

# The first proof of the recent presence of wolves in the Netherlands

Glenn Lelieveld<sup>1,2</sup>, Bart Beekers<sup>1,3</sup>, Julia Kamp<sup>1</sup>, Dick Klees<sup>1,4</sup>, Leo Linnartz<sup>1,3</sup>,  
Ellen van Norren<sup>1,5</sup>, Elze Polman<sup>1</sup> & Roeland Vermeulen<sup>1,6</sup>

<sup>1</sup> Wolven in Nederland (www.wolveninnederland.nl), e-mail: info@wolveninnederland.nl

<sup>2</sup> Averti Ecologie, Acacialaan 21, NL-6721 CN Bennekom, the Netherlands

<sup>3</sup> ARK Natuurontwikkeling, Molenveldlaan 43, NL-6523 RJ Nijmegen, the Netherlands

<sup>4</sup> Studio Wolverine, Legstraat 2a, NL-4861 RK Chaam, the Netherlands

<sup>5</sup> Landschap Overijssel, Poppenallee 39, NL-7722 KW Dalfsen, the Netherlands

<sup>6</sup> FREE Nature, Augustuslaan 36, NL-6642 AB Beuningen, the Netherlands

**Abstract:** During the second half of the 20<sup>th</sup> century, wolves (*Canis lupus* L. 1758) have greatly expanded their range in Europe. Experts believe that wolves will ultimately recolonise the Netherlands. In March 2015, a German wolf (named 'Wanderwolf') visited the Netherlands, leaving a trail of sightings and several attacked sheep. This raised a lot of media interest and public discussion. In this article, we summarise the spread of the wolf across north-western Europe in the 21<sup>st</sup> century, often into habitats previously considered too small for viable populations, track Wanderwolf's background and journey across the north-east of the Netherlands and discuss other possible sightings of wolves in the Netherlands since 1990.

**Keywords:** *Canis lupus*, Europe, habituation, Netherlands, wolf, management, dispersion, recolonisation, habitat, expansion.

## Introduction

During the second half of the 20<sup>th</sup> century, wolves (*Canis lupus*) have greatly expanded their historical range in Europe. The most important reasons for this expansion seem to be European-wide legal protection, especially since the fall of the Iron Curtain (the wolf was not a protected species in the former German Democratic Republic (DDR) until 1990), and increased populations of prey species, which allowed wolf populations to recover from their last refuges in Spain, Italy and Eastern Europe and to recolonise France, Switzerland and Germany. It is estimated that there are currently 46 wolf packs, 15 wolf pairs and 4

territorial individuals in France and 40 wolf packs or pairs in Germany (Kontaktbüro Wolfsregion Lausitz 2016, ONCFS 2016).

The first wolves to come back into Germany were sighted in the Lausitz region close to the Polish border. In 2000, for the first time in approximately 150 years, wolf pups were born in Germany, at a military training area (Kontaktbüro Wolfsregion Lausitz 2016, NABU 2016). From 2002/2003 wolves began to spread mostly in a north-westerly direction, occasionally visiting Denmark by 2012 (Jensen et al. 2015).

Wolves have also been heading back to the Netherlands. In March 2013, a camera captured a territorial female wolf in a military training area near the city of Meppen in Lower Saxony (Germany), some 50 kilometres from the Dutch border. The same wolf

was sighted a year later in March/April 2014 at military areas near Meppen and Nordhorn (through camera trapping and photos by passers-by). DNA analyses showed that the female wolf came from the Gartower pack in the Wendland region, Germany (B. Habbe, personal communication).

The wolves' rapid colonisation of densely populated western European countries surprised many since most of the older literature describes suitable wolf habitat as large areas (up to thousands of square kilometres) with minimal human disturbance (Mech & Boitani 2003, Kaartinen et al. 2005). Others suggested that these were refuge areas instead of being a preferred habitat of wolves (Llaneza, Lopez-Bao & Sazatornil 2012). A 2013 German study showed that European wolves are highly adaptive to cultivation and can deal with human population densities of up to 80 people per km<sup>2</sup> (Fechter & Storch 2014). A Dutch study suggested that the Netherlands may provide enough suitable habitats for at least 40 wolf packs (Lelieveld 2012), despite the country's high average population density of 500 people per km<sup>2</sup> (CBS 2014) and the intensive cultivation of its rural areas. Fechter and Storch (2014) argue that wolves can deal with even more densely populated areas than suggested by Lelieveld's study (2012).

