



**Thesis: The return of the wolf in a Cultivated Landscape**

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## The arrival of 'GW998f'

In 2017, adolescent she-wolf 'GW998f' started her long journey from her birthplace and home around Babben in the East German state of Brandenburg. She traveled over 600 km by foot, looking for a new territory and a companion to start her family. At the beginning of 2018, she made it to the Netherlands, where she drifted through the provinces of Drenthe, Groningen, Friesland, and Overijssel, far away from her original home and family.<sup>1</sup> This journey did not go without notice. It was widely covered by the Dutch media. GW998f was the first wolf to settle in the Netherlands after wolves were extinct because of brutal prosecution 150 years ago. <sup>2</sup>

Her return is a magnificent event made possible by the European wolf protection law. At the Convention of Bern in 1979, Europe listed the wolf as a European Protected Species. In 1992, Europe extended this law that forbids the members of the European Union to kill or even disturb the wolf in its natural habitat. <sup>3</sup>

In June 2017, GW998f arrived in Laag-Zutphen, Overijssel, hungry and a bit disorientated. For wolves, who usually eat wild prey, the Dutch landscape, a monoculture of grass, can be a tricky area to find food if you don't know your way around. The Netherlands only counts twenty-one national parks with large grazers.<sup>4</sup> Two-thirds of our landscape is used for agricultural purposes, making it a lot easier for an adolescent wolf to catch a sheep than a deer. Due to the Dutch landscape's animal unfriendly layout, GW998F had no other option than to cowl underneath a meadow's fence and catch sheep to still her hunger. This event was devastating for both the farmer and his sheep but occurred by mismanagement of our landscape and not because GW998F is a violent animal. Unfortunately, the media blamed the wolf, and the negative tone around her moving here was set.<sup>5</sup>

In an article for Zoogdierveniging, Martin Drenthen, Associate professor of environmental philosophy at Radboud University, explains:

*"A meadow with perennial ryegrass shouts to a flying goose: come here and eat! A pasture of unprotected sheep does the same for a roaming, hungry young wolf searching for new territory. And vice versa: natural behavior for an animal can appear as problematic behavior to humans. These differences in interpretation of the landscape can inadvertently lead to conflict, especially when wild animals make decisions based on landscape features that we humans are not even aware of."* <sup>6</sup>

This misinterpretation is precisely what happened in Laag-Zutphen. By placing fences in our landscape, we unintendedly communicate with other species.<sup>7</sup> Animals read these communication signs a lot differently than we do, and that's where it went wrong in this case. The farmer placed these fences to communicate that no one can enter his meadow. The wolf reads this precisely the other way around, she sees the sheep as her prey, and for her, the fence makes it easy to catch them.

One month after this incident, the first excrement of she-wolf GW998f was found at the North Veluwe.<sup>8</sup> It seemed like she finally reached her destination. When she was still at the Veluwe six months later, it became clear that this was the case. After an absence of wolves for 150 years, she-wolf GW998f was the first wolf that had officially settled in the Netherlands. As a custom in wolves' behavior, the female adolescent goes on a quest to find a suitable territory to settle; when she has reached that goal, she stays there and waits for an adequate male to find her, and they can start a new pack together.

Soon after settling, she-wolf GW998f found a partner: Gw893m.<sup>9</sup> Together, they made two nests of pups, one in 2019 and another in 2020. These nests are still the only time wolf pups were born in the Netherlands since their extinction 1,5 century ago.



2: Forester with the first excrement of she-wolf GW998f at the Veluwe.

3: She-wolf GW998f and her partner Gw893m at the Veluwe.



Their new territory, De Veluwe, is the largest terrestrial natural area of the Netherlands. Don't let the term natural fool you because every centimeter has been subjected to human intervention at one point in our history and still is to this day.<sup>10</sup> De Veluwe is not one single site but is owned by different people and organizations, consists of several villages and cities, and is crossed by many roads and railways.<sup>11</sup> All these different sights are divided by fences and cattle grids through whom we communicate to the wolves and other animals that inhabit the area. Most of the fences surrounding the parks at the Veluwe are used to keep animals inside, but for the wolf who is new in the area, this might communicate that she cannot enter. This division of land is not new; it started centuries ago.

Until the 19th century, the nobility of Gelderland would purchase land and build castles as summer residences at the Veluwe. In 1642 nobleman Willem II purchased 1200 acres (heather fields, sand dunes, and seven forests) as his hunting ground.<sup>12</sup> That's where the misery of the fences started. The noblemen would fence off their land so the animals they set out to hunt for could not escape—this shows comparisons to what happened in Laag-Zutphen. Animals behind fences, defenseless against their predator and nowhere to run. Only in 1642, the human was the apex predator. These lords and ladies did not like hungry wolves preying on their hunting trophies and cattle, so the wolf was constantly prosecuted. The royals handed out large rewards to any hunter who would kill a wolf. *f*30,- Florijn for a young wolf, *f*100,- for an adult wolf, and *f*120,- Florijn for a pregnant wolf.<sup>13</sup> These were enormous figures for a poor hunter (100 times more than what they would receive for a fox), so they would go out of their ways to kill these poor animals to serve their lords.

After centuries of being hunted and prosecuted until extinction in the Netherlands, and many countries all over Europe, the wolf can now finally make her reentrance into the Dutch landscape, thanks to the protection law of Bern. But this beautiful occurrence will ask for spatial adjustments on the humans' end. The landscape is designed so that it's easy for humans to control the animal population. By fencing both

the domesticated and 'wild' animals, an artificial landscape is created that only serves our human needs. With the introduction of a new apex predator, this can lead to conflict between humans and animals and animals amongst each other, as the incident in Laag-Zutphen shows. The danger of this is that not the causer of the problem (humans) gets blamed, but the wolf is. And if these situations happen too often, this can have a disastrous effect on the wolf's protection and the support of their settlement.

How can we rearrange the Dutch landscape and focus on co-existence with other species, like the wolf, instead of subjecting other species to our human needs?

## A brief history of the wolf in Europe and in our human imagination.

The return of the wolf in the Netherlands is making us, if we want to or not, rethink the way we have designed our landscape. In the current Dutch layout, nature and animals are kept behind fences. This is not sustainable. Eventually, domesticated sheep will be victimized, or the wolf will. These problems can be solved by changing the layout of our landscape. But to make such rigorous changes there has to be a support base for this, which seems to be missing at this moment because people conceive the wolf as a threat.

The reason that we conceive the wolf as a problem is a cultural one. In his book: *Of Wolves and Men*, Barry Holstun Lopez states the following: *“The wolf is not an animal that we have consistently known but an animal that we have always imagined. To the human imagination, the wolf has proved at various times the appropriate symbol for greed or savagery, the exactly proper guise for the Devil, or as a fitting patron of warrior clans.”*<sup>14</sup>

This quote also counts for the Netherlands; we don't know how it is to live amongst wolves because she has not been around for the last 150 years. Even though she has not been around for all this time, we still have negative feelings towards her. We base these feelings towards the wolf on negative religious stories and folk tales from centuries ago. These stories were not based on facts but were meant to keep the peasants under the Church's power. To clarify how this negative image of the wolf came together, I will give you a brief introduction to the history of the wolf in Europe.

