LIFE Lynx

Preventing the extinction of the Dinaric-SE Alpine lynx population through reinforcement and long-term conservation

LIFE16 NAT/SI/000634

Baseline demographic status of SE Alpine and Dinaric lynx population

Action A.3

Vedran Slijepčević, Urša Fležar, Marjeta Konec,Tomaž Skrbinšek, Matej Bartol, Aleš Pičulin, Andrej Rot, Rok Černe, Miha Krofel, Lan Hočevar, Hubert Potočnik, Ivan Kos, Franc Kljun, Magda Sindičić, Anja Molinari-Jobin, Paolo Molinari, Dario De Martin, Ivana Selanac, Ivan Budinski, Zdravko Budimir, Tomislav Gomerčić

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ZAVOD za GOZDOVE SLOVENIJE
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Introduction

Monitoring of the lynx population in the Dinarics and SE Alps over the last two decades had mainly been based on the collection of opportunistically recorded signs of presence, occasional camera-trapping and direct observations classified according to the SCALP categorization. In some regions, even the range distribution of lynx is unclear and there were no reliable estimations of population size, based on solid scientific methodology. Recent advancements in monitoring methods can improve our understanding of endangered wildlife populations and address the threats they face. Prior to the start of the project efforts, there was no reliable transboundary monitoring of the demography of the Dinaric-SE Alpine lynx population.

In some pilot areas in Slovenia, lynx were monitored using telemetry, snow tracking and non-invasive genetics. It was estimated that approximately 10-15 resident animals were present in the country (some of them shared with neighbouring countries) and their number was declining. In Croatia, the population size estimation was based on local expert opinions (National Management Plan (Sindičić et al. 2010), Population status report 2011, 2012) (Huber et al. 2013)). All of them agreed there had not been enough monitoring data for a robust population size estimation, but that all the evidence suggested that the population was decreasing with an optimistic maximum of 40 - 60 animals present in Croatia. According to that, lynx was listed as critically endangered - CR (D) in national IUCN Red List category in 2013. Between 2014 and 2017 in Croatia about 1000 km2 were monitored with 15 camera traps. A total of 20 adult animals were identified, but numerous individuals identified in the first year have never been observed again. Last data about the genetic status of the Dinaric lynx population include samples collected up to the year 2010 (Sindičić et al. 2013). In Italy, the Regione Friuli V.G. is the only region where lynx were consistently present during the past 20 years. The monitoring was based on the collection of signs of presence, camera-trapping and telemetry and the number of lynx was estimated at 5-7 individuals in peak years.

The goal of the LIFE Lynx A3 action was therefore to obtain information about the current genetic status, abundance, and sex-specific territorial distribution of lynx in potential release areas in NW Dinaric mountains prior to the translocations of lynx from the Carpathian population (action C3). This report presents the data collected during the 2018 – 2019 period, highlighting the areas were lynx reproduction (females with kittens) were detected. Ideally, a translocated lynx would be placed in a territory of an animal of the opposite sex and without territorial lynx of the same sex. Therefore, the results of this report aim to assist the choice of the release locations and optimize the reinforcement process.

Methodology

We used non-invasive genetic sampling and camera trapping as main methodology to assess the demographic status of lynx in the Dinarics and SE Alps. Camera trapping in Slovenia started in autumn 2018 and continued until spring 2019, while in Croatia it started in spring 2018 and continued

uninterruptedly. The methods were complemented by a-priori questionnaires about lynx presence that had been sent to the hunting clubs and other owners of hunting rights in the Dinarics and the SE Alps. The implementation of methodology was coordinated through international cooperation of Italian, Slovenian and Croatian project partners.

Most of the data was collected within LIFE Lynx project, but as we are at the same time implementing other national or international lynx-related projects (Interreg CE 3Lynx, Interreg Carnivora Dinarica, Slovenian large carnivore monitoring scheme, Long term monitoring of lynxes in National park Plitvice lakes, Croatia) as well as opportunistic data collection (e.g. via private camera trapping), we show the demography of lynx based on all available data.

Questionnaires

In Croatia, data about lynx presence was gathered from hunting grounds through interviews, in person or over the phone with the person in charge for hunting ground management or with game wardens. In larger hunting grounds, multiple persons were interviewed (game wardens were asked about lynx presence only in their area, not for the entire hunting ground), so totally 93 persons representing 60 hunting grounds were interviewed. This was the opportunity to establish a first contact with hunting grounds, present the project and also discuss their view of lynx distribution and overall situation in detail. Previous experience showed low response rate to questionnaires sent by mail, so personal approach was used to collect more data. Questions about the following were asked:

- signs of lynx presence in the hunting ground in the last year
- hunters estimation of lynx numbers in their hunting ground
- willingness for cooperation in camera trapping within LIFE Lynx project.

In Slovenia, 200 questionnaires were distributed to hunting grounds in the Dinaric and the Alpine part of the country (Figure 4). The questionnaire consisted of questions about:

- signs of lynx presence in the hunting ground in the last period between bear counts (yes/no)
- type of signs of presence observed (tracks, visual observations, prey, scat, photo).

Questionnaires were filled in by the representatives of the hunting grounds which mainly communicated the questions among the members of their hunting grounds so all information about lynx could be reported.

In Italy, 3 meetings were organized where five administrative units reported lynx presence.

For the interpretation of lynx signs of presence, we used the SCALP criteria (Molinari-Jobin et al. 2012) which distinguish between hard fact data (C1), confirmed data (C2) and data not verified because too old or badly documented (C3).

We used the results of the questionnaires, together with the SCALP report (2017), as a guidance for defining the range of the area in Slovenia and Croatia to be included in lynx camera trapping and to focus our efforts on the non-invasive genetic sampling.

Camera trapping

Camera trapping was chosen as one of the fundamental methods to assess the demographic status of the lynx population in the Dinaric and SE Alpine region. The method has already been successfully used to monitor Eurasian and Iberian lynxes in Europe, e.g. Switzerland (Capt 2007, Zimmermann et al. 2013), Germany (Weingarth et al. 2012, Weingarth et al. 2015), Czech Republic, Slovakia (Kutal et al. 2013), Republic of North Macedonia (Melovski et al. 2009) and Spain (Gil-Sanchez et al. 2011, Garrote et al. 2011). Camera traps enable us to individually distinguish lynxes based on their fur pattern, to

gain data about reproduction, as well as estimate minimum population size. Placing camera traps strategically on locations which are potentially frequently used by lynx (certain logging roads, mountain trails, passes, game paths and marking locations) (Figure 1) enables us to get pictures of both territorial lynx as well as lynx that are in dispersal. Based on photos from both sides of the body (left and right), individual lynx can be identified and monitored. Also, in some occasions, lynx sex can be determined if his perineal area is photographed, or if a female was photographed with kittens. To standardize camera trapping methodology we produced and distributed "Lynx camera trapping guidelines" (Stergar & Slijepčević 2017), a guide for project staff and volunteers. Collaboration with local hunters or other volunteers was essential as each hunter was retrieving data from all camera traps in his/her hunting ground and sending it to the contact person from a coordinating beneficiary (VUKA, FVM, BIOM, SFS and UL). Large scale surveys are not easy to conduct, so their involvement was crucial for obtaining this data. It is important to stress that the collaboration is improving, especially in Croatia.

Figure 1. Camera trap set on lynx resting place

Since the lynxes are territorial animals, the entire project area map was covered with 10x10 km grid in order to get a better orientation with setting camera traps and ensure better coverage of project area. The goal was to set at least 1 camera trap in each square.

