

Institutional innovation in conservation law: Experiences from the implementation of the Birds and Habitats Directives in the Netherlands

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ABSTRACT

In 2016, the Fitness Check of the EU Birds and Habitats Directives concluded that, in order to reach their most important objectives, the implementation of both directives needed to be improved. This paper analyses the institutional changes that characterise the implementation of the Birds and Habitats Directives in the Netherlands. These institutional changes include revisions of the rules embedded in Dutch nature conservation law, the introduction of new policy instruments, and the emergence of widely shared concepts and additional norms and rules that are used in decision-making procedures. In the first phase of the implementation of these directives, their legal requirements were integrated into national laws. In later years, national aims and rules were gradually removed from conservation law, and new instruments and rules were added. The analysis shows that most important drivers for institutional change were a discourse focusing on ways to stretch the legal requirements of the two directives and the interpretation of key concepts and rules that emerged in assessment and decision-making procedures and court rulings. In sum, these institutional changes have not improved the implementation of the Birds and Habitats Directives and have made it more difficult to ensure the sustainable conservation of species and their habitats in the Netherlands.

1. Introduction

The Birds and Habitats Directives are the cornerstone of the European Union's nature conservation policy. The directives include a range of legal obligations that should ensure the sustainable conservation of species and their natural habitats. With the implementation well underway, many studies have shown the benefits that both directives have brought (Beresford et al., 2016; Blicharska et al., 2016; Donald et al., 2007; Koschová et al., 2018; Maiorano et al., 2007; Popescu et al., 2014). The implementation of these directives, however, does not always run smoothly. In 2016, an extensive evaluation of them concluded that they were fit for purpose, but that their implementation needed to be improved:

Within the framework of broader biodiversity policy the Nature Directives are fit for purpose but fully achieving their objectives and realising their full potential will depend on substantial improvement in their implementation in relation to both effectiveness and efficiency, working in partnership with different stakeholder communities in the Member States

and across the EU, to deliver practical results on the ground. (EC, 2016, p. 8)

This conclusion was not surprising given the extensive body of literature discussing the implementation difficulties in the various Member States of the European Union (EU) (Gallo et al., 2018; Grodzinska-Jurczak and Cent, 2011; Kati et al., 2015; Lai, 2020; Wandesforde-Smith and Watts, 2014). Although implementation experiences vary between countries, it has become clear that the aims of both directives can be achieved only if involved actors align their actions with these aims and responsible governments ensure sufficient conservation efforts. This first of all includes the designation of protected areas – Natura 2000 sites – and a transposition of the EU directives into national legal frameworks. This transposition has faced delays in many Member States (Frederiksen et al., 2017). Furthermore, a wide range of actors, including governments, conservation organisations, and landowners and users, might need to adapt existing conservation policies and practices, find ways to balance conservation goals with other land-use activities, and ensure the enforcement of the legal requirements that follow from the Birds and Habitats Directives. All these actions require a

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revision of the institutional structures, the formal and informal norms and rules, through which conservation practices and decision-making processes are governed.

The Fitness Check (EC, 2016) showed that all Member States revised the institutional frameworks for nature conservation, that existing institutions were adapted, and that various novel institutions were introduced to translate the requirements of the directives into practice. Such institutional changes include, for example, a revision of conservation laws and the introduction of management plans for Natura 2000 sites (Bouwma et al., 2017). The various institutional innovations could potentially help to overcome the implementation difficulties reported in the Fitness Check. Following Pierson (2004), these institutional change processes should be understood as a moving picture rather than as a single snapshot. In the context of the implementation of the Birds and Habitats Directives, this implies a longitudinal analysis that goes beyond the formal transposition of both directives into national law. Some studies explore the fit between EU and national institutions, but much less attention has been paid to the ongoing institutional change processes through which the directives are implemented and the way in which various institutional changes actually impact the conservation of species and habitats (Frederiksen et al., 2017; Knill and Lenschow, 1998).

This paper addresses this gap by exploring the institutional changes developed in the Netherlands to facilitate the implementation of the Birds and Habitats Directives. The Netherlands has a long tradition of nature conservation and was, in the past, one of the active promoters of these directives (van der Zouwen and van Tatenhove, 2002). Despite this proactive attitude during the formulation of the directives, the country has been slow to actually implement them, and it still faces many problems in realising conservation objectives (Adams et al., 2020; Bennett and Ligthart, 2001; Frederiksen et al., 2017). Earlier studies have shown that the Netherlands was ill-prepared to actually protect species and their habitats against new socio-economic developments and negative impacts of other land-use activities (Bastmeijer and Verschuuren, 2003; Bennett and Ligthart, 2001; Beunen, 2006; van der Zouwen and van Tatenhove, 2002). Following rulings by the Council of State and the European Court of Justice (ECJ), the legal requirements of the directives increasingly attracted attention, and a wide range of actors, including ecologists, consultants, legal advisors, scientists, and civil servants, started to explore ways to translate these requirements into workable practices. This resulted in a range of institutional changes that are explored in depth in this paper.

The aim of this paper is to analyse the institutional changes that characterise the implementation of the Birds and Habitats Directives in the Netherlands and to reflect on the impact of these changes on the conservation of species and their habitats. The study draws on the analysis of a wide range of policy documents, related political and societal debates, legal discussions, court rulings, papers in scientific and professional journals, and coverage of the directives in the Dutch media. These materials were used to identify the most important institutional changes in conservation law and the main drivers behind institutional change. Scientific reports and reflections on changes of conservation law were used to assess the impact of institutional changes on the conservation of species and habitats. In our analysis, we concentrated on the period between 1992 – the year the Habitats Directive was adopted – and 2021.