The wolf, in her current evolutionary form, has been around for 2 million years. Humans have only been around for 125.000 years.<sup>15</sup> The wolf was the first animal man domesticated; long before we held cattle, we held wolves. When people were still living as nomads and fed themselves by gathering and hunting, wolves became our protectors.<sup>16</sup> Wolf cubs were taken into the community and were tamed and trained as the first watchdogs. At this point in time, wild wolves were

a competitor for humans because they were hunting the same animals, but they were not a threat yet. People like the Greeks and Germans even drew strength, endurance, speed, alertness, and courage by identifying with the wolf. They would often wear a piece of wolf skin, to literally fight like animals when going to battle. This started way before our era and lasted until the middle ages.<sup>17</sup>

When people started farming, the position of the wolf changed. Poorly protected cattle became easy prey for the wolf, making the wolf more than a competitor; she became an economic threat. A threat that increased in the Middle ages when the majority of the people were farmers and sheep farming became a significant industry. Wool became the main element for textile by replacing animal skin, and for this reason, humans kept more and more sheep. These often inadequately protected sheep were easy prey for the wolf, and the loss of a sheep was a catastrophe for a poor shepherd.<sup>18</sup> This economic loss was the start of the wolf being linked to disaster, which later changed in an excuse to use her as a scapegoat when tragedies occurred.

Subsequently, the wolf became more and more associated with disaster and evil. During the middle ages, people lived behind large city walls to protect themselves against attacks from other people and animals. In times of war and epidemics, they would leave their compounds to go to battle or were sent away to prevent contamination. The weakened or dead bodies would make an easy meal for the wolf, and the human battlegrounds became places where wolves could feast on the remains of the fallen.<sup>19</sup> During epidemics, like the plague, the corpses around the cities became a banquet for the wolves. Because there was such an abundance of food, the wolves became more opportunistic and lost their cautious ways, coming ever closer to the humans. Where there was a tragedy, there was the wolf. People didn't link her coming as a consequence of the disaster but thought the wolf spread disaster.<sup>20</sup> Instead of realizing that the arrival of the wolf was a consequence of our actions, people blamed her for the horrific human-inflicted problems that were occurring. The

wolf became a symbolic risk for tribulation. She became demonized, and stories about werewolves and other devils' tendencies that the church spread did not contribute to the wolf's image.

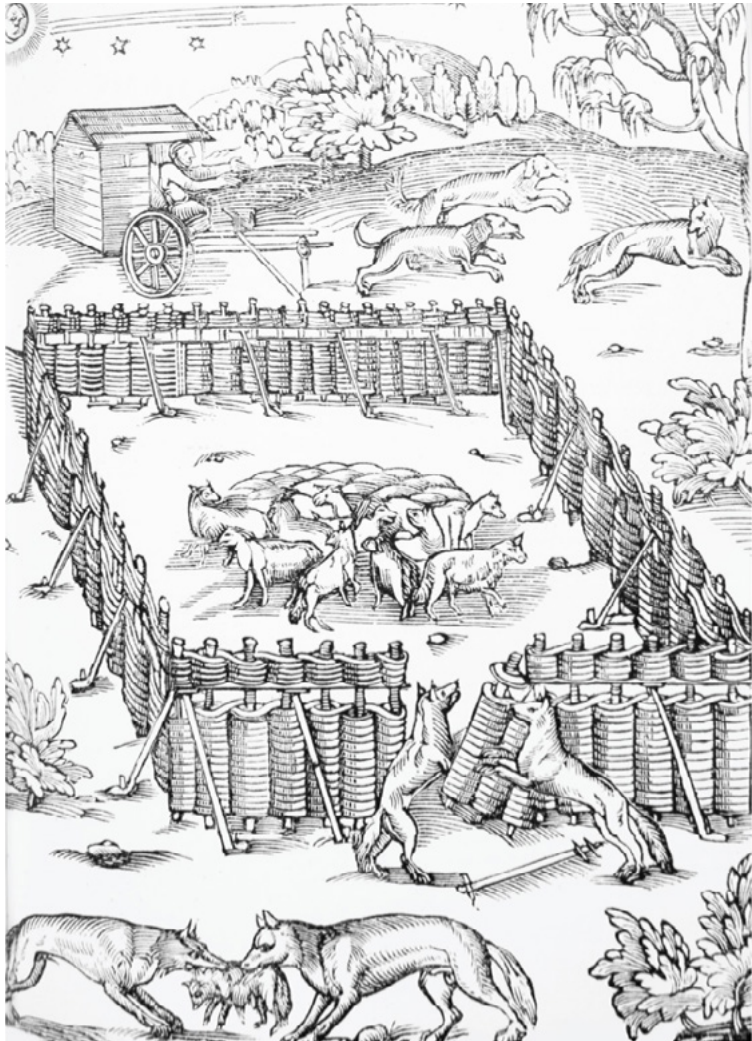
The roman Church that dominated medieval life exploited the wolf's sinister image as the Devil's embodiment in the real world. During the inquisition, the Church tried to smother social and political unrest and maintain secular control by prosecuting "werewolves" and convicting them to death; this contributed to the deepening fears for the wolf, in whatever form. <sup>21</sup>

Pagan festivals in which wild men, mythic relatives of wolves, played the central roles were popular. Peasants were in revolt against their feudal lords, and wolves represented the hated nobles in the proletarian literature. Medieval peasants called famine "the wolf", avaricious landlords were "wolves", anything that threatened a peasant's precarious existence was "the wolf".<sup>22</sup> The fear of wolves was partly grounded. She occasionally did kill a human, often children, who were easier prey for the wolf. The wolves also spread rabies, a horrible and incurable disease at that time, but the fear of wolves bordered on hysteria. This fear was fed not only by the stories of the Church but also by folktales like Little Red Riding Hood, where the wolf tries to eat an innocent young girl in the forest.

Thus, the prosecution of wolves in Europe and the Netherlands commenced. The first registered battue on a wolf in the Netherlands was in 1384 at the Veluwe. The hunt was executed by dozens of men who would drive the wolves in one direction of the field. At the end of the area, other men were waiting to spear the wolves.<sup>23</sup> The Church often played a big part in these mass hunts. Another method used for wolf hunting is an ever-shrinking circle of trapping wolves at a central "wolf beacon" where wolves get stuck in long safety nets or traps. The expensive nets were usually paid for and stored by the Church.<sup>24</sup> In a way, you could say that this is happening again, unintentionally, hundreds of years later. By fencing off the majority of the land, the wolf's territory gets smaller and smaller, making her an easy victim for

poachers and more vulnerable to accidents while she is pushed into human territory.

Sometimes, when the wolves were caught, her snout was cutt of, then she was dressed as humans and hung at gallows. Although this action was against the wolf, it was primarily meant to scare criminals and apostates of the Church. Hanging a wolf on gallows or a special wolf-oak may refer to hanging the wolf in sheep's clothing in one of Aesop's fables.<sup>25</sup> These actions don't seem like a trial of the wolf but a display of power towards people. This seems a direct consequence of all the negative stories surrounding the wolf, making her an easy scapegoat to set an example. Even though the wolf is not being hung at the gallows anymore, the stigma of the wolf being an embodiment of evil remains.



4: A wolf attack on badly protected sheep in 1566.

5: Little red riding hood and the wolf.



6: The hanging of a wolf in human clothes.



## The Dutch landscape, a monoculture of grass divided by fences.

With the wolf's return in 2017, it became utterly clear that she was still seen as an economic threat and that the stigma of a violent and evil animal hadn't changed. When the wolf still roamed the Netherlands one and a half century ago, we didn't protect our cattle better or changed our landscape's layout, our solution against wolf attacks was to prosecute the wolf until she was extinct. Now, 150 years after her extinction, she is back, and we are facing the same problem again. Only the conditions for the wolf have worsened as agriculture has wholly taken over the Dutch landscape in the last century.