A total of 237 camera traps financed by LIFE Lynx project were activated within the project area, 107 in Croatia, 95 in Slovenia and 35 in Italy (Figure 2). In Slovenia additional 97 cameras were set up as a part of two other projects (Interreg CE 3Lynx and Slovenian large carnivore monitoring scheme), aiming specifically at monitoring lynx in state's special purpose hunting grounds (for more details on camera

trapping in Slovenia, see Fležar et al. 2019). The density of camera trap locations was highest in Slovenia, with 161 camera trapping locations in an area of 3.123 km2 which represents the density of 1 camera per 19,39 km2. In Croatia, the area of lynx distribution is around 9.500 km2 , so the 107 cameras set on that surface represent a density of 1 camera per 88,78 km2. In Italy, project area is 10.743 km2, with 35 camera traps. That represents a density of 1 camera per 306,94 km2. At some locations, two cameras were set opposite to each other in order to record a passing lynx from both sides of the body and get a full picture of the coat pattern. Additionally, we obtained records from camera traps owned by hunters. Also, pictures from other monitoring projects from Plitvička jezera National park, Paklenica National park, Nature park Velebit and Public institution "Priroda", Croatia were added to analysis. All good quality lynx pictures that were collected in Slovenia and Croatia were entered into lynx database (http://lynx.vef.hr) with the information about the record date, time and location (GPS coordinates), and lynx sex (male/female/unknown), age estimation (adult/juvenile) and name (individual identification).

All photos recorded by camera traps were imported to program Camelot (Hendry and Mann, 2018) and annotated (the species, sex and life stage of each individual animal on the photo was determined). Additionally, lynx photos were imported to lynx.vef.hr database and used for individual identification, while the lower quality images were used only to determine lynx distribution. As sexual dimorphism in Eurasian lynx is cryptic, the only certain way to sex them is to get a clear photograph (or a video) of their perineal area, or document females with kittens. On locations like marking places, where they turned around while marking, we mostly managed to define their sex.

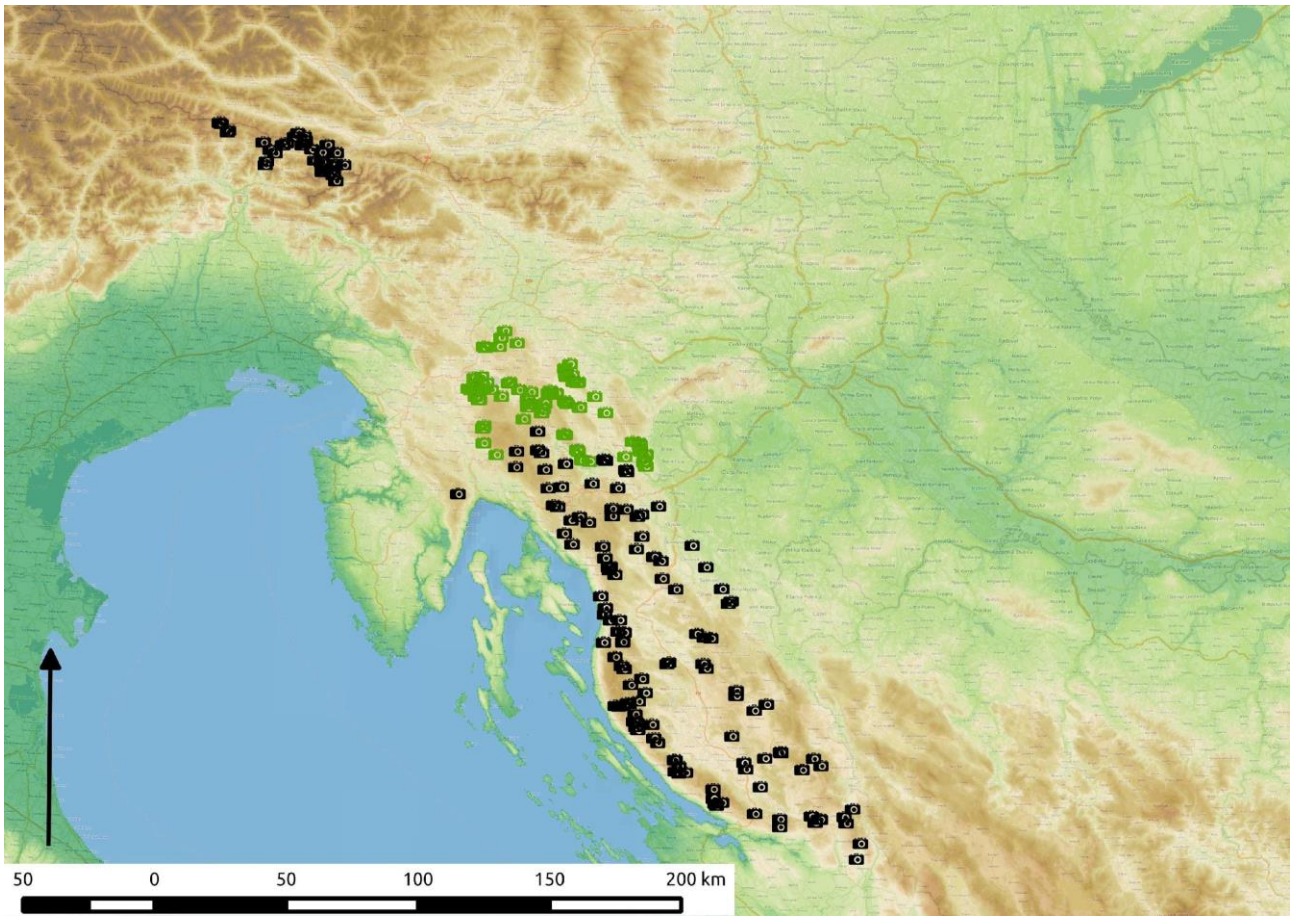

Figure 2. Map with locations of all LIFE Lynx camera traps for lynx monitoring in Italy, Slovenia and Croatia during 2018/19

Non-invasive genetic sampling

Different approaches for collecting non-invasive genetic samples were used: hair traps, snow tracking, opportunistic sampling and sampling lynx kills. To improve genetic sampling, we produced "Genetic sampling guidelines" (Skrbinšek 2017), that was distributed among project staff and volunteers. In Croatia and Italy, workshops were organized for volunteers and foresters, respectively, to inspire them to participate in sampling and educate them about appropriate methodology.

Hair traps were specially developed for sample collection within this project – both passive hair pad and active coil spring (Smolej 2018) (Figure 3). The main principle of hair traps is activating feline psycho-sexual reaction to catnip, which is used as bait on the hair trap mixed with vaseline and castoreum. When lynx approaches, smell of catnip triggers a rubbing behaviour against the hair trap which catches some hair.

Figure 3. Hair trap for lynx

Overall, 98 hair traps were activated in Croatia and Slovenia. Camera trap was installed next to hair traps to record the rubbing animal so we could connect genetic data with the visual identity of the animal. Project staff and volunteers, including hunters, visited hair traps at least every two weeks because hair samples should be collected as soon as possible to avoid DNA degradation, as quality of the DNA affects the genotyping success rate.

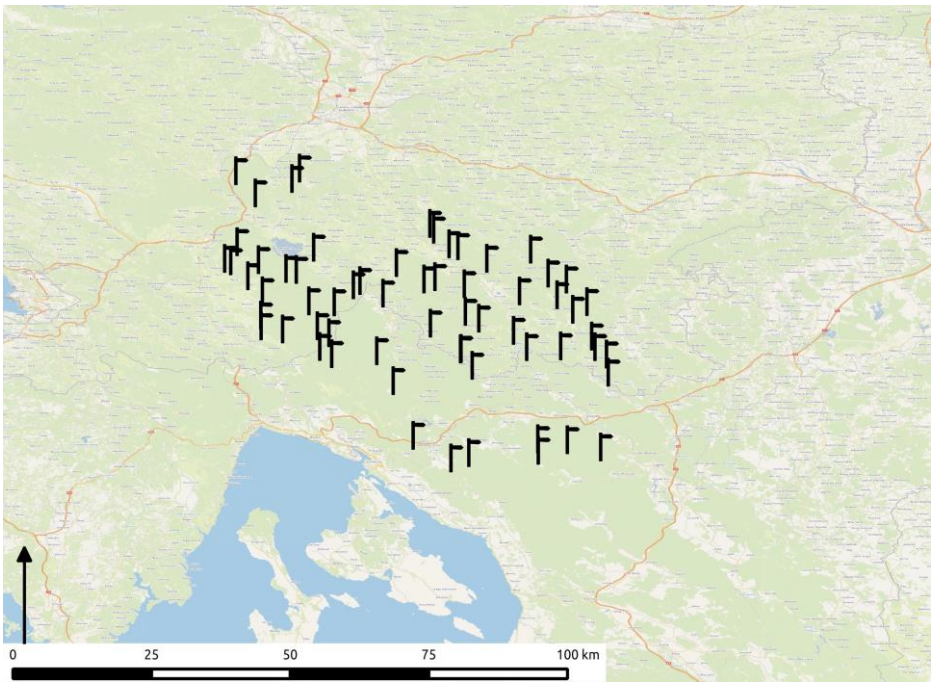

Figure 4. Map with locations of lynx hair traps active in Slovenia and Croatia in 2018/2019.