The next section describes the analytical perspective that structured the collection and interpretation of information. It is followed by an elaboration of the most important institutional changes that have shaped the implementation of the Birds and Habitats Directives in the Netherlands and by a reflection on the main drivers and impacts of these institutional changes. The paper ends with the main conclusions.

2. Policy implementation and institutional change

The Birds and Habitats Directives are widely considered to be a novel

and effective framework for ensuring the sustainable conservation of species and their habitats (Blicharska et al., 2016; Kati et al., 2015; Popescu et al., 2014). Their actual impact, however, depends on the way in which they are implemented in everyday practices of nature conservation and in decision making concerning new developments and activities that potentially impact conservation objectives. An institutional perspective can offer useful insights about these implementation processes, because it focuses attention on the large diversity of norms and rules that influence the interpretation and application of the directives in particular situations (Frederiksen et al., 2017; Ostrom, 2005). Institutions are understood as the rules and norms that guide human and organisational behaviour and that provide a degree of stability and predictability in social interactions (North, 1990; Ostrom, 2005). Conservation practices and decision-making processes are influenced by a wide range of institutions. These include not only the EU Birds and Habitats Directives, national conservation laws, and many other legal frameworks, policies, decision-making procedures, and property rights, but also rules that shape the interpretation of the legal requirements of conservation laws.

The interplay between the legal requirements of the Birds and Habitats Directives and a wide set of other formal and informal institutions shapes the way in which the directives are interpreted and translated into more specific rules and particular actions and decisions. The need for interpretation implies that actors always have room to decide how they deal with the legal requirements of the directives and how they weigh these requirements against other applicable norms and rules (Edelman and Suchman, 1997; Gregg, 1999; Mermet et al., 2010). This room for interpretation is fairly extensive because of the ambiguous nature of some legal obligations (Borrass, 2014) and of terms like favourable conservation status, appropriate assessment, adverse effects on the integrity of the site, alternative solutions, or overriding public interest, which all require a case-specific understanding (EC, 2013). This ambiguity is an inevitable aspect of every rule put in place to govern many different practices and decision-making contexts, such as EU directives. It allows for flexible and tailor-made solutions, but it can also trigger discussions and contestation about the meaning and consequences of particular rules (Beunen and Duineveld, 2010).

Although most of the institutions that influence conservation practices are fairly stable, they can and do change over time. Institutional change can result from deliberative revisions, but also from shifting understandings and interpretations and changing interactions with other institutions (Cleaver and De Koning, 2015; Hall, 2010; Mahoney and Thelen, 2010; North, 2005). The need to interpret legal requirements in specific contexts is itself an important driver of institutional change, whereby practitioners develop new rules about how to interpret and apply particular legal requirements. Institutional change processes include not only the transposition of a legal framework into a national legal framework, but also the development of additional rules, norms, policy instruments, or guidelines at different policy levels. Institutional change can thus take different forms. Mahoney and Thelen (2010), for example, distinguish between displacement (new rules replace existing ones), layering (new rules are added to existing ones), drift (institutions change because of shifts in external conditions), and conversion (re-interpretation of existing institutions). All these types of change can be found in relation to the Birds and Habitats Directives.

Finally, it is important to mention that institutional changes include changes to informal norms and rules that shape how stakeholders interpret and translate the legal requirements of the Birds and Habitats Directives into specific practices. The informal rules and norms in those practices might deviate from the legal requirements of the directives, but they can also contribute to a context-specific translation of those requirements. Furthermore, the norms and rules developed and explored in local practices can become formalised, be embedded in regional or national policies, and thereby diffuse to other places (Van Assche et al., 2014). Formal changes, e.g., the revision of conservation laws and policies, play a pivotal role in institutional change processes, but changes in

the informal rules about how to deal with formal requirements can also have severe effects on conservation efforts, on the implementation of the Birds and Habitats Directives, and on the ultimate effect of these directives on the conservation of species and their natural habitats.

Drawing on this perspective, policy documents, court rulings, publications in scientific and professional journals, and coverage of the institutional changes in the Dutch media have been analysed to identify the most important institutional changes in conservation law. This analysis focused on the formal revisions of conservation law as well as the emergence particular concepts and additional, often more informal, rules and norms in the assessment and decision-making processes in which the Birds and Habitats Directive played an important role. The documents were also used to identify the main drivers behind institutional change by looking at the underlying discussions and the motivations for making institutional changes as presented in the explanatory memoranda and discussed in various publications. The impact of institutional changes on the conservation of species and habitats was assessed by searching for evaluation reports and publications that reflect on the legal consequences of institutional changes and on the relation with the legal requirements of the Birds and Habitats Directives.

3. Institutional changes in the Netherlands

Fig. 1 shows the most important institutional changes in Dutch nature conservation law made between 1992 and 2021. These include a series of revisions of conservation rules and the introduction of specific policy instruments aimed at facilitating the implementation of the Birds and Habitats Directives. In addition, a number of concepts and more informal rules and norms have emerged from conservation and decision-making processes. These institutional changes are described in chronological order. Text Boxes 1 and 2 provide more information on the policy instruments, rules and norms and information about their impact on conservation practices.