Consequently, biodiversity decreased significantly, making it very hard for a top predator to stay away from farm animals. Even though GW998F has settled at the Veluwe, which contains many forests and enough wild prey to survive, she occasionally eats cattle.<sup>26</sup> And that is not strange because the Netherlands' landscape is structured so that a wolf's territory will always overlap with farms at some point. Two-thirds of our country has an agricultural destination, and again, two-thirds of that farmland is used for livestock. This has led to the fact that in 2014 we only had 15% of our biodiversity left what makes us the biggest 'loser' in this field of whole Europe and one of the biggest 'losers' in the world.<sup>27</sup> We should take on returning species that can help bring our biodiversity numbers back up. Studies have shown that in areas where wolves are settled they influence the behavior of their prey. The grazers have to be less predictable to avoid the wolf. This means that their area gets more widespread which gives new trees and plants the chance to develop. This increases the biodiversity in these areas.<sup>29</sup>

Susan Boonman-Berson points out in her Ph.D. Thesis: Rethinking Wildlife management living with wild animals, that *'we do not communicate with wild animals directly, but our communication is based on material traces or signs that both humans and wild animals have access to and that must be interpreted by both of them. Because*

*of our use of the land, we are continually giving signs, and thus we are regularly communicating with other species, usually without being aware of it.'*<sup>30</sup>

For instance, most national parks in the Netherlands are surrounded by fences and cattle grids. They are meant to keep the large grazers and wild boars inside the parks. For newcomers, like the wolf, the fence seems to communicate that she cannot enter these areas; this forces her into the domains assigned for humans, which, in turn, will increase the chance for conflicts as there is little wild prey to be found in these 'human' areas. When the land was divided and fenced off centuries ago, other species weren't taken into account; humans merely saw it from their perspective.

Where the fence once was a means to protect ourselves, we now use it for containment. We try to keep nature behind a fence to control her, as a prisoner behind a wall. Domesticated and 'wild' animals are being kept behind bars subjecting both of them to our human dominance. The fence is no longer a safeguard but a way of displaying power and a way to show ownership of the land that we are not willing to share with other species.

Martin Drenthen describes fences not only as a communication tool but as a tool for segregation between the built environment and nature. He says, *"We protect nature reserves so that endangered plants and animal species can survive there. But we generally regard the other areas as exclusive to us humans; there we completely control nature. Where we used to place a fence around a town or our yard to keep wild animals out, now fences and cattle grids mainly serve to keep wild animals in."*<sup>31</sup>

Martin Drenthen advocates for better wolf-proof fences as a good solution to protect our sheep against the wolf. To keep a wolf out of a meadow you need a 90 cm high fence with electric wiring.<sup>32</sup> This might seem like a good solution for the farmer, but when you look at it from an environmental friendly perspective this is not best answer. A



wolf proof fence does not only communicate to the wolf to stay out the meadow, other small animals will also stay away, decreasing the biodiversity in the area. When seen from an animals point of view, we have to get rid of our fences and look for better ways of communicating. An animal does not understand that a fence communicates to people that one side is for animals only and the other side is human land. They will conceive this fence as a barrier in the landscape. If they can overcome this barrier, what would keep them from entering? How can a wolf know the difference between a 'wild' sheep in a national park enclosed by fences to a domesticated sheep that stands in a meadow surrounded by fences? It is both the same prey, and they are both in a fenced-off area. To the wolf, it does not communicate anything different. As long as the communication stays unclear, the wolf will stay an economical threat because she will eat a sheep that was actually meant to be a human prey.

This becomes utterly clear when you look at what happened on the journey of she-wolf GW998F. Placing a fence can have detrimental consequences, as the incident in Laag-Zuthem shows. At this farm, hungry she-wolf GW998F killed 26 sheep in one night, 25 more than she ate.<sup>33</sup> While hunting wild prey, a wolf will usually kill one animal and live off its meat for days. When it comes to sheep attacks, wolves tend to kill many more than they can eat. The problem is the fenced area that traps the sheep. The fact that the sheep can't run away makes it an easy kill for the wolf. When the wolf attacks, the frightened sheep keep running in circles inside the fenced area. They are continuing to trigger the wolf to attack.<sup>34</sup> Where the fence was supposed to communicate that others had to stay out of the meadow, the miscommunication led to a massacre.

However, instead of getting rid of the fences and trying to work towards a more balanced way of cohabitation, the wolf's arrival seems to work in the exact opposite way. Farmers from the province of Friesland and Limburg asked the government to place a 150 km and a 600 km fence around their region to protect them against the wolf.<sup>35</sup> In both provinces, no wolf has settled yet. These farmers demand protection

against the wolf, but maybe the Dutch landscape needs protection from the farming industry growing out of proportion. The Netherlands is the fourth-most densely populated country globally, but we are also the second-largest export country of agricultural products after the US. For livestock products, like meat and milk, we are the world's most producing country.<sup>36</sup>

In such a small country, an agricultural machine of this scale will inevitably clash with the remaining landscape and its inhabitants. As a consequence, a lot of wild animals are being pushed towards villages and cities. If this happens with the wolf, looking at how we treat wild animals that disturb us in the Netherlands will inevitably cause problems.



7: The Dutch landscape, a monoculture of grass divided by fences.

## Naming

The described massacre in Laag-Zutphen wasn't the only attack on farm animals. Before she settled at the Veluwe, she-wolf Gw998f also attacked 34 sheep in Drenthe, Groningen, and Friesland.<sup>37</sup> This seems like a lot, but in the Netherlands, around ten thousand sheep are being bitten or killed by dogs and foxes every year.<sup>38</sup> The few wolf attacks that have occurred so far are nothing in comparison to these numbers. Nevertheless, since she arrived in 2017, the wolf has been national news monthly. Although the number of wolves in the Netherlands is still minimal, around 11, every newspaper and NewsChannel has extensively reported about them. Because they are being monitored closely, every step or slip is on the record. Every wolf born or settling in the Netherlands receives a name (read number) from Dutch scientists, a number based on their genetic code. The GW at the start of the code stands for Genetic Wolf and the F or M at the end stands for Male or Female. While the wolves in Belgium are named August and Noëlla, we work with GW998f and Gw893m. This practice does not help raise public sympathy for these animals.<sup>39</sup>

The Netherlands has a long history of subjecting nature to human needs and treating her and the beings that inhabited her as a product. The fact that we don't name wild animals contributes to the distance we have towards these living creatures. If a wolf does not get a name, it is a lot harder to achieve an emotional connection with this animal. Wild animals are not to be sympathized with; they are meant to be kept in control. Although everyone names their pets (I even name my fish), 'wild' animals don't seem worthy of affection. If people got too attached to these animals, it would make it a lot harder to eliminate them when needed for economic purposes.

Attributing human qualities to non-human beings - anthropomorphism - is still taboo among some (Dutch) scientists. This also counts for giving names to wild animals. Jane Goodall started naming wild animals in the 1960s during her chimpanzee research in Tanzania. In Belgium, scientists even give names to gulls and eels. In the Netherlands, the

excuse is that we don't want to humanize wild animals by giving them names.<sup>40</sup> The newspaper De Stensor executed a poll to see if the Dutch felt this way, and from the 511 votes, 69% agreed on not giving the wolf a name.<sup>41</sup> It is a shame because naming a wolf could raise a positive feeling towards the animal. When a wolf is on the news, it's often very confusing of which specific one they are speaking of; giving her a name could clarify a lot. It does not humanize the animal, but it does make clear that we are talking about a living being instead of a serial number, something that gives you the feeling of reading a license plate or barcode.

When scientists have established the genetic code, they track the wolves in different ways, for example, through their feces and saliva. This monitoring is done by BIJ12. BIJ12 works as an implementing organization for the twelve provinces of the Netherlands. They support counties in their routine tasks, especially in areas that have a vital farm sector.<sup>42</sup> Not only does BIJ12 monitor the wolves, but they also monitor the damage that wolves cause to human properties.

