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Wolf Recovery in the

Świętokrzyskie Mountains

Knowledge, Education and Conservation

Project of SAVE Wildlife Conservation Fund

9th report

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The goal of the project

The project aims at assuring the future well-being of the recently established wolf population in the Świętokrzyskie Mountains region. To achieve this goal, in 2012 we implemented a wolf population survey, which allows us to monitor wolf range, numbers, and reproduction, and therefore evaluates the conservation status of the local population. We disseminate information regarding the wolves among governmental agencies (forestry and conservation administration) responsible for wolf management and the general public. Moreover, through publications, lectures, the internet, and social media, we inform the society about the wolves in the region and about important facts of wolf biology to improve the social acceptance of the wolf.

Summary

From April 2019 to November 2020, we systematically recorded signs of wolf presence all over the monitored area (about 4500 km²) along the border between Świętokrzyskie and Mazowieckie provinces. We monitored 11 forest complexes and recorded wolf presence in all of them. In the summer 2019, we confirmed reproduction in three forest complexes – Świetokrzyska Forest, Iłżecka Forest, and Daleszyce Forest. Winter of 2019/20 was snowless and therefore we were not able to conduct a systematic snow tracking census and estimate winter population numbers. However, we observed tracks of wolves and recorded wolves with photo-traps in all 11 forests. In the summer 2020, we documented reproduction in five forest complexes – Świętokrzyska Forest, Iłżecka Forest, complexes – Świętokrzyska Forest, Iłżecka Forest, Przysucha and in the forest situated north-east of Iłża town. In 2020 we live-trapped and fitted with the telemetry collar first wolf in the region and began telemetry monitoring of the wolf population.



Fig. 1: The results of the monitoring of wolf population in Świętokrzyskie Mountains



Methods and area of wolf monitoring

We continued the systematic wolf survey in the area of about 4500 km² situated along the borderline of the Mazowieckie and Świetokrzyskie provinces (Fig. 1; 50° 52′-51° 22′N, 20° 21′-21° 27′E). The area is foothills of the Świętokrzyskie Mountains with a maximum elevation of 450 m a.s.l., mean annual temperature of 7° C and annual precipitation of 630 mm. The average human population density is 127 people/km² (68 people/km² when larger urban areas Końskie, Skarżysko-Kamienna, Starachowice, and Ostrowiec Świętokrzyski are excluded), 41% of the area is urbanized/covered by settlements in and about 27% of the area is forested.

We monitored wolf presence in 11 forest complexes: **Przysucha Forest** (PB, forest districts of Przysucha and Barycz), **Niekłań Forest** (LN, forest districts of Stąporków and Skarżysko Kamienna), **Majdów Forest** (LM, forest district of Skarżysko-Kamienna), **Kierz Niedźwiedzi Forest** (KN, forest district of Skarżysko-Kamienna), **Czarna Konecka Forest** (forest districts of Stąporków and Barcza), **Kołomańskie Hills** (WK, forest district of Zagnańsk), **Świętokrzyska Forest** (PS, forest districts of Suchedniów and Zagnańsk), **Siekierzyńskie Forest** (LS, forest districts of Suchedniów and Skarżysko Kamienna), **Lipie Forest** (KL, forest district of Starachowice, Marcule and Skarżysko--Kamienna), **Iłżecka Forest** (PI, forest districts of Starachowice, Marcule and Ostrowiec Świetokrzyski) and **Daleszyce Forest** (DF, Daleszyce and Łagów forest district) situated south-east of the town of Kielce (Fig. 1). Additionally, we obtained information about wolf presence in the Klonowskie Hills and the **Świętokrzyski National Park** (PK) from the national park' personnel.

Between the 1st of April 2019 and the 31st of November 2019, five observers spent about 200 man-days in the field, patrolled roads and trails in search for wolf tracks, scats, and other signs of wolves. From July to October, we systematically tried to stimulate the wolves to howl to check for the presence of pups to confirm breeding. The stimulation was carried out at night, usually by two teams working in the same forest complex and communicating via radio. We stopped our vehicles 2-3 kilometers apart, howled simultaneously, and then listened for possible wolf response. We repeated the procedure until we covered the entire forest complex. In winter 2019/20 there was no persisting snow cover in the region allowing us to conduct winter snow tracking counts of wolves. As in previous periods, fieldwork was supplemented by information received from the Forest Service, hunters, and residents. In 2020 we first time attempted to live-trap the wolves and fit them with a telemetry collar.