3.1. 1992–2005

The institutional change processes that characterise the implementation of the Birds and Habitats Directives started with the revision of Dutch conservation law in 1998. This revision aimed to transpose the requirements of both directives into national law. At that time, nature was protected via two different laws: the Nature Conservation Act and the Flora and Fauna Act. The Nature Conservation Act regulated the protection of sites, whereas the Flora and Fauna Act included the legal requirement for the protection of species. Institutional change was a process of layering by which the directives' legal requirements were added to the existing rules. Soon after these first revisions became effective, the European Commission (EC) started an infringement procedure against the Netherlands for failing to bring legislation into line with the obligations of the Birds and Habitats Directives (EC, 2000). The EC's critique focused on two main issues (Backes, 1995). First of all, Dutch law did not ensure that all Natura 2000 sites were properly

protected because not all Natura 2000 sites were included in the protection regime of the Nature Conservation Act. Second, the transposition of the legal requirements of article 6 of the Habitats Directive Conservation felt short (ECJ, 2005; Faber, 2001). In 2005, the Nature Conservation Act was revised to address these critiques (Backes and Van den Broek, 2005).

In the same period, citizens and environmental NGOs increasingly took legal action because they believed that governments had insufficiently taken into account the legal requirement of the Birds and Habitats Directives in their decisions about specific plans or projects (Beunen, 2006). Well-known examples are court rulings about the development of a business park in Heerlen (The Council of State, 2001) and cockle fishing in the Wadden Sea (The Council of State, 2004). These court rulings and their media coverage focused attention on the relevance of the Birds and Habitats Directives for conservation and decision-making practices (Beunen et al., 2013). They led to questions and debates about the governance of Natura 2000 sites and about the application of the requirements of the directives in the decision making about plans and projects. In response to these questions, more specific guidelines and policy instruments were developed to facilitate the implementation of the Birds and Habitats Directives.

The instrument management plan for Natura 2000 sites was added to the existing set of institutions in response to a growing demand for clarity about the consequences of the designation for economic activities in and around these sites (Box 1). The formulation of management plans is suggested in the guidelines of the Habitats Directive, but it is not a legal obligation. Member States themselves can thus decide whether or not to use management plans, and they are also free to decide the form of these plans. The Dutch national government made the formulation of management plans compulsory for all Natura 2000 sites (Bouwma et al., 2018; LNV, 2006). The management plans describe the conservation objectives and measures needed to achieve these objectives and to prevent deterioration and disturbance (following articles 6.1 and 6.2 of the Habitats Directive), and they provide clarity about the consequences for various land-use activities. The plans may also identify economic activities and developments that will not negatively affect conservation objectives and hence do not require a permit (in line with articles 6.3 and 6.4 of the Habitats Directive) (LNV, 2006).

Codes of conduct instrument were included in nature conservation to allow for a partial exemption from the legal requirements of the Nature Conservation Act for certain activities. The instrument was introduced to reduce the administrative burden that comes with permit procedures. These codes of conduct present a set of guidelines that, if followed and applied properly, exempts a particular activity from the permit requirements of the Nature Conservation Act (Bastmeijer et al., 2006).

The management plans and codes of conduct are examples of institutional layering that add a policy instrument to the existing set of institutions. These particular instruments facilitate the implementation of the Birds and Habitats Directives in concrete planning and decision-making processes. They present a more specific translation of the legal requirement that provides clarity and a basis for further actions and

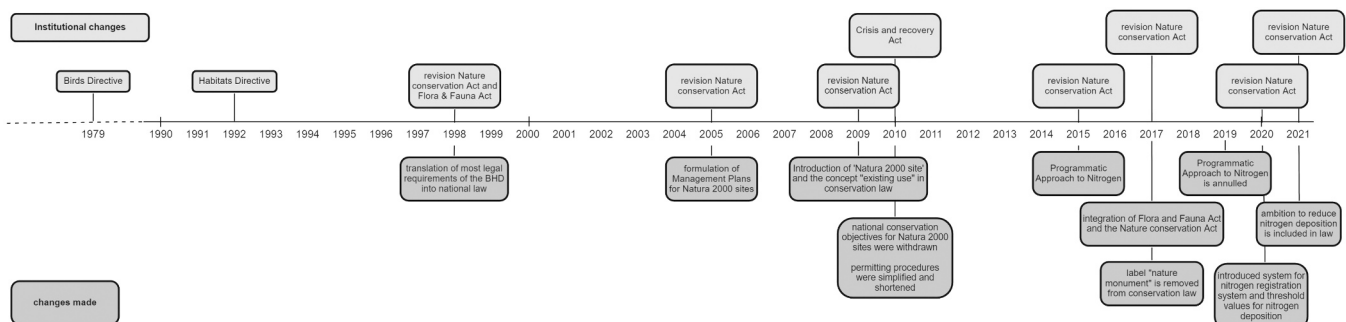


Fig. 1. Important institutional changes in Dutch nature conservation law.

Box 1

Policy instruments.

