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# Knowledge, Education and Conservation

## Wolf Recovery in The Świetokrzyskie Mountains

8<sup>th</sup> report - December 2019

## Overall goal of the project

Wolves disappeared from the Świętokrzyskie Mountains region in the 1950s, likely eliminated during the state-organized extermination campaign, as most wolves in Poland. They began coming back in the 1980s, but the first packs that managed to settle down were either shot or poisoned. In 2006, we found a pack of at least 5 adult individuals breeding in the Świętokrzyska Primeval Forest, one of the largest and best-preserved forest complexes in the region. Since then, we found more and more evidence of wolf presence and breeding in the region.

The Świętokrzyskie Mountains region is situated in central Poland, west of the Vistula River. The landscape is a mosaic of forest, agricultural and urban areas stretching over the rolling hills of the Świętokrzyskie Mountains and their foothills. It is the most densely (127 inhabitants/km<sup>2</sup>) populated region in Poland that supports a substantial number of wolves. Therefore, assuring the long-term persistence of the wolf population in this region is challenging, especially due to high degree of habitat fragmentation.

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 to monitor wolf range, numbers and reproduction, and therefore evaluates the conservation status of the population. We disseminate this information among governmental agencies (forestry and conservation administration) responsible for wolf management and the general public. Moreover, through publications, lectures, internet and social media, we inform the society about the wolf population and in the region and about important facts of wolf biology in order to elevate the social acceptance of the wolf, which is crucial for its survival.

## Wolf monitoring in the Świętokrzyskie (Holy Cross) Mountains region

### Summary

Between early May 2018 and end of April, we systematically recorded signs of wolf presence all over the monitored area (about 4500 km<sup>2</sup>) around the border between the Świętokrzyskie and Mazowieckie provinces. We monitored 11 forest complexes and recorded wolf presence in all of them. In 2018, we confirmed reproduction in 7 forest complexes. In another 4 forest complexes, we recorded wolf presence, but not signs of reproduction. Among them, reproduction in the Przysucha Forest is likely, because we systematically recorded larger groups of wolves (4 individuals). Majdowskie and Kołomańskie Hills may be frequented by the packs from the neighboring Niekłańskie Forest and Czarna Konecka Forest, respectively. Wolves also appeared in the Świętokrzyski National Park, but there were no signs of reproduction and, were also present and reproduced east of the area we monitored, in Ćmielów Forest. Considering largest group of wolves recorded in each of the forest complexes we estimate that minimum number of wolves in winter of 2018/19 was 43.



Results of the monitoring of wolves in the Świętokrzyskie Mountains region from 1st of April 2018 to 31st of March 2019. Circles represent wolf families (packs) identified by locating breeding sites, snow-tracking and photo-traps. Numbers of wolves given for each area are the highest numbers recorded during snow-tracking, by photo-traps and howling stimulation.

## Methods and area of monitoring

We continued the systematic wolf survey in the area of about 4500 km<sup>2</sup> situated along the borderline of the Mazowieckie and Świętokrzyskie provinces (50°52' - 51°22'N, 20°21' - 21°27'E). We monitored wolf presence in 10 forest complexes: **Przysucha Forest** (PB, forest districts of Przysucha and Barycz), **Niekląt 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) and **Iłżecka Forest** (PI, forest districts of Starachowice, Marcule and Ostrowiec Świętokrzyski). In the fall of 2018, we began to survey the **Daleszyce Forest** (DF, Daleszyce and Łagów Forest District) situated south-east of the town of Kielce. Additionally, we obtained information about wolf presence from the **Klonowskie Hills** (PK, forest districts of Suchedniów and Świętokrzyski National Park) from the personnel of Świętokrzyski National Park, and **Ćmielów Forest** from the foresters of Ostrowiec Świętokrzyski district.