Nonetheless, wolves tend to colonise areas with relatively little human disturbance, such as military areas or former open-cast coal mining areas. German wolves are known to have occupied territories of 200 km<sup>2</sup> on average, sometimes even as small as 80 km<sup>2</sup>, indicating that the need for large territories is not, in itself, an obstacle for the settlement of wolves. It is likely that territory size is highly depending on the availability of prey (Fechter & Storch 2014).

In light of the expansion of wolves from the Polish border to the northwest of Germany and the sightings in Denmark, the appearance of the wolf in the Netherlands was no surprise to most experts. In March 2015, this expectation was fulfilled when, after generations

without resident wolves, a single wolf wandered through the Dutch provinces of Drenthe and Groningen in broad daylight. From 7 to 10 March 2015, the Netherlands witnessed the comeback of an iconic species. In this article we describe the appearance of this wolf, its history and the response by the general public and others.

## **'Wanderwolf'**

'Wanderwolf' had caught the eye of German wolf experts long before it reached the Netherlands. The first noticeable and documented incident with this young wolf, was in February 2015 when he attacked a sheep flock in Schleswig-Holstein. What was conspicuous about this incident was that he attacked them in broad daylight and did not seem to be as timid as its conspecifics. The wolf did not show any aggressive behaviour towards humans (Kabel 2015a), but kept returning to the flock for about an hour despite humans being just a few metres away, trying to protect the flock. A few weeks later, he was identified to be a yearling from the Munster pack in Lower Saxony, a pack known for its indifference towards humans. Such unusual behaviour has only been reported in this particular wolf pack in Germany. Experts began to discuss the possibility that humans had made a contribution to this conspicuous behaviour through feeding them (Kabel 2015b).

The authorities in Lower Saxony decided to make Wanderwolf more wary of human presence. The first step in this process was to permit a wolf advisor to startle the wolf by shooting at it with rubber bullets. The authorities also permitted the killing of the wolf if it were to actively threaten humans. These actions caused much debate among wolf experts and conservationists, who argued that startling a wolf with rubber bullets fired from a short distance could cause injuries and this should only be done by experts. After a meeting, all the stakeholders agreed it would be best

to capture the wolf and study its health and behaviour. If the wolf proved to be healthy and wild, it should be released back into its parents' territory and startled during release by experts to make the wolf more wary of humans. To follow its movements, it should be tagged with a GPS transmitter. However, Wanderwolf took matters into its own hands and entered the Netherlands before German experts were able to capture it.

## **Wanderwolf wandering through the Netherlands**

In the afternoon of 6 March 2015 a German wolf expert contacted the platform organization 'Wolven in Nederland' ('Wolves in the Netherlands') to inform them that Wanderwolf was heading towards the Dutch border and was expected to enter the Netherlands soon. The information was forwarded to the relevant Dutch authorities: the Ministry of Economic Affairs, the Province of Drenthe, Faunafonds and other nature organisations. The authorities from Lower Saxony also made contact with the Province of Drenthe.

On the evening of 6 March 2015, a local resident witnessed the wolf near to the Dutch border at the Bargerveen Nature Reserve, (see figure 1). The observer was not able to make a photograph, so the sighting remained an unverifiable C3 classification under the SCALP criteria (Kaczensky et al. 2009, Reinhardt et al 2015).

In the night between 6 and 7 March 2015, Wanderwolf left the first evidence of his presence in the Netherlands when a sheep carcass was found near Nieuw Amsterdam (see figure 2). News about this was reported to Faunafonds (the responsible authority) which sanctioned the dissection of the sheep to research institute Alterra Wageningen UR to carry out DNA analysis of the saliva in the bite marks (see figure 3). Their findings confirmed that the sheep had been killed by a wolf (Alterra 2015).