Results of the monitoring

Reproduction in 2019

During the summer of 2019, we confirmed breeding of the wolves in three forest complexes - Świętokrzyska Forest, Iłżecka Forest, and Daleszyce Forest. In the other forest complexes, we systematically recorded wolf presence (tracks, scats, and photo-trap records) but we did not confirm reproduction. In Świętokrzyska Forest, six pups were video-recorded with a smartphone by Marek Mościcki in June 2019. Our photo-traps recorded pups several times in this area, a maximum of four together. On the 8th of August, the wolf family of that forest responded to our howling stimulation. There were four adults and four pups howling. In **Iłżecka Forest** we observed three pups in September 2019 crossing the forest road. On the 31st of September, five adults and several pups of that family responded to our howling stimulation. In **Daleszyce Forest** wolves responded to our howling stimulation on two occasions. On the 28 of August, 2-3 pups and three adults responded twice. On the 22nd of September, only pups howled, and at that time there were 3 or 4.

Packs in winter of 2019/2020

In the winter of 2019/2020, there were no substantial snowfalls and there was not a single day with snow cover allowing snow tracking and systematic wolf counting. Despite that, we recorded many single wolf tracks, including over a dozen tracks left by more than one individual on the mud and sand, and we recorded wolves by photo-traps. This allowed us to estimate the minimal size of the wolf packs in four out of 11 forest complexes

In **Daleszyce Forest** we recorded wolves by the photo-traps many times. The largest group consisted of eight wolves, including three individuals recognizable as pups. We also recorded tracks of wolves on mud – a maximum of four wolves. Four or five wolves of the pack also responded in early winter to howling stimulation. In **Iłżecka Forest** we recorded groups of up to five wolves several times. Four times groups of 2-4 wolves were recorded by the photo-traps. In Lipie Forest we recorded tracks of 1 to 3 wolves traveling together. We also recorded two wolves with the photo-traps. In **Świętokrzyska Forest** we recorded many tracks and scats of wolves. The largest group, tracks of which we recorded on mud, consisted of four wolves.

In Siekierczyńskie Forest, Czarna KoneckaForest, Kołomańskie Hills, Niekłańskie and Majdowskie Forest, Przysuskie Forest, and Kierz Niedźwiedzi Forests we recorded single tracks on mud and sand, and wolf droppings, but lack of snow cover did not allow us to estimate the winter size of the packs. In Świętokrzyski National Park wolves were observed only once, in March of 2020. It was a group of three adult wolves.



Reproduction of 2020

We documented the reproduction of wolves in four of 11 forest complexes. Additionally, we documented reproduction north-east of Iłża town in the forest complex which had not been monitored by our team before. In the remaining forests, we systematically recorded the presence of wolves in spring, summer, and fall of 2020, but did not record any signs of reproduction.

In **Świętokrzyska Forest** wolf pups were observed in July by a forester According to him, there were even nine pups walking on a logging trail. On the 1st of August, we managed to get the response of that pack to our howling stimulation. There were five adults and a least five pups howling. We recorded several time adults and pups of that pack with the photo-trap. There were maximum of two pups recorded at once.

Wolves of **Iłżecka Forest** responded to our howling stimulation on the 27th of July. There were four adults and three pups howling together. Additionally, on the 3rd of August two pups were seen walking on the forest road.

In **Lipie Forest** we documented wolf reproduction for the first time since 2015 when we started to monitor wolves in that forest. At the beginning of July, one of the foresters observed two pups. A week later, a dead pup was found on the side of the road DW 744. It was a 10-week old female who weighed 8 kilograms, killed by a motor vehicle.

We recorded the presence of wolves (groups of up five individuals) in **Przysucha Forest** since 2013, although we never managed to document the reproduction of these wolves. In the summer of 2020, we visited the forest and conducted howling stimulation several times. We recorded tracks and scats of wolves, but we did not get a howling response from them. Nevertheless, in July one of the foresters observed three pups on the forest road, and pups were recorded by a photo-trap. On one of the photo-trap pictures, there were four pups, two adults, and a 7th wolf laying on the forest road, which could be also a pup but the quality of the picture did not allow to estimate the age with certainty.