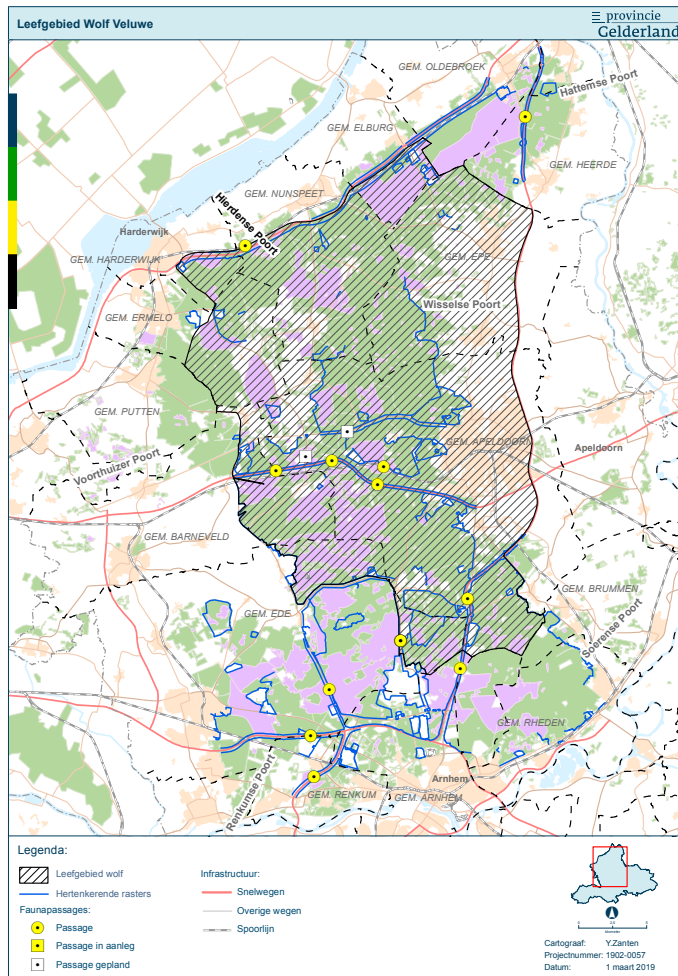
Domesticated sheep are an example of such property. When a wolf attacks a sheep, the farmer can report this to BIJ12, and they will reimburse the damage to the farmer. On the map, you can see the wolves monitored from July 17th until October 30th, 2020 in the Netherlands. The red and black wolf icon stands for the wolf couple living at the Veluwe, and the two small icons are two of their cubs. The grey icon on the bottom of Brabant is from a wolf that has officially settled there in December, and the white icons are from drifting wolves, with no official territory in the Netherlands.

8: A map of the wolf monitoring between 17 July and 30 October 2020



## The Veluwe

Through all the monitoring done by BIJ12, the territory of she-wolf GW998f and her partner GW893m at the Veluwe could be established quite precisely. On the map, you can see where the domain of the wolf is. The Wageningen University made this map for the province of Gelderland (where the wolves live), using the collected data on the wolf's family. The area is not one single site but is owned by different people and organizations, consists of several villages and cities, and is crossed by many roads and railways.



Because the Veluwe is such a divided land, the wolf's territory stretches over different forestry's, parks, and villages. In prehistory, the Veluwe was a relatively densely inhabited area, and at that time, the exhaustion of the land by deforestation started. Because the dry land wasn't easy to work with, many people moved to the wetter and agricultural friendlier areas of the Netherlands. By the middle ages, only farmers inhabited the area.<sup>43</sup> That the country wasn't densely populated does not mean the Dutch did not use it. Shepherds used the large fields for their sheep throughout the ages, which kept the heather fields short and prevented forestation. Farmers would sodd regularly and use it as fertilizer for their bare land; this kept the soil poor of nutrients. Farmers mowed the grasslands yearly for their hay, and this is how the blue grasslands emerged. Locals planted pine forests for wood winning and the oak forest where cut ones every four to seven years.<sup>44</sup>

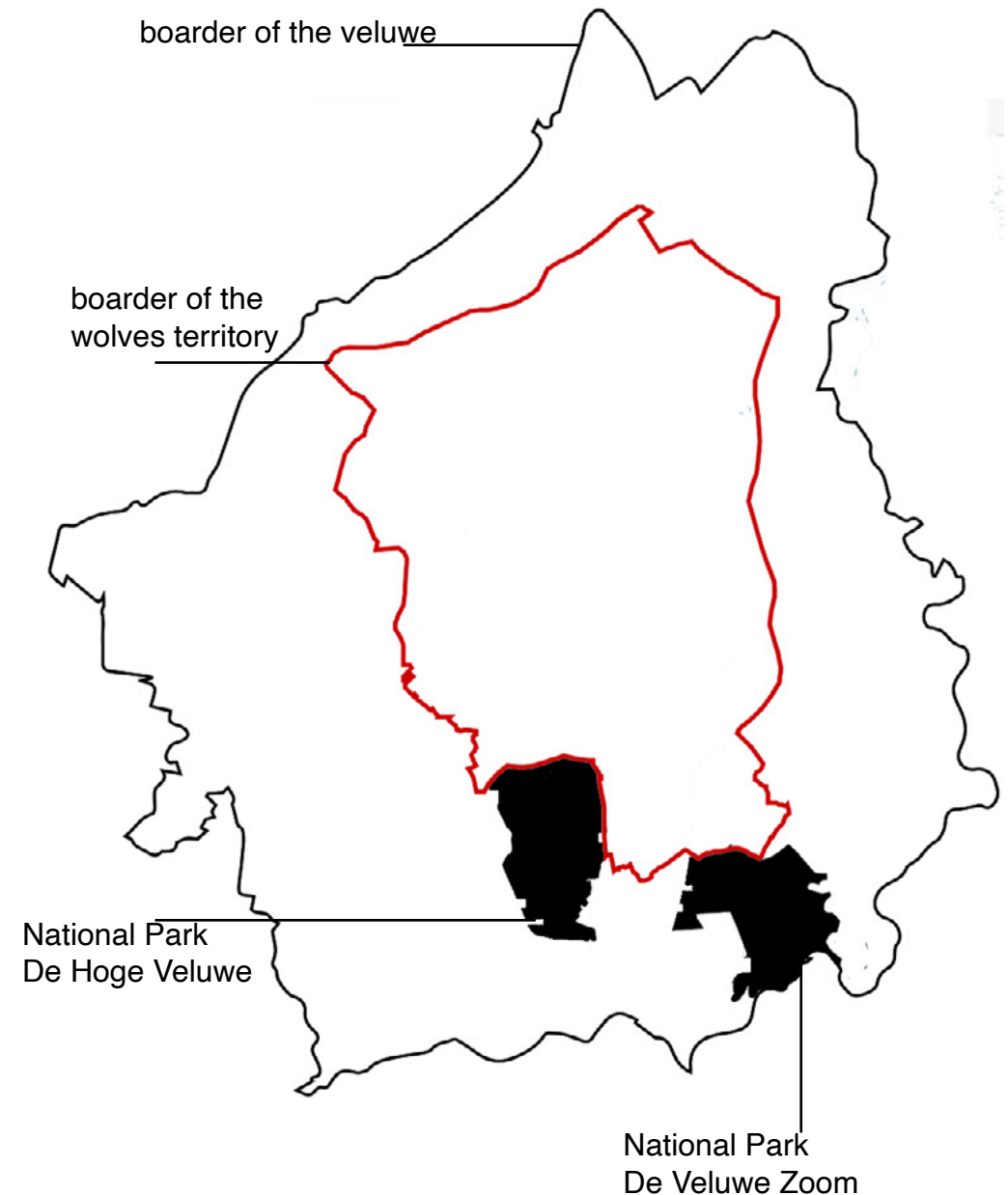
After the nobility of Gelderland build their castles and summer residences at the Veluwe in the 19th century, the Veluwe also became a popular place for nobles and royals from the West Netherlands. They also purchased land that they used for their holidays and hunting.<sup>45</sup> They would place barriers in the form of fences and cattle grids around their land so the animals they would hunt couldn't escape. The most famous example is the National Park de Hoge Veluwe, purchased by the Kröller-Müller couple. They fenced in 5400 hectares of land to use as a hunting ground which later became a national park. When the land was purchased over a century ago, inhabitants had to move elsewhere, and their farms were destroyed and reduced to rubble.<sup>46</sup> After fencing off their territory, Anton Kröller and his wife replaced the native animals by imported wild boars from The Czech Republic, Deers from Hungary, and the native sheep had to make room for Mouflons.<sup>47</sup> The meters high fences of the Hoge Veluwe form the bottom line of the wolf's territory. Where a national park would make a great wolf's territory because people do not inhabit it, the wolf is not welcome.

The current park board is afraid the wolf will eat the mouflons.<sup>48</sup> At the beginning of the last century, the park imported the mouflons to eat the

newly emerging trees in the heather fields to prevent forestation and maintain the heather fields. These beautiful purple fields are one of the main touristic attractions in the area. Over 625.000 tourists pay an entrance fee to the park every year to see these heather fields.<sup>49</sup> The wolf would become a commercial threat.

But there is another example of how the wolf forms an economic threat to the park. The board wants to be sure their visitors can see 'wild' animals when spending a day at the park, and the wolf would cause the other animals to show unpredictable behavior, typical for wild animals. With the wolf around, the deer and mouflons would flee to the park's quieter areas.<sup>50</sup> As Cronon discusses in *The Trouble with Wilderness*, people come to the park to expect wild nature, where it is instead a human creation formed over historical events.<sup>51</sup> To the park visitors, the fence communicates that inside it, their entrance fee will be worth something, as they will see real nature and wild animals. That is what they pay for. But to the only real wild animal, the wolf, it communicates that she is not welcome.

Nationaal Park de Hoge veluwe is one of the two national parks at the Veluwe. The other National Park, De Veluwe Zoom, is 5000 hectares. Hypothetically speaking, the wolf would be welcome at the Veluwe Zoom since Natuurmonumenten and Staatsbosbeheer present themselves as a wolf-friendly organization. Still, the fences and cattle grids that are surrounding the park are giving the wolf a different signal since their park is right underneath the bottom border of the wolf's territory.



10: Heather fields at the veluwe



## The Veluwe as a mosaic landscape

The Veluwe is a fragmented landscape that falls under the management of many different organizations. Because of the diverse land use, the forest and natural sights at the Veluwe are still in many owners' and organizations' hands. However, all these small plots fall under the European Natura 2000 network. This Natura 2000 network consists of areas designated under the Birds Directive and the Habitats Directive. Both European directives are essential instruments for safeguarding European biodiversity.<sup>52</sup> All areas have been selected based on species and habitat types that need protection from a European perspective. Even though the whole region falls under the Natura 2000 territory, every single forestry organization has its own rules and population management.

The largest part of the Veluwe is the Crown Domain which the royal family owns and uses as their private hunting ground. Many of the different forestry's are being closed off by fences and cattle grids, making it impossible for the animals to travel from one area to another. Not only the fences are causing a division in the landscape. The Veluwe is intersected by various national roads, provincial roads, local roads, and three railways. These intersections have a significant impact on the functioning of the Veluwe as a natural body. The splintering has been partially eliminated by constructing a series of Ecoducts along the national highways.<sup>53</sup>

However, these few Ecoducts are not enough to solve this huge problem. In line with the fences, the fragmentation by roads is also a bottleneck, especially for smaller animals. To animals, a busy road communicates the same thing as a fence, it's a border that you cannot cross. While for people, a road communicates that you can cross it, for an animal, it signals danger. When cars are driving at high speed back and forth, unintentionally, the roads communicate that it is a border, also, for wolves, who try to stay away from busy places and humans.

When domains get more and more divided, and the connections

between the regions are limited, the animal population will decrease, and the chance of extinction will increase.<sup>54</sup> This also affects the wolf family. A wolf's territory is much larger than one National Park in the Netherlands. The wolves will have to move between multiple parks and areas. If fences prohibit that, you will have the chance that the wolves will move to more densely inhabited areas. If the different regions are fenced off, and it is harder for the wolf to find prey, the consequence is that he or she sometimes gets seduced to eat poorly protected sheep or other small cattle.

On a Saturday, March 6th, 2021, this subdivision of the land by busy roads led to a horrific and dreadful event. The Veluwe is a popular touristic destination. Due to Covid-19, the area is more crowded than ever, and people are going off the designated trails to find their 'adventure'. This caused the wolves to feel unsafe in their territory and prompted unpredictable behavior. Where wolves usually shy away from people and busy roads, a young she-wolf was killed in a car accident at the Veluwe in broad daylight. She was pregnant with her first cubs and had already been digging dens in the area for her unborn babies. The she-wolf is the daughter of GW998F and was on her way to form the second wolf pack in the Netherlands.<sup>55</sup> When a she-wolf dies, the male leaves, which means the end of a wolf pack. The she-wolf represents a small step to a larger biodiversity, and this unnecessary death means a huge step back for the Dutch wildlife population. The newspaper calls it an accident, but it is an unavoidable consequence of the terrible landscape design, unnecessary land division, and mismanagement. If all the parks and forest at the Veluwe had appropriately been connected, this would not have happened.

In *Zoopolis A Political Theory of Animal Rights*, Sue Donaldson, Will Kymlicka shows that the hands-off approach is being widely supported in traditional animal rights theories. To protect wild animals, you have to leave them alone and don't hurt them. The writers debate if this is enough. Mistakes made by humans that, for instance, lead to habitat loss for animals should be actively recovered.<sup>56</sup> In the case of the Veluwe, this means that we should get rid of all the busy roads and



fences that are dividing the forest and parks to restore the animal territories as they were before the reallocation.

11: The she-wolf right after her death at the Veluwe.



## Fences and borders at the Veluwe

Removing all the fences at the Veluwe would be a monumental task. At the Veluwe, over 600 km of barriers are spread over the area to separate all the different parts. That means over 600 meters of fence per square kilometers, and in this official count, only the fences higher than 1 meter are counted. If all the fences were counted, it would be four times more, which would come out onto a sloppy 2400 km of fence in an area of 912 square kilometers.<sup>57</sup> Many of these fences are placed for the wild boars in the area. At the Veluwe, there is an inclement boar policy. According to this national policy, the wild boars are not allowed to roam around outside the Veluwe, and within the Veluwe, they are not allowed to enter agricultural zones. These areas are designated as zero-tolerance zones, indicating non-accessibility for wild boars, and physically restricted by (wild boar resistant) fences.<sup>58</sup> To put this zone into perspective, the whole of the Netherlands, except for the Veluwe, is a zero-tolerance zone. When a wild boar enters a zero-tolerance area, he or she can immediately be shot by a licensed hunter. These rules prevent the wild boars from burdening human activities like traffic, farming, and even gardening.<sup>59</sup> These activities are so vital to us that they count more heavily than a wild animal's life. Instead of forcing animals into a particular grid, it would be better to focus on co-existence. A wild boar can't understand that a fence is supposed to communicate that he or she will be killed when crossing this border. Nevertheless, he or she will get the death penalty when doing so. If we could arrange the landscape so that there is no segregation between people and animals, 'human land' and nature, this could save unnecessary bloodsheds.

