

**Exploring the potential of nature-based outdoor recreation to serve the
Kristianstad Vattenrike goals:
A report on analysis of 2013 Naturum visitor data.**



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December, 2013**



MABH
man & biosphere health

Introduction

Bästa sättet att lära och förstå landskapets värden får man genom att ge upplevelse och kunskap på plats (Kristianstad Vattenrike, 2013).

This quote, translated to English as: *The best way to learn and understand the value of the landscape is achieved by providing site based experience and knowledge*, is from the Kristianstad Vattenrike website and underscores a key role for nature-based outdoor recreation¹ in conjunction with biosphere goals.

This report will present partial results from the 2013 visitor survey and provide a basic analysis of these data. Additionally, the analysis will be used to discern interesting patterns that can be used to frame further research question about underlying processes that can be used for decision-making and prioritization at Naturum/Vattenrike. The report is based on a review of survey data, a review of the Vattenrike website, and observations at a majority of the 21 designated visitor sites. Such a review provides opportunity for consideration of many important questions related to the role of outdoor recreation in the Vattenrike. Specifically, results indicate that the ability of outdoor recreation to support the broad UNESCO biosphere mission of protecting biodiversity, developing human opportunity, and supporting creative approaches to sustainable development needs further investigation. Consider the potential of outdoor recreation based on the UNESCO description of biosphere reserve opportunity: *As places that seek to reconcile conservation of biological and cultural diversity and economic and social development through partnerships between people and nature, they are ideal to test and demonstrate innovative approaches to sustainable development from local to international scales* (UNESCO, 2013).

It needs to be noted that the emphasis of this report is focused upon the visitor sites. While the Naturum provides a physical and very visible center for public engagement with Vattenrike efforts, and the Vattenrike website provides exceptional informational access, the visitor sites provide direct physical access. Further, the visitor sites serve as key locations for public engagement in outdoor recreation. While outdoor recreation access is not presented as a key reason for visitor site locations or development on the Vattenrike website, the connection between recreation and visitor site is assumed. This assumption is based on presentation of the sites in Vattenrike literature and via the development of outdoor recreational amenities at many of the sites (trails, picnic tables, wildlife viewing structures, etc.).

Methods and Data

Vattenrike Naturum staff collected data during the time period April through October 2013. Staff selected Naturum visitors at random and survey participation was voluntary. The survey consisted of 13 questions that visitors responded to on a touch screen ipad (see Appendix). The survey was designed to be completed quickly in order to not deter visitors from their Naturum experience. During the noted time period, 923 Naturum visitors completed the survey. While the majority of the thirteen questions were geared toward questions

¹ In this paper *outdoor recreation* will be used in reference to the idea of nature-based outdoor recreation, or in Swedish, *friluftsliv*, although the terms have slightly different meanings. See Beery (2011) for a discussion on the relationship between the two concepts.

surrounding visitors' reasons for their Naturum trip, two questions regarding visits to the 21 designated Kristianstad Vattenrike visitor sites were also included.

Analysis

The two questions regarding visitor sites are of particular interest here. Of the 923 survey respondents, 61% reported having visited one of the Vattenrike's visitor sites (see Table 1). And when this result is broken down by specific visitor site, a rough picture of overall site use begins to take shape. An initial comparison of mean visit values, i.e. the average number of visitor site visits per visitor shows that the local resident survey respondents visited an average of 10 sites each, while non-local Swedish visitors visited an average of 6 sites each. Table 1 provides a break down of visitor site visits by specific site, site ranking (visitation numbers) and by residence, local (Kristianstad resident) or non-local Sweden. Survey numbers for international visitors are so low that they have not been included in this report.

Table 1. Kristianstad visitor site numbers and ranking for local and non-local Swedish visitation, April to October, 2013 ($N=923$).

Kristianstad: rank, site ($N = 270$)	# of visits	Other Sweden: rank, site ($N = 540$)	# of visits
1. Lillöområdet	194	1. Forsakar	204
2. Balsberget	175	2. Lillöområdet	150
3. Forsakar	167	3. Degeberga backar	145
4. Ekenabben	159	4. Äspet	120
5. Lägsta punkten	156	5. Håslövs ängar	115
5. Näsby Fält/Araslövssjön	156	6. Balsberget	108
6. Kanalhuset	144	7. Näsby Fält/Araslövssjön	104
7. Äspet	126	8. Pulken	103
8. Degeberga backar	124	9. Gropahålet	97
8. Gropahålet	124	9. Lägsta Punkten	97
9. Håslövs Ängar	110	10. Ekenabben	95
10. Storkcenter	109	11. Aosehus	83
11. Aosehus	101	12. Kanalhuset	81
12. Pulken	98	13. Storkcenter	71
13. Vramsån	89	14. Vramsån	48
14. Åsums Ängar	68	15. Hercules	42
15. Mosslunda	62	16. Karpalundsdammarna	41
16. Hercules	51	17. Åsums Ängar	36
17. Karpalundsdammarna	45	18. Mosslunda	34
18. Sånarna	43	19. Fjällmossen	33
19. Fjällmossen	35	20. Sånarna	26

A two way contingency table analysis was conducted to evaluate whether local residents were more likely to visit certain visitor sites within the Vattenrike. The two variables were

residence (local vs. non-local Sweden) and visitor site. Results are displayed in Table 2 and demonstrate that a majority of sites show a significant visitor relationship with local residence, that is, local residents were more likely than non-local visitors to visit particular sites. Further analysis of effect sizes for these significant relationships was conducted. An effect size is a measurement of the magnitude of the observed significance; in this case, the greater the effect size, the stronger the relationship between visitation and local residence. Six sites show a medium to large effect size: Balsberget, Ekenabben, Kanalhuset, Lillöområdet, Lägsta Punkten, and Näsby Fält. All other effect size measurements for the sites showing significance were in the small to medium range.

Table 2. Significance in the relationship between visitor site visitation and local residence.

Significance	Visitor Site
Significant at the .001 level, (p<.000)	Aosehus, Balsberget*, Ekenabben*, Gropahålet, Kanalhuset*, Lillöområdet*, Lägsta Punkten*, Mosslanda, Näsby Fält*, Stork Center, Vramsån, Åsums Ängar
Significant at the .001 level, (p<.01)	Sännarna, Äspet
Significant at the .001 level, (p<.05)	Hercules, Håslövs Ängar
Not Significant (p>.05)	Degeberga Backar, Forsaker, Pulken, Karpalundsdammarna

*Effect size measurement medium to large (.3 to .5).

Another question of interest in the investigation of visitor sites was survey question 9: *Do you usually participate in Naturum activities?* A two-way contingency table analysis was conducted to evaluate whether Naturum program participation showed a relationship with visitor site visitation. Visitor participation in Naturