

# **Changing Attitudes to Swedish Wolf Policy**

Wolf Return, Rural Areas, and Political Alienation

**Max Eriksson**



**Department of Political Science**  
Umeå 2016

Copyright © Max Eriksson

ISBN: 978-91-7601-632-9

ISSN: 0349-0831 Research Report 2016:4

Department of Political Science

Cover by CellarDoor85/wikimediacommons/CC-BY-SA-3.0

An electronic version of this thesis is available at <http://umu.diva-portal.org/>

Printed by Print & Media, Umeå University

Umeå, Sweden 2016

# Table of Contents

<b>Table of Contents</b> .....	<b>i</b>
<b>List of Papers</b> .....	<b>iii</b>
<b>Abstract</b> .....	<b>v</b>
<b>Svensk sammanfattning</b> .....	<b>vi</b>
<b>Acknowledgements</b> .....	<b>ix</b>
<b>Acronyms and Abbreviations</b> .....	<b>xi</b>
<b>1. Introduction</b> .....	<b>1</b>
Attitudes Towards Wolves.....	6
Aim and Research Question .....	8
<b>2. Development of the Swedish Wolf Policy</b> .....	<b>11</b>
International Drivers and National Responses.....	13
<b>3. Theoretical framework</b> .....	<b>16</b>
Attitudes and Policy .....	16
Attitudes and the Cognitive Hierarchy .....	17
Environmental Change: Wolf return and Direct Experience.....	20
Socio-Political Change: Rural-Urban Cleavage and Political Alienation.....	21
Institutional Change: Collaborative Governance and Swedish Wolf Policy .....	23
<b>4. Materials and Methods</b> .....	<b>26</b>
Study Design .....	26
Surveys: A Structured Way of Asking Questions .....	26
Statistics: Description, Analysis, and Generalization .....	27
Sources of Error .....	28
The Survey Process.....	29
Analytical Tools .....	31
Data Collection and Sampling.....	32
Measurements.....	35
Strengths and Weaknesses .....	36
<b>Overview of Appended Papers</b> .....	<b>38</b>
<b>5. Results</b> .....	<b>40</b>
<i>Environmental Change</i> .....	41
<i>Socio-Political Change</i> .....	43
<i>Institutional Change</i> .....	45
<b>6. Discussion</b> .....	<b>46</b>
Policy Implications .....	48
Concluding Remarks .....	52
Future Research .....	53
<b>References:</b> .....	<b>54</b>



# List of Papers

This thesis builds upon the four studies that are listed below. These papers are referred to throughout the text using Roman numerals.

- Paper I** Eriksson, M., Sandström, C. and Ericsson, G. 2015.  
Direct experience and attitude change towards bears and wolves. *Wildlife Biology*, 21(3), 131-137.  
DOI: <http://dx.doi.org/10.2981/wlb.00062>
- Paper II** Eriksson, M.  
Political alienation, rurality and the symbolic role of wolf policy  
Manuscript.  
Currently submitted to Taylor & Francis LLC,  
[http:// www.tandfonline.com](http://www.tandfonline.com) for publishing consideration.
- Paper III** Eriksson, M. 2016.  
Rurality and Collective Attitude Effects on Wolf Policy.  
*Sustainability*. 8(8), 711. DOI: 10.3390/su8080711
- Paper IV** Eriksson, M. Sandström, C. Roos, K., and Ericsson, G.  
Value patterns and input legitimacy, in Swedish wolf governance.  
Manuscript.  
Currently submitted to Elsevier, <https://www.elsevier.com> for publishing consideration.



# Abstract

In 1966, the grey wolf was listed as a protected species in Sweden. Since then, the Swedish wolf population has increased in size, making human-wolf encounters more common, particularly in rural areas. Previous qualitative research has shown that segments of the rural population perceive the wolf to be incompatible with traditional rural life. Some also believe that the return of the wolf was orchestrated by urban interests, and perceive the wolf policy as a vehicle for the consolidation of urban power in rural areas. Thus, the return of the wolf can be assumed to aggravate pre-existing urban-rural tensions, resulting in conflicts over wolf policy, which Swedish wolf governance could be ill-equipped to handle. In view of this, this thesis is an examination of,

*how environmental, socio-political, and institutional factors affect variations in public attitudes to the Swedish wolf policy over time, and discuss their policy implications.*

Drawing on extensive survey material collected in Sweden in 2004, 2009, and 2014, the wolf policy is approached from a political science perspective. This thesis is an attempt to bridge a number of existing gaps in literature related to wolves and policy, individual and collective level explanatory factors, and attitude change. The underlying assumption is that environmental, socio-political and institutional factors are likely to impact attitudes to wolf policy. Environmental change is found to be relevant, as direct experiences with wolf have increased over time, a development that was also associated with an increase of support for a more restrictive wolf policy (Paper I). Regarding socio-political change, politically alienated individuals were less likely to support the current wolf policy, and more likely to favor either more, or less restrictive policy options compared to other individuals. Rural areas displayed higher levels of political alienation than urban areas, and people living in rural areas were more likely to favor a more restrictive wolf policy (Paper II). Furthermore, individuals living in municipalities in which a high proportion of residents had grown up in a rural area, tended to favor a more restrictive wolf policy, an effect which could also be associated with political alienation (Paper III). Finally, institutional change was examined through an analysis of public support for the actors within the Wildlife Management Delegations (WMDs). In general, the interest groups represented in WMDs were found to reflect the representation preferred by the public. However, findings show a fundamental value divide in relation to natural resources, among the Swedish public, which is also reflected within the WMDs (Paper IV).

The return of the wolf has caused part of the general public to want fewer wolves in Sweden. This attitudinal change is related to a growing divide between urban-rural areas in Sweden, and associated with a general pattern of political alienation. Thus, the wolf policy has become a symbolic issue around which rural citizens rally their fight against urban interests for political autonomy.

# Svensk sammanfattning

Sedan vargen fridlystes 1966 har den svenska vargstammen vuxit i storlek och vintern 2015/2016 fanns det omkring 269-442 vargar i Sverige. Vargens återkomst har inneburit att människor allt oftare kommer i direkt kontakt med varg, något som kan förväntas påverka allmänhetens attityder och leda till konflikter mellan stad och land.

En majoritet av den svenska befolkningen är positivt inställd till varg, men boende på landsbygden tenderar att vara mindre positiva till varg än stadsbor. Till viss del kan denna attitydskillnad förklaras av geografisk närhet till varg, eftersom dess närvaro begränsar aktiviteter som jakt och djurhållning. Därmed finns det en konflikt mellan vargen och människor som bor på landsbygden, vilken tillsammans med kulturella och historiska faktorer, bidrar till att vargen uppfattas som oförenlig med en levande svensk landsbygd.

Delar av landsbygdsbefolkningen ser även vargens återkomst som ett urbant politisk projekt, där vargpolicyn används som ett verktyg för att befästa städernas politiska inflytande över landsbygden. Därmed är vargmotståndet bland den svenska landsbygdsbefolkningen sannolikt kopplat till grundläggande motsättningar mellan stad och land i termer av politisk makt. Mot bakgrund av detta undersöker denna avhandling:

*hur miljörelaterade, sociopolitiska och institutionella faktorer påverkat allmänhetens attityder till den svenska vargpolicyn över tid, samt vilka implikationer detta har för policy.*

Baserat på material från tre omfattande attitydundersökningar insamlade i Sverige 2004, 2009, och 2014, analyserar den här avhandlingen den svenska allmänhetens attityder till vargpolicyn. Utifrån ett statsvetenskapligt perspektiv identifierar denna avhandling ett antal luckor i befintlig litteratur, relaterade till varg, vargpolicy, individuella och kollektiva förklaringsfaktorer, samt attitydförändringar, genom en undersökning av den svenska allmänhetens attityder till den nationella vargpolicyn, mellan 2004 och 2014.

Avhandlingen visar att direkt erfarenhet av varg har blivit vanligare i Sverige över tid, framförallt på landsbygden. Sammantaget har denna miljörelaterade förändring resulterat i ett ökat stöd för en mer restriktiv vargpolicy (Artikel I). Den har även medfört en ökad polarisering mellan stad och land, samt minskat acceptansen för den nuvarande vargpolicyn (Artikel II).

Även socio-politiska faktorer, särskilt politisk aliering, har påverkat allmänhetens attityder till vargpolicyn. Politiskt alierade individer var mindre benägna att stödja den nuvarande vargpolicyn än allmänheten i stort, till förmån för policyalternativ som antingen var mer, eller mindre, restriktiva än



den nuvarande vargpolicyn (Paper II). Boende på landsbygden var dock både mer benägna att föredra en restriktivare vargpolicy och i högre utsträckning politiskt alienerade, jämfört med stadsbor (Paper II). Individens attityd till vargpolicyn påverkades även av andelen boende i deras hemkommun som vuxit upp på landsbygden, och en restriktivare vargpolicy föredrogs oftare av individer i kommuner där en högre andel av befolkningen hade vuxit upp på landsbygden (Paper III).

Slutligen studerades även institutionella faktorer relaterade till styrningen och förvaltningen av varg i Sverige, då dessa har utvecklats i kollaborativa riktning över tid. Denna studie jämförde aktörsrepresentationen inom viltförvaltningsdelegationerna med allmänhetens attityder, angående vilka aktörer som borde vara en del den svenska rovdjursförvaltningen. Generellt överensstämde den faktiska representationen väl med allmänhetens preferenser. Allmänheten uppvisade även tydliga värderingsskillnader relaterade till användandet av naturresurser, skiljelinjer som tidigare även har observerats hos representanterna inom viltförvaltningsdelegationerna (Artikel IV).

Denna avhandling slår fast att 35% av Sveriges befolkning föredrog en mer restriktiv vargpolicy 2014, och att ökningen, från 30% 2004, var relaterad till direkt erfarenhet av varg och politiskt alienering.

Vargen har återvänt till Sverige och eftersom befolkningen på landsbygden lever närmare vargen än stadsbor, så är det sannolikt att ökad direkt erfarenhet av varg även kommer resultera i fortsatt växande attitydskillnader mellan stad och land. Dessutom har vargpolicyn har blivit en symbolfråga, en politikens arena där landsbygdsbefolkningen gör motstånd, inte bara mot vargens närvaro, utan även mot urbana eliter och mot landsbygdens politiska underordning i relation till städerna. Givet de konfliktlinjer som återspeglas, både inom viltförvaltningsdelegationerna och hos allmänheten, så är det även osannolikt att den Svenska vargförvaltningen, i dess nuvarande form, skulle kunna vända denna utveckling.



# Acknowledgements

Firstly, I would like to thank my supervisors Camilla, Katarina and Göran, for their advise and support throughout my Ph.D. studies. Camilla, your constant openness to new ideas and endless positive energy kept me going through the dark Umeå winters. Katarina, your keen eye for details, and your ability to question exactly the right details helped me immensely; and Göran, somehow you always understood how to link my work to the big picture, which helped make my work so more relevant than it would otherwise have been. I consider myself privileged to have had the benefit of your supervision and friendship. Thank you for making my writing process, and life as a Ph.D. student in Umeå, so rewarding.

I will always be grateful to all the wonderful colleagues, friends, and students for all the memorable times we had together. Thank you, fellow Ph.D. students, researchers, staff, and all the amazing people, at the Department of Political Science at Umeå University; and at the Department of Wildlife, Fish, and Environmental Studies at the Swedish Agricultural University.

In addition, I also want to thank the researchers at University of Archangelsk, NARFU, and the crew of the Professor Molchanov; everyone involved in ICPSR at the University of Michigan; and the Human Dimensions Research Unit at the Department of Natural Resources at Cornell University.

While, few of my friends and family understood my decision to move to Umeå and study wolves they have always been there to support me. Without you I would never have got this thesis written, you are the best!

Thank you: Katarina, for the time in the pink villa; Chris, for all the fun times teaching; Johan, Daniel, and Maria, for all the beer and statistics; Marie, Eva, and Christina, for your patience with me; Thank you Sonja, Tomas, Emma, Sabrina, and everyone involved in the seemingly endless survey work; and Rich, for inviting me to gorgeous Ithaca.

Also thank you: Sebastian, Dan & Amanda, Ylva, Brie & Maple, Anna & Fernando, Pär, Per, Nick, The Debsters, Linda, Konstantin, Shelly, Mike, Pastellälgen, Teddy, Natalie, Carena, Robert & Oskar, Erik, Darragh, Liza, Christian, the Farmhouse Chemists & Andrew, Tom, Roxanna, Sarah & Heidi, and many others.

Finally I also gratefully acknowledge FORMAS, for the funding that made this research possible.



# Acronyms and Abbreviations

CAB	County Administrative Board (Länsstyrelse)
CBD	Convention on Biological Diversity
CITES	Convention on International Trade of Endangered Species of Wild Flora and Fauna
CBD	Convention on Biological Diversity
EPA	Environmental Protection Agency
EU	European Union
FSF	Federation of Swedish Farmers
HDW	Human Dimensions of Wildlife
MLM	Multi Level Modeling
NLCC	National Large Carnivore Committee (Nationell rovdjursgrupp)
OR	Odds Ratio
RHC	Reindeer Herding Community (Sameby)
RLCC	Regional Large Carnivore Committee (Rovdjursgrupp)
UN	United Nations
SCB	Statistics Sweden (Statistiska centralbyrån)
SEM	Structural Equation Modeling
SSNC	Swedish Society for Nature Conservation (Svenska Naturskyddsföreningen)
WMD	Wildlife Management Delegation (Viltförvaltningsdelegation)
WWF	World Wildlife Foundation
SCA	Swedish Carnivore Association (Svenska rovdjursföreningen)
SOA	Swedish Ornithological Association (Sveriges Ornitologiska Förening)



# 1. Introduction

On the 1<sup>st</sup> of January 1966, after centuries of government sponsored persecution, the grey wolf (*Canis lupus*) was listed as a protected species in Sweden (SOU 1999:146). This brought an end to the bounty-based system that had been the norm for 318 years,<sup>1</sup> and thus marked a definite shift in Sweden's national wolf policy. Policy makers redefined the wolf, and overnight it changed, in the eyes of the law, from a pest species into a valuable natural resource (Andersson et al. 1977, SOU 1999:146).

This had a profound effect on the development of the Swedish wolf population, as well as on Swedish wolf policy and management. In addition, redefining the wolf improved the public image of wolves, which could be expected to result in a more positive attitude towards wolves among the general public. However, the sudden policy change of 1966 is also likely to have created lasting tensions between different groups in society, as some held on to the more anthropocentric values of the old wolf policy, while others accepted and adopted the more conservation-based, or ecocentric, values put forth in the 1966 policy. Thus, the contentious debate over wolf policy seen in Sweden today can be assumed to be related to policy choices made in the 1960s.

The far-reaching change to the Swedish wolf policy in 1966 was a part of a much broader societal trend, which emanated from the rise of environmentalism in the United States. Environmental values spread through the American middle class in the 1960s, following several corporate scandals related to pollution and widespread disregard for the environment, not to mention the publication of numerous influential books, such as Rachel Carson's "The Silent Spring" (Lundqvist 2014). These values quickly spread to Sweden, where, during a period known as the "green wave", they gave rise to popular activism and a variety of non-governmental organizations (Lundqvist 2001, Lundqvist 2014).

This initial "green wave" of popular environmentalism in the 1960s was very fragmented, and while it did establish some basic environmental values within the Swedish public, the formalization of these environmental values into policy was largely left in the hands of the Swedish political elite. For this reason, early Swedish environmental policies were focused on balancing ecological concerns with the socio-economic interests of society (Lundqvist 2001). The elite-driven policy process, together with the general support of the Swedish public for ecological concerns, allowed environmental values to become integrated into the Swedish administrative system very quickly, and

---

<sup>1</sup> Formal wolf bounties were introduced in 1647, during the reign of Queen Christina (Nyrén 2012).

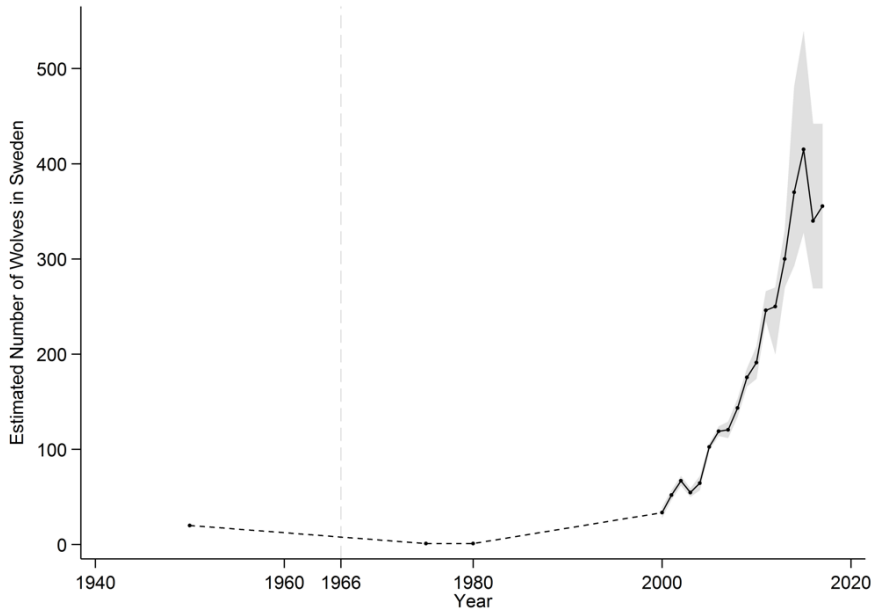
in 1976 Sweden founded the worlds' first environmental protection agency (Lundqvist 2001; Lundqvist 2014). Environmental organizations in Sweden gradually became more politically organized, culminating in the creation of the Swedish green party in the 1980s. Hence, it was the early adoption of increased environmental regulations that led to the 1966 protection of the wolf in Sweden (Jamison 1991; Lundqvist 2001; Lundquist 2014).

In 1966 there were no more than a handful of wolves in Sweden, which meant that increased legal protection had little immediate impact on the survivability of the Swedish wolf population. Instead, wolf numbers continued to decrease over time until the wolf was deemed to be functionally extinct in the early 1970s (SOU 1999:146; Vilà et al. 2003). Protecting wolves was also seen as relatively unproblematic. The small number of animals reflected a minimal risk of human-wolf conflicts, and the Swedish public expected that any future wolves would inhabit the sparsely populated areas of northern Sweden (Andersson et al. 1977), making the risks of future human-wolf conflicts negligible.

Despite the elite-driven nature of the policy process, the prevalence of environmental values among the Swedish population (Bolin 2016; Jamison 1991; Lundqvist 2001; Vedung 1988) is likely to have affected the implementation of the 1966 wolf policy, which took a more environmentalist stance than the previous policy. Once established, the policy most likely also contributed to the further spread, and consolidation, of environmental values among the Swedish public by establishing a perception of the wolf as an ecological resource.

In the late 1970s, a small number of wolves from the Finnish-Russian population migrated into Sweden. Under the protection of the strongly conservationist policy, these individuals then settled in central Sweden, where they started to breed (Flagstad et. al 2003). Since then, the growth of the Swedish wolf population has been exponential (Figure 1), and, with the exception of the winter of 2015/16, the overall population trend has been positive since the early 2000s. In the winter of 2015/2016 the Swedish wolf population consisted of approximately 269-442 animals (Wabakken et al. 2016).





**Figure 1.** *Estimated number of wolves in Sweden 1900-2016 (the policy change of 1966 is marked with a gray dashed line, and the gray area represents the 95% confidence interval).<sup>2</sup>*

However, the Swedish wolf population is surrounded by various forms of human activity, which affects its potential for future growth (Figure 2). Expansion of the current wolf area to the north is hindered by the Sami reindeer herding zone. Norway’s restrictive wolf policies make western expansion unlikely, while agricultural and urbanized landscapes makes future wolf expansion in southern Sweden problematic. Thus, the Swedish wolf population is contained in a relatively small geographical area, and largely isolated from the wolf populations of Finland and Russia (Ericsson and Heberlein 2003).

---

<sup>2</sup> Estimates prior to 2000 (black dashed line) are not based on a consistent methodology. This data can be found in Aronson and Sand 2004 , EPA 2016, and Wabakken et al. 2016.



**Figure 2.** Map of Sweden, including parts of Finland (East) and Norway (West). The dashed area shows the Swedish “wolf area” in which the majority of the Swedish wolf population is located.<sup>3</sup>

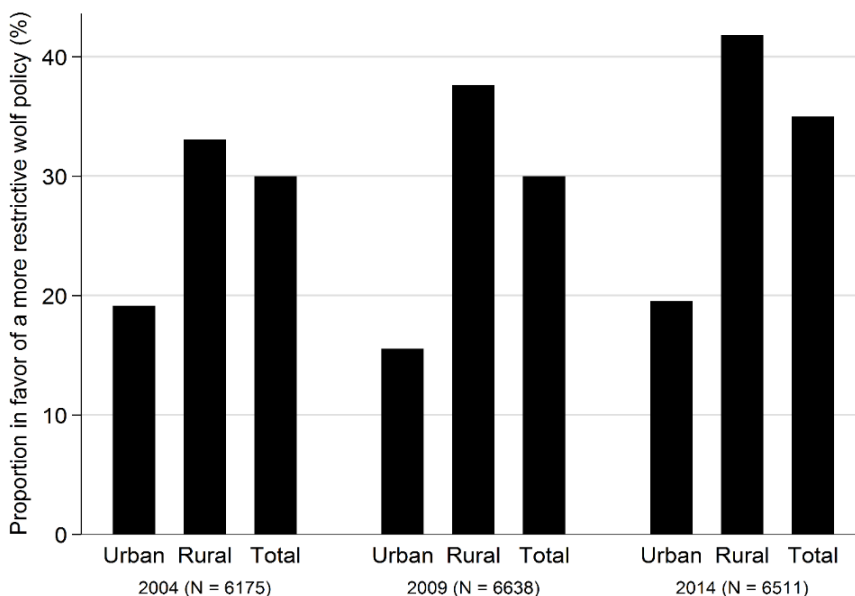
The Swedish wolf policy of 1966 represents a remarkable case of successful policy implementation. In the 50 years since implementation, the wolf has returned to Sweden, and rather than facing local extinction as a result of human activity, the Swedish wolf population is now stable and growing (Wabakken et al. 2016). However, the return of the wolf has also created the potential for human-wolf conflicts.

Public acceptance is crucial for the coexistence of humans and large carnivores (Chapron et al. 2014). A majority of the Swedish population feels that the wolf should be allowed to exist in the country (cf. Heberlein and Ericsson 2008), but acceptance of the large carnivore policy is lower than that of the wolf (Sandström et al. 2014), indicating that some groups would prefer to have fewer wolves in the country. In addition, the attitude polarization between rural and urban segments of the Swedish population is problematic (Ericsson et al. 2006), since a growing urban-rural divide could undermine the current conservation-oriented wolf policy, which would threaten the long-term survival of the Swedish wolf population (Sjölander-Lindqvist et al. 2015).

---

<sup>3</sup> This estimate is based on data for the winter of 2015-2016, which can be found in Wabakken et al. 2016.

**Table 1.** *The proportion of respondents in favor of a more restrictive wolf policy between rural and urban areas in 2004, 2009, and 2014.*<sup>4</sup>



In general, rural segments of the Swedish public support more restrictive wolf policy options than people living in urban areas (Ericsson et al. 2006), and it has been shown that the media both reflects and maintains this attitude polarization (Peterson and Herlitz 2011). Data indicate that this attitude polarization is increasing over time (Table 1), which also is likely to increase the potential for future urban-rural conflicts over wolf policy.

Traditionally Swedish politics have been dominated by the left-right dimension (Holmberg and Oscarsson 2004). However, this data (Table 1) show an increasing urban-rural divide, which indicate that the relevance of the urban-rural dimension could be on the rise in Swedish politics.

The urban-rural dimension is known to impact attitudes towards nature (Kellert 1997), natural resources (Lewis and Maund 1976), and wolves (Heberlein and Ericsson 2005), but its impacts on policy, governance and management, and society in general remain more unclear.

<sup>4</sup> Areas with a population under 10 000 inhabitants were defined as rural. Table 1 is based on the data from the municipal samples presented in the Materials and Methods section, which can also be found in: Ericsson and Sandström 2005, Sandström and Ericsson 2009, and Sandström et al. 2014.

## **Attitudes Towards Wolves**

Most of the current knowledge about attitudes towards wolves derives from an academic field known as Human Dimensions of Wildlife (HDW; cf. Manfredo 2008). HDW developed in the United States and can be understood as a reaction to the rise of environmentalism in the 1970s (Decker Chapter 1). The integration of new environmental values into policies required trade-offs between conservation and other socio-economic interests, which led to numerous stakeholder conflicts related to conservation, such as the spotted owl controversy (Freudenburg, et al. 1998). This contributed to the development of HDW into an academic field focused on improving the efficiency of policies and management, while ensuring the social sustainability of conservation efforts (Manfredo et al. 1998, Manfredo 2008, p. 18).

HDW has, since then, grown into two largely separate bodies of literature: one group of studies that relies on social psychological theory and quantitative data; and another group that is based on more qualitative research, with roots in anthropology, geography, and sociology (Manfredo 1989; Manfredo et al. 1998).

Early research on attitudes towards wolves was primarily related to wolf reintroduction efforts (cf. Bath and Buchanan 1989; Lohr et al. 1996), and focused on the interests of relevant stakeholder (cf. Fritts 1982; Tucker and Pletscher 1989). Attitudinal patterns were largely described in terms of demographics and analyzed through the aggregation of individual level attributes; a focus which has come to dominate later work within the quantitative tradition of HDW.

Attitudes were measured using social psychological frameworks, such as the cognitive hierarchy (Whittaker et al. 2006), the theory of reasoned action (Fishbein 1979), and, the related, theory of planned behavior (Ajzen 2011). Over time, attitudes towards wolves was associated with values of nature (cf. Kellert 1997), various value scales (Bjerke et al. 1998; Kellert 1985; Kellert and Berry 1987), value orientations (Fulton et al. 1996), and other psychological concepts and theoretical frameworks. Thus, there has been a move towards the integration of more qualitative concepts, such as identity and culture (cf. Lute et al. 2014; Skogen and Thrane 2007), into quantitative models.

Studies applying this approach have accumulated enough data to discern a number of general patterns with respect to attitudes towards wolves (Dressel et al. 2015; Williams et al. 2002). However, this research remains dominated by surveys directed at stakeholder interest groups, rather than general population samples. Many studies also rely on single measurement surveys

conducted in a North American context (cf. Heberlein and Ericsson 2005; Sponarski et al. 2013; Treves and Martin 2011), which limits the potential to generalize the results of previous research.

The main focus of the qualitative approach within HDW has been to understand the social meaning of the wolf. This has generally involved the examination of the relationship between the wolf and various collective level social patterns (cf. Scarce 1998, Skogen et al. 2008), such as society, and culture (cf. Sjölander-Lindqvist 2009; Skogen and Krange 2003). Until recently, the sociological focus of HDW had left the political perspective of wolf return relatively unexplored, and research on policy systems and wolf governance has just begun to appear (cf. Sandström et al. 2015; Sjölander-Lindqvist and Cinque 2014; Cinque 2015).

Currently, the main challenge facing HDW is how to develop in terms of theory, while remaining relevant and directly applicable to managers (cf. Manfredo 1989, Manfredo et al. 1998). The field also continues to suffer from an epistemic divide between the quantitative and qualitative perspectives, despite some isolated attempts to introduce collective level concepts and measurements into quantitative models (e.g. Skogen and Thrane 2007).

In spite of these minor shortcomings, HDW has generated a vast amount of knowledge relating to wolves. For instance, individual-level demographics have been extensively studied, and the following factors have been established to be associated with less positive attitudes towards wolves: old age, low educational level, working class, male gender, living in a rural area, and hunting (e.g. Bath et al. 1989; Berg et al. 2015; Ericsson and Heberlein 2003; Kellert et al. 1987; Kleiven et al. 2004,).

Previous research has also identified a number of collective-level socialization effects, which make people in rural areas less positive towards wolves (Krange and Skogen 2007; Heberlein and Ericsson 2008). Furthermore, the return of the wolf has been suggested to lead to feelings of marginalization and powerlessness within the rural population, as the wolf has a symbolic role within rural communities (Sjölander-Lindqvist 2009).

Many of these findings are generalizable to the Swedish context (cf. Ericsson and Heberlein 2003; Heberlein and Ericsson 2008; Karlsson and Sjöström 2007; Sjölander-Lindqvist 2008; Sjölander-Lindqvist 2009).

Other findings apply specifically to the Swedish context. In Sweden, attitudes towards wolves have been found to drive attitudes towards other large carnivore species (Heberlein and Ericsson 2008). Conflicts between hunters and

wolves are also particularly problematic in Sweden, as it is allowed to sell both game meat and hunting, hunters often use highly trained hunting dogs (Bisi et al. 2010), and some Swedish hunters perceive the illegal hunting of wolves as a form of civil disobedience (von Essen and Allen 2015). Certain collaborative elements have also been integrated into Swedish wolf governance (SOU 2007:89; Prop. 2008/09: 210), which are likely to affect public attitudes towards the Swedish wolf policy.

This thesis attempts to connect previous findings within HDW to a broader societal context in a theoretical, as well as methodological, sense. Thus, this thesis aims to unify both qualitative and quantitative theoretical perspectives, and bridge a methodological divide between individual-collective explanatory factors within the field. In addition, the political science perspective adopted in this thesis will also facilitate a clearer connection between nature and society, as the presented findings will be related to possible policy implications. Furthermore, the data from the research underlying this thesis represents a notable empirical contribution.

## **Aim and Research Question**

This thesis is guided by an overarching aim to examine,

*how environmental, socio-political, and institutional factors affect variations in public attitudes to the Swedish wolf policy over time, and discuss their policy implications.*

Consequently, this thesis is structured around three broad families of hypothesizes, or themes: environmental change, socio-political change, and institutional change. These themes are assumed to explain a large proportion of the variation in public attitudes, and to function as a link between the four standalone articles that make up the empirical contribution of this thesis.

### ***Environmental Change: Wolf Return***

Wolf return matters, as geographic proximity, spatial expansion, and changes in wolf population size have all been shown to affect attitudes towards wolves (Ericsson and Heberlein 2003; Karlsson and Sjöström 2007). Theories from psychology (Ajzen 1989) also suggest that attitudes towards wolf policy are related to direct, and indirect, experience with wolves. Consequently, I assume that:

*Direct experience with wolves will have an effect on the attitudes of the Swedish public towards the wolf policy (Paper I).*

This could clarify the relationship between public acceptance of wolf policy and the size of the Swedish wolf population, a connection with direct implications for future wolf population size and policy.

### ***Socio-Political Change: The Rural-Urban Cleavage***

People living in rural areas support more restrictive wolf policy options than people living in urban areas (Table 1). This divide is likely related to a rural perception of political powerlessness, which could potentially affect attitude formation on an individual, as well as a collective, level. Based on previous research I assume that:

*Political alienation among people living in rural areas affects their attitudes towards the wolf policy (Paper II), and there is a connection between political alienation and collective level effects within the rural context (Paper III).*

This assumption establishes that attitudes towards the wolf policy are driven by general pattern of rural subordination in terms of political power. Thus, attitudes towards the wolf policy, and wolf-related social conflicts, can in part be understood as symptoms symptoms of political alienation.

### ***Institutional Change: Collaborative Governance***

Inclusive decision-making processes are assumed to increase policy legitimacy (Ansell and Gash 2008). This has inspired the formation of the Wildlife Management Delegations (WMDs), a collaborative governance element within the Swedish wolf governance system. However, these organizations do not seem to reduce conflicts over wolf policy, a shortcoming which could be related to a lack of input legitimacy, in which case there would be a mismatch between the interests represented within WMDs and the preferences of the public. Therefore, I assume that:

*There is a gap between the stakeholder interests that are currently represented within the WMDs and the stakeholder interests that the public feels should be represented within the WMDs.*

The expectation is that the stakeholder interests represented in the WMDs are too disconnected from the preferences of the public to increase policy legitimacy, which would have direct implications for the current wolf policy.



## 2. Development of the Swedish Wolf Policy

In 1647, the first national hunting act was established in Sweden. This marked the beginning of a long period during which Sweden's national policy actively encouraged the killing of wolves. A reform which not only established a system of wolf bounties, but also allowed the killing of wolves by any means available (Andersson et al. 1977). This policy was instrumental in the removal of the wolf from Sweden, as the number of wolves in the country rapidly dwindled with the systematic capturing and poisoning of wolves during the 19<sup>th</sup> century (Nyrén 2012). Until the protection of the wolf in 1966 this policy remained active (Andersson et al. 1977), and thus it established a negative perception of the wolf throughout Sweden for over 300 years.

This policy of wolf removal came to a definitive end when the wolf was listed as a protected species in Sweden in 1966 (Andersson et al. 1977), as a protected species cannot be captured, killed, or in other way harmed without reason (Andersson et al. 1977). This change in national policy allowed the Swedish wolf population to recuperate from centuries of government-sanctioned wolf killing (Nyrén 2012).

Despite this sudden policy change, the protection of the wolf was met by limited popular resistance at the time (Chapter 1). Modernization had increasingly moved Sweden away from economic reliance on farming (SCB) and there were few wild wolves left in the country at the time (Andersson et al. 1977), which meant that there was minimal fear of human-wolf conflicts. There was also an expectation that any immigrating wolves would settle in the sparsely populated parts of northern Sweden (Andersson et al. 1977). The general public thus perceived the protection of the wolf as unlikely to limit human future activity. However, when wolves did eventually returned to Sweden, under the strong legal protection of the act of 1966, they established in a rural region in central Sweden (Ericsson and Heberlein 2003), rather than in the north of the country. An event which clearly went against the expectations of the public prior to the return of the wolf.

The number of wolves and other large carnivores continued to increase during the 1980s and 1990s, prompting a policy change in 2001, when “A Coherent large carnivore policy” (Prop. 2000/01: 57) was adopted by the Swedish parliament. The aim of this policy was to ensure the long-term inclusion of the bear (*Ursus arctos*), wolf (*Canis lupus*), wolverine (*Gulo gulo*), lynx (*Lynx lynx*) and golden eagle (*Aquila chrysaetos*) in Swedish fauna. Minimum population targets were established for each of the carnivore species in order

to guarantee their favorable conservation status (SOU 1999:146). In the case of the wolf, the small size of the Swedish population led to the establishment of an interim minimum population goal. This temporary population target was set at annual regenerations corresponding to 200 wolves, which was to be reassessed once the Swedish wolf population had sufficiently increased in size (Liberg 2010). The 2001 policy reform also represented a move towards a more decentralized wolf management system, as the policy introduced county-level regional large carnivore committees (RLCCs) into the formal organizational structure of Swedish wolf management (Sandström et al. 2009). These RLCCs were regional organizations that had an advisory function on issues pertaining to the management of large carnivores. The RLCCs would report to a newly formed national large carnivore committee (NLCC), which operated under the authority of the Swedish EPA (SOU 1999:146). The internal structure of the RLCCs was based on interest representation, and the committees were meant to comprise representatives for all relevant interests, which allowed for regional variations in representation (Sandström et al. 2009).

Due to increasing numbers of large carnivores, and the subsequent critique of the top-down character of the 2001 policy, the Swedish parliament approved “A new large carnivore management” in October 2009 (Prop. 2008/09: 210). This policy included a collaborative governance approach, which increased regional and local influence by delegating the power to make management decisions to the county administrative boards (CABs) and to the Wildlife Management Delegations (WMD), which were established at county level. The WMDs replaced RLCCs and were primarily based on interest representation, which included a mix of political representatives and interest organizations (SOU 2007:89; Prop. 2008/09: 210). Furthermore, the 2009 policy also included new targets for the wolf population, more specifically, a temporary limitation of the wolf population growth rate and measures to strengthen the genetic status of the wolf population.

The next policy change came in 2010, when the government launched an investigation to re-evaluate the wolf population targets, the effects of collaborative governance, the need for additional measures to improve the genetic status of the wolf population, and a number of other measures aimed at improving the coexistence between humans and large carnivores.

Based on this governmental investigation (SOU 2011:37; SOU 2012:22), “A sustainable large carnivore management” (Government Bill 2012/13: 191) was adopted in 2013. This policy contained new long-term goals that aimed to maintain favorable conservation status of the 5 large carnivore species in Sweden, in accordance with the EU Habitats Directive, while simultaneously

considering socio-economic aspects. The collaborative aspects of previous policies were largely maintained, despite criticism being directed at the WMDs for not working as intended (Duit and L f 2015; Hallgren and Westberg 2015; von Essen and Hansen 2015; Lundmark and Matti 2015). This policy also established a minimum range of wolves in Sweden, which corresponded to 170-270 animals (SOU 2012:22). In general, the 2013 policy had an emphasis on social acceptability, legitimacy and sustainability in relation to the management of wolves and the other large carnivores in Sweden.

## **International Drivers and National Responses**

The development of the Swedish large carnivore policy has been driven by a number of international agreements, of which the most important have been the Bern Convention (ETS No.104), the Convention on Biological Diversity (CBD; 1992) and the CITES Convention (1973). At the EU and national level, the pivotal acts have been the Habitats Directive (Council Directive 92/43/EEC), the Species Protection Ordinance (2007: 845), the Hunting Act (1987: 259), the Hunting Ordinance (1987: 905), the Ordinance (2009: 1263) on the management of bears, wolves, wolverines, lynx and the golden eagle, the Ordinance (2009: 1474) on wildlife management delegations, and the wildlife damage Ordinance (2001: 724).

CITES, or the Convention on International Trade of Endangered Species of Wild Flora and Fauna, aims to protect species of wild fauna and flora against overexploitation through international trade, which is considered to be a significant threat to large carnivore species. In 1975, it became one of the first environmental conventions to be ratified in Sweden, and today has 180 member parties.

The Bern Convention, or the Convention on the Conservation of European Wildlife and Natural Habitats, lists the wolf as a protected species under Annex II. Sweden ratified this convention in 1976, and it was fully incorporated into Swedish law in 1982. Article 6 prohibits all deliberate capture, keeping, killing or disturbances in sensitive periods, of the listed species, as well as deliberate damage to breeding or resting sites, and trade. The convention also stipulates that possible exceptions to these prohibitions can be made, to prevent serious damage to crops, livestock, forests and other forms of property.

The Convention of Biodiversity, CBD, was opened for signature at the Earth Summit in Rio de Janeiro in 1992, and came into effect on 29 December 1993. The overarching aim of the CBD is the conservation and sustainable use of biological diversity at an ecosystem-, species-, and genetic level. The

Convention is more or less universally recognized, with 193 states and the EU as contracting parties. The CBD does not include a list of species that require special attention, but many of its articles focus on large carnivores, for example, in situ conservation (Article 8), ex situ conservation (Article 9), sustainable use (Article 10) and environmental impact assessment (Article 14).

While CITES and the Bern Convention primarily focus on the ecological aspects of large carnivore governance, rather than collaborative aspects, the CBD has a strong focus on the collaborative governance. According to the Malawi principles, which aim to guide the implementation of the CBD and its ecosystem-based approach:

*“Management should be decentralized to the lowest appropriate level” since “(d)ecentralized systems may lead to greater efficiency, effectiveness and equity. Management should involve all stakeholders and balance local interests with the wider public interest. The closer management is to the ecosystem, the greater the responsibility, ownership, accountability, participation, and use of local knowledge” (Art. 2).*

In contrast to CITES and the Bern convention, the ratification of the CBD pledges Sweden to both the conservation of large carnivores and the inclusion of the public into the governance of large carnivores. The ratification of the CBD thus introduced ideas of social sustainability, participation, and decentralized management into Swedish wolf management (SOU 2007:89). Thus, Sweden’s ratification of the CBD shifted Swedish wolf policy towards the main ideas put forth at the Rio summit in 1992 (United Nations 1992), which has had a definite impact on the structure of Swedish wolf policy.

Sweden joining the EG, and later the EU, had a profound impact on Swedish environmental policy in general, and also played a pivotal role in the development of Swedish wolf policy. The ongoing co-ordination of rules and regulations on the EU level primarily affect Swedish wolf management through the Habitats Directive (Darpö 2014). Functionally, the Habitats Directive subordinates Swedish wolf management to European law by stipulating that the general goal of national wolf management is to ensure the favorable conservation status of the wolf, with favorable conservation status defined as; a species that is maintained as a viable, long-term component of its natural habitat, provided that the habitat will continue to be a sufficiently large habitat for the long-term maintenance of the population (adapted from Article 1 of the Habitats Directive, Directive 92/43/EEC).

The current large carnivore policy comprises two main components: the outcome-related policy goals, and the procedural structure of decision-making. Both of these components are regulated by international agreements, but they are also adapted to attempt to mitigate conflicts at the national and local level (Sjölander-Lindqvist et al. 2015). The policy goals stipulate concrete population targets for each individual carnivore species in order to maintain viable populations, while the decision-making structure has increasingly developed towards collaborative governance, with the primary aim to decentralize influence in the management of the large carnivores.

To conclude, the development of the Swedish large carnivore policy has been influenced by environmental and socio-political factors, the strong legal protection since 1966 has enabled a rapid increase in the Swedish wolf population. This resulted in concerns regarding social acceptance, which prompted both reduced policy goals and more inclusive governance structures (Government Bill 2012/13: 191). Institutional factors have also contributed to this policy development, as ideas introduced at the 1992 Rio summit (cf. Conca 2016) have become guiding principles for Swedish wolf management since the ratification of the CBD. These structural changes are likely to have affected public acceptability of the policy, and are therefore assumed to have impacted attitudes towards the management goals stated in the wolf policy.

**Table 2.** *Development of Swedish Wolf policy*

<b>Year</b>	<b>Policy development</b>	<b>Effect on Swedish wolf policy</b>
1966	The protection of the wolf.	Legal protection aimed at preventing the hunting or killing of wolves.
1975	CITES	Legal protection aiming at preventing trade of endangered species.
1976/1982	The Bern convention: Convention on the Conservation of European Wildlife and Natural Habitats	Legal protection of wild flora and fauna, and their natural habitats. Promoted cooperation between states to give particular attention to endangered and vulnerable species.
1993	The CBD	Introduced the basis for conservation and collaborative governance.
1995	Sweden becomes a member of the EU	'Habitats Directive comes into effect in Sweden'
2001	"A coherent carnivore policy".	Introduced a coherent policy for the five large carnivore species in Sweden. Set minimum population goals for wolves. Regional large carnivore committees were formed.
2009	"A new carnivore management".	Regionalized Swedish wolf management. WMDs were formed.
2013	"A Sustainable large carnivore management".	The wolf population goal was updated.

### **3. Theoretical framework**

This chapter offers an introduction to the theoretical tools needed to analyze variations in attitudes. Theories are presented, adapted to the analysis of attitudes towards the Swedish wolf policy, and then integrated into an analytical model. Once attitudes towards wolf policy have been placed within a relevant theoretical context, the rest of the chapter is devoted to the development of an analytical model of the interaction between environmental, sociopolitical and institutional factors, and public attitudes towards the Swedish wolf policy.

#### **Attitudes and Policy**

Attitudes appear regularly throughout the social sciences because they fulfil a range of important functions within a number of disparate academic disciplines. In psychology, attitudes are central to theories regarding the formation of the self (e. g. Ajzen 2001). Social psychology relies on attitude measurements to link internal processes to behavior (e. g. Eagly and Chaiken 1993), and sociologists have been using attitudes to measure societal changes for decades (e.g. Thurstone 1928). Attitudes are also central to political science since they can be used to measure the legitimacy of governments and the efficiency of policy making (Zaller 1992, Ch. 1).

According to democracy theorists, the connection between public preferences and policy contents is a cornerstone of any legitimate government (Dahl 1956; Sen 2014). The Attitude concept provides a way to measure public preferences, and is hence vital to political science, as it offers a way to measure the will of the people, in relation to government, and government policy.

There is a general consensus that a policy interacts with the attitudes of the public (Bachner and Hill 2014; Eriksson 1976; Page and Shapiro 1983). However, the finer details of this interaction is a continuous source of debate (Bachner and Hill 2014). Some researchers contend that public attitudes have a profound effect on public policy (Monroe 1978; Pierskalla 2011), while others maintain that the will of political elites have a stronger influence on policy content (cf. Mill 1861; Zaller 1992 p.23). Causal direction remains a contended issue, and there is strong support for all possible combinations of public policy, political elites, and the attitudes of the public (cf. Glynn et al. 2015; Mullinix 2011; page and Shapiro 1983; Zaller 1992; Weber and Schaffer 1972). Most likely causal direction varies (Zaller 1992 Ch.1), in some cases policy makers enact policies based on the attitudes of the public, whereas in other cases policies will be elite-driven projects, which then go on to influence public attitudes (Zaller 1992 p.23; Mullinix 2011).

Only the branches of political science that specialize in public opinion (e.g. political behavior and electoral research) have studied the concept of attitudes in any greater depth. In general, political scientists tend to only have an instrumental interest in attitudes (cf. Jagers and Matti 2010), and leave research on the concept of attitudes other fields within the social sciences (Zaller 1992 p.2). Consequently, the research underlying this thesis relies on theory from fields such as psychology, sociology, and social psychology to describe the nature and function of attitudes.

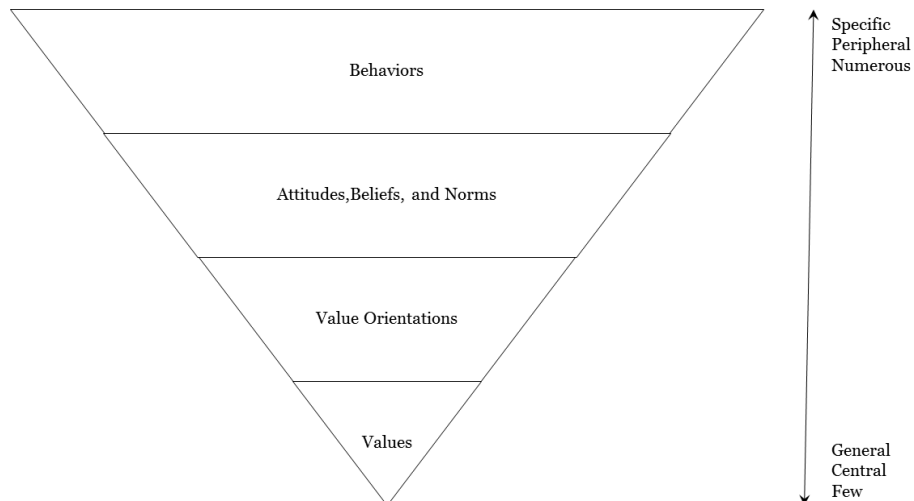
## **Attitudes and the Cognitive Hierarchy**

An attitude is uninteresting when viewed in isolation, it is the interaction between an attitude and the other aspects of an individual's personality that makes it interesting, as this is how attitudes come to impact in a wide range of situations (Zinn et al. 1998). All attitude theories are strongly influenced by the academic field they originated in. In particular, many theories in the field of psychology tend to have a much more detailed individual-level focus than the basic social psychological framework adopted in this thesis (cf. Maio and Haddock 2014). However, the cognitive hierarchy both accurately and adequately describes how attitudes are thought to interact with other parts of an individual's psyche. Alternative social psychology models, such as the theory of planned behavior, are generally considered to be more accurate when studying behavior, but these models would add little to the purely attitude-based research that underlies this thesis.

Individuals base their perceptions of the outside world on an internal psychological structure. This structure is often described as a network comprising diverse, interconnected, and adaptive parts, and the interactions between these parts is what makes up an individual's personality (cf. Ajzen 2001; Eagly and Chaiken 1998; Olson and Zanna 1993).

New information has the potential to change the structure of this system, as it has to either, be adapted to fit into the existing structure, ignored, or shift the structure already in place (Olson and Zanna 1993). Change is costly, and individuals strive to maintain their current psychological make-up, which leads to a bias in favor of accepting new information that agrees with the existing psychological structure. This bias can have significant consequences, as information that does not correspond with the existing structure is easily distorted, or even ignored, while information that is consistent with the existing structure is more likely to be accepted. Over time such filtering processes can lead to systematical biases in how individuals perceive the world, as all information is interpreted through a pre-existing cognitive structure (Olson and Zanna 1993).

The cognitive hierarchy introduces a typology of the different parts of an internal psychological network (Whittaker et al. 2006), and in doing so also clarify the mechanisms behind attitude change. These concepts are structured according to their centrality and specificity: from the most stable and foundational parts of an individual’s psychological make-up to the more context-specific and peripheral aspects (Figure 3).



**Figure 3.** *The cognitive hierarchy*<sup>5</sup>

Values are broad concepts that form the inner core of an individual’s cognitive make-up (Dunlap et al. 2000). They are concepts of a general nature that are often adopted early in life (Dunlap et al. 2000). Due to their early adoption and general nature, values often play a crucial role in shaping the formation and adoption of attitudes and other, less central, values (e.g. Olson and Zanna 1993, Ajzen 2001).

Beliefs are ideas concerning the factual properties of an object (Eagly and Chaiken 1993 p.123). They are thought to affect attitudes by distorting the evaluation of attitude objects (Olson and Zanna 1993). In theory this means that disproving inaccurate beliefs can change attitudes, which has led much work on attitude change to focus on information, education, and experience (Heberlein 2012 Ch. 5).

Value orientations are systematic patterns of beliefs that are based on values (Manfredo et al. 2003).

---

<sup>5</sup> Adapted from Decker, et al. (2012) p. 46.



Attitudes function by simplifying decision-making that involves familiar objects or situations, and can be understood as mental shortcuts. A more technical definition would be “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (Eagly and Chaiken 1993 p.1). Attitudes are more context-specific than values, and are connected to particular attitude objects (Ajzen 2001; Eagly and Chaiken 1993 p.4; Olson and Zanna 1993; Pratkanis and Breckler 1989 p.2-3; Schwarz and Bohner 2001). An attitude object can be a concrete object or an abstract, but well-defined, concept, the factual properties of which are supported by beliefs (Eagly and Chaiken 1993 p.123). Similar to values, most attitudes are generally formed early in life and have been shown to become less likely to change as individuals grow older (Ajzen 2001).

Attitudes usually change gradually over a prolonged period of time. However, in some cases attitudes can change more rapidly (Ajzen 2001; Olson and Zanna 1993). Attitudes that are more peripheral are easier to change, as changing these requires less adaption of the surrounding cognitive structure (Ajzen 2001). Furthermore, high involvement situations, especially those involving direct experience with an attitude object, have been found to be conducive to attitude change, and also result in more stable attitudes (Eagly and Chaiken 1993 p.194). Thus, a direct experience with an attitude object that has never been encountered before could potentially result in a change of attitude towards that object. Moreover, a direct experience that contradicts a held belief about an attitude is hard to ignore or rationalize. Hence, such an experience is likely to force individuals to change their attitude, despite the psychological cost involved (Eagly and Chaiken 1993 p. 195).

Finally, norms are socialized codes of conduct that impose external or internal sanctions on behavior (Nordlund 2009). Norms work on both the collective and individual level, and can be either internally or externally imposed.

The aim of mapping and measuring the interactions between these concepts has often been to understand what causes certain behaviors (Ajzen and Fishbein 1980). This has given rise to a number of alternatives, and expansions, to the cognitive hierarchy model (e. g. Fishbein 1979; Ajzen 2011), but, while accurate prediction of behavior is still very much an ongoing project, previous research has generally corroborated the structure presented above (cf. Jagers and Matti 2010)

## **Environmental Change: Wolf return and Direct Experience**

Direct experiences have the theoretical potential to cause rapid changes in attitudes on the individual level (Eagly and Chaiken 1993 p.194). Thus, a large-scale environmental change could result in a rapid attitude shift on the aggregate level if it causes a large enough proportion of the population to encounter an attitude object for the first time.

The return of the wolf to Sweden is likely to have done just this, as similar shifts in public attitudes have been observed before, both in relation to ecology (Newhouse 1990; Shepard and Speelman 1986), as well as related to wolves and wolf return (Ericsson and Heberlein 2003; Heberlein 2012 Ch. 1). Previous findings also suggest that the Swedish public has little direct experience with wolves, knows little about wolves, and that their attitudes towards wolves are likely to be of peripheral importance (Heberlein and Ericsson 2008). Consequently, public attitudes towards the Swedish wolf policy could be susceptible to rapid shifts, in response to the increased number of direct experiences with wolf associated with a growing Swedish wolf population.

Since 2000, Sweden has experienced an increase in the numbers of wolves (Ch. 1; Kindberg et al. 2011; Svensson et al. 2012). Elsewhere, rapid growth in wolf population size has correlated with more negative attitudes towards wolves (e.g. Bath and Buchanan 1989; Bisi et al. 2010; Kellert 1987; Mech 1995; Rodriguez et al. 2003). This most probably stems from the increased predation of livestock, competition for huntable game, and clashes between stakeholder groups that are associated with growing wolf populations (e.g. Ericsson et al. 2008; Rodriguez et al. 2003; Skogen and Krange 2003). In Sweden, the return of the wolf have had a negative impact on various human activities, such as farming, reindeer husbandry, and hunting. Thus, a case of successful policy implementation has transformed into a problem of public acceptance (Linnell et al. 2008), as wolf return has given rise to intense debate, increased political polarization and societal conflict. The wolf policy of 2013 reflects this increased level of social conflict, as it marks a shift away from ecological concerns towards objectives that are more socio-economically oriented (Government bill 2012/13:191).

The Swedish public has little direct experience with, low levels of knowledge of, and are not highly invested in wolves. Thus, public attitudes towards the wolf policy are likely to be based on very general pro-environmental values and largely inaccurate beliefs about wolves. For this reason, direct experiences with wolves could trigger an attitude change among the Swedish public related to wolf policy. Consequently, I assume that:

*Direct experience with wolves will have an effect on the attitudes of the Swedish public towards the wolf policy (Paper I).*

## **Socio-Political Change: Rural-Urban Cleavage and Political Alienation**

A majority of Swedes support the current wolf population goals set by parliament (Sandström et al. 2014). However, wolves primarily exist in rural areas, a dynamic that tends to increase urban-rural attitude polarization with respect to wolf policy. Thus, attitudes towards the wolf policy reinforce a pre-existing cleavage between urban and rural areas.

This cleavage consists of differences between urban and rural areas that span across multiple dimensions, such as culture, economy, and geography (Lipset and Rokkan 1967). From a systemic perspective, rural and urban segments of society can be perceived to fulfil fundamentally different roles (Lewis and Maund 1976). Historically, urban areas have been geared towards the production of services, specialized knowledge, and refined products (Gutman 2007; Lewis and Maund 1976), while the role of rural areas has been to supply nearby urban centers with natural resources and a reliable supply of food.

These functional roles have, over time, affected people's views of nature, causing people in rural areas to hold more utilitarian values in relation to nature and natural resources than people living in urban areas (Harry et al. 1969; Heberlein and Ericsson 2005; Kellert 1997; Lowe and Pinhey 1982).

This urban rural cleavage also involves a degree of rural subordination to urban political interests. Urban areas are commonly perceived to be at the center of political processes; in this way, many feel that urban preferences both steer the political agenda and dominate political processes. People in urban areas are thus considered to be in control of the policy-making process (Pierskalla 2011), which has resulted in a perceived divide between urban and rural areas in terms of political power (Cloke 2006; Jansson 2013; Lewis and Maund 1976).

The role of rural areas in system is becoming increasingly challenging, as modernization, globalization, and urbanization are gradually crowding out rural industry (Inglehart and Welzel 2005). Rural areas are struggling to maintain their traditional industries, which are based on manufacturing and the direct use of natural resources, in the face of increased competition resulting from reduced transport costs and economies of scale, a situation which has forced many rural areas into a process of socio-economic transition (Lundmark and Pettersson 2012).

Wolf presence is seen as a clear challenge to traditional rural life (Sjölander-Lindqvist 2009; Sjölander-Lindqvist 2011). Wolves limit a number of activities that have been important to rural industry in the past, such as agriculture, farming, and hunting (Bisi et al. 2010). From the rural perspective, wolf presence also accentuates the perceived political subordination of rural areas, as having wolves in rural areas is considered to be an extension of urban ideals and values (Figari and Skogen 2011; Sjölander-Lindqvist 2011). Thus, the wolf represents a threat to the rural economic base, as well as their political autonomy (Sjölander-Lindqvist 2008; Sjölander-Lindqvist 2009). This leads wolf presence to be perceived as symbolic of an ongoing transformation of rural areas, where rural areas are forced to abandon their old role as providers of natural resources, in favor of a new role as providers of biodiversity and ecosystem services (Karlsson and Sjöström 2011; Sjölander-Lindqvist 2009).

For rural citizens, accepting wolf presence is synonymous with accepting a situation defined by both a lack of political power compared to urban areas and an externally imposed limitation on natural resource use (Krange and Skogen 2011). Hence, opposing wolf return can be considered a way to protect the traditional rural way of life from incursions, both from wilderness and from urbanity (Krange and Skogen 2011). In this way, the wolf policy has become a symbolic issue through which people living in rural areas can voice their feelings of political alienation.

Rural attitudes towards the wolf policy is affected a general pattern of political alienation; people that live in rural areas are characterized by general estrangement for the political system, which translates into distrust of the policy process and of specific policy outcomes (*sensu* Pierskalla 2011).<sup>6</sup>

People living in rural areas think that they are not listened to, taken seriously, or given enough control over the wolf policy process (Heberlein and Ericsson

---

<sup>6</sup> For additional background on the development of political trust in Sweden and the Swedish voter, see Holmberg (1999) and Oscarsson and Holmberg (2011).

2008; Sjölander-Lindqvist 2011). This perceived unfairness is a probable driver of negative attitudes towards the wolf policy among people living in rural areas, and could transform into collective, identity-based action (*sensu* Crosby 1976; Pettigrew et al. 2008; Smith et al. 2012). The symbolic importance of the wolf within rural culture makes the wolf policy an ideal political issue that citizens can use to rally rural opposition and discontent (*Sensu* Tarrow 1998).

Urban-rural conflicts over wolf policy thus contain an element of general estrangement towards the political system. Political alienation is the result of the political subordination of rural areas to urban areas across a number of policy sectors (cf. Lipset and Rokkan 1967; Pierskalla 2011). Thus, the rural context can be assumed to give rise to a particular set of values and beliefs, which may lead to political alienation that can be understood as a value orientation related to the political system as a whole. This leads to the assumption that:

*Political alienation among people living in rural areas affects their attitudes towards the wolf policy (Paper II), and there is a connection between political alienation and collective level effects within the rural context (Paper III).*

## **Institutional Change: Collaborative Governance and Swedish Wolf Policy**

The United Nations Conference held in Rio de Janeiro in 1992 (United Nations 1992) popularized a view of sustainability comprising of social, ecological, and economical aspects (Lundqvist 2004). In the political sphere, this resulted in what has later been called a move from government to governance (Lundqvist 2001). The social aspects of sustainability became a trend, which led to a revival of ideas related to deliberative democracy and interest representation. Furthermore, traditional forms of top-down government systems were also increasingly replaced with, or complemented by, collaborative forms of governance (Ansell and Gash 2008).

Collaborative governance can be defined as: “A governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus oriented, and deliberative (Ansell and Gash 2008).” By engaging previously marginalized actors in a consensus-based, deliberative process (Baber and Bartlett 2005; Smith 2003), collaborative governance is expected to result in better decisions and policy outcomes, as stakeholders are allowed to identify opportunities for cooperation and mitigate underlying conflicts through dialogue (Schön and Rein 1994).

Following the Rio summit, many countries introduced collaborative governance elements into their respective carnivore policies. In Sweden, these elements took the form of the large carnivore committees, and their successors, the Wildlife Management Delegations (Duit et al. 2009; Sandström et al. 2009). Both of these organisational structures were introduced to increase policy legitimacy through interest representation (SOU 2007:89).

Social, or interest, representation and deliberative democracy are the cornerstones of collaborative governance (Curtin 2003), and such a system depends on the inclusion of all relevant stakeholder in order for an informed dialog to be possible (Ansell and Gash 2008). Thus, collaborative governance can be regarded as dependent on having sufficiently high levels of input legitimacy (Easton 1965; Schmitt 2013) to work as intended.

In theory, collaborative governance should result in more efficient management, translating into a wolf policy that is perceived as more legitimate (Lundmark and Matti 2015; Sandström et al. 2015). However, previous research on the structure of representation within WMDs suggests that these organizations are not working in accordance with collaborative governance ideals. Rather than consensus building and dialog, work in the WMDs has instead been characterized by strategic voting (Hallgren and Westberg 2015) and coalition building (Matti and Lundmark 2015). This has led some stakeholder representatives to question the overall legitimacy and procedural fairness of WMDs (Matti and Lundmark 2015).

Briefly stated, the WMDs seem to be failing, both in terms of the procedural legitimacy of the collaborative governance arrangements, in terms of reflecting public interest (Bäckstrand 2010), also known as input legitimacy.

One way to measure input legitimacy is to compare public attitudes with the interest representation within WMDs. The perceived legitimacy of WMDs can be assumed to affect various beliefs that are related to the overall fairness of the wolf management system, and can, in this way, affect political alienation. Based on previous research, the WMDs are assumed to suffer from problems that are related to input legitimacy. In other words:

*There should be a gap between the stakeholder interests that are currently represented within the WMDs and the stakeholder interests that the public feels should be represented within the WMDs.*

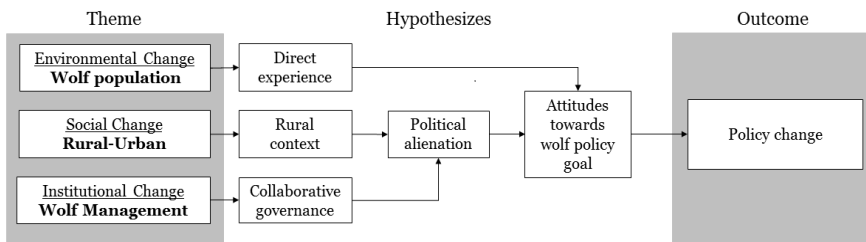
To sum up, the effects of environmental change can be measured through direct experiences (Paper I), socio-political changes as political alienation on

an individual level (Paper II), and collective-level changes in a rural context (Paper III). The introduction of collaborative governance (Paper IV) into Swedish wolf policy is assumed to be an institutional change that likely affects public attitudes towards wolf policy, through political alienation.

Direct experiences are assumed to challenge beliefs about wolves held by the Swedish public. Given that many of these beliefs are likely to be factually incorrect, direct experiences with wolves could well trigger an attitude change among the Swedish public.

The rural context is seen as a source of values, attitudes, and beliefs, that is affected by an ongoing urban-rural power struggle. The general subordination of rural interests to urban power is assumed to cause people from rural areas to adopt a less involved value orientation towards the political system, i.e. the rural context is assumed to be a specific source of political alienation. This general estrangement for the political system then affects attitudes towards wolf policy.

In theory, the collaborative governance initiative and the introduction of WMDs both have the potential to reduce political alienation. Thus, the effects of these policy reforms are assumed to affect attitudes through political alienation.



**Figure 4.** Theoretical framework, gray details are not examined in depth.<sup>7</sup>

<sup>7</sup> The operationalization of this framework is developed in the Materials and Methods section.

## 4. Materials and Methods

### Study Design

The research underlying this thesis employed a quantitative approach for analyzing variations in public attitudes to Swedish wolf policy. Data collection consisted of three surveys, distributed in 2004, 2009 and 2014<sup>8</sup>. The resulting data were then analyzed using statistics. Thus, the general design of the research underlying this thesis was based on survey methodology (cf. Bryman 2012; Dillman 2009). This methodology can be understood as comprising two main parts: data collection through surveys, and data analysis using statistics.

This approach is an efficient and reliable way to study public attitudes on a large, societal scale. Few other approaches are applicable to studies of how public attitudes change over time, or differ across groups (Dillman 2009 Ch.1), which has led to the frequent use of the survey methodology across a wide range of academic fields.

### Surveys: A Structured Way of Asking Questions

Surveys typically consist of a large number of identical, or similar, sets of questions with a range of fixed answer alternatives. These questions are then distributed to a group of individuals (respondents) who answer the questions and return their answers to the researcher for analysis (Dillman 2009 Ch. 1). One important part of the survey methodology is the inclusion of a set of standards and best practices that aims to ask questions in a way that avoids bias (Dillman 2009 p. 16).

The unique benefits of surveys have made them popular within a range of academic fields. While, most of the methodological strengths of surveys can also be perceived as potential drawbacks, surveys are generally considered to be:

*Cost efficient.* The cost per survey response is often far less than that of any alternative method, even when monetary incentives are offered. Researchers can distribute hundreds, or thousands, of surveys at a time, and this makes the survey methodology particularly useful for researchers, policy makers, and the private sector, as few other methods can match the capability of surveys to collect data on broad social trends (Dillman 2009 Ch. 1). However, surveys

---

<sup>8</sup> Data collection was funded by the Mountain Mistra Program (2004), the Swedish EPA and the CABs of northern Sweden (2009), and FORMAS (2014), and was a collaboration between the Swedish University of Agricultural Sciences, SLU, and Umeå University.



restrict the possible answers since they rely on fixed answer alternatives, and this can compromise the accuracy of collected data, as well as limit the types of questions that can be asked (Dillman 2009 Ch. 2).

*Flexible.* The choice of medium allows surveys to be tailored to specific groups of respondents. Online surveys, email surveys, social media surveys, mail surveys, mobile surveys, telephone surveys, face-to-face interview surveys, or any form of mixed mode survey can all, to some extent, attract different demographics (Dillman 2009 Ch. 7-8). Thus, a good choice of survey medium can increase response rates, while using a medium that does not appeal to the desired group of respondents is likely to result in fewer surveys being answered and returned to the researcher.

*Anonymous.* Researchers and respondents do not have to communicate outside of the survey. This allows respondents to remain anonymous and also reduces the risk that any personal biases will affect the responses given (Dillman 2009 Ch. 1). However, this lack of direct contact limits the opportunity to ensure that respondents understand the questions asked, and that they answer them truthfully (Dillman 2009 Ch. 1-2).

In general, surveys excel at measuring the same concept multiple times without introducing random error; hence, a well-designed survey tends to demonstrate high reliability (Bryman Ch.7). However, the fixed question format and lack of direct contact can introduce systematic errors when researchers attempt to measure more complex concepts. Thus, surveys can sometimes struggle in terms of validity (Bryman Ch.7 and 17).

## **Statistics: Description, Analysis, and Generalization**

Surveys collect vast amounts of data, which, if fixed answer alternatives are used, are particularly suitable for statistical analysis. Descriptive statistics, in the form of various measurements such as mean value, standard deviation, and skewness (Blalock 1960 Ch.1), offer a quick and easy description of survey data once they have been collected. Analytical statistics can then be used to model more complex relationships within survey data (Blalock 1960 Ch.1).

However, the main advantage of combining survey data with statistics is the potential to draw conclusions outside of the group of individuals that took part in the survey, i.e. the possibility to generalize results. Respondents are typically selected at random from a larger group (the population), and the selected subgroup is referred to as the sample. Given that the sample is randomly selected and large enough, it can be assumed to accurately reflect characteristics (be representative) of the entire population. In such cases,

statistics can be used to generalize findings from the sample to the population (Dillman 2009 p.54).

The accuracy of these population estimates is not dependent on the size of the total population, but rather on the size of the sample. In theory, this means that generalizing a result to a population of 200 million requires the same amount of surveys as generalizing to a population of 10 000 (Dillman 2009 Ch. 3). However, accurate generalizations are still dependent on the sample being representative the population. Thus, any significant sources of non-random bias in the sample can result in inaccurate population estimates (Dillman 2009 Ch. 3). The number of answer alternatives for a question and the desired margin of error also matter. For example, a sample comprising 1067 respondents can estimate the true population value of a yes/no question with an error margin of 3%, regardless of the size of the population in question (Dillman 2009 p.56).

## **Sources of Error**

Common sources of errors related to the survey methodology can be grouped into four main categories (Dillman 2009 p.19): coverage errors; sampling errors; non-response errors; and measurement errors.

Coverage errors are discrepancies between the sampling frame and the population. A sampling frame is the source material, or device, from which a sample of respondents is drawn. Sampling frames are often some form of population list, such as a phone book, census, or membership register. This list is then used to select the survey recipients, often by randomly selecting a set number of recipients. There are three main types of coverage errors: under coverage; over coverage; and erroneous inclusion errors (Dillman 2009 Ch. 3). Under coverage means that some individuals are excluded from the sampling frame, over coverage occurs when some individuals are represented in the sampling frame more than once, and erroneous inclusion describes cases when the sampling frame includes individuals that are not part of the population (Dillman 2009 Ch. 3). All forms of coverage errors threaten the representativity of the random sample by introducing bias into the sampling process.

Random samples are never completely identical, and this introduces variation known as sampling error when population values are being estimated. In practice, this means that any estimated population value will have a margin of error (Bryman, Ch.8; Dillman 2009, Ch. 3).

Measurement errors result from any form of discrepancy between collected data and the knowledge of the respondent. The numerous sources of measurement error can be related to the survey questions, the respondents, or the mode of data collection used. Unclear questions, long surveys, confusing answer alternatives, uninterested respondents, online surveys, telephone surveys, and language are just some examples of the possible sources of measurement error (Dillman 2009 Ch. 6).

Non-response errors result from the incomplete collection of information. Failing to collect answers from all units in the sample not only decreases the amount of data available for analysis, but it can also introduce systematic bias, as some types of respondents are less likely to answer surveys than others (Bryman Ch.8). The three main sources of non-response errors are non-contact, non-response, and item non-response. When a respondent belongs to the sample but is never contacted, often due to an imperfect sample frame, a non-contact error has occurred. In cases of non-response errors, the respondent is contacted but do not answer the survey, often due to disinterest or lack of time. Finally, item non-response refers to partially answered surveys in which respondents have chosen not to answer some questions, due to reasons such as, disinterest, the sensitive nature of a question, or lack of time (Bryman Ch.8).

Realistically, these errors can never be completely avoided, and the goal should be to minimize their effects rather than to avoid them completely. Random errors will not impact a statistical analysis (Bryman Ch.8), as some respondents will always leave the country, answer questions inaccurately, die during the survey process, ect.. However, systematic errors represent a threat to generalizability as they can result in a discrepancy between the sample estimates and the actual population value (Bryman Ch.8).

## **The Survey Process**

All three surveys predominantly included questions related to wildlife and nature, with additional sections regarding natural resources, protected areas, hunting, politics, and trust, as well as a number of demographic variables.

The structure and contents kept as consistent as possible across the three surveys (Dillman 2009 Ch. 4), but some minor changes were required due to external causes. One notable change was the wording of a question measuring attitudes towards the Swedish wolf policy goal, which was prompted by a policy change made in 2013. In cases where changes were considered relevant they were further discussed in the measurements sections of the related papers (Papers III and IV).

Following the standard in the field (Dillman 2009 Ch. 4-6), the majority of questions were measured using the five-point Likert scale, which is a numerical scale combined with non-numerical answer alternatives (anchors). In the research underlying this thesis, the scales ranged from one to five, with anchors ranging from completely disagree (1) to complete agree (5), with a neutral middle alternative (3). This standardized format was used to avoid confusing the respondents, which could lead to measurement errors (Dillman 2009 Ch. 4-6). Standardized questions also decrease the risk of accidentally including double-barreled, or otherwise unclear, questions (Dillman 2009 Ch. 4-6).

The three surveys were distributed by mail in 2004, 2009, and 2014. Each survey included up to four contacts with every respondent, and each respondent received an introduction, pre-notice letter, reminder, thank you card, and up to two copies of the survey in question. The 2014 survey also included an option to answer online, with a unique personal login code printed on each survey. Depersonalized ID codes were used throughout the survey process to guarantee the anonymity of respondents, and respondent names and addresses were excluded from the survey process following survey distribution. Distribution by mail was chosen because mail surveys have been found to be less prone to systematic patterns in non-response than other mediums (cf. Dillman 2009 Ch. 7). Multiple contacts and the ability to answer online were included to further increase response rates, as suggested by Dillman (2009 Ch. 7-8).

The same relative timeline was used for the distribution of all three surveys (Table 3; Dillman 2009 Ch. 6-7). Respondents were given ample time to fill in the surveys and told that they could contact researchers by phone or e-mail at any hour, from the first day of distribution until approximately one month after the second copy of the survey was sent. After this, phone contact was restricted to office hours.

**Table 3.** *Relative timeline of the survey process*

Day 0	Introduction / pre-notice letter sent
Day 5	First survey sent out
Day 11	Reminder / thank you card sent
Day 26	Second survey sent out
Day 180	Data collection closed

All data were manually coded. Random checks of coded data were periodically performed to ensure data quality, and any data suspected to be inaccurately

coded were not used. Surveys that were not filled-in properly, such as blank surveys, empty envelopes, and surveys with blanked-out ID-numbers, were excluded from the sample. Surveys that were not answered due to death, emigration, or severe disability were also removed from the sample. In some cases, respondents received, filled-in, and returned two mailed copies of the same survey. In such cases only the last received survey was used for analysis.

## **Analytical Tools**

In an attempt to bridge the gap between social science theory and individual-level survey data, the research underlying this thesis employed a number of statistical techniques that are particularly suited for modeling hierarchies, structures, and latent constructs.

Various exploratory statistical techniques were also used throughout the research process. CHAID trees (Song and Ying 2015) were used to identify cut-off points and possible interaction effects, while Cluster analysis (Andendelfer and Blashfield 1994) and multidimensional scaling (Kim and Mueller 1978) were used to inform model building. However, factor analysis (Kruskal and Wish 1978), structured equation modeling (SEM) (Paxton, et al. 2011; Little 2013), and multi-level modeling (MLM) (Luke 2004) were the central analytical tools used in the research underlying this thesis.

Factor analysis can be used to identify and analyze underlying patterns in data (Kruskal and Wish 1978). Guided by theory, factor analysis allows for the analysis of theoretical concepts that are problematic to measure directly, also known as latent constructs (Cunningham, et al. 2001).

The SEM framework, which is a combination of regression, factor analysis, and path models, facilitates the modeling of latent variables as well as network structures (Little 2013 Ch.1). This framework is very useful when modeling internal structures such as attitudes and values.

Finally, MLM allows researchers to estimate collective-level effects (Luke 2004 Ch. 1), making it particularly useful for investigating how group-level effects drive individual attitude formation (Paper III).

Data were initially entered into Excel (Excel, 2007, Microsoft, Redmond, CA). The bulk of the data cleaning and analysis was done in Stata (Version 13.0, Stata, College Station, TX). Various additional software, such as: R, SPSS, SAS, and QGIS, were also used for exploratory analysis and visualization.

## Data Collection and Sampling

The official registry of Statistics Sweden (SCB) was used as a sampling frame. Given Sweden's national system of personal identification numbers, this sample frame provides the most accurate depiction of the Swedish general population available. Thus, the risk of coverage errors (cf. Dillman 2009 Ch.3) is minimal.

For each survey, two sets of independent random samples were drawn. Each survey comprised a national sample, with a sample size of 1067 respondents, and a series of municipal samples with individual sample sizes of 150. This, oversampling of rural areas was necessary for reaching rural respondents, as noted by Ericsson et al. (2006).

The municipal samples were then weighted to adjust for variations in the population size of Swedish municipalities. These weights assigned observations from areas with large populations higher values than observations from areas with smaller populations to account for the uneven chances of being randomly selected across municipalities and counties. These weights were calculated as the inverse of the probability of selecting an individual respondent (cf. Biemer and Christ 2008):

$$\text{Weight} = 1 / (\text{Sample Size} / \text{Population Size})$$

Sweden is divided into 21 counties, and these counties are divided into a total of 290 municipalities. While each survey contained a national sample that sampled Sweden as a whole, the municipal samples were expanded in each successive survey (Figure 5; Table 4). The 2004 survey sampled municipalities in counties of northern Sweden, the 2009 survey added the municipalities of the county of Stockholm, and the 2014 survey further expanded sampling by including the municipalities in the county of Värmland.



**Figure 5.** *Temporal expansion of municipal samples. The gray area was sampled in all surveys, the county of Stockholm (black area) was included in the 2009 and 2014 samples, and the county of Värmland (black dotted area) was added in 2014.*

Compared to other general population samples, the response rates of all three surveys were high. The total response rate in 2004 was 57%, and the 2009 and 2014 surveys had total response rates of 48% and 40%, respectively (Table 4). Response rates diminished over time, which corroborates a general trend of diminishing survey response rates (Dillman 2009 Ch.1). While not all non-response errors are problematic, over 40% of the respondents did not answer the survey, which makes systematic patterns among the group of respondents very likely.

Previous wildlife and nature surveys in Sweden have identified respondents to be older than the national average, and the samples also tend to contain a higher proportion of male hunters than the general population (Ericsson, Sandström et al. 2006). Mail survey respondents tend to be older and have a higher educational level than the general population (Dillman 2009 Ch.7-8).

National statistics were used to find possible patterns of non-response, as the sampling frames were unavailable. A drop-out analysis compared the samples with national SCB data in terms of age, education, gender, and number of sold hunting licenses.

**Table 4.** *Overview of sampling and response rates*

Survey year Sample	2004		2009		2014	
	National	Municipal	National	Municipal	National	Municipal
Sample size	1 067	10 950	1 067	14 250	1 067	16 950
Response rate	52%	58%	48%	48%	39%	40 %
Total response rate	57%		48%		40%	
Counties in municipal sample	Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, Norrbotten		Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, Norrbotten, Stockholm		Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, Norrbotten, Stockholm, Värmland	
Number of municipalities sampled	290		73		290	

The results from the drop-out analysis conformed to the expected pattern: respondents had a higher average age and educational level than the general population, and were more likely to be male hunting license holders (Table 5).

**Table 5.** *Comparison of sample and population data<sup>9</sup>*

Variable	Survey year	General population	National Sample	Municipal samples
Age	2004	41	48	50
	2009	41	45	46
	2014	41	40 NS	42
Education	2004	0.21	0.32	0.26
	2009	0.23	0.41	0.34
	2014	0.26	0.52	0.39
Hunting	2004	0.03	0.09	0.07
	2009	0.03	0.07	0.16
	2014	0.03	0.08	0.16
Gender	2004	0.50	0.45	0.52
	2009	0.50	0.52 NS	0.49
	2014	0.50	0.49 NS	0.49

NS indicates that there was not a statistically significant difference between the sample and population data at the 95% significance level.

This bias most probably resulted from the subject of the research underlying this thesis. Questions about nature and wildlife are likely to be more interesting to individuals that hunt, and hunting is more common among older males. In addition, the questions related to wolves and wolf policy are

<sup>9</sup> All population data are based on SCB statistics. Mean age, along with the proportion of the population that has a university degree, purchased a hunting license, or is female, are compared with the mean within each sample.



sensitive, which could have made respondents more likely to skip these questions, resulting in missing data. In general, fewer respondents answered survey questions related to wolves than other questions; however, the effect of this bias is likely to be minor.

The combined effects of these sampling biases could potentially impact generalizability. However, given the relatively high response rates and large sample size, it is unlikely that they would be serious enough to invalidate the results of the research underlying this thesis.

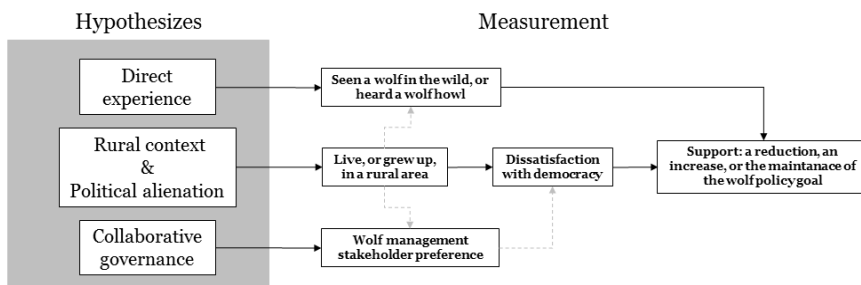
## **Measurements**

The growing wolf population is likely to result in more direct experiences with wolves. Thus, the population growth represents an environmental change with the theoretical potential to affect public attitudes towards the wolf policy goal (Paper I). Direct experience with wolves was measured as either having seen a wild wolf or having heard a wolf howl. These measurements were based on two survey questions, which asked “have you ever seen a wolf in the wild” and “have you ever seen wolf tracks”, see table 6 for additional details.

Socio-political change was analyzed in terms of the urban-rural divide and political alienation. Following previous research (Ericsson, Sandström et al. 2006) areas with less than 10 000 inhabitants were treated as rural. Respondents were asked two questions, where they currently lived, and where they grew up. Political alienation was measured using five questions. four questions measured satisfaction with democracy on different administrative levels, phrased as: “how satisfied are you with the way democracy works, on the EU, National, county (only included in Paper II), and municipal level, respectively”? The fifth question measured attitudes towards Swedish politicians, worded as: “how much do you trust Swedish politicians?” These questions were then reverse coded and used as a summative index (Paper II), as well as the basis for a factor solution (Papers II and III).

Institutional change was studied in relation to collaborative governance, and its potential to give marginalized groups a voice. The interest representation within WMDs is assumed to empower rural actors. This assumption means that the attitudes of the general public, with respect to whom they wish to be represented by, should be reflected in the interests that are actually represented in WMDs. Such agreement, or lack thereof, is assumed to affect political alienation. Thus, input legitimacy was operationalized as the correspondence between the interests represented in WMDs and the public preferences for what actors should take part in Swedish wolf management (Paper IV).

Finally, the attitudes of the public towards the Swedish wolf policy were measured using a survey question related to the Swedish wolf policy goal. (Table 6).



**Figure 6.** Assumed structural relationship between measurements. Assumed relationships that are not been tested are marked with gray dashed arrows.

The variables discussed in this section are described in detail in table 6. All measurements were self-reported, which leaves the potential for measurement errors. For instance, not all respondents can be expected to differentiate between dog and wolf tracks. However, attitudes are formed from subjective beliefs and perceptions rather than objective reality; hence, such errors are unlikely to affect the results of the research presented in this thesis.

## Strengths and Weaknesses

This thesis is based on research that gives a reliable overview of the broader attitude patterns present among the general Swedish public. The sampling design offers an overview of the attitudes of the Swedish rural population, while the repeated surveys enable comparison over time. However, this research design prioritizes width over depth, which leads to results being less causally robust than studies based on panel data or experiments. Moreover, the presented research also lacks the detail and depth of more qualitative designs.

This design does provide robust probabilistic estimates of aggregate changes, which, in conjunction with theory, allow strong arguments to be made based on the collected data.

**Table 6.** Measured variables of importance to attitude changes towards wolf policy.<sup>10</sup>

Measured item	Question Wording (Translated from Swedish)	Answer Alternatives
Attitudes to Wolf policy (2004, 2009)	In the spring of 2001, the Swedish parliament decided how many large carnivores we should have in Sweden. The first goal was set for the number of reproducing females, corresponding to at least 200 wolves. What is your opinion of the goal set by the parliament for large carnivores in Sweden?	1: Should be reduced a lot, 2: Should be reduced somewhat 3: Is acceptable 4: Should be increased somewhat
Attitudes to Wolf policy (2014)	In 2013, the Swedish parliament decided how many large carnivores we should have in Sweden. The goal corresponds to 170–270 wolves. What is your opinion of the set goal for large carnivores in Sweden?	5: Should be increased a lot
Political alienation	In general, how satisfied are you with how democracy works in the EU?	1: Not at all satisfied 2: Not particularly satisfied 3: Pretty satisfied 4: Very satisfied
	In general, how satisfied are you with how democracy works at the national level?	
	In general, how satisfied are you with how democracy works in your County?	
	In general, how satisfied are you with how democracy works in your municipality?	
Urban-rural <sup>11</sup>	Generally speaking, how much do you trust Swedish politicians?	1: Very little 2: Little 3: A moderate amount 4: A lot
	Where are you currently living?	1: In a place with less than 200 inhabitants, 2: In a place with less than 2,000 inhabitants 3: In a place with 2,000 to 10,000 inhabitants
	Where did you spend the majority of your life before 18 years of age?	4: In a place with 10,001 to 180,000 inhabitants 5: In Stockholm, Göteborg, or Malmö
Direct experience	Have you ever seen a wild wolf?	0: Never 1: Once
	Have you ever seen wolf tracks?	2: More than once
Management preference	To what degree do you think the following actors should be a part of Swedish wolf management:	1 Disagree completely 2: Disagree 3: Do not know 4: Agree 5: Agree completely
	CAB , Courts, EPA EU, FSF, Hunters, Local populations , Municipalities, Parliament, Police, Research, RHC, SCA, SOA, SSNC, WWF <sup>12</sup>	

<sup>10</sup> Additional details are provided in the individual papers.

<sup>11</sup> Stockholm, Göteborg, and Malmö are the three largest metropolitan areas in Sweden.

<sup>12</sup> The full names of stakeholder organizations are provided in the list of acronyms and abbreviations.

# Overview of Appended Papers

**Paper I:** Direct experience and attitude change towards bears and wolves.

Understanding how changes in the sizes of large carnivore populations affect public attitudes is a vital part of mitigating social conflicts over large carnivore management. Using data from two Swedish postal surveys in 2004 and 2009, we examined the probable social effects of a continual increase in the Swedish bear and wolf populations by comparing how levels of direct experiences with bears and wolves impact public attitudes towards these animals. We report an increase in direct experiences with bears and wolves, lower levels of acceptance for the existence of these animals in Sweden, and a lower degree of support for the policy goals of both species in 2009 than in 2004. We also noticed that these changes are more prominent in areas with local carnivore populations than in other areas of Sweden. Our results imply that attitudes towards bears and wolves are likely to become more negative as populations continue to grow. Social conflicts are likely to become more frequent in the future due to the uneven distributions of the carnivore populations, which may also widen the attitudinal divide between people who have had direct experiences with large carnivores and those who have not.

**Paper II:** Political alienation, rurality and the symbolic role of wolf policy.

Public attitudes towards wolves are partly determined by cultural context. It has been proposed that the asymmetric power relationship between urban and rural groups in society is a contextual driver of attitudes towards wolf policy. This article empirically evaluates this power asymmetry using generalized structural equation modeling and Swedish survey data from 2014, by how living within a rural context in combination with political alienation, impacts public attitudes towards wolf policy. Results indicate that living within a rural context increases the probability of favoring a more restrictive wolf policy and demonstrates that political alienation is a probable mediator in this process. These findings highlight the importance of accounting for the rural context in policy-making, as recognizing underlying power asymmetries between urban and rural areas could mitigate the pervasiveness of wolf-related social conflicts.

**Paper III:** Rurality and Collective Attitude Effects on Wolf Policy.

Social conflicts over wolf policy are driven by an underlying attitudinal divide between people from urban and rural areas. This study explores how social context affects the formation of this attitude pattern, as contextual effects could explain how dissatisfaction with wolf policy transforms into a collective political struggle, leading to pervasive social conflicts between urban and rural groups in society. The study examines collective level mechanisms behind wolf-related social conflicts by applying Swedish survey data. The results support that individual attitudes towards the Swedish wolf policy are affected by collective attitude patterns, given sufficient levels of political alienation. These findings suggests that addressing political alienation in rural areas could potentially mitigate social conflicts over wolf policy.

**Paper IV:** Value patterns and input legitimacy, in Swedish wolf governance.

Political marginalization among people living in rural areas has been found to drive wolf-related social conflicts. Increased local control over natural resource management has been suggested as one possible strategy to reduce perceptions of political marginalization. This study examine public support for the inclusion of a number of stakeholder groups into Swedish wolf management. The preferences of the Swedish public are then compared with the stakeholders that are represented within the wildlife management delegations (WMDs), which are collaborative governance structures related to Swedish wolf governance. Results indicate that the interests represented within WMDs match the preferences of the public. However, patterns in the attitudes of the public and the coalitions within the WMDs reveal underlying conflict lines based on having either utilitarian- or conservation-based values in relation to natural resources, a pattern that is likely to limit the potential of WMDs to reduce the urban-rural divide with respect to wolf policy

## 5. Results

The aim of this thesis was to examine,

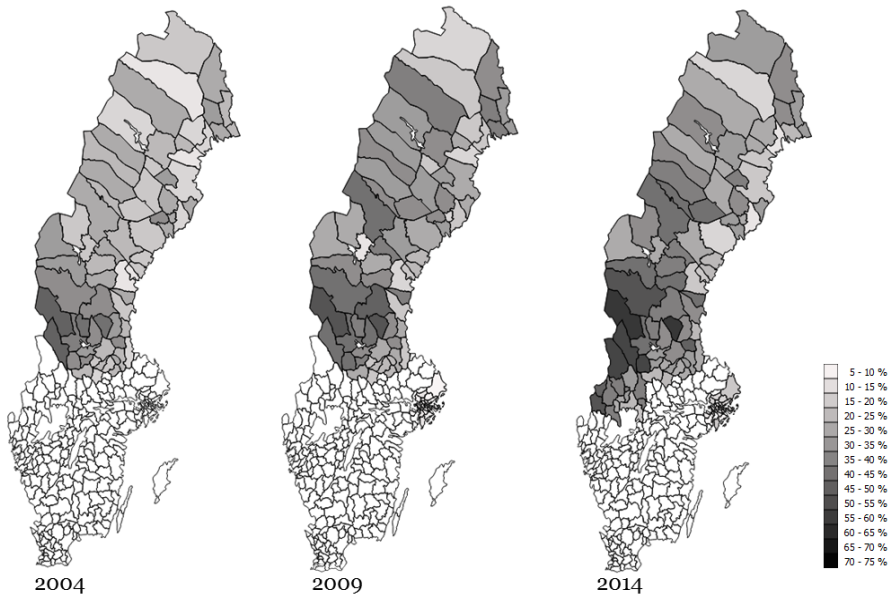
*how environmental, socio-political, and institutional factors affect public attitudes towards the Swedish wolf policy over time, and to discuss their policy implications.*

The research underlying this thesis shows that the Swedish population is positive towards wolves existing in Sweden. In all three surveys, a majority of the respondents, 65-70%, either supported the current wolf policy goal or wanted to increase it further. Respondents living along the northern part of Sweden's eastern coast were less likely to support a more restrictive wolf policy than respondents living in western and central Sweden. Individuals living in, or close to, the Swedish wolf area in the south-eastern part of the sampling area (Chapter 1; Figure 2), were the most supportive of a more restrictive wolf policy (Figure 7).