Management plans Management plans must describe the conservation objectives for the Natura 2000 site and the measures needed to achieve conservation objectives and to prevent deterioration and disturbance (following articles 6.1 and 6.2 of the Habitats Directive), and they provide clarity about the consequences for various land-use activities and may identify economic activities and developments that will not negatively affect conservation objectives and hence do not require a permit (in line with articles 6.3 and 6.4 of the Habitats Directive) (LNV, 2006). For most Natura 2000 sites, the relevant provincial government is responsible for the formulation of management plans. For some larger sites, this responsibility lies with the national government. It was agreed that these plans should be finalised within three years of the formal designation of a Natura 2000 site, but the formulation of these plans was severely delayed and many plans were only formally adopted around 2015 or even later (Frederiksen et al., 2017; Van Vreeswijk et al., 2017). Many stakeholders were actively involved in the formulation of these plans. The assessment of existing activities and their potential effects on protected species and habitats increasingly became a key objective (Kole, 2014). It can be characterised as a political process with pressure to limit the number of measures and restrictions for economic activities and hence to label as many activities as possible as ‘existing use’ (Kole, 2017). Van Vreeswijk et al. (2017) assessed 31 management plans and concluded that, in general, the elaboration of the Natura 2000 conservation objectives fails to meet the requirement sets by the EC and the Dutch government. Most plans focus only on the conservation objectives, rather than on an integrated perspective that takes other objectives into account. Furthermore, van Vreeswijk et al. concluded that the plans do not take into account the information about the contribution of the site to national conservation objectives or about the national conservation status. Objectives concerning the quality of habitats are formulated too ambiguously. Also Schmidt et al. (2017) concluded that the lack of coherence, priority, and coordination might lead to ineffective and inefficient management plans. They argued that political-administrative reasons and a lack of knowledge are the main reasons for these flaws in the management plans. A study by Bouwma et al. (2018) that included 15 management plans showed that not all environmental problems identified in the management plans were indeed addressed with specific measures and that the plans hardly included the restrictive measures necessary to limit negative effects from existing land-use activities. The management plans will be evaluated, and if necessary, updated, after a period of six years.

Codes of conduct Codes of conduct offer a partial exemption from the legal requirements of the Nature Conservation Act, provided that a certain approach is followed. A code of conduct applies for a specific set of species and describes how damage to these protected plants and animals can be prevented or minimised during the course of work. Codes of conduct are used widely, but experts are critical of the impact (Adams et al., 2017; Bosman et al., 2011; Hunnink, 2018; Tubbing, 2018; van den Bremer and van Kleunen, 2009). Codes of conduct can limit the administrative burden, but practitioners explain that time is needed to develop and assess these codes (Berkhof, 2019), and following the procedures of the codes of conduct is sometimes found burdensome (Broekmeyer, 2015). Local governments furthermore are not always certain about the legal status of the codes of conduct and hence decide to follow the regular permit procedure instead. Secondly, the governments involved in the development and use of codes of conduct have little knowledge about the actual activities carried out on the basis of a code of conduct. They do not always, for example, ascertain whether actors are indeed acting according to the code of conduct if they say they are. Third, there is a lack of knowledge about the actual effects of using the codes of conduct on protected species and their habitats (Tubbing, 2018; van den Bremer and van Kleunen, 2009). It is not known whether the activities, even if performed in accordance with the codes of conduct, either individually or in combination with other activities, do not significantly affect species and habitats (Farjon et al., 2018). The use of codes of conduct can encourage actors to take flora and fauna into account and develop ways of working that prevent negative effects on (protected) species. At the same time, responsible authorities might lose the overview of the activities carried out on the basis of a code of conduct and their cumulative impact on protected species. It therefore remains unclear whether and under what conditions the use of codes of conduct is compliant with the legal requirements of the Birds and Habitats Directives (Zijlmans and Roepers, 2019).

Policy on temporary nature Several protected species benefit from construction sites that are temporarily not in use, such as land where new urban developments are planned. For owners and developers, the presence of protected species might pose legal problems if at some point in the future they want to develop the site. Developers often take measures to prevent protected species from occupying the site, for example by regularly ploughing these construction sites. The temporary nature concept was introduced to deal with such situations (EZ, 2015a). The policy on temporary nature rules that a construction site can be designated as temporary nature for a maximum period of 10 years. Within that period, the developer is allowed to remove plants and animals once construction starts (see EZ, 2015b for an English version of the policy text). Even though such benefit is only temporary, it might still contribute to the conservation status of the wider population. The policy on temporary nature aims to enhance the ecological value of ecological sites in the period before the land is actually developed, while also assuring the developer that the land can indeed be developed without any legal problems at a later stage. The policy emerged from conversations between developers and conservationists about the potential benefits of construction sites for certain species and the legal uncertainties for owners and developers of these sites (BureauStroming, 2015). It was agreed that it made sense to find a solution that benefited both nature and developers. Their shared efforts were translated into a green deal temporary nature that was later formalised in the temporary nature policy. Various studies have indicated the potential ecological benefits of temporary nature (BureauStroming, 2015; Linnartz, 2006), and an evaluation showed that the policy had a positive effect on various species for which ‘temporary-nature’ construction sites provided a suitable habitat (Kuiper, 2018). In 2019, about 3678 ha were designated as temporary nature. The long-term benefits of the policy are more difficult to assess. Legally, the concept seems to fit fairly well with the protection regime of the Habitats Directive (Drahmann and Onrust, 2016; Schoukens, 2015). One of the most important positive effects of the policy is that it creates more awareness about protected species among developers and builders and therefore induces them to take nature into account in the design and use of their land (Kuiper, 2018).