Snow tracking has proved to be one of the most effective methodologies for collecting lynx genetic samples for several reasons. Firstly by following fresh lynx tracks in the snow, we can find and collect lynx urine, faeces, hair or prey remains (so lynx saliva swabs can be taken). Secondly, most of the samples collected this way are fresh and well conserved by the low temperatures. In cases during snowtracking, on a few occasions, snowtracked lynx has passed in front of a camera trap, so the snowtracking genetic samples could be connected to photoidentified animal.

Figure 5. Collecting lynx hair during snow tracking

Lynx kill is usually found by systematic snow tracking during the winter or by hunters, foresters or other

people that are present in lynx habitat. In those occasions lynx saliva samples were taken if saliva was found on their kills.

All gathered samples were analysed at Biotechnical Faculty University of Ljubljana (see Report on genetic data).

Results

Questionnaires

Data about lynx presence was gathered from 260 hunting grounds in Slovenia (200) and Croatia (60) (Figure 4). In Croatia 42 hunting grounds reported lynx presence, while in 18 hunting grounds signs of lynx presence were not recorded by hunters. In Slovenia, 48 hunting grounds confirmed lynx presence, 150 declared no lynx presence and 2 hunting grounds did not answer the questionnaire. Interestingly, 9 hunting grounds in the pre-alpine area and one in the Alpine area confirmed lynx presence. Since no lynx presence was reported there in the past and lynx distribution was assumed to be limited to the Dinaric mountains, this information was especially valuable.

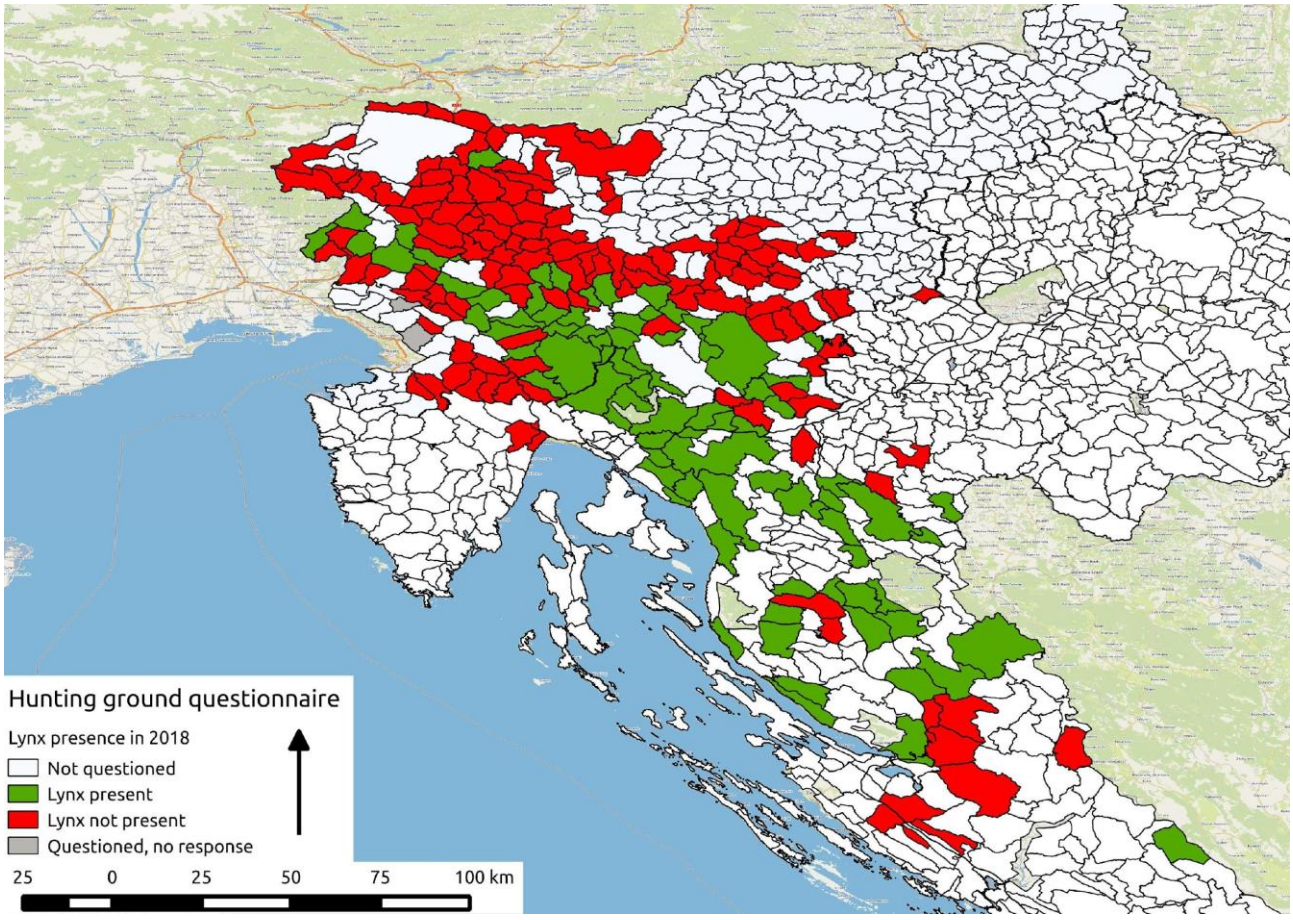

Figure 4. Map with borders of hunting grounds in Slovenia and Croatia. Hunting grounds that confirmed lynx presence are coloured in green, hunting grounds that deny lynx presence are coloured in red, grey are the ones that did not respond (n=2) and the white are the ones that were not questioned.

Camera trapping

Based on photos and videos collected during the 2018 and 2019 in Slovenia, Croatia and Italy we

identified a total of 71 adult lynxes and 31 kittens. Out of 71 adults we identified 15 males, 27 females and for 29 lynxes we could not identify the sex. In Slovenia a total of 19 adult animals (6 females, 4 males, 9 unknown sex) and 5 kittens were identified; in Croatia 51 adult lynxes (20 females, 11 males, 20 unknown sex) and 26 kittens; in Italy one adult female was identified (Table 1). Two animals (Mišo and Marta) were documented both in Croatia and Slovenia. Male lynx named "Mišo" was first documented in Croatia and then emigrated to Slovenia, where it was detected only once so we cannot conclude whether it was in dispersal or in mating excursion. A female lynx named Marta was first documented in Slovenia - in the very north of Dinarics, moved to Croatia and has been recorded there multiple times since the beginning of 2019. It is likely that she dispersed and will establish a territory around Risnjak National park.

Table 1. Individual adult lynx that were identified in Slovenia, Croatia and Italy during the monitoring season 2018/2019, with information about the body position of the recording, the number of recordings and the number of kittens (for reproductive females). Lynx photographed on different sides in different events on the same or nearby locations are joined within bordered area (considered to most likely to be the same animal).