Between the 1<sup>st</sup> of April 2018 and the 31<sup>th</sup> of March 2019, five observers spent 124 days in the field, patrolled roads and trails in search for wolf tracks, scats and other signs of wolf. From July to October, we systematically tried to stimulate the wolves to howl to check for presence of pups to confirm breeding. The stimulation was carried out at night, often 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, snow cover persisted for 5 weeks. It enabled us to estimate the size of packs by following fresh tracks in snow. We drove along forest roads and when we spotted wolf tracks, we stopped the vehicle and followed the tracks on foot until we were able to establish how many individuals traveled together. We considered the largest observed group of wolves recorded in a given forest complex as the minimum size of the pack inhabiting this forest. Unfortunately, during wolf mating season (2<sup>nd</sup> half of Feb), the snow cover was not sufficient to observe the signs of estrus. Additionally we installed photo-traps in places we frequently recorded wolf tracks and scats. As in previous periods, fieldwork was supplemented by information received from the Forest Service, hunters and local residents.

### Status of the monitored packs

We recorded 31 direct observations of wolves, 154 scats, wolf tracks at over 200 locations, 5 howling responses, two spontaneous howls, 15 photo-trap records of wolves and 11 remains of wolf prey.

#### Przysucha Forest

As in previous years, during summer and fall of 2018, we attempted to stimulate howling. We did not get any response, although we recorded wolf tracks and scats when driving around the area. In winter 2018/19, we recorded many tracks of a maximum of 4 wolves.

#### Niekląskie Forest

In August of 2018, wolves responded to the howling stimulation. There were 3 adults and at least 3 pups howling. This matches the observation of an intensively marking pair of wolves that we recorded in winter of 2017/2018. This is the second confirmed reproduction in this forest since we began the monitoring in 2012. Previously, wolves reproduced there in 2013. Despite reproduction in 2018, in winter 2018/2019, we only recorded tracks of one individual. This is unfortunately consistent with rumors that two wolves were shot in the area.

#### Lasy Majdowskie

We recorded tracks and scats in this area, but less frequently than in the previous year (only 6 times vs 25). We found 3 scats and 3 times tracks of a single individual. In summer of 2018, we did not get any response to the howling stimulation. Since this coincided with disappearance of wolves in Niekląskie Forest, we think that the pair of wolves that intensively marked on snow in the previous (2017/2018) winter was the same pair that we observed in the neighboring Niekląskie Forest and which later reproduced there. Interestingly, two wolves were observed near the south-east of the forest, near the village of Bugaj in November 2018. They were several times seen by a farmer when approaching goats and geese. The farmer claimed they looked like young wolves, so they might be the offspring of the above-mentioned pair.

#### Czarna Konecka Forest

Wolves of this pack responded to the howling stimulation on the 1st of September 2018. There were 2 adults and at least 3 pups howling. A local forester also heard the pack howling spontaneously in August. In winter of 2018/2019, we recorded scats and many wolf tracks but never more than of 3 wolves together.

#### Klonowskie Hills

This year, single wolves were recorded twice in the National Park. A photo-trap recorded a wolf in Bukowa Góra in February. In March, a single wolf was spotted crossing the public road 752 to the Podgórze Protection District of the National Park.



A wolf recorded by the photo-trap in Świętokrzyski National Park /  
Courtesy of Świętokrzyski National Park

### **Świątokrzyska Forest**

On the 30<sup>th</sup> of August 2018, the PS pack responded to a howling stimulation. There were 4 adults and at least 4 pups howling. A local forester also heard the pack howling spontaneously in December 2018. In the early morning (05:00) of the 13<sup>th</sup> of September 2018, a fisherman spotted 5 wolves coming to the artificial lake in the village of Bliżyn to drink. The lake is situated in the northern vicinity of PS. Interestingly, wolves approached the lake in the middle of a recreational area, which is very crowded during hot summer days. Wolves drank and then headed back north to the forest. Adult wolves have been also observed several times by foresters and forest workers. During fall and winter, we registered tracks and scats of wolves all over the forest. The maximum group size that we recorded was 6 wolves (tracks on snow). In February 2019, we found remains of a dead moose. There were 2 fresh wolf scats and wolf footprints on mud (there was no snow). Wolves apparently ate the moose, but we do not know if they killed it.



Remains of a moose eaten and probably killed by wolves

### **Siekierzyńskie Forest**

On the 1<sup>st</sup> of September 2018, wolves of this forest responded to our howling stimulation. There were adults and pups howling, but the wolves were too far, and it was not possible to count how many. When we approached them, only one wolf responded. In winter the largest group that we tracked on snow was five wolves, which intensively marked their territory, but throughout the year, we recorded scats and wolf tracks all over the forest.