Programmatic approach to nitrogen (PAN) The PAN was developed to enable and facilitate the issuance of permits for nitrogen-emitting activities. The instrument takes into account ammonia emissions from livestock farming and sources of ammonia and nitrogen oxides. An accounting system and a nitrogen deposition model (AERIUS) were developed to measure and monitor deposition levels. The programmatic approach to nitrogen included measures to reduce ammonia emissions, measures to mitigate the negative effects of nitrogen deposition on protected habitats, and measures to enhance the environmental quality of habitats. The measures to reduce ammonia emissions were expected to result in a decrease of about 10 million kiloton NH₃ by 2030, about 10% of the total emission from the agricultural sector. Based on the expected decrease in nitrogen deposition and investments in nature restoration, permits could be issued for activities that would lead to an increase in nitrogen emissions, such as livestock farming or the construction of new roads. The PAN also included rules that exempted grazing and fertilising from the need for an individual assessment of their implications in the context of the conservation objectives of protected sites. In total 10.271 activities were allowed based on the PAN. Most of these projects (94%), concerned the expansion of livestock farms (Oostdijk et al., 2020). A formal evaluation of the PAN concluded that the PAN included useful elements such as the AERIUS tool and helped to gain further insights in the conservation status of Natura 2000 sites. It also facilitated permit processes and the implementation of conservation measures. The main problems were the legal bases that conflicted with the conservation requirements of the Birds and Habitats Directive and its failure to reduce nitrogen deposition caused by ammonia emissions (Oostdijk et al., 2020).

decisions.

3.2. 2005–2010

Over the years, it became clear that the implementation of the Birds and Habitats Directives was an ongoing search for ways in which to translate the requirements into specific conservation and decision-making practices. This search included not only formal revisions of conservation law, but also processes of institutional drift and conversion taking place in concrete practices. Practitioners such as consultants and licencing authorities developed shared interpretations of conservation requirements as well as concepts and more informal rules that helped to apply formal rules in assessment procedures and decision-making processes. Relevant examples include the notions of *existing use*, *adaptive management*, and the *1% mortality criterion* (Box 2). The development and evolution of these concepts and informal norms was influenced by a series of court rulings in which they were tested against the legal requirements of the Birds and Habitats Directives. It was a process of institutional conversion in which the formal rules remained the same, but their impact changed, because actors enacted and interpreted them differently.

Another example of institutional conversion is the ammonia assessment framework developed in this period. One of the issues with which governments had to deal was the assessment of the effects of nitrogen deposition on protected habitats caused by ammonia emissions from livestock farming. The direct link between ammonia emissions and the Habitats Directive was made after citizens successfully brought court proceedings against proposed expansions of livestock farms (Blankers et al., 2021). The high level of nitrogen deposition on many protected habitats made it difficult to issue new permits for livestock farms, because it could not be ruled out that this would adversely affect the integrity of Natura 2000 sites. In response to these court rulings and political pressure from agricultural interests groups, the ministry and provincial authorities developed an assessment framework (In Dutch: *Toetsingkader ammoniak*) that could be used for issuing permits for livestock farming projects (LNV, 2007). This assessment framework included a threshold value for nitrogen deposition and ruled that livestock expansions that did not exceed that threshold could be allowed. In

2007, citizens who were worried about the negative consequences for protected Natura 2000 sites successfully brought court proceedings against the first project licenced on the basis of this assessment framework (The Council of State, 2008). The assessment framework had altered the interpretation and impact of the legal rules in such a way that decisions based on the framework conflicted with the legal requirements of the Birds and Habitats Directives. Consequently, the national government had to withdraw the assessment framework (Verburg, 2008).

In 2009, further revisions were made to the Nature Conservation Act. These revisions introduced the formal concept of a Natura 2000 site, and it formalised in law the notion of existing use (Box 2). This notion ruled that activities that were already taking place before 1 October 2005 and had not changed since then, were exempted from the permitting requirements or an appropriate assessment under the Habitats Directive. It also ruled that existing and future activities that met the criteria set out in the management plan, and carried out in line with these criteria, did not require a permit. Furthermore, it suspended the permit requirement for existing management activities in Natura 2000 sites until the management plan was formally adopted. Finally, the responsibility to assess the potential effects of a municipal zoning plan on Natura 2000 sites, which used to be a responsibility of the provincial authorities, was delegated to the municipalities.

3.3. 2010–2021

The last decade covered in this paper is characterised by the gradual removal of existing institutions, thereby replacing the former national conservation regime with the legal requirements of the Birds and Habitats Directives.

This process of institutional displacement started in 2010 when the national government adopted the Crisis and Recovery Act. This act proposed a number of revisions to reduce the assumed administrative burden of environmental law and to exclude certain activities from the permit requirements of the Nature Conservation Act. It proposed to withdraw the national conservation objectives from all sites that were part of the Natura 2000 network, and it furthermore introduced a separate regime to regulate all activities that contributed to nitrogen deposition on Natura 2000 sites. It also introduced the legal requirement

Box 2

Concepts and additional norms.

Existing useThe notion of existing use emerged as an important concept in the environmental assessments and decision-making procedures. The concept was included in the Nature Conservation Act in 2009 to exempt activities that were already taking place before 2005 from the permitting process. This exemption was introduced to provide a certain amount of clarity about these ongoing activities, but national and international court rulings have shown that there are different legal interpretations on what qualifies as existing use and what that actually means in relation to the requirements of the Birds and Habitats Directives (Frins, 2014; Viertelhuizen, 2011; Woldendorp, 2010). Furthermore, it is unclear how this concept, and particularly its inclusion in the Nature Conservation Act, relates to the legal obligation of article 6.2 of the Habitats Directive (Kole, 2017).