All of these fences and cattle grids that are put up to constrain the wild boars also affect the wolf's habitat. Unintentionally, we communicate to the wolf family where they are and are not allowed to go. The fences are meant to constrain the animals into a fenced area, but they communicate to the wolves that they have to stay out of certain areas, like National Park de Veluwe Zoom. If we took the time to learn to live together with the wolf and adjust our behavior to their living patterns,

we wouldn't need these fences as a tool of communication.

Martin Drenthe, for example, talks about a village in the farm- and wetlands of central Gujarat in India. Here the inhabitants live together with "mugger" crocodiles, predators that can reach a staggering length of five meters.<sup>60</sup> Despite several fatal attacks, the inhabitants are proud of their muggers. Instead of killing them or locking them up, they build islands in the water where the crocodiles live to offer them safe basking places. After a long period, the reptiles have learned to interact peacefully with humans and vice versa. The fisherman anchors their boats a day before netting. After getting this signal, the muggers usually retreat to neighbor's wetland, allowing the fisherman to do their work. Although the process took a long time and a lot of patience, this example shows that humans and wild animals can learn to live together. The boats are the means of communication, and in contrast to the fence, they are only temporary and do not form a blockage for the muggers or any other animals that inhabit the area. One of the main differences between the muggers and the wolf is that the community in India has religious ties with the mugger crocodile dating back centuries.<sup>61</sup> This animal is associated with the Hindu warrior goddess Khodiya, where the wolf in the Netherlands was associated with the Devil.

The given example of how humans in central Gujara communicate to giant crocodiles shows us that with a lot of patience and respect, it is possible to coexist with dangerous animals. Time and mutual respect can teach both parties that they are not a danger to each other. <sup>62</sup> If you keep animals behind a fence, you don't get the chance to get used to each other and will not learn how to communicate because there will be no direct interaction. This also counts for the wolf. Almost no one has seen the wolf in real life, and the primary interaction we have with her is through the occasional dead sheep she leaves behind in our fenced meadows.

In the Netherlands, we could communicate with the wolf without using fences but by using a translator, someone who understands both human and animal signs of communication: a watchdog. Before we had fences everywhere in our landscape, shepherds already used dogs to

protect their herds. When livestock farming intensified, these watch-dogs were replaced by a fence. Now that the fences have turned out to be problematic, there has been a two-year testing pilot with trained watchdogs that live with sheep herds to protect them against predators at the Sallandse Heuvelrug. During this period, the herd of sheep was left alone by wolves and other dogs and foxes.<sup>63</sup> The latter is a nice bonus because dogs and foxes cause much more damage to farm animals than wolves do.<sup>64</sup> This is a way better solution than violently and abruptly dividing land and making it inaccessible to different species or trapping others. The problem with this way of communicating is that it comes with a higher cost price and needs more attention and care than a barbwire fence. To make this a success, you would need a large base of support for the wolf in the Netherlands, which unfortunately is still missing at the moment.

12: A woman and her cattle next to the crocodile pond where a mugger crocodile is swimming, in central Gujarat in India.



## Conclusion

Over centuries, humans left traces in our landscape to control and protect their properties. We build fences around our gardens, meadows, and even forest. The Cattle grids and fences around the forest were built to protect our properties from animals that might wander out of these areas into the built environment. To keep complete control over these 'wild beasts' we tried to lock them in. As Martin Drenthen states: *Where we used to place a fence around a town or our yard to keep wild animals out, now fences and cattle grids mainly serve to keep wild animals in.*<sup>65</sup> The same goes for our domesticated animals. We keep them in meadows surrounded by obstructions so they can't run away. These territorial strategies communicate with the animals that inhabit the areas.

Dr. Susan Boonman-Berson pointed out: *"We do not communicate with wild animals directly, but our communication is based on material traces or signs that both humans and wild animals have access to and that must be interpreted by both of them."*<sup>66</sup> The wolf can interpret these signs a lot differently than we have intended to. For this top predator, the obstruction around a meadow can communicate a containment of her prey. This can lead to horrific accidents where many more sheep than necessary get killed. An animal does not understand what we try to communicate with our fences. For them, it is just an obstruction in the landscape. We have to think of ways to communicate to animals clearly and work towards co-inhabitation instead of only trying to control them.

There are many advocates for better wolf-proof fences to protect our cattle from the wolf to prevent bloodshed. This would only benefit the farmer and his cattle and would not help the biodiversity of our landscape. We should try to find different ways of communicating with the wolf instead of placing more fences. A wolf-proof fence might keep the wolf out of a meadow or area, but it also keeps other animals away. The problem is not only that barriers lead to direct violence; in the longer term, they can lead to a decrease in biodiversity. When domains

get more and more divided, and the connections between the regions are limited, animals' population will decrease, and the chance of extinction will increase.<sup>67</sup> Animal territories should be protected and restored instead of making them smaller and smaller by placing fences and other obstructions to communicate that they don't belong there. We are currently moving towards a mass extinction<sup>68</sup> and will have to find better ways to communicate with animals to work towards co-existence before it is too late. For centuries humans believed that the wolf spread disaster; however, she can prevent disaster by bringing our biodiversity back up.

At this moment, two-thirds of our country has an agricultural destination, and two-thirds of that farmland is used for livestock. This will lead to an unavoidable clash with the wolf, who needs a territory of 250 to 300 square kilometers. Our landscape, a monoculture of grass, does not provide such a place without an intersection with agricultural land. This overkill of farmland led to the fact that in 2014 we only had 15% of our biodiversity left.<sup>69</sup>

While we should embrace the wolves' return as growth in biodiversity, many of us are still hesitant. This came from a fear of wolves based on an outdated paradigm and came forth from the wolf being an economic threat. After being away for 150 years, the situation hasn't improved, and due to the unfriendly animal layout of our landscape, the wolf remains an economic threat to farmers. As long as we don't adjust our landscape to live in cohabitation and find new ways of communication with the wolf, she will keep eating our livestock, and we will stay trapped in this vicious circle.

## Bibliography

- 1: Wilo Meijers (2019) De wolf terug als vaste bewoner, for natuurmonumenten (nature monuments), <https://www.natuurmonumenten.nl/nieuws/wolf-terug-als-vaste-bewoner>
- 2: Dick Klees, Erwin van Maanen, Leo Linnartz, Martin Drenthen, Michiel van der Weide (2015) De wolf terug, eng of enerverend? Publisher: Kosmos uitgevers, P 60
- 3: Dick Klees, Erwin van Maanen, Leo Linnartz, Martin Drenthen, Michiel van der Weide (2015) De wolf terug, eng of enerverend? Publisher: Kosmos uitgevers, P 86
- 4: <https://www.nationaalpark.nl/#:~:text=Nederland%20heeft%2021%20nationale%20parken,%2C%20getijdenwater%2C%20beekdalen%20en%20vennen.>
- 5: Jaap Selles (2018) 26 schapen in Laag Zuthem doodgebeten door wolf – published by Newspaper de Stensor: <https://www.destentor.nl/raalte/26-schapen-in-laag-zuthem-doodgebeten-door-wolf~ac8f7b74/>
- 6: Martin Drenthen (2020) Wolven en de noodzaak tot intersoortelijke communicatie Published by Zoogdierenvereniging: <https://www.zoogdierveniging.nl/nieuws/2020/nu-zoogdier-wolven-en-de-noodzaak-tot-intersoortelijke-communicatie>
- 7: Martin Drenthen (2020) Wolven en de noodzaak tot intersoortelijke communicatie Published by Zoogdierenvereniging: <https://www.zoogdierveniging.nl/nieuws/2020/nu-zoogdier-wolven-en-de-noodzaak-tot-intersoortelijke-communicatie>
- 8: Wilo Meijers (2019) De wolf terug als vaste bewoner, for natuurmonumenten (nature monuments) <https://www.natuurmonumenten.nl/nieuws/wolf-terug-als-vaste-bewoner>
- 9: Tussenrapportage activiteit wolf in Nederland, Bij12 <https://publicaties.bij12.nl/tussenrapportage-wolf-17-maart-2021/inhoud/>
- 10: By Susan Boonman-Berson (2018) PHD Thesis: Rethinking Wildlife management- living with wild animals for Wageningen university, P97
- 11: Jozef Keulart (2019) Dieren in ons midden, Publisher: Noordboek Natuur, P51
- 12: Jan Neefjes (2018) Landschapsbiografie van de Veluwe, Historisch landschappelijke karakteristieken en hun ontstaan, , For Rijksdienst voor het Cultureel Erfgoed, P70
- 13: Dick Klees, Erwin van Maanen, Leo Linnartz, Martin Drenthen, Michiel van der Weide (2015) De wolf terug, eng of enerverend? Publisher: Kosmos uitgevers, P57
- 14: Barry Holstun Lopez (1975) Of wolves and Men, Macmillan Publishing Company, P 201
- 15: <https://www.wolveninnederland.nl> – a website created by different nature organizations and specialist to inform the Netherlands about wolves.
- 16: Dick Klees, Erwin van Maanen, Leo Linnartz, Martin Drenthen, Michiel van der Weide (2015) De wolf terug, eng of enerverend? Publisher: Kosmos uitgevers, P15
- 17: Dick Klees, Erwin van Maanen, Leo Linnartz, Martin Drenthen, Michiel van der Weide (2015) De wolf terug, eng of enerverend? Publisher: Kosmos uitgevers, P13
- 18: Dick Klees, Erwin van Maanen, Leo Linnartz, Martin Drenthen, Michiel van der Weide (2015) De wolf terug, eng of enerverend? Publisher: Kosmos uitgevers, P49