	INDIVIDUAL LYNX	SEX	POSITION	NO. OF KITTENS	NO. OF RECORDINGS	2018	2019
Slovenia	Draga_1	F	both	2	13	x	x
	Glazuta_2016	F	left	1	6	x	x
	Jurjeva_1	F	right	1	1	x	
	Jurjeva_2 (Marta)	F	right		2	x	
	MalaGora_1	F	both		23	x	x
	Rog_1	F	right	1	2	x	x
	VelikaGora_1	F	right		2	x	
	Draga_2	M	both		14	x	x
	Jurjeva_3 (Mišo)	M	both		13	x	
	Hrusica_1	M	both		23	x	x
	Stojna_1	M	both		10	x	x
	Gomance_1	-	left		2	x	
	Javorje_1	-	right		2		x
	Javorniki_1	-	left		2	x	
	Kambrce_1	-	both		2		x
	Osilnica_1	-	both		4	x	
	Osilnica_2	-	both		10	x	x
	PoljanskaGora_1	-	both		15	x	x
	Stojna_2	-	left		8	x	x
	VelikaGora_2	-	right		2		x
Croatia	Andreja	F	right		21		x
	CRO231	F	both		2	x	x

CRO277	F	both	1	7	x	x
CRO326_2	F	both	1	7		x
CRO329_2 (Spot)	F	both	2	9	x	x
CRO329_3	F	both		1		x
CRO329_4	F	both		1		x
CRO372_1	F	both		9	x	x
Vida (CRO446_3)	F	both	2	1		x
Golo trlo 3	F	right	1	1		x
Jasmina	F	both	2	2	x	x
L11	F	both	1	1		x
Silvia (L14)	F	both		2		x
L5	F	both	2	2	x	x
Marta	F	both		3	x	x
Milka	F	left	2	5	x	x
Miška	F	both	1	7	x	x
Stella L13	F	both	3	7	x	
Tamara	F	left	2	1		x
L13 Velebit	F	right		1		x
CRO327	M	both		4	x	x
Mišo (Jurjeva 3)	M	both		13	x	
CRO372	M	right		1	x	
Damir	M	both		13	x	x
Draž	M	left		2		x
Draž 2	-	right		1		x
Hibler	M	both		4		x
Ivica L15	M	both		8	x	
L9 Velebit	M	both		4	x	x
LCRO18 (dead)	M	both		1	x	
Marko ZIP	M	both		13	x	x
Martin	M	both		5	x	
Pačo	M	both		14	x	x
Paul	M	both		23	x	x
CRO230	-	right		1	x	
CRO279	-	left		1	x	
CRO330_1	-	left		1		x
CRO583	-	both		8	x	x
CRO584	-	right		2	x	x
CRO584L	-	left		1		x

	Godača	-	right	1	x	
	Godača 2	-	left	1	x	x
	Golo trlo	-	left	1	x	
	Golo trlo 2	-	left	1		x
	Hamlet	-	left	1	x	
	Ilija	-	both	4	x	x
	Kapela	-	right	1	x	
	Kapela 2	-	left	1		x
	L10	-	right	2	x	x
	L12	-	right	4	x	x
	L3	-	both	2	x	
	L4	-	right	2	x	x
	L6	-	both	8	x	x
	L7	-	left	1	x	
	L8	-	right	3	x	
	Mufasa	-	left	1	x	
	R1	-	left	4	x	x
	R3	-	left	3	x	
	R4	-	right	2	x	
	R5	-	both	2	x	
	Tomislav	-	right	1	x	
Italy	Jura	F	left	2	x	

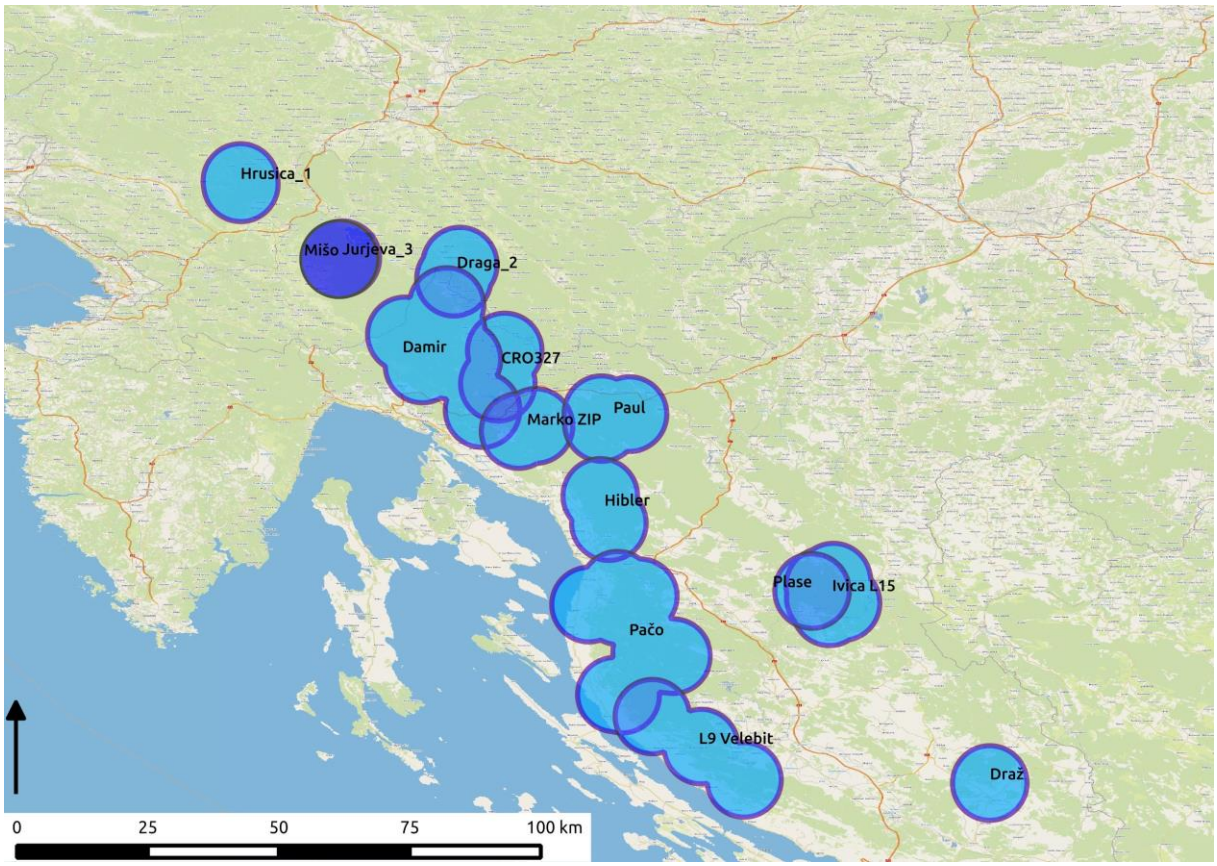

Figure 8. Map with presumed male lynx territories, 200 km2 buffers were made around locations of identified male lynx.

Out of 27 female lynx that were identified, 9 were documented without reproduction and 16 with 1 to 3 kittens (Table 1, Figure 10). However, the cases where kittens were not documented does not mean that the female has not reproduced, maybe she was not photographed with kittens. Overall, we documented 25 lynx kittens with females and additional 6 that were recorded on other locations and not found related to any identified female (Figure 10).

In the Alpine part, there is only one documented female lynx named Jura that was photographed on two locations (Table 1).

