



Environment & Society



White Horse Press

Full citation:

Turnhout, Esther, Matthijs Hisschemüller, and Herman Eijsackers. "The Role of Views of Nature in Dutch Nature Conservation: The Case of the Creation of a Drift Sand Area in the Hoge Veluwe National Park."

Environmental Values 13, no. 2, (2004): 187-198.

<http://www.environmentandsociety.org/node/5905>

Rights:

All rights reserved. © The White Horse Press 2004. Except for the quotation of short passages for the purpose of criticism or review, no part of this article may be reprinted or reproduced or utilised in any form or by any electronic, mechanical or other means, including photocopying or recording, or in any information storage or retrieval system, without permission from the publisher. For further information please see <http://www.whpress.co.uk/>

The Role of Views of Nature in Dutch Nature Conservation: The Case of the Creation of a Drift Sand Area in the Hoge Veluwe National Park

ESTHER TURNHOUT

*Faculty of Earth and Life Sciences, Institute of Ecological Science
Vrije Universiteit
De Boelelaan 1085, 1081 HV Amsterdam, the Netherlands*

*Current address:
Forest and Nature Conservation Policy Group
Wageningen University
P.O. Box 341, 6700 AH Wageningen, the Netherlands
Email: esther.turnhout@wur.nl*

MATTHIJS HISSCHEMÖLLER

*Faculty of Earth and Life Sciences, Institute of Environmental Studies (IVM)
Vrije Universiteit
De Boelelaan 1085, 1081 HV Amsterdam, the Netherlands*

AND

HERMAN EIJSACKERS

*Faculty of Earth and Life Sciences, Institute of Ecological Science
Vrije Universiteit
De Boelelaan 1085, 1081 HV Amsterdam, the Netherlands*

ABSTRACT

Nature conservation requires choices about what sort of nature should be protected in what areas and includes value judgments on what nature is and/or should be. This paper studies the role of differing views of nature in nature conservation. A case study on the creation of a drift sand area in the Netherlands illustrates how nature conservation disputes can be understood as a conflict in views of nature.

KEY WORDS

Nature conservation, views of nature, wilderness, pastoral idyll, drift sand, Hoge Veluwe

INTRODUCTION

The relations between people and nature are various. People use nature for recreation, as object for study and inspiration, or as resource to be exploited or cultivated. Furthermore, people have different views on what nature is and/or should be. This is relevant for the practice of nature conservation because these different views of nature may lead to different preferences and priorities of what in nature should be protected and how it is best protected. Thus, the existence of differences in views of nature between actors may become a source of conflict in decision-making about nature conservation.

This paper studies the role of different views of nature in a case study about the creation of a new drift sand area in the Dutch Hoge Veluwe National Park. This case study has been undertaken as part of a larger research project (Turnhout 2003). This paper will first introduce a framework to typify the scope of different views of nature and show how both the wilderness ideal and the pastoral idyll have influenced Dutch nature conservation policy. Then, the results of the case study are presented followed by some conclusions.

VIEWS OF NATURE

'The value and meaning of nature does not grow on trees but must be constructed by people' (Pels 1997). This quote nicely illustrates how different people may have different views on what nature is and/or should be. This paper assumes that, although such views of nature are individually constructed based on preferences and experiences, it is possible to identify categories to typify and compare different views of nature. The framework of nature that will be used in this paper is largely based on the work of Worster (1979), Schama (1995) and Van Koppen (2002).

Worster (1979) has described two traditions with respect to nature: the imperialistic tradition and the arcadian tradition. In the imperialistic tradition, nature is seen as a resource, consisting of different elements, connections, mechanisms, processes, energy fluxes etc. The imperialistic tradition holds nature to be knowable by science and controllable by humans. It is studied by (systems) ecology. As has been shown by Kwa (1989), it was the aim of American systems ecologists in the 1960s and 1970s, to understand, control and steer the development of ecosystems with the help of large computer models. The imperialistic view