The first sighting that could be validated

with photos verified by experts (C1 under the SCALP criteria) was at 7 March around 8 a.m. near Erm, approximately 17 km from the German border. Other validated sightings showed that the wolf continued in a north-westerly direction, through Sleen and Wezuperbrug. A man driving with his daughter on the N381, between Zweeloo and Noord-Sleen, not far from Emmen, stopped their car for a wolf crossing the road in front of them. He took photos and sent them to various media outlets.

Between the first and last C1 sighting, at Wezuperbrug on 7 March, the wolf walked a distance of 17 km. The next morning, the animal was reported to be nearby Amen, 15 km further northwest (P. Venema, personal communication). On the same day, two observers photographed the wolf crossing a road in Wezuperbrug. According to their description, the wolf was wandering slowly and jumping at a bird. Shortly after these first sightings were reported in the news.

On 8 March, Wanderwolf was photographed many times during daylight hours in the Drentse Aa National Park. The next morning it was photographed (C1) close to Annen, approximately 16 kilometres from where it had been seen the day before. The wolf continued to follow a northerly direction, travelling through the villages of Hoogezand and Kolham between 8:30 and 10:30, which resulted in almost a live feed of verifiable sightings. Once outside the villages, Wanderwolf seemed to take a rest in the afternoon and continued northwards in the evening where he was photographed near Woudsbloem. At 10 March, the wolf travelled further north and reached the most northerly mainland point of the province of Groningen, the Eemshaven. He was seen and photographed by several people near this industrial harbour. A sheep farmer near Holwierde reported a panic amongst his sheep late in the evening of 10 March and the next morning found a dead sheep that had been attacked by a wolf. On that same morning (11 March), a farmer near Termunten drove away a 'wolf-like' animal





Figure 2. One of the predated sheep, Nieuw-Amsterdam, the Netherlands, 07-03-2015. *Photo: Bart Beekers.*

the Lupus Institute and the policy of Lower Saxony. Preparations were made for keeping the animal temporarily in an enclosure while planning on what to do with the wolf after having determined its wildness and origins. However, in the end it was decided to tranquilise the animal, collar it with a GPS transmitter and to immediately release the animal back into the wild. During the following day, the team started searching for the wolf in an attempt to sedate it. On 11 March the wolf had returned to Germany, before the team got a chance to capture it.

## Returning to Germany

After Wanderwolf left the Netherlands and returned to Germany, it disappeared out of sight for some time and media attention on it decreased. However, on 15 April 2015 it was killed in an accident with a truck on the A7 highway nearby Berkhof close to Hannover, Germany (although this was not announced

until 23 July) (NLWKN 2016). At that time it was not known whether the wolf had been examined or where its carcass was. Research by Wolven in Nederland, later (in January 2016) revealed that the wolf was stored at the Lower Saxony Ministry for Environmental, Energy and Climate Protection in Hanover. The authorities there agreed to donate the wolf to the Netherlands for education and research purposes. The carcass of Wanderwolf was picked up at Friday 29 January 2016 by Wolven in Nederland and handed over to the Naturalis Biodiversity Center in Leiden to be incorporated in its collection.

## Revealing the background of Wanderwolf

Examination of Wanderwolf by autopsy and the analysis of its DNA revealed a lot of information on its background. The DNA analysis traced the wolf back to the Munster pack in Germany. The territory of this pack is sit-



Figure 3. Research by Dennis Lammertsma and Hugh Jansman on one of the sheep killed by Wanderwolf at Alterra Wageningen UR. *Photo: Wendy Bos.*

uated in a large military training area and was established when a female wolf from the Nochten pack in Saxony settled in the area in 2011 (Landesjägerschaft Niedersachsen 2016). The pups of the Munster pack that were born in 2014 made a stir in the beginning of 2015 when they showed less timid behaviour towards humans than usual. One of them eventually became known as ‘Wanderwolf’. This wolf travelled along roads, through villages, towns and industrial zones. The remarkable daytime activity caused different reactions amongst the general public. Some people concluded that the animal must have been of captive origin, or even intentionally released. Some were afraid for their children, others for their dogs, cats and horses, or asked if they still could walk safely with or without their dog in nature areas. Experts continued to advise that wild wolves do not avoid human structures, such as roads and buildings, but do mostly avoid the risks that humans may impose, although this behaviour can be changed by habituation as a result of (un)intentionally feeding. Habituated wolves themselves form no danger, but can spread the effect by not teaching their offspring

