



Figure 35: Wolf W30-Ivanka captured and collared in Plitvice lakes national park on 26.10.2014.

One day later, on 27.10.2014, another wolf was captured! It was a pup again, but male pup (23 kg) from another part of the NP. This time, two main managers from the National park came there to see captured wolf.



Figure 36: Wolf W31-Andelko captured and collared in Plitvice lakes National park on 27.10.2014. (Photo: Andelko Novosel, NPPL).

Lynx trapping in Gorski kotar

Lynx capture attempts started on 15.07.2014 when Peter Haswell and Josip Kusak have set three box traps for lynx capture at known lynx marking sites in Gorski kotar. Since then and until the end of January, traps were active, but no lynx visit or capture happened. The waiting for a lynx will continue until the first serious snowfall. Lynx trapping with box traps at marking sites is less demanding than wolf trapping since box traps are set at marking sites with available GSM signal. We can use GSM trap alarms, but with periodical checking of traps, which is being done by National park rangers or local game wardens.



Figure 37: Peter Haswell and Josip Kusak setting lynx box trap at lynx marking site, behind an old barn named Larmina bajta in Risnjak NP, Gorski kotar on 15.07.2014 (Photo Pavao Kusak).

TELEMETRY TRACKING

Wolf tracking

The first few weeks of tracking of two newly collared wolves confirms that they belong to two different and neighboring packs. This was additionally confirmed with one successful howling check, when the whole pack responded while W30-Ivanka was with them. This also confirmed that W30-Ivanka was not the only pup born in the pack during 2014.

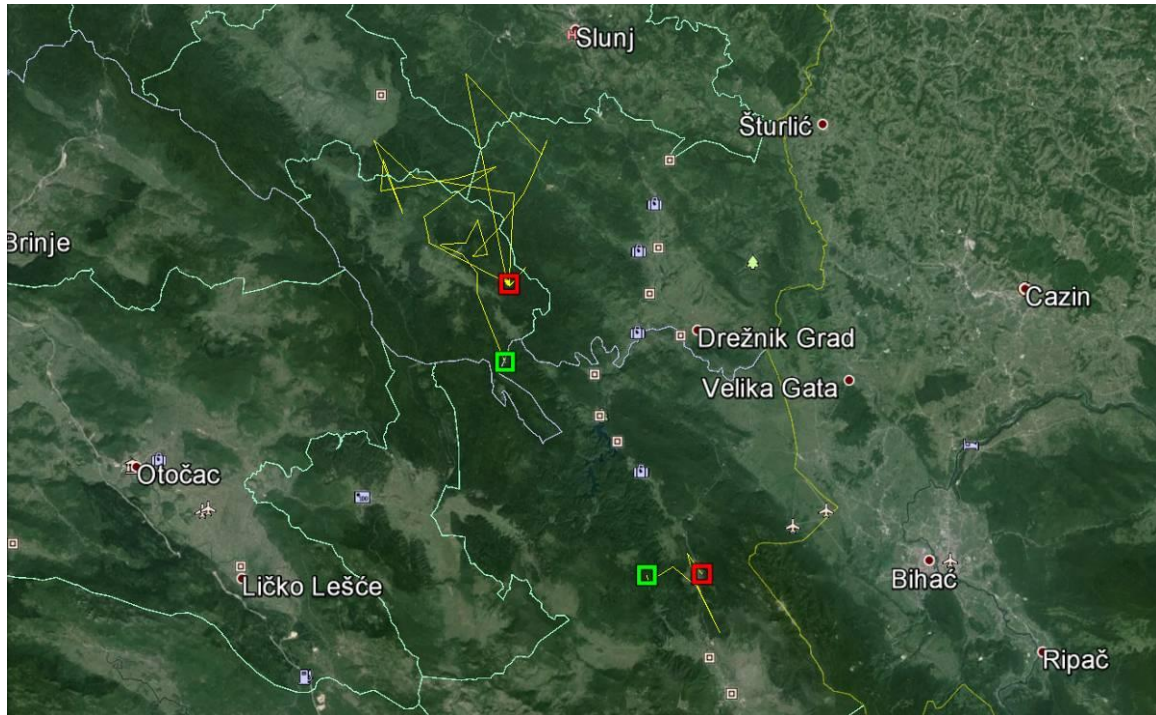


Figure 38: The first movement data of two wolves collared in 2014 in Croatia. Yellow lines on the north show the movement of W30-Ivanka, while shorter lines (less data so far) show the first movement data of W31-Anđelko.

Wolf packs to which our collared wolves belong, were recognized through regular wolf monitoring. Wolf W30-Ivanka belong to a pack named “Mala Kapela”, while W31-Anđelko was born in the pack named “Plješevica”. Mala Kapela pack is using part of the PLNP and the area north of the NP, while the first data shows that Plješevica pack also use southern part of PLNP and the Plješevica Mountain, which is on the border between Croatia and B&H. To move between NP and Plješevica Mountain, the pack needs to cross the magistral road Zagreb-Spit. During the summer 2014 a female wolf was hit by a car on this road and in the presumable territory of the Plješevica pack. The wolf was unconscious for more than one hour, but then it suddenly stood up and walked away. We do not know if it survived injuries. During the January 2015, a combination of radio-tracking and snow-tracking of Plješevica pack revealed that this pack counted at least eight wolves, including a collared wolf Anđelko.

Tracking of red deer and roe deer

Since the end of 2007 and until 19.04.2014 a total of 11 cervids were radio tracked in Gorski kotar. All radio-collared cervids had VHF collars and 1009 locations were collected. All radio tracking was done by a game warden Damir Prokopović on a voluntary basis. The main objective for tracking of cervids is to determine survival and the cause of death. D. Prokopović checked for the signal (mortality or not) on a regular basis. Interestingly, after the death of five animals in late winter of 2009, all remaining animals survived until the end of 2010, while one more roe deer died in spring 2011. During 2012, we have lost two other tracked animals. One red deer (RD04-Mina) has disappeared (signal lost), while the collar of roe deer RO04-Ars was found cut-off, so most likely a deer was illegally shot. The last remaining red deer RD01-Fana was found dead on 19.04.2014. Only the head and part of the neck cut-off, were found by the radio signal by the game warden Damir Prokopović.

Table 7: Basic data about red deer and roe deer radio-tracked in Gorski kotar during 2007-2014.

Animal	Start	End	N days	N locations	Fate
RD01-Fana	25.12.2007	19.04.2014	2307	206	Shot illegally
RD02-Daki	12.02.2008	26.09.2009	592	32	Shot legally
RD03-Tina	19.04.2008	10.03.2009	325	32	Starvation/disease
RD04-Mina	25.04.2008	21.09.2012	1610	65	Signal lost
RO01-Siljo	02.12.2007	09.01.2008	38	12	Disease
RO02-Gabi	18.12.2007	19.02.2009	429	83	Starvation
RO03-Nova	06.01.2008	20.03.2009	439	72	Starvation
RO04-Maki	07.01.2008	31.03.2011	1179	166	Starvation/disease
RO05-Magda	12.01.2008	21.04.2012	1561	169	Collar failed, alive
RO06-Ars	12.02.2008	15.10.2012	1707	157	Shot illegally
RO07-Lena	09.04.2008	03.03.2009	328	35	Lynx predation
TOTAL				1029	

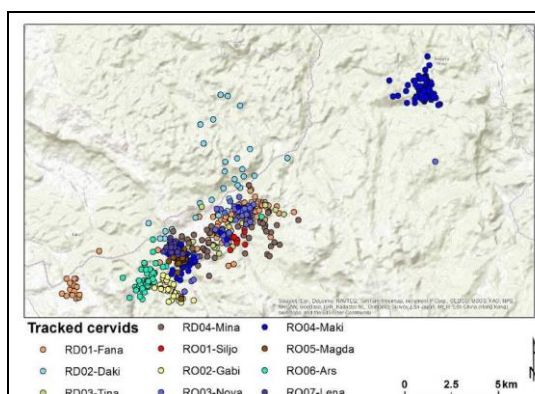


Figure 39: Cumulative data (all locations) of all tracked cervids (n=11) in the period from 2007 to 2014.



Figure 40: The head, the cut-off neck with collar of RD01-Fana were found on 19.04.2014. This red deer was shot illegally (Photo by Damir Prokopović).

FIELD WORK WITH BEARS

The bear capturing and radio-collaring was done in NP Una in Bosnia and Herzegovina as described above.

In July 2014 the LIFE DINALP BEAR project started. Among other actions, we plan to buy 4 satellite bear collars and mark 4 bears in the Gorski kotar area.

We are continually collecting measurements and samples of all bears that die in Croatia. In 2013, it included 100 hunted bears and 17 that died due to other reasons, In 2014 so far 101 bears (of the total quota of 120) were hunted and 22 died from other reasons. In the cases when the cause of death is not obvious we do perform the necropsy as complete as possible.

In some cases, we do even treat sick bears. On 13 December 2013, a bear that could not walk was spotted in the Ogulin area. After telephone call, we went there the same day. We immobilized the bear and transported it away from the road and from the public that was already gathering. The bear did recover and leave the site after three days.

In the Kuterevo bear sanctuary we were examining one female bear that became sick but it finally died with diagnose of kidney and brain cancer.



Figure 41: Handling of the sick female bear (“Đurša”) near Ogulin – Gomirje on 13.12.2014. After transplant to the deep forest the bear recovered after 3 days.



Figure 42: Handling the sick female bear “Bena” in Kuterevu 22.11.2013. The diagnosis revealed the kidney and brain tumor.

WOLF GENETIC RESEARCH

Three scientific papers, about wolf and jackal genetic were published during 2014; see the list at the end of the report.

In the LIFE SLOWOLF project the Slovenian wolf researchers obtained data that are relevant for the wolves in Croatia as well.

It was estimated that 38% of wolves from Slovenia belong to the border packs with Croatia. Genetic survey revealed that in average 13,3 wolves (26,4%) per year disappear from the population (emigration or death) on the top of the known mortality. The total loss of mature/reproductive individuals is in average 29% per year. That also causes very big turnover in the population where many wolf packs are destructed.

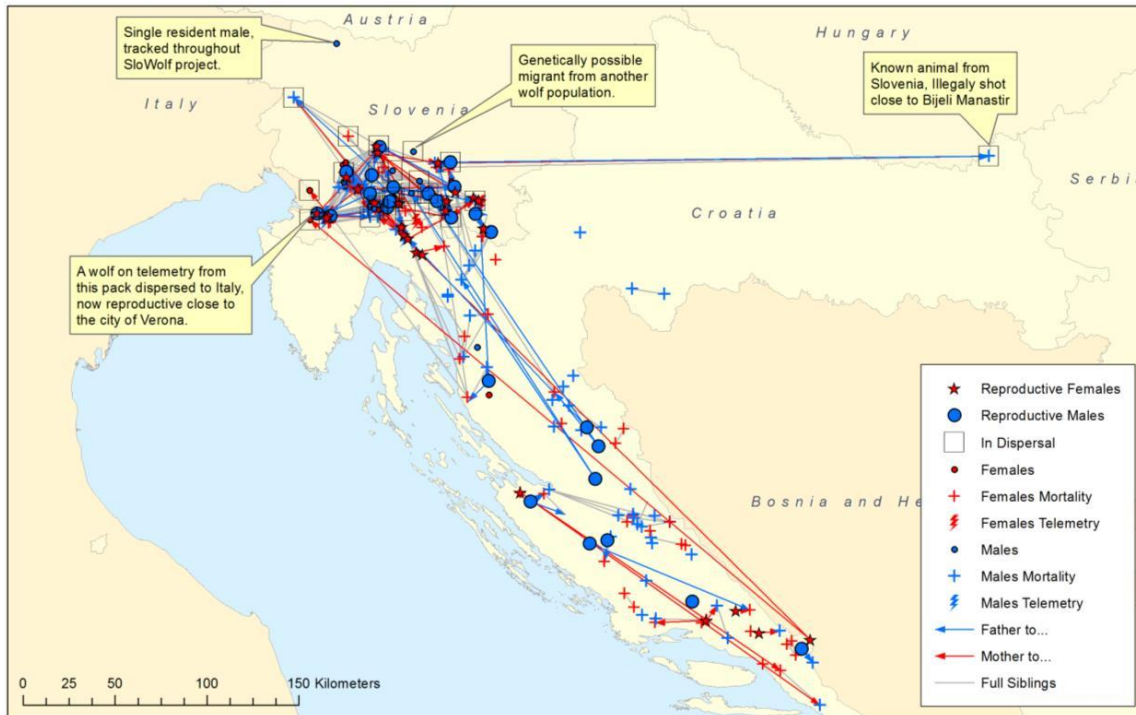


Figure 43: The flow of wolf genes along Dinarids. Distant dispersals with confirmed family relations are visible (Source: Slowolf, 2014.)

