

# Inspiring the Outdoor Experience: Does the Path Through a Nature Center Lead Out the Door?

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## **Abstract**

This study investigates the visitor experience at a Swedish nature center within a UNESCO biosphere reserve. The question of whether this interpretive facility succeeds in motivating the visitor to get outdoors for a direct experience of nature is explored. Use of the environmental connectedness perspective and concerns about diminished nature experience support the importance of this study. A number of qualitative methodologies are used to investigate the research questions, including thought listing, phenomenology, and field observation. Results indicate that this particular nature center generally succeeded in the goal of inspiring visitors for a direct nature experience. The success in motivating visitors appears to be a result of a number of key variables, including place-based exhibitry, access, and personal visitor factors. Given the setting for this study, we conclude that interpretive nature centers have the potential to play an important role in the re-imagination of urban environments.

## Keywords

access, biodiversity, environmental connectedness perspective, Kristianstad Vattenrike Biosphere Area, Naturum, nature, interpretive nature center, thought listing, urban

## Introduction

There is a growing concern for both the decline of direct experience people have with nature, and the quality of that experience. This diminished experience may have negative consequences for public awareness and concern about biodiversity loss and ecosystem degradation and at the same time it appears to have a substantial negative impact on human well being (Bratman, Hamilton, & Daily, 2012; Charles & Loge, 2012a, b; Dudley, 2011; Louv, 2005; Pyle, 1993; 2002; Thomashow, 2002). In addition, this diminished experience may result in a lack of engagement in nature conservation and sustainable futures (Folke, et al., 2011; Miller, 2005). At the core of this concern is an essential question about the human relationship with nature, often referred to as environmental connectedness. The environmental connectedness theoretical perspective is represented by a long list of scholarly, empirical, and practical connectedness to nature efforts that emphasize the direct experience of nature, and the possible relationship between the individual and nature that develops from these experiences. “This broad group of connectedness-related ideas ranges from how one thinks about oneself (e.g. identity) to how one conceptualizes one’s relationship with the more than human world (e.g. affiliation or connection)” (Beery & Wolf-Watz, 2014, p 199). The environmental connectedness theoretical perspective represents an important way to reconsider people and nature that opposes a dichotomized framing of nature-culture and considers a more relational perspective (Beery & Wolf Watz, 2014). Feldman (2004) provides an example of such relational thinking via his encouragement to consider many of our wild landscapes “as evidence neither of past human abuse nor of triumphant wild nature, but rather as evidence of the tightly intertwined processes of natural and cultural history” (p. 41). This description of wild landscapes is a fitting one for considering both the human relationship with nature and the role that many nature centers play for interpreting nature, i.e. the weaving together of complex stories of cultural and natural heritage. This role highlights an important opportunity for nature centers to serve as launch points for direct experience of nature.

This study will explore the question of whether a visit to an interpretive-based nature center in a Swedish biosphere reserve, the Kristianstad Vattenrike Naturum, motivates a direct experience of nature. And further, the research will consider specific variables that support the goal of motivating visitors to have a direct experience of nature as an outcome of a nature center visit. As foundation for the study, a consideration of the complex concept of nature, fears regarding a diminished experience of nature, and the Swedish interpretive nature center concept of Naturum will be presented.

## Literature Review

### *What is Nature?*

A belief in the power of human experience to unite the ideas of nature and culture provides a basic philosophic foundation for this paper. Therefore, a thoughtful consideration of the meaning of the term *nature* is essential to setting a foundation for this study. Bratman et al. (2012) remind us that the challenge of defining the idea of nature/natural is dynamic