to fear humans. The wolves of the Munster pack never showed an interest in people and clearly backed off whenever they were closely approached. Nonetheless, in reaction to the unusual behaviour of this pack of wolves, the government of Lower Saxony decided to tag two young wolves with GPS transmitters. In June 2015, the authorities tagged one male and one female from the Munster pack, both born in 2014. The male of this pack was culled later, on 27 April 2016, because of its lack of shyness towards humans, even though he never showed any aggressive behaviour.

## Previous sightings of wolves in the Netherlands

Before Wanderwolf in March 2015, the Netherlands may have been visited by other wild wolves. However, none of these earlier potential visits could be verified as wild wolves dispersing to the Netherlands in a natural way. Fifteen years earlier, in 2000, a first wolf-like animal was sighted in the southernmost part of the province of Zeeland, close to the Belgian border. The animal was first sighted on

14 October and had reportedly been killing sheep on a regular basis. Local people claimed that the animal was a wolf, but the only evidence was a short video of a wolf-like creature taken from far away, which was regarded insufficient evidence for validation. The animal was reported to have been around until at least 22 December, but disappeared afterwards. Rumours say the animal was shot, but this is not proven (Calle 2010).

The next sighting of a wolf-like animal was on a Saturday afternoon on 27 August 2011 when people stopping at a gas station along the A12 near Duiven, a town east of Arnhem, saw a wolf-like animal crossing this busy motorway. Pictures were taken with mobile phones, but none of these pictures were of sufficient quality to become evidence for a C1 sighting. However, German wolf expert Ilka Reinhardt gave this sighting a C2 classification, making it a near-certain sighting of a wolf in the Netherlands.

Two years later, on 4 July 2013, a dead wolf was found along a road near Luttelgeest in Flevoland. This wolf most likely originated from the Carpathian region (Gravendeel, de Groot, Kik et al. 2013). Although at first it was thought that the wolf had arrived in Luttelgeest by itself, researchers later concluded that the most plausible explanation was that the animal had been shot abroad (as bullet impacts and shattered fragments were found inside the body) and dumped by the roadside to make it look like as if it had been hit by a car or truck (Gravendeel, de Groot, Kik et al. 2013).

Between April and July 2014, several possible wolf sightings were made on the Dutch side of the Dutch-German border near Meppen and Nordhorn (Anonymous 2015). The sightings were independent of each other and occurred before local media gave attention to these sightings. All the sightings and findings of tracks and excrement (without proper DNA tests) were recorded as C3 sightings as there was no verifiable evidence.

## The wolf today in Dutch society

The road trip of Wanderwolf through the Netherlands proved to be a highly successful PR event for this species. In the 15 years between the first supposed wolf sightings in the Netherlands and Wanderwolf, a lot has changed in peoples' attitudes towards the expected return of wolves to the Netherlands (Anonymous, 2012). Disbelief, aggression, misinformation and fear were the main initial reactions. Education and awareness-raising work have much to better inform public opinion. One of people's main initial concerns has been to do with the protection of livestock. Committed farmers in Germany have shown that it is possible to prevent livestock predation by working together with other stakeholders to keep livestock safe and ensure that wolves stick to their natural prey.

The Dutch government has taken up its responsibility concerning this iconic though controversial species. It has developed a wolf management plan (BIJ12 2015; cf. Groot Bruinderink & Lammertsma 2013), and financially supported studies to determine the best damage-prevention measures for different kinds of livestock in the Netherlands. Any damage to livestock will be compensated completely by the authorities. Normally the Faunafonds charges a handling fee and a deductible excess for any claims of damage by wildlife. Neither will apply in case of damage by wolves.

**Acknowledgements:** We wish to thank all those who helped to put the wolf on the political agenda in a positive, realistic and constructive way. Two of them, Peter Venema and Hugh Jansman, have particularly helped to raise political awareness about the wolf and have helped this article by their solid advice. We also wish to thank two anonymous reviewers for their constructive feedback.

