

University of Groningen

Walking behavior, perceptions of nature and perceptions on the management of the land. Are they related?

A case study on Terschelling



D.I. Cramer  
Dr.ir. E.W. Meijles  
01/11/2015

## Abstract

Research has been done on the perceptions of nature of various groups differing in social demographics. This study does not look into the demographics, but starts from the recreational behavior of people on Terschelling, specifically studying on or off-path recreation. By the use of GPS the walking behavior of respondents is mapped. A survey is used to detect several preferences of our respondents, like their perceptions of nature (determined by the perceptions Wilderness, Arcadian and Functional) and their perceptions on the management of the land, which are determined by the Attractive nature view, Attachment view and Rurality view of Buijs (2009). One of the questions is whether the perception on the management of the land can be forecasted by knowing the respondent's perception of nature.

In total 92 respondents were questioned of which 11 participated in the GPS-research. None of the respondents went off the paths. Most respondents were classified in the Wilderness perceptions of nature, followed by the Arcadian group. The smallest number of respondents was classified in the Functional perception of nature. We could not forecast the respondents' view on the management of the land, based on their perception of nature, since the respondents scored the same on all these views. At last we researched which aspects the respondents define as important to find in nature. They mentioned purity, rest and beauty of nature. The freedom to roam through nature seems not to be of importance.

## Contents

Abstract .....	1
Contents .....	2
Chapter 1: Introduction .....	4
1.1 Introduction .....	4
1.2 Problem Description and goal of research .....	4
1.3 Research Questions .....	5
Chapter 2: Theoretical Framework .....	6
2.1 Nature .....	6
2.2 Roaming in nature .....	6
2.3 Measuring values and beliefs .....	7
2.4 Conservation or the management of the land .....	12
2.5 Important aspects of nature .....	14
2.6 GPS .....	15
2.7 Conceptual Framework .....	15
2.8 Hypotheses .....	17
Chapter 3: Methodology .....	18
3.1 Study area: Terschelling .....	18
3.2 Conducting the research .....	19
3.3 GPS .....	19
3.3.1 Defining if the respondent is on or off the path .....	19
3.3.1.2. Beach .....	20
3.4 Survey .....	20
3.4.1 Perceptions of nature .....	20
3.4.2 Comparing nature perceptions with views on land management .....	22
3.4.2.1 Analyzing land management views .....	22
3.4.3 Important aspects .....	22
3.4.4 Linking the aspects to the statements .....	23
Chapter 4: Results .....	24
4.1 Descriptives .....	24
4.2 GPS .....	24
4.2.1 On or off the paths .....	25
4.3 Survey .....	28
4.3.1 Perceptions of nature .....	28

4.3.2 Views on land management .....	30
4.3.2.1 Analyzing land management views .....	31
4.3.3 Which aspects are of importance for the different groups of nature perceptions?.....	33
4.3.3.1 Linking the aspects to the statements .....	36
Chapter 5: Conclusion and discussion .....	37
5.1 Conclusion .....	37
5.2 Discussion .....	37
5.2.1 GPS.....	37
5.2.2 Perceptions of nature.....	38
5.2.3 Important aspects of nature.....	38
5.2.4 Land management views.....	39
5.2.5 The concept of 'nature' .....	39
5.3 Recommendation .....	39
Chapter 7: Literature .....	40
Chapter 8: Appendix.....	44
1. Overview of statements for the perceptions of nature .....	44
2. Syntax for nature views .....	47
3. Statements for defining the land management view.....	51
4. Survey .....	53
5. Flyer with information on GPS application.....	62
6. Alternative answers on questions in survey.....	64
7. Scoring for the statements concerning the nature views .....	67

## Chapter 1: Introduction

### 1.1 Introduction

Almost 3% of the Dutch land surface consist of Nature Reserves (Natuurmonumenten 2014). To conserve the Dutch landscape these reserves have been realized. Dutch landscape is in fact the result of centuries of human influence on nature. As Lowenthal (2005) states, nature and culture always commingle, “no aspect of nature is unimpacted by human agency” (Lowenthal, 2005, p.81). Humans have changed landscapes through time, in order to adapt them to their preferences and use (Antrop, 2005; Swart et al., 2001). This change and interference of humans on the landscape is nowadays seen as a threat because of the loss of diversity in the landscape (Antrop, 2005). Today, landscapes should be conserved because diverse landscapes are rare and flora and fauna vanish (Natuurmonumenten cahier). Beside the intrinsic values of nature, which should be protected, the Functional aspects are also of importance. For example, nature plays an important role for agriculture (Natuurmonumenten cahier), it provides food, fuels and medicines, and it gives scientific information and pleasure to people (Swart et al., 2001).

The exact idea of what nature is and the reason why it should be conserved differs among people (Buijs, 2009; Swart et al., 2001). Some people think of nature as being wild with feelings of astonishment, but nature can also be seen as being Functional for humans. A rural idyll of nature is also a common idea of nature (Buijs, 2009). Besides the different perceptions of nature, different reasons for nature conservation exist. People protect nature because they feel attached to it, because of the intrinsic value of nature or because of the agricultural function of it (Buijs, 2009).

The conservation of natural resources started in the late 19<sup>th</sup> century (Lowenthal, 2005). In this period, “societies for the protection of wildlife, natural sites and nice scenery” (Antrop, 2005, p.29) came into existence. This included the Dutch land management and nature protection organizations of Natuurmonumenten and in 1910 Staatsbosbeheer. These organizations have nature reserves in which people can recreate and nature is protected. Therefore, nature areas are seen as multipurpose areas. Some parts of the reserves are closed for public access for protective reasons (Customerservice Natuurmonumenten, 2014; Customerservice Staatsbosbeheer, 2014). In other parts of the reserves, people have the possibility to bicycle, hike on paths and some areas are open for roaming through nature. Terschelling is one of these areas where roaming is allowed, due to its history and the late interference of Staatsbosbeheer on the island (Berg, 2015).

Since people have the possibility to roam here, Terschelling is chosen as the area of research. On this island we will conduct a study to find out how ideas on nature and the land management differ among people who recreate on and off the paths.

### 1.2 Problem Description and goal of research

Earlier research is done on peoples’ attitudes towards nature and their correlating recreation motivations. Kil et al. (2014) researched relationships between environmental attitudes and behavior. Buijs et al. (2006) show a demographic approach towards visions of nature, concerning

attitudes of youngsters and immigrants on nature. Boer & Schulting (2002) also focused upon the attitudes towards nature of different demographic groups, concerning youngsters, farmers, volunteers, bird watchers and immigrants. In these studies people are classified in demographic groups. To my knowledge, no research on attitudes towards nature started from peoples' way of movement in nature. In the present research we are interested in possible differences between recreants who follow the paths and the ones who roam through nature.

People will be divided in multiple groups based on their movement preferences (on & off the path), perceptions of nature ("Wilderness , Arcadian or Functional") and conservation views (also called "views on land management") ('Attachment view', 'Attractive nature view' and 'Rurality view') (Buijs, 2009; Swart et al., 2001). These divisions will lead to a better understanding of peoples' preferences towards nature aspects. Therefore, this approach can be valuable for nature organizations to find out the behavior of recreants in nature areas. For nature organizations it can be important to be aware of the recreational pattern as well as the ideas on land management of the public. They may use the information on movement patterns to organize nature areas. With the information on land management ideas, they can decide which aspects of nature should be emphasized. Also the aspects people find important in nature, can be valuable for land management organizations. Nature areas can be organized in a more attractive sense if these aspects are taken into account.

To register peoples' movement patterns, respondents routes are tracked by GPS. This can be done with a GPS-device or through their smartphone. This is an interesting aspect of this research, since former GPS research has mainly be done by GPS-devices. In this research we will find out whether research via GPS on smartphones is a useful method for scientific research. To find out if people are willing to participate in research with the use of their own smartphone can be valuable for future research.

### 1.3 Research Questions

The main question states: *How do recreationalists roaming trough nature differ in nature ideas and in ideas on nature conservation from recreationalists who stay on the paths?*

The sub questions supporting the main question are:

1. What are the perceptions of nature for both the recreationists leaving the paths and the ones staying on the paths?  
The nature perceptions which will be used to find out different perceptions of nature are based on Buijs (2009) and Swart et al. (2001), consisting of the 'Wilderness view', 'Arcadian view' and 'Functional view'.
2. What are the views on nature conservation for both the recreationalists staying on the paths and the ones leaving the paths?  
This concerns the aspects which people find important to conserve. The division that will be used to classify people are the 'Attachment frame', 'Attractive nature frame' and 'Rurality frame' of Buijs (2009).
3. What are, according to both groups of recreationists, the important aspects in nature areas?  
This question is focused upon the aspects people can find in nature, for example the beauty of nature, purity of nature or catering facilities.

## Chapter 2: Theoretical Framework

### 2.1 Nature

People find nature important, since it gives opportunities to recreate, to sport or to relax (LNV Consumentenplatform, 2009). Nature can be found at home, in the form of a park in the neighborhood, or as a nature area further away that is worth visiting (LNV Consumentenplatform, 2009). The manner in which nature is perceived differs between people and these differences are conceptualized as 'nature images' (Buijs, 2009).

Nature images are, according to Van den Berg et al. (2006, in Buijs, 2009, p.45), "*people's general cognitions of what nature is*". Noel Castree emphasizes the multiple meanings of the concept of nature, as well as Cronon, who states that the way we describe nature and understand the nonhuman world is entangled with our own values and assumptions. "*What we mean when we use the word 'nature' says as much about ourselves as about the things we label with that word*" (Oakes and Price, 2008, p.208). Chhetri et al. (2004) underscore that the experiencing of nature is dependent on a person's knowledge, belief and recognition of nature. A certain landscape can therefore result in different emotional reactions for different people (Chhetri et al., 2004). Since different people have different cognitions of what nature is, it is hard to define the concept of nature. Some people even state that nature does not exist in the Netherlands, because of the cultural influences of the inhabitants on nature and the land consolidation performed in the 20th century (Rijksdienst voor Cultureel Erfgoed, 2015). According to Meijles et al (2013), people in Dutch culture generally regard nature as fragile and therefore it should be protected.

Overall, people have different images of nature. Therefore it is decided not to use a defined concept of nature in this research, because it could conflict with a person's own idea on nature.

### 2.2 Roaming in nature

Although people perceive nature in different ways (Buijs, 2009) and some people state that nature does not exist in the Netherlands (Rijksdienst voor Cultureel Erfgoed, 2015), according to LNV Consumentenplatform (2009) nature does exist in different places and forms. About 3% of the Dutch surface is in use of National Parks which protect and develop characteristic nature (Samenwerkingsverband Nationale Parken, 2015). These parks give freedom to recreationists to hike or cycle, most often on the paths. In some nature areas, people are allowed to go into nature, of the paths. These areas are called 'roaming areas' and are often managed less strictly (Staatsbosbeheer, 2015a).

Sandell and Fredman (2010) state that in general three aspects can be valued as important background features for designating an area a roaming-area. Environmental education can be an important reason for giving people permission to roam through nature. The contact with nature forms in this case a basis for a sustainable attitude towards nature. Bommel (2001) agrees on this point, stating that generations growing up outside of nature, will not develop a feeling of irreplaceable nature. According to Bommel (2001), these people will probably see nature as less valuable than people who were able to roam through nature and who have a deeper contact with nature. A second reason which is mentioned by Sandell and Fredman (2010) is that of identity. One should have the right to be present and to be able to influence the area from which he derives its

identity. The third and last aspect which is mentioned is that of a historical relationship between 'man' and 'nature'. Previously this relationship was production-oriented but it is currently characterized by an idea of esthetical-consumption.

Although the 'right to roam' is popular in different European countries, like the Scandinavian countries as well as England, Scotland and Wales (Ramblers, 2015), the concept of 'roaming' never became very popular in the organization of Staatsbosbeheer (Berg, 2015). Staatsbosbeheer is one of the largest nature management organizations in the Netherlands. It manages 265.000 ha, of which only 2.000 ha is roaming area (Staatsbosbeheer, 2015a). For the small amount of roaming area, Staatsbosbeheer does not have a nationwide policy on which steps should be taken to designate an area as a roaming area (Berg, 2015). This is because organizations are not sure which concept would be the best for nature itself. By letting people roam through nature, nature could be harmed, is what some people state (Bemmel, 2001). Bemmel (2001) states also that nature itself makes that people will walk on the paths or on animal trails, because bushes can be very narrow and hard to walk through. Therewith, nature regulates itself and there will be enough place left for animals Bemmel, 2001).

To designate an area as roaming area is dependent on several aspects. Aspects which are of importance, are for example fragility of the nature and the goals and principles of partner-organizations. For example, in Millingerwaard, a nature area near Nijmegen, one of the cooperating parties of Staatsbosbeheer is Ark. This party supports roaming through nature and therefore Staatsbosbeheer and Ark together decided to designate the area as a roaming area (Ark, 2015).

Agnes van den Berg states in an interview with Pruim (2013) that access to nature has several benefits, varying from stress relief to the development of a more creative and diversified play behavior. Ballantyne et al. (2014) add to this, the benefits of health, education and social connectedness. Besides these benefits, they point out that access to nature and primarily the paths can cause environmental impacts. Examples are reduced heights and land cover of vegetation, erosion and the disturbance of wildlife. Shultis (2006), researching user impact and carrying capacity of nature, found a relationship between visitor and user impact, when focused on campsites and trails. The effects of hiking and trampling are heavier when more recreants cross a certain trail (Ballantyne et al., 2014). Ballantyne et al. (2014) also state that the effects of hiking off the paths across a bigger area will probably be smaller. According to Dinther (2015) the effects of off-path recreation can be very negative though, because people are not always aware of their influence in nature. As a result, deer can feel chased and will group together (Dinther, 2015).

It is clear that different organizations have various thoughts on roaming through nature and also in organizations discussions on the best concept can exist (Bemmel, 2001). Till now Staatsbosbeheer has denoted just one percent of its area as a roaming area and prefers recreationists to walk on paths.

### **2.3 Measuring values and beliefs**

Different researchers have studied the link between humans and the environment, which resulted in various terms on the different relations. Because of the variety of terms, confusion about the definitions started to exist (Price et al, 2014). Schultz et al. (2005) organized the various terms and

narrowed it to three definitions. “The term ‘environmental attitude’ refers to the collection of beliefs, affects and behavioral intentions a person holds regarding environmentally related issues” (Schultz et al, 2005; p458). ‘Environmental concern’ is part of this attitude and covers the “affect associated with environmental problems” (Schultz et al, 2005; p458). A person’s idea about the relationship between humans and nature is considered as the ‘environmental worldview’.

These worldviews are formed by images and stories persons hold about themselves, their society and their surroundings. The images and stories help a person to make sense of its surroundings and people use their worldview to interpret information and formulate actions (Marten, 2001). These different perceptions are socially and culturally constructed (Xu & Fox, 2014; Chhetri et al., 2004), which means they are interrelated with different factors like demographics, cultural and ethnic background. Bell calls this the ‘integrationist approach’, meaning experiences are influenced by socio-demographic, behavioral and cultural factors (Chhetri et al., 2004). Also more national elements, like laws and media coverage are of influence on a persons’ perception towards nature (Xu & Fox, 2014).

A scale that has often been used to measure environmental values and beliefs is the ‘Ecological Paradigm’ from Dunlap & Van Liere (1987). It measures both the “human exceptionalism paradigm” and the “new ecological paradigm” (NEP). HEP stands for the idea that humans differ from other species, since humans have a culture and freewill, contrary to other species and NEP beliefs that humans do differ from other species in the sense that they are innovative and have a culture, but humans are still dependent of nature (Buijs, 2009). The NEP was developed as a reaction on the “Dominant Social Paradigm” (DSP), which includes the ideas of limitless resources, continuous progress, faith in the problem-solving abilities of science and of a strong commitment to the laissez-faire economy (Roberts & Bacon, 1997). Price et al. (2014, p.9) describes the core-idea of the DSP as “nature exists solely for human use”. As a reaction on the DSP, the NEP was developed to measure eco-centrism capturing beliefs regarding limits to growth, human superiority over nature and balance of nature (Price et al, 2014). Since the 1970’s people showed a more environmental/ ecocentric view (“valuing nature for its own sake”) (Thompson & Barton, 1994, p.149), compared to a more anthropocentric world-view before (“valuing nature because of material or physical benefits it can provide for humans”) (Thompson & Barton, 1994, p.149; Buijs, 2009; Roberts & Bacon, 1997). Although this method has been very popular in environmental studies, Kopnina (2011) states that the statements used in the NEP scale can be interpreted in multiple ways. Thereby, Kopnina (2011) states, that ethnics, level of education and differences in age should be taken into account when drawing conclusions of the results of the NEP scale. She pleads for a combination of NEP and qualitative research to come to useful, statistical data. Buijs (2009) also states that the statistical usefulness is limited, which made that another measurement should be used in this research.

Another means to order humans' values and beliefs about nature is the 'cognitive hierarchy' model (Hermann et al., 2012). In this hierarchy (see figure 2.1), the lower level concepts influence the higher level concepts; "values influence attitudes, attitudes influence behavioral intentions and these intentions influence the final behavior" (Buijs, 2009, p.35). According to Olson & Zanna (1993), values can be seen as "potential determinants of preferences and attitudes"(Olson & Zanna, 1993, p.125). Choi & Fielding (2013) confirm Buijs' (2009) statement by saying that attitudes form a major determinant of behavioral intentions.

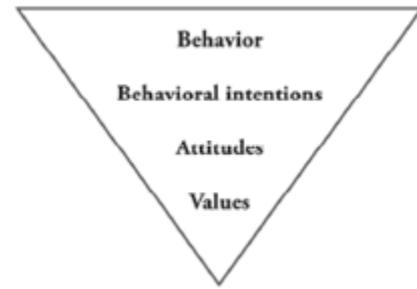


Figure 2.1: Cognitive hierarchy. (Source Buijs, 2009)

Also Kil et al. (2014) state that a substantial relationship has been found between a person's attitude and its environmental behavior. "Recreationists with strong environmental attitudes were more likely to engage in appreciative activities" (Kil et al., 2004, p.17) and recreationists with strong environmental attitudes showed more frequently environmentally responsible behavior.

According to Buijs (2009) the 'cognitive hierarchy' is not that useful though, because people do not always do what they know they should. Kaenzig et al. (2013) states that 50-90% of the respondents favors renewable energy over traditional sources of energy. According to Bird et al. (2002), a maximum of 3% actually makes use of this source. This gap between intention and action is confirmed by Allcott and Mullainathan (2010) (in Momsen and Stoerk, 2014). Because of this gap, the focus should be on the person's values, beliefs and attitudes (Buijs,2009). The concept of Keulartz, Van der Windt and Swart (2004) captures ones image of nature, thereby not focusing on behavior. They formulate 'images of nature' as a three dimensional concept, consisting of cognitive beliefs, normative values and expressive aesthetic experiences (see figure 2.2). The cognitive beliefs cover ones idea on what nature is and how natural processes function. Normative values are about how individual judge nature and the expressive aesthetic experiences cover the ideas on beauty of nature (Keulartz et al., 2004).