Support for a more restrictive wolf policy has also grown over time: In 2004, 30% of respondents wanted to reduce the number of wolves in Sweden, compared to 35% in both 2009 and 2014 (Figure 7).<sup>13</sup> The data also indicate ongoing attitude polarization based on geography, as the attitudes towards wolf policy in areas along Sweden's eastern coast changed little over time, while attitudes in inland municipalities have gradually become more supportive of a more restrictive wolf policy. This also reflects an urban-rural divide, as the eastern coast of northern Sweden is more urbanized than the inland areas of central and northern Sweden.

---

<sup>13</sup> T-tests indicate that this change is statistically significant ( $P < 0.01$ ), and stable when including only the municipalities sampled in 2004.



**Figure 7:** *The proportion of respondents in the municipal samples that supported a reduction of the wolf policy goal.*

### ***Environmental Change***

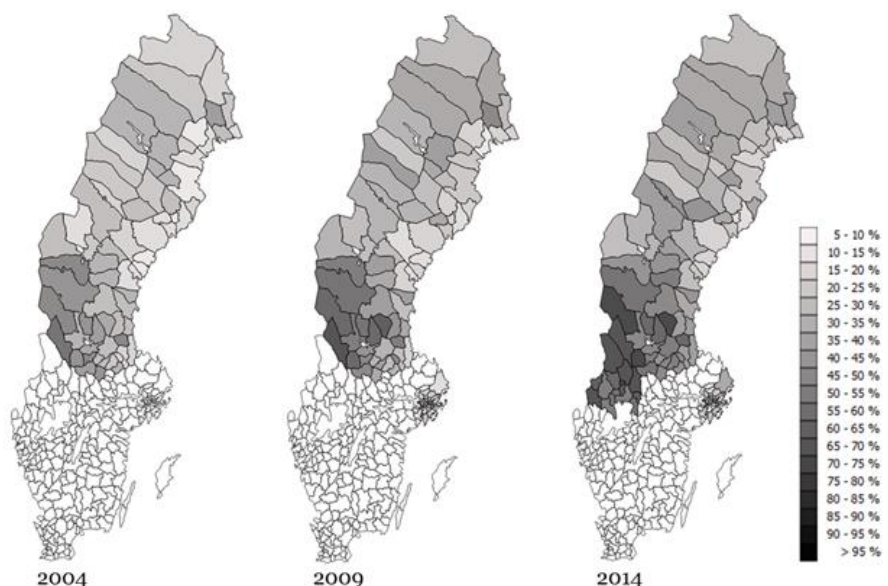
During the studied time period (2004-2014), the Swedish wolf population has increased in size (Paper I). This has caused human-wolf interactions to become a more common occurrence, which could be expected to affect public attitudes towards the wolf policy. Thus, the assumption was that:

*Direct experiences with wolves would have an effect on the attitudes of the Swedish public towards the wolf policy (Paper I).*

Few people in Sweden have ever seen a wolf in the wild, and the Swedish public, in general, does not know much about wolves (cf. Heberlein and Ericsson 2008). Thus, the attitudes of the Swedish public towards wolves should be susceptible to quick change, as wolf return is likely to force individuals to re-evaluate what they thought they knew about wolves (Paper 1).

Between 2000 and 2014 there was an increase in the proportion of respondents who reported having had direct experiences with wolves (Figure 8). In 2004, 32% of the respondents reported that they had seen either a wild

wolf or wolf tracks, a proportion that grew to 36% in 2009, and 46% in 2014.<sup>14</sup> Respondents living in, or around, the Swedish wolf area had the highest proportion of direct experiences with wolves (Chapter 1; Figure 2), but direct experiences with wolves have also increased north of the wolf area with time (Figure 8)



**Figure 8:** *The proportion of respondents in the municipal samples reporting having seen either a wild wolf or wolf tracks.*

An association was found between direct experiences with wolves and attitudes towards wolf policy (Papers I-IV). In some cases, direct wolf experiences were correlated with support for increasing the wolf policy goal (Paper II). The dominant trend, however, was that direct experiences were correlated with increased support for a more restrictive wolf policy (Papers I-IV).

Direct experiences accounted for up to 5% of the variation in attitudes towards the wolf policy (Paper I), leaving a substantial amount of variation unaccounted for.

<sup>14</sup> T-tests indicate that this change was statically significant ( $P < 0.01$ ), and found to be robust when comparing only the municipalities sampled in 2004.



## ***Socio-Political Change***

Wolves have returned to rural areas, areas that are already struggling with an aging population, depopulation, and general feelings of powerlessness. This context was assumed to affect attitudes towards the wolf policy among the rural population, especially given the symbolic nature of the wolf within rural culture, which is likely to transform the wolf policy into an a figurehead issue through which rural citizens express their political alienation. This reasoning led to the following assumptions:

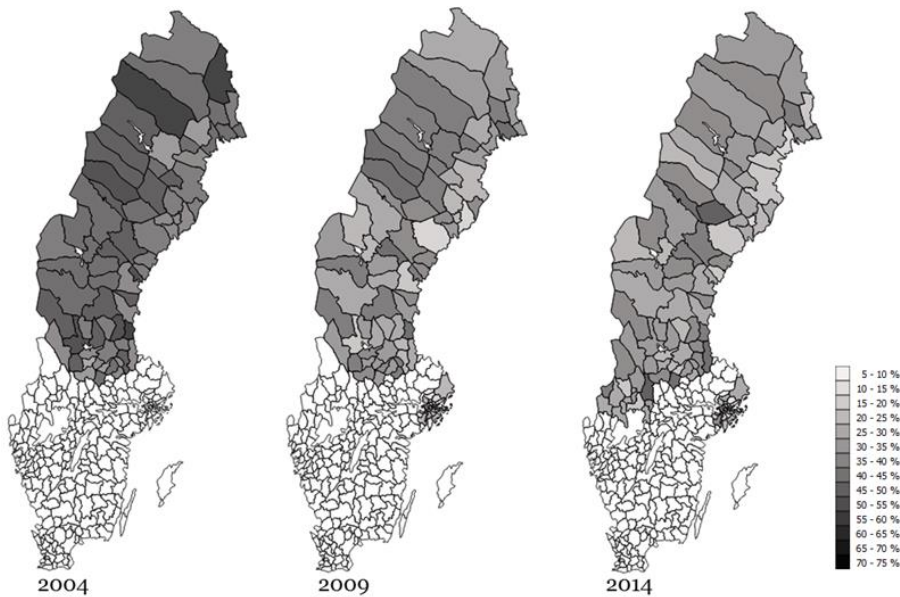
*Political alienation among people living in rural areas affects their attitudes towards the wolf policy (Paper II), and there is a connection between political alienation and collective level effects within the rural context (Paper III).*

In general, people living in rural areas are less positive towards wolves than people who live in urban areas (Dressel 2015). This attitudinal divide is assumed to be associated with a pattern of political alienation, which is driven by a rural context. Thus, rural support for a reduction of the wolf policy goals can be understood as a symptom of a perceived lack of political power. The rural population sees the wolf policy as both unfair and driven by urban interests (Sjölander-Lindqvist 2008). Previous research has also established that political alienation is instrumental in creating a collective sense of unfairness (Pettigrew et al. 2008), which would explain the social movements and collective protests that often surround wolf policy conflicts.

Data from the research underlying this thesis show a decrease in political alienation from 2004 to 2009.<sup>15</sup> However, the general geographic pattern remains constant over time (Figure 9); inland municipalities show more political alienation than costal municipalities, which, given Sweden's demographic make-up, reflects an urban-rural divide. In this way, individuals in rural areas were found to be more politically alienated than those living in urban areas (Papers II and III).

---

<sup>15</sup> T-tests indicate that this change was statically significant ( $P < 0.01$ ), and found to be robust when comparing only the municipalities sampled in 2004.



**Figure 9:** *The proportion of respondents in the municipal samples with a high level political alienation<sup>16</sup>*

The rural context also affected public attitudes towards wolf policy. Both living in and growing up in a rural area were associated with higher odds of supporting more restrictive policy options, demonstrated by odds ratios (ORs) of 1.26. and 1.14, respectively (Paper II). However, in some cases, politically alienated respondents were also found to be more likely to support a less restrictive wolf policy, indicating that political alienation could also be associated with discontent towards current policy levels, and not only affected attitudes towards the wolf policy among rural individuals (Paper II).

Political alienation was found to be associated with the formation of collective-level attitude effects (Paper IV), as public attitudes towards the wolf policy were only affected by collective-level effects in those cases where political alienation had a significant effect (Paper III). In these cases, individual attitudes towards the wolf policy was effected by the upbringing of other respondents living in the same municipality. Individuals living in a municipality where a high proportion respondents grew up in a rural areas were more likely to support a more restrictive wolf policy (OR = 2.13), an effect which became more pronounced (OR = 4.24) when an individual also disliked wolves (Paper III).

<sup>16</sup> High levels of political alienation were defined as having a rating above 8 on a summative scale consisting of the four items (excluding the county item only measured in 2014) measuring political alienation, presented in table 6.

## ***Institutional Change***

Swedish wolf governance has gradually moved towards collaborative governance in an effort to increase the legitimacy of the Swedish wolf policy (SOU 2012:22) and comply with the stipulations of the CBD. This transition is exemplified by WMDs and their interest representation-based structure. In theory, this procedural shift should reduce political alienation. However, previous research indicates that WMDs do not seem to function well, prompting an examination of WMDs in terms of input legitimacy and the related assumption, that:

*There should be a gap between the stakeholder interests that are currently represented within the WMDs and the stakeholder interests that the public feels should be represented within the WMDs.*

In theory, collaborative governance should reduce feelings of marginalization and powerlessness by through the adoption of a more inclusive policy process, and a deliberative climate defined by consensus. Thus, the success of the collaborative governance model within WMDs is contingent on all relevant interests being represented, and that the represented stakeholders correspond to the stakeholders that the public would prefer to be represented by.

The research underlying this thesis identified a clear urban-rural split related to which actors were seen as acceptable parts of wolf governance. Rural respondents preferred that the included actors represent a utilitarian / anthropocentric view of nature, whereas urban respondents preferred actors to have a clear focus on conservation. This corresponded with the coalitions present within WMDs, who can also be divided into groups based on either having a conservation- or utilitarian-based perspectives on natural resources (Paper IV).

## 6. Discussion

The decision to protect the wolf in Sweden was an easy one to make in 1966, when the risk of wolves limiting human activities was considered to be a distant, and unlikely, future scenario. However, since then the wolf has returned to Sweden, and the Swedish public is now being exposed to the effects of actual wolf presence.

For some members of the Swedish public the growing wolf numbers have meant little more than increased reporting on wolf related issues in the media, but for others the increased wolf presence has had a profound effect on their daily lives. On the whole, wolf return has increased support for a more restrictive wolf policy among the Swedish public, and it has widened the pre-existing attitude divide between urban and rural areas. This thesis concludes that both these developments are related to the urban-rural cleavage, perceptions of political power, and political alienation.

In 2014, only a small proportion of Swedes claimed to have had direct experiences with wolves (Paper III). In view of this, direct experiences with wolves can be expected to continue to affect the attitudes of the general public in the future. However, wolf encounters do occur more frequently in rural areas, which also makes direct experiences with wolves likely to increase urban-rural polarization (Chapter 3).

Attitude polarization is also driven by political alienation. Some segments of the rural population see the current wolf policy as a urban infringement on their political autonomy, and this discontent manifests itself as increased support for a more restrictive wolf policy (Paper II). In rural areas political alienation also drive social mobilization related to the wolf issue, as it transforms individual level discontent into collective level, identity-based political action (Paper III).

At the other end of the spectrum, some politically alienated individuals also showed a tendency to favor a less restricted wolf policy. Previous research have established that political alienation is not limited to a rural context. Thus, these results could be an indication of mechanisms to connect attitudes towards the wolf policy and political alienation within the urban context (Paper II). In either case this dualism, further adds to the polarizing effect of political alienation on attitudes towards the wolf policy.

Finally, Swedish wolf governance has undergone a series institutional changes, aimed at making the policy process more inclusive, in an attempt to increase the legitimacy of the wolf policy. However, these institutional reforms have generally failed to mitigate the ongoing attitude polarization and growing divide between urban and rural areas (Chapter 1).

According to theory, the collaborative governance, which the WMDs are based on, should promote actor inclusion and a more inclusive policymaking process, and in doing so mitigate political alienation (Paper IV). In reality, the decision-making within these organizations has been characterized by coalition building and strategic voting behavior, both of which can be assumed to promote conflict rather than policy legitimacy. Given this the WMDs are more likely to contribute to increased attitude polarization between urban and rural interests, as the actors involved reflect the a basic urban-rural value divide in relation to natural resources (Paper IV).

To summarize, attitudes towards the wolf policy are firmly connected to a urban-rural divide, which is related to both environmental and socio-political factors. Continual wolf presence will result in an increasing number of wolf encounters. Due to the geographic location of the wolf population this will most likely result in increased support for a more restrictive wolf policy among the rural population. Given that the wolf policy remains a symbolically important issue, and wolf return continues to be perceived as a way to consolidate urban political power in rural areas, political alienation is likely to add to this attitude polarization. Moreover, the current Swedish wolf governance structure is unlikely to be able to mitigate this development. Instead, the WMDs are likely solidify the pre-existing conflict lines present among the Swedish public within Swedish wolf management, which can be expected to aggravate urban-rural conflicts over wolf policy.

Thus, the attitude polarization between rural and urban groups in Sweden related to the wolf policy is likely to persist, if not increase in the future.

## **Policy Implications**

This section focuses on rural areas, as the research underlying this thesis has implied that a general rural-urban divide affect attitudes towards wolf policy within a rural context. Also, wolves primarily establish in rural areas, which makes finding a policy solution that fit these areas a priority.

Rural and urban areas differ from one another with respect to their political, social, and economic structure. Combined these differences make up what is known as the rural-urban cleavage (cf. Lipset and Rokkan 1967), two dimensions of this cleavage that are particularly relevant in the context of Swedish wolf policy are political power and the relationship towards natural resources (Chapter 3).

Urban interests are perceived to be in control of the political process, and this has left people in rural areas feeling politically alienated with respect to multiple policy sectors (Paper II). The strong symbolic importance of the wolf within rural culture, cause this general sense of political powerlessness to be expressed in relation to the wolf policy (Chapter 3). In addition, the infrastructure of rural areas tend to be more aligned towards the use of natural resources, than that of urban areas (Lewis and Maund 1976). Over time this difference has come to shape the values of the people living in these areas; thus, people within a rural context has come to favor a more utilitarian view of natural resources than urban people (cf. Heberlein and Ericsson). When combined these dimensions produce a two by two matrix, in which each cell represents an ideal type of a governance, which can to analyze possible alternatives to the current urban-rural dynamic within Swedish wolf governance (Figure 10).

**Figure 10.** Possible future management systems in rural areas with respect to political power and view of natural resources

		Rural view of natural resources	
		Conservation	Use
Rural political power	Strong	Adaptive governance	Local governance
	Weak	Payment for ecosystem services	Top down governance

Adaptive governance combine a high degree of decentralization, in the form of regional or local governance, with a management model based on local involvement. Thus, such a system include local actors throughout both decision-making and management, which, according to theory, should result in a management situation characterized by a high degree of both flexibility and adaptability to local conditions (*Sensu* Folke, Hahn et al. 2005).

A payment for ecosystem services based governance system would entail some type of all encompassing compensation scheme for rural areas, which would allow them to base their existence on stewardship and conservation, rather than the direct use of natural resources (*Sensu* Redford and Adams 2009).

Local governance is a system based on actor inclusion, that rely on local process in and stakeholder involvement in relation to both policy making and management (cf. Sandström et al. 2009). Non-traditional forms of knowledge are also often valued, as a method of improving both the inclusion and efficiency of decision-making processes (Paper IV).

Top-down governance relies on decisions being made high up in the administrative system. These expert decisions is then expected to trickle down through the administrative system, with little popular input or control over either decision-making or implementation process. Instead, decisions are expected to rely on the expert knowledge of bureaucrats and technical staff (cf. Sjölander-Lindqvist 2015).

Swedish wolf governance have traditionally been a top-down management system, in which political decisions were made in urban centers, and rural industry was defined by the use of natural resources (Chapter 3). The 1966 wolf policy created a potential conflict between the wolf policy and rural areas,

as its focus on wolf conservation represented a shift away from the traditional rural paradigm, which was centered around the use of natural resources. However, this conflict has only become apparent years later, as the wolf has gradually returned to Sweden.

Wolf return has now actualized this clash between wolf conservation, as prescribed by the national policy, and rural reliance on the use of natural resources, as customary within the traditional rural paradigm. This has most likely increased the resistance to the wolf policy among rural inhabitants, since accepting the wolf policy is perceived as also accepting rural transformation. Furthermore, the perception of the wolf policy as urban driven project serves to further widen this attitudinal gap, as urban elites are seen as responsible for both wolf presence and the transformation of rural areas (Paper II).

Modernization and globalization have also made the traditional rural role increasingly untenable, as competition between businesses reliant on natural resources has increased and the prices of transport have gone down. Thus, the traditional rural paradigm is no longer a realistic future role for rural areas in economic decline (Chapter 3).

Similarly local management is an unlikely future governance model for rural areas. While some attempts have been made to include local actors in wolf management (Sjölander-Lindqvist and Cinque 2014), these groups have primarily been involved in monitoring and assisting the regional authorities. However, given the urban-rural tensions identified above it is unlikely that rural actors would be allowed to make management and policy decisions on the local level regarding wolf, while still adhering to their traditional use based view of natural resources.

Examining governance trends in Sweden, there are two current developments that could have the potential to reduce the urban-rural divide with respect to the wolf policy: One is the gradual development towards adaptive governance described in chapter 2 (Prop. 2000/01:57; Prop. 2008/09:210; Government Bill 2012/13:191); and the other involves the development of a system of compensation schemes for ecosystem services.

Moving towards a adaptive management would require actors in rural areas to accept, and adhere to, a policy wolf conservation. In exchange they would be given increased control over the management of wolf at the regional level. In theory increased regional control could work; However, when implemented in practice, outside interference have typically prevented rural actors from independently managing the wolf on the regional level. The best example of this is the recurring legal conflicts over the licensed wolf hunts, were



conservation interests have repeatedly succeeded in canceled hunts, by making last minute appeals to the European court (Darpö 2014).

The payment for ecosystem services approach could also be a viable strategy. However, this would entail restructuring the economic system in rural areas completely, making them entirely based on compensations for ecosystem services and stewardship (Prop 2013/14:141). The outline of such a governance solution can be traced throughout the government strategy on strengthening biodiversity and securing ecosystem services, which was adopted in 2014 (Government bill 2013/14:141). This strategy is likely to have a profound impact on the future of Swedish nature conservation policy, as it is connected to the Swedish environmental quality objectives, the generational goal, the targets of the EU Bio-diversity Strategy to 2020, and the international Aichi Biodiversity Targets within the UN Convention on Biological Diversity (CBD). However, in their current form monetary compensation schemes are largely devoted to the direct loss of livestock, and would need to be considerably expanded, before being a realistic alternative economic model for rural areas. Thus the future potential of this governance solution remains dependent on the development of currently non-existent, comprehensive, and reliable compensation schemes (Chapter 3).

In general, the strong polarizing effects of political alienation on attitudes towards the wolf policy established in the research underlying this thesis suggests that governance systems that empower rural interests are more likely to work than systems that do not. Thus, both local governance and adaptive management could, in theory, make the management of wolves in Sweden more efficient, and thereby reduce some of the limitations imposed on people living in rural areas by wolf return (Chapter 1). The inclusiveness of both these systems should, in theory, also alleviate political alienation (e.g. Heberlein and Ericsson 2008; Sjölander-Lindqvist 2008; Sjölander-Lindqvist 2011); But, there are substantial caveats involved in the adoption of both of these governance models.

Firstly, the underlying value conflicts within WMDs (Paper IV) suggest that any form of management that is more decentralized risk to further increase attitude polarization (Paper IV). Moreover, public acceptance of wolves is key in both of these governance models, and in the case of local governance it remains to be seen to what degree increased political power can compensate, for the loss of the symbolic and economic values involved with having wolves present in a rural area; while, adaptive governance could adversely affect the favorable conservation status of the wolf, if local actors do not prioritize wolf conservation over use of natural resources.

## **Concluding Remarks**

Rural areas are currently under pressure from a number of outside forces, and perceive themselves as subordinated to urban areas with respect to political power, across a wide range of policy sectors. This leads to political resistance with respect to certain symbolic issues. Political alienation affects the wolf policy, due to the historical and cultural importance of the wolf within rural society, and because urban interests are perceived to be using the policy to restructure rural areas.

To some extent, the wolf policy, has become a symbolic issue for both sides in an ongoing political struggle between urban and rural areas. The research underlying this thesis focuses on the idea that the perception of wolf return as an urban political project is seen as a threat to the political autonomy of rural areas. The research underlying this thesis finds that wolf return has become a key factor for political alienation in rural areas. Moreover, the wolf policy has become a political arena through which rural people voice their discontent with the general subordination of rural areas to urban political power.

However, some politically alienated individuals also support less restrictive wolf policy options, which suggests that there are additional mechanisms that connect attitudes towards wolf policy with political alienation, possibly involving factors that affect urban segments of the population.

Variations in attitudes related to wolf policy partially stem from a general pattern of perceived inequality between urban areas and rural areas in terms of political power, and preventing future urban-rural conflicts over wolf policy would likely require a solution that addresses this underlying pattern. The impact of political alienation on public attitudes towards wolves also emphasizes the contemporary relevance of the urban-rural dimension, as reducing wolf policy conflicts without addressing political alienation may well result in increased rural-urban conflicts, in other, symbolically important policy fields.

Thus, urban-rural conflicts over the Swedish wolf policy are likely to remain a prominent feature of Swedish politics, as a broad development towards the political empowerment of rural areas seems unlikely in the near future.

## **Future Research**

There is a continued need to examine social conflicts over the wolf from a broader socio-political perspective. The research underlying this thesis applied a variety of theories at different analytical levels in an attempt to connect existing research on attitudes towards wolves, and wolf policy, to a social context. While this perspective has offered a good overview of the mechanisms involved in the formation of public attitudes towards wolf policy, it also required compromises in terms of analytical depth. Consequently, both political alienation and the urban-rural divide would benefit from further in-depth studies, both in relation to wolf policy conflicts and in a broader scientific context.

Political alienation also deserve more attention in relation to, group identification, collective action, and attitude polarization. Moreover, further study of the mechanisms driving political alienation, outside the rural context, is likely to offer new insight into the dynamics of urban-rural conflicts over wolf related policy conflicts.

Political alienation could also be studied in a large number of other contexts than wolf policy, and could be particularly useful to the field of natural resource management, as conflicts over natural resources tend to involve urban-rural divides similar to the one discussed in this thesis.

# References:

- Ajzen, I. 1989. Attitude Structure and Behavior. In Attitude Structure and Function. Eds. Pratkanis A., Breckler J., Greenwald A., Marsden, T., Mooney, P.. New York: Psychology press.
- Ajzen, I. 2001. Nature and Operation of Attitudes. *Annual review of psychology* 52(1): 27-58.
- Ajzen, I. 2011. Theory of Planned Behavior. In Handbook of Theoretical Social Psychology 1(1): 438.
- Ajzen, I., M. Fishbein 1980. Understanding Attitudes and Predicting Social Behaviour. Englewood Cliffs, NJ: Prentice-Hall
- Andendelfer, M., R. Blashfield 1994. Cluster Analysis: Quantitative Applications in the Social Science Series. London: Sage.
- Andersson, T., A. Bjärvall, M. Blomberg. 1977. Inställningen till varg i sverige: en intervjuundersökning, Statens Naturvårdsverk.
- Ansell, C., A. Gash 2008. Collaborative Governance in Theory and Practice. *Journal of public administration research and theory* 18(4): 543-571.
- Aronson, Å., H. Sand 2004. Om vargens utveckling i skandinavien under de senaste 30 åren. *Skogsvilt* 3: 47-53.
- Assembly, U. N. 1948. Universal Declaration of Human Rights. Resolution adopted by the general assembly 10: 12.
- Bachner, J., K. W. Hill 2014. Advances in Public Opinion and Policy Attitudes Research. *Policy Studies Journal* 42(S1): S51-S70.
- Baber, W. F., R. V. Bartlett 2005. Deliberative environmental politics: Democracy and ecological rationality. Cambridge, MA: MIT Press.
- Bath, A., T. Buchanan 1989. Attitudes of Interest Groups in Wyoming Toward Wolf Restoration in Yellowstone National Park. *Wildlife Society Bulletin* 17(4): 519-525.
- Berg, L., M. Solevid 2015. Tracing a Political Cleavage: The Wolf Issue in Sweden. *European politics and society* 16(4): 488-522.
- Bisi, J., T. Liukkonen, S. Mykrä, M. Pohja-Mykrä, S. Kurki. 2010. The Good Bad Wolf—Wolf Evaluation Reveals the Roots of the Finnish Wolf Conflict. *European journal of wildlife research* 56(5): 771-779.
- Bjerke, T., O. Reitan, S. R. Kellert. 1998. Attitudes Toward Wolves in Southeastern Norway. *Society and Natural Resources* 11(2): 169-178.
- Bjerke, T., J. Vitterso, B. P. Kalternborn. 2000. Locus of Control and Attitudes Toward Large Carnivores. *Psychological reports* 86(1): 37-46.
- Blalock, H. 1960. Social Statistics: International Student Edition. Ljubljana: McGraw-Hill
- Bolin, N. 2016. 7 Green parties in Finland and Sweden. *Green Parties in Europe*: 158. New York: Routledge.
- Bruskotter, J. T., J. J. Vaske, R. H Schmit. 2009. Social and Cognitive Correlates of Utah Residents' Acceptance of the Lethal Control of Wolves. *Human dimensions of wildlife* 14(2): 119-132.
- Bryman, A. 2012. Social research methods: OUP Oxford.

- Bäckstrand, K., J. Khan, A. Kronsell, E. Lövbrand. 2010. The promise of new modes of environmental governance. In *Environmental politics and deliberative democracy: Examining the promise of new modes of governance: 3-27*. Cheltenham: Edward Elgar Publishing Limited.
- Chapron, G., P. Kaczensky, J. D. C. Linnell, M. von Arx, D. Huber, H. Andrén, J. V. López-Bao, M. Adamec, F. Álvares, O. Anders, L. Balčiauskas, V. Balys, P. Bedó, F. Bego, J. C. Blanco, U. Breitenmoser, H. Brøseth, L. Bufka, R. Bunikyte, P. Ciucci, A. Dutsov, T. Engleder, C. Fuxjäger, C. Groff, K. Holmala, B. Hoxha, Y. Iliopoulos, O. Ionescu, J. Jeremić, K. Jerina, G. Kluth, F. Knauer, I. Kojola, I. Kos, M. Krofel, J. Kubala, S. Kunovac, J. Kusak, M. Kutal, O. Liberg, A. Majić, P. Männil, R. Manz, E. Marboutin, F. Marucco, D. Melovski, K. Mersini, Y. Mertzanis, R. W. Mysłajek, S. Nowak, J. Odden, J. Ozolins, G. Palomero, M. Paunović, J. Persson, H. Potočnik, P. Y. Quenette, G. Rauer, I. Reinhardt, R. Rigg, A. Ryser, V. Salvatori, T. Skrbinšek, A. Stojanov, J. E. Swenson, L. Szemethy, A. Trajçe, E. Tsingarska-Sedefcheva, M. Váňa, R. Veeroja, P. Wabakken, M. Wölf, S. Wölf, F. Zimmermann, D. Zlatanova, L. Boitani. 2014. Recovery of large carnivores in Europe's modern human-dominated landscapes. *Science* 346(6216): 1517-1519.
- Cinque, S. 2015. Collaborative management in wolf licensed hunting: the dilemmas of public managers in moving collaboration forward. *Wildlife biology* 21(3): 157-164.
- Cloke, P. 2006. Conceptualizing Rurality. *Handbook of Rural Studies*. Eds. Cloke, P., Marsden, T., Mooney, P.. London, Sage Publications.
- Committee of Environment and Agriculture 2013/14:mju7. En hållbar rovdjurspolitik. Swedish parliament, 10 December 2013.
- Conca, K. 2016. The Changing Shape of Global Environmental Politics. In *New Earth Politics: essays from the anthropocene*. Eds. S. Nicholson, S. Jinnah. Cambridge, MA: MIT Press.
- Convention on Biological Diversity, 1992. UN Doc. UNEP/Bio. Div/N7-INC. 54.
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 1973, 993 U.N.T.S. 243.
- Cunningham, W. A., K. J. Preacher, M. R. Banaji. 2001. Implicit attitude measures: Consistency, stability, and convergent validity. *Psychological science* 12(2): 163-170.
- Crosby, F. 1976. A Model of Egoistical Relative Reprivation. *Psychological review* 83(2): 85.
- Curtin, D. 2003. Private Interest Representation or Civil Society Deliberation? A Contemporary Dilemma for European Union Governance. *Social & legal studies* 12(1): 55-75.
- Dahl, R. A. 2013. A preface to democratic theory, University of Chicago Press.
- Darpö, J. 2014. Vargen och domstolscircusen 1-3.: Om den svenska rovdjurspolitiken och motet med EU-rätten. *Info Torg Juridik*.
- Decker, S. J. Riley, W. F. Siemer. 2012. Human dimensions of wildlife management, JHU Press.
- Dillman, D. A. 2009. Internet, mail, and mixed-mode surveys: The tailored design method, Wiley: New Jersey.
- Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive).
- Dressel, S., C. Sandström, G. Ericsson. 2014. A meta-analysis of studies on attitudes toward bears and wolves across europe 1976–2012. *Conservation Biology*.

- Duit, A., V. Galaz, A. Löf. 2009. Fragmenterad förvirring eller kreativ arena?: från hierarkisk till förhandlad styrning i svensk naturvårdspolitik. Samhällsstyrning i förändring. Malmö: Liber
- Dunlap, R. E., K. D. van Liere, A. G. Mertig. 2000. New Trends In Measuring Environmental Attitudes: Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale. *Journal of social issues* 56(3): 425-442.
- Eagly, A. H., S. Chaiken 1993. *The Psychology of Attitudes*. Harcourt Brace: Jovanovich college publishers. EPA: <http://www.naturvardsverket.se/sa-mar-miljon/statistik-a-o/varg-population-skandinavien/>. Retrieved 05-06-2016.
- Easton, D. 1965. *A systems analysis of political life*. New York: Wiley.
- Ericsson, G., T. A. Heberlein 2003. Attitudes of Hunters, Locals, and the General Public in Sweden Now that the Wolves are Back. *Biological conservation* 111(2): 149-159.
- Ericsson, G., C. Sandström 2005. Delrapport om svenskers inställning till rovdjurspolitik och förvaltning, Fjällmistra, Report.
- Ericsson, G., C. Sandström, G. Bostedt. 2006. The Problem of Spatial Scale when Studying the Human Dimensions of a Natural Resource Conflict: Humans and Wolves in Sweden. *The international journal of biodiversity science and management* 2(4): 343-349.
- Erikson, Robert S. 1976. The Relationship between Public Opinion and State Policy: A New Look Based on Some Forgotten Data. *American Journal of Political Science* 20: 25-36.
- Figari, H., K. Skogen 2011. Social Representations of the Wolf. *Acta Sociologica* 54(4): 317-332.
- Fishbein, M. 1979. *A Theory of Reasoned Action: Some Applications and Implications: Nebraska Symposium on Motivation* Lincoln: University of Nebraska Press.
- Flagstad, Ø., C. Walker, C. Vilà, A. K. Sundqvist, B. Fernholm, A. K. Hufthammer, Ø. Wiig, I. Koyola H. Ellegren. 2003. Two centuries of the scandinavian wolf population: patterns of genetic variability and migration during an era of dramatic decline. *molecular ecology* 12(4): 869-880.
- Folke, C., T. Hahn, P. Olsson, J. Norberg. 2005. Adaptive governance of social-ecological systems. *Annu. Rev. Environ. Resour.* 30: 441-473.
- Freudenburg, W. R., L. J. Wilson, Daniel J. O'Leary. 1998. Forty years of spotted owls? A longitudinal analysis of logging industry job losses. *Sociological Perspectives* 41(1): 1-26.
- Fritts, S. H. 1982. *Wolf depredation on livestock in Minnesota*, US Department of the Interior, Fish and Wildlife Service.
- Fulton, D. C., M. J. Manfredo, J. Lipscomb. 1996. Wildlife value orientations: A conceptual and measurement approach. *Human Dimensions of Wildlife* 1(2): 24-47.
- Glynn, C. J., S. Herbst, M. Lindeman, G. J. O'Keefe, R. Y. Shapiro. *Public opinion*. New York: Westview Press.
- Government bill 2000/01:57 Sammanhållen rovdjurspolitik, Stockholm.
- Government bill 2012/13:191 En hållbar rovdjurspolitik, Stockholm.
- Government bill 2013/14:141 A Swedish strategy for biodiversity and ecosystem services, Stockholm.
- Gutman, P. 2007. Ecosystem services: Foundations for a new rural–urban compact. *Ecological Economics* 62(3): 383-387.
- Harry, J., R. Gale, J. Hendee. 1969. Conservation: an Upper-middle Class Social Movement. *Journal of leisure research* 1(3): 246.