## References

- Alterra 2015. Het was een wolf, afkomstig uit een roedel wilde wolven in Duitsland. Press release published on 2 April 2015. URL: <http://www.wur.nl/nl/nieuws/Het-was-een-wolf-afkomstig-uit-een-roedel-wilde-wolven-in-Duitsland.htm>; viewed 14 November 2016.
- Anonymous 2012. Appreciatie-onderzoek naar de komst van de wolf. Kwalitatief en kwantitatief onderzoek onder de Nederlandse bevolking. Intomart GfK, Hilversum, the Netherlands.
- Anonymous 2015. De wolf van Twente. Zoogdier 26 (2): 21.
- BIJ12 2015. Operationeel Draaiboek Wolf Fase 1. Published on 29 January 2015 by Unit Faunafonds of BIJ12. URL: <http://www.wolveninnederland.nl/nieuws/wolvendraaiboek>; viewed 14 November 2016.
- Calle, L. 2010. Wolf *Canis lupus*. In: J.P. Bekker, L. Calle, S. Dobbelaar, A. Fortuin, C. Jacobusse & K. de Kraker (eds.) 2010. Zoogdieren in Zeeland. Fauna Zeelandica Deel 6: 156-157. Zoogdierwerkgroep Zeeland & Het Zeeuwse Landschap, Wilhelminadorp, the Netherlands.
- CBS [Centraal Bureau voor de Statistiek] 2014. Demografische kerncijfers per gemeente 2014. Centraal Bureau voor de Statistiek, Den Haag/Heerlen, the Netherlands. <https://www.cbs.nl/nl-nl/publicatie/2014/50/demografische-kerncijfers-per-gemeente-2014>; viewed 14 November 2016.
- Fechter, D. & I. Storch 2014. How many wolves (*Canis lupus*) can fit in Germany? The role of assumptions in predictive rule-based habitat models for habitat generalists. Plos One 9 (7): e101798.
- Gravendeel, B., A. de Groot, M. Kik, K.K. Beentjes, H. Bergman, R. Caniglia, H. Cremers, E. Fabbri, D. Groeneweg, A. Grone, G. Groot Bruinderink, L. Font, J. Hakhof, V. Harms, H. Jansman, R. Janssen, D. Lammertsma, I. Laros, L. Linnartz, D. van der Marel, J.L. Mulder, S. van der Mije, A.M. Nieman, C. Nowak, E. Randi, M. Rijks, A. Speksnijder & H.B. Vonhof 2015. The first wolf found in the Netherlands in 150 years was the victim of a wildlife crime. Lutra 56 (2): 93-109.
- Groot Bruinderink, G.W.T.A. & D.R. Lammertsma 2013. Voorstel voor een wolvenplan voor Nederland; versie 2.0. Rapport 2486. Alterra WUR, Wageningen, the Netherlands.
- Jensen, T.S., K. Olsen, P. Sunde, C. Vedel-Smith, A.B. Madsen & L.W. Andersen 2015. Genindvandring af ulven (*Canis lupus*) i Danmark. Flora og Fauna 121 (1+2): 48-54.
- Kabel, N. 2015a. Gen-Untersuchungen zu auffälligem Wolf abgeschlossen: Tier stammt aus Rudel in Niedersachsen. Presstext. Ministerium für Energiewende, Landwirtschaft, Umwelt und ländliche Räume des Landes Schleswig-Holstein, Kiel, Germany. URL: [http://www.gdi-sh.de/DE/Landesregierung/V/Presse/PI/2015/0315/MELUR\\_150330\\_Wolf\\_Lauenburg.html](http://www.gdi-sh.de/DE/Landesregierung/V/Presse/PI/2015/0315/MELUR_150330_Wolf_Lauenburg.html); viewed 14 November 2016.
- Kabel, N. 2015b. Wolf in Ortschaft nahe Mölln gesichtet. Ministerium für Energiewende, Landwirtschaft, Umwelt und ländliche Räume des Landes Schleswig-Holstein, Kiel, Germany. URL: [http://www.schleswig-holstein.de/DE/Landesregierung/V/Presse/PI/2015/0315/MELUR\\_150307\\_Wolf.html](http://www.schleswig-holstein.de/DE/Landesregierung/V/Presse/PI/2015/0315/MELUR_150307_Wolf.html); viewed 14 November 2016.
- Kaczynsky, P., G. Kluth, F. Knauer, G. Rauer, I. Reinhardt & U. Wotschikowsky 2009. Monitoring von Großraubtieren in Deutschland. Skripten 251. Bundesamt für Naturschutz, Bonn, Germany.
- Kaartinen, S., I. Kojola, & A. Colpaert 2005. Finnish wolves avoid roads and settlements. Annales Zoologici Fennici 42: 523-532.
- Kontaktbüro Wolfsregion Lausitz 2016. Verbreitung in Deutschland. Monitoringjahr 2015/2016. URL: <http://wolfsregion-lausitz.de/index.php/verbreitung-in-deutschland>; viewed 15 November 2016.
- Landesjägerschaft Niedersachsen 2016. Rudel Münster. Wildtier Management Niedersachsen. URL: [http://www.wildtiermanagement.com/wildtiere/haarwild/wolf/wolfsnachweise\\_in\\_niedersachsen/rudel\\_munster/](http://www.wildtiermanagement.com/wildtiere/haarwild/wolf/wolfsnachweise_in_niedersachsen/rudel_munster/); viewed 23 November 2016.
- Llaneza, L., J.V. Lopez-Bao & V. Sazatornil 2012. Insights into wolf presence in human-dominated landscapes: the relative role of food availability, humans and landscape attributes. Diversity and Distributions Volume 18 (5): 459-469.
- Lelieveld, G. 2012. Room for wolf comeback in the Netherlands. MSc thesis. Department of Ecology, Vrije Universiteit, Amsterdam, the Netherlands.