and changes across time, space, and individual. Many disciplinary efforts on this matter reflect an evident Cartesian divide, where *nature* and *culture* are placed in opposition to one another, and where one of them dominates the other (Beery & Wolf-Watz, 2014; Castree, 2005; Hinchliffe, 2007; Rose, 1993; Whatmore, 2002). Head (2000, 2012) makes a strong case for the importance of a conceptualization of nature that integrates the human with nonhuman and emphasizes the real world management consequences of our failure to do so. We wish to present our uneasiness that use of phrases in this text such as, “A concern for a reduced human experience of nature” will result in supporting conceptualizations of nature as somehow exclusive of culture; this is not our intent. We do not solve this conceptual problem but draw support from Castree (2014) who urges that we put less focus on an essential definition of nature, and more focus on perception of and use of the term. Following Castree’s guidance, we present two examples that we feel help orient this current study. One, consider the definition of nature employed by Maller, Townsend, Pryor, Brown, and St. Leger (2006): “an organic environment where the majority of ecosystem processes are present (e.g. birth, death, reproduction, relationships between species). This includes the spectrum of habitats from wilderness areas to farms and gardens” (p. 46). This particular definition is of interest as it spans the “spectrum” from the largely nonhuman (“wilderness”) to the heavily human (“farms and gardens”). Similarly, Bratman et al. (2012) describe nature as: “areas containing elements of living systems that include plants and nonhuman animals across a range of scales and degrees of human management, from a small urban park through to relatively ‘pristine wilderness’” (p. 120). Both of these definitions move us toward a more integrated and relational understanding of nature and culture and avoid complete opposition, or separation of human and nonhuman elements. While the question “What is nature?” will not be answered in this paper, we argue that a relational approach to these ideas is invaluable to nature center interpretation of natural and cultural heritage.

### *Biodiversity, Urbanization, and a Diminished Experience of Nature*

A brief consideration of the contemporary concern for a diminished experience of nature is critical to a full understanding of the importance of nature centers’ potential to facilitate direct experiences of nature. Given the strong biodiversity theme of the nature center considered in this study, biodiversity loss provides an important context for concerns regarding a diminished experience of nature. There is an unprecedented rate of loss of biodiversity across the planet. The Millennium Ecosystem Assessment (2005) reports both a significant decline in biodiversity and a rapid rate of loss. One potential factor in these trends of diminished biodiversity is another global trend, urbanization. Rates of urbanization continue to grow, with 54 percent of the world’s population currently residing in urban areas and projections for this global figure continue to rise (United Nations, 2014). Current rates of urban population in Europe and North America are 73 percent and 82 percent respectively (United Nations, 2014). It has been observed and projected that much of the earth’s current and projected urban expansion will take place in areas where protection of biodiversity is of high priority (Secretariat of the Convention on Biological Diversity, 2012). Given the added concern that the global trend toward urbanization has had a largely homogenizing effect on biodiversity (McKinney, 2006; Miller, 2005), attention to this relationship between biodiversity and urbanization is critical. With the exception of certain successful novel ecosystems (Marris, 2011), much of the nature most people regularly experience is currently, or projected to be, biologically diminished.

Along with the health of the ecosystems themselves, another concern for this biological impoverishment is for its impact on the human experience. A diminished experience of biodiversity contributes to the fear of a shifting baseline (Pauley, 1995), i.e. the idea that the environment encountered in childhood is the baseline against which all future environmental health is judged. Given global trends, if urban areas of diminished biodiversity make up these places of nature experience, then we can anticipate a diminished experience leading to each successive generation creating a new baseline of environmental health, forgetting previous, possibly healthier environmental histories (Kahn & Friedman, 1995; Kahn, 2002). This “environmental generational amnesia” (Kahn, 2002, p. 93) threatens to exacerbate the negative trend in biodiversity seen around much of the world as people come to accept ever-diminished levels of biodiversity as the norm and as a baseline for current decision making and future comparisons.