THE ROLE OF VIEWS OF NATURE

of nature is still widespread. It can be recognised in policy that sets standards according to the carrying capacity of nature for pollution or human activity. It is the starting point of many scientific studies: ecological studies; studies that take nature to be a resource for human wellbeing; or studies that try to determine and/or calculate the functions and (instrumental) values of nature. The imperialistic tradition has been described as the result of an ongoing process of rationalisation that started in the Renaissance and culminated in the positivism of the enlightenment movement. Parallel to this process, a romantic counter movement emerged that emphasised emotions, sensitivity, morality and spirituality (Van Koppen 2002). This counter movement has been called the arcadian tradition (Worster 1979) and can be characterised by: sympathy for animals, appreciation of natural beauty, study of natural history and a religious/spiritual respect for the mysteries of the cosmos (Van Koppen 2002).

According to Schama (1995), arcadia has two complementary manifestations or ideal types: wilderness and the pastoral idyll. Schama (1995) has put it like this (phrasing and spelling taken from original):

There have always been two kinds of arcadia: shaggy and smooth; dark and light; a place of bucolic leisure and a place of primitive panic. [...] Arguably, both kinds of arcadia, the idyllic as well as the wild, are landscapes of the urban imagination, though clearly answering to different needs. It's tempting to see the two arcadias perennially defined against each other; from the idea of the park (wilderness or pastoral) to the philosophy of the front lawn (industrially kempt or drifted with buttercups and clover); civility and harmony or integrity and unruliness? The quarrel even persists at the heart of debates within the environmental movement, between the deeper and paler shades of Greens. But as contentious as the battle often seems, and as irreconcilable as the two ideas of arcadia appear to be, their long history suggests that they are, in fact, mutually sustaining.

This paper views nature as a relative concept. As Van Zomerem (1989) has put it: 'It is never perfect, you can only have more or less of it'. Accordingly imperialistic and arcadian as well as pastoral idyll and wilderness can be understood as extreme poles on a scale. Such a spectrum allows for relative distinctions rather than for the attribution of absolutes. Nash (2001) has argued in a comparable way that wilderness can be conceptualised as a scale between two poles: wilderness on the one pole and civilisation on the other. Such a spectrum allows for a 'premium on variations of intensity rather than on absolutes. The necessity of finding the watershed where wild becomes civilised is made less pressing. Yet the spectrum idea can permit distinctions to be made [...]'.

According to the above, three ideal types of nature can be distinguished: the resource, the pastoral idyll and wilderness. It is acknowledged here that these ideal types do not exist in the real world in their pure form. Ideal types of nature are incorporated in everyday life and are reshaped by the everyday experiences people have with nature. In this way representations of nature are created that

are much more flexible and varied than the ideal types of nature (Van Koppen 2002). The scope of different possible views of nature that people have, can be typified by tracing them back to the ideal types of nature of which they are the culturally, socially and individually shaped representations. Furthermore, the spectrum idea can be used to position and compare different views of nature on the scale between imperialistic and arcadian or between the pastoral idyll and wilderness.

VIEWS OF NATURE IN DUTCH NATURE CONSERVATION POLICY

Views of nature not only influence the way we see and evaluate nature but also how we treat nature in policy and management. As Schama (1995) has identified above, nature conservation policy and management are divided between the two arcadian ideal types, wilderness and the pastoral idyll. The different shades of Greens (in Schama's words) struggle for the representation of their ideal type of nature in policy. This can be recognised in several Dutch policy documents, which show a gradual shift from the pastoral idyll in the 1970s and 1980s to wilderness in the 1990s (Keulartz et al. 2000). The struggle between wilderness and the pastoral idyll has arguably been present ever since the beginning of nature conservation. Van der Windt (1995) has analysed two such disputes in the Netherlands, one in the 1930s (about the management of nature reserves and the role of the famous Dutch ecologist Victor Westhoff) and one in the 1970s. The 1970s dispute will be described in more detail here, as it is considered to be the starting point of the current Dutch wilderness movement.