Adaptive managementFor authorisation to be granted for a project or plan with potentially significant effects on the conservation objectives on a Natura 2000 site, an appropriate assessment is required. If there is a residual and foreseeable risk, permission may be granted for the plan and project under certain conditions. This can be done by imposing a monitoring obligation and an obligation to adjust or stop the activity if there may be significant effects. It is a form of adaptive management included in the condition under which permission is granted, referred to as the hand-on-the-tap principle (*hand-aan-de kraan-principe* in Dutch). This principle was first used in 2007 in a case about gas extraction in the Wadden Sea (Kistenkas and Broekmeyer, 2007) and thereafter regularly in other cases (Kole, 2014). Not much is known about the long-term effects.

1% mortality criterionThe objective of an appropriate assessment and other ecological assessments is to determine whether the favourable conservation status of habitats or species is endangered as a result of the implementation of a particular project or plan. In practice, in the Netherlands, the 1% mortality criterion developed by the ORNIS committee is sometimes used for that purpose (Schippers et al., 2020). This criterion rules that an expected population loss of less than 1% of the relevant biogeographical population does not qualify as a significant negative effect, as the favourable conservation status of a habitat or species is considered not to be endangered. A recent study focusing on the effect of wind energy on bird populations, however, shows that the use of this criterion might in fact lead to an underestimation of the actual effects, particularly in relation to the effects of other projects with an impact on the population (Schippers et al., 2020).

to describe measures in the management plan for the Dutch Natura 2000 sites that did not threaten the sustainable conservation of sites and that could be exempted from the permit procedure. The Crisis and Recovery Act also stated that existing activities in and near Natura 2000 sites no longer required a permit if these did not have a significant effect on conservation objectives. It also reduced the time taken for objection and appeal procedures. Finally, it ruled that, for certain projects, it was no longer required to explore alternative solutions or to ask for advice from the Netherlands Committee for Environmental Assessment (*Commissie voor de Milieueffectrapportage*).

In 2015, the Programmatic Approach to Nitrogen (PAN) was included in the Nature Conservation Act (Box 1). The PAN was developed as an alternative to the ammonia assessment framework that had previously been annulled in court. Pushed by agricultural interest groups and their political representatives, the national government started to explore new ways to facilitate the issuing of permits for the development and expansion of livestock farms (Huys et al., 2009; Verburg, 2010). The instrument not only addressed ammonia emissions from livestock farming but also nitrogen emissions caused by other activities, such as, traffic and transportation, construction works, and industrial activities. It aimed for a reduction in the overall nitrogen deposition and its negative effects on protected sites, while simultaneously creating legal possibilities to allow nitrogen-emitting activities (Schoukens, 2017). Soon after the PAN was formally adopted, environmental NGOs brought court proceedings against various projects for which a permit was issued on the basis of the PAN. The Dutch Council of State asked the ECJ for legal advice concerning the PAN. In November 2018, the ECJ explicitly stated that the PAN should be subject to an appropriate assessment that ensured that the programme and the projects allowed under that programme did not lead to significant effects on the conservation objectives on the Dutch Natura 2000 sites (ECJ, 2018). Following the advice from the ECJ, the Dutch Court of Justice ruled that the appropriate assessment underlying the PAN conflicted the Habitats Directive and could no longer be used, and the PAN was formally annulled (The Council of State, 2019a, 2019b). It also ruled that grazing of livestock and the fertilisation of land could not be exempted for the assessment and permit procedures (Frins, 2018; Kole, 2019).

The decision to integrate the Nature Conservation Act and the Flora and Fauna Act was made in 2011 (Bleker, 2012; Dotinga et al., 2012). As a first step in this integration process, the Nature Conservation Act, the Flora and Fauna Act, and the Forestry Act were merged in a new Nature Conservation Act that came into force on 1 January 2017. This new act annulled legal protection of all nature areas not designated as Natura 2000 sites. This implied that the original Dutch conservation regime was now completely replaced by rules from the Birds and Habitats Directives (Woldendorp, 2017a, 2017b). The new Nature Conservation Act also devolved nature conservation responsibility from the national to the provincial authorities. This included responsibility for issuing permits for activities and projects likely to have a significant effect on protected species and habitats and the implementation of articles 6 (1) and 6 (2) of the Habitats Directive.

As already stated, the PAN was annulled in court in 2019 and months of heated debates followed (van der Ploeg, 2020). After a long time, the national government proposed a new series of institutional changes under the label of the Nitrogen Emergency Act (Schouten, 2019) and the Nitrogen Reduction and Nature Restoration Act (LNV, 2020). The Nitrogen Emergency Act provides the possibility to introduce a nitrogen registration system and threshold values for nitrogen deposition. The Nitrogen Reduction and Nature Restoration Act introduced a reduction target for nitrogen deposition. Furthermore, it includes the obligation for the national government to design a programme that describes measures to reduce nitrogen deposition and to improve the quality of Natura 2000 sites. Provincial authorities have to translate these measures into site-specific plans. Finally, it introduced a partial exemption from the protection regime for the construction sector. These revisions of conservation law are another form of institutional layering by which

new rules, particularly focusing on the issue of nitrogen deposition, were added to conservation law.

4. Drivers of institutional change

Institutional change in the Netherlands took place in different phases and in different forms. The first institutional changes were made to transpose the legal requirements from the Birds and Habitats Directives into national law. Some of these revisions were made only after the EC started an infringement procedure. Further institutional changes evolved from the societal and political debates about the implementation of the Birds and Habitats Directives in conservation and decision-making practices. Several policy instruments were introduced to facilitate implementation and to reduce the legal burden of the Birds and Habitats Directives. In the last decade covered in this study, the national conservation rules became displaced by rules limited to the requirements of the Birds and Habitat Directives and by the introduction of instruments and additional rules focusing particularly on nitrogen deposition.