Genetic connections reveal the gene flow. There are no barriers for animal movements in the area and wolves belong to the same population. This gives addition emphasis on the need for coordinated wolf management between Slovenia and Croatia.

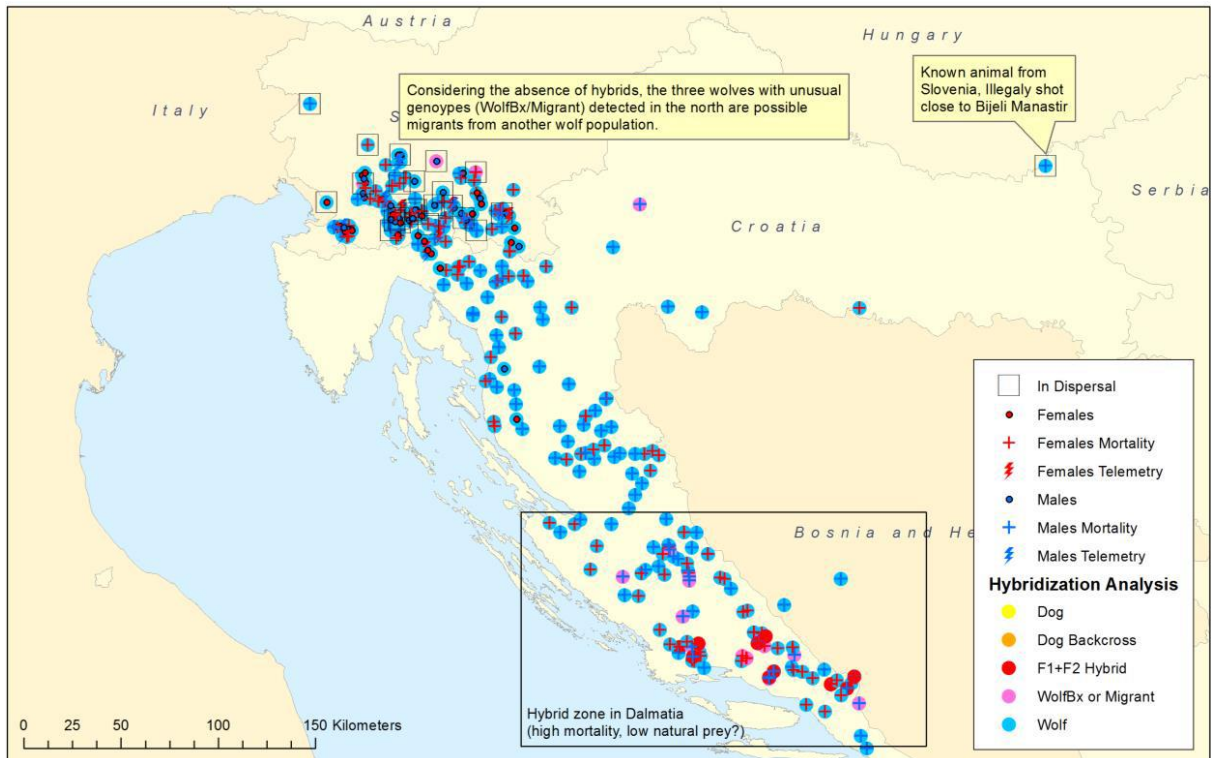


Figure 44: Detected wolf-dog hybrids in Dinarids. In the north, three individuals of F1 and F2 hybrids were found as likely dispersals or from captive origins. More hybrids were found in Dalmatia (Source: Slowolf, 2014.)

In Slovenia, they found only two wolf-dog hybrids plus three in northwestern Croatia. All of them are likely dispersals from other population or are from captive origin.

In Dalmatia, more hybrids were found. The habitat conditions are different there as well – poor forest cover and poor natural prey. The livestock depredation makes the wolf acceptance very low and increases illegal killing. All that can lead to hybridization.

CAMERA TRAPS

During 2014, we covered larger area (compared to the year 2013) with cameras. We primarily used them to monitor lynx presence and numbers, to check for wolf presence in the area and to collect data about spatial-temporal distribution and activity pattern of humans, large herbivores and large carnivores in Gorski kotar and Northern Velebit. The data about spatio-temporal distribution and activity pattern will be continuously collected and analyzed by Pete Haswell in his PhD, so here I shortly present the results of lynx counting only. Counting of lynx by photographing them is possible because in Dinaric lynx population each individual lynx has a unique pattern of spots of its fur. So, if we can distinguish individuals, we can count them!

For the purpose of lynx counting in Gorski kotar area, the data collected within the frame of this project was merged with the data collected by another project, which is lynx monitoring project funded by State Institute for Nature Conservation (DZZP) and conducted by Vedran Slijepčević. Vedran is a PhD student of Josip Kusak who is doing his thesis on lynx population dynamic in Croatia and works as teaching assistant at Karlovac University of Applied Sciences (VUKA).



Figure 45: Josip Kusak and Vedran Slijepčević during the snowshoeing walk to check a lynx box-trap in Gorski kotar on 29.12.2014.

None of the two projects alone would be able to entirely cover the Gorski kotar area with cameras (not enough cameras), but we achieved much better coverage by coordinated camera distribution and by merging collected data. The buffer of 6.9 km (the radius of average lynx home range size in Gorski kotar area) around each camera, shows that we were able to cover almost the entire Gorski kotar area for the purpose of lynx counting.

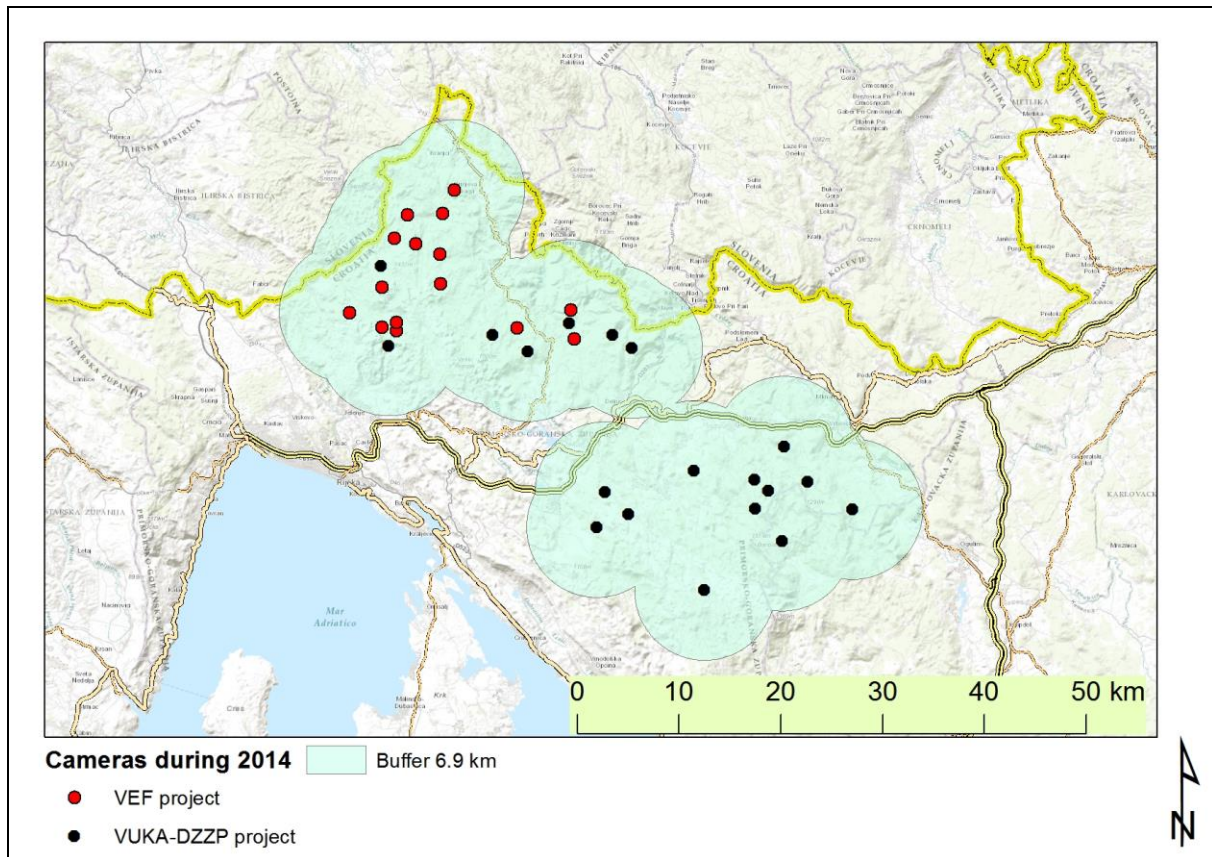


Figure 46: Merged camera traps locations of two projects (VEF and VUKA-DZZP) with 6.9 km buffer (1508.8 km²) around camera traps used in Gorski kotar region for lynx counting during 2014.

Cameras were set along forest roads, logging roads (VEF cameras) and at known lynx marking sites (VUKA-DZZP cameras). Already during the 2011 we identified seven types of camera sites: the main forest road, secondary forest road, tertiary forest road, logging road, hiking trails, animal trails and forests without trails. Such camera placement may not be optimal for the purpose of lynx counting but it was retained as it is essential in analyzing the activities and the use of space by animals and humans. When choosing a camera site, we took into account that cameras should be hidden from view, and at the distance of 3-5 m from presumed passage place. Cameras were placed at a height of 50 to 200 cm from the ground, depending on the distance of the recording site. As the distance was greater, the angle which the camera was covering was increasing too.

Some cameras were set to record video clips for 10, 20 or 30 seconds, with a three-second pause in the event of prolonged retention of the subject in the view-field of the camera. Still, most camera were set to record images as the previous use of the camera showed that video had not sufficient quality to identify the details, but was good for recording animal behavior.

Camera data analysis

In the period from 23.10.2013 and until 05.12.2014 (408 days) cameras of both projects were placed at 34 different sites. At most places, only one camera was used, but at one place (Site 45), we concurrently used two cameras. Nineteen cameras were set at lynx marking sites (Project VUKA-DZZP), which is almost always an abandoned house or stable somewhere in the forest. We have learned that for some reasons lynx particularly like to mark (by scratching, rubbing and urinating) corners of such abandoned objects. Fifteen cameras (Project VEF) were set along forest roads and

trails. For a further period of monitoring, it would be good to increase the representation of site categories that have so far been little or not represented.

Table 8: Type, name coordinates and project origin for the automatic camera sites used during 2014.