In the early 1970s, some storms severely damaged Dutch forests, which had been planted in the late nineteenth century for wood production purposes. The storm damage showed the vulnerability of these uniform pine forests. The reaction of the forest owners to remove all the fallen trees from the forest as quickly as possible and with the use of impressive machinery, drew attention to the 'unnaturalness' of current forest management, which apparently had no place for dead wood in the forest (Van de Veen and Lardinois 1991). Wilderness advocates since 1977 have organised in the Foundation for Critical Forest Management (SKB, *Stichting Kritisch Bosbeheer*), and have pleaded for natural forest management based on natural processes and for the creation of large and robust areas with the argument that natural processes need space. They promoted self-regulation and completeness as standards for forest management. Completeness of nutrient cycles could be accomplished by not removing any materials from the forest. Completeness in terms of species groups implied the introduction of large herbivores and predators (wolf, lynx, wisent, moose, and cows and horses that resembled the extinct aurochs and tarpan). The wilderness ideas implied a disqualification of most aspects of traditional forest management and resulted in a fierce controversy between forest managers and the wilderness

THE ROLE OF VIEWS OF NATURE

advocates (Van der Windt 1995). SKB also opposed traditional, pastoral nature management that, according to wilderness advocates, focused too much on the preservation of certain species and was not based on real nature, but on the artificial preservation, through mowing, sod cutting and the removal of nutrients, of a mainly cultural landscape. Wilderness advocates believed that the necessity for such 'gardening' was a result of the incompleteness (the absence of large herbivores and top-predators) of those ecosystems (Van de Veen 1988). Grazing by large herbivores should replace traditional nature management practices. These herbivores were often, rather instrumentally and mechanistically, described as 'cheap mowing and pruning machines' (Keulartz 1999).

According to SKB, 'real nature' was not influenced by humans but dominated by natural processes. They used the ice age period as an ecological reference for 'real nature', because it was assumed that in that period human influence on nature can be considered negligible. This ecological reference was constructed based on prehistoric records and data or on existing so-called pristine and complete ecosystems. Furthermore, SKB provided an alternative for the ecological succession theory. According to the wilderness advocates, complete ecosystems would not grow towards closed forest climax succession stages, as ecological theory would predict. Instead, because of the influence of large herbivores, a mosaic landscape would develop that would consist of shifting patches of open and closed vegetation (Van de Veen 1988). This theory, later put forward by Frans Vera (1997) in his thesis as 'the theory of cyclical vegetation turnover', is still controversial as are other claims of the wilderness movement. It has been doubted whether wilderness is really as diverse as claimed by the wilderness advocates and whether the large herbivores and predators such as wisent, lynx and moose (elements of the wilderness ecological reference) were actually present in the Netherlands in the ice age period. Furthermore, the human-exclusive nature vision implied by the wilderness view has been criticised. Some felt that human influence is not all negative, and feared a loss of biodiversity due to the disappearance of species associated with cultural landscapes (Van der Windt 1995). Still, since its introduction, many forest managers and nature conservation organisations have been, to varying extents, sympathetic to the wilderness view. They recognised the need for more natural management of nature and forests and started several wilderness and grazing experiments. Often they did not fully implement wilderness in their goals, but added elements of the wilderness ideal to their existing management goals (Van der Windt 1995). This means that their views of nature were often mixtures between both arcadian ideal types, somewhere on the scale between wilderness and the pastoral idyll.

Dutch nature conservation policy does not in principle favour either wilderness or pastoral nature. The pastoral idyll can be recognised in the valuation of so-called semi-natural nature, which often has a cultural origin and is considered to be important for the protection of certain species. Such nature is considered to

be relatively static and needs to be actively managed in order to maintain it. The wilderness ideal can be recognised in the valuation of nature with a so-called natural, pristine origin. The management of wilderness focuses on processes and not so much on species. In wilderness nature, human management should be restricted as much as possible. As was described above, this paper uses a spectrum idea to distinguish between pastoral and wilderness views of nature. The amount of nature management necessary, the focus on species or natural processes, and the supposed pristine or cultural origin of nature areas serve as criteria to distinguish between wilderness and pastoral elements. With these criteria, the relative positions on the spectrum of views of nature, such as those identified in the case study below, can be determined.

A NEW DRIFT SAND AREA IN THE HOGE VELUWE NATIONAL PARK

Nature management requires choices about what sort of nature is to be aimed for in what areas. Considering the possible existence of differing views of nature, the plan of the Hoge Veluwe National Park to create a new drift sand area in their property is potentially controversial. Before presenting the results of the dispute that followed the creation of this new drift sand area, this section will give some background information about the Veluwe, drift sand areas and the Hoge Veluwe National Park.

The Veluwe is a large (around 100,000 hectares), relatively dry, nutrient poor, sandy area, which consists mainly of forests, heath lands, drift sand areas and some agricultural fields. It is one of the most important nature areas of the Netherlands, with respect to ecological quality as well as for recreation. The landscape of the Veluwe is the result of centuries (from the Middle Ages) of human use. The cutting of forest for agriculture led to the degradation of the forest into heath land. Due to continued grazing and sod cutting, many heath lands degraded further into drift sand areas. Much of the forest currently present is the result of reforestation. Currently, drift sands have become rare because of reforestation and because they have been stabilised through succession by vegetation (lichens, mosses, young trees etc.). They are valued because of the presence of important biodiversity. Also in the Hoge Veluwe National Park, drift sands have become rare. The Hoge Veluwe National Park is a private foundation that owns an area of around 5500 hectares in the south part of the Veluwe. In the remainder of this paper 'National Park' refers to the foundation and 'Hoge Veluwe' refers to the area. The Hoge Veluwe is a diverse area with heath lands, forest and some remnants of former drift sand areas. The Hoge Veluwe used to be the property of the wealthy Dutch family of Mr. Kröller and Mrs. Kröller-Müller. Mr. Kröller used the area for hunting. The main interest of Mrs. Kröller-Müller was art. Her art-collection (famous for its Van Gogh paintings) is currently exhibited in the Kröller-Müller museum, which is located in the Hoge

THE ROLE OF VIEWS OF NATURE

Veluwe. Also the sculpture garden of the museum, a place where nature and art truly meet, is worth mentioning here. The other main art attraction of the Hoge Veluwe is the house the family lived in, which was designed by Berlage.

The National Park has the task of managing and preserving both the natural and the cultural heritage of the Hoge Veluwe with its diversity in landscapes, natural values and art objects. In light of this, partly cultural, task and given the former presence and current rarity of drift sand areas in the area, the National Park decided to investigate the possibilities for the development of a new drift sand area in the Hoge Veluwe. Research done by the University of Amsterdam indicated that the location known as the Pollen had the best conditions for the creation of a new drift sand area (Sevink et al. 1999). The project started in 1999 with the motto: 'Working on drift sands is working on the future with a historical perspective' (Stichting Het Nationale Park De Hoge Veluwe 2001). The aim of the project was to create a drift sand area that would be able to sustain itself and would only require incidental and small scale management such as the removal of young trees and the small scale mechanical disturbance of stabilised parts (Sevink et al. 1999). The execution of the project was described in a plan of work, according to which the project involved a total area of around 130 hectares (Resource Analysis 2001). In this area, vegetation cover and litter layer were removed. This involved the cutting of around 15,000 pine trees (7,000 m³ wood). Additionally, from approximately 40% of the total area, the topsoil (10–25 cm deep, 18,000 m³ soil) was removed to expose the 'driftable' sand. The remaining 60%, where only vegetation and litter layer were removed, was intended to enable the wind to gain enough strength to let the sand drift.

SKB opposed the drift sand project. This was not surprising when taking into account that the Veluwe has always been a special place for Dutch wilderness advocates. According to SKB, the Veluwe is the most important terrestrial area in the Netherlands with the highest potential for wilderness. The following two quotes by people involved in the SKB illustrate this: 1) 'The Veluwe is the largest forest area of Northwest Europe. It has that potential. It can be considered a Wadden Sea on land. Nature should be left alone there.' and 2) 'It is not necessary to develop wilderness in the whole country, but the Veluwe is the only option that is big enough'. SKB wanted the Veluwe to be one large unified nature area, with grazing, without human interference, without fences and with as few roads and buildings as possible. Furthermore, SKB claimed that landscapes with a cultural origin such as heath lands and drift sands do not belong in the Veluwe and should not be actively created or protected. The wilderness ideal is in this respect not easily matched with the ideas about cultural values and diversity in landscapes and consequently, the drift sand project resulted in a dispute between SKB and the National Park. The most important source of the quotes below is a television programme called *Van Gewest tot Gewest* about the drift sand project that was broadcast on 7 February 2002.