- Hallgren, L., Westberg, L. 2015. Adaptive management? Observations of knowledge coordination in the communication practice of Swedish game management. *Wildlife Biology*, 21(3):165-174.
- Heberlein, T. A. 2012. Navigating Environmental attitudes. New York: Oxford university press.
- Heberlein, T. A., G. Ericsson 2005. Ties to the Countryside: Accounting for Urbanites Attitudes Toward Hunting, Wolves, and Wildlife. *Human dimensions of wildlife* 10(3): 213-227.
- Heberlein, T. A., G. Ericsson 2008. Public Attitudes and the Future of Wolves, Canis Lupus, in Sweden. *wildlife biology* 14(3): 391-394.
- Holmberg, S. 1999. Down and down we go: political trust in Sweden. *Critical citizens: Global support for democratic government*: 103-122.
- Holmberg, S., H. Oscarsson 2004. Väljare: Svenskt väljarbeteende under 50 år, Norstedts juridik.
- Inglehart, R. 2004. Human Beliefs and Values: A Cross-Cultural Sourcebook Based on the 1999-2002 Values Surveys, *Siglo xxi*.
- Inglehart, R., C. Welzel 2005. Modernization, Cultural Change, and Democracy: the Human Development Sequence. New York: Cambridge university press.
- Jamison, A., R. Eyerman, J. Cramer. 1991. The Making of the New Environmental Consciousness: a Comparative Study of Environmental Movements in Sweden, Denmark and the Netherlands. Edinburgh university press.
- Jansson, A. 2013. The Hegemony of the Urban/rural Divide Cultural Transformations and Mediatized Moral Geographies in Sweden. *Space and Culture* 16(1): 88-103.
- Jagers, S. C., S. Matti 2010. Ecological citizens: Identifying values and beliefs that support individual environmental responsibility among Swedes. *Sustainability* 2(4): 1055-1079.
- Johansson, M., J. Karlsson, E. Pedersen, A. Flykt. 2012. Factors Governing Human Fear of Brown Bear and Wolf. *Human dimensions of wildlife* 17(1): 58-74.
- Karlsson, J., M. Sjöström 2007. Human attitudes towards wolves, a matter of distance. *Biological conservation* 137(4): 610-616.
- Kellert, S. R. 1985. Public perceptions of predators, particularly the wolf and coyote. *Biological conservation* 31(2): 167-189.
- Kellert, S. R. 1997. The value of life: Biological diversity and human society. Washington DC: Island Press.
- Kellert, S. R., J. K. Berry 1987. Attitudes, Knowledge, and Behaviors Toward Wildlife as Affected by Gender. *Wildlife society bulletin* 15(3): 363-371.
- Kellert, S. R., J. N. Mehta, S. A. Ebbin, L. L. Lichtenfeld. 2000. Community Natural Resource Management: Promise, Rhetoric, and Reality. *Society and natural resources* 13(8): 705-715.
- Kim, J.-O., C. W. Mueller 1978. Factor analysis: Statistical methods and practical issues. London: Sage.
- Kindberg, J., J. E. Swenson, G. Ericsson, E. Bellemain, C. Miquel, P. Taberlet. 2011. Estimating Population Size and Trends of the Swedish Brown Bear *Ursus Arctos* Population. *Wildlife biology* 17(2): 114-123.
- Kleiven, J., T. Bjerke, B. P. Kaltenborn. 2004. Factors Influencing the Social Acceptability of Large Carnivore Behaviours. *Biodiversity and conservation* 13(9): 1647-1658.
- Krange, O., K. Skogen 2011. When the Lads go Hunting: the Hammertown Mechanism and the Conflict over Wolves in Norway. *Ethnography* 12(4): 466-489.

- Kruskal, J. B., M. Wish 1978. *Multidimensional scaling: Quantitative Applications in the Social Science Series*. London: Sage.
- Kvastegård, E. 2013. Social and Economic Consequences of Wolf (*Canis Lupus*) Establishments in Sweden.
- Lewis, G., D. Maund 1976. The urbanization of the countryside: a framework for analysis. *Geografiska Annaler. Series B. Human Geography*: 17-27.
- Liberg, O. 2010. Intensive Monitoring in Scandinavia. Pages 20-21 in *Wolves, People, and Territories*. Workshop. Museo Regionali di Scienze Naturali. Regione Piemonte, Torino, Italy.
- Liberg, O., H. Andrén, HC. Pedersen, H. Sand, D. Sejberg, P. Wabakken, M. Åkesson, S. Bensch. 2005. Severe inbreeding depression in a wild wolf *Canis lupus* population. *Biology letters* 1(1): 17-20.
- Linnell, J., V. Salvatori, L. Boitani. 2008. Guidelines for Population Level Management Plans for Large Carnivores in Europe. A Large Carnivore Initiative for Europe. Report prepared for the european commission (contract 070501/2005/424162/mar/b2): 83.
- Lipset, S. M., S. Rokkan 1967. Party systems and voter alignments. *International Yearbook of Political Behavior Research*, vol. 7. London: Free press.
- Little, P. T. D. 2013. *Longitudinal structural equation modeling*, New York: Guilford Press.
- Lohr, C., W. B. Ballard, A. Bath. 1996. Attitudes toward gray wolf reintroduction to New Brunswick. *Wildlife Society Bulletin*: 414-420.
- Lowe, G. D., T. K. Pinhey 1982. Rural-urban Differences in Support for Environmental Protection. *Rural sociology* 47(1): 114.
- Luke, D. A. 2004. *Multilevel modeling: Quantitative Applications in the Social Sciences*, London: Sage.
- Lundmark, C., S. Matti 2015. Exploring the Prospects for Deliberative Practices as a Conflict-reducing and Legitimacy-enhancing Tool: the Case of Swedish Carnivore Management. *Wildlife biology* 21(3): 147-156.
- Lundmark, L., Ö. Pettersson 2012. The Relevance of Cluster Initiatives in Rural Areas: Regional Policy in Sweden. *Urban-izziv* 23(1): 42-52.
- Lundqvist, L. J. 2001. Implementation from Above: the Ecology of Power in Sweden's Environmental Governance. *Governance* 14(3): 319-337.
- Lundqvist, L. J. 2004. *Sweden and Ecological Governance: Straddling the Fence*. Manchester university press.
- Lundqvist, L. J. 2014. Sweden: From Environmental Restoration to Ecological Modernisation. In: *Governance and Environment in Western Europe: Politics, Policy and Administration*. Eds. Hanf, K., A.-I. Jansen. New York: Routledge.
- Lute, M. L., A. Bump, M. L. Gore. 2014. Identity-driven differences in stakeholder concerns about hunting wolves. *PLoS one* 9(12): e114460.
- Mech, L. D. 1995. The Challenge and Opportunity of Recovering Wolf Populations. *Conservation Biology* 9(2): 270-278.
- Maio, G., G. Haddock 2014. *The psychology of attitudes and attitude change*. London: Sage.
- Manfredo, M. J. 1989. Human dimensions of wildlife management. *Wildlife Society Bulletin* (1973-2006) 17(4): 447-449.



- Manfredo, M. J., D. J. Decker, M. D. Duda. 1998. What is the future for human dimensions of wildlife? Transactions of the North American Wildlife and Natural Resources Conference, Wildlife Management Institute.
- Manfredo, M., T. Teel, A. D. Bright. 2003. Why are Public Values Toward Wildlife Changing? Human dimensions of wildlife 8(4): 287-306.
- Manfredo, M. J. 2008. Attitudes and the Study of Human Dimensions of Wildlife. Who Cares About Wildlife?: 75-109. New York: Springer.
- Mill, J.S. 1861. Considerations on representative government. London: Parker, Son, and Bourn
- Monroe, A. D. 1978. Public opinion as a factor in public policy formation. Policy Studies Journal 6(4): 542-548.
- Mullinix, K. J. 2011. Lingering debates and innovative advances: The state of public opinion research. Policy Studies Journal 39(s1): 61-76.
- Newhouse, N. 1990. Implications of Attitude and Behavior Research for Environmental Conservation. The journal of environmental education 22(1): 26-32.
- Nie, M. A. 2003. Beyond Wolves: The Politics of Wolf Recovery and Management. University of Minnesota press.
- Nordlund, A. 2009. Values, Attitudes, and Norms. Future forest working report.
- Noss, R. F., H. B. Quigley, M. G. Hornocker, T. Merrill, P. C. Paquet. 1996. Conservation biology and Carnivore Conservation in the Rocky Mountains. Conservation biology 10(4): 949-963.
- Nyrén, U. 2012. Från utrotning till utbredning. Den svenska vargstammen som historiskt allmog-och överhetsprojekt. Historisk tidskrift 132(3): 2-28.
- Olson, J. M., M. P. Zanna 1993. Attitudes and Attitude Change. *Annual review of psychology* 44(1): 117-154.
- Oscarsson, H. and S. Holmberg 2011. Swedish voting behavior, Report
- Ordinance (2007: 845). On species Protection
- Ordinance (1987: 905). On hunting
- Ordinance (2009: 1263). On the management of bears, wolves, wolverines, lynx and the golden eagle.
- Ordinance (2009: 1474), Wildlife management delegations
- Ordinance (2001: 724), Wildlife damage
- Page, B. I., R. Y. Shapiro 1983. Effects of public opinion on policy. *American Political Science Review* 77(01): 175-190.
- Paxton, P., J. R. Hipp, S. Marquart-Pyatt. 2011. Nonrecursive models: Endogeneity, reciprocal relationships, and feedback loops: Quantitative Applications in the Social Sciences. London: Sage.
- Peterson, P., G. Herlitz 2011. Vargen –kramdjur och hatobjekt, Malmö: Liber
- Pettigrew, T. F., O. Christ, Oliver Christ, U. Wagner, R. W. Meertens, R. van Dick, A. Zick. 2008. Relative Deprivation and Intergroup Prejudice. *Journal of social issues* 64(2): 385-401.
- Pierskalla, J. 2011. Urban Bias and Democracy: the Causal Effect of Elections on Rural Public Goods Provision. *APSA 2011 Annual meeting paper*.

- Plummer, R., J. Fitzgibbon 2004. Co-management of Natural Resources: a Proposed Framework. *Environmental Management* 33(6): 876-885.
- Pratkanis A., Breckler J., Greenwald A., Marsden, T., Mooney, P.1989. Eds. Attitude structure and function. New York: Psychology press
- Prop. 2000/01: 57, bet. 2000/01: MJU9, rskr 2000/01: 174. En sammanhållen rovdjurspolitik, Stockholm.
- Prop. 2008/09: 210, bet 2009/10: MJU8, Parliamentary Communication 2009/10: 7. En ny rovdjursförvaltning, Stockholm.
- Prop 2013/14:141 En svensk strategi för biologisk mångfald och ekosystemtjänster, Stockholm.
- Redford, K. H., W. M. Adams 2009. Payment for ecosystem services and the challenge of saving nature. *Conservation Biology* 23(4): 785-787.
- Rodriguez, M., P. R. Krausman, W. B. Ballard, C. Villalobos, W. W. Shaw. 2003. Attitudes of Mexican Citizens About Wolf Translocation in Mexico. *Wildlife society bulletin*: 971-979.
- Rønningen, K. 2016. Environment and Resources. Routledge International Handbook of Rural Studies: 265.
- Sandström, C., G. Ericsson 2009. Om svenskars inställning till rovdjursförvaltning. Project report.
- Sandström, C., G. Ericsson, S. Dressel, M. Eriksson, E. Kvastegård. 2014. Attityder till rovdjur och rovdjursförvaltning. Project report.
- Sandström, C., M. Johansson, A. Sjölander-Lindqvist. 2015. The Management of Large Carnivores in Sweden -challenges and opportunities. *Wildlife biology* 21(3): 120-121.
- Sandström, C., J. Pellikka, O. Ratamäki, Allan Sande. 2009. Management of large carnivores in Fennoscandia: new patterns of regional participation. *Human Dimensions of Wildlife* 14(1): 37-50.
- SCB [www.scb.se](http://www.scb.se). Retrieved 02-26-2016.
- Scarce, R. 1998. What do wolves mean? Conflicting social constructions of *Canis lupus* in bordertown. *Human Dimensions of Wildlife* 3(3): 26-45.
- Schmidt, V. A. 2013. Democracy and legitimacy in the European Union revisited: input, output and 'throughput'. *Political Studies* 61(1): 2-22.
- Schwarz, N, G. Bohner 2001. The Construction of Attitudes. In Blackwell handbook of social psychology. Eds. Tesser, A., N. Schwarz.
- Schön, D., M. Rein 1994. Reframing: Toward the Resolution of Intractable Policy Controversies. New York: Basic Books.
- Selman, P. 2006. Planning at the landscape scale: New York: Routledge.
- Sen, A. K. 2014. Collective choice and social welfare. San Francisco: Elsevier.
- Shepard, C. L., L. R. Speelman 1986. Affecting Environmental Attitudes Through Outdoor Education. *The journal of environmental education* 17(2): 20-23.
- Sjölander-Lindqvist, A. 2008. Local Identity, Science and Politics Indivisible: the Swedish Wolf Controversy Deconstructed. *Journal of environmental policy and planning* 10(1): 71-94.
- Sjölander-Lindqvist, A. 2009. Social-natural landscape reorganised: Swedish forest-edge farmers and wolf recovery. *Conservation and Society* 7(2): 130.

- Sjölander-Lindqvist, A. 2011. Predators in 'Agri-environmental' Sweden: Rural Heritage and Resistance Against Wolf Propagation. Survival and sustainability. Berlin: Springer.
- Sjölander-Lindqvist, A., S. Cinque 2014. Dynamics of Participation: Access, Standing and Influence in Contested Natural Resource Management. *Partecipazione e conflitto* 7(2): 360-383.
- Sjölander-Lindqvist, A., M. Johansson, C. Sandström. 2015. Individual and collective responses to large carnivore management: the roles of trust, representation, knowledge spheres, communication and leadership. *Wildlife Biology* 21(3): 175-185.
- Skogen K., O. Krange 2003. A Wolf at the Gate: the Anti-carnivore Alliance and the Symbolic Construction of Community. *Sociologia ruralis* 43(3): 309-325.
- Skogen, K., I. Mauz, O. Krange. 2008. Cry Wolf!: Narratives of Wolf Recovery in France and Norway. *Rural sociology* 73(1): 105-133.
- Skogen, K., C. Thrane 2007. Wolves in Context: Using Survey Data to Situate Attitudes Within a Wider Cultural Framework. *Society and natural resources* 21(1): 17-33.
- Smith, G. 2003. Deliberative democracy and the environment, Psychology Press. London: Routledge.
- Smith, H. J., T. F. Pettigrew, G. M. Pippin, S. Bialosiewicz. 2012. Relative Deprivation a Theoretical and Meta-analytic Review. *Personality and social psychology review* 16(3): 203-232.
- Solevid, M., L. Berg 2010. Gärna varg, men inte på min bakgård. .In Nordiskt ljus. Eds. Holmberg, S., Weibull, L. Göteborg: SOM-Institute.
- Song, Y., L. Ying 2015. Decision tree methods: applications for classification and prediction. *Shanghai archives of psychiatry* 27(2): 130.
- SOU 1999:146. Available at: <http://www.regeringen.se/rattsdokument/statens-offentliga-utredningar/2000/01/sou-1999146/>. Retrieved 05-17-2016.
- SOU 2007:89. Available at: <http://www.regeringen.se/rattsdokument/statens-offentliga-utredningar/2007/12/sou-200789/>. Retrieved 05-17-2016.
- SOU 2011:37. Available at: <http://www.regeringen.se/rattsdokument/statens-offentliga-utredningar/2012/04/sou-201222/>. Retrieved 02-26-2016.
- SOU 2012:22. Available at: <http://www.regeringen.se/rattsdokument/statens-offentliga-utredningar/2012/04/sou-201222/>. Retrieved 02-26-2016.
- Sponarski, C. C., C. Semeniuk , J. A. Glikman, A. J. Bath, M. M. 2013. Heterogeneity among rural resident attitudes toward wolves. *Human Dimensions of Wildlife* 18(4): 239-248.
- Sponarski, C. C., J. J. Vaske, A. J. Bath, M. M. Musiani. 2014. Salient Values, Social Trust, and Attitudes Toward Wolf Management in South-Western Alberta, Canada. *Environmental conservation* 41(04): 303-310.
- Svensson, L., P. Wabakken, I. Kojola, E. Maartmann, T. H. Strømseth, M. Åkesson, Ø. Flagstad, A. Zetterberg. 2012. Varg i skandinavien och finland: slutrapport från inventering av varg vintern 2011-2012, report.
- Tarrow, S. 1998. Power in movment, SOCIAL MOVMENTS AND CONTENTIOUS POLITICS. New York, Camebridge University Press.
- The Hunting Act (1987: 259)
- Thurstone, L. L. 1928. Attitudes Can be Measured. *American journal of sociology*: 529-554.

- Treves, A., L. Naughton-Treves, V. Shelley. 2013. Longitudinal Analysis of Attitudes Toward Wolves. *Conservation biology* 27(2): 315-323.
- Tucker, P., D. H. Pletscher 1989. Attitudes of hunters and residents toward wolves in northwestern Montana. *Wildlife Society Bulletin* (1973-2006) 17(4): 509-514.
- United nations. 1992. Rio declaration on environment and development.
- Vilà, C., A. K. Sundqvist, Ø. Flagstad, J. Seddon, S. Björnerfeldt, I. Kojola, A. Casulli, H. Sand, P. Wabakken, and H. Ellegren. 2003. Rescue of a Severely Bottlenecked Wolf (*Canis lupus*) Population by a Single Immigrant. Proceedings of the Royal Society of London. *Biological sciences* 270(1510): 91-97.
- von Essen, E., M. P. Allen 2015. Reconsidering illegal hunting as a crime of dissent: Implication for justice and deliberative uptake. *Criminal Law and Philosophy*: 1-16.
- von Essen, E., H. P. Hansen 2015. How Stakeholder Co-management Reproduces Conservation Conflicts: Revealing Rationality Problems in Swedish Wolf Conservation. *Conservation and Society* 13(4): 332.
- Wabakken, P., L. Svensson, E. Maartmann, M. Åkesson, Ø. Flagstad. 2016. Bestandsovervåking av ulv vinteren 2015-2016.
- Weber R. E., W. R. Schaffer. 1972 Public Opinion and American State Policy-making, *Midwest Journal of Political Science* 16: 683-699.
- Whittaker, D., J. J. Vaske, M. J. Manfredo. 2006. Specificity and the Cognitive Hierarchy: Value Orientations and the Acceptability of Urban Wildlife Management Actions. *Society and Natural resources* 19(6): 515-530.
- Williams, C. K., G. Ericsson, T. A. Heberlein. 2002. A Quantitative Summary of Attitudes Toward Wolves and their Reintroduction (1972-2000). *Wildlife society bulletin*: 575-584.
- Zachrisson, A. 2008. Who should manage protected areas in the Swedish mountain region? A survey approach to co-management. *Journal of environmental management* 87(1): 154-164.
- Zaller, J. 1992. *The Nature and Origins of Mass Opinion*. New York: Cambridge university press.
- Zinn, H. C., M. J. Manfredo, Decker, D. J.. 1998. Using Normative Beliefs to Determine the Acceptability of Wildlife Management Actions. *Society and natural resources* 11(7): 649-662.
- Øian, H., K. Skogen 2016. Property and possession: Hunting tourism and the morality of landownership in rural Norway. *Society & natural resources* 29(1): 104-118.