#	CAM_ID	SITE NAME	SITE TYPE	X COORD	Y COORD	PROJECT
1	1	JAVORSKE DRAGE	Abandoned house	5499099	5019276	VUKA-DZZP
2	2	BEGOVA CISTERNA	House in the forest	5497838	5017471	VUKA-DZZP
3	3	MEDINE DRAGE	Abandoned stable	5497726	5020331	VUKA-DZZP
4	4	OSTROŽICA	Abandoned house	5500431	5014330	VUKA-DZZP
5	5	LARMINA BAJTA	Abandoned house	5471977	5034598	VUKA-DZZP
6	6	ŠVERDA	Abandoned house	5461030	5041362	VUKA-DZZP
7	7	BANSKA VRATA	Forest road	5483062	5019132	VUKA-DZZP
8	8	RUDINE	Abandoned house	5485374	5016962	VUKA-DZZP
9	10	JELA NAD LESKOM	Logging road	5475486	5032952	VUKA-DZZP
10	11	TISOVA KOSA	Abandoned house	5500665	5023591	VUKA-DZZP
11	12	ČARAPINE DRAGE	Abandoned house	5502970	5020147	VUKA-DZZP
12	13	ĐOKINA JAMA	Abandoned stable	5507362	5017435	VUKA-DZZP
13	14	BJELOČA	Abandoned house	5492836	5009493	VUKA-DZZP
14	15	GOSPODSKA BAJTA	Abandoned house	5483807	5034572	VUKA-DZZP
15	16	GLAVICE	Abandoned house	5485702	5033266	VUKA-DZZP
16	17	KOVAČEV LAZ	Abandoned house	5479553	5035725	VUKA-DZZP
17	18	CRNA KOSA	Logging road	5491812	5021198	VUKA-DZZP
18	19	GORNIŠKO	Abandoned stable	5461760	5033513	VUKA-DZZP
19	20	LIPOVAČA	Abandoned stable	5482225	5015675	VUKA-DZZP
20	22	KIRŠINA DRAGA	Logging road	5462552	5035007	VEF-JUP
21	31	CECLJE	Forest road	5461122	5039222	VEF-JUP
22	34	ŽELEJZNA VRATA	Forest road	5457922	5036769	VEF-JUP
23	35	KAČJE – KIRŠINA DRAGA	Forest road	5462498	5035763	VEF-JUP
24	40	PREVIJAK	Logging road	5461102	5035322	VEF-JUP
25	45	PRAPROT	Forest road	5479665	5037002	VEF-JUP
26	46	PRAPROT – TORIČEK	Forest road	5479990	5034180	VEF-JUP
27	49	ŠIJSKA CESTA	Forest road	5474371	5035230	VEF-JUP
28	50	PAJNHOVO	Forest road	5466805	5042472	VEF-JUP
29	55	CRNA OŠTARIJA	Forest road	5467094	5046482	VEF-JUP
30	56	CRNA GORA	Forest road	5468227	5048810	VEF-JUP
31	57	VELIKI TISOVAC	Forest road	5466889	5039553	VEF-JUP
32	58	CRNI VRH	Forest road	5464446	5043515	VEF-JUP
33	59	BELIŠKA DRAGA	Forest road	5463615	5046366	VEF-JUP
34	60	LEPUŠJE	Forest road	5462338	5044062	VEF-JUP

The determination of lynx numbers in Gorski kotar during 2014.

Taking into account both projects (VEF and VUKA-DZZP), the cameras were installed on a total of 34 sites, of which 19 cameras on lynx marking sites and 15 on forest paths. Twelve cameras were set in the southern part Gorski kotar (south of the highway), while 22 cameras were set north of the highway. Lynx were recorded at 13 different locations, in a total of 75 different occasions. Of these 75 lynx appearances at camera sites, in 43 occasions (57.3%) recorded photos were good enough to identify the individual lynx. From a total of 75 situations, in 19 (25.3%) was recorded the right side of a lynx, in 32 (42.7%) the left side, and in 17 (22.7%) cases both, left and right side of a lynx were photographed. In one occasion photos taken showed left-frontal and right-frontal side of the lynx, while in one occasion the same lynx was photographed from left and right side and from the back. In two cases, the recording was so bad, that it was not possible to determine which side of the animal body was photographed.

Table 9: Summary data about the success of photographing lynx during 2014.

PHOTOGRAPHED SIDE	N OF LYNX APPEARANCES	%
Right	19	25.3
Right-frontal	2	2.7
Left	32	42.7
Left and right	17	22.7
Left frontal	1	1.3
Unclear	2	2.7
Back side	1	1.3
Left right and back side	1	1.3
TOTAL	75	100.0

Most of times ($n = 43$), a lynx was recorded at the site #45. In a total of 20 occasions of a lynx passing by at the site 45, photos taken were not good enough to identify individual lynx. At other places, the lynx was photographed from one to six times. At the site #45 (where two cameras were placed concurrently) usefulness of collected recordings was the lowest (46.5%), but again this site gave the highest total ($n = 29$, 46.5%) number of photos. Camera which we use unfortunately are still not good enough for nighttime photos, i.e. in most cases it was not possible to identify individual lynx from night photos.

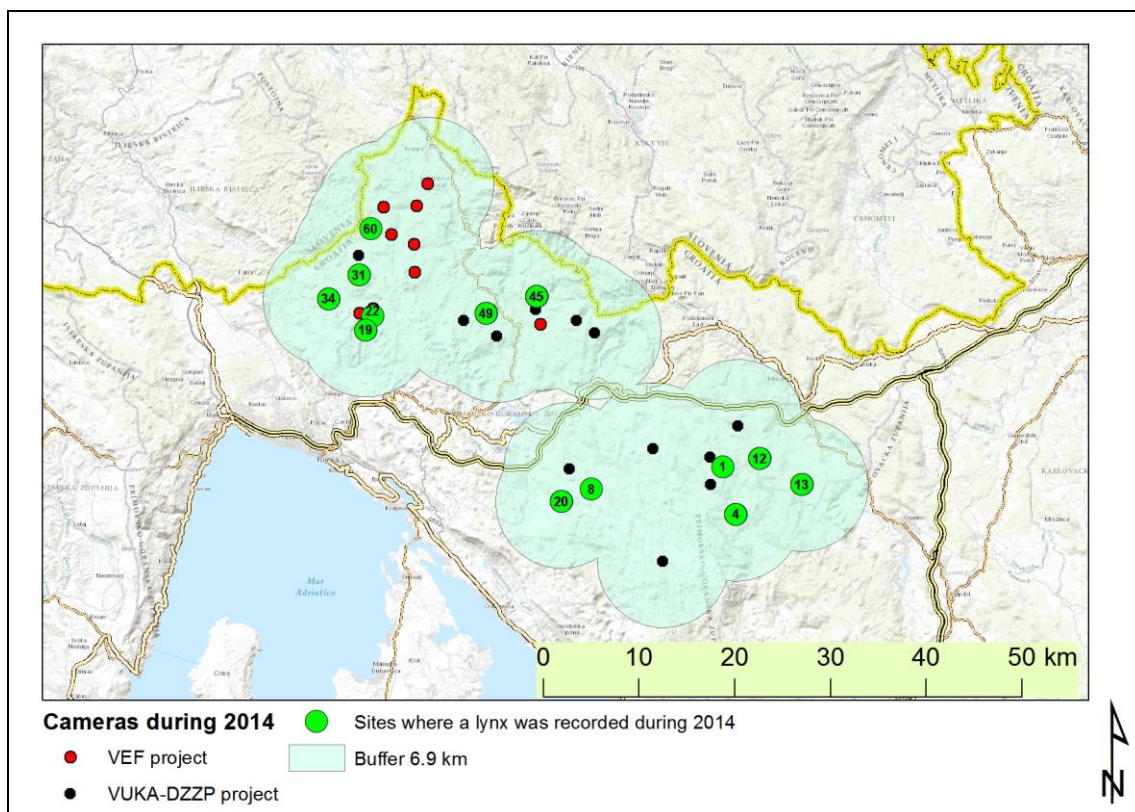


Figure 47: Camera traps locations of two projects (VEF and VUKA-DZZP) with 6.9 km buffer (1508.8 km²) around camera traps used in Gorski kotar region and sites where a lynx was photographed during 2014.

Table 10: Summary data number of lynx visits to camera sites and the ratio of usable photos at each site during 2014.

#	SITE_ID	SITE NAME	N OF LYNX VISITS	N USABLE VISITS	% USABLE VISITS
1	1	Javorske drage	1	1	100.0
2	4	Ostrožica	5	4	80.0
3	8	Rudine	1	1	100.0
4	12	Čarapine drage	4	4	100.0
5	13	Đokina jama	3	2	66.7
6	19	Gorniško	2	2	100.0
7	20	Lipovača	6	6	100.0
8	22	Kiršina draga	1	0	0.0
9	31	Ceclje	2	2	100.0
10	34	Željezna vrata	3	0	0.0
11	45	Praprot	43	20	46.5
12	49	Šijska cesta	3	0	0.0
13	60	Lepušje	1	1	100.0
	TOTAL		75	43	57.3

In the period from 23.10.2013 until 05.12.2014 (408 days), we recorded 75 appearances lynx, of which the 43 occasion's photos were not good enough for comparing patterns of spots on the fur. In 25 cases, the images were not good enough for distinguishing individuals, but considering the place of occurrence (all at site # 45), it is very likely that these were the same individuals which were identified from other, better photos taken at the same site. However, in five other occasions elsewhere, there might have been at least one to a maximum of five individuals of lynx.

Table 11: Detailed data about lynx visits to camera sites and determined individual lynx in Gorski kotar area during 2014.

#	SITE ID	SITE NAME	TIME	LYNX NAME	PHOTOGRAPHED SIDE	N CAMERAS	USABLE
1	1	Javorske drage	27.06.2014 07:09	Spot	Right	1	YES
2	4	Ostrožica	28.02.2014 03:39	Jasenak	Right	1	YES
3	4	Ostrožica	20.04.2014 19:14	Jasenak2	Right	1	YES
4	4	Ostrožica	05.05.2014 17:45	Miška	Right-frontal	1	YES
5	4	Ostrožica	10.06.2014 03:47	Rudi	left and right	1	YES
6	4	Ostrožica	28.06.2014 20:28	Undetermined4	Unclear	1	NO
7	8	Rudine	14.07.2014 02:48	Rudi	left and right	1	YES
8	12	Čarapine drage	11.08.2014 09:13	Spot	left and right	1	YES
9	12	Čarapine drage	12.08.2014 04:56	Spot	left and right	1	YES
10	12	Čarapine drage	25.08.2014 15:15	Socket	Left	1	YES
11	12	Čarapine drage	21.09.2014 00:22	Joke	Left	1	YES
12	13	Đokina jama	17.01.2014 01:39	Joke	left and right	1	YES
13	13	Đokina jama	19.02.2014 05:38	Undetermined5	Unclear	1	NO
14	13	Đokina jama	08.04.2014 04:30	Joke	Left	1	YES
15	19	Gorniško	13.11.2013 00:44	Faca	back, left and right	1	YES
16	19	Gorniško	12.01.2014 22:38	Faca	Back	1	YES
17	20	Lipovača	17.12.2013 16:20	Luna	left and right	1	YES
18	20	Lipovača	02.01.2014 16:57	Solo	left and right	1	YES
19	20	Lipovača	19.01.2014 03:35	Solo	Right	1	YES
20	20	Lipovača	24.03.2014 04:43	Luna	Left	1	YES
21	20	Lipovača	25.03.2014 15:53	Luna	Left	1	YES
22	20	Lipovača	24.04.2014 05:10	Luna	right	1	YES
23	22	Kiršina draga	08.01.2014 00:36	Undetermined1	right-frontal	1	NO
24	31	Ceclje	23.10.2013 20:16	Undetermined2	Left	1	YES
25	31	Ceclje	29.12.2013 00:33	Undetermined2	Left	1	YES
27	34	Željezna vrata	24.11.2013 04:59	Undetermined3	Left	1	NO
28	34	Željezna vrata	05.12.2013 02:56	Undetermined3	Left	1	NO
26	34	Željezna vrata	09.01.2014 00:37	Undetermined3	Left	1	NO
29	45	Praprot	20.02.2014 00:38	Undetermined	right	1	NO
30	45	Praprot	24.02.2014 17:43	Trokutka	Left	1	YES