### *The Concept and Purpose of Naturum*

Naturum is a specific group of interpretive nature centers in Sweden with a name that is designed to evoke nature and space (Naturvårdsverket, 2013). Thirty-two such facilities are located throughout the country as part of educational outreach at Swedish national parks, nature reserves, and other sites of natural/cultural history interest. While the Swedish Environmental Protection Agency (SEPA) owns the rights to the name and sets the common goals for all Naturum programming in Sweden, county administrative boards, municipalities, or foundations manage the sites. The specific mission statement for Naturum interpretation states: “Our mission is to arouse people’s interest in nature. We use inspiring methods to raise knowledge about nature, conservation and human impact on nature” (p. 6). SEPA describes the work of Naturum with a strong emphasis on the idea of these facilities as gateways to nature, for example consider the following passage from the Naturum Handbook: “Naturum shows the way out into nature... visitors will gain knowledge, understanding, and a feel for the value of nature as well as be inspired to get out, take time, and gain a deepened nature contact” (Naturvårdsverket, 2013, p. 15). This effort is described in nine specific points including: “guides visitors about what to see, experience, and do in the area and how to access...” (p. 15). This goal of inspiring nature center visitors to get out into nature has only briefly been studied in the Swedish context. A study of Naturum visitor experience from seven different Naturum sites was undertaken during the summer of 2013 and found that the theme of inspiring visitors to outdoor activity emerged, yet was noted by a minority of visitors (Sandberg, 2014). Beyond the Swedish context, this possible function of nature centers has not been effectively studied. A 1991 analysis from 1,225 nature and environmental education centers throughout the United States did not include motivating an outdoor experience as a specific goal noted by any of the participating centers (Simmons, 1991). Other research into the nature center experience provides consideration of a broad range of nature center sites and visit outcomes, including: impact upon environmental attitudes (Kostka, 1976; Euler, 1989); the usefulness or user-friendliness of interpretive kiosks (Alpert & Herrington, 1998); nature center outreach to urban youth populations (Storksdieck, Pragoff, & Streett, 2003); participation barriers at nature centers (Hong & Anderson, 2006); and community impact of a nature center (Price, 2010). No research was identified, however, that looked at the specific question of the role nature centers play in inspiring a direct experience of nature.

## Methods

### *Study Design*

Qualitative methodology and the specific methods of thought listing, phenomenology, and field site observation were used in order to consider the following research questions:

1. Does an informal nature center visit motivate a direct experience of nature?
2. If so, what are the variables that support the nature center goal of motivating visitors to have a direct experience of nature?

### Thought-listing

Thought-listing methods encourage participants to share thoughts and ideas stimulated by the informal interpretive experience in the context of short interviews at the conclusion of the visitor experience. Informal experience references the self-motivated and self-directed visitor experience of the exhibits (Jetts & Smith, 2011). Thought-listing interview questions are designed to be broad and simple with only enough direction to encourage the participant to share his or her visit experience. These thoughts and ideas are then evaluated based upon researcher analysis of whether they align with an organization's mission and/or specific goals of interest. Ham (2013) refers to this comparison between response and mission as the "zone of tolerance" or ZOT (p. 149). The degree to which a participant speaks to the mission determines whether this ZOT has been reached. Thought-listing methodology is noted within the literature of heritage interpretation to be useful for understanding the potential ideas, feelings, and behaviors provoked by the visitor experience of an interpretive site (Ham, 2013). The methodology has been successfully applied to questions of heritage interpretation (Bucy, 2005; Ham, 2013; Rand, 2010) and recently applied in a Swedish Naturum context (Sandberg, 2014). The main goal of Sandberg's (2014) study was "to practically test the thought-listing method for qualitative assessment of naturum interpretation" (p. 3). A key result of that study found that thought listing is a useful method for gaining a better understanding of the visitor experience in the Naturum context. In addition to use in heritage interpretation, thought-listing has been used extensively as a method in cognitive psychology (e.g. Broderick, 2005; Lent, Brown, & Gover, 1996; Cacioppo & Von Hippel, 1997; Cadinu, Maass, & Rosabianca, 2005; Lodge, Tripp, & Harte, 2000).

Ham (2013) presents three different degrees of the ZOT idea: unrestricted, wide, and narrow. Unrestricted ZOT is described as visitor response that indicates visitor engagement, i.e. visitors are thinking, making meaning, and drawing conclusions. The wide ZOT is visitor response that reveals an appreciative personal connection to established outcomes. And finally, the narrow ZOT is described as responses that reveal a deliberate reference to a particular desired outcome. The question of whether a visit to the Naturum Vattenrike motivates a direct outdoor experience was established as the criteria for determining whether or not a response fits within a narrow ZOT, i.e. participants will either note the inspiration/motivation or they will not. If participants do not provide a comment within the narrow ZOT, they will be asked a probing question and will either indicate that such inspiration/motivation exists or does not. Positive responses to these probes, i.e. acknowledgement of inspiration or motivation for a direct experience are then noted in a separate category as a narrow ZOT with a prompted response. All responses that did not address research question #1 or directly indicated that the Naturum experience was not a part of a motivation or inspiration for a direct experience of nature were noted as outside the narrow ZOT.



Figure 1. Kristianstad Vattenrike Naturum. Photographs used with permission of Kristianstad Vattenrike.

### Phenomenology and Observation

While application of thought-listing methods for data collection and analysis was the primary method used in this study, a general phenomenological coding of the transcripts using Hycner (1985) as a guide allowed for additional themes to be considered in the analysis to address research question #2. Finally, field site observation was used and supplementary data was collected in a field notebook. The purpose of the notebook was to gather relevant study information that fell outside of the interviews. Patton (2002) notes the importance of field notes for the qualitative research process, “They consist of descriptions of what is being experienced and observed...and field generated insights and interpretations” (p. 305). A simple protocol was established to review each of exhibits during the research sessions. For example, this research considered each exhibit with the motivating outdoor experience goal in mind, and notes/ observations of any support for that goal were recorded in the field notebook.

### Setting and Participants

In addition to the overarching goals of the Naturum program, each individual Naturum facility has its own character and theme based upon the significant and specific heritage setting. The Naturum of the Kristianstad Vattenrike highlights the important, expansive, and biodiverse wetlands and significant water resources of the 100,000 hectares of the lower Helge River watershed and Hanö Bay of the Baltic Sea. The Vattenrike Naturum is

an interpretive facility using both interactive and passive exhibitry in an effort to present key interpretive messages of the Kristianstad Vattenrike Biosphere Area (see Figures 1 & 2). The exhibit space is a large, open room with expansive views of the wetlands just outside the windows. Living elements (such as a fish tank and a macroinvertebrate touch tank) are used to create multi-sensory experiences. Additionally, many of the devices used to represent and interpret the specific places and phenomena of the Vattenrike are electronic media, such as audio recordings, touch screens, and a sensory film experience. Many of the Naturum exhibits are place-based, i.e. they feature the actual designated visitor sites of the Vattenrike. The facility also provides nook-like areas for reading, maps for review, and an activity area for children, as well as extensive visual and written interpretive text exhibited throughout. Numerous bookshelves provide reference material and brochures relating to the Naturum topics.

The population for this study is adult visitors to the Vattenrike Naturum. The Naturum is located in the core area of the Kristianstad Vattenrike Biosphere Reserve Area and immediately adjacent to the city center of the Kristianstad Municipality with a population of 36,000 residents (the greater municipality has an additional 40,000 residents, Statistics Sweden, 2011). The Vattenrike Naturum opened in 2010 and had 160,000 visitors in the first year (Å. Pearce, personal communication, December 16, 2014). Since that initial burst of interest, visitation has remained high, with approximately 130,000 visitors to the Naturum during 2014 (Nordgren, 2015).

### *Data Collection*

Data collection was undertaken during five days in June and July 2014. Dates were chosen to capture both weekend and midweek visitorship and to not coincide with any special Naturum event or Swedish holiday. Visitors at the Naturum were invited to participate after they had been observed in the facility for an extended period of time or appeared to be preparing to leave the facility. Interviews consisted of a number of basic questions focused upon the Naturum visitor experience and exhibitry. The goal of the broad questioning was to invite participants to talk openly about their experience. Prompts were used to encourage clarification when responses were not clear. Initial questions consisted of basic demographic information such as age, residence, and prior visitation and then the following short progression of questions was posed to each participant:

- Tell me about your visit today! Describe any thoughts or feelings about your visit to the Naturum.
- Can you trace these thoughts/feelings to any particular part of the exhibitry?
- Has your visit to Naturum influenced you in any way?
- If there is no mention of outdoor experience during the previous responses, ask directly: Has your visit to Naturum inspired/motivated you to do anything outdoors or to go anywhere outdoors in particular?

Interviews were conducted in a quiet corner of the main exhibit area. Participants were asked for permission for the interviews to be recorded; however, no names were documented. Prior to testing of the questions, interviews were designed to be conducted one on one, but given the Naturum setting and pattern of visitation, many visitors

wanted to participate with a companion, hence 39 interviews and 55 participants). All individual participant comments and opinions were recorded and any differences of opinions or difference of experience in the case of multiple participants interviewed simultaneously was noted to insure all participants' thoughts were included. At the completion of the interview, participants were given the visitor site excursion guide to the Vattenrike in recognition of their participation.

All interviews were transcribed and analyzed using thought-listing methods. Specifically, themes were listed and then evaluated for whether they fit within a narrow ZOT for the question of motivating outdoor experience. Those responses that emerged without interviewer prompting indicated success within a narrow ZOT. When a participant provided an affirmative response to the prompt question regarding motivation for outdoor experience, indicated a conditional narrow ZOT. Those participants that did not mention or acknowledge outdoor experience as a motivated outcome of their experience were noted as outside the ZOT. In addition to the thought-listing analysis, phenomenological coding of data and field observations for the identification of key themes related to research question #2 was considered in the analysis process.

## Results

### *Interviews*

The interviews ranged from three to 20 minutes in duration, largely determined by the participant interest in discussing their Naturum experience. Thirty-nine interviews were conducted in both the Swedish and English languages (based upon participant preference) with a total of 55 participants. While the target population for this study was adult visitors to the Kristianstad Vattenrike Naturum, one minor participated in concert with parental participation, thus the actual participant age ranged from 15 to 89, with an average age of 52. Twenty-three participants were male and 32 were female. Thirty-one participants were visiting the Vattenrike for the first time and 24 had visited the Center at least once prior. Forty-six participants were from Sweden, with 22 of that total from the Kristianstad Municipality. Nine participants were from outside of Sweden with the following counties represented: Australia, Denmark, Great Britain, Germany, and the United States.

### *Zone of Tolerance*

#### Narrow ZOT

Responses were evaluated for whether or not they fit within the narrow zone of tolerance (ZOT), i.e. whether or not they noted motivation for getting out into nature as an outcome of the Naturum visit. Twenty-two, or 40 percent of respondents fell into this narrow ZOT. The following is a sample of responses:

- I have walked the Linnérundan after discovering here that it existed. And in Åhus, I have used the trail at the golf course for exercise (Vattenrike visitor site)...I learned about the trails here...
- I really want to take a trip on the boats! The films have given me a taste to get out in the area and see things!



- Mama is 92 years old and her sister is 97! Ha! But Mama wants to walk, but she must use the roll-walker. She can not walk too far, she doesn't have the energy to go too far...so we will try the Linnérundan as far as she can, but it won't be the whole way! She got the idea here (for the hike).
- We were looking at the map...we have no plans...we go where we find something good...[the exhibit] showed the waterfalls and now we want to go to that place.

While some of the comments indicating a narrow ZOT were general to the entire visit experience, some highlighted the impact of a particular exhibit. The sensory film, the visitor site map, the macroinvertebrate touch tank, etc., were noted in above comments, yet no one particular exhibit emerged as having a significant get-out motivational influence more than any other.

#### Narrow ZOT with Prompt

During each interview, the question of whether an outdoor experience was motivated by the Naturum visit was asked directly to those who did not provide such a response spontaneously. Twenty-four participants, or 44 percent of the sample, fit in this category. Once prompted, many of these respondents provided an appreciative statement in response to the question of whether they were motivated by the visitor experience to do anything outdoors or to go anywhere outdoors in particular, for example:

- Yes! Every time I come I just want to get outside...
- I think it works! You hear sounds and see birds...and the things that are happening based upon time of year, it gives me ideas for getting out!
- It works well, I think that a person can be given an appetite to get out and see things for real.

#### Outside the ZOT

Other responses were judged to be outside the ZOT because it was unclear what the participant felt about the Naturum goal of motivating outdoor experience or participants indicated that they don't need motivation. Nine respondents, or 16 percent, fit in this category and provided comments such as:

- It is a bit hard to say...we come from a country where we see a lot of birds, we see a lot of birds even in our yard. So I don't know what to say...
- Hmm, don't know, I can't say that it is the Naturum that inspires me to be out, I get inspiration from nature itself.
- We are outdoors a lot and don't need any motivation to be out.

#### *Other Themes*

##### Access

Beyond thought listing analysis of the participant response, a general phenomenological coding of the transcripts using Hycner (1985) as a guide allowed for other themes to be considered to address research question #2. The most prominent theme to emerge

from the results was access or accessibility in a proximate sense. The physical location of the Naturum was noted to be an important feature given its ability to facilitate visits between the center and nearby nature. The following example comments from participants provide a sense of this access theme from the perspective of a nature center close to city center and a nature center close to nature, as well as a mix of these two measures of accessibility:

- I have taken the train here today and have done it every time I have visited. And then just walk, it is so very close to the station and takes just a few minutes before you are directly out in nature! Only a few minutes! So good for all the people here in Kristianstad, it is a dream location to live.
- I think it is nice that it is situated very close, easy access for almost everyone, situated close to the town or almost downtown.
- I actually came into town to go to the electronics shop, and we had a few hours today, so I wanted to see Kristianstad walk around and one of things here was this place just across from the park, amazing access!
- The whole atmosphere, that it sits here in the middle of the River Helge and yet so close to town and accessible.

#### Nature People

Many visitors described themselves using the idea of and/or the very phrase of “nature people” and shared that they were out in nature regularly. Here are a few quotes highlighting this theme:

- I am highly motivated, it is integrated into my daily life...
- We are nature people!
- I don't need inspiration to be out. I am out every day to learn, and it is exciting.

These results remind us that the population of visitors of the Naturum may be highly represented by people already engaged in questions of natural history, conservation, outdoor recreation, etc.

#### *Field Notebook Observations*

Other results to consider in order to address research question #2 come from the observations recorded in the field notebook. One key theme of observations recorded in the field notebook is evidence of a get out message promoted within the Vattenrike Naturum exhibitry. Significant evidence of this message was noted widespread throughout the exhibitry, and while many of these examples highlight information rather than interpretation, the availability of information in conjunction with the Naturum interpretation appears to be significant. Consider the following examples:

- Map of the visitor sites with an encouraging get-out message featured prominently in the exhibit room. Adjacent to the map is a photo screen with rotating images of each of the Vattenrike's 21 visitor sites.

- Live cam from outdoor sites, e.g. osprey nest featured from Lake Hammar.
- Photos accompanying various Naturum exhibits of actual Vattenrike visitor sites, for example a photo from the Vramsån visitor site at the interpretive fly-fishing exhibit.
- Many topical exhibits about subjects corresponding to a specific Vattenrike place, for example an aquarium showcasing freshwater fish species used the focus of Lake Hammar.
- Prominently displayed daily observation board providing information about flowers in bloom at one of the visitors sites, with the tag line “Out and enjoy!”
- Numerous different brochures in three different locations within the facility, regularly restocked, providing outdoor activity ideas, such as one titled “Out in Skåne,” was noted both on the shelf and in the hands of participants (Skåne is the broader county region in which the Vattenrike is located).

When the above results are analyzed in conjunction with the previously noted results of the ZOT analysis, insight into exhibit contribution to the get-out message is substantial. The following examples from the interviews supports the field notebook observations:

- I have taken the brochures and seen...I think I will walk the trail that leads up to Näsby.
- There are some books on display that have good information about where to walk around. It is always nice to get a sense of where you can walk around.
- These with maps I have picked up [shows brochures/maps to the researcher] I have hiked these loops on the maps, they go in all different directions.

## Discussion

While the methods employed in this study do not allow for the results to be broadly generalized to all Naturums in Sweden, or nature centers in general, clear and strong trends have emerged from the data that can serve to deepen understanding of the Vattenrike Naturum visitor experience. Hycner (1985) reminds us, however, that although “...the results in a strict sense may not be generalizable, they can be phenomenologically informative...” (p. 295), thus providing insight and illumination about the Naturum visitor experience. Closely related to the ideas of generalizability, transferability refers to “how well the study has made it possible for the reader to decide whether similar processes will be at work in their own settings and communities by understanding in depth how they occur at the research site” (Bloomberg & Volpe, 2008, p. 78). It is hoped that the application of multiple data collection methods and analyses supports a consideration of how these findings may have relevance beyond the Vattenrike Naturum.

### *Motivating a Direct Experiences of Nature*

Based upon the numerous measures used in this study, it appears the Vattenrike Naturum is successful in motivating direct outdoor experiences of nature. A review of the ZOT

analysis reminds us that 84 percent of participants indicated that the Naturum visit had motivated or inspired a direct experience of nature. In addition, the phenomenological analysis of the interview data, and the analysis of the observations recorded in the field notebook all provide tangible indicators of Vattenrike Naturum success in motivating a direct outdoor visitor experience of nature and point to several key variables for the success, including: place-based exhibitry, accessibility, and personal visitor factors. Each of these factors will be considered along with recommendations for future research to support a deeper understanding or broader transferability of the findings.