19: Dick Klees, Erwin van Maanen, Leo Linnartz, Martin Drenthen, Michiel van der Weide (2015) De wolf terug, eng of enerverend? Publisher: Kosmos uitgevers, P51

20: Dick Klees, Erwin van Maanen, Leo Linnartz, Martin Drenthen, Michiel van der Weide (2015) De wolf terug, eng of enerverend? Publisher: Kosmos uitgevers, P51

21: Barry Holstun Lopez (1975) Of wolves and Men, Macmillan Publishing Company, P207

22: Barry Holstun Lopez (1975) Of wolves and Men, Macmillan Publishing Company, P207

23: Dick Klees, Erwin van Maanen, Leo Linnartz, Martin Drenthen, Michiel van der Weide (2015) De wolf terug, eng of enerverend? Publisher: Kosmos uitgevers, PP 54-55

24: Dick Klees, Erwin van Maanen, Leo Linnartz, Martin Drenthen, Michiel van der Weide (2015) De wolf terug, eng of enerverend? Publisher: Kosmos uitgevers, P56

25: Dick Klees, Erwin van Maanen, Leo Linnartz, Martin Drenthen, Michiel van der Weide (2015) De wolf terug, eng of enerverend? Publisher: Kosmos uitgevers, P18

26: Website Bij12 : an excel sheet of all the wolf attacks and their location: <https://www.bij12.nl/onderwerpen/faunazaken/wolf/>

27: Jozef Keulart (2019) Dieren in ons midden, Publisher: Noordboek Natuur, P14

29: wolf terug, eng of enerver- end? Dick Klees, Erwin van Maanen, 2015. Publisher: Kosmos uitgevers Page 79

30: Martin Drenthen (2020) Wolven en de noodzaak tot inter-

soortelijke communicatie Published by Zoogdierenvereniging: <https://www.zoogdierveniging.nl/nieuws/2020/nu-zoogdier-wolven-en-de-noodzaak-tot-intersoortelijke-communicatie>

31: Martin Drenthen (2020) Wolven en de noodzaak tot inter-soortelijke communicatie Published by Zoogdierenvereniging: <https://www.zoogdierveniging.nl/nieuws/2020/nu-zoogdier-wolven-en-de-noodzaak-tot-intersoortelijke-communicatie>

32: Sandra Veltmaat (2020) Nu al twee keer zoveel aanvallen door wolven in Nederland als in heel 2019 – Published by the Stensor (Dutch newspaper) <https://www.destentor.nl/epe/nu-al-twee-keer-zoveel-aanvallen-door-wolven-in-nederland-als-in-heel-2019~a2e19b6d/>

33: Jaap Selles (2018) published 26 schapen in Laag Zuthem doodgebeten door wolf –Newspaper de stensor: <https://www.destentor.nl/raalte/26-schapen-in-laag-zuthem-doodgebeten-door-wolf~ac8f7b74/>

34: Wilo Meijers (2019) De wolf terug als vaste bewoner, Natuurmonumenten (nature monuments), <https://www.natuurmonumenten.nl/nieuws/wolf-terug-als-vaste-bewoner>

35: redactie trouw (2021) Friese boeren willen een hek rond de provincie tegen de wolf Publisher, Trouw (Dutch Newspaper) [https://www.trouw.nl/duurzaamheid-natuur/friese-boeren-willen-een-hek-rond-de-provincie-tegen-de-wolf~b88548de/#:~:text=Een%20%20groep%20Friese%20veehoud-%20ers%20wil,ongelimeerde%20%20uitbreiding%20van%20de%20%20wolf%E2%80%99.%20&%20https://www.hbvl.be/cnt/%20dmf20190709\\_04502307](https://www.trouw.nl/duurzaamheid-natuur/friese-boeren-willen-een-hek-rond-de-provincie-tegen-de-wolf~b88548de/#:~:text=Een%20%20groep%20Friese%20veehoud-%20ers%20wil,ongelimeerde%20%20uitbreiding%20van%20de%20%20wolf%E2%80%99.%20&%20https://www.hbvl.be/cnt/%20dmf20190709_04502307)

36: Jozef Keulart (2019) Dieren in ons midden, Publisher: Noordboek Natuur, P9

37: Website Bij12 : an excel sheet of all the wolf attacks and their location: <https://www.bij12.nl/onderwerpen/faunazaken/wolf/>

38: Sandra Veltmaat (2020) Nu al twee keer zoveel aanvallen door wolven in Nederland als in 2019, Published by De Stensor (Dutch Newspaper) <https://www.destentor.nl/epe/nu-al-twee-keer-zoveel-aanvallen-door-wolven-in-nederland-als-in-heel-2019~a2e19b6d/>

39: Floris Brandriet (2020) België heeft August en Noëlla, maar waarom hebben de Veluwse wolven eigenlijk geen naam? De Stensor (Dutch Newspaper) <https://www.destentor.nl/veluwe/belgie-heeft-august-en-noella-maar-waarom-hebben-de-veluwse-wolven-eigenlijk-geen-naam~a2860717/>

40: Floris Brandriet (2020) België heeft August en Noëlla, maar waarom hebben de Veluwse wolven eigenlijk geen naam? De Stensor (Dutch Newspaper) <https://www.destentor.nl/veluwe/belgie-heeft-august-en-noella-maar-waarom-hebben-de-veluwse-wolven-eigenlijk-geen-naam~a2860717/>

41: Floris Brandriet (2020) België heeft August en Noëlla, maar waarom hebben de Veluwse wolven eigenlijk geen naam? De Stensor (Dutch Newspaper) <https://www.destentor.nl/veluwe/belgie-heeft-august-en-noella-maar-waarom-hebben-de-veluwse-wolven-eigenlijk-geen-naam~a2860717/>

42: Maak kennis met IPO/BIJ12 – Over BIJ12 published at the website of BIJ12: [bij12.nl/over-bij12/](http://bij12.nl/over-bij12/)

43: Jan Neefjes (2018) Landschapsbiografie van de Veluwe, Historisch landschappelijke karakteristieken en hun ontstaan, Rijksdienst voor het Cultureel Erfgoed, PP9-11