Keulartz et al (2004) found three visions, taken from the Advisory Council for Research on Spatial Planning, Nature and the Environment (Raad voor Ruimtelijk Milieu- en Natuuronderzoek), which can be seen as three alternative views on nature. These alternatives consist of the nature development vision or 'Wilderness vision', the classical nature vision or 'Arcadian vision' and the 'Functional vision' of nature.

The mentioned views on nature are not randomly chosen for Dutch society. It is a combination of a limited number of values and beliefs, based on the interrelated values, beliefs and expressions. These views stem back to the ancient Greek periods, and fulfill an anthropological need (Keulartz et al., 2004). Originally though, these views were not meant for lay people, but for experts in the field of nature and nature development.

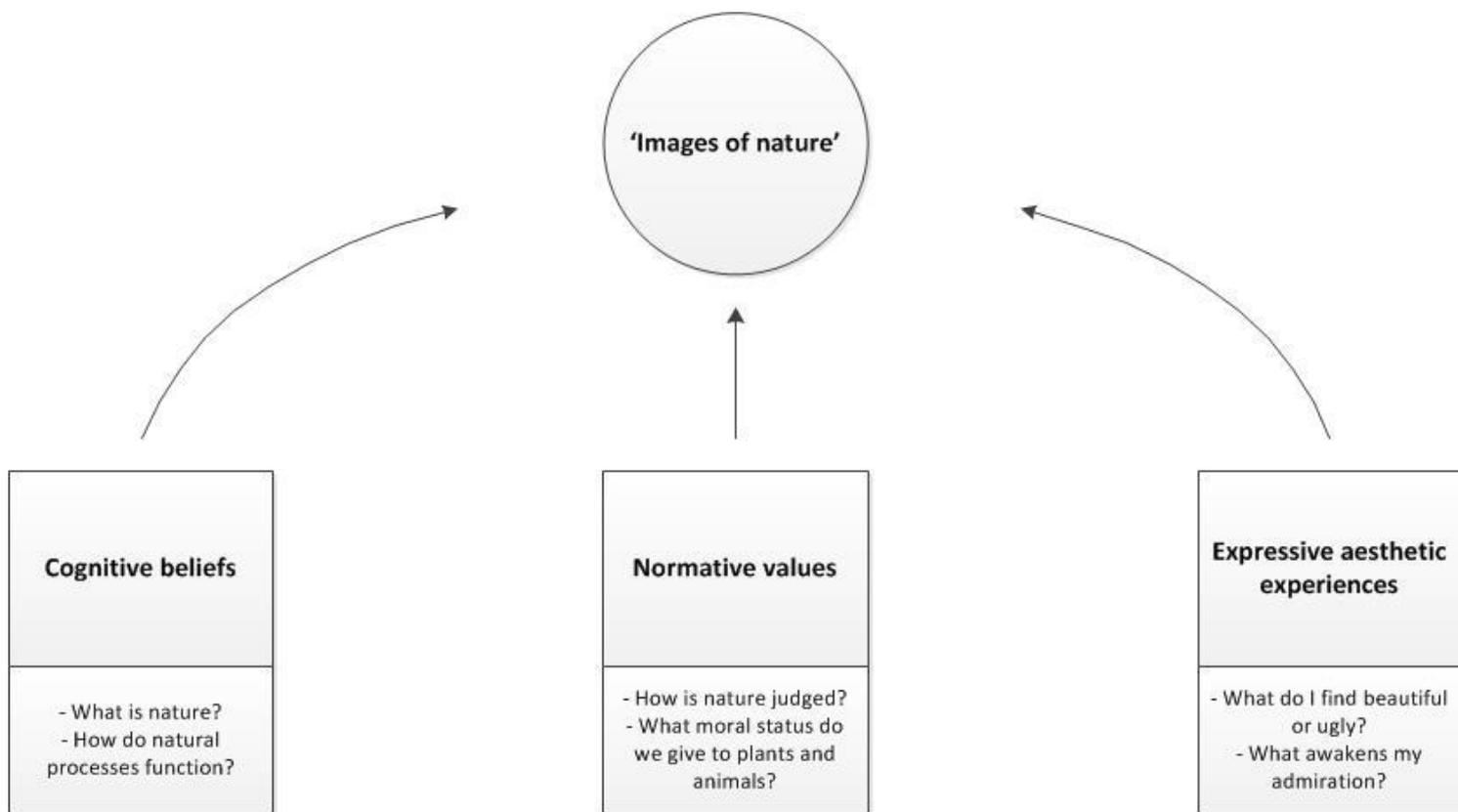


Figure 1.2: Nature views, based on Keulartz et al., 2004.

Buijs (2009) researched which views Dutch lay people have on nature, comparing to the three views of experts, as researched by Keulartz et al. (2004). He made a qualitative research of the values, beliefs and value orientations on nature what resulted in a five-fold typology of nature images in the Netherlands for lay people. The typology consisted of the Wilderness Image, Autonomy image, Inclusive image, Aesthetic image and Functional image (see figure 2.3).

Based on the description of Buijs (2009), the differences between the various nature images are not clear to me. The problem with the division in five instead of three views, is that the views come very close to each other and sometimes even seem to overlap (see figure 3). Take for example the Aesthetic and Functional view. The first mentioned view has its emphasis on recreational possibilities in nature, wherein the visual aspect is important. The Functional view is focused on the management of nature, for as well utilitarian values as aesthetic values (Buijs, 2009). Since the borders of these two views are shaded and a person's view is hard to define in a questionnaire, compared to the qualitative research of Buijs (2009), we made the decision to use the three-fold division of Keulartz et al. (2014) for this research instead of the five-fold.

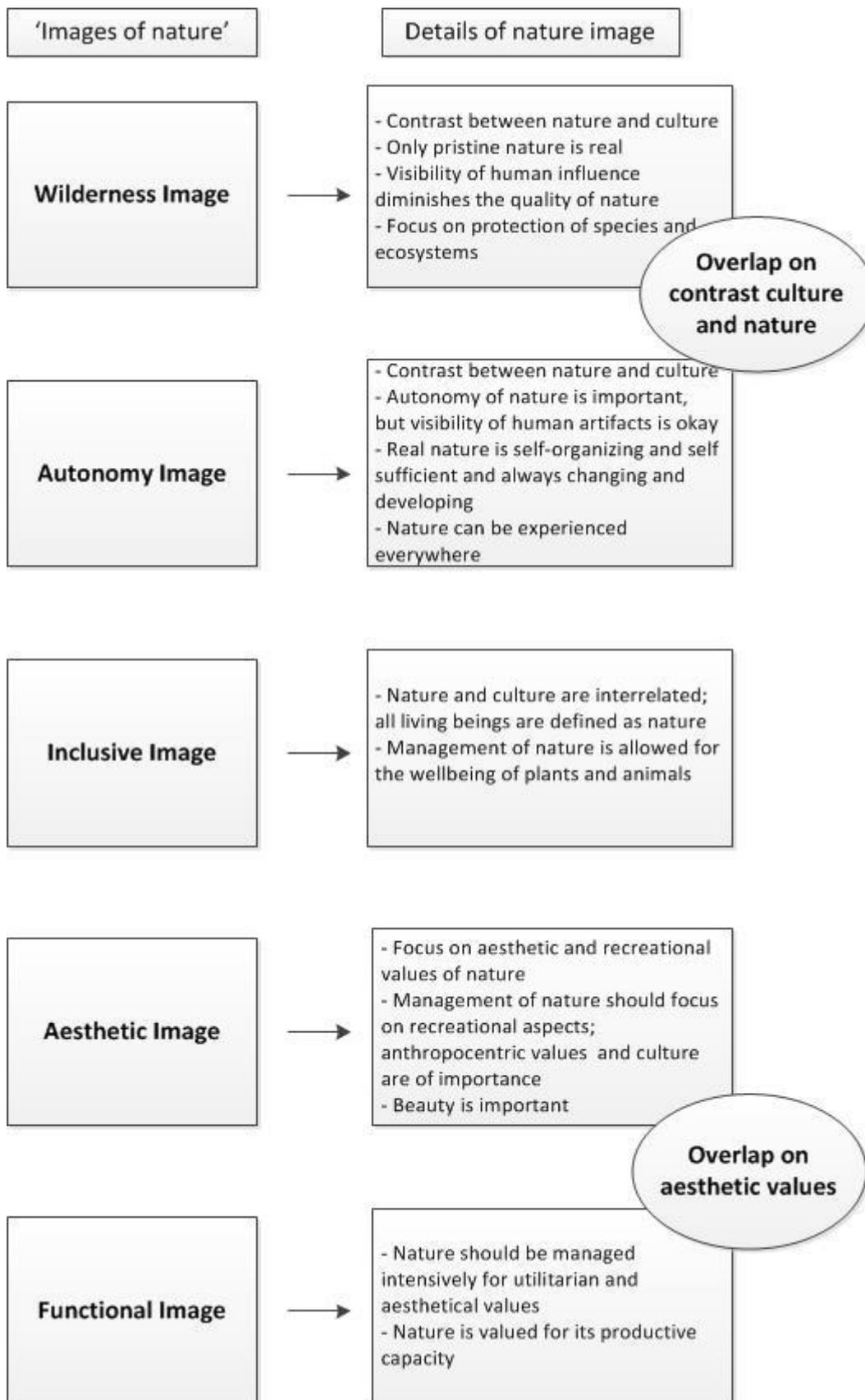


Figure 2.3: Five nature views of Dutch lay people (Based on Buijs,2009)

The included views are exposed beneath. The explanation of their details is based on Buijs (2009):

- Functional view: Nature is a resource for humans' activities. Conservation of nature can still be valued, for example to protect the useful nature. The focus is on cultural landscapes and culture-following species. Keulartz et al. (2004) add to this that nature is dependent on the possibilities of coupling with other functions, for example fishing, reforestation and recreation. The use of nature by man is central.

- Arcadian view: This view on nature idealizes nature and rural life. The focus is on the experiencing of nature and the emotions resulting from that. This approach often refers to the landscape of around 1850, before the society underwent large-scale urbanization and industrialization (Keulartz et al., 2004).

- Wilderness view: The Wilderness view on nature holds feelings of astonishment, fear and roughness. This view is a reaction on the rationality and culture of modern civilization. The aim of people with this view on nature, is to disturb the natural processes as little as possible (Keulartz et al., 2004).

Functional view	Arcadian view	Wilderness view
Nature as resource (tourism included)	Nature as icon	Nature as icon
Anthropocentric value	Ecocentric value	Ecocentric value
Balance between human and ecological needs	Beautiful, picturesque nature	Emotional and spiritual bond
	Rural idyll	Sublime nature
	Fragile	Naturalness

Table 2.1: Overview of the perceptions of nature (based on Buijs, 2009; p.55)

## 2.4 Conservation or the management of the land

The trichotomy of Keulartz et al. (2004) which explains a person's view on nature, is not applicable to capture one's idea of conservation or land management, because peoples' preferences in nature do not state anything on a persons' attitude towards this management. What a person likes is not necessarily what it wants to conserve (Kaiser et al.; 2014). According to Kaiser et al. (2013) a positive relation exists between personal attitude towards nature and the appreciation of environmental protection. Kaiser et al. (2014) state though that "the connection between attitude and behavior is not a causal connection, but a formal one", herewith referring to the connection of attitude and behavior, wherein attitude is a property from behavior. Behavior, concluding from Kaiser et al. (2013) is not a result from a person's attitude. Therefore is decided to look for another method to use in this study, to come to a person's idea on the management of nature.

Foundational to the discourse of conservation of nature, are the terms *in situ* and *ex situ* (Burney and Burney 2010 in Braverman, p.49). This division between *in* (on-site) and *ex situ* (off-site or captive) conservation led to a native-versus-alienated dichotomy, in which a preference exists for *in*

*situ* plants and animals (originated from the native environment). For both *in situ* as *ex situ* conservationists, “pristine nature” is the central focus of their conservation (Braverman, 2014). The dichotomy between on-site and off-site conservation seems the basis for the conservation of nature, and “without it, it seems difficult, if not impossible, for many to imagine what conservation could mean” (Braverman,2014, p.48)

Today, more and more scientists question the native-alienate dichotomy and argue for a more dynamic and pragmatic approach towards nature conservation (Davis et al., 2011). Despite this call for a dynamic approach, “nature is at the moment still ‘sold’ to the public as a fixed entity that needs to be preserved or restored” (Braverman,2014, p.50). As Braverman (2014) concludes, the public still receives the idea of the land management of nature based on the traditional dichotomy. Therefore, we will use this dichotomy as a basis for further research on the ideas of nature conservation of the public. Since the term ‘conservation’ covers the idea of preserving or protecting and nature is something that can also be developed, we will from here on speak of ‘land management’ instead.

A popular method to find out one’s attitude towards land management is the method of Thompson and Barton (1994). They classify people on a gradual scale, ranging from Ecocentric to Anthropocentric ideas. Ecocentric views judge that nature has intrinsic values and should be appreciated for these values. Anthropocentric views state that nature has a value in the sense that people can make use of it. Nature can contribute to the satisfaction of human wants and needs (Thompson & Barton, 1994). Rientjes (2002) states that nature is protected mainly for the sake of itself, but as we can see in the ecological- anthropocentric scale, this idea is too simple. Nature can be valuable for the use by humans as well (Thompson and Barton, 1994).

Connecting this scale to the nature views of Keulartz et al. (2004) and Buijs (2009) seems possible at first glance. In figure 2.4 the nature perceptions are connected to the scale of Thompson and Barton. Since the Wilderness perception has similarities with the ecocentric view towards land management, these two stand at the same side of the scale. Both the Wilderness view and the ecocentric idea of managing nature have in common that nature should be appreciated for its intrinsic value. The lesser human involvement, the better. At the other side of the scale, we find the anthropocentric attitude and the Functional perception. These two have in common that nature is valuable because humans can make use of it. We find the Arcadian view in the middle of the scale, because it has no similarities with just one of the two extreme management attitudes, but it finds similarities in both of them.

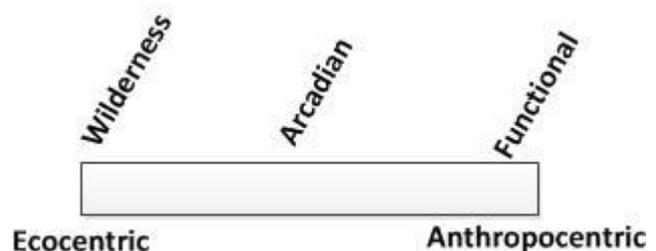


Figure 2.4: Link between Thompson & Barton (1994) and Keulartz et al. (2004).

The problem with linking together the perceptions of Keulartz et al (2004) and the scale of Thompson and Barton (1994), is that the comparison is not profound enough. A person with a Wilderness view does not always choose to protect from an ecocentric point of view, but could in different situations choose to protect other elements. These differences are dependent on what the person perceives from the nature area, based on it looks and sounds (Chhetri et al., 2004).

To bypass the problem of having a too narrow description of management attitudes, we decided to choose the three management views of Buijs (2009). Buijs (2009) used three views on the management of the land, comprising the 'Attachment frame', 'Attractive nature frame' and the 'Rurality frame'. These frames are designed to capture the resistance people have against changes in traditional floodplains, but are used in this research to sort peoples' idea on land management. The research Buijs (2009) did was on the effects of the restoration of floodplains in the Netherlands. With this restoration, cultural heritage could be impacted, as well as the ecological quality, accessibility and scenic quality of the area (Buijs, 2009). Besides these elements, also the attachment of people to the area and the intrinsic value of nature could be impacted. It is because of this broader approach, that these land management views seem applicable to this study. The research resulted in the three frames, as mentioned above. The characteristics of the frames are explained beneath:

- Attachment frame: In this frame, the personal attachment to the area is of importance. Concepts contributing to the quality of the area are sense of place, scenic beauty and intrinsic value. The two most important aspects for this group, are cultural heritage and agricultural function.

- Attractive nature frame: Core elements of this frame are the protection or enhancement of the natural value and attractiveness of the area. Elements like personal attachment, agricultural function or cultural heritage are less important. It is more about the intrinsic value and scenic beauty of nature.

- Rurality frame: The focus of this framework lies on the agricultural functions and the rurality of the area. Also the beauty of the area is of importance.

Buijs' (2009) views on land management can be used for this research, since the same aspects are of importance while thinking of the management of a specific area or resistance against a new development. The elements of importance as mentioned in the frames, cover the attitudes of people towards nature conservation. Since attitudes are influenced by a persons' value (see figure 2.2), it is quite a strong division, compared to behavior in nature, for example. Behavior, as stated before, is influenced by more elements than just values and beliefs, and is situation specific. Because these three frames are based on the more steady elements of values and beliefs, they seem useful for this research, and therefore will be implemented in the research on peoples' attitudes towards the management of the land.

## **2.5 Important aspects of nature**

Several scientists state that people today still appreciate surroundings that offered the best chance of survival in the prehistoric age most (Buijs, 2009; Mealey & Theis, 1995; Van den Berg, 2004). Van den Berg (2004) underscores that although most modern humans are not dependent on nature as they were in ancient times, people are still sensitive to places which give the best chances of survival. Folmer et al. (2013) state though that a shift has been taking place from the appreciation of nature based on its use values towards its emotional meanings and values. Mealey & Theis (1995) confirm that moods also influence the preference for different landscapes, what results in different

preferences at different times. Van Marwijk (2009) confirms this diversity in preferences and adds to this that people visit nature for different reasons.

To understand nature-based recreation motivations, the recreation experience preference (REP) scale has been developed (Kil et al, 2014). The idea behind this scale is that people visit a specific outdoor area to realize certain socio-psychological and physical experiences (Kil et al., 2014). Anderson et al. (2008) state that these motives vary, ranging from adventure, social bonding and relaxation. The most important factors to visit nature are mental health, social interaction and seeking nature (Anderson et al., 2008).

The factors mentioned by Anderson et al. (2008) are very broad and not focused on the natural aspects of the area. Since the focus of my research is on the differences between people who stay on the paths or leave the paths, my focus is on the natural elements.

In line with the focus of this study, is the survey of Natuurmonumenten (2014) in which the most important aspects of nature were researched. The most important aspect was tranquility, followed by purity of nature and the beauty of nature was the third most important aspect of a nature area.

According to Anderson (2008) and Kil et al. (2014), people visit specific nature areas to realize certain experiences. For example people leaving the path seek for adventure, purity and the possibility to roam through nature.

## 2.6 GPS

GPS is a system based on satellites, allowing mobile devices to locate at any place and time on earth (Bauer,2013). By letting respondents use GPS-devices, high resolution data can be obtained, without much effort of the respondents (Meijles et al., 2014; Bierlaire et al., 2013). Using GPS-devices takes less time compared to more traditional methods like travel diaries and it provides extra information on the participants behavior, like the duration of stops and the speed of the respondents (Meijles et al., 2014).

With the use of GPS-devices, privacy related issues could become a problem for the participation of respondents, although Taczanowska et al. (2008) (as stated in Meijles et al, 2014) state that few respondents refuse to participate because of these issues. Meijles et al. (2014) mention the issue that respondents' behavior could be influenced by the use of GPS-devices although they quote Taczanowska et al. (2008) who underscore that visitors who do not follow the rules are unlikely to participate.

## 2.7 Conceptual Framework

Figure 2.5 shows the relationships between the several aspects, covered in the previous paragraphs. The bold lined boxes and arrows show these relationships. The boxes with thin lines show the literature which is linked to the aspect it stands closest too.

The starting point of this research lies at the question whether people stay on the paths or leave them. This forms the basis for further divisions in nature perceptions, important aspects of nature areas and views on land management.

Besides the link from on/off path to the perceptions of nature, a link in the other direction is also visible. How people behave in nature is influenced by their ideas of nature. The perceptions of nature do also influence the important aspects of and the perception on land management, although this is a more shaded statement.

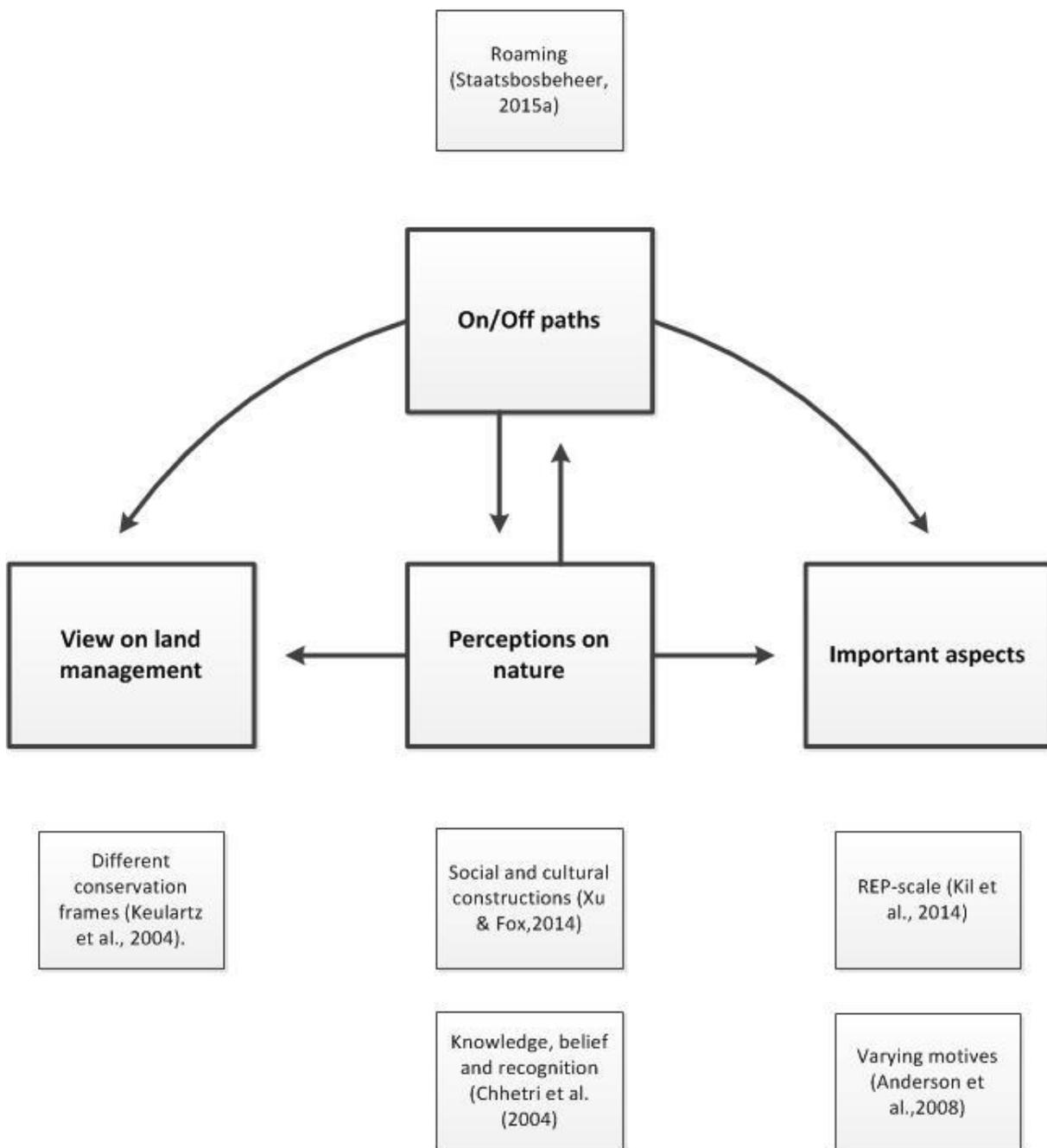


Figure 2.5: Conceptual model.

## 2.8 Hypotheses

Koster (2013) states that people did not leave the paths in his research, but since we will conduct this research in an area where it is allowed to leave the paths, my expectation is that people will use this liberty and leave the paths. Dinther (2015) confirmed this thought by stating that people do roam through nature when having the possibility.

*Hypothesis: More recreationists who are in an area where roaming is allowed, will leave the paths, compared to recreationalists staying on the paths.*

My expectation is that the one's leaving the paths search for other aspects in nature than the ones staying on the paths. Chhetri et al. (2004) found that visitors of nature go to specific places to fulfill their needs. Therefore my expectation is that recreationists searching for adventure will leave the paths, compared to recreationists wanting a day out.

*Hypothesis: Recreationist roaming through nature mention different aspects as being important to find in nature, compared to the ones staying on the paths.*

On the issue of land management we do expect differences between both groups of recreationalists. Based on Dinther (2015) and Bommel (2001) we expect recreationists roaming through nature to be less willing to close off a nature area for the conservation of that nature.

*Hypothesis: Recreationalists staying on the paths are more up to nature protection with a result of not being able to visit certain nature areas, compared to the recreationalists leaving the paths.*

## Chapter 3: Methodology

### 3.1 Study area: Terschelling

The study took place on the island of Terschelling. Terschelling is one of the Wadden Islands in the north of the Netherlands (see picture 3.1). Its length is 30km and width about 3,5km. The island



Picture 3.1: The Wadden-islands (Source: Leven met Water, 2015).

covers around 11.000 ha of which 80% consists of nature. The island has several villages, of which West- Terschelling, Midland and Hoorn are the biggest (see picture 3.2). Spread among the villages live about 5000 inhabitants (Waddenkiosk, 2015). Terschelling is chosen as area of research, since the land management organization of the island (Staatsbosbeheer) allows people to roam through



Picture 2.2: Map of Terschelling (Source: Texel 44)

nature (Berg, 2015). Staatsbosbeheer decided in collaboration with the inhabitants to keep the area open for access. This is in line with the history of the island, on which the inhabitants are used to the habit of open access of the nature, also mentioned as 'Oerol' (Noordhoff, 2013). Till late in the 19<sup>th</sup> century, private ownership of the land only applied to the summertime. In the other seasons, all land was accessible for everyone. Therewith should be taken into account that also during the summer, most owners could only access their own lands by crossing the land of others (Noordhoff, 2013). The habit of 'Oerol' is thus a known and very logical habit for the inhabitants of Terschelling and still

applies to the nature of the island, year round. For this research it is important that recreants have full access to nature, because for detecting their recreation behavior in nature restrictions of access could influence their behavior and therewith influence the results of this research. Because of the freedom to roam in nature on Terschelling this island was chosen for conducting the research.

## 3.2 Conducting the research

In this study, both a survey and GPS-track method are used. On two days we approached people on three different locations on the island to participate in this research (picture 4.2). A third day we approached people on the ferry of Rederij Doeksen from Harlingen to Terschelling. The respondents were first asked to participate in the survey, which consists of 23 questions and statements (appendix 4), and afterwards they were also asked to participate in the GPS-tracking study. By the use of an respondents code, the survey and GPS-track could be linked to each other.

## 3.3 GPS

Respondents were asked to use a GPS-device while recreating on Terschelling. This could be their own smartphone if it used Android as operating system, or otherwise a GPS-tracker we provided. The provided GPS-trackers are Qstarz, model BT-Q1000XT.

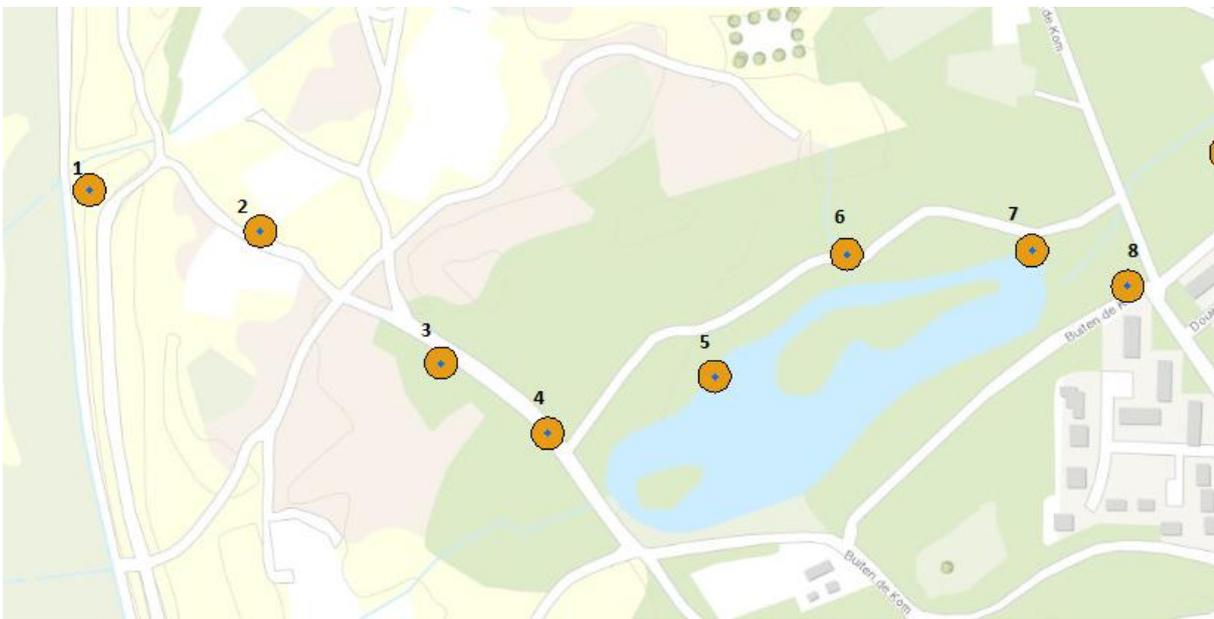
If the respondent chose to use his own smartphone, he had to download the Greentracker App. We provided a flyer with information on the use of this application (see appendix 5). This application tracked the route of the respondent and was very simple in use. After recording the route in this app, the route was anonymously send to our Greentracker account. The respondents had to note down their respondent number in the title of the track so we could connect the route to their survey. After sending the route, the respondent could delete the app from his smartphone.

The respondents who used the Qstarz tracker, could hand it over to us at the end of their recreational activity. We wrote down their respondent number and tracker number, so we could connect it to their survey. After downloading the smartphone-routes, they were analyzed in ArcMap10.2. The routes of the tracker were also analyzed in ArcMap10.2.

### 3.3.1 Defining if the respondent is on or off the path

#### 3.3.1.1. General

Most modern smartphones have GPS. Developed for the U.S. Defense department, the most accurate version of GPS is in their use, where the public version holds generally an accuracy of 5 to 10 meters (Bauer, 2013). This difference in accuracy is also influenced by the model of telephone (Bierlaire et al., 2013; Bauer,2013) and the time interval of plots. The trackers have a 10 second interval, where the smartphones have an interval between 15 seconds and several minutes. The lower amount of logged points, the smaller the accuracy of the route (Bierlaire et al., 2013). To analyze the walking behavior of the respondents, a buffer of 10 meters is used. In built areas or other dense areas like forests, the GPS can become less accurate. In this research, the accuracy of the logs in these areas is of less importance. For these cases, defining if a respondent is on or off path is based upon all logs together, together with the respondents' behavior on other parts of the route.



Picture 3.3: Analyzing the routes

Next to the mathematical interpretation of the routes, is the descriptive interpretation in which we look at the whole route of the respondent. The interpretation of plots which are more remote of the paths is dependent on the other plots. If more plots are removed from the paths and they show a pattern, a route can be interpreted as being of the path. As an example, picture 3.3 shows a part of the route of R149. The blue spot is the exact point of the plot and the orange circle is the buffer of 10 meters. From the picture it seems like R149 followed a path, although he left the path at two points (plot 1 and 5). This picture gives us the idea that R149 walked wherever he wanted, but it is not to be expected that he walked in the lake as plot 5 suggests. And since most of the plots are on the path, we interpret this as a failure of the GPS-device and we assume that R149 followed the path. Between plot 7 and 8 it is not known though what the respondent has done. It could be that he walked off the path, but since he followed the path in the rest of his route, we assume that he also followed the path at this point.

#### 3.3.1.2. Beach

At the beach, there are no routes, although some areas are more often visited than others. Because of the lack of paths, these tracks are not considered as being on or off path. For the dunes, where paths do exist, it was studied whether respondents show tracks on or off path. To detect the walking behavior of respondents, GPS will be used, as well as maps and air photos.

### 3.4 Survey

#### 3.4.1 Perceptions of nature

The statements which are of importance for detecting a person's nature perception are based on research of Buijs et al. (2006) and Boer & Schulting (2002). Both Buijs et al. (2006) and Boer & Schulting (2002) used quite the same elements to detect perceptions of nature, although the research of Boer & Schulting (2002) was more extended and focused besides the respondents' preferences for nature also on their support for current policies on nature. Both studies based their questionnaire upon a questionnaire previously designed by researchers of Alterra, although they both not mention the actual report from which the questionnaire is taken. The statements used in this study are taken from both the studies of Buijs et al. (2006) and Boer & Schulting (2002) but not

all questions are included. Thereby, some questions are inspired on their studies and are not explicitly the same. In appendix 1 an overview of the important statements is given.

Both Buijs et al. (2006) and Boer & Schulting (2002) used a factor analysis to find out if there was a common factor among the different questions. Difference between their studies and this research, is that for this research the questions which contributed to which perception of nature already are determined, based on results from their studies. Therefore, we assumed there was no need to do a factor analysis. Instead, the respondents were given points on the three perceptions if their answers corresponded with the required answers for each perception.

In the analysis, the first step was to decide what scores belonged to which different nature perceptions. In the study of Buijs et al. (2006), the statements are given, but the exact analysis is not explained and the descriptions on the statements is not delimited and open for interpretation. This made that the perceptions and statements should be linked to each other, without any literature to base the links on. As a result, some statements are used for two or more nature perceptions (see appendix 1 for overview of statements). Hereafter, the points received were divided by the amount of statements belonging to that particular perception (see appendix 2 for Syntax). This resulted in scores between 0-1 on all three perceptions. As an example, a respondent could score 0.55 on the Wilderness view, a score of 0.20 on the Functional view and a score of 0.07 on the Arcadian view. In total 92 questionnaires of respondents were analyzed, resulting in scores for the three separate nature perception views. The participants who did not answer all statements, which resulted in missing values, were left out of the analyses.

Most respondents have scores on all three perceptions. The scores of all respondents on all the perceptions are added in a ternary plot. Therefore the scores on the nature views had to be normalized to sum up to 100. Although the normalization of the scores can result in a distorted image of the division among the nature views, a ternary plot is used because it shows in one eyesight how the respondents are divided between the three nature perceptions. All respondents with missing values were left out of further research, because these respondents contribute to a distorted image. The respondents who scored zero points on two of the three nature views are included in this plot because they did not score zero points because of a missing value, but they just did not relate to the nature view. These respondents are colored blue in the plot. The number of respondents that was left is 67.

To check whether the statements cover the different nature perceptions in a right way, the respondents were asked what kind of nature they prefer the most. The question is stated as: "When do you think nature is most beautiful?". They could choose one of the following answers:

1. "Nature should be rough"
2. "Nature should be romantic"
3. "Nature should clearly be in use of men"
4. "Other, namely..."

The first answer covers the idea of the Wilderness view, the second of the Arcadian view and the third of the Functional view. Just one answer could be chosen, because each answer is linked to one nature perception. Since every option represents one nature perception, and this question is used as a controlling question, just one answer should be given. It could be seen as a difficult question

though, since people could score points on all three nature perceptions and therewith overlap on all three perceptions. Still this question could be used to point out the perception most preferred by a respondent and therefor just one answer is allowed.

In SPSS the link between the nature perceptions and the answers above were analyzed.

### **3.4.2 Comparing nature perceptions with views on land management**

As well as for the perceptions of nature as for the views on land management, statements of Buijs et al. (2006) and Boer & Schulting (2002) are used to find out which view on land management respondents have. On these statements, respondents could score points if their result matched the required result for the particular land management view (see appendix 3 for statements and scores). The received points were divided by the total statements necessary for each view. As a result, each respondent could receive a score between 0 and 1 for the Attachment view, the Attractive nature view and the Rurality view.

Since the goal of this study is to find out which land management views the different groups of nature perceptions hold, the land management views for the different groups of nature perception were studied. To classify the respondents in a nature view, a minimum score of 30% was set which should be reached in order to be classified in the nature perception. This limit is to my idea a good minimum, because when set lower a respondent was not convincingly linked to a perception. The ones who scored lower are left out of further analyses. If a respondent scored on more than one perception 30% or higher and the difference between these two perceptions was smaller than 20%, the respondent was classified in both perceptions. If the score on two perceptions was 30% or higher, but the difference between these two was bigger than 20%, only the highest perception was chosen. This 20% line is, as is the 30% minimum, an arbitrary percentage. As a result, the Wilderness view consists of 44 respondents, the Arcadian view of 18 respondents and the Functional view of 4 respondents, covered by 49 different respondents.

#### **3.4.2.1 Analyzing land management views**

In this paragraph a more thorough analysis will be done on the core elements of the land management views. Each view has a certain core-aspect, which will be analyzed, to see whether the ideas of Buijs (2009) come back in this research.

Buijs (2009) stated that in the Attachment view, feeling attached to the area forms an important element. In the other views this personal attachment is not of importance. The scores on this aspect will be researched, as well as the importance of the purity of nature. This aspect forms a core element of the Attractive nature view. For the Rurality view, the scores of respondents on the importance of protecting agricultural land will be analyzed, which forms the core element of the Rurality view.

### **3.4.3 Important aspects**

In the survey, respondents could tick off as many important aspects as they wanted. The survey was in Dutch, which can be found in appendix 4. Below, the statements as used in the paragraphs and their explanation are shown:

As stated in the graphs	Explanation
Purity	Nature has to be as pure as possible
Rest	Nature should be a place of tranquility and rest
Beauty	Nature should be beautiful
Adventure	It should be a place of adventures
Other recreationists	I should not be disturbed by other recreationists
Freedom to roam	I should have the freedom to walk wherever I want
Catering facilities	There should be catering facilities
Other	Other aspects, namely...

Table 3.1: Statements from the survey and how they are labeled in the paragraphs.

For each group of nature perceptions, the mean scores and standard deviations on the different nature aspects are measured. The results of these measurements are shown in paragraph 4.2.3.

#### 3.4.4 Linking the aspects to the statements

As a check whether people find the aspects important they tick off as being important, the differences in the mentioned aspects and the given scores to several statements are studied. As an example, the aspect 'beauty' is chosen.

The respondents who said this aspect is important to find in nature, were selected. After this, the given scores concerning 'beauty' were analyzed. In the survey are two statements involved concerning the beauty or attraction of nature, namely:

1. "The nature on Terschelling should be protected because the nature is very attractive"
2. "The nature on Terschelling should be protected because the nature itself is beautiful"

In SPSS we studied whether respondents gave similar answers on the several statements in order to find out if statements are useful in further analyses and to find out whether the aspects of nature are useful to use and well understood.

# Chapter 4: Results

## 4.1 Descriptives

92 persons participated in the survey. Thirteen 13 out of 92 respondents visited the island for the first time. Almost 60% came regularly to the island. As shown in table 4.1, 57 respondents visited the island for a holiday. ‘Rest and space’ is together with ‘Hiking and/ or cycling’ the second reason to visit Terschelling. Just ten out of 92 persons lived on the islands. Examples of other reasons to visit Terschelling are ‘visiting friends’ (R142, 45,46), ‘(organizing) an event’ (R58,46) and ‘geocaching’ (R65) (see appendix 6 for alternative answers on the questions in the survey).

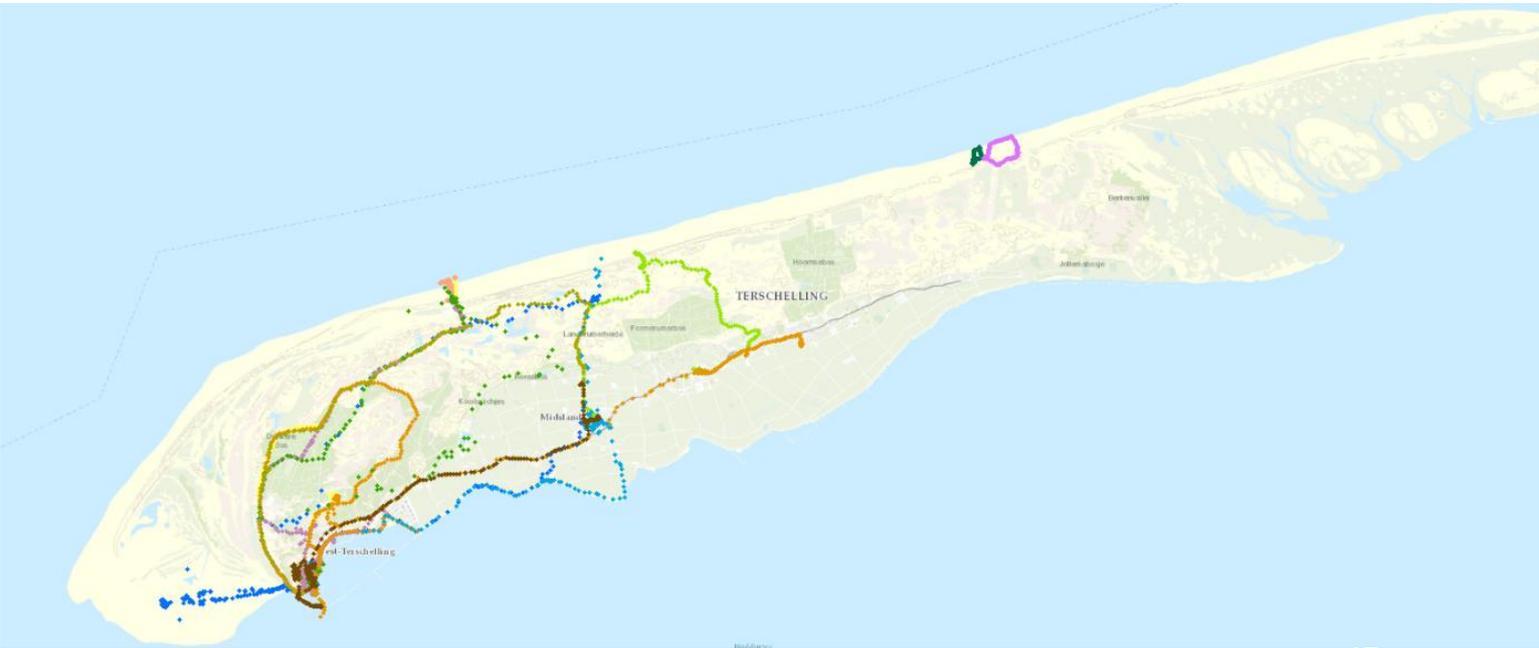
56% of the respondents is not a member of a nature organization. The ones with a membership mentioned organizations like Natuurmonumenten (22 times), Waddenvereniging (7 times), Wereld Natuur Fonds (9 times) and many others, resulting in 17 different nature organizations (see appendix 4.1 for an overview). 73 respondents stated they feel attached to the island. One did not answer this question.

Statistics		Family	Holiday	Rest and space	Work	Hiking and/ or cycling	Nature	I live here	Other
N	Valid	92	92	92	92	92	92	92	92
	Missing	0	0	0	0	0	0	0	0
Sum		11	57	39	0	39	33	10	7

Table 4.1: Reasons to visit Terschelling.

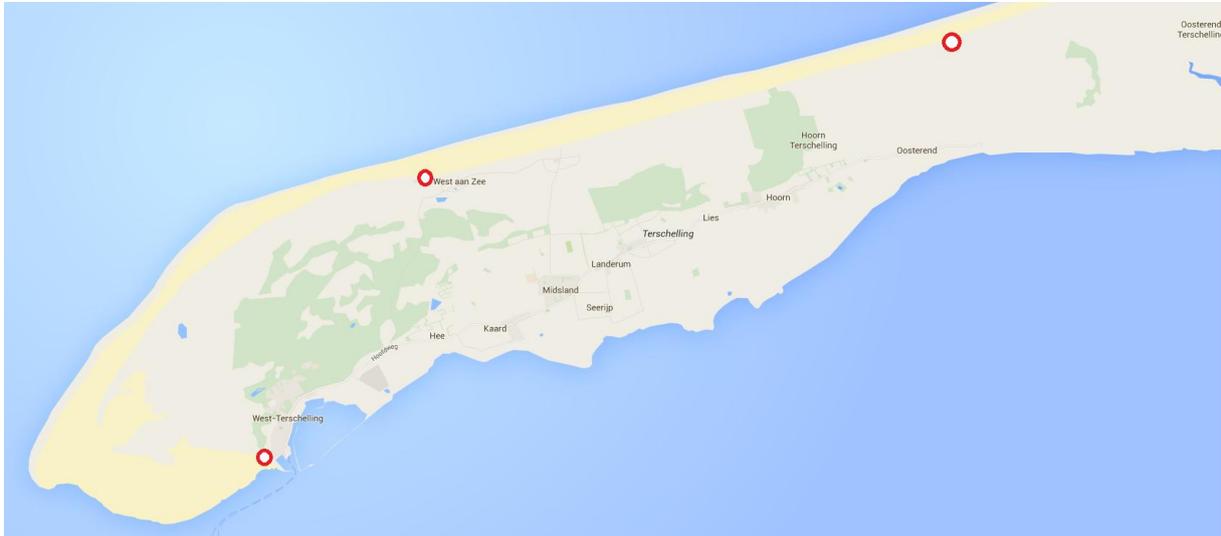
## 4.2 GPS

Of the 92 respondents, 11 respondents tracked their route. 1 respondent (R26) uploaded two routes, resulting in 12 routes in total. 4 of these routes were tracked by a GPS-device provided by us. The other 8 routes were uploaded via the Greentracker App. Many plots were found in the village of



Picture 4.1: Plots on Terschelling

West Terschelling, as well as for the town of Midland. The most visited area lies between West Terschelling, Midland and West aan Zee. Outside of the villages, a smaller amount of plots was found, although some routes seem to be more popular than others. For example the Badweg West and Longway are two popular routes, on which we found plots of 5 different GPS devices each. This makes sense as this was induced by the methodology of conducting our data (see picture 4.2).



Picture 4.2: Locations of conducting the research

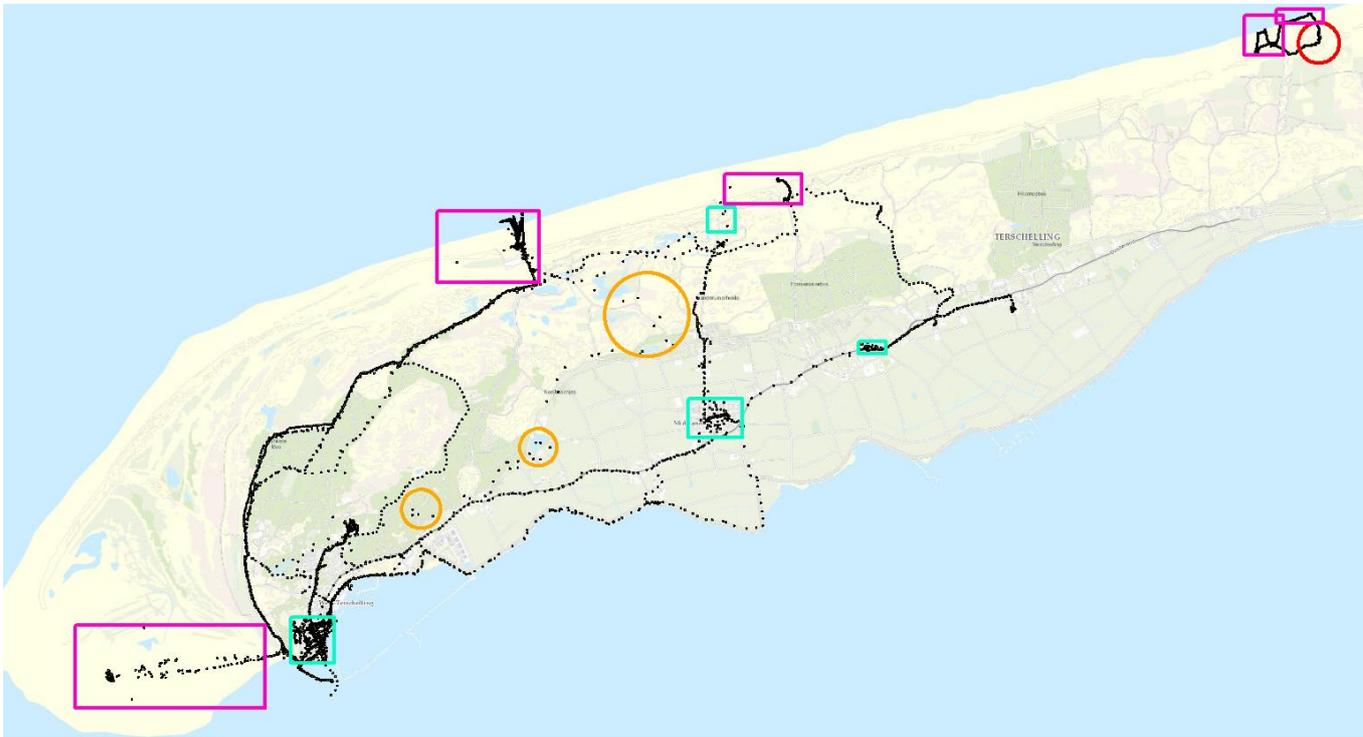
#### 4.2.1 On or off the paths

Using a buffer of 10 meter, we studied whether respondents left the routes. There was a big difference in the quality of the GPS. Some devices had an interval of 10 seconds, others of many minutes. Together with a difference in accuracy, many different plots were found. Picture 4.3 shows a plot which is easy to analyze. This plot of R74 has an even interval and the plots do not seem to leave the paths.



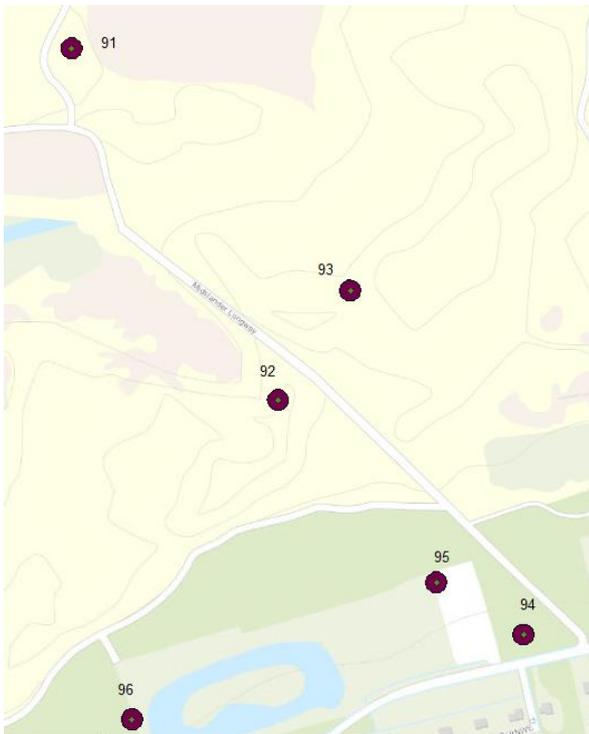
Picture 4.3: Route of R74 on Terschelling.

For analyzing which respondents recreated on and which respondents recreated off path, the plots on the beach were left out for further analyses, as well as the plots in towns. Also plots nearby houses or bungalow parks were left out of further analyses because of the possibility that people forgot to turn off their GPS device although they were already at home. Picture 4.4 captures all routes. The pink squares capture the routes on the beach which are left out of further analyses. The light blue squares show the plots in towns, which are also left out of further analyses. The colored circles show a plot which is off the path. Further down, the plots in these circles are analyzed more closely.



Picture 4.4: Showing plots off the paths.

The orange circles capture different plots of route 1354. The plots are not in line with the path and plots are not scattered on the map in a chronological order. The numbers of the plot are based upon the original data and time of plot. As is made visible in picture 4.5, plot 93 is closer to plot 92 and plot 95 is closer to 93 than 94.



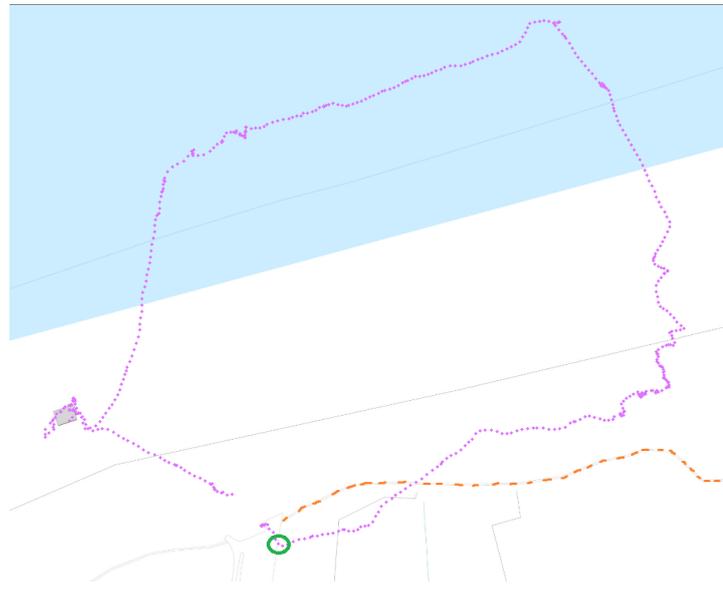
Picture 4.5: Capture of Route 1354.



Picture 4.6: Capture of Route 1354.

Further on route 1354 we see another failure (see picture 4.6). Here we measured big distances between the plots and some plots are located in the water. Route 1354 had more fallacies, on which we decided to leave out the route for further analyses.

The red circle belongs to R123. This participant started walking at the parking lot and turned right into the dunes (see picture 4.7). The participant starts at the green circle, which is a path, although not visible on the Basiskaart (as used in ArcMap 10.2) as well as on the map of VVV Terschelling 2015 (see picture 4.8). We can see this path on the air photo (picture 4.9) (colored pink). The orange line is a path which is also visible on the air photo and on the map VVV Terschelling 2015.



Picture 4.7: Route of participant 123.

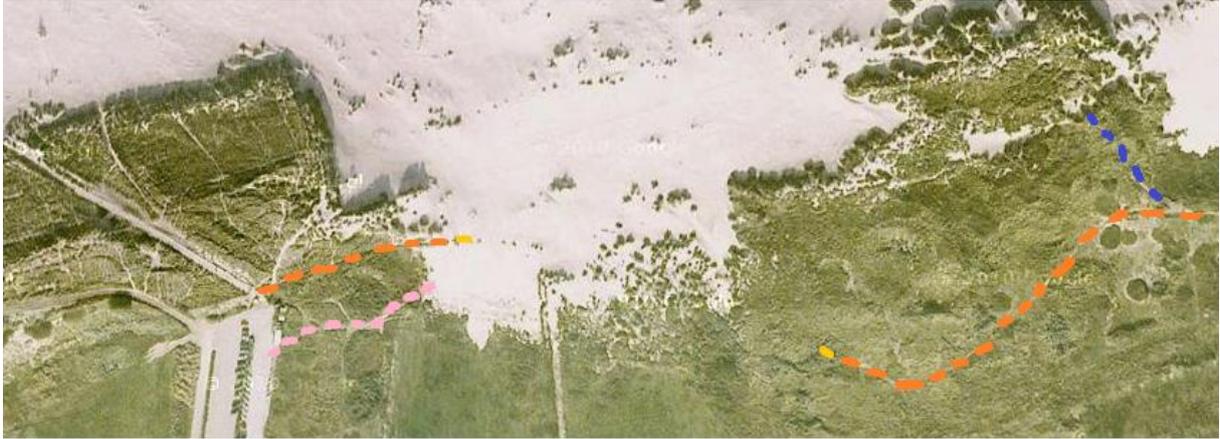
As soon as there is more sand, the path is not visible on the air photo anymore. You can see that the orange line stops between the two yellow points and after the sand part it continuous again. Even in the greener area, it is sometimes hard to detect the path. The same problem is faced for the pink path, which seems to disappear as soon as it enters the sandy area. This means that the air photo is not clear enough to detect a path in a sandy area. Therefore it is not clear from the data whether a respondent recreates on or off the path.

Looking at the air photo, we also find a blue line. This line shows a path that is visible on the air photo, but which we cannot find on the map of VVV Terschelling or on the Basiskaart as used in ArcMap10.2. This means that not all tracks people use, are mapped.



Picture 4.8: Capture of map of VVV Terschelling 2015

Out of 12 routes, 1 route is left out of further analyses, and 10 respondents stayed on the path. For one respondent it is not sure if he stayed on or off the path, even after analyses by air photo, a topographic map of Terschelling and analyzing GPS-data. From these maps and photos we can conclude all respondents walked on the paths, with one participant as an unknown exception.



Picture 4.9: Air photo of the dunes (Source: Google, 2015)

## 4.3 Survey

### 4.3.1 Perceptions of nature

In the ternary plot of the individual perceptions of nature (see figure 4.1), we find that most respondents have a perception of nature that consists of a combination of two or more nature perceptions.