Different views of the ideal Veluwe were at the forefront of this discussion. One of the people from SKB stated: 'We want the Veluwe to be one unified natural ecosystem' (*Van Gewest tot Gewest* 2002). About the drift sand project he said the following: 'This cannot be called nature' and 'What is going on here is the restoration of an ecological disaster landscape, a system that does not belong in the Veluwe' (*Van Gewest tot Gewest* 2002). The representative of the National Park stated the following: 'Our point of departure is the conservation of special plants and animals, but equally important for us, is the cultural function of the Hoge Veluwe' (*Van Gewest tot Gewest* 2002). For the National Park this cultural function implied the protection of examples of how people have shaped their natural surroundings. Drift sands, being the result of overexploitation of forests and heath lands, were such examples. SKB was not necessarily against the conservation of such cultural artefacts, but not under the label of nature and most importantly, not in the Veluwe.

Besides the issue of views of nature, two technical issues entered into the debate. It is recognised here that these technical issues were not merely technical. The views of nature of both parties were reflected in this part of the debate as well as in the part described above. The difference between the two parts of the debate is discursive. The views of nature part of the debate can be understood not only in terms of views of nature, it was also discussed in those terms (what should the ideal Veluwe look like). The technical part of the debate described below, although can be understood in terms of views of nature, was discussed in technical terms.

First of all, the National Park used the argument that drift sands are important for the protection of biodiversity to legitimise their project: 'I believe that you should also have areas that take into account that second [the first being naturalness] important goal of nature conservation: the conservation of species. That is what we are doing here [in the drift sand project]. And when it comes to the species of heath lands and drift sands, that is a speciality of the Hoge Veluwe National Park. That is our aim and for that aim, we take special measures' (*Van Gewest tot Gewest* 2002). This claim that drift sands are essential for the protection of biodiversity was opposed by SKB. According to SKB, besides untrue, it was arrogant and anthropocentric to assume that species originate with and solely depend on landscapes created by humans: 'As if those species have not existed in other ecosystems. Those species [of drift sands] originally belong in coastal dunes, where these [drift sand like] kinds of landscapes naturally occur ...' (*Van Gewest tot Gewest* 2002).

As a second legitimisation for their project, the National Park claimed that the created drift sand area would be able to sustain itself: 'It is not our intention to create one big sand box here that is not allowed to change. It is our intention to create a living drift sand landscape that is continuously in motion' (*Van Gewest tot Gewest* 2002). One of the scientists involved in the research project done by

THE ROLE OF VIEWS OF NATURE

the University of Amsterdam repeated this argument in a newspaper: 'The idea is that after the initial restoration measures, hardly any human interference will be necessary and that the drift sand will be able to sustain itself' (Anonymous 2001). SKB was sceptical in that respect: 'I don't think that it will exist long because nature always stabilises open areas. Everyone who weeds her/his garden knows that. This will be grown over in no time. On the other hand, if it does start to drift, this will also create a problem. The drifting sand will probably not be allowed to cover the road, because then they will have to move the road. In both cases it will lead to human interference, either because it doesn't drift or because it drifts too much' (*Van Gewest tot Gewest* 2002). This argument was also repeated in a newspaper article (Van Halm 2001).

VIEWS OF NATURE AT STAKE

First of all it has to be recognised that between both parties there was a considerable degree of consensus. Both SKB and the National Park wanted the Veluwe to be a nature area and both were representatives of the arcadian tradition. There was, however, no consensus on what sort of a nature area the Veluwe should be. To analyse the dispute in terms of different views of nature requires a closer look on the different qualities and characteristics of drift sands. It is important to realise that drift sands are not easily placed within either arcadian ideal type. They are not the pastoral idyll as it for instance appears in landscape paintings and there is a certain wilderness appeal to drift sands. The larger drift sand landscapes with little human interference and a primacy for natural processes especially, fit the wilderness profile relatively well. On the other hand, Veluwe drift sands are natural areas that result from centuries of human use and reflect historical land use practices. In their different evaluation of the cultural origin of drift sands, the National Park and SKB were on opposite sides. The National Park valued this cultural origin and in that way represented the pastoral idyll. That same cultural origin caused SKB, who represented the wilderness ideal, to reject drift sands as part of their ideal Veluwe.