44: J.L. van Zanden en S.W. Verstegen (1993) Groene geschiedenis van Nederland Publisher: Het Spectrum, P11

45: Jan Neefjes (2018) Landschapsbiografie van de Veluwe, Historisch landschappelijke karakteristieken en hun ontstaan, Rijksdienst voor het Cultureel Erfgoed, P69

46: Quirijn Vissche (2010) De Hoge Veluwe, in de geest van Kröller, Published by Trouw (Dutch Newspaper) <https://www.trouw.nl/nieuws/de-hoge-veluwe-in-de-geest-van-kroller~b870af49/>

47: Quirijn Vissche (2010) De Hoge Veluwe, in de geest van Kröller, Published by Trouw (Dutch Newspaper) <https://www.trouw.nl/nieuws/de-hoge-veluwe-in-de-geest-van-kroller~b870af49/>

48: Stichting het Nationale park de Hoge Veluwe (2019) Standpunt van Het Nationale Park De Hoge Veluwe ten aanzien van de wolf. Published on their website. P2 <https://www.hogeveluwe.nl/files/Standpunt%20NPDHV%20ten%20aanzien%20van%20de%20wolf.pdf>

49: Stichting Nationaal park de Hoge Veluwe (2019) Ruim 625.000 betalende bezoekers voor Het Nationale Park de Hoge Veluwe in 2019, Published on their website: <https://www.hogeveluwe.nl/nl/pers/2020-01-21-ruim-625-000-betalende-bezoekers-voor-het-nationale-park-de-hoge-veluwe-in-2019>

50: Stichting het Nationale park de Hoge Veluwe (2019) Standpunt van Het Nationale Park De Hoge Veluwe ten aanzien van de wolf. Published on their website. P4, published on their website: <https://www.hogeveluwe.nl/files/Standpunt%20NPDHV%20ten%20aanzien%20van%20de%20wolf.pdf>

51: Cronon, William (1995) The Trouble With Wilderness; or, Getting Back to the Wrong Nature In William Cronon, ed., Uncommon Ground: Rethinking the Human Place in Nature, New York: W. W. Norton & Co., PP 69-90

52: Natura 2000 Ministerie van Landbouw, Natuur en Voedselkwaliteit : <https://www.natura2000.nl/gebieden>

53: Jozef Keulart (2019) Dieren in ons midden, Publisher: Noordboek Natuur, P57

54: Jozef Keulart (2019) Dieren in ons midden, Publisher: Noordboek Natuur, P57

55: Natuurmonumenten (2021) De dure les van een dode wolf Published on their website: <https://www.natuurmonumenten.nl/nieuws/de-dure-les-van-een-dode-wolf>

56: Sue Donaldson, Will Kymlicka (2011) Zoopolis A Political Theory of Animal Rights by Sue Donaldson, Will Kymlicka, Published by oxford university press. P 167

57: Jozef Keulart (2019) Dieren in ons midden, Publisher: Noordboek Natuur, P52

58: Susan Boonman-Berson (2018) PHD Thesis: Rethinking Wildlife management- living with wild animals, University of Wageningen, P95

59: Susan Boonman-Berson (2018) PHD Thesis: Rethinking Wildlife management- living with wild animals, University of Wageningen, P95

60: Martin Drenthen (2020) Wolven en de noodzaak tot intersoortelijke communicatie Published by Zoogdierenvereniging: <https://www.zoogdierveniging.nl/nieuws/2020/nu-zoogdier-wolven-en-de-noodzaak-tot-intersoortelijke-communicatie>

61: Simon Pooley and Silvio Marchini, (2020) What living alongside crocodiles can teach us about coexisting with wildlife. Published at The conversation.com <https://theconversation.com/what-living-alongside-crocodiles-can-teach-us-about-coexisting-with-wildlife-139144>

62: Martin Drenthen (2020) Wolven en de noodzaak tot intersoortelijke communicatie Published by Zoogdierenvereniging: <https://www.zoogdierveniging.nl/nieuws/2020/nu-zoogdier-wolven-en-de-noodzaak-tot-intersoortelijke-communicatie>

63: Floris Brandriet (2020) Deze honden houden wolven weg bij de

schapen op Sallandse Heuvelrug, maar duur is dat wel. Published by De Stensor (Duch newspaper) <https://www.destentor.nl/salland/deze-honden-houden-wolven-weg-bij-de-schapen-op-sallandse-heuvelrug-maar-duur-is-dat-wel~a074979ce/>

64: Sandra Veltmaat (2020) Nu al twee keer zoveel aanvallen door wolven in Nederland als in 2019, Published by De Stensor (Dutch Newspaper) <https://www.destentor.nl/epe/nu-al-twee-keer-zoveel-aanvallen-door-wolven-in-nederland-als-in-heel-2019~a2e19b6d/>

65: Martin Drenthen (2020) Wolven en de noodzaak tot intersoortelijke communicatie Published by Zoogdierenvereniging: <https://www.zoogdierveniging.nl/nieuws/2020/nu-zoogdier-wolven-en-de-noodzaak-tot-intersoortelijke-communicatie>

66: Martin Drenthen (2020) Wolven en de noodzaak tot intersoortelijke communicatie Published by Zoogdierenvereniging: <https://www.zoogdierveniging.nl/nieuws/2020/nu-zoogdier-wolven-en-de-noodzaak-tot-intersoortelijke-communicatie>

67: Jozef Keulart (2019) Dieren in ons midden, Publisher: Noordboek Natuur. P57

68: Jozef Keulart (2019) Dieren in ons midden, Publisher: Noordboek Natuur. P12

69: Jozef Keulart (2019) Dieren in ons midden, Publisher: Noordboek Natuur. P14



## Image Bibliography:

1: <https://www.wolvenin nederland.nl/nieuws/wederom-een-wolf-nederland>

2: Forester with the first excrement of she-wolf GW998f at the Veluwe. <https://www.natuurmonumenten.nl/nieuws/wolf-terug-als-vaste-bewoner>

3: She-wolf GW998f and her partner Gw893m at the Veluwe. <https://www.volkskrant.nl/nieuws-achtergrond/de-hoge-veluwe-bant-nieuwe-herten-en-wolven~b88f422b/>

4: A wolf attack on badly protected sheep in 1566 from the book: Wolf terug eng of enerverend? P50

5: Little red riding hood and the wolf from the book: Of wolves and men p257

6: The hanging of a wolf in human clothes from the book: De wolf terug eng of enerverend P18

7: The Dutch landscape, a monoculture of grass divided by fences. <https://www.destentor.nl/zwolle/roep-om-einde-aan-oneerlijke-concurrentie-van-buitenlandse-boeren~a056aba8/>

8: A map of the wolf monitoring between 17 July and 30 October 2020 <https://www.bij12.nl/nieuws/tussenrapportage-wolf-17-juli-30-oktober-2020/>

9: Map of wolf territory at the Veluwe: <https://www.gelderlander.nl/binnenland/bekijk-de-kaart-dit-is-het-leefgebied-van-wolven-op-de-veluwe~a800bc64/144223063/>

10: Heather fields at the veluwe: <https://www.visitveluwe.nl/artikelen/hier-geniet-je-van-de-bloeiende-heide>

11: The she-wolf right after her death at the Veluwe: <https://www.rtlnieuws.nl/nieuws/nederland/artikel/5220327/doodgereden-wolvin-op-veluwe-was-zwanger-van-8-welpen>

12: A woman and her cattle next to the crocodile pond where a mugger crocodile is swimming in central Gujarat in India : <https://theconversation.com/what-living-alongside-crocodiles-can-teach-us-about-coexisting-with-wildlife-139144>