#	SITE ID	SITE NAME	TIME	LYNX NAME	PHOTOGRAPHED SIDE	N CAMERAS	USABLE
31	45	Praprot	25.02.2014 15:41	Faca	right	1	YES
32	45	Praprot	25.02.2014 16:53	Faca	Left	1	YES
33	45	Praprot	25.02.2014 21:11	Undetermined	right	1	NO
34	45	Praprot	01.03.2014 04:53	Undetermined	Left	1	NO
35	45	Praprot	02.03.2014 08:22	Undetermined	right	1	NO
36	45	Praprot	02.03.2014 08:22	Faca	right	1	YES
37	45	Praprot	03.03.2014 05:41	Undetermined	right	1	NO
38	45	Praprot	03.03.2014 05:50	Undetermined	Left	1	NO
39	45	Praprot	04.03.2014 04:42	Undetermined	Left	1	NO
40	45	Praprot	05.03.2014 22:40	Undetermined	right	1	NO
41	45	Praprot	06.03.2014 06:02	Undetermined	right	1	NO
42	45	Praprot	07.03.2014 15:13	Faca	Left	1	YES
43	45	Praprot	14.03.2014 02:10	Faca	Left	1	YES
44	45	Praprot	16.03.2014 21:02	Undetermined	Left	1	NO
45	45	Praprot	16.03.2014 21:02	Undetermined	right	1	NO
46	45	Praprot	01.04.2014 18:52	Undetermined	Left	1	NO
47	45	Praprot	05.04.2014 02:30	Undetermined	Left	1	NO
48	45	Praprot	17.04.2014 18:01	Bijeli	Left	1	YES
49	45	Praprot	29.04.2014 06:38	Repić	left and right	2	YES
51	45	Praprot	14.05.2014 21:51	Undetermined	Right	1	NO
52	45	Praprot	17.06.2014 01:58	Undetermined	Right	1	NO
53	45	Praprot	17.06.2014 10:54	Faca	left and right	2	YES
54	45	Praprot	18.06.2014 02:03	Undetermined	Left	1	NO
55	45	Praprot	18.06.2014 08:44	Faca	Right	1	YES
56	45	Praprot	18.06.2014 15:29	Trokutka	Left	1	YES
57	45	Praprot	18.06.2014 18:46	Faca	right	1	YES
58	45	Praprot	19.06.2014 07:42	Trokutka	Left	2	YES
59	45	Praprot	19.06.2014 21:16	Undetermined	Left	1	NO
60	45	Praprot	20.06.2014 01:35	Faca	Left	2	YES
61	45	Praprot	20.06.2014 11:59	Trokutka	Left	1	YES
62	45	Praprot	20.06.2014 17:01	Faca	left and right	2	YES
63	45	Praprot	21.06.2014 03:08	Undetermined	Left	1	NO
64	45	Praprot	21.06.2014 20:54	Undetermined	left and right	2	NO
65	45	Praprot	21.06.2014 23:34	Undetermined	Left	1	NO
66	45	Praprot	22.06.2014 01:46	Trokutka	Left	1	YES
67	45	Praprot	22.06.2014 16:55	Trokutka	left and right	2	YES
68	45	Praprot	22.06.2014 21:35	Undetermined	left and right	2	NO
69	45	Praprot	23.06.2014 19:22	Bijeli	left and right	2	YES
70	45	Praprot	24.06.2014 19:46	Bijeli	left and right	2	YES
71	45	Praprot	25.06.2014 00:49	Undetermined	left and right	2	NO
72	49	Šijska cesta	07.12.2013 13:54	Undetermined	left-frontal	1	NO
73	49	Šijska cesta	03.05.2014 00:42	Undetermined	Right	1	NO
74	49	Šijska cesta	05.05.2014 17:47	Undetermined	Right	1	NO
75	60	Lepušje	12.05.2014 21:48	Undetermined4	Right	1	YES

Names and images of individual lynx determined during 2014 are shown in the following chapter. For some the lynx, representative photos from previous years were used, when recording from 2014 was not good enough.

1. Lynx Bijeli

Lynx Bijeli was recorded at Praprot site (#45) on three occasions during 2014, but each time from the left side only. This lynx has a distinct light fur, which becomes completely white at the belly. The tail is tiny.



Figure 48: lynx Bijeli at Praprot 17.04.2014 18:01 (Project VEF)



Figure 49: Lynx Bijeli at Praprot 23.06.2014 19:22 (Project VEF)

It is very likely that the same animal was photographed on the same time on 11.06.2013 19:10, but from the right side.



Figure 50: Uncertainly recorded lynx on 11.06.2013 19:10 could be a lynx Bijeli.

2. Lynx Faca

A lynx named Faca (Face) has a distinctive pattern on the left side of the body, which makes it easily recognizable if we have the photo of the left side. This animal was photographed twelve times, of which eleven times at Praprot site (#45) and once at Gorniško site.

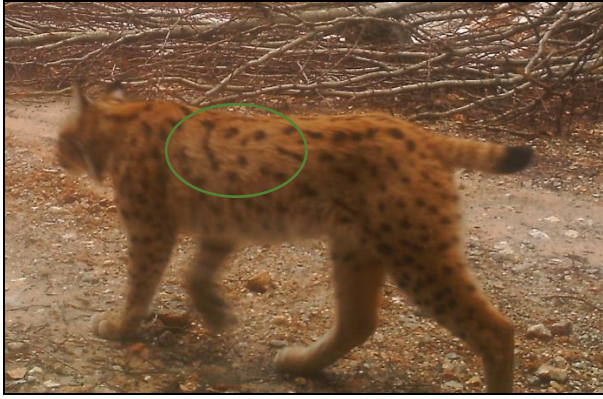


Figure 51: Lynx Faca at Praprot 07.03.2014 15:13 (Project VEF).



Figure 52: Lynx Faca at Praprot 17.06.2014 10:54. The left side of a lynx was photographed too (Project VEF).

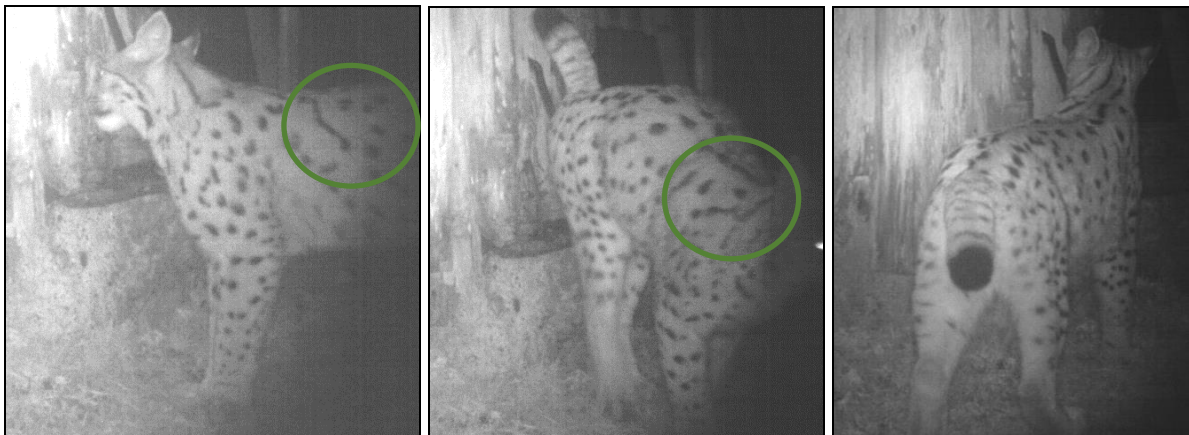


Figure 53:, Figure 54: and Figure 55: Lynx Faca at Gorniškog 13.11.2013 (project VUKA-DZZP)

3. Lynx Jasenak and Jasenak2

Lynx Jasenak and Jasenak2, recorder on two occasions, each time from a different side, so it is not clear if this was one animal or two different ones.



*Figure 56: Ris Jasenak2 kod mjesta Ostrožica
20.04.2014 19:44*



*Figure 57: Ris Jasenak kod mjesta Ostrožica
28.02.2014 03:39*

4. Ris Joke

Lynx Joke was recorded and identified by Vedran Slijepčević on three occasions at two different sites during 2014.



*Figure 58: Lynx Joke at Đokina jama
17.01.2014 01:39 (project VUKA-DZZP).*



*Figure 59: Ris Joke at Đokina jama
08.04.2014 04:30 (project VUKA-DZZP).*

5. Lynx Luna

Lynx Luna, which was collared during DinaRis project in 2007 is still alive (!) and it wears a collar until 2014. It is also interesting that since the beginning of camera traps use in Gorski kotar (2011) it has never been photographed until 2014, when it visited Lipovača site on two occasions.

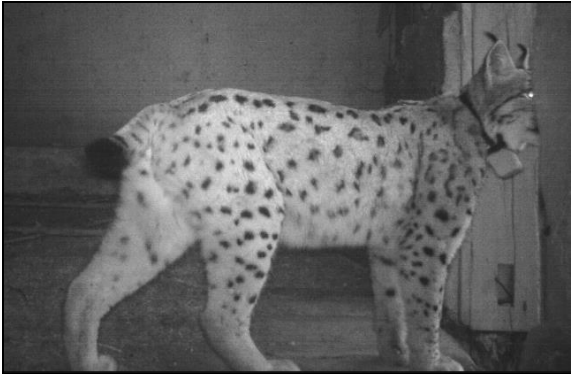


Figure 60: Lynx Luna at Lipovače 17.12.2013 16:27 (project VUKA-DZZP)

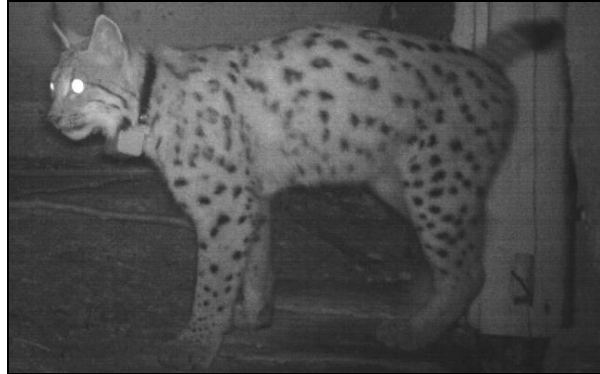


Figure 61: lynx Luna at Lipovače 24.03.2014 04:43 (project VUKA-DZZP)

6. Lynx Miška

Lynx Miška was recorder every year since 2012. During 2014, Miška was recorded once at the site Ostrožica.



Figure 62: Lynx Miška, recorded at th4 site Ostrožica on 05.05.2014 17:45 (project VUKA-DZZP).



Figure 63: Lynx Miška, recorded on 17.09.2012 (project VUKA-DZZP).

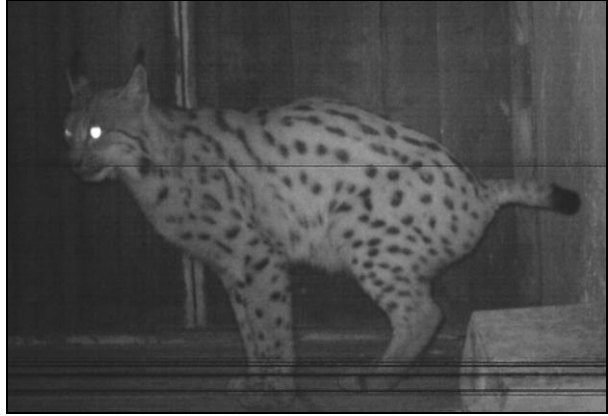


Figure 64: lynx Miška, recorded 08.05.2012 (project VUKA-DZZP).