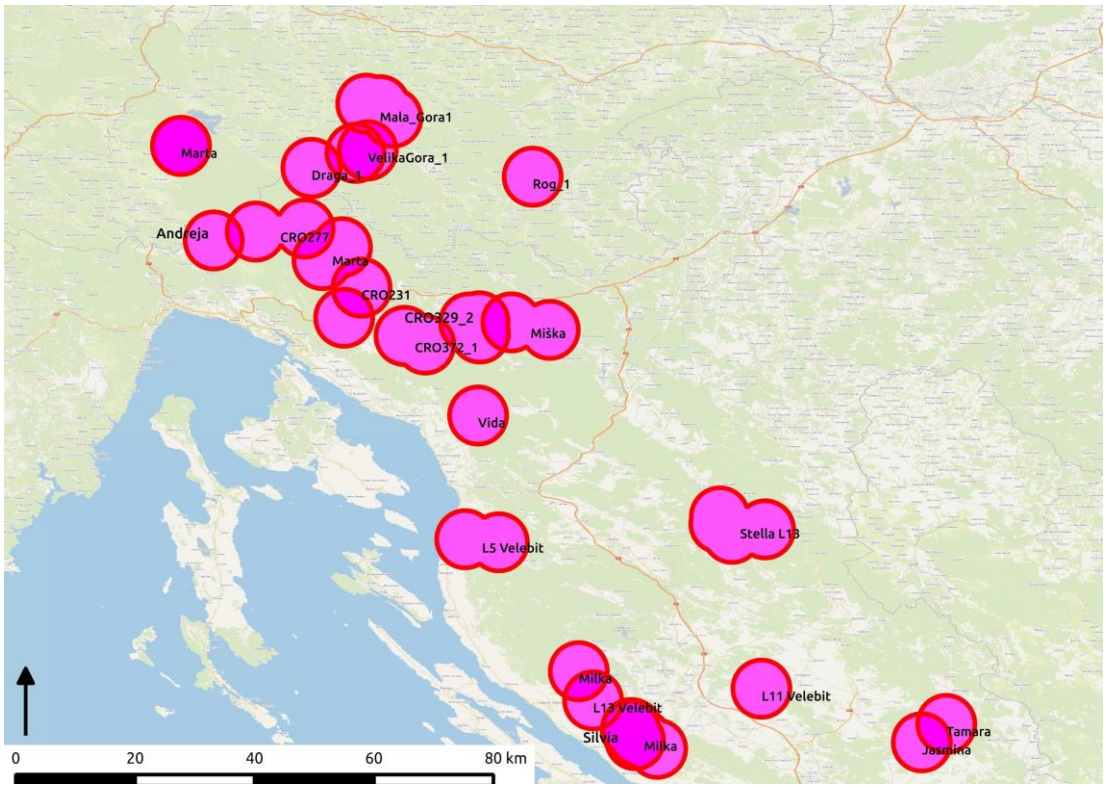

Figure 9. Map with presumed female lynx territories in Dinarics, 100 km2 buffers were made around locations of identified female lynx.

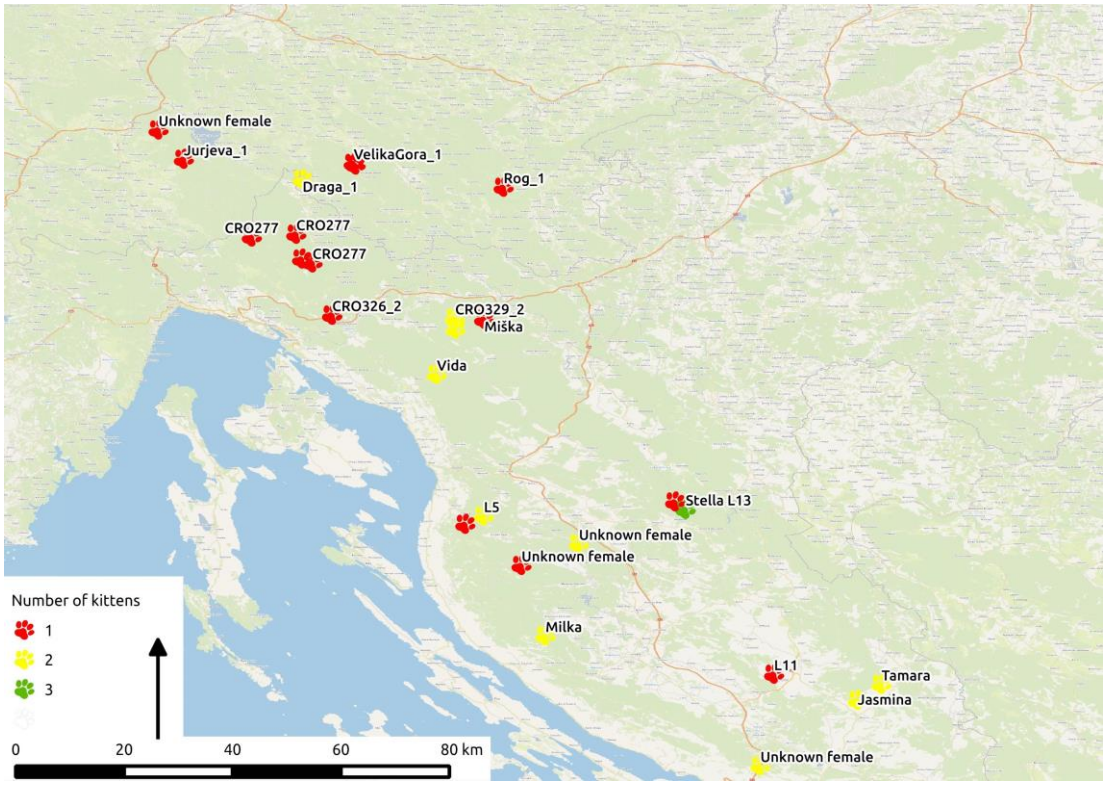

Figure 10. Map with documented lynx reproduction, colours of the paws indicate the number of kittens next to the name of a mother.

A large proportion of the recordings were of too poor quality to be used for determining identity or sex of the lynx. In Slovenia and Croatia, 9 and 20 additional lynx of unknown sex were identified, respectively (Table 1, Figure 11).

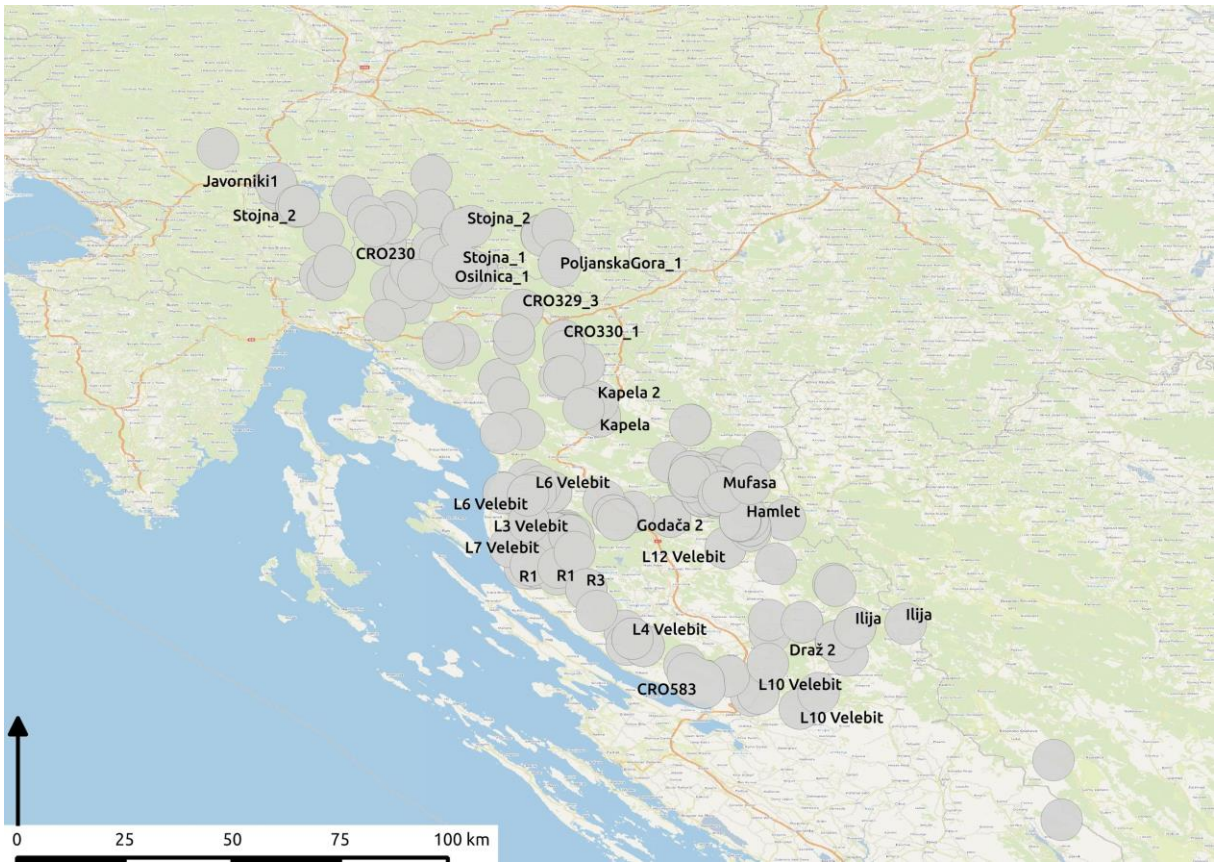

Figure 11. Map with presumed territories of lynx with unknown gender, 100 km2 buffers were made around locations of identified lynx (unidentified lynx remained nameless).