### Get Out Exhibits

The exhibitry of the Naturum appears to have been designed not only with a get-out message, but rather a specific, place-based, get-out message appears to have been prioritized, i.e. here are the places of the Vattenrike, now go experience them! The message is strengthened if one actually visits one or more of the 21 visitor sites. All of the visitor sites have infrastructure to support recreational experience, such as trails, picnic tables, grills, bird viewing platforms, etc. The Vattenrike Biosphere Area organization highlights the direct experience of nature at the visitor sites for engaging the public, maintaining: “The best way to learn and understand the landscape values is achieved by providing experience and knowledge in place” (Vattenrike, 2014). Many visitors noticed the connection between actual visitor sites and the exhibits in the Naturum and communicated a link between an exhibit and a visitor site they wished to explore. For example, one visitor comment noted two Vattenrike Visitor sites: “I want to get to Härlövs Ängar.... There was a map with pictures and you can see how nice it is and that there is a hiking trail there! I was also reminded of Forsakar...we will get ourselves over there this week too!” Given this type of support for the idea of place-based exhibitry, it would be interesting to ascertain whether any particular exhibit or type of exhibit have a greater impact in motivating direct experiences of nature.

### Accessibility

Accessibility facilitating the outdoor experience is another key finding. The strength of this theme cannot be understated, as it emerged without any specific access questions posed.

Visitors marveled at the location and the access to outdoor experience that the location provided, with comments such as: “...that it is so near the center of town, that you can just walk from town! I think it is fantastic!” Access was noted both in regards to its proximity to city center and associated services and access in regard to the expansive wetlands of the Vattenrike Biosphere Area inclusive of trails, a nature reserve, and park space (see Figure 2.). The Kristianstad Vattenrike is quite unique in this respect of proximate access. When compared to the other Naturums in Sweden, no other Naturum is simultaneously adjacent to both the residence of such a large number of local residents as well as to such a significant natural setting. And while it may seem odd to put the relatively small city of Kristianstad into the context of the global trend toward urbanization, we get a different perspective when we consider that Kristianstad city center has a population of 36,000 residents and a population density of 2,019 residents per square kilometer (Statistics Sweden, 2010).

The strength of this theme is noted in related empirical work. Ernst (2012) conducted a nature play needs assessment for preschool aged children and found that in addition to the need for increasing the amount of time pre-school children have for nature play, other



Figure 2. Aerial photo of Naturum and Kristianstad city center. Photograph: Patrik Olofsson

key factors noted included the need to increase access (or perceived access) to natural areas. Similarly, Matteo et al. (2014) emphasized the importance of access via findings that demonstrated that nature-rich routines show a relationship with a child's ability to develop affinity with nature. Despite the obvious difference in focus between Ernst's (2012) study of nature play, Matteo et al.'s study of childhood affinity with nature, and this study of nature center visit outcomes, the findings all relate access to nature as a key part of supporting the beneficial effects of nature on human well-being. Future research should look closely at the specifics of how people access nature centers and whether the specific location of a nature center, in concert with the other noted features of an area, contributes to the livability of a community as implied by the participant in this study who referred to Kristianstad as "a dream place to live" based on his assessment of access and opportunity.

### Nature People

It was noted that many of the visitors to Vattenrike Naturum described themselves as "nature people" and this theme points to the possibility that the population of Naturum visitors may be unique and not necessarily representative of the general population. Other factors and demographics may be at work that were not explored in this current study. For example, the south of Sweden is a region with significant recent immigration. Was this group captured in the results? One participant self identified as both a resident of Kristianstad and a recent immigrant from Syria. Does such a demographic have an impact on outcomes? Recent attention in Sweden to questions of ethnicity, urbanization, outdoor recreation, and nature engagement (Jensen & Ouis, 2014) is a good reminder

that the Naturum experience is yet another context for such consideration. In general, a greater understanding about the visitor themselves can support an alignment between message and intended outcomes. Allen (2004) notes that a greater understanding of visitors' diversity of intelligences and learning styles is a key consideration in exhibit design and outcome. Further study with greater generalizability may be able to provide a more detailed picture of who is visiting and provide greater insight into the motivations for their visits. Such information may be able to assist Naturum staff to tailor multiple direct experience of nature messages that may appeal to the full spectrum of Naturum visitors.