7. Lynx Repić

Only one photo was made at the site Praprot (site #45). The phot is of low quality (from far distance), but it is visible that this animal has higher number of smaller dots on the fur, which is different from three other lynx (Faca, Trokutka, or Bijeli) recorded at this site.



Figure 65: Lynx named Repić, (“tinny tail”) recorded on 29.04.2014 at Praprot (project VEF).

8. Ris Rudi

Lynx Rusi was recorded two times at two different sites during 2014. This lynx was recorded for the first time in 2014.



Figure 66: Lynx Rudi at Ostrožica 10.06.2014 03:41 (project VUKA-DZZP).



Figure 67: Lynx Rudi at Ostrožica 10.06.2014 03:47 (project VUKA-DZZP).

9. Ris Sock

Lynx Sock is another new individual in 2014. It showed up at Čarapine drage site 05.08.2014.



Figure 68: Lynx Sock at Čarapine drage 05.08.2014 15:15 (project VUKA-DZZP).



Figure 69: Lynx Sock at Čarapine drage 05.08.2014 15:15 (project VUKA-DZZP).

10. Lynx Solo

Lynx Solo can easily be recognized after the distinctive pattern of its fur. It has circular spots which resemble a pattern of a leopard. Solo was recorded every year during the last three years in both southern and northern part of Gorski kotar. During 2014, Solo was recorded once, at Lipovača site.



Figure 70: Lynx Solo at Lipovača 02.01.2014 16:59 (project VUKA-DZZP).



Figure 71: Lynx Solo at Lipovača 02.01.2014 16:59 (project VUKA-DZZP).

11. Lynx Spot

Lynx Spot is another individual which was recorded for the first time in 2014. It showed up three times at two different sites.



Figure 72: Lynx Spot at the site Čarapine drage 11.08.2014 09:15 (project VUKA-DZZP).



Figure 73: Lynx Spot at site Čarapine drage 12.08.2014 04:56 (project VUKA-DZZP).

12. Lynx Trokutka

Lynx Trokutka was recorded in 2013 for the first time at Praprot site and was confirmed six times during 2014. We managed to take a photo of its both sides.

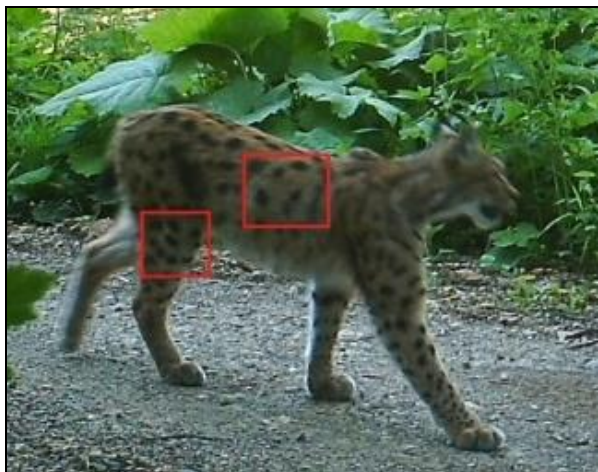


Figure 74: Lynx Trokutka at Praprot
22.06.2014 16:55 (Project VEF-JUP).



Figure 75: Lynx Trokutka at Praprot
22.06.2014 16:55 (Project VEF-JUP).

Here are examples of lynx photos where it was not possible to determine which individual was photographed.



Figure 76: Lepušje
12.05.2014 21:48



Figure 77:
Željezna vrata
03.12.2013.



Figure 78: Kiršina
draga 08.01.2014.



Figure 79: Šijska
cesta 07.12.2013

Recorded were at least twelve different lynx in Gorski kotar during 2014, and insecure identifications were for at least one to five lynx. The determined number was 12 (up to 17) lynx. The density of lynx in the studied part of Gorski Kotar, and calculated based on the average size of home range in this area (1508.8 km² buffer radius of 6.9 km), was therefore 0.8 / 100 km². In 2012, we recorded 11 lynx but only four of them were recorded in 2013, a change of 63.6%. During 2014, of 12 lynx, only four of them were recorded during 2013. It is interesting that collared lynx Luna, which was not captured with automatic cameras since 2011. This indicates that the "disappearance" of lynx in front of the camera can be temporary, and that the temporary nature can be perennial. Missing lynx was replaced by new individuals, and ultimately the number in 2014 was equal to that during 2013 and previous years. It is possible that the movement of lynx over several years is greater than it was determined by the telemetric monitoring (which was generally less than a year), and that some individuals leave the area, and some other fill the gap. However, the extent of the population "turnover" in the study area is due to immigration/emigration processes, and how much is due to fertility/mortality ratio, could only be determined by extensive research of population dynamics.

WOLF MORTALITY

A mortality of 8 wolves was documented between 15.12.2013 and 01.09.2014. Prevailing causes of death was traffic (n=5) and illegal killing (n=2). Illegal killing of wolves is still present. We are aware that this data is biased.



Figure 80: Traffic killed wolf WCRO249.

Table 12: Basic data about dead wolves in Croatia between 15.12.2013 and 01.09.2014.

#	ANIMAL ID	GENDER	DATE	CAUSE
1.	WCRO248	F	15.12.2013	Illegal killing
2.	WCRO249	F	02.03.2014	Traffic
3.	WCRO250	M	07.03.2014	Traffic
4.	WCRO251	F	12.03.2014	Illegal killing
5.	WCRO252	F	13.03.2014	Traffic
6.	WCRO253	M	13.04.2014	Killed by guarding dogs
7.	WCRO254	M	28.04.2014	Traffic
8.	WCRO255	M	14.06.2014	Traffic

All dead wolves were pathologically processed at the Veterinary faculty of the University of Zagreb and some of them were fresh enough to be thoroughly examined.

The Committee for large carnivores of Croatia has recommended to the ministry that for the next season the quota should be zero.

LYNX MORTALITY

There was no confirmed dead lynx in Croatia during 2014, as well as in 2013.

IMPLEMENTATION OF THE WOLF AND LYNX MANAGEMENT PLANS

WOLF MANAGEMENT

Duro Huber and Josip Kusak continue to participate in large carnivores management through the work in the “Committee for large carnivores in Croatia” and the “Comity for bear management in Croatia” and through various other activities (organizing and implementing monitoring, giving courses for damage inspectors and Intervention team for large carnivores, media appearances and statements..). Both researchers are co-authors of the yearly report about wolf population status in Croatia. The main conclusion of the report for 2014 was that we observed a drop to about 168 wolves in 48 packs, and that there are no arguments for any legal shooting of wolves. This conclusion was brought after the collecting and analyzing monitoring results. The main outcome of this work was a map showing the distribution, numbers and trend of wolves in each of 48 wolf packs determined during monitoring. Beside lower number of wolves, the number of packs has also decreased for one, compared to the year 2013.

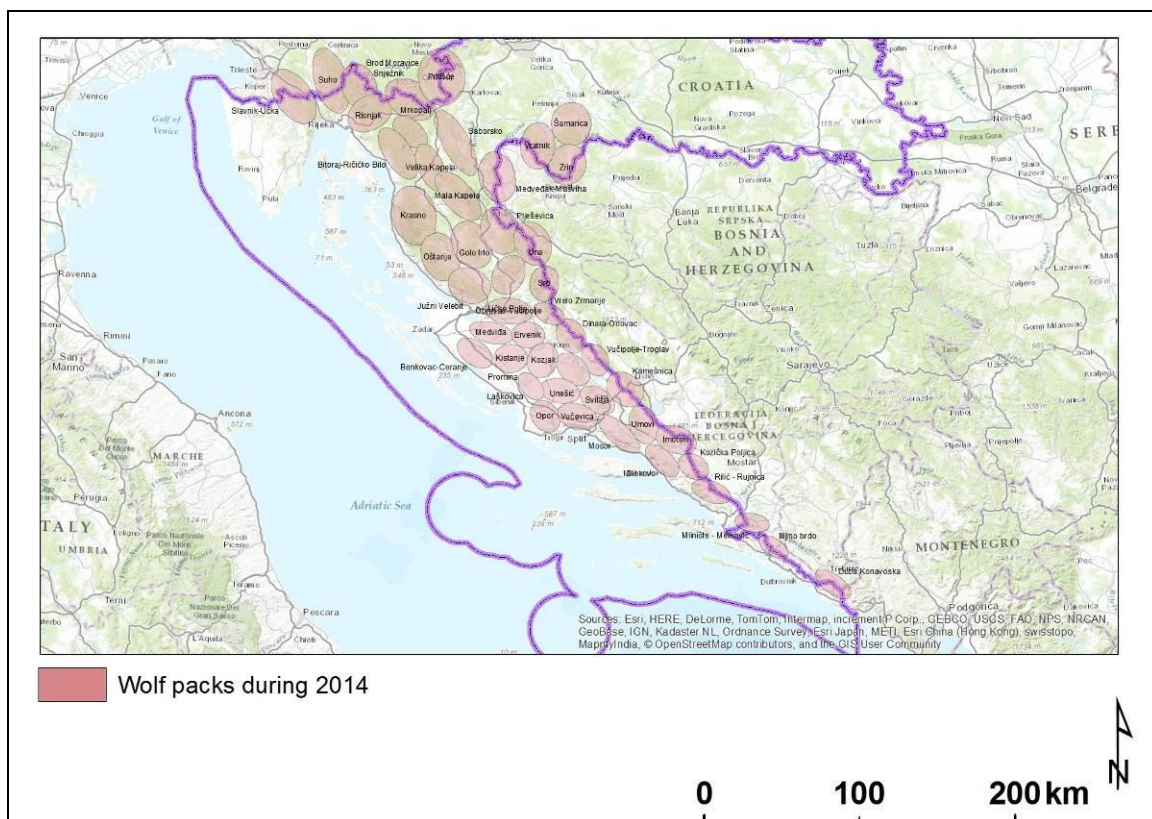


Figure 55: The spatial distribution of wolf packs observed in Croatia during 2014 (from the “Yearly report about the status of wolf population in Croatia in 2014”).

Table 13: Wolf pack sizes determined by the regular monitoring in Croatia during 2014.

#	PACK NAME	BORDERING PACK	MINIMAL NUMBER	MAXIMAL NUMBER	AVERAGE NUMBER
1	Benkovac-Ceranje	NO	3.00	5.00	4.00
2	Biokovo	NO	4.00	6.00	5.00
3	Bitoraj-Ričičko Bilo	NO	7.00	8.00	7.50
4	Brod Moravice	YES	2.50	3.00	3.00
5	Dinara-Orlovac	YES	2.50	3.50	3.00
6	Duba Konavoska	YES	2.00	3.00	2.50
7	Ervenik	NO	3.00	5.00	4.00
8	Golo trlo	NO	3.00	7.00	5.00
9	Ilijino brdo	YES	1.00	2.00	1.50
10	Imotski	YES	2.00	3.00	2.50
11	Južni Velebit	NO	2.00	4.00	3.00
12	Kamešnica	YES	2.00	3.00	2.50
13	Kistanje	NO	3.00	5.00	4.00
14	Kozička Poljica	YES	2.00	3.00	2.50
15	Kozjak	NO	3.00	5.00	4.00
16	Krasno	NO	1.00	3.00	2.00
17	Laškovića	NO	4.00	4.00	4.00
18	Ličko Polje	NO	2.00	4.00	3.00
19	Mala Kapela	NO	6.00	7.00	6.50
20	Medvedak-Mašvina	YES	2.00	2.00	2.00
21	Medviđa	NO	5.00	7.00	6.00
22	Mlinište - Metković	YES	1.00	2.00	1.50
23	Mosor	NO	4.00	6.00	5.00
24	Mrkopalj	NO	6.00	8.00	7.00
25	Obrovac-Vučipolje	NO	5.00	9.00	7.00
26	Opor	NO	2.00	3.00	2.50
27	Oštarije	NO	3.00	5.00	4.00
28	Plješevica	YES	2.50	4.50	3.50
29	Prilišće	YES	1.00	2.00	1.50
30	Promina	NO	5.00	7.00	6.00
31	Rilić - Rujnica	YES	2.00	3.00	2.50
32	Risnjak	NO	5.00	6.00	5.50
33	Saborsko	NO	1.00	3.00	2.00
34	Slavnik-Učka	YES	2.00	2.00	2.00
35	Snježnik	YES	2.00	2.00	2.00
36	Srb	YES	2.00	2.50	2.00
37	Suho	YES	1.50	1.50	1.50
38	Svilaja	NO	4.00	6.00	5.00
39	Umovi	YES	2.00	3.00	2.50
40	Una	YES	2.00	3.00	2.50
41	Unešić	NO	7.00	8.00	7.50
42	Velika Kapela	NO	4.00	5.00	4.50
43	Vratnik	YES	2.00	2.00	2.00
44	Vrelo Zrmanje	YES	1.50	2.50	2.00
45	Vučevica	NO	2.00	4.00	3.00
46	Vučipolje-Troglav	YES	1.50	2.50	2.00
47	Zrin	YES	1.50	2.00	2.00
48	Šamarica	NO	1.00	2.00	1.50
	AVERAGE/TOTAL		2.82	4.15	167.5

The trend in wolf numbers since the beginning of the implementation of wolf management plan from 2005 was for the first five years positive and then it turned down during the last four years. The most serious drop happened in the year 2013.