A wolf den found in Siekierzyńskie Forest

### **Lipie Forest**

Wolves did not respond to the howling stimulation, although we recorded tracks and scats of wolves all over the year in this forest complex. During snow cover period we systematically recorded tracks of 2 wolves walking together.

### **Ćmielów Forest**

Wolf tracks were recorded all over the area by forestry personnel. In June female with a pup was observed near Teofilów village.

### **Kołomańskie Hills**

In summer 2018, we recorded tracks and a few scats, but we did not receive a response to howling stimulation. In winter of 2018/2019, we recorded only tracks of single wolves and scats.

### **Kierz Niedźwiedzi Forest**

We did not carry out a howling stimulation in the area in 2018. In the fall of 2018, local hunters saw 2 pups. During the winter of 2018/19, we recorded wolf scats and tracks on snow of a maximum of 3 wolves traveling together.

### **Ilżecka Forest**

During the summer and fall of 2018, wolves answered to the howling stimulation, but only adult individuals. However, in August 2018, 3 pups and probably a female were seen by foresters. Later in September, 3 pups and a female were recorded by a photo-trap. In winter 2018/19, we recorded many times wolf tracks in the snow and scats, and recorded wolves by photo-traps. There were most often tracks of single wolves, but several times, we recorded larger groups of 3-6 wolves, and once a group of 9 individuals was seen by a forester. In March of 2019, we found an old den and fresh signs of wolf digging.



J. Major setting the photo-trap in Ilżecka Forest



A wolf recorded by the photo-trap in Ilżecka Forest



Tracks of wolves crossing backwaters.



T. Bracik when tracking wolves in Daleszyce Forest

### **Daleszyce Forest**

In December of 2018, we went to the Daleszyce Forest to verify information obtained from local foresters on a potential wolf den site. We found two dens situated close to each other, which were apparently used in 2018. Moreover, we recovered over 20 scats in the surrounding. There was no snow, but there were many wolf tracks in sand and places looking like wolf resting sites. Most likely wolves reproduced at this place and used it in the fall as a rendezvous site. In January, we found another den situated 1.8 km from the other two, and we followed 4 wolves that marked intensively the area. Throughout the winter, we snow tracked wolves all over the forest and recorded many wolf scats. The largest group that we recorded consisted of 5 wolves, but foresters saw tracks of 6 wolves in eastern part of forest.

## Education

### Conference about wolves in the Świętokrzyski region

The conference was organized on the 23<sup>rd</sup> of November 2018 as a cooperation between the Foundation SAVE, the Regional Directorate of State Forest in Radom, and the Museum and Institute of Zoology of the Polish Academy of Sciences, at the office of the Regional Directorate of State Forest in Radom.

About 80 people from forestry, the Świętokrzyski National Park, the Regional Directorate for Environmental Protection, and NGO's including WWF Poland attended the conference. Tree speakers were invited to inform the audience about the current situation of wolves in Poland and especially in the Świętokrzyski region.

The first speaker, the Chief Regional Conservation Officer, talked about the legal aspect of wolf conservation and management. The following speaker, Henryk Okarma from the Institute of Environmental Protection of the Polish Academy of Sciences, elaborated on the current status of the wolf population in Poland.

The final talk by Roman Gula from the Museum and Institute of Zoology of the Polish Academy of Sciences reported the results of monitoring of wolves in the region. Presentations were followed by a vivid, several-hour lasting discussion. Many participants were interested in the future of wolf management in Poland, but most questions concerned details on wolf distribution, numbers and reproduction in the region. As usual, many people wondered if wolves present any direct threat to humans. At the closure of the conference we distributed T-shirts promoting wolves in the Świętokrzyski region provided by the Foundation SAVE.