Non-invasive genetic sampling

As lynx have shown the tendency to notice (and rub against) only the hair traps set on their usual marking locations (Figure 5), the number of collected hair samples was low in general. In Croatia, hair traps were placed only on marking locations (10) and on 8 of them we collected hair samples. As there is very limited information of lynx marking locations in middle and southern parts of Croatia, no hair traps were set there in this period. In Slovenia, a larger number of hair traps (n=54) were activated on randomly chosen locations together with some of the camera traps and had less success with sampling. Lynx was recorded by camera traps at 11 locations where hair traps were 20 present. At only two locations it was recorded using the hair traps however, the hair caught
on the trap did not yield any genetic results. On all others recordings of lynx at hair-traps, lynx did not show any signs of detecting the hair-trap.

As two types of hair traps were used – passive and active hair traps, we used this opportunity to compare the effectiveness of each system. Currently it seems that the passive system works better, especially when installed at marking sites. Their disadvantage however, is cross contamination of samples – it was common for more than one lynx to use the hair trap before the hair was collected, so the samples contained hair of 2 or more lynx in several occasions. This was mostly observed when females with kittens visited a hair trap together (Figure 12).

Figure 12. Lynx kitten investigating a hair trap.

A total of 147 genetic samples were collected in the period between July 1st 2017 and July 1st 2019, of which 9 samples were invasive, and 138 non-invasive (Table 2). Out of those, 80 samples were successfully genotyped, while the remaining 67 had to be discarded because of poor quality. Microsatellite genotyping identified 32 individuals - 15 females and 17 males (multiple samples were collected from the same animal, totally 54 male samples and 26 from females) (Table 3). We will improve the degree of connection between photoidentified and genotyped lynx in further analyses.

Table 2. Number of collected genetic samples and number of genotyped individual male or female lynx.

Sample type	Number of samples	Males	Females
Blood	4	2	2
Hair	60	9	3
Saliva	15	1	1
Scat	26	2	5
Tissue	4	1	3
Urine	38		3
Total	*147*	*15*	*17*

Table 3. Successfully genotyped lynx.

females		**males**	
sample	**animal**	**sample**	**animal**
Blood	M1YEH	Blood	M1YEK
Blood	M2F4K	Blood	M2C7E
Hair	H002	Hair	AJ.04LC

Hair	M1YYM	Hair	M2E0Y
Hair	M28U7	Hair	M2EPK
Hair	M28UL	Saliva	M2822
Hair	M28UM	Scat	M08HM
Hair	M2ALY	Scat	M2AC1
Hair	M2C2Y	Scat	M2AL1
Hair	M2CFL	Scat	M2CY5_3
Hair	M2CYM	Scat	M2E1A
Saliva	M2A21	Tissue	M1YE8
Scat	M0AK3	Tissue	M2E0C
Scat	M21EX	Tissue	M2F4J
Tissue	M2AYA	Urine	M1XFL
		Urine	M2CFM
		Urine	M2CUJ

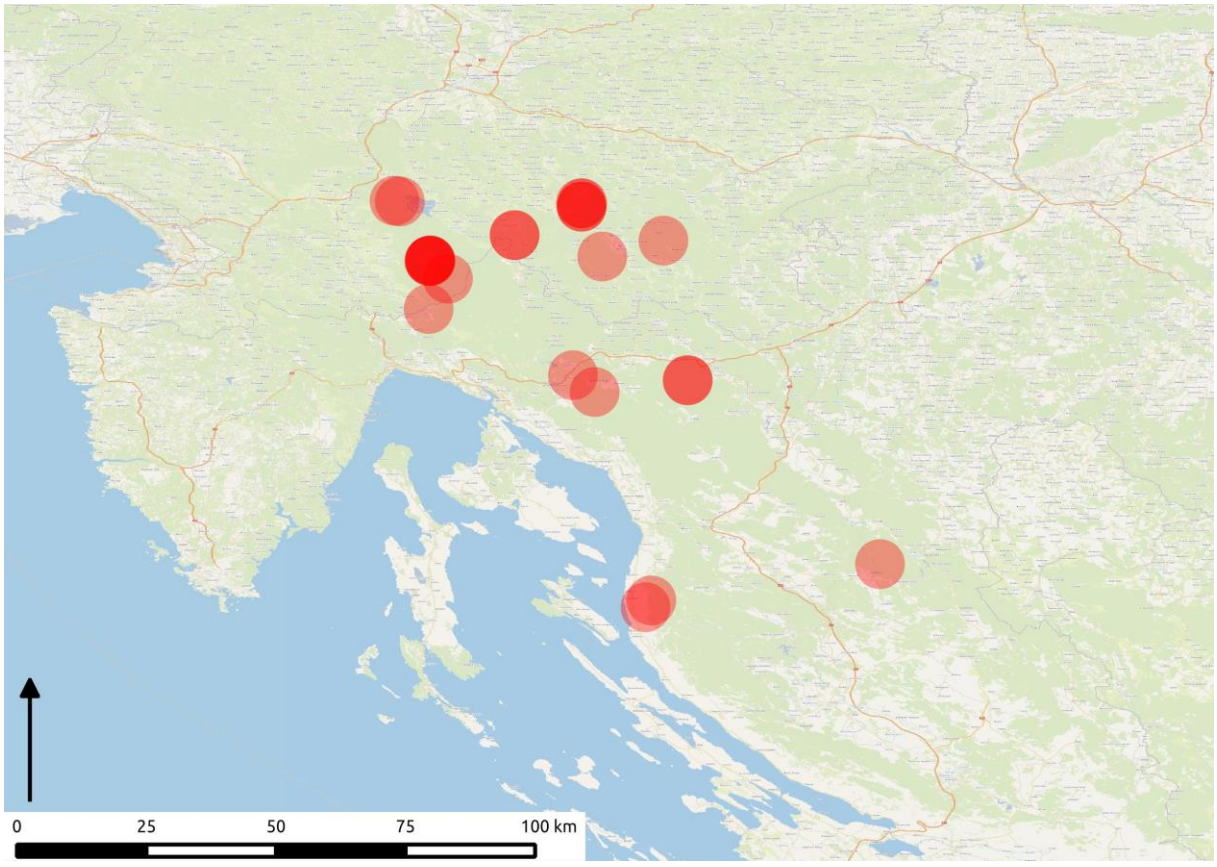

Figure 13. Map with genetically detected female lynx (n=15) in the Dinarics, each with a 100 km^2 buffer indicating potential territories.