The negative trend in wolf number and the fact that illegal wolf killing is still present form two main arguments against any legal quota on wolves this year.

The regular public meeting on discussing the yearly quota of accepted mortality was not held this year! The ministry in charge of wolf conservation and management decided that it is enough to have the "Yearly wolf status report" and discuss it at the National Large Carnivore Committee meeting. The 2014 wolf report proposes that this year the wolf quota will be 0 (zero). This will certainly raise additional negative reaction from the hunting lobby, but seems that there was no alternative.

LYNX MANAGEMENT

Considering **lynx management** this year a group of authors (including Đuro Huber and Josip Kusak as the first two authors) prepared a 28 page document on the “Lynx population status in Croatia”. The main of 13 conclusions tell that the population size is roughly around 50 individuals, but they are heavily inbred and there is an urgent need for repopulation to increase genetic variability. The Directorate for nature protection of the Ministry for environment and nature protection agreed that the species is critically endangered (CR) and that repopulation is necessary. The Directorate for hunting of the Ministry for agriculture submitted the complaint on that fearing that the eventual rise of lynx population will put roe deer population in threat. In any case the researchers of Croatia and Slovenia plan to submit a LIFE+ project proposal aimed to add new animals to the Dinaric lynx population.

The mayor activity in 2014 was the preparation and submission of the LIFE DinAlp Lynx project. The outcome of the project application will be known during 2015.

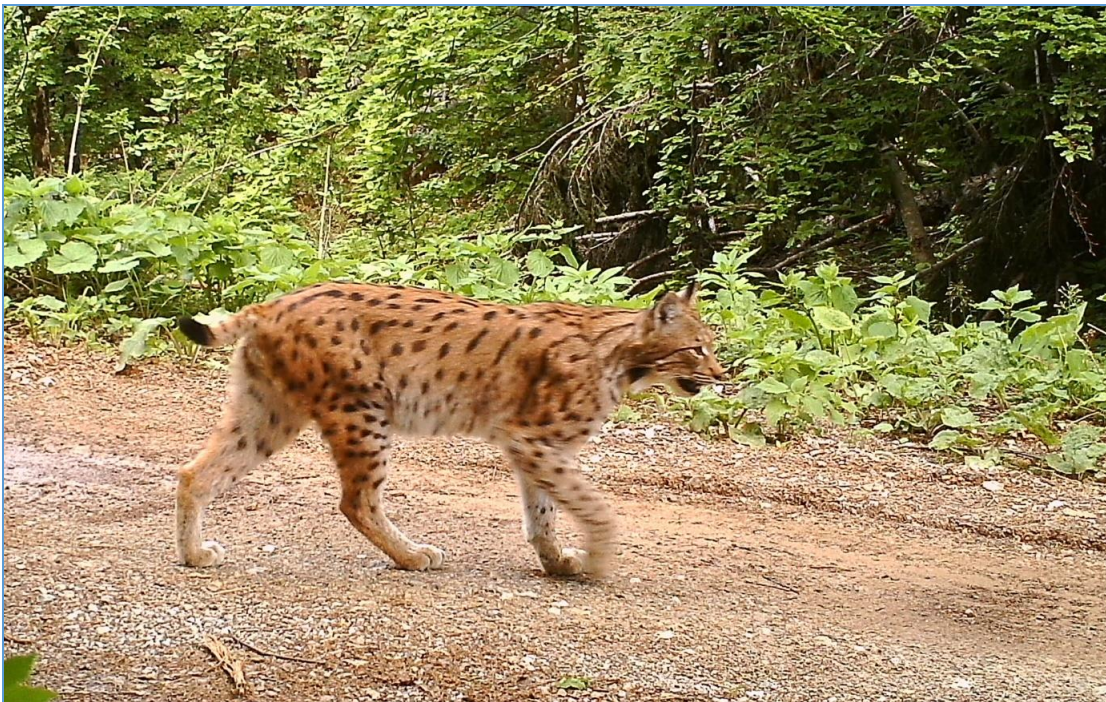


Figure 55: A lynx “captured” with automatic camera in Gorski kotar.

HIGHWAY MITIGATION MEASURES

The LIFE DINALP BEAR project includes the actions around the highways to prevent the animals to get onto the highway. The authors of this study made a field survey of the Rijeka – Zagreb highway fence on 14.04.2014 and 14.11.2014. The sections where the fence will be enforced by adding the electric fence, were decided (30+30 km in total). The data from all previous studies were used for this purpose.



Figure 81 and Figure 82: Đuro Huber, Josip Kusak and Bojan Vivoda ((Rijeka-Zagreb highway company), checking the highway fence on 14.04.2014.

Previously, on 10th and 11th April 2014 they provided new trainings for the highway personnel on how to deal with wildlife on highway.



Figure 83: The course for highway checking personnel on how to deal with wildlife on highway.

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1. Fabbri, E., R. Caniglia, J. Kusak, A. Galov, T. Gomerčić, H. Arbanasić, Đ. Huber, E. Randi (2014): Genetic structure of expanding wolf (*Canis lupus*) populations in Italy and Croatia, and the early steps of the recolonization of the Eastern Alps. *Mammalian biology* 79: 138-148.
2. Galov, A., M. Sindičić, T. Gomerčić, H. Arbanasić, M. Baburić, I. Bošković, T. Florijančić (2014): PCR-based Y chromosome marker for discriminating between golden jackal (*Canis aureus*) and domestic dog (*Canis lupus familiaris*) paternal ancestry. *Conservation Genetics Resources* 6: 275-277
3. Sergiel A, Mašlak R, Zedrosser A, Paško L, Garshelis DL, Reljić S, Huber D (2014) Fellatio in Captive Brown Bears: Evidence of Long Term Effects of Suckling Deprivation? *ZooBiology* 33:349–352.
4. Lazarus M, Sekovanića A, Reljić S, Kusak J, Kovačić J, Orct T, Jurasovića J, Huber Đ (2014) Selenium in brown bears (*Ursus arctos*) from Croatia: Relation to cadmium and mercury. *Journal of Environmental Science and Health, Part A* 49:1392–1401.
5. Astrid V Stronen, Bogumiła Jędrzejewska, Cino Pertoldi, Ditte Demontis, Ettore Randi, Magdalena Niedziałkowska, Małgorzata Pilot, Vadim E Sidorovich, Ihor Dykyy, Josip Kusak, Elena Tsingarska, Ilpo Kojola, Alexandros A Karamanlidis, Aivars Ornicans, Vladimir A Lobkov, Vitalii Dumenko, Sylwia D Czarnomska 2013. North-South Differentiation and a Region of High Diversity in European Wolves (*Canis lupus*). *PLoS ONE* 8(10): e76454. doi:10.1371/journal.pone.0076454.
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7. Sibelle T Villaca, Daniela Biosa, Frank Zachos, Laura Iacolina, Julia Kirschning, Paulo C Alves, Ladislav Paule, Christian Gortazar, Zizzis Mamuris, Bogumila Jedrzejewska, Tomasz Borowik, Vadim E Sidorovich, Josip Kusak, Stefano Costa, Laurent Schley, Gunter B Hartl, Marco Apollonio, Giorgio Bertorelle, Massimo Scandura 2014. Mitochondrial phylogeography of the European wild boar: the effect of climate on genetic diversity and spatial lineage sorting across Europe. *Journal of Biogeography*. <http://wileyonlinelibrary.com/journal/jbi> 1 doi:10.1111/jbi.12268
8. Gomerčić, T., M. Sindičić, T. Florijančić, I. Bošković, Đ. Huber, A. Galov (2013): Differentiating between Y chromosome sequences in Croatian canids - short communication. *Veterinarski arhiv* 83: 571-579.
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11. Huber Đ, Kusak J, Reljić S: Wintering of brown bears in Croatia. Book of Abstracts of the 2nd International Scientific Meeting of Anatomy and Physiology, Fundamentals of Medicine, June 16-17, 2014, Zagreb, Croatia. Oral presentation

12. Skrbinšek T, Jelenčić M, Jerina K, Huber D, Reljić S, Trontelj P: Monitoring of effective population size in a hunted population of brown bears (*Ursus arctos*) shows effects of different management approaches in neighboring countries. Oral presentation. Book of Abstracts of 23rd International Conference on Bear research and Management, October 05-11, 2014, Thessaloniki, Greece.
13. Sergiel A, Mašlak R, Zedrosser A, Paško L, Garshelis DL, Reljić S, Huber D: Fellatio in Captive Brown Bears: Evidence of Long Term Effects of Suckling Deprivation? Oral presentation. Book of Abstracts of 23rd International Conference on Bear research and Management, October 05-11, 2014, Thessaloniki, Greece.
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17. Reljić S, Huber Đ, Kusak J, Beck A, Huber D, Šoštarić-Zuckermann IC, Gudan Kurilj A, Habuš J, Radišić B, Sergiel A, Stefaniak T, Miller J, Wrzosek M, Mašlak R, Crnković. J. Poučki P: Brain and renal B lymphoma in brown bear - case report. Poster presentation. Book of Abstracts of 23rd International Conference on Bear research and Management, October 05-11, 2014, Thessaloniki, Greece.
18. Vranković L, Delaš I, Aladrović J, Beer-Ljubić B, Reljić S, Huber Đ, Stojević Z: Fatty acid composition of subcutaneous fat of brown bears in Croatia. Poster presentation. Book of Abstracts of 23rd International Conference on Bear research and Management, October 05-11, 2014, Thessaloniki, Greece.

FINANCIAL ACCOUNTING

For our work in 2014 UKWCT generously donated a total of 4000 GBP. Most of fund in 2014 was spent for field work; fuel for cars and food for field workers with some minor expenses for the consumable equipment like receiver batteries. Josip Kusak, Pete Haswell and occasional volunteers are doing the entire wolf and lynx related field work.

Table 14: Summary list of expenses made on the project with the use of UKWCT fund during 2014.

PURPOSE	N OF EXPENSES	SUM OF EXPENSES (HRK)
Car-fuel	50	25289.63
Car-highway	44	1243
Car-use (repair)	2	235
Personal-food	80	9501.87
Personal-overnight stay	2	480
Technic-equipment	15	3529.64
TOTAL	193	40279.14

- There might be a minor difference in the total sum due to fluctuations of currency exchange rate during the period of funding use

Table 15: Detailed list of expenses broken down by activities performed on the project with the use of UKWCT fund during 2014.