The amount of human interference was identified before as another element of the wilderness ideal. This aspect also appeared in the debate. Both actors positively evaluated the self-sustainability of drift sands. The National Park used the self-sustainability argument to legitimise their project while SKB doubted whether the drift sand would be self-sustainable. Another element of the discussion was whether or not species depend on drift sands and whether or not special measures should be taken to protect those species. The National Park used the biodiversity argument as another legitimisation of the project while SKB denied the importance of drift sands for the protection of biodiversity.

Two different levels in the debate can be identified:

- 1 SKB discussed the drift sand project in terms of what sort of area the Veluwe should be. In relation to their view of the ideal Veluwe, SKB opposed the project. The National Park also used arguments on the scale of the Veluwe as a whole by emphasising how their drift sand would contribute to the conservation of the important cultural values of the Veluwe.
- 2 SKB also discussed the merits of this particular drift sand project. This second strategy resulted in technical arguments about the self-sustainability of the area and about the role of drift sands in the protection of biodiversity. According to SKB, the legitimisation of the National Park for the project was based on false assumptions.

The first level of what sort of area the Veluwe should be dominated over the second level. The fact that SKB did not want drift sands in the Veluwe preceded the argument that the legitimisation of the project by the National Park was based on false assumptions. It can therefore be concluded that views of nature dominated this dispute.

Various authors (e.g. Nelkin 1982; Collingridge and Reeve 1986; Jasanoff 1990) have described cases where controversies were mainly debated in technical and scientific terms. These cases generally show how, based on vested interests, scientific knowledge is either used strategically as ammunition or discredited and rejected. At this point the question emerges why views of nature were so dominantly present in the drift sand debate and why technical arguments played a secondary role. To elaborate this further, it is helpful to tentatively compare this case to a science-dominated controversy between fisheries and nature conservation that has been described by Turnhout (2003). A first difference is that, in contrast with the drift sand dispute, the fisheries controversy involved economic interests. Second, in contrast to the drift sand case that showed a dispute between two arcadian actors, the fisheries controversy showed a conflict between arcadian nature conservation organisations and imperialistic fishermen. Third, in contrast to the fisheries controversy where the different parties were part of the decision-making process, SKB was not in a position to influence the decision of the National Park. The National Park was autonomous. The *Hoge Veluwe* was their property and there was no need for them to include the views of SKB in their decision-making. The National Park wanted a drift sand area, asked science to develop some scenarios, chose one of them and went on creating the drift sand area. Despite the dispute, the drift sand project was executed and there are no indications that the National Park changed its policy and/or views.

The drift sand case has shown how, in the absence of economic interests, in disputes between two arcadian actors with uneven distribution of power without incentives for the inclusion of different stakeholders in decision-making, differences in views of nature are able to dominate debates about nature conservation. This however does not imply that views of nature should be seen as fundamental underlying principles. Views of nature are shaped by interests.

THE ROLE OF VIEWS OF NATURE

A person living in the Veluwe is not likely to view the ideal Veluwe as unified wilderness without human interference. A fisherman is likely to view the ideal Wadden Sea as multifunctional and fisheries as sustainable. What is important here is that the drift sand case shows how views of nature can be used to understand nature conservation disputes and controversies. Furthermore, it shows a debate that was discussed mainly in terms of different views of nature and where technical arguments played a secondary role. Comparison with disputes dominated by technical arguments illustrates that under different circumstances different discourses will be used.

ACKNOWLEDGEMENTS

The authors thank the National Institute for Public Health and the Environment (RIVM) for supporting this research as well as two anonymous reviewers for commenting on an earlier draft of the manuscript.