### *Nature Centers are a Critical Link*

The success of the Vattenrike Naturum in motivating direct experience of nature is hopeful and the specific variables identified in this section are useful. Future study should explore how these key factors may interact with each other to further support the goal of motivating visitors to have a direct experience of nature. In addition, another specific area of possible future research is deeper consideration for the role of nature center staff to facilitate direct experiences of nature. While interview participants respondents did not mention their interaction with staff during the interviews, the important role that staff working at nature centers can play helping visitors extend the nature center or interpretive experience has been documented previously (Bixler, James, & Vadala, 2011; Erickson & Erickson, 2006). This research along with potential future inquiry is important, as nature centers may be able to provide a critical link in our efforts toward supporting direct human experience of nature.

## **Conclusion**

Given mounting concerns for a diminished experience of nature, we need to broaden our considerations of human relationships with nature and how they can be nurtured. The SEPA Naturum trademark manual, "Curious in Nature" (2011) reminds us to see the Naturum as a gateway to nature, and states that Naturum "shows us the path out into nature" (p. 14) and this emphasis is important. Naturum in Sweden, and interpretive nature centers in other parts of the world, may be able to serve as a critical pathway with an acknowledgement that the ultimate goal is not the content of the nature center itself, but rather the direct relationship between people and nature that can be supported. This role is unique and differs distinctly from other visitor facilities such as museums, zoos, and aquaria. We need nature centers, like the Kristianstad Vattenrike Naturum, that see their goal as beyond the building. Pyle (1993) stated, "Direct, personal contact with living things affects us in vital ways that vicarious experience can never replace" (p. 145). The results of this study indicate that nature centers may be able to open the door to such direct nature contact.

Urban spatial design is a key factor shaping how urban dwellers relate to the landscape (Matteo et al., 2014.); therefore we must rethink and redesign urban areas to feature natural ecosystems and the intertwined processes of natural and cultural history. Gottlieb (2007) promotes an urban nature agenda supporting a reimagining our urban spaces so that we see nature as a part of the urban system. Such creative effort may be able to increase public engagement in urban outdoor spaces, from city parks to nature reserves to abandoned lots. The opportunity to bring people and nature together is an important

positive outcome of urbanization to consider. The work of the Vattenrike, both within the scope of the Naturum and the broader biosphere area objectives, represents such an effort to support biodiversity and ecosystem integrity in close proximity to human residence and daily experience. The intersect of hiking trails, expansive wetlands, a train and bus station, urban park space, and a nature center all within a few hundred meters of each other and immediately adjacent to 36,000 residents is a reminder of this opportunity. The model that Kristianstad Vattenrike presents, along with lessons from other urban places, reminds us that our cities can be rich in biodiversity and contribute important ecological benefits for human well-being (McPhearson, Kremer, & Hamstead, 2013; Nordh, Hartig, Hagerhall, & Fry, 2009; Secretariat of the Convention on Biological Diversity, 2012). Nature centers have an important role in this reimagined urban effort. Nature centers can serve to motivate the public for direct experience of nearby natural places and support the idea of cities as vital ecosystems with the possibility of biodiversity, beauty, and outdoor recreation just beyond the door.

Despite the hopeful results presented in this study, it must be cautioned that simply getting people outdoors for increased experience of nature will not solve our environmental problems. Thomashow (2002) reminds us that our concerns for a diminished experience of nature refers to more than a reduced exposure to local flora and fauna and that it “reflects a decline in specific qualities of attention, ways of learning and thinking about the natural world” (p. 81). Therefore, beyond simply providing greater opportunity for the direct experience of nature, we need to provide experience of nature in deliberate ways with specific outcomes in mind. Nature centers need to be a part of “a network of people, places, institutions, and personal experiences that foster an interest in natural history” (Bixler et al., 2011, p. 35). And beyond interest, if nature centers wish to bridge the nature experience to environmental understanding to pro-environmental behavior progression, we need careful consideration of effective and outcome-based environmental education approaches as recently outlined by Monroe and Krasny (2013). The nature center has a unique opportunity to play a dual role in motivating people out into nearby nature while also being able to help nurture interest and appreciation into understanding and behavior.

Ultimately, nature centers with quality interpretation can help bridge the artificial divide between people and nature, which brings us to a final idea of partnership. UNESCO (2013) describes the biosphere reserves as places “to reconcile conservation of biological and cultural diversity and economic and social development through partnerships between people and nature...” (Biosphere Reserves – Learning Sites for Sustainable Development section, para. 2). The Kristianstad Vattenrike Naturum’s effort supporting access to nature in the urban context is just such a partnership.

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