Wolf conference in Radom, November 2019



Wolf conference in Radom, November 2019

## Essays on wolf biology, conservation and management

Since 2018, we began to prepare and publish via the WILKnet platform and social media short essays focused on particular aspects of wolf biology or conservation, which we believe are of importance for the broader audience. The major goal here is to correct misconceptions about the wolf widely spread in the society. We are trying to achieve this goal by a vivid, easily understandable writing style combined with scientifically correct information. So far, we published four illustrated essays:

1. [R. Gula & K. Bojarska: Can a wolf eat you? – the essay discusses potential of wolves being a direct threat to people](#)
2. [K. Bojarska: What can we learn from wolves of Yellowstone? – the essay describes the newest, not published findings of wolf population social structure and its similarities to human social interactions revealed by the Yellowstone Wolf Research.](#)
3. [R. Gula: Can the wolf be used as a positive marketing symbol? – the essay attempts at answering the question why wolves are not often used as marketing symbol in Poland and provides a few examples when they are actually used.](#)
4. [K. Bojarska & R. Gula: Wolves and livestock – the essay is explaining why wolves attack livestock at all, and what can be done to prevent or minimize the depredation.](#)
5. [R. Gula: Can we save the wolves? – the essay discussed the challenges of effective protection of wolves in Poland.](#)
6. [K. Bojarska: On wolves in faraway countries – Kars, Turkey.](#)

## 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. 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 32 notes about activity in wolf projects and other wolf news. The notes were illustrated with photos, figures and videos.

[www.wilknet.pl](http://www.wilknet.pl)



### Lectures and other educational activities

- J. Major: "Do we need to be afraid of wolves?" 25 April 2019, Public Library in Starachowice.
- R. Gula: „Wolves in the Świętokrzyski region – results of monitoring.” Conference on Conservation and management of wolves in the Świętokrzyski region”, November 2019, Regional Directorate of State Forests in Radom.
- K. Bojarska: 2 speeches "Hunting at the fence: how wolves use forestry enclosures to kill their prey" and "How wolves use a dense network of forest roads", October 2018, International Wolf Symposium held at the International Wolf Center in Ely, Minnesota.
- K. Bojarska: Six courses on wolf biology for foresters, farmers, and high schools, November 2018, Beskid Żywiecki.
- K. Bojarska: Workshops for the Regional Directorate of Nature Conservation „Czy taki wilk straszny, jak go malują?” December 2018, Lublin.
- K. Bojarska: Course on wolf biology. February 2019, IV High School in Bydgoszcz.
- K. Bojarska: „Where do wolves kill their prey?” Conference „Methods of active nature conservation in sustainable forestry, 26-27 March 2019, Center of Forest Education in Rogów.
- K. Bojarska: From a wolf perspective – forest, deer and people. 69 Open Biebrza University „Our Neighbor Wolf”, 30-31 March, Biebrza National Park.
- K. Bojarska: Course on wolf biology. April 2019, XLIV High School in Kraków.
- K. Bojarska: Methods of monitoring of wolves - training for hunters and foresters. March 2019, Zielona Góra.
- K. Bojarska: The problem of wilderness: How wolves and bears cope with human dominated landscapes? May 2019, IV Bałowieża Meeting of Wildlife Enthusiasts, Białowieża National Park
- K. Bojarska : Wolf workshop during the seminar „Talking about wolves in Lubuskie” , September 2019, Landscape Parks of Lubuskie Province.



K. Bojarska lecturing about wolves

## Publications

Bojarska, K., E. Gosling, R. Kuehn & R. Gula 2018. Jak leśnicy i mieszkańcy małych miejscowości postrzegają wilki? (How do foresters and residents of rural areas perceive wolves?), *Przegląd Przyrodniczy* XXIX, 4: 42-49.

Gosling, E., K. Bojarska, R. Gula & R. Kuehn 2019. Recent Arrivals or Established Tenants? History of Wolf Presence Influences Attitudes towards the Carnivore. *Wildlife Society Bulletin*, in press.

## T-shirts

To promote the project and wolves in the region, we prepared T-shirts in 2018. T-shirts are decorated in the front with a drawing of 3 trotting wolves by artist Jacek Major, who is also member of the project team and tracking wolves in Iłżecka Forest. 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, meetings and conferences. About 350 T-shirts were distributed so far.



T-shirt promoting wolves in Świętokrzyskie Region

## Acknowledgements

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