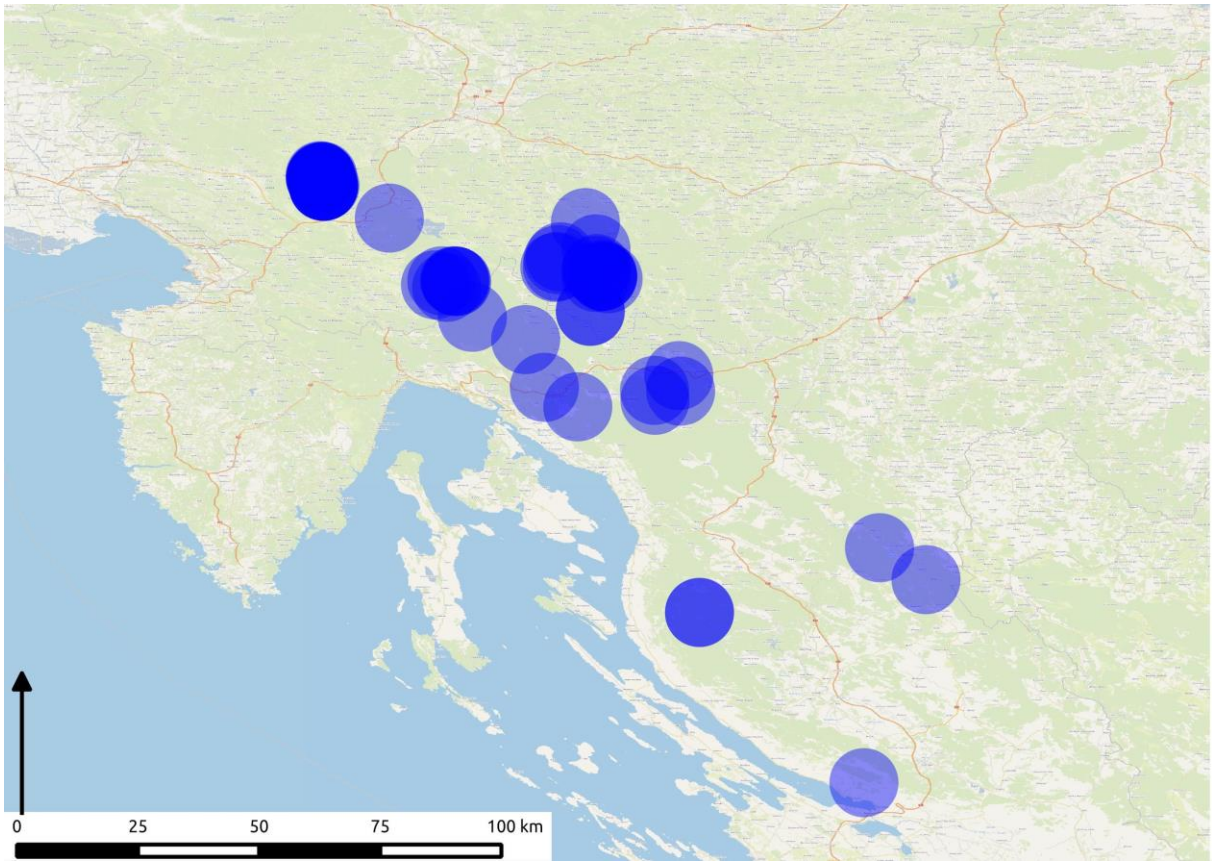

Figure 14. Map with genetically detected male lynx (n=17) in the Dinarics, each with a 200 km² buffer indicating potential territories.

Conclusions

This report provides an overview of the lynx distribution and demography that can be used for planning lynx translocations. For the most of the project area, we now know detailed distribution and in the best case also sex of the territorial animals. Using this data, we will be able to optimize the translocation activities to such an extent that we avoid introducing animals of the same sex into occupied teritories.

We can conclude that contacting hunting grounds by questionnaires was very useful, especially first contact with some hunting clubs that opened opportunities for collaboration. We can see how the distribution map made based on questionnaires corresponds to collected signs of presence, which confirms the importance of data from hunters.

According to all signs of presence (photos, genetic samples, mortality, lynx sightings, footprints, lynx prey) collected in the reporting period lynx are permanently present in the area from Slovenian Dinarics (with Javorniki being the Northern edge of the range of permanent presence, with an additional lynx being identified even more North in the Zahodno-visoko Kraško region (“Hrusica_1”) through Croatian Dinarics to Lička Plješivica. Outside this core area lynx presence was reported in Pelješac, Croatia, and in Jelovica, Slovenia, but this data was not confirmed by hard evidence (Figure 15; the Northernmost and Southernmost C3 points). It is interesting to compare distribution confirmed by this data and the one indicated by hunters (Figure 15). In Slovenia, they reported wider lynx

distribution, especially in the pre-Alpine area, so we will aim to extend the camera trapping grid there in the following season.

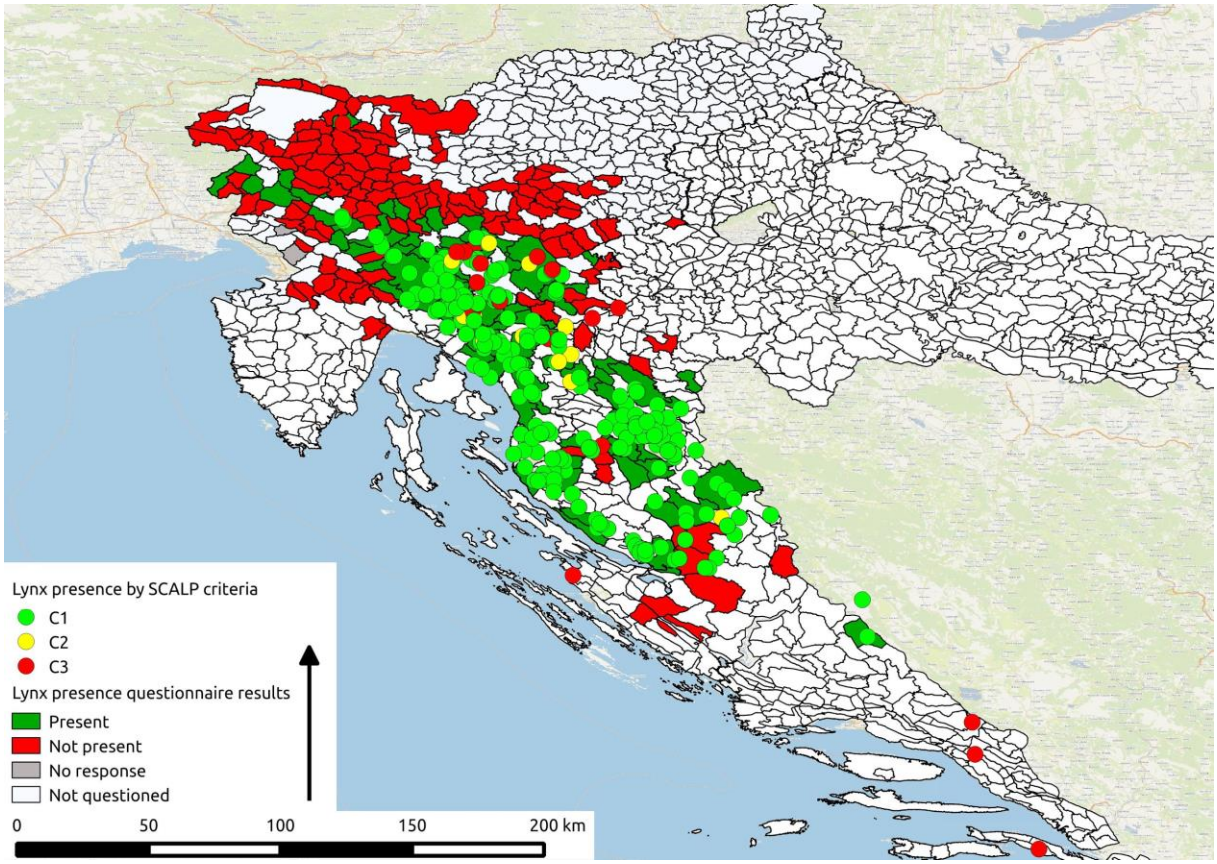

Figure 15. Comparison of hunter questionnaire results to lynx presence data evaluated by SCALP criteria.

In Slovenia, the minimum population size obtained with camera trapping gave encouraging results. The population seems to be larger than previously thought (10-15 individuals, Kos et al (2012)). We expected to record more reproductive females in Slovenia, however we found at least three females with kittens where it was believed to be less lynx in general (in Kočevsko).

In Croatia, previous estimates of lynx population size were around 40 - 60 individuals (Sindičić et al. 2010). Now we confirmed 51 adult lynx and 26 kittens. It is important to emphasize numerous animals were photographed from only one side of the body, so based on the location where they were documented for 8 pairs of right + left identified lynxes we doubt it might be the same animal. Due to that the span for minimal observed population in Croatia is 43 - 51 adult lynxes. However, we believe that certain number of lynxes were not documented due to problems in finding good camera trap locations or lower density of camera traps in some areas. We will continue in promoting collaboration with hunting clubs and building knowledge of better camera trapping locations.

Unfortunately, most of the collected kitten photographs were low in resolution so we will not be able to recognize the kittens in the upcoming seasons of camera trapping. To improve the quality of the acquired recordings, choosing the camera trap with appropriate flash functions accurately for the situation in which it is set up is important. For example, a white flash camera traps is a preferred option at locations, where lynx is assumed to be passing by, while a camera with black infrared flash could be used at a lynx marking site. Two cameras are also preferred at sites, where lynx is passing by, to record

it from both sides of the body. Moreover, the density of camera trapping locations was higher in Slovenia, which could influence the quality of the demographic results. We think that the minimum population size obtained for Slovenia would not change dramatically if we further increased the density of camera traps, however some changes in the number of identified lynx could occur if the additional camera traps were set in Croatia.