Most respondents are located on the Wilderness -Arcadian- axis of the ternary plot and just 1 respondent is located on the Arcadian-Functional axle of the plot. Two respondents are in between the Wilderness and Functional view, although they incline more to the Wilderness view. No respondents scored 100% on the Functional perception, 1 respondent is found completely in the Wilderness perception and two respondents scored 100% on the Arcadian nature perception. The respondents in blue (R63, R77 and R148) scored 100% on a certain nature view because they scored zero on the others, which was not due to missing values. Since the respondents with missing values are left out of this ternary plot, the total amount of respondents is 67.

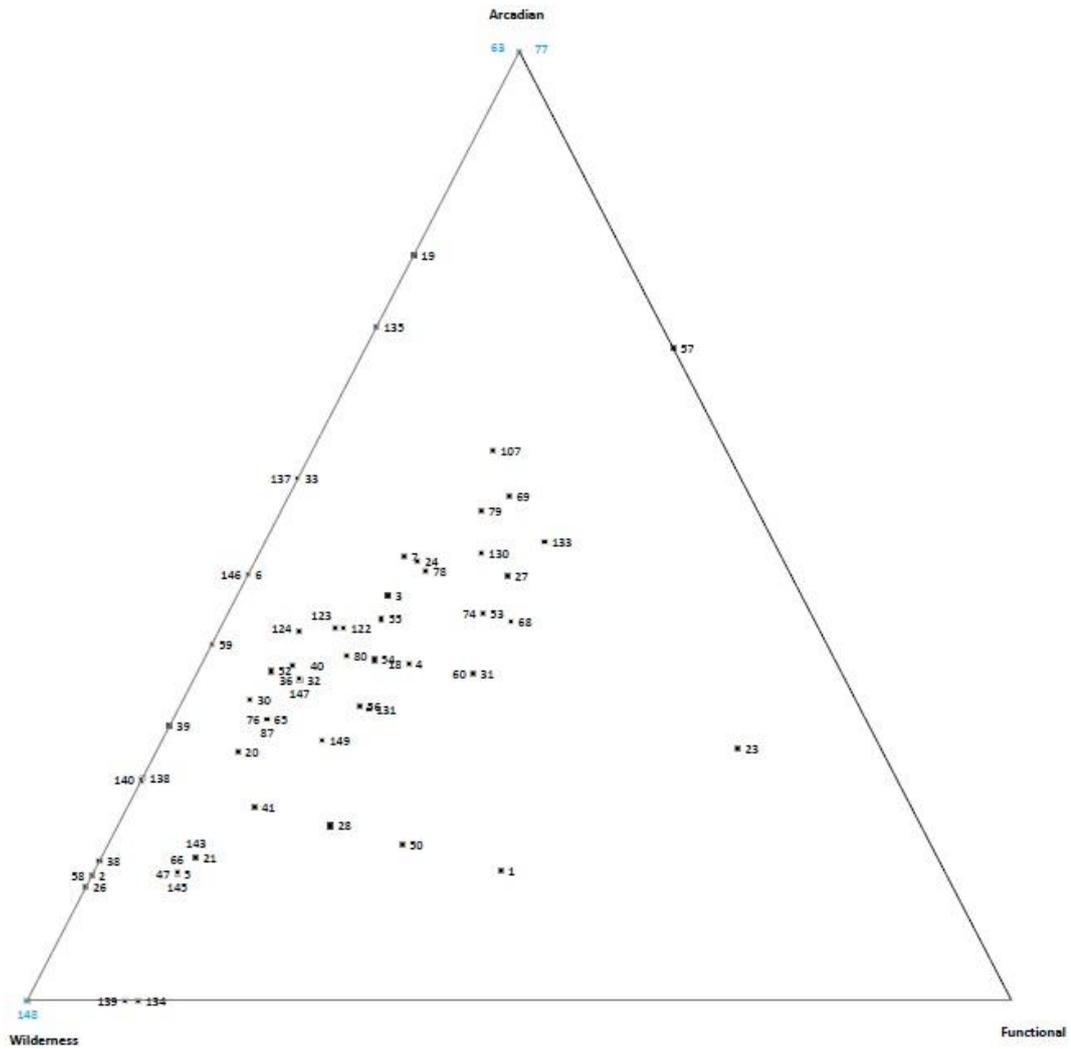


Figure 3.1: Ternary plot of respondents' nature perceptions.

The scores (given in percentages) on the question concerning the beauty of nature ('When do you think nature is most beautiful?') are listed in the table below:

	Nature should be rough	Nature should be romantic	Nature should clearly be in use of men	Other	Missing
Wilderness	84,1	4,5	0	9,1	2,3
Arcadian	77,8	5,6	5,6	11,1	0
Functional	25	0	25	25	25

Table 4.2: What nature do people in the different groups of nature perceptions prefer? (scores in %)

The highest response rate is in the Wilderness group (N=44) and the lowest in the Functional group (N=4). The Wilderness group as well as the Arcadian group prefers nature when it is rough. The Functional group shows an even distribution over the different answers, except for the 'nature should be romantic' option.

### 4.3.2 Views on land management

The average scores on the three frames are shown in table 4.3. For each nature perception the groups are formed as explained in paragraph 3.1.2.

	Attachment view	Attractive nature view	Rurality view
Wilderness view	,4535	,5682	,3068
Arcadian view	,6296	,5667	,4306
Functional view	,4583	,4000	,3750

Table 4.3: Average scores on the land management views

Table 4.3 shows the average scores of the three nature views on the land management views. The higher the score, the more the nature view is related to the view on land management. We do not find a clear difference in land management preferences between the three separate nature views.

To get a better understanding of the spread among the land management views, a ternary graph was plotted to show the relationship between the various nature perceptions and the views on land management. In this plot, the respondents of the Wilderness group are colored black. The Arcadian group is green and the respondents of the Functional group are pink. As was also visible in table 4.3, the scores of the three groups lay very close to each other.

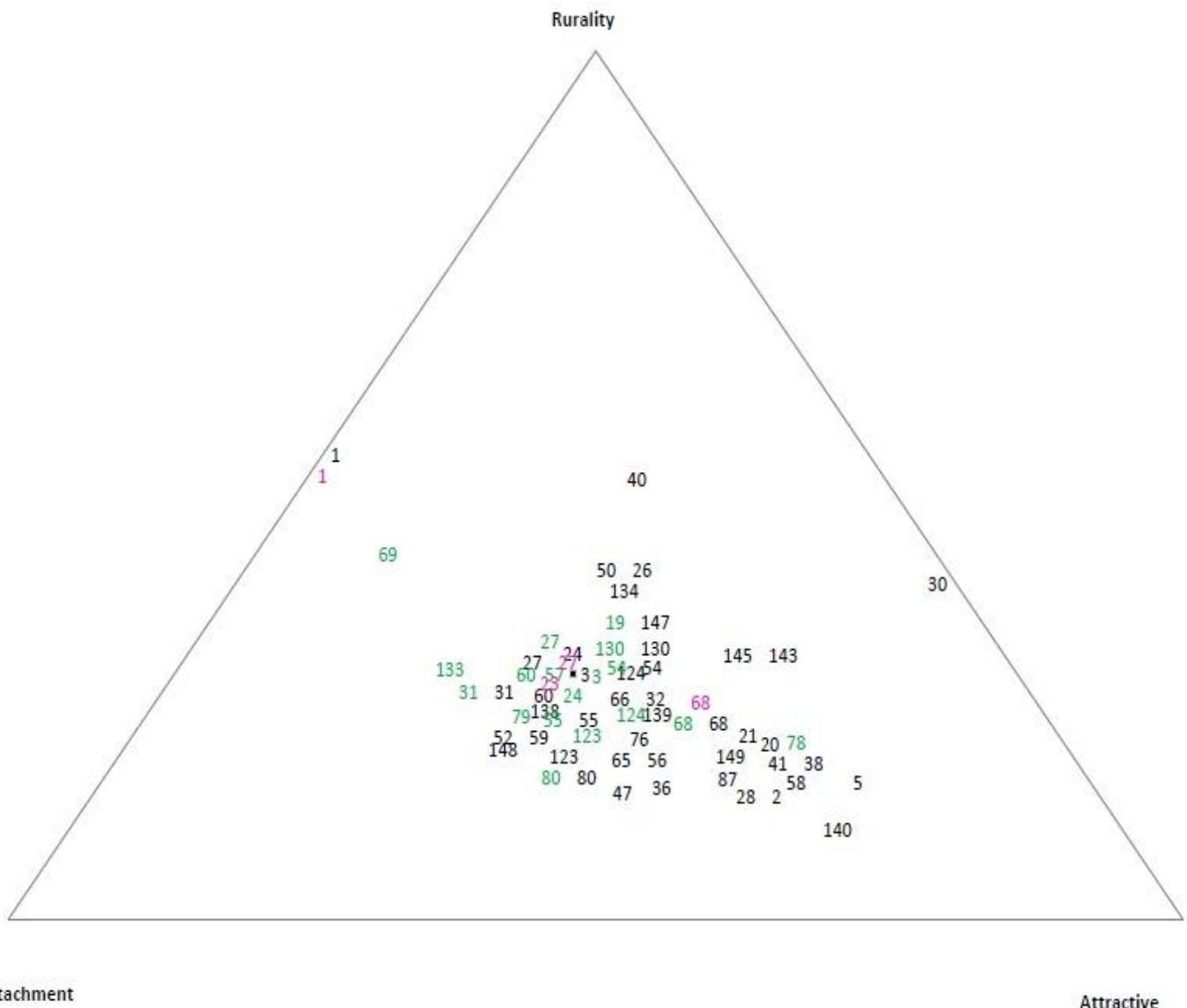


Figure 4.3: Ternary plot of the scores of the nature perceptions on the land management views.

Looking at the ternary plots, most respondents with a Wilderness view are between the 'Attachment' and the 'Attractive' frame. Just a few respondents deviate from this pattern. The average scores (table 4.3) show that the respondents in the Wilderness view score highest on the 'Attractive nature view' but as we can see from the ternary plot they do not fit in just one land management view.

The respondents in the Arcadian view are also scattered in the middle of the ternary plot, although their score on the Rurality view is in average higher, compared to the Wilderness view (table 4.3). They show a preference for the Attachment view.

The average scores on the land management views are also measured for the 'Functional perception', which show an inclination for the 'Attachment frame'. The scores on the land management views come very close to each other.

Overall, differences on the preferences for land management views are subtle. Where the Wilderness view has a slight preference for the Attractive nature view, the Arcadian view heads more in the direction of the Attachment view. One strong trend that is observed based on the graph is that the Functional view scores much lower on the Attractive nature view.

The option of conducting a chi-square test to test if the difference is significant, is considered, but since assumptions would be violated, the test is not conducted. Looking at table 4.3 and at the ternary plot (figure 4.3) we do not see significant differences between the three nature perceptions.

4.3.2.1 Analyzing land management views

In the tables below, the different mean scores are summarized for the persons who said to feel attached to Terschelling (N=68) (table 4.4) and the ones who said not to feel attached to the island (N=16) (table 4.4).

Descriptive Statistics			
	N	Mean	Std. Deviation
Attachment	68	,4436	,21856
Valid N (listwise)	67		

Table 4.4: Score on Attachment view of attached respondents.

Descriptive Statistics			
	N	Mean	Std. Deviation
Attachment	16	,3229	,18727
Valid N (listwise)	16		

Table 4.5: Score on Attachment view of non-attached respondents.

The attached respondents score higher on the Attachment view compared to the non-attached respondents. The standard deviation is a bit higher for this group of respondents.

Table 4.6 shows the mean score on the Attractive nature view for respondents who said that ‘purity’ is an important aspect of nature (N=68). Table 4.7 shows the mean score on the Attractive nature view for the respondents who do not define ‘purity’ an important aspect to find in nature (N=17). The mean score for this group is lower compared to the group which defines ‘purity’ as an important aspect.

Descriptive Statistics			
	N	Mean	Std. Deviation
Attractive nature	68	,5324	,28202
Valid (listwise)	N 68		

Table 4.6: Scores on Attractive nature. Purity is of importance.

Descriptive Statistics			
	N	Mean	Std. Deviation
Attractive nature	17	,3176	,23515
Valid (listwise)	N 17		

Table 4.7: Scores on Attractive nature. Purity is not of importance.

Table 4.8 shows the score on the Rurality view for the respondents which scored a 4 or 5 (important to very important) on the question “Do you think protection of agricultural land is important?” (N=47). Comparing this result to the score of the group which scored 3 or lower on this question (N=38) (table 4.9), we see a small difference. The score for the first group is higher.

Descriptive Statistics			
	N	Mean	Std. Deviation
Rurality	47	,3324	,12842
Valid (listwise)	N 47		

Table 4.8: Score on Rurality view for respondents which scored 4 or higher on the question “Do you think protection of agricultural land is important?”.

Descriptive Statistics			
	N	Mean	Std. Deviation
Rurality	38	,2500	,08220
Valid N (listwise)	38		

Table 4.9: Score on Rurality view for respondents which scored 3 or lower on the question “Do you think protection of agricultural land is important?”.

#### 4.3.3 Which aspects are of importance for the different groups of nature perceptions?

For each group of nature perceptions, the mean scores on the different nature aspects are measured. Figure 4.4 shows the important aspects for the respondents in the Wilderness group (N=44). Purity of the nature is seen as the most important aspect of nature, followed by rest and adventure. Just two out of 44 respondents find catering facilities important to find in nature.

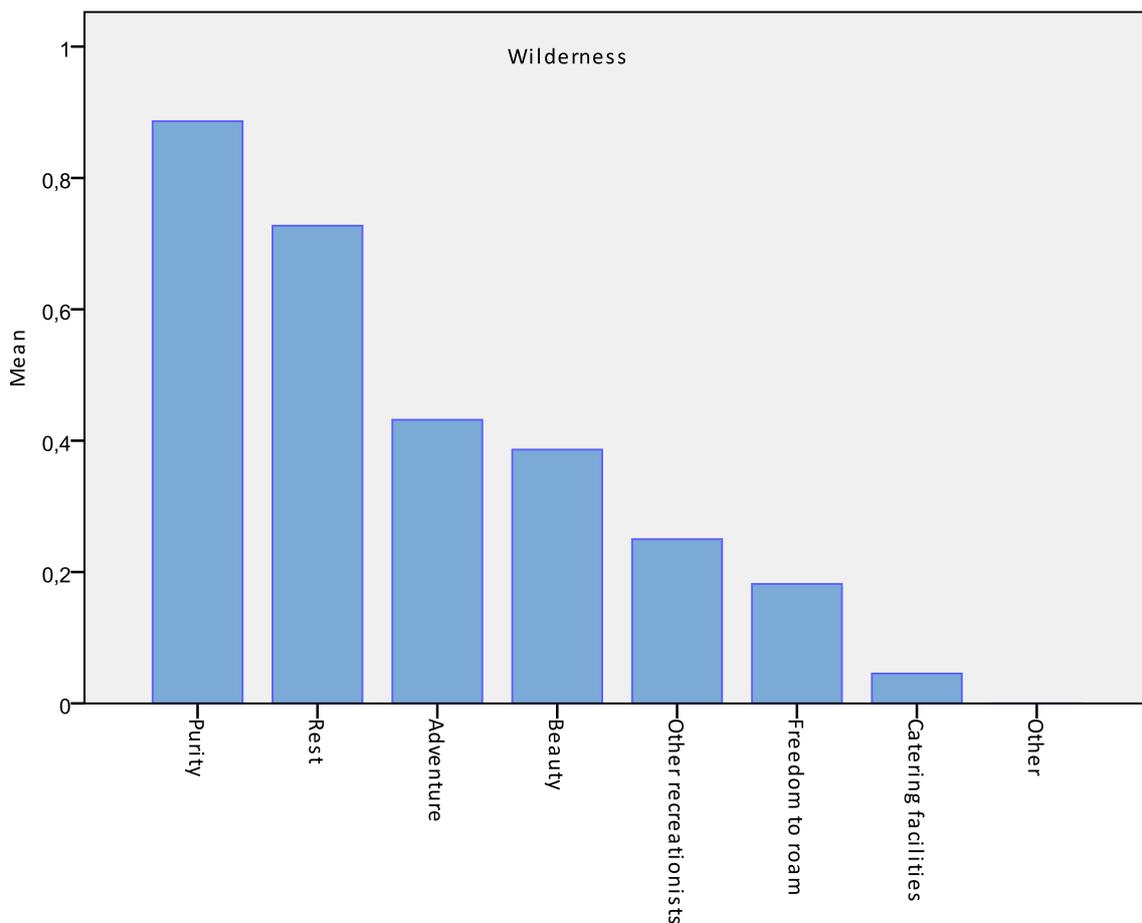


Figure 4.4: Important aspects of the Wilderness group

The Arcadian group is formed by 18 respondents. They define purity of nature, rest and the freedom to roam the most important aspects (figure 4.5).