- Mech, L.D. & L. Boitani 2003. Wolves: behaviour, ecology and conservation. University of Chicago Press, Chicago, USA.
- NABU [Naturschutzbund Deutschland] 2016. Karte Wolf (*Canis lupus*). Mitteleuropäische Tieflandpopulation. Stand 15.04.2016. URL: <https://www.nabu.de/tiere-und-pflanzen/saeugetiere/wolf/deutschland/index.html>; viewed 14 November 2016.
- NLWKN [Niedersächsischer Landesbetrieb für Wasserwirtschaft, Küsten- und Naturschutz] 2016. Rätsel um den Wanderwolf gelöst. URL: <http://www.nlwkn.niedersachsen.de/aktuelles/pressemittelungen/raetsel-um-den-wanderwolf-geloest-135690.html>; viewed 14 November 2016.
- ONCFS [Office National de la Chasse et de la Faune Sauvage] 2015. Bulletin loup du réseau. N° 35 - 2016, Période du 01.01.2016 au 01.06.2016. URL: [http://www.oncfs.gouv.fr/IMG/pdf/bulletin\\_loup\\_35.pdf](http://www.oncfs.gouv.fr/IMG/pdf/bulletin_loup_35.pdf); viewed 14 November 2016.
- Reinharts, I., G. Kluth, S. Nowak and R.W. Mysłajek 2015. Standards for the monitoring of the Central European wolf population in Germany and Poland. Skripten 398. Bundesamt für Naturschutz, Bonn, Germany.

## Samenvatting

### Eerste bewijzen van de terugkeer van de wolf in Nederland

In de tweede helft van de 20<sup>ste</sup> eeuw hebben wolven (*Canis lupus*) hun verspreiding in Europa flink uitgebreid. Experts menen dat wolven uiteindelijk ook Nederland weer zullen koloniseren. In maart 2015 liet een wolf afkomstig uit Duitsland, die daar reeds de naam ‘Wanderwolf’ had gekregen, een spoor van waarnemingen door Nederland achter. Deze wolf heeft een aantal schapen aangevalen. Zijn aanwezigheid kreeg veel media-aandacht en riep veel discussie op. In dit artikel presenteren we de meest essentiële informatie over dit bezoek en over de herkomst en verdere achtergrond van Wanderwolf. Daarnaast presenteren we een overzicht van een andere in Nederland (mogelijk) waargenomen wolven in de periode 1990-2015.

*Received: 27 October 2016*

*Accepted: 16 November 2016*