Most of these institutional changes were driven by a general discourse that framed nature conservation as a barrier to economic development and that focused on limiting legal requirements for nature conservation (Beunen et al., 2013; Buijs et al., 2014). In the period after 2005, responsible ministers repeatedly stated that they aimed “to make an effort to make dealing with those rules more flexible” (Veerman, 2006), (c.f. Bastmeijer, 2009a; Bleker, 2011; Verburg, 2009). The Dutch government commissioned several studies to explore the possibilities for stretching the rules of the Birds and Habitats Directives (De Boer et al., 2010; Huys et al., 2009; Schouten et al., 2019). Claims that the Dutch implementation of the Birds and Habitats Directives was stricter than necessary were used to delimit or annul the protection of species, habitats, and sites not explicitly addressed in the directives. Initially, these directives were considered as a partly overlapping layer of institutions focusing on species and habitats that were important from an international perspective. Over the years however, the original rules and aims of Dutch conservation policy became increasingly framed as gold plating, as an unnecessary layer on top of the requirements of the EU directives (c.f. Morris, 2011). Various pillars of the Dutch conservation regime were consequently annulled, such as the legal protection of sites not part of the Natura 2000 network and the legal protection of more generic landscape values (Dessing and Pedroli, 2013). Furthermore, the overall ambition to realise a national ecological network was attenuated, and the budget for nature conservation was cut significantly (Beunen and Lata, 2021).

Practical experiences and court rulings were other important drivers of institutional change (Kaajan, 2014; Onrust and Kaajan, 2020; Woldendorp, 2012). The formal rules of the Birds and Habitats Directives gained relevance over the years, and their meaning was shaped through their application in specific decision-making situations – a process to which Mahoney and Thelen (2010) referred as conversion. Actors explored the ambiguities of the formal institutions and thereby also changed the meaning of these rules. In this context, the development of important concepts such as existing use, adaptive management, and the 1% mortality criterion was a way to translate the requirements of the directives into more specific rules. The emergence of such concept and additional, sometimes informal, norms is in general more gradual. The problems faced in assessment and decision-making procedures and the solution developed there, can be an important driver for institutional change. The meaning and importance of these concepts and informal norms evolved through court rulings in which particular approaches and interpretation were tested for their fit with the legal requirements of the Birds and Habitats Directives. Interpretations that withstood the legal test were picked up by others and used in other processes as well. Approaches that did not work were adapted. Over time, some of these more informal rules and norms thus gradually gained more weight, became embedded in guidelines, and some were even formalised in law.

5. The effects of institutional change

Table 1 presents an overview of the various institutional changes and their possible effects on the conservation and protection of species and their habitats. The assessment of effects is based on publications that reflect on the legal implications of the institutional changes. Boxes 1 and 2 present background information about the different instruments and informal rules. Table 1 shows that some instruments indeed facilitated the implementation of the Birds and Habitats Directives and limited the administrative burden. It also shows that certain institutional changes diluted the requirements of the Birds and Habitats Directives and weakened the general conservation of biodiversity. For some institutional changes, the effects are difficult to assess.

Potential benefits for nature conservation can be expected from management plans and the concept of temporary nature. Codes of conduct are an example of an instrument that reduces the administrative burden of decision-making and permit processes, but the impact on the conservation of species and habitats is strongly dependent on how the instrument is used. The use of codes of conduct as an alternative to the permit process, for example, might hamper the assessment and monitoring of activities and their potential effect. It also makes it difficult to monitor the cumulative effects of all activities carried out on the basis of codes of conduct. Concepts like existing use, adaptive management (hand-on-the-tap principle), and the 1% mortality criterion play an important role in the assessment procedures, as they help to deal with the inevitable uncertainties about the impact of new activities on species and their habitats and to translate the more ambiguous requirements of the Birds and Habitats Directives into more concrete rules. However, the use of these informal rules might also lead to an underestimation of the actual effects of plans and projects on protected species and habitats (Schippers et al., 2020). The PAN is a clear example of a policy instrument that conflicted with the legal requirements of the Birds and Habitats Directives and hence was annulled in court (The Council of State, 2019a, 2019b). It also failed to realise the intended reduction in nitrogen deposition (Oostdijk et al., 2020). Overall, the institutional changes made over the past 30 years brought conservation law more in line with the Birds and Habitats Directives, but they also diluted the legal protection of species and sites, particularly those not protected under these directives.

6. Conclusion and discussion

The implementation of the Birds and Habitats Directives is an ongoing process that has triggered a range of institutional changes in Dutch nature conservation. These institutional changes include several revisions of the Nature Conservation Act, which gradually replaced national rules with the rules of the Birds and Habitats Directives (displacement of rules); the introduction of new policy instruments such as management plans, codes of conduct, and the PAN (layering of rules); and the development of additional concepts and norms that changed the meaning and impact of the Birds and Habitats Directives (drift and conversion of rules). The analysis shows that the implementation of the Birds and Habitats Directives was characterised by an ongoing process of institutional change in which rules and norms were created, disrupted, revised, and removed. In the Netherlands, the institutional change processes were driven mostly by a discourse that focused on limiting the impact of the legal requirements of the EU directives. The issues faced in assessment and decision-making procedures and the solution developed there, were an important driver for institutional change, often taking place via the introduction of additional concepts and norms. Over the years, the implementation approach gradually narrowed from a broad perspective on biodiversity and a network of connected ecosystems to a legal and often quantitative focus on the site-specific conservation objectives of the Birds and Habitats Directives.