#	Activity ID	Activity main objective	TIME	TO	Purpose	Receipt#	Amount (HRK)
1	551	Highway survey	10.04.2014 10:12	CRODUX DERIVATI DVA d.o.o.	Personal-food	81922/32603260/5	81.46
2	551	Highway survey	11.04.2014 06:30	CRODUX DERIVATI DVA d.o.o.	Car-fuel	69048/32273227/1	517.00
3	551	Highway survey	11.04.2014 18:06	CRODUX DERIVATI DVA d.o.o.	Personal-food	85020/32203228/1	11.49
4	551	Highway survey	11.04.2014 21:16	WEST Desetka	Personal-food	44541-45-01	26.98
5	553	Animal handling	20.04.2014 22:43	CROBENZ d.d	Car-fuel	94642/32283228/1	688.52
6	554	Trapping	01.05.2014 08:07	INA d. d.	Car-fuel	95684-S006-2	491.88
7	554	Trapping	01.05.2014 12:39	AC RI-ZG	Car-highway	2014050100000123905967	61.00
8	554	Trapping	01.05.2014 13:05	AC RI-ZG	Car-use	2014050175002130568491	35.00
9	554	Trapping	02.05.2014 08:16	Trgovina Krk d.d.	Personal-food	11599/19/1	250.24
10	554	Trapping	02.05.2014 12:06	KONZUM d. d.	Personal-food	24064/0298/1	180.59
11	554	Trapping	03.05.2014 07:38	Trgovina Krk d.d.	Personal-food	11720719/1	79.35
12	554	Trapping	03.05.2014 09:38	TIFON d. o. o.	Car-fuel	052338	566.58
13	554	Trapping	03.05.2014 17:58	AC RI-ZG	Car-highway	20140503750021758750524	35.00
14	554	Trapping	04.05.2014 12:29	Restoran Bitoraj	Personal-food	3252/BAR/1	106.00
15	554	Trapping	04.05.2014 13:47	AC RI-ZG	Car-highway	2014050418005134717905	55.00
16	554	Trapping	04.05.2014 18:31	Mikol d.o.o.	Car-fuel	62259/BPKC/1	615.95
17	558	Wolf search	06.08.2014 16:33	INA d. d.	Car-fuel	152916-S158-1	270.96
18	558	Wolf search	11.08.2014 14:33	Adria Oil d.o.o.	Car-fuel	74361/05/1	92.20
19	558	Wolf search	14.08.2014 11:06	INA d. d.	Car-fuel	132141-S062-1	436.95
20	558	Wolf search	14.08.2014 11:40	Lidl	Personal-food	169167/POSLO169/10203	152.74
21	558	Wolf search	18.08.2014 11:48	INA d. d.	Car-fuel	135187-S062-1	290.52
22	559	Wolf search	04.07.2014 06:55	CRODUX DERIVATI DVA d.o.o.	Car-fuel	0-2630280790	510.01
23	559	Wolf search	04.07.2014 20:43	BILA KC 01	Personal-food	67745/221/5	539.69
24	559	Wolf search	05.07.2014 11:15	AC RI-ZG	Car-highway	2014070560402123002393	51.00
25	559	Wolf search	05.07.2014 12:38	PETROL HRVATSKA d.o.o.	Car-fuel	914699	598.61
26	559	Wolf search	05.07.2014 13:56	Risnjak, NP	Personal-food	4023/PO1/1	23.00
27	559	Wolf search	05.07.2014 16:56	AC RI-ZG	Car-highway	2014070575004165650038	35.00
28	559	Wolf search	05.07.2014 19:42	Urbanek, Pavel	Personal-food	4177-posl-1	120.00
29	559	Wolf search	05.07.2014 20:19	Urbanek, Pavel	Personal-food	4182-posl-1	45.00
30	559	Wolf search	06.07.2014 14:09	Risnjak, NP	Personal-food	4075/PO01/1	210.00
31	559	Wolf search	06.07.2014 17:55	AC RI-ZG	Car-highway	2014070618004175510889	51.00
32	559	Wolf search	06.07.2014 20:04	INA d. d.	Car-fuel	150579-S006-1	476.99
33	560	Trapping	14.07.2014 12:50	Chipoteka	Technic-	11374156664	188.00

#	Activity ID	Activity main objective	TIME	TO	Purpose	Receipt#	Amount (HRK)
					equipment		
34	560	Trapping	14.07.2014 14:03	McDonald's Dubrava	Personal-food	23746/04/05	76.00
35	560	Trapping	14.07.2014 15:46	AC RI-ZG	Car-highway	201407146040215460912	51.00
36	560	Trapping	14.07.2014 16:20	KONZUM d. d.	Personal-food	5119/0284/8	268.28
37	560	Trapping	14.07.2014 17:18	Risnjak, NP	Personal-food	4408/P01/1	22.00
38	560	Trapping	14.07.2014 21:16	INA d. d.	Car-fuel	157034-A006-1	380.00
39	560	Trapping	15.07.2014 12:07	Risnjak, NP	Personal-food	4425/P01/1	7.00
40	560	Trapping	15.07.2014 12:39	Gorancica d.o.o.	Technic-equipment	17932-PJ1-1	96.20
41	560	Trapping	15.07.2014 12:54	Gorancica d.o.o.	Technic-equipment	17933-PJ1-1	5.60
42	560	Trapping	15.07.2014 13:52	Behdeti j.d.o.o.	Personal-food	5354/POS1/1	126.00
43	560	Trapping	15.07.2014 14:42	KONZUM d. d.	Personal-food	6936/0284/6	150.87
44	560	Trapping	16.07.2014 07:30	Raukar, Marina	Personal-overnight stay		320.00
45	560	Trapping	16.07.2014 09:55	Gorancica d.o.o.	Technic-equipment	18025-PJ1-1	20.21
46	560	Trapping	16.07.2014 10:09	AC RI-ZG	Car-highway	2014071660502100928809	4.00
47	560	Trapping	16.07.2014 10:37	TREF Caffè bar	Personal-food	6499/P02/1	39.00
48	560	Trapping	16.07.2014 14:30	OBRT AUTOUSLUGA DELNICE	Car-use	169/A1/2	200.00
49	560	Trapping	16.07.2014 14:33	AC RI-ZG	Car-highway	2014071660402143310842	4.00
50	560	Trapping	16.07.2014 16:12	Behdeti j.d.o.o.	Personal-food	5379/POS1/1	36.00
51	560	Trapping	16.07.2014 19:04	HR autoceste d. o. o.	Car-highway	1090458382	16.00
52	560	Trapping	16.07.2014 19:22	Adria Oil d.o.o.	Car-fuel	61039/05/1	549.05
53	560	Trapping	16.07.2014 19:42	Buffet	Personal-food	900/P1/1	6.00
54	560	Trapping	16.07.2014 19:48	Buffet	Personal-food	901/P1/1	31.00
55	560	Trapping	17.07.2014 11:31	KONZUM d. d.	Personal-food	67462/0547/2	76.92
56	560	Trapping	19.07.2014 11:55	TIFON d. o. o.	Technic-equipment	110776	248.99
57	560	Trapping	19.07.2014 12:40	AC RI-ZG	Car-highway	2014071960402124013098	52.00
58	560	Trapping	19.07.2014 12:46	PETROL HRVATSKA d.o.o.	Technic-equipment	922248	130.00
59	560	Trapping	19.07.2014 13:07	KONZUM d. d.	Personal-food	59533/0284/10	71.74
60	560	Trapping	20.07.2014 07:45	Raukar, Marina	Personal-overnight stay		160.00
61	560	Trapping	20.07.2014 16:51	MARCHE RESTORANI d.o.o.	Personal-food	75477-707-55	48.00
62	560	Trapping	20.07.2014 17:33	AC RI-ZG	Car-highway	2014072018006173370157	55.00
63	560	Trapping	20.07.2014 18:54	CRODUX DERIVATI DVA d.o.o.	Car-fuel	214713/32283228/3	762.17
64	563	Trapping	01.09.2014 14:09	BAUHAUS	Technic-equipment	31392	358.00
65	563	Trapping	01.09.2014 14:33	CRODUX DERIVATI DVA d.o.o.	Personal-food	310151	22.48
66	563	Trapping	02.09.2014 09:54	CRODUX DERIVATI DVA d.o.o.	Technic-equipment	194002/32643664/1	55.97
67	563	Trapping	02.09.2014 10:25	emmezeta.hr	Technic-equipment	21161/100/7	1699.99
68	563	Trapping	02.09.2014 12:23	Trgonom d.o.o.	Technic-equipment	23371-PJ1-1	50.47
69	563	Trapping	02.09.2014 12:29	INA d. d.	Car-fuel	131837-S151-1	555.50
70	563	Trapping	02.09.2014 12:41	INA d. d.	Technic-equipment	131838-S151-1	107.98
71	563	Trapping	02.09.2014 17:22	Behdeti j.d.o.o.	Personal-food	6555/POS1/1	94.00
72	563	Trapping	02.09.2014 17:38	AC RI-ZG	Car-highway	2014090260402173853038	5.00
73	563	Trapping	02.09.2014 20:56	KONZUM d. d.	Personal-food	124618/0284/2	133.45
74	563	Trapping	02.09.2014 22:32	HR autoceste d. o. o.	Car-highway	1090478400	52.00
75	563	Trapping	03.09.2014 13:58	INA d. d.	Car-fuel	145657-S062-1	247.92
76	563	Trapping	03.09.2014 14:20	Lidl	Car-fuel	185261/POSLO169/10203	226.14
77	563	Trapping	04.09.2014 19:20	INA d. d.	Car-fuel	146435-S062-1	595.97
78	563	Trapping	04.09.2014 19:56	KONZUM d. d.	Personal-food	67573/0453/3	321.52
79	563	Trapping	06.09.2014 16:25	OBRT-MONAJO	Personal-food	3807-PJ1/1	72.00
80	563	Trapping	07.09.2014 12:18	INA d. d.	Car-fuel	147903-S062-1	457.55
81	563	Trapping	07.09.2014 12:42	KONZUM d. d.	Personal-food	2976/0453/1	112.03
82	563	Trapping	07.09.2014 19:39	INA d. d.	Car-fuel	137316-S065-1	574.71
83	563	Trapping	08.09.2014 20:28	Libertas bistro	Personal-food	3111/P1/1	129.00
84	563	Trapping	09.09.2014 12:49	HR autoceste d. o. o.	Car-highway	1070256269	10.00
85	563	Trapping	09.09.2014 19:22	INA d. d.	Car-fuel	190551-S158-1	663.03
86	563	Trapping	10.09.2014 12:04	KONZUM d. d.	Personal-food	69425/0453/3	229.01
87	563	Trapping	11.09.2014 18:57	INA d. d.	Car-fuel	150654-S062-1	476.67
88	563	Trapping	12.09.2014 11:38	Zvonimor d.o.o.	Personal-food	13384/PJ2/1	37.00
89	563	Trapping	12.09.2014 12:34	HR autoceste d. o. o.	Car-highway	2070256605	10.00