BIBLIOGRAPHY

- Anonymous 2001 'Park start uniek natuurproject: *Hoge Veluwe* laat zand vrijuit stuiven', *Reformatisch Dagblad*, 10 Nov. 2001.
- Collingridge, D. and Reeve, C. 1986. *Science Speaks to Power: The Role of Experts in Policy Making*. London: Frances Pinter.
- Jasanoff, S. 1990. *The Fifth Branch: Science Advisers as Policymakers*. Boston: Harvard University Press.
- Keulartz, J. 1999. 'Engineering the environment: the politics of "Nature Development"', in Fischer, F. and Hajer, M.A. (eds), *Living with Nature: Environmental Politics as Cultural Discourse*. Oxford: Oxford University Press.
- Keulartz, J., Swart, J.A.A. and Van der Windt, H.J. 2000. *Natuurbeelden en natuurbeleid, theoretische en empirische verkenningen*. Stimuleringsprogramma Ethiek van Beleid van de Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO), nr. 00/1.
- Kwa, C.L. 1989. Mimicking nature, the development of systems ecology in the United States 1950–1975. PhD thesis, Universiteit van Amsterdam
- Nash, R.F. 2001. *Wilderness and the American Mind*. New Haven/London: Yale University Press.
- Nelkin, D. 1982. 'Controversy as a political challenge', in Barnes, B. and Edge, D. (eds), *Science in Context: Readings in the Sociology of Science*. Milton Keynes: Open University Press.
- Pels, D. 1997. 'Natuurpolitiek: Beck en Latour als woordvoerders der dingen', in Keulartz, J. and Korthals, M. (eds), *Museum aarde, natuur: criterium of constructie?* Amsterdam: Boom.

- Resource Analysis 2001. *Uitvoeringsplan voor werkzaamheden: integratie van verrichte studies in het kader van het stuifzandproject in het Nationaal Park de Hoge Veluwe*. RA/01-465.
- Schama, S. 1995. *Landscape and Memory*. London: Fontana Press.
- Sevink, J., Emmer, I.M., Arens, S.M. and Wilms, R.T. 1999. *Herstel en behoud van levend stuifzand in het Nationaal Park de Hoge Veluwe*. Universiteit van Amsterdam, Nationaal park de Hoge Veluwe.
- Stichting Het Nationale Park De Hoge Veluwe 2001. Brochure: *Het stuifzand komt terug*.
- Turnhout, E. 2003. *Ecological Indicators in Dutch Nature Conservation: Science and Policy Intertwined in the Classification and Evaluation of Nature*. Aksant: Amsterdam.
- Van de Veen, H. and Lardinois, R. 1991. *De Veluwe natuurlijk! Een herkansing en eetherstel voor onze natuur*. Haarlem: Schuyt & Co Uitgevers en Inmorteurs BV.
- Van de Veen, H.E. (ed.) 1988. *Nieuwe kansen voor natuurbehoud en natuurontwikkeling*. Utrecht: Stichting Natuur en Milieu.
- Van der Windt, H.J. 1995. *En dan, wat is natuur nog in dit land? Natuurbescherming in Nederland 1880–1990*. Amsterdam: Boom.
- Van Halm, H. 2001 'Stuifzanden worden gereanimeerd', *Trouw*, 15 Dec. 2001.
- Van Koppen, C.S.A. 2002. *Echte natuur: een sociaal theoretisch onderzoek naar natuurwaardering en natuurbescherming in de moderne samenleving*. Proefschrift Wageningen Universiteit
- Van Zomeren, K. 1989. *Het scheepsorkest*. Amsterdam: De Arbeiderspers.
- Van Gewest tot Gewest 2002 'De verwoesting van de Veluwe, televisie uitzending over het stuifzand project in het Nationaal Park de Hoge Veluwe', *NPS Nederland* 3, 7 Feb. 2002.
- Vera, F. 1997. *Metaforen voor de Wildernis, eik, hazelaar, rund en paard*. Helton en van Haeringen & Koninklijke drukkerij De Swart.
- Worster, D. 1979. *Nature's Economy: The Roots of Ecology*. New York: Anchor Press/Doubleday.