Genetic analysis and camera trapping are both reliable methods for studying lynx population parameters, however for determining population size and sex specific territorial distribution, data from both methods should be combined. We unfortunately could not combine the majority of the data in this season due to poor success with hair trapping. The method should be improved for the upcoming seasons, especially in Slovenia where hair traps should be placed on known marking sites only.

Importantly, the lynx population size in the Dinarics and SE Alps, reported in this document, lacks information about the lynx in Bosnia and Herzegovina (BiH). The project area ends at the Croatian border with BiH and it would greatly improve our knowledge about the Dinaric lynx population, if systematic monitoring took place also in BiH, preferably using camera traps.

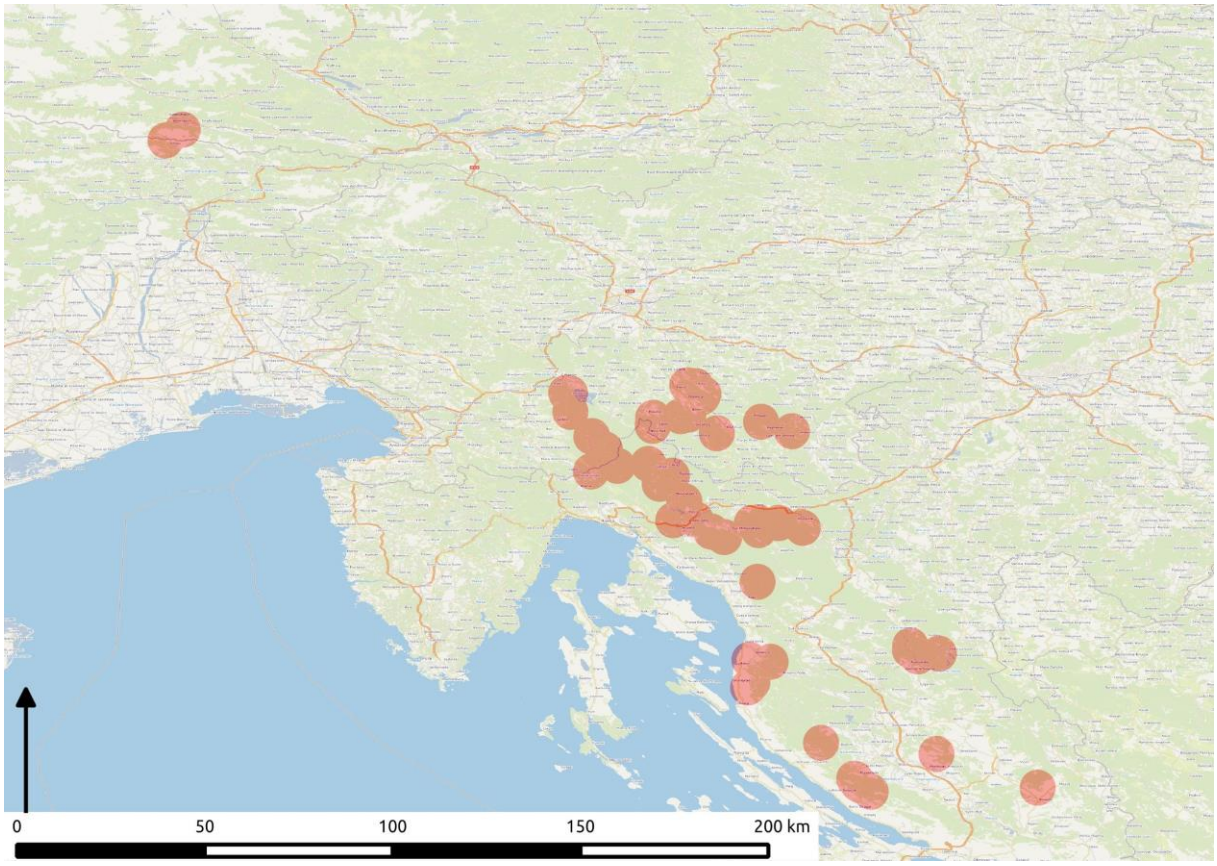

Figure 16. Combined (camera trapping + genetics) female lynx presumed territory occupancy.

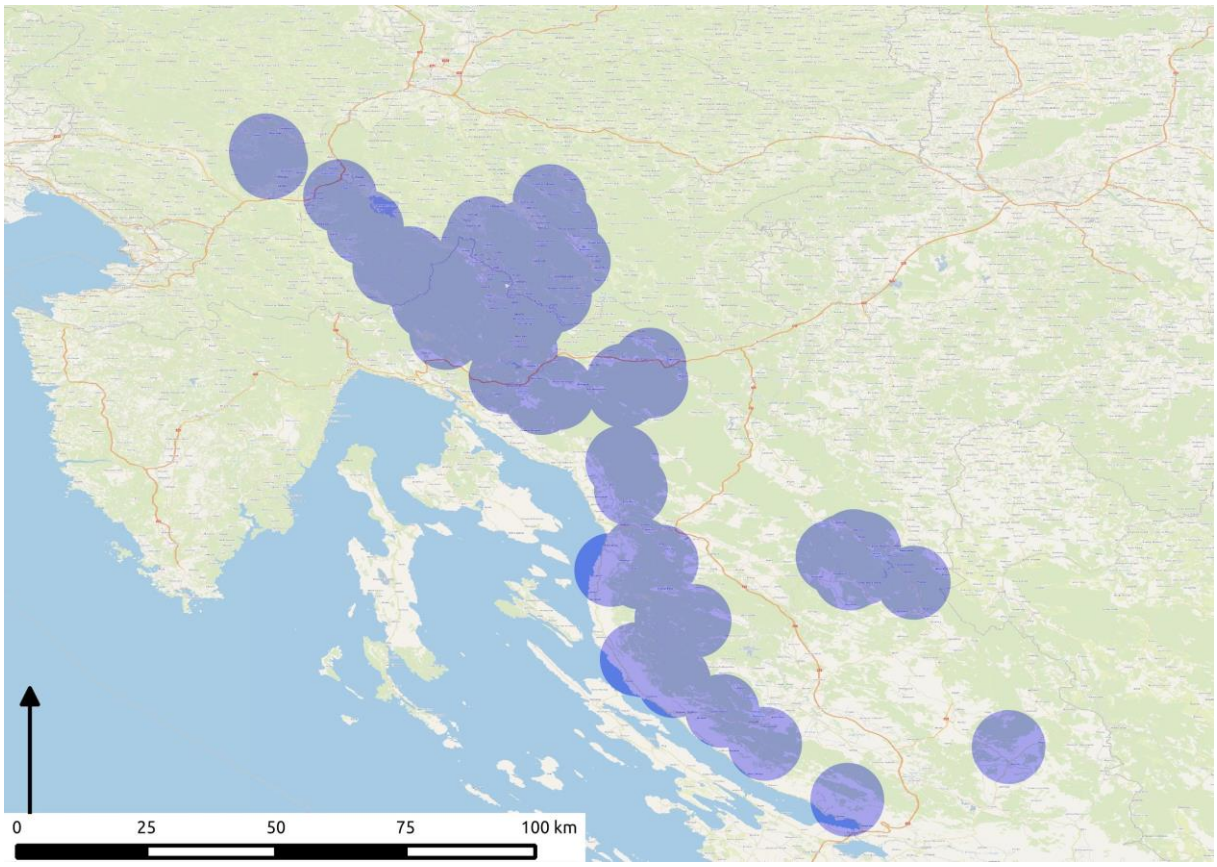

Figure 17. Combined (camera trapping + genetics) male lynx presumed territory occupancy.

Over the duration of the project, we will continue using camera trapping and genetic methods to follow the progress of the inclusion of the introduced lynx into the resident population as well as the detection of their offspring. We will improve the implementation of the methods (i.e. combination of hair traps and camera traps) and continue collaborating with many volunteers, mostly hunters. Further expansions of the camera trapping grid are also to be considered in all countries, taking into account the suitability of the habitat for lynx and the SCALP or hunter's records indicating potential lynx presence in a novel area.

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