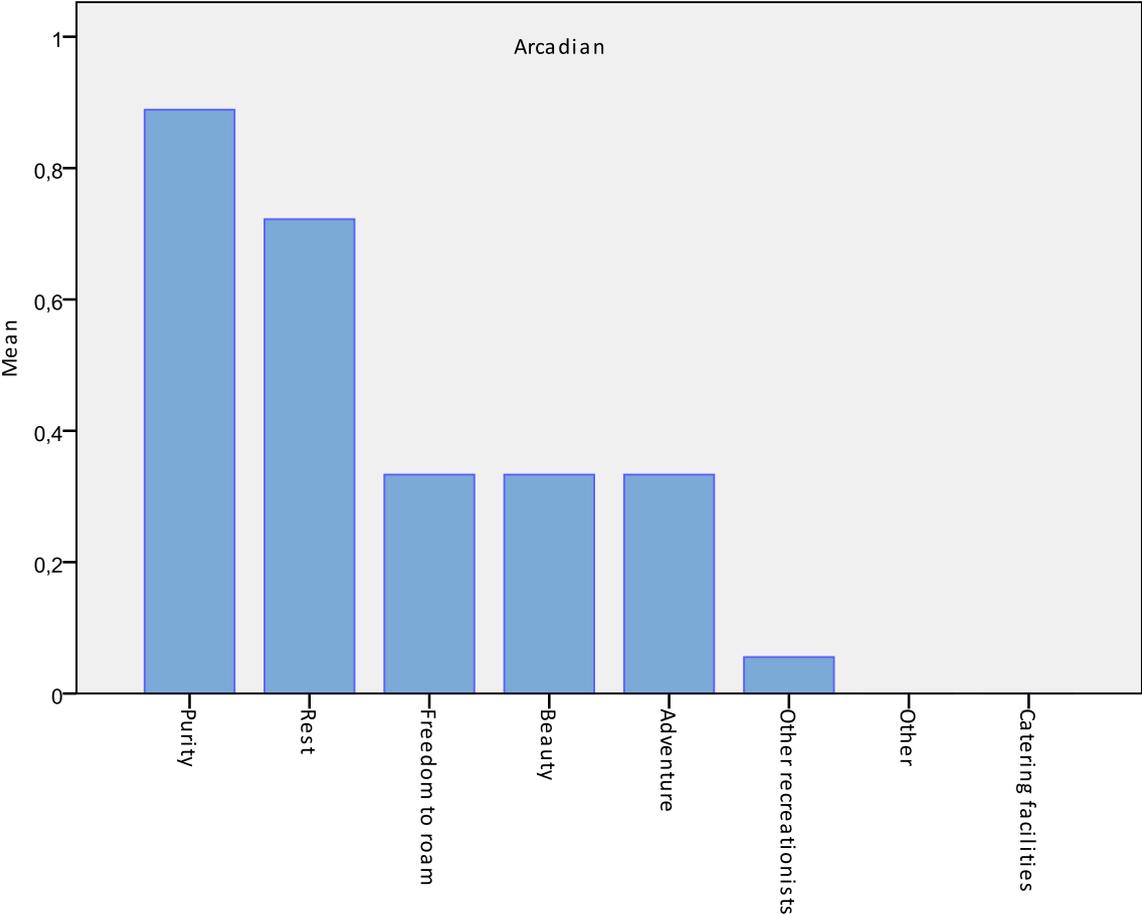


Figure 4.5: Important aspects of the Arcadian group

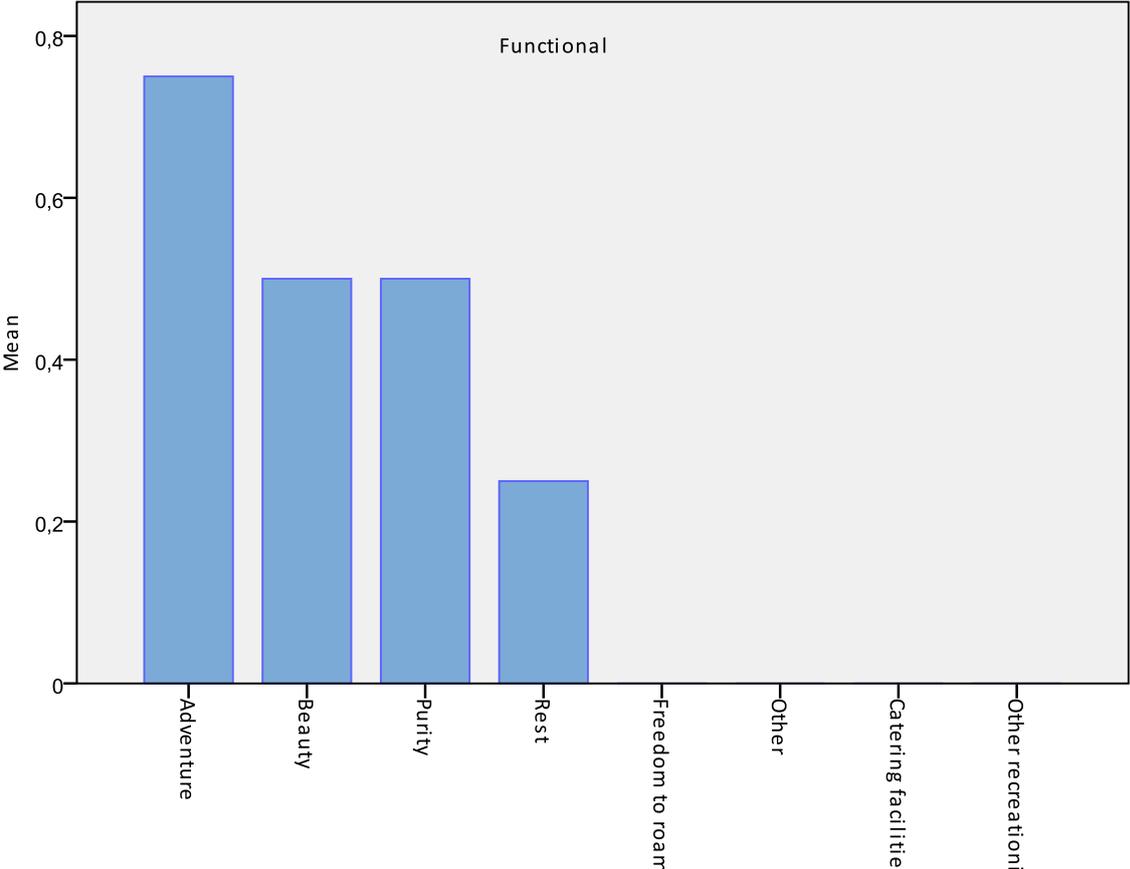


Figure 4.6: Important aspects of the Functional group

In the Functional group, we have four respondents. The most important aspect for these respondents is adventure. Beauty and purity have the same mean score. No respondent chose for freedom to roam, catering facilities, other recreationists or other.

All results together (table 4.10), we see purity as the highest scoring aspect of nature, closely followed by rest and beauty. These results are in line with results found by Natuurmonumenten (2014).

Descriptive Statistics			
	N	Mean	Std. Deviation
Purity	92	,78	,415
Rest	92	,76	,429
Beauty	92	,45	,500
Adventure	92	,38	,488
Other recreationists	92	,26	,442
Freedom to roam	92	,20	,399
Other	92	,03	,179
Catering facilities	92	,02	,147
Valid N (listwise)	92		

Figure 4.7 shows the results for the survey of Natuurmonumenten, in which respondents who are member of Natuurmonumenten are separated from the ones without a membership. Each respondents could mention 3 aspects. As a result, the three most important aspects were rest, purity and beauty. The only difference between studies is the order of the first two aspects.

Table 4.10: The most important aspects to find in nature.

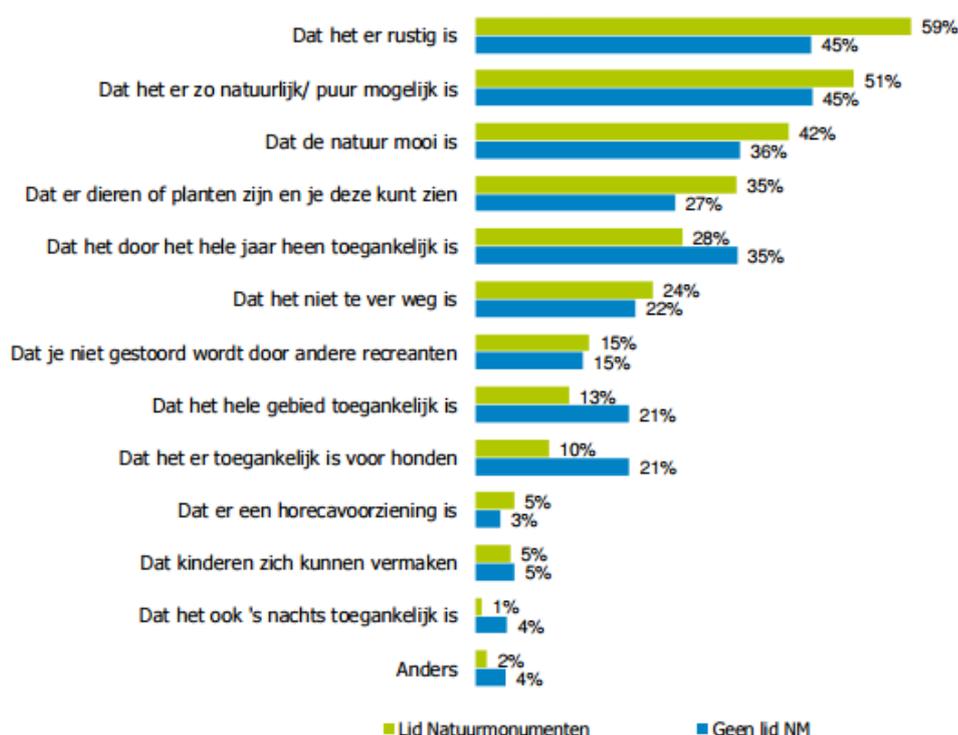


Figure 4.7: Most important aspects in nature. (Source: Natuurmonumenten 2014).

#### 4.3.3.1 Linking the aspects to the statements

41 out of 92 respondents stated that the beauty of nature is an important aspect to find when visiting a nature area. Their scores for the two statements concerning the beauty and attraction of nature is made visible below:

	Nature is attractive	Nature is beautiful
Totally agree	22	22
Agree	15	15
Other	2	3
Missing value	2	1

Table 4.11: Scores on beauty.

Five respondents who graded 'nature is beautiful' 5, did not score 5 on 'nature is attractive'.

When we start from the other side, with the scores on the statements, we find that 53 out of 92 respondents scored 5 on 'nature is attractive'. Of these respondents, only 22 said beauty is an important aspect to find in nature. Including the respondents who scored 4 on the statement (N=81), only 37 respondents stated beauty is an important aspect to find in nature.

Of the 82 respondents scoring 4 or 5 on 'nature is beautiful', 37 define this an important aspect to find in nature. Of the respondents who scored 5 on this statement (N=55), 22 state beauty is an important aspect to find in nature. This results in the fact that only 4 respondents who mentioned the aspect 'beauty' as an important aspect to find in nature, did not range the two statements concerning beauty in nature a 4 or 5.

## Chapter 5: Conclusion and discussion

### 5.1 Conclusion

At the end of this study we can conclude that although people are free to roam through the nature of Terschelling, people stay on the paths. Eleven of the 92 respondents participated in the GPS-research, resulting in twelve routes. Of the eleven participants who joined the GPS-research one track was left out from analysis due to unclear data. All participants stayed on the path (a total of 10).

As a result the hypotheses are rejected. Further research is done on the division of recreationists in the three different nature perceptions. We looked into the relationship between perceptions of nature and perceptions on land management. Also the preferences for aspects to find in nature are researched, based on the division of respondents in nature perceptions.

Dividing the respondents in the three perceptions of nature, 44 respondents can be considered as having a Wilderness view, 18 an Arcadian view and 4 a Functional view. In total 67 respondents of the 92 were spread among these views.

A significant link between the nature views and views on the management of the land is not found. The respondents in the Wilderness view seem to incline towards the Attractive nature view, whereas the Arcadian group has a higher mean score on the Attachment view. The respondents in the Functional view score almost the same on all three land management views, although their highest score is on the Attachment view. The absence of a big difference between the various nature perceptions is not unexpected, since the respondents gained scores on all perceptions. Some respondents were even placed in more than one nature perception, which automatically led to a less distinct score for each nature perception.

The verification question confirmed the reliability of the statements concerning the important aspects in nature. Concerning these aspects, we see that overall purity, rest and beauty are the most important aspects to find. This is almost the same as the scores on the survey of Natuurmonumenten (2014) in which rest, purity and beauty were scored as most important. The only difference is the sequence of the aspects.

### 5.2 Discussion

#### 5.2.1 GPS

GPS is very useful to locate people and track their routes. The problem we faced during this research, had not to do with the use of GPS, but with the idea that people have of GPS. Some people were cautious about the idea of having a GPS-device with them and related it to "Big Brother is watching you". This idea was stronger when people had to download the application on their Smartphone. Possibly will people in the future be less anxious about this "Big Brother" when the Smartphone becomes an even more integrated object in society. Another disadvantage we faced was the GPS-application we used. The application was only to be used on Smartphones with Android System which led to a lower amount of respondents.

### 5.2.2 Perceptions of nature

For this research we used the traditional nature perceptions. Buijs (2009) presented five views which would represent our society better, but we decided to stick with the traditional perceptions instead. The used perceptions fit in less with society because they are meant for experts in nature and the management of nature. The use of these perceptions might have led to the minor differences between the perceptions.

Also the idea that people would fit in one nature perception seems wrong. People score on all views and Buijs (2009) does not state explicitly that people would fit in just one perception of nature. It could be questioned though whether the 5 perceptions of nature of Buijs (2009) would make a difference, resulting in a division in which people are related to one perception, instead of being related to several perceptions. People stated to assess nature differently in various situations. Does this mean that people have one nature perception in which their perceptions of nature can slightly differ, or do people vary in between these nature perceptions during different situations?

The assumption that people would fit in just one perception made it harder to classify respondents. To overcome this problem of not being able to classify people in one perception we came up with the ternary plot. This plot gave a clear overview of the scores on the perceptions, although the normalization made that extreme scores were harder to plot. As a consequence, the data lost some of its depth and the final result is less distinct. The decision to classify respondents in more than one perception made that the differences between the three perceptions were smaller.

The statements which we used to define respondents' perceptions of nature were based on the literature of Buijs et al. (2006) and Boer & Schulting (2002). Since the statements were already defined and linked to the perceptions, we did not see the necessity to do a factor analysis. Resulting in scores on all three perceptions, a factor analysis could possibly have made a difference since it could have grouped the respondents differently, therewith leading to other conclusions.

### 5.2.3 Important aspects of nature

Linked to the perceptions of nature, is the question when nature is defined as being most beautiful. The question concerning when nature is most beautiful could possibly have led to a different result when it was allowed to give more answers. Since people do not correspond with just one nature view but several, multiple answers would have fit better. Also the term "romantic nature" is possibly not well chosen, since it does not really cover the idea of 'idyll nature' which is seen as core element of the Arcadian perception.

Concerning the beauty aspect of nature, we should look closer into the conclusions coming from this analysis. Less than 50% of the respondents stating nature is beautiful mentioned beauty as an important aspect. This could mean that people who state nature is beautiful, do not seek for this beauty when visiting nature. Or it could be read as nature is beautiful from itself and since its beauty is already there, you do not see it as an extra aspect in nature, because it is an intrinsic value of nature which you cannot separate and therefore not add. This result raises questions whether the survey captures respondents' ideas about nature well. If people can react in different ways on quite the same paper, the validity of these questions could be questioned.

#### **5.2.4 Land management views**

In paragraph 4.3.2.1 the core elements of the land management views are analyzed. The scores seem to be in line with the ideas of Buijs (2009), but we could question whether this comparison says that much about the groups, since the mean scores on the land management views are formed by mean scores on a set of statements. The scores on just one element of these views (like purity, attachment and protection of agricultural land) do not state that much about the formed groups, although the values are in line with the expectation from the literature of Buijs (2009).

#### **5.2.5 The concept of 'nature'**

At last, we could question whether the concept of nature is captive in a quantitative research. During the research respondents said they had a hard job scoring the various statements. This could have led to a distorted result. As stated in the literature, people search for different forms of nature in different situations, so peoples' ideas of nature could therewith differ too.

### **5.3 Recommendation**

Although this study shows the contemporary ideas on nature and land management, further research is needed to give a more complete idea on peoples' perceptions of nature and on the management of the land. Therefore we recommend to do a qualitative research instead, to capture a person's image of nature at different moments during a longer period of time. Instead of conducting a survey in which the questions are already focused on certain nature images, an interview can give new insights in contemporary perceptions of nature. Besides the study on peoples' ideas, also the walking behavior of people should be captured during a longer period of time to find out if people behave differently in nature when their goal in nature varies. These people should also visit divers nature areas, to see whether people behave differently in another nature. This can again be done with GPS-devices or with an application which is suitable for Android System as well as iOS.

## Chapter 7: Literature

- Anderson, D.H., Wilhelm Stanis, S.A., Schneider, I.E., & Leahy, J.E. (2008). Proximate and distant visitors: Differences in importance ratings of beneficial experiences. *Journal of Park and Recreation Administration*, 26(4), 47–65.
- Antrop, M. (2005). Why landscapes of the past are important for the future. *Landscape and Urban Planning*, 70, 21-34.
- Ark (2015). *Ark Natuurontwikkeling*. Consulted on 14-5-2015 via <http://www.ark.eu>.
- Bemmel, N. van (2001). Struinen door de natuur mag weer. *De Volkskrant*. 23-06-2001.
- Bierlaire, M., Chen, J., & Newman, J. (2013). A probabilistic map matching method for smartphone GPS data. *Transportation Research Part C*, 26, 78-98.
- Bird, L., Wüstenhagen, R., & Aabakken, J. (2002). A review of international green power markets: recent experience, trends, and market drivers. *Renewable Sustainable Energy Reviews*, 6(6), 513-536.
- Boer, de T.A. & Schulting, R. (2002). *Zorg(en) voor natuur – Draagvlak voor natuur en natuurbeleid in 2001*. Alterra-rapport 453. Wageningen: Alterra, Research Instituut voor de Groene Ruimte.
- Brauer, C. (2013). On the (In-)Accuracy of GPS Measures of Smartphones: A Study of Running Tracking Applications. *11th International Conference on Advances in Mobile Computing & Multimedia*, 11.
- Brockington, D., Duffy, R., & Igoe, J. (2008). *Nature unbound: Conservation, capitalism and the future of protected areas*. London: Earthscan.
- Buijs, A. (2009). *Public Natures: Social representations of nature and local practices*. Wageningen: Wageningen UR.
- Buijs, A., Langers, F. & Vries, de S. (2006). *Een andere kijk op groen - beleving van natuur en landschap in Nederland door allochtonen en jongeren*. Rapport 24. Wageningen: Wettelijke Onderzoekstaken Natuur & Milieu.
- Chhetri, P., Arrowsmith, P., & Jackson, M. (2004). Determining hiking experiences in nature-based tourist destinations. *Tourism Management*, 25, 31-43.
- Choi, A.S. & Fielding, K.S. (2013). Environmental attitudes as WTP predictors: A case study involving endangered species. *Ecological Economics*, 89, 24-32.
- Davis, M., Chew, M.K., Hobbs, R.J., Lugo, A.E., Ewel, J.J., Vermeij, G.J., Brown, J.H., Rosenzweig, M.L., Gardener, M.R., Carroll, S.P., Thompson, K., Pickett, S.T.A., Stromberg, J.C., Tredici, P., Suding, K.N., Ehrenfeld, J.G., Grime, J.P., Mascaro, J. & Briggs, J.C. (2011). Don't judge species on their origins. *Nature*, 474, 153 - 154.
- Dinther, M. van (2015). De paden op maar niet erbuiten. *De Volkskrant*. 21-10-2015.

Dunlap, R.E. & Van Liere, K.D. (1978). The "new environmental paradigm" A proposed measuring of instrument and preliminary results. *Journal of Environmental Education*, 9(4), 10-19.

Folmer, A., Haartsen, T. & Huigen, P.P.P. (2013). Explaining emotional attachment to a protected area by visitors' perceived importance of seeing wildlife, behavioral connections with nature, and sociodemographics. *Human Dimensions of Wildlife*, 18, 435-449.

Gerald G. Marten (2001). *Human Ecology- basic concepts for sustainable development*. Abingdon: Earthscan.

Hermann, N., Voß, C., & Menzel, S. (2012). Wildlife value orientations as predicting factors in support of reintroducing bison and of wolves migrating to Germany. *Journal of nature conservation*, 21, 125-132.

Kaenzig, J., Heinzle, S.L., & Wüstenhagen, R. (2013). Whatever the consumers wants, the consumer gets? Exploring the gap between consumer preferences and default electricity in Germany. *Energy Policy*, 53, 311-322.

Kaiser, F.G., Brügger, A., Hartig, T., Bogner, F.X., & Gutscher, H. (2014). Appreciation of nature and appreciation of environmental protection: How stable are these attitudes and which comes first? *Revue européenne de psychologie appliquée*, 64, 269-277.

Kaiser, F. G., Hartig, T., Brügger, A., & Duvier, C. (2013). Environmental protection and nature as distinct attitudinal objects: an application of the Campbell paradigm. *Environment and Behavior*, 45, 369-398.

Kil, N., Holland, S.M. & Stein T.V. (2014). Structural relationships between environmental attitudes, recreation motivations, and environmentally responsible behaviors. *Journal of Outdoor Recreation and Tourism*, 7, 16-25.

Keulartz, J., Windt, H. van der & Swart, J. (2004). Concepts of Nature as Communicative Devices: The Case of Dutch Nature Policy. *Environmental Values*, 13(1), 81-99.

Kopnina, H. (2011). Qualitative Revision of the New Ecological Paradigm (NEP) Scale for children. *International Journal of Environmental Research*, 5(4), 1025-1034.

Koster, R. (2013). *Walkingbehavior in the Drents-Friese Wold*. Masterthesis Rijksuniversiteit Groningen.

Leven met water (2015). *Leven met water*. COnsulted on 10-10-2015 via <http://levenmetwater.weebly.com/de-waddeneilanden.html>

LNV Consumentenplatform (2009). *Van picknickplek tot ecoduct- over mensenwensen voor natuur*.

Lowenthal, D. (2005). Natural and Cultural Heritage. *International Journal of Heritage Studies*, 11(1), 81-92.

Marwijk, R.B.M., van. (2009) *These routes are made for walking: Understanding the transactions between nature, recreational behaviour and environmental meanings in Dwingelderveld National Park, the Netherlands*. Wageningen: wageningen UR.

Mealey, L., & Theis, P. (1995). The Relationship Between Mood and Preferences Among Natural Landscapes: An Evolutionary Perspective. *Ethology and Sociobiology*, 16, 247-256.

Meijles, E.W., Bakker, M. de, Groote, P.D., & Barske, R. (2014). Analysing hiker movement patterns using GPS data: Implications for park management. *Computers, Environment and Urban Systems*, 47, 44-57.

Momsen, K., & Stoerk, T. (2014). From intention to action – can nudges help consumers to choose renewable energy? *Energy Policy*, 74, 376-382.

Natuurmonumenten (2014). Natuurbeleving nader bekeken. Leusden: MarketResponse

Natuurmonumenten (?) Boswachters, vakmensen-Goed natuurbeheer is niet vanzelfsprekend. <https://www.natuurmonumenten.nl/sites/default/files/Cahier%20Natuurbeheer.pdf>

Noordhoff, I. (2013). Grazen in stuivende duinen. Consulted on 05-10-2015 via [http://www.rug.nl/research/kenniscentrumlandschap/mascripties/grazen\\_in\\_stuivende\\_duinen\\_i\\_noordhof.pdf](http://www.rug.nl/research/kenniscentrumlandschap/mascripties/grazen_in_stuivende_duinen_i_noordhof.pdf).

Oakes, T.S. & Price, P.L. (Red.) (2008). *The Cultural Geography Reader*. Oxon: Routledge.

Olson, J.M. & Zanna, M.P. (1993). Attitudes and attitude change. *Annual Review Psychology*, 44, 117-154.

Price, J.C., Walker, I.A. & Boschetti, F. (2013). Measuring cultural values and beliefs about environment to identify their role in climate change responses. *Journal of Environmental Psychology*, 37, 8-20.

Pruim, F. (2013). Zelfs een plant kan rustgevend werken. *Groen*, 22, summer 2013.

Ramblers (2015). *Ramblers- at the heart of walking*. Consulted on 16-7-2015 via [www.ramblers.co.uk](http://www.ramblers.co.uk).

Rientjes, S. (2002). Making Nature Conservation Modern: An Analysis of Developments in Nature Conservation Policy in Relation to Macro-social Changes—The Netherlands as a Case Study. *Journal of Environmental Policy & Planning*, 4, 1-21.

Rijksdienst voor Cultureel Erfgoed (2015). *Landschap in Nederland*. Consulted on 28-05-2015 via <http://landschapin nederland.nl>.

Roberts, J.A. & Bacon, D.R. (1997). Exploring the Subtle Relationships between Environmental Concern and Ecologically Conscious Consumer Behavior. *Journal of Business Research*, 40, 79-89.

Samenwerkingsverband Nationale Parken (2015). *Samenwerkingsverband Nationale Parken*. Consulted on 26-09-2015 via <http://www.nationaalpark.nl/>.

Sandell, K. and Fredman, P. (2010). The Right of Public Access – Opportunity or Obstacle for Nature Tourism in Sweden? *Scandinavian Journal of Hospitality and Tourism*, 10(3), 291-309.

Schultz, W., Gouveia, V. V., Cameron, L. D., Tankha, G., Schmuck, P., & Franek, M. (2005). Values and their relationship to environmental concern and conservation behavior. *Journal of Cross-cultural Psychology*, 36(4), 457- 475.

Shultis, J.D. and Way, P.A. (2006). Changing Conceptions of Protected Areas and Conservation: Linking Conservation, Ecological Integrity and Tourism Management. *Journal of sustainable tourism*, 14(3), 223-237.

Staatsbosbeheer (2015a). *Staatsbosbeheer*. Consulted on 12-05-2015 via <http://www.staatsbosbeheer.nl/over-staatsbosbeheer/organisatie/feiten-en-cijfers>. Driebergen: Staatsbosbeheer.

Staatsbosbeheer (2015b). *Staatsbosbeheer*. Consulted on 13-7-2015 via <http://www.staatsbosbeheer.nl/natuurgebieden/terschelling/over-terschelling>. Driebergen: Staatsbosbeheer.

Swart, J.A.A., Windt, H. van der, & Keulartz, J. (2001). Valuation of nature in conservation and restoration. *Restoration Ecology*, 9(2), 230-238.

Texel 44 (2015). *De Texel 44*. Consulted on 10-10-2015 via <http://www.tx44.nl/>.

Thompson, S.C.G. & Barton, M.A., 1994. Ecocentric and anthropocentric attitudes toward the environment. *Journal of environmental psychology*, 14(2), 149-157.

Van den Berg, A., (2004). *De charme van de savanne- Onderzoek naar landschapsvoorkeuren*. Consulted on 13-08-2015 via <http://www.agnesvandenbergnl/savanne.pdf>

Vaughn, W. (2010). *Ternary plots*. Consulted on 12-06-2015 via <http://wvaughan.org/ternaryplots.html>.

Waddenkiosk (2015). *Waddenkiosk*. Consulted on 14-08-2015 via [www.waddenkiosk.nl](http://www.waddenkiosk.nl).

Xu, F. & Fox, D. (2014) Modelling attitudes to nature, tourism and sustainable development in national parks: A survey of visitors in China and the UK. *Tourism Management*, 45, 142-158.

#### **Other sources:**

J. van den Berg; Adviseur recreatie en natuurbeleving Staatsbosbeheer

Klantenservice Staatsbosbeheer – telefonisch contact op 12 november 2014

Klantenservice Natuurmonumenten – telefonisch contact op 12 november 2014

VVV Terschelling. Topografische Kaart Terschelling 2015.

## Chapter 8: Appendix

### 1. Overview of statements for the perceptions of nature

In this appendix are the statements which are of importance for defining a respondent's nature perception. These statements are used in the survey, which was in Dutch. Because of the loss of information that could come into existence when the statements would be translated, we decided to keep the statement in Dutch. The explanation for why this statement is important for the particular nature perception is in English. In the last column, you will find the score that should be reached in order to receive a point on the statement.

#### Wilderness view

Statement	Explanation	Score
Dode bomen moeten worden opgeruimd	The assumption is that people with this nature perception prefer the roughness of nature. Thereby do they prefer to disturb nature as little as possible (Keulartz et al., 2004).	1/2
De mens moet de natuur soms helpen, door bijvoorbeeld in koude winters wilde dieren te voeren	The assumption is that people with this view do not agree on this statement, because they want to disturb nature as little as possible. Feeding animals conflicts with the idea of roughness, fear and astonishment in nature.	½
Hoe langer een natuurgebied door de mens met rust is gelaten, des te groter is de waarde van dit gebied.	To agree with this statement is in line with the conviction that nature should be left alone and should not be interfered by human influences.	5
Hoogspanningsmasten (elektriciteitsmasten) en windturbines (moderne windmolens) maken natuurgebieden minder waardevol.	The influence of humans on the landscape is in this case not deniable and easily to see. Therefore, the suggestion is that people with this view would agree on this statement.	5
Het verbouwen van gewassen en het houden van vee hoort bij natuur	Agriculture is the interference of man on nature. This conflicts with the ideal of as little as possible disturbance of man on nature.	1/2
Een gebied is pas echt een natuurgebied als de mens er geen invloed op uitoefent	To agree on this statement is in line with the description of the Wilderness view.	5
Grond dat vooral gebruikt wordt om voedsel te produceren is per definitie geen natuur	The assumption is that people who have a Wilderness view on nature, do agree on this statement, since they prefer the state of nature that is opposite to a cultivated nature.	5/4
Natuur zou moeten worden gestuurd en gereguleerd door mensen	People with a Wilderness view would not agree on this, because they prefer nature with as little as possible influences of humans.	1
Moerassen	Swamps are seen as natural aspects and existed already before mankind	5
Overstromingen	Floods are caused by nature but can (indirectly) be caused by humans too. Therefore I decided that scoring a 4 or 5 is sufficient.	5/4
Natuurontwikkeling mag niet. Natuur moet de vrije hand krijgen.	To agree on this statement is in line with the description of Wilderness .	5

### Functional view

Statement	Explanation	Score
Dode bomen moeten worden opgeruimd	This statement fits in the Functional view on nature, because people should be able to walk through nature.	5/4
De mens mag de natuur gebruiken zoals hij zelf wil.	This statement fits well in this perception of nature, because nature is seen as a resource for human activities.	5
Hoogspanningsmasten (elektriciteitsmasten) en windturbines (moderne windmolens) maken natuurgebieden minder waardevol	People should not agree on this statement to fit well in the Functional view, because these attributes are of importance for humans. The devaluation of the landscape therefore is not of importance.	1
Het verbouwen van gewassen en het houden van vee hoort bij natuur	This is in line with the core character of the Functional view: nature is in the service of humans.	5
Een gebied is pas echt een natuurgebied als de mens er geen invloed op uitoefent	To agree on this statement is in conflict with the Functional view, because humans have the authority to do with nature whatever they want.	1
Grond dat vooral gebruikt wordt om voedsel te produceren is per definitie geen natuur	Since nature is seen as a resource for humans, people should not agree on this statement.	1
Natuurgebieden zijn er vooral voor de mens om te recreëren	To agree on this statement is in line with the core feature of the Functional view: nature is in service of humans.	5
Natuur zou moeten worden gestuurd en gereguleerd door mensen	Scoring a 4 or 5 on this statement is in line with the Functional view. People should regulate nature to control it and make use of it. If nature is not in control, it is harder to use it as wanted.	5/4
Maïsvelden	Corn fields are in use of humans. This is therefore in line with the idea of humans controlling nature for their own use.	5/4
Kamerplanten	Plants in use of men, for example for decoration in house, can be seen as nature.	5/4
Stadsparken	Urban parks are created by men and in use of men.	5/4
Een boer op zijn tractor	A farmer on his tractor stands for the use of nature ad its resources by humans.	5/4
De natuur op Terschelling moet beschermd worden omdat de mens er goed gebruik van kan maken	This statement is focused o the use of the island by humans. This is in line with the core element of the Functional view. So it is necessary to agree on this statement.	5
Natuurontwikkeling mag ten koste gaan van landbouw	To be classified in the Functional view, you should not agree on this statement, because nature is in service of human activities, and agriculture is seen as one of those activities.	1
Natuurontwikkeling mag ten koste gaan van recreatie	To agree on this statement is in conflict with the core element of the Functional view, since	1

	humans should be able to do with nature what they want.	
--	---	--

### Arcadian view

Statement	Explanation	score
Hoogspanningsmasten (elektriciteitsmasten) en windturbines (moderne windmolens) maken natuurgebieden minder waardevol	To see high voltage towers and windmills in the landscape, does not fit in the Arcadian ideal of what a landscape should look like. Therefore it is necessary to score a 5 on this statement.	5/4
Vindt u het beschermen van agrarisch landschap belangrijk?	The rural aspect of the landscape is important in the Arcadian view. Scoring a 5 on this element is necessary to be part of the Arcadian view.	5
Het verbouwen van gewassen en het houden van vee hoort bij natuur	These rural aspects are core part of the Arcadian view. Therefore the respondent needs to agree on this statement to be included in this view.	5
Grond dat vooral gebruikt wordt om voedsel te produceren is per definitie geen natuur	In the Arcadian view, the collaboration of men and nature in an idyllic sense forms the core. Therefore, to fit in this view, the respondent should not agree on the statement.	1/2
In natuurgebieden moet de mens kunnen recreëren	From the idea of the experiencing of nature, this statement fits well in the Arcadian view.	5/4
De natuur op Terschelling moet beschermd worden omdat het samenspel tussen natuur en landbouw zo mooi is	The idealization of nature and rural life is the core idea of the Arcadian view. To agree on this statement fits well in the Arcadian view.	5
Natuurontwikkeling mag ten koste gaan van landbouw	The rural life forms a core element of this view. Therefore, respondents should not agree on this statement to be part of the Arcadian view.	1
Oude boerderijen	This fits well in the idealization of rural life. Especially the focus on 'old' farms fits in the idea of rural life around 1850.	5
Een boer op zijn tractor	The farmer working on the land fits well in the Arcadian idea of rural life.	5

## 2. Syntax for nature views

### Defining the Wilderness score:

If (StelNat1 < 3) wdStelNat1 = 1.

If (StelNat1 > 2) wdStelNat1 = 0.

If (StelNat3 < 3) wdStelNat3 = 1.

If (StelNat3 > 2) wdStelNat3 = 0.

If (StelNat6 = 5) wdStelNat6 = 1.

If (StelNat6 ne 5) wdStelNat6 = 0.

If (StelNat7 = 5) wdStelNat7 = 1.

If (StelNat7 ne 5) wdStelNat7 = 0.

If (StelNat9 < 3) wdStelNat9 = 1.

If (StelNat9 > 2) wdStelNat9 = 0.

If (StelNat10 = 5) wdStelNat10 = 1.

If (StelNat10 ne 5) wdStelNat10 = 0.

If (StelNat11 > 3) wdStelNat11 = 1.

If (StelNat11 < 4) wdStelNat11 = 0.

If (StelNat13 = 1) wdStelNat13 = 1.

If (StelNat13 ne 1) wdStelNat13 = 0.

If (EchNat1 = 5) wdEchNat1 = 1.

If (EchNat1 ne 5) wdEchNat1 = 0.

If (EchNat3 > 3) wdEchNat3 = 1.

If (EchNat3 < 4) wdEchNat3 = 0.

If (NatOntw5 = 5) wdNatOntw5 = 1.

If (NatOntw5 ne 5) wdNatOntw5 = 0.

Execute.

COMPUTE wdscore = (wdStelNat1 + wdStelNat3 + wdStelNat6 + wdStelNat7 + wdStelNat9 + wdStelNat10 + wdStelNat11 + wdStelNat13 + wdEchNat1 + wdEchNat3 + wdNatOntw5)/11.

EXECUTE.

Defining the Functional score:

If (StelNat1 > 3) fuStelNat1 = 1.

If (StelNat1 < 4) fuStelNat1 = 0.

If (StelNat2 = 5) fuStelNat2 = 1.

If (StelNat2 ne 5) fuStelNat2 = 0.

If (StelNat7 = 1) fuStelNat7 = 1.

If (StelNat7 ne 1) fuStelNat7 = 0.

If (StelNat9 = 5) fuStelNat9 = 1.

If (StelNat9 ne 5) fuStelNat9 = 0.

If (StelNat10 = 1) fuStelNat10 = 1.

If (StelNat10 ne 1) fuStelNat10 = 0.

If (StelNat11 = 1) fuStelNat11 = 1.

If (StelNat11 ne 1) fuStelNat11 = 0.

If (StelNat12 = 5) fuStelNat12 = 1.

If (StelNat12 ne 5) fuStelNat12 = 0.

If (StelNat13 > 3) fuStelNat13 = 1.

If (StelNat13 < 4) fuStelNat13 = 0.

If (EchNat2 > 3) fuEchNat2 = 1.

If (EchNat2 < 4) fuEchNat2 = 0.

If (EchNat4 > 3) fuEchNat4 = 1.

If (EchNat4 < 4) fuEchNat4 = 0.

If (EchNat6 > 3) fuEchNat6 = 1.

If (EchNat6 < 4) fuEchNat6 = 0.

If (EchNat7 > 3) fuEchNat7 = 1.

If (EchNat7 < 4) fuEchNat7 = 0.

If (BesWant2 = 5) fuBesWant2 = 1.

If (BesWant2 ne 5) fuBesWant2 = 0.

If (NatOntw3 = 1) fuNatOntw3 = 1.

If (NatOntw3 ne 1) fuNatOntw3 = 0.

If (NatOntw4 = 1) fuNatOntw4 = 1.

If (NatOntw4 ne 1) fuNatOntw4 = 0.

Execute.

Compute fuscure = (fuStelNat1 + fuStelNat2 + fuStelNat7 + fuStelNat9 + fuStelNat10 + fuStelNat11 + fuStelNat12 + fuStelNat13 + fuEchNat2 + fuEchNat4 + fuEchNat6 + fuEchNat7 + fuBesWant2 + fuNatOntw3 + fuNatOntw4)/15.

Execute.

#### Defining the Arcadian score:

If (BesWant4 = 5) arcBesWant4 = 1.

If (BesWant4 ne 5) arcBesWant4 = 0.

If (NatOntw3 = 1) arcNatOntw3 = 1.

If (NatOntw3 ne 1) arcNatOntw3 = 0.

If (EchNat5 = 5) arcEchNat5 = 1.

If (EchNat5 ne 5) arcEchNat5 = 0.

If (EchNat7 = 5) arcEchNat7 = 1.

If (EchNat7 ne 5) arcEchNat7 = 0..

If (StelNat7 > 3) arcStelNat7 = 1.

If (StelNat7 < 4) arcStelNat7 = 0.

If (StelNat8 = 5) arcStelNat8 = 1.

If (StelNat8 ne 5) arcStelNat8 = 0.

If (StelNat9 = 5) arcStelNat9 = 1.

If (StelNat9 ne 5) arcStelNat9 = 0.

If (StelNat11 < 3) arcStelNat11 = 1.

If (StelNat11 > 2) arcStelNat11 = 0.

If (StelNat12 > 3) arcStelNat12 = 1.

If (StelNat12 < 4) arcStelNat12 = 0.

Execute.

Compute arcscore = (arcBesWant4 + arcNatOntw3 + arcEchNat5 + arcEchNat7 + arcStelNat7 + arcStelNat8 + arcStelNat9 + arcStelNat11 + arcStelNat12)/9.

Execute.

### 3. Statements for defining the land management view

#### Attractive nature perception

Statement	Explanation	Score
De mens mag de natuur gebruiken zoals hij zelf wil	The natural value and intrinsic value of nature are seen as core elements of this view. Letting humans do with nature whatever they want does not stroke with this perception on land management.	1
Hoe langer een natuurgebied door de mens met rust is gelaten, des te groter is de waarde van dit gebied	The intrinsic value of nature is seen as an important element of this perception and with the lesser influences of humans, the natural value seems more important.	5
In natuurgebieden moet de mens kunnen recreëren	The freedom of humans in nature is not of importance for this view on land management.	1
De natuur op Terschelling moet beschermd worden omdat de natuur erg aantrekkelijk is	Since the natural value and scenic beauty are core elements, scoring a 5 on this statement fits well in this perception.	5
De natuur op Terschelling moet beschermd worden omdat de natuur vanuit zichzelf mooi is	Here the intrinsic value of nature is underscored and thus fits well in the Attractive nature view.	5

#### Attachment perception

Statement	Explanation	Score
Vindt u het beschermen van agrarisch landschap belangrijk?	The agricultural function is of importance for this perception. Therefore scoring a 5 is necessary.	5
De natuur op Terschelling moet beschermd worden omdat ik mij er op mijn plek voel	Personal attachment to the area forms the core element of this land management view. Scoring a five on this statement is seen as necessary.	5
De natuur op Terschelling moet beschermd worden omdat de natuur erg aantrekkelijk is	Scenic beauty is an element of this perception, but since it does not form the core element of the perception, scoring a 4 is sufficient enough.	5 & 4
De natuur op Terschelling moet beschermd worden omdat de natuur vanuit zichzelf mooi is	Intrinsic value is an element of this view, but since it does not form the core element of the land management perception, scoring a 4 is sufficient enough.	5
Natuurontwikkeling mag ten koste gaan van cultureel erfgoed	Cultural heritage forms one of the core elements of this view and therefore a 1 should be scored on	1

	this statement.	
Natuurontwikkeling mag ten koste gaan van landbouw	The agricultural function of the area is that important, that degrading the agricultural function conflicts with this view.	1

### Rurality perception

Statement	Explanation	Score
Vindt u het beschermen van agrarisch landschap belangrijk?	The agricultural function and the rural area are the most important elements of this view. A five should be scored.	5
Grond dat vooral gebruikt wordt om voedsel te produceren is per definitie geen natuur	Rurality and nature can be combined, according to this view. So agreeing on this statement is in conflict with this view on land management.	1
De natuur op Terschelling moet beschermd worden omdat de natuur erg aantrekkelijk is	It does not belong to the core element of this view, but it is of importance. Thus scoring a 4 is sufficient enough.	5 & 4
De natuur op Terschelling moet beschermd worden omdat de natuur vanuit zichzelf mooi is	It does not belong to the core element of this perception, but it is of importance. Thus scoring a 4 is sufficient enough.	5 & 4
Natuurontwikkeling mag ten koste gaan van landbouw	No, agriculture is the core of this view and thus a one should be scored.	1
Grote maïsvelden	This is an aspect linked to agriculture and therefore fits well in this view.	5
Oude boerderijen	This is an aspect linked to agriculture and therefore fits well in this view.	5
Een boer op zijn tractor	This is an aspect linked to agriculture and therefore fits well in this view.	5

## 4. Survey

The questions which are marked with a \*, were not used in my research.

### Enquête landschapsvoorkeuren en natuurbeelden Terschelling 2015

*De volgende vragenlijst duurt 10 minuten en is opgesteld voor ons Masteronderzoek aan de Rijksuniversiteit Groningen. De antwoorden uit deze enquête zijn volledig geanonimiseerd. Deze resultaten worden naast de data van de GPS gelegd. Zowel de vragen uit de enquête als de GPS-data zijn niet traceerbaar naar u als persoon.*

**\*1.** Uit hoeveel personen bestaat uw groep?

.....

**2.** Komt u vaker op het eiland Terschelling?

- Nee, dit is de eerste keer
- Ik ben hier al enkele malen eerder geweest
- Ja regelmatig

**3.** Wat is de reden van uw bezoek aan Terschelling? Kruis aan wat voor u van toepassing is.

- |                                      |  |
|--------------------------------------|--|
| <input type="radio"/> Familiebezoek  | <input type="radio"/> Wandelen en/of Fietsen |
| <input type="radio"/> Vakantie       | <input type="radio"/> Natuur                 |
| <input type="radio"/> Rust en Ruimte | <input type="radio"/> Ik woon hier           |
| <input type="radio"/> Werk           | <input type="radio"/> Anders namelijk.....   |

**\*4.** Door welke factoren wordt uw route bepaald

- Een van te voren uit gestippelde route
- Te bezichtigen hoogtepunten (hotspots) op het eiland
- We volgen geen route maar beslissen op het moment zelf
- Toegankelijkheid van het gebied; Verklaar.....
- Anders namelijk.....

**6.** Voelt u zich betrokken bij Terschelling?

Nee / Ja

7. Bent u lid van een natuur- of milieuorganisatie?

Nee / Ja, namelijk.....

2.1 Hoe aantrekkelijk vindt u het onderstaande landschap:



Bron foto: Imares  
Wageningen UR

Helemaal niet aantrekkelijk 1 2 3 4 5 6 7 8 9 10 Heel erg aantrekkelijk

2.2 Hoe aantrekkelijk vindt u het onderstaande landschap:



Bron foto: Eureco advies

Helemaal niet aantrekkelijk 1 2 3 4 5 6 7 8 9 10 Heel erg aantrekkelijk

**2.3** Hoe aantrekkelijk vind u het onderstaande landschap:



*Bron foto: Huize zonnedaauw*

Helemaal niet aantrekkelijk 1 2 3 4 5 6 7 8 9 10 Heel erg aantrekkelijk



**2.4** Hoe aantrekkelijk vind u het onderstaande landschap:

*Bron foto: Route.nl*

Helemaal niet aantrekkelijk 1 2 3 4 5 6 7 8 9 10 Heel erg aantrekkelijk

2.5 Hoe aantrekkelijk vindt u het onderstaande landschap:



Bron foto: Sytske Dijkse  
op Ecomare

Helemaal niet aantrekkelijk 1 2 3 4 5 6 7 8 9 10 Heel erg aantrekkelijk

2.6 Hoe aantrekkelijk vindt u het onderstaande landschap:



Bron foto: staatsbosbeheer  
Terschelling

Helemaal niet aantrekkelijk 1 2 3 4 5 6 7 8 9 10 Heel erg aantrekkelijk

2.7 Hoe aantrekkelijk vind u het onderstaande landschap:



*Bron foto: beleef-terchelling.nl*

Helemaal niet aantrekkelijk   1   2   3   4   5   6   7   8   9   10   Heel erg aantrekkelijk

2.8 Hoe aantrekkelijk vind u het onderstaande landschap:



*Bron foto: Sytske Dijkse op Ecomare*

Helemaal niet aantrekkelijk   1   2   3   4   5   6   7   8   9   10   Heel erg aantrekkelijk

**2.9** Hoe aantrekkelijk vind u het onderstaande landschap:



*Bron foto: Puur water en natuur*

Helemaal niet aantrekkelijk   1   2   3   4   5   6   7   8   9   10   Heel erg aantrekkelijk

**17.** Geef hieronder aan in hoeverre u de volgende aspecten echte natuur vindt of niet. Dit doet u door het corresponderende getal te omcirkelen.

	Helemaal natuur	1	2	3	4	5 Echte natuur
Moerassen		1	2	3	4	5
Grote maïsvelden		1	2	3	4	5
Overstromingen		1	2	3	4	5
Kamerplanten		1	2	3	4	5
Oude boerderijen		1	2	3	4	5
Stadsparken		1	2	3	4	5
Een boer op zijn tractor		1	2	3	4	5

**18.** Hieronder vindt u verschillende stellingen. Geef aan in hoeverre u het eens bent met deze stellingen door het corresponderende getal te omcirkelen.

	Helemaal mee oneens				Helemaal mee eens
1. Dode bomen in het bos moeten worden opgeruimd.	1	2	3	4	5
2. De mens mag de natuur gebruiken zoals hij zelf wil.	1	2	3	4	5
3. De mens moet de natuur soms helpen, door bijvoorbeeld in koude winters wilde dieren te voeren.	1	2	3	4	5
4. De natuur is minder kwetsbaar dan sommige denken.	1	2	3	4	5
5. Bermen langs de weg moeten netjes gemaaid worden.	1	2	3	4	5
6. Hoe langer een natuurgebied door de mens met rust is gelaten, des te groter is de waarde van dit gebied.	1	2	3	4	5
7. Hoogspanningsmasten (elektriciteitsmasten) en windturbines (moderne windmolens) maken natuurgebieden minder waardevol.	1	2	3	4	5
8. Vindt u het beschermen van agrarisch (landbouw) landschap belangrijk?	1	2	3	4	5
9. Het verbouwen van gewassen en het houden van vee hoort bij natuur	1	2	3	4	5
10. Een gebied is pas echt een natuurgebied als de mens er geen invloed op uitoefent	1	2	3	4	5
11. Grond dat vooral gebruikt wordt om voedsel te produceren is per definitie geen natuur	1	2	3	4	5
12. Natuurgebieden zijn er vooral voor de mens om te recreëren	1	2	3	4	5
13. Natuur zou moeten worden gestuurd en gereguleerd door de mens	1	2	3	4	5

**19.** Wanneer vindt u natuur het mooist?

- Natuur moet ruig zijn
- Natuur moet romantisch zijn
- Natuur moet duidelijk in gebruik staan van de mens
- Anders, namelijk .....

**20.** Als u natuur bezoekt, welke aspecten zijn dan voor u van belang? U mag meerdere antwoorden aankruisen.

- Het moet er rustig zijn
- Het moet er avontuurlijk zijn
- Het moet er zo natuurlijk/puur mogelijk zijn
- De natuur moet mooi zijn
- Je moet niet gestoord worden door andere recreanten
- Ik moet overal mogen lopen
- Er moeten recreatie- en horecavoorzieningen zijn
- Anders, namelijk.....

**21.** Vindt u het beschermen van natuur belangrijk?

Helemaal niet belangrijk      1    2    3    4    5      Heel erg belangrijk

***Wanneer u bij vraag 21 antwoord 1 of 2 heeft aangekruist, is de enquête voor u afgelopen.***

***Wij bedanken u voor uw medewerking!***

***Wanneer u bij vraag 21 antwoord 3,4 of 5 heeft ingevuld gaat u door naar vraag 22 op de volgende pagina***

**22.** De natuur op Terschelling moet beschermd worden omdat:

Helemaal  
mee oneens

Helemaal  
mee eens

... ik mij er op mijn plek voel	1	2	3	4	5
... de mens er goed gebruik van kan maken	1	2	3	4	5
... de natuur erg aantrekkelijk is	1	2	3	4	5
... het samenspel tussen natuur en landbouw zo mooi is	1	2	3	4	5
... de natuur vanuit zichzelf mooi is	1	2	3	4	5

## 22. Natuurontwikkeling...

	Helemaal mee oneens			Helemaal mee eens	
... mag altijd	1	2	3	4	5
... mag ten koste gaan van cultureel erfgoed	1	2	3	4	5
... mag ten koste gaan van landbouw	1	2	3	4	5
... mag ten koste gaan van recreatie	1	2	3	4	5
... mag niet. Natuur moet de vrije hand krijgen	1	2	3	4	5

**HARTELIJK DANK VOOR UW TIJD!**

## 5. Flyer with information on GPS application

### Uitleg GPS-applicatie

Deze flyer geeft uitleg over het gebruik van de Applicatie, behorende bij het onderzoek naar landschapsvoorkeuren en natuurbeelden op Terschelling. Deze applicatie houdt uw route bij en u kunt een foto uploaden van het hoogtepunt van uw route.

#### *Hoe verloopt het onderzoek?*

Wanneer u gaat recreëren zet u de applicatie aan en start u de opname. De applicatie volgt waar u bent en werkt het beste als u uw smartphone in uw jas- of broekzak heeft zitten. Op een plek die u erg mooi vindt, kunt u een foto uploaden. Als u klaar bent met recreëren stopt u de opname en stuurt u deze op. Deelname aan dit onderzoek is op vrijwillige basis en op eigen risico.

#### *Hoe werkt de applicatie?*

De applicatie werkt alleen op een Android-device. Alleen het downloaden van de applicatie en het verzenden van de verkregen route verbruikt data. Het gebruik van GPS kost u geen internetdata. U kunt de applicatie downloaden via de volgende link: [www.greentracker.nl/download](http://www.greentracker.nl/download)

Het kan zijn dat uw smartphone een melding geeft dat u uw instellingen dient te wijzigen, maar dat niet gegarandeerd kan worden dat de te downloaden applicatie veilig is. Dit komt doordat de applicatie niet via GooglePlay wordt verschaft. De applicatie is echter wel veilig voor uw telefoon.

1. Zet uw GPS aan en wacht op verbinding
2. Start de applicatie (er opent zich een kaart op uw scherm)
3. Druk 'Menu'
4. Druk 'Opnemen'
5. Druk 'Start opnemen'
6. Er komt een melding om een naam in te vullen. Vul de volgende naam in: Terschelling2015nr(*uw respondentnummer, zie onderaan deze pagina*)  
Voorbeeld: Respondent nummer 1 heeft als naam: Terschelling2015nr1
7. Druk op 'ok'. Uw route wordt nu opgenomen

Als u tussendoor een foto wilt uploaden, doet u het volgende:

1. Druk op 'Menu'
2. Druk op 'maak notitie'
3. Druk op 'Neem foto'
4. Maak een foto van het hoogtepunt van uw route
5. Druk op 'Opslaan'. Uw foto is toegevoegd aan uw route

### Z.O.Z

Als u klaar bent met uw route, doet u het volgende om te stoppen met het opnemen van uw route en deze aan ons te versturen:

1. Druk op 'Menu'
2. Druk op 'Opnemen'

3. Druk op 'Stop opnemen'
4. Druk op 'Menu'
5. Druk op 'Deel route'. U kunt nu de naam van de route controleren. Deze dient te zijn: Terschelling2015nr (*uw respondentnummer. Zie onderaan de pagina*). Het e-mailadres wat u hier dient in te vullen is: [Terschelling2015@gmail.com](mailto:Terschelling2015@gmail.com).
6. Druk op 'OK'. Uw route wordt nu aan ons verzonden.
7. U kunt nu de applicatie afsluiten en deze van uw telefoon verwijderen.

Wij danken u zeer voor uw bijdrage aan ons onderzoek en wensen u nog een prettig verblijf op Terschelling.

Voor vragen kunt u ons mailen: [terschelling2015@gmail.com](mailto:terschelling2015@gmail.com) of bellen op 0643791860

Met vriendelijke groet,  
Dorien Cramer  
Liesbeth de Vries

**Uw respondentnummer is:**



## 6. Alternative answers on questions in survey

Resp nr	Vraag 3: Reden bezoek	Vraag 4: Factoren route	Vraag 7: natuurorganisatie	Lid	Vraag 19: natuur het mooist	Vraag 20: aspecten natuur
65	Gecoachen	De ligging van de Geochaces	Natuurmonumenten WWF			
51			Waddenvereniging Natuurmonumenten			
52			WNF			
54			Groninger Landschap			
75		Naar 't strand	Waddenvereniging			
74	Hardlopen	Ivm kleine kinderen	Natuurmonumenten Waddenvereniging			
149			Natuur & Milieu			
71			Greenpeace Milieudefensie			
72	Woning op Terschelling		Greenpeace Natuurmonumenten D.B			
73			Fryske Gea			
58	Toeristisch project					
60			Waddenvereniging Behoudbaai Terschelling			
59			Waddenvereniging			
56			Vogelbescherming			
76			Gastvrij Terschelling			
146			Natuurmonumenten			
148			WNF			
57			Natuurmonumenten		Ieder jaargetijde	
133			Natuurmonumenten			
134					Zichzelf zijn	
136			NOJG		Het moet zichzelf onderhouden	Beperkende factor dat niet iedereen goed met de natuur omgaat
143			Fryske Gea WWF			
87			Noord Hollanders WNF			
139			Natuurmonumenten			
137						Met de hond lopen
142	Vrienden bezoeken					
144		Ervaring				
68		Eigen inzicht				

Respondent	Vraag 3	Vraag 4	Vraag 7	Vraag 19	Vraag 20
46	Vrienden bezoeken, organiseren van een evenementje		Natuurmonumenten, Stichting Drentsch Landschap		
24			Natuurmonumenten, Milieudefensie		
33				Als het is zoals het is	
32			Greenpeace, Natuurmonumenten		
48			Natuurmonumenten	Mag gebruikt worden mits volhoudbaar	
30			Natuurmonumenten		
29				Onaangetast door de mens	
41			WWF		
31			Natuurmonumenten		
39			Natuurmonumenten, Greenpeace		
25			Natuurmonumenten		
27				Zoals het bij de plek hoort	
26				Wanneer de natuur zijn gang gaat	
19			Natuurmonumenten, Kennemer Duinen		
2		Ik zoek stille stukken op	Greenpeace, Milieudefensie, natuurmonumenten, Vogelbescherming	Zo weinig mogelijk menselijke invloeden	
1			WNF		
64				Voorjaar	
38			Wadden, Natuurmonumenten, Greenpeace, Staatsbosbeheer		
62			Waddenvereniging, Natuurmonumenten, Landschap Noord-Holland, Greenpeace		
7				Als het mij "raakt", dat kan ruig maar ook gecultiveerd	Zie vraag 19: Als het mij "raakt", dat kan ruig maar ook

				landschap zijn	gecultiveerd landschap zijn
8				Erg verschillend	
4			Natuurmonumenten		
13			WWF, Zuid-Hollands natuurbescherming, Natuurmonumenten	Helemaal met rust gelaten worden door de mens	
45	Vrienden		Greenpeace, WNF		

## 7. Scoring for the statements concerning the nature views

	Wilderness	Arcadian	Functional
14. Dode bomen in het bos moeten worden opgeruimd.	1/2		5/4
15. De mens mag de natuur gebruiken zoals hij zelf wil.			5
16. De mens moet de natuur soms helpen, door bijvoorbeeld in koude winters wilde dieren te voeren.	1/2		
17. De natuur is minder kwetsbaar dan sommige denken.			
18. Bermen langs de weg moeten netjes gemaaid worden.			
19. Hoe langer een natuurgebied door de mens met rust is gelaten, des te groter is de waarde van dit gebied.	5		
20. Hoogspanningsmasten (elektriciteitsmasten) en windturbines (moderne windmolens) maken natuurgebieden minder waardevol.	5	5/4	1
21. Vindt u het beschermen van agrarisch (landbouw) landschap belangrijk?		5	
22. Het verbouwen van gewassen en het houden van vee hoort bij natuur	1/2	5	5
23. Een gebied is pas echt een natuurgebied als de mens er geen invloed op uitoefent	5		1

24. Grond dat vooral gebruikt wordt om voedsel te produceren is per definitie geen natuur	5/4	1/2	1
25. Natuurgebieden zijn er vooral voor de mens om te recreëren			5
26. Natuur zou moeten worden gestuurd en gereguleerd door de mens	1		5/4
Moerassen	5		
Grote maïsvelden			5/4
Overstromingen	5/4		
Kamerplanten			5/4
Oude boerderijen		5	
Stadsparken			5/4
Een boer op zijn tractor		5	5/4