The **forest north-east of Iłża town** belongs to Marcule Forest District but it is surrounded by agricultural land and separated from the main body of Iłżecka Forest. In July 2020 we obtained information that in June one of the local hunters saw a female with three pups in this forest. During our visit to that area on the 27th of July, we recorded many wolf tracks and scats, and a den used by wolves in 2020. Wolves also responded to our howling stimulation on that evening. A pack of three pups and at least four adults, howled back to us.



A wolf from Iłżecka Forest



A wolf from Lipie Forest



The pups of Przysucha Forest

Telemetry of wolves

In 2020 we extended our monitoring activities to live-trapping and telemetry. We caught the first wolf on the 12th of January in Świetokrzyska Forest. It was a young, 22 months old female, weighing 20 kg. We fitted her with a telemetry collar and released her. Over the next several weeks, she was roaming over 80 km² of Świętokrzyska Forest (Fig. 2), although due to lack of snow cover, we were not able to confirm if she was alone or accompanied by other wolves. On the 4th of February, she stopped moving around, and stay confined in a small area of the forest. We walked in on the 9th of February and spotted her escaping from a resting site in spruce thickets. However, she



Young female wolf Jaga live-trapped and fitted with telemetry collar in January of 2020 in Świętokrzyska Forest.

did not move far and on 13th February, we found her dead in that area. She was thin, weighed only 15.3 kg.

Necropsy did not reveal any wounds or injuries, her digestion tract was filled with wild boar hairs, probably because she ate a skin of wild boar killed by other wolves. She died of malnutrition and we think that she was not a member of the wolf pack from Świętokrzyska Forest, but a dispersing individual looking for the breeding opportunity.



Fig. 2: The range of female wolf Jaga monitored by telemetry in January and February of 2020.





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Education

WILKnet

WILKnet is a cooperation of Polish wolf researchers and conservationists supported by the Foundation SAVE through web hosting and programming assistance, while the website is edited voluntarily by WILKnet participants.

WILKNEt

The idea is to exchange information from projects concerning wolf monitoring, research, and conservation in Poland and to disseminate science-based wolf knowledge among the public. Over the last year, we posted 47 notes about activity in wolf projects and other wolf news. The notes were illustrated with photos, figures, and videos. www.wilknet.pl

Lectures and other educational activities

1. K. Bojarska, lecture entitled "Wolves and humans – the problem of coexistence of two expanding populations" presented at the workshop "On the wolves in Lubuskie Province" organized by Lubuskie Province Landscape Parks in September 2019.

2. K. Bojarska, 3 lectures in the Gorce and Beskid Sądecki Mountains about the ecology of large carnivores presented within the project of Regional Directorate of Nature Protection in Kraków entitled "Database of habitats and species valuable for nature conservation in Poland, November 2019



3. K. Bojarska, lecture entitled "Wolves in Poland: status, ecology and conservation of expanding population" presented at the workshop: "Preventing wolf depredation in Lubuskie Province" in Łagów, October 2020.

4. K. Bojarska, lecture entitled "Gray wolf management in Poland: background, controversies and challenges" presented in Grafenwoehr in Germany for foresters and biologists in September 2020.



Scientific publications

- Bojarska, K., J. Sulich, S. Bachmann, H. Okarma, J. Theuerkauf & R. Gula 2020. Opportunity and Peril: How Wolves Use a Dense Network of Forest Roads. Mammalian Biology <u>https://doi.org/10.1007/s42991-020-00014-0</u>
- Gula, R., K. Bojarska, J. Theuerkauf, W. Król, H. Okarma 2020. Re-evaluation of the wolf population management units in Central Europe. Wildlife Biology, <u>https://doi.org/10.2981/wlb.00505</u>

Popular science articles

- Gula, R. and K. Bojarska 2020. Savage beasts or affectionate parents?? Academia 61(1):32-35. https://journals.pan.pl/dlibra/publication/135923/edition/118845/content
- Gula, R. i K. Bojarska 2020. Wolves and forest roads. Eseje WILKnet 1/2020 5pp. <u>http://wilknet.pl/user-data/downloads/Eseje%20WILKnet%20Wilki%20i%20drogi%20.pdf</u>

T-shirts

To promote the project and wolves in the region, we continued to distribute T-shirts decorated in the front with a drawing of three trotting wolves by an artist Jacek Major. The sleeves have logos of the Foundation SAVE and our educational webpage WILKnet.pl. The T-shirts were distributed for free among the participants of our educational events – lectures and meetings.







SAVE Wildlife Conservation Fund

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SAVE donation account

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