The combined effect of the various institutional changes made between 1992 and 2021 has diluted conservation law in the Netherlands in

Table 1

Overview of institutional changes in conservation law and their effects on the conservation of species and their habitats.

Institutional change	Overview of effects	Assessment of effects
Revisions to conservation law	<ul style="list-style-type: none"> - Various national objectives were removed from the legislative framework and the overall protection of species and habitats was weakened (Bastmeijer, 2009b; Dessing and Pedrolí, 2013; Frederiksen et al., 2017; Kole, 2016) - Uncertain whether current transposition is still faithful to the requirements of the Birds and Habitats Directives (Frins, 2021; Hunink, 2018, 2021; Kole, 2016, 2020). 	-
<i>Policy instruments</i> Management plans	<ul style="list-style-type: none"> + The management plans describe conservation measures and provide a framework for the implementation of necessary measures (Bouwma et al., 2018) - The formulation of the management plans severely delayed the realisation of necessary measures and in general the plans are not ambitious enough to ensure the sustainable conservation of Natura 2000 sites (Kole, 2014; Schmidt et al., 2017; Van Vreeswijk et al., 2017) 	+/-
Programmatic approach to nitrogen (PAN)	<ul style="list-style-type: none"> - The PAN was adopted in contravention of the Habitats Directive (Kole, 2019; The Council of State, 2019a, 2019b) - The PAN did not substantially reduce the high levels of nitrogen deposition (Oostdijk et al., 2020) - The PAN delayed an effective approach to tackle the problems of nitrogen deposition by at least 10 years (Adviescollege Stikstofproblematiek, 2020; Oostdijk et al., 2020) 	-
Codes of conduct	<ul style="list-style-type: none"> + Might make decision-making procedures concerning the protection of species and habitats easier, in particular for small-scale activities or recurring management actions (Bastmeijer et al., 2006; Berkhof, 2019) - The use of codes of conducts implies a general loss of oversight for responsible authorities as they cannot oversee whether actions are indeed carried out according to the rules of the code of conduct (Bastmeijer et al., 2006; Zijlmans and Roepers, 2019) 	+/-
Temporary nature policy	<ul style="list-style-type: none"> + Formalises a practice that is in line with the overall objectives of the Birds and Habitats Directives (Drahmann and Onrust, 2016) + Helps to create and maintain support for protection of species (Kuiper, 2018) 	+
<i>Concepts and additional norms</i> Existing use	<ul style="list-style-type: none"> + More clarity about the legal status of existing activities - Effects are not always assessed and the effects of existing activities might change over time (Frins, 2014; Kole, 2017; Viertelhuizen, 2011; Woldendorp, 2010) 	?
Adaptive management	<ul style="list-style-type: none"> + Creates more flexibility in the permit process (Kistenkas and Broekmeyer, 2007) + Monitoring can improve knowledge about the ecosystem and effects of projects on species and habitats (Kistenkas and Broekmeyer, 2007) ? Long-term effects are largely unknown 	+/-?
1% mortality criterion	<ul style="list-style-type: none"> + Makes the assessment of effects more specific - Does not ensure that the sustainable conservation of species and their habitats will not become endangered by new projects (Schippers et al., 2020) 	+/-?

different ways. First of all, the legal protection of sites and species not included in the Birds and Habitats Directives was weakened or completely annulled. Second, the rules of these directives were stretched and re-interpreted in such a way that it became easier to grant permission for projects with potentially negative effects. Third, instruments related to the problem of nitrogen deposition, most importantly the PAN, circumvented the legal requirements of the Birds and Habitats Directives. Fourth, legislation offers several partial exemptions from the legal requirements and makes it more difficult to assess and monitor the effects of activities carried out on the basis of such exemptions.

The analysis of institutional changes and their effects on the protection of species and habitats brings attention to the means by which governments implement the Birds and Habitats Directives. The development and introduction of additional institutions such as management plans can facilitate the translation of the directives' more generic rules to particular contexts and induce actors to take conservation objectives into account. Institutional changes can also weaken conservation policies (Chapron et al., 2017) and dilute and even circumvent conservation commitments (Sazatornil et al., 2019). Institutional innovation does not necessarily enhance implementation and compliance with conservation requirements. Analysing institutional change processes can also help to explain why countries like the Netherlands fail to adequately implement the Birds and Habitats Directives and face difficulties in realising many conservation objectives (Adams et al., 2020). More in general it can help identifying the institutional facilitators of, and barriers to, effective implementation of the directives and opportunities for Member States and the European Commission to intervene and improve implementation.

Compliance with the conservation requirements is an important aspect in improving the implementation of the Birds and Habitats Directives (EC, 2016). This study shows that, in order to understand the emerging impact of the Birds and Habitats Directives, it is important to analyse institutional changes longitudinally and to take into account the impact of additional rules and policy instruments and of the changing interpretations of legal requirements and concepts included in the directives. Even if legal obligations are clearly and precisely transposed into national law, their meaning and impact is likely to change over time, depending on a range of other institutions and on the ways in which these institutions are interpreted, applied, and enforced in the various planning and decision-making processes through which the Birds and Habitats Directives are put into practice.

Declaration of Competing Interest

None.

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