#	Activity ID	Activity main objective	TIME	TO	Purpose	Receipt#	Amount (HRK)
90	563	Trapping	12.09.2014 15:02	AC RI-ZG	Car-highway	2014091260401150230871	4.00
91	563	Trapping	13.09.2014 13:56	INA d. d.	Car-fuel	138810-5151-1	810.10
92	563	Trapping	13.09.2014 14:17	AC RI-ZG	Car-highway	2014091360603141778904	10.00
93	563	Trapping	13.09.2014 14:36	AC RI-ZG	Car-highway	2014091375004143667443	35.00
94	563	Trapping	14.09.2014 17:31	AC RI-ZG	Car-highway	2014091418006173150446	51.00
95	563	Trapping	14.09.2014 19:41	TIFON d. o. o.	Car-fuel	139409	493.00
96	564	Trapping	15.09.2014 20:18	BILA KC 01	Personal-food	55740/221/4	127.45
97	564	Trapping	16.09.2014 12:40	INA d. d.	Car-fuel	154011-5062-1	576.05
98	564	Trapping	16.09.2014 12:50	IGLU Sport ZG	Technic-equipment	10820/IGM/1	299.25
99	564	Trapping	16.09.2014 16:26	TIFON d. o. o.	Personal-food	184896	47.99
100	564	Trapping	16.09.2014 17:27	HR autoceste d. o. o.	Car-highway	1090481534	63.00
101	564	Trapping	16.09.2014 17:44	KONZUM d. d.	Personal-food	96210/0453/2	151.44
102	564	Trapping	17.09.2014 13:02	Zvonimor d.o.o.	Personal-food	13666/PJ2/1	25.00
103	564	Trapping	17.09.2014 13:19	KONZUM d. d.	Personal-food	96515/0453/2	124.95
104	564	Trapping	18.09.2014 12:30	Zvonimor d.o.o.	Personal-food	13692/PJ2/1	36.00
105	564	Trapping	18.09.2014 12:48	KONZUM d. d.	Personal-food	4149/0453/1	76.73
106	564	Trapping	19.09.2014 14:28	Lidl	Personal-food	198630/POSLO169/10203	333.44
107	564	Trapping	20.09.2014 11:52	INA d. d.	Car-fuel	155789/S062-1	610.03
108	564	Trapping	20.09.2014 12:23	Zvonimor d.o.o.	Personal-food	13777/PJ2/1	77.00
109	564	Trapping	21.09.2014 11:55	KONZUM d. d.	Personal-food	73882/0453/3	244.92
110	564	Trapping	23.09.2014 07:56	Adria Oil d.o.o.	Car-fuel	93326/05/1	521.09
111	564	Trapping	23.09.2014 09:05	AC RI-ZG	Car-highway	2014092360402090565708	52.00
112	564	Trapping	23.09.2014 10:01	Behdeti j.d.o.o.	Personal-food	7003/POS1//1 R-1	127.00
113	564	Trapping	23.09.2014 12:42	AC RI-ZG	Car-highway	2014092360302124219805	5.00
114	564	Trapping	23.09.2014 15:55	HR autoceste d. o. o.	Car-highway	1090348871	10.00
115	564	Trapping	24.09.2014 10:29	INA d. d.	Car-fuel	158096-5062-1	556.34
116	564	Trapping	24.09.2014 11:25	Zvonimor d.o.o.	Personal-food	13937/PJ2/1	63.00
117	564	Trapping	24.09.2014 12:13	KONZUM d. d.	Personal-food	75039/0453/3	265.73
118	564	Trapping	25.09.2014 10:53	INA d. d.	Car-fuel	158712-5062-1	34.99
119	564	Trapping	25.09.2014 11:50	KONZUM d. d.	Personal-food	75439/0453/3	65.05
120	564	Trapping	26.09.2014 12:25	KONZUM d. d.	Personal-food	75825/0453/2	258.42
121	564	Trapping	26.09.2014 12:43	Adria Oil d.o.o.	Car-fuel	94388/05/1	529.06
122	564	Trapping	27.09.2014 12:19	MOST d.o.o.	Personal-food	35738/012/01	43.00
123	564	Trapping	28.09.2014 12:57	KONZUM d. d.	Personal-food	76221/1453/3	78.59
124	564	Trapping	29.09.2014 11:00	Gavranović d.o.o.	Personal-food	44677/399/1	135.42
125	564	Trapping	29.09.2014 11:09	Gavranović d.o.o.	Personal-food	44681/399/1	31.47
126	564	Trapping	30.09.2014 08:19	Gavranović d.o.o.	Personal-food	44787/399/1	101.73
127	564	Trapping	30.09.2014 16:20	INA d. d.	Car-fuel	150413-5065-1	536.08
128	564	Trapping	01.10.2014 19:22	Zvonimor d.o.o.	Personal-food	14315/PJ2/1	76.00
129	564	Trapping	02.10.2014 08:49	AC RI-ZG	Car-highway	2014100218007084938705	63.00
130	564	Trapping	02.10.2014 18:55	TIFON d. o. o.	Car-fuel	149676	672.53
131	565	Trapping	05.10.2014 19:50	TIFON d. o. o.	Car-fuel	151488	370.05
132	565	Trapping	06.10.2014 10:09	MARCHE RESTORANI d.o.o.	Personal-food	69044-701-50	53.00
133	565	Trapping	06.10.2014 10:32	AC RI-ZG	Car-highway	2014100660302103222840	46.00
134	565	Trapping	06.10.2014 14:23	HR autoceste d. o. o.	Car-highway	1090485500	10.00
135	565	Trapping	06.10.2014 16:35	KONZUM d. d.	Personal-food	103188/0453/2	355.92
136	565	Trapping	06.10.2014 16:47	INA d. d.	Car-fuel	165628-5062-1	424.08
137	565	Trapping	07.10.2014 08:51	Gavranović d.o.o.	Personal-food	45926/399/1	40.67
138	565	Trapping	07.10.2014 19:17	Borje restoran	Personal-food	29940/1509/1	29.00
139	565	Trapping	09.10.2014 08:54	Gavranović d.o.o.	Personal-food	46243/399/1	104.32
140	565	Trapping	09.10.2014 13:08	INA d. d.	Car-fuel	102342-S981-1	624.00
141	565	Trapping	09.10.2014 13:09	INA d. d.	Personal-food	102343-S081-1	60.97
142	566	Trapping	20.10.2014 14:59	INA d. d.	Car-fuel	234811-S006-2	520.04
143	566	Trapping	21.10.2014 18:00	Ljekarna DE 01	Personal-food	44605-1-1	180.00
144	566	Trapping	21.10.2014 19:26	BILA KC 01	Personal-food	0221-20141021-02-4829	499.19
145	566	Trapping	23.10.2014 20:59	BILA KC 01	Personal-food	0221-20141023-05-5755	46.78
146	566	Trapping	24.10.2014 07:53	BILA ZG 02	Personal-food	0221-20141024-02-5094	128.40
147	566	Trapping	24.10.2014 10:55	AC RI-ZG	Car-highway	2014102418102105582963	7.00
148	566	Trapping	24.10.2014 11:26	TIFON d. o. o.	Technic-equipment	207586	110.00
149	566	Trapping	24.10.2014 12:06	AC RI-ZG	Car-highway	2014102460302120626684	39.00
150	566	Trapping	24.10.2014 15:05	AC RI-ZG	Car-highway	2014102460522150566371	9.00
151	566	Trapping	25.10.2014 09:53	PETROL HRVATSKA d.o.o.	Car-fuel	970619	654.09
152	566	Trapping	25.10.2014 10:43	AC RI-ZG	Car-highway	2014102560202104320103	12.00
153	566	Trapping	25.10.2014 12:27	Gavranović d.o.o.	Personal-food	49217/399/1	85.45
154	566	Trapping	26.10.2014 15:21	MACOLA d.o.o.	Personal-food	94856-2204-1	170.00

#	Activity ID	Activity main objective	TIME	TO	Purpose	Receipt#	Amount (HRK)
155	566	Trapping	27.10.2014 14:50	INA d. d.	Technic-equipment	177748-S062-1	83.98
156	566	Trapping	27.10.2014 14:50	INA d. d.	Car-fuel	177747-S062-1	565.00
157	566	Trapping	27.10.2014 17:37	KONZUM d. d.	Personal-food	11930/0453/1	302.09
158	566	Trapping	29.10.2014 08:27	Gavranović d.o.o.	Personal-food	49770/399/1	21.99
159	566	Trapping	29.10.2014 15:19	INA d. d.	Car-fuel	164406-S065-1	505.31
160	566	Trapping	30.10.2014 15:05	AC RI-ZG	Car-highway	2014103018004150500587	19.00
161	566	Trapping	30.10.2014 20:27	BILA KC 01	Personal-food	0221-20141030-02-6478	192.85
162	566	Trapping	31.10.2014 20:19	INA d. d.	Car-fuel	325037-S356-1	590.04
163	566	Trapping	01.11.2014 09:37	BILA ZG 02	Personal-food	124495/221/5	52.07
164	566	Trapping	03.11.2014 12:01	KONZUM d. d.	Personal-food	105572/0205/11	76.91
165	566	Trapping	03.11.2014 12:37	AC RI-ZG	Car-highway	2014110310304123700336	19.00
166	566	Trapping	03.11.2014 18:46	INA d. d.	Car-fuel	110582-S081-1	535.60
167	566	Trapping	04.11.2014 14:58	AC RI-ZG	Car-highway	2014110460502145869864	16.00
168	566	Trapping	04.11.2014 15:51	Behdeti j.d.o.o.	Personal-food	7804/POS1/1	89.00
169	566	Trapping	04.11.2014 15:56	AC RI-ZG	Car-highway	2014110460402155691058	4.00
170	566	Trapping	04.11.2014 16:48	KONZUM d. d.	Personal-food	156354/0284/2	131.32
171	566	Trapping	04.11.2014 17:15	AC RI-ZG	Car-fuel	2014110460202171523583	12.00
172	566	Trapping	05.11.2014 11:22	INA d. d.	Car-fuel	167416-S065-1	515.44
173	566	Trapping	06.11.2014 16:55	Gavranović d.o.o.	Personal-food	45271/112/2	192.31
174	566	Trapping	07.11.2014 12:08	Zvonimor d.o.o.	Personal-food	15833/PJ2/1	129.00
175	566	Trapping	07.11.2014 16:58	INA d. d.	Car-fuel	168289-S065-1	566.06
176	566	Trapping	08.11.2014 17:24	AC RI-ZG	Car-highway	2014110818005172406180	19.00
177	567	Highway survey	12.11.2014 20:10	CRODUX DERIVATI DVA d.o.o.	Car-fuel	396323/32283228/1	652.93
178	567	Highway survey	14.11.2014 07:21	CRODUX DERIVATI DVA d.o.o.	Personal-food	374269/32603260/5	72.46
179	567	Highway survey	14.11.2014 07:57	AC RI-ZG	Car-highway	2014111410502075788191	30.00
180	567	Highway survey	14.11.2014 11:23	AC RI-ZG	Car-highway	2014111460202112326073	9.00
181	567	Highway survey	14.11.2014 12:01	AC RI-ZG	Car-highway	2014111460402120195548	12.00
182	567	Highway survey	14.11.2014 14:39	PETROL HRVATSKA d.o.o.	Technic-equipment	979535	75.00
183	567	Highway survey	14.11.2014 17:45	AC RI-ZG	Car-highway	201411460302174530792	5.00
184	567	Highway survey	14.11.2014 20:09	TIFON d. o. o.	Car-fuel	354848	550.61
185	567	Highway survey	14.11.2014 21:30	AC RI-ZG	Car-highway	2014111418004213006578	46.00
186	567	Highway survey	16.11.2014 20:04	INA d. d.	Car-fuel	256604-S006-1	465.31
187	568	Trapping	27.11.2014 12:05	AC RI-ZG	Car-highway	2014112760302120233095	46.00
188	568	Trapping	27.11.2014 14:42	Bedeti, ug. obrt	Personal-food	8283/POS1/1	47.00
189	568	Trapping	27.11.2014 15:37	AC RI-ZG	Car-highway	2014112760502153776031	4.00
190	568	Trapping	27.11.2014 18:01	Risnjak, NP	Personal-food	9906/01/1	15.00
191	568	Trapping	27.11.2014 19:45	TIFON d. o. o.	Car-fuel	364190	674.87
192	568	Trapping	27.11.2014 20:49	AC RI-ZG	Car-highway	2014112718006204911664	51.00
193	568	Trapping	30.11.2014 19:39	INA d. d.	Car-fuel	267048-A006-2	680.05
				TOTAL			40279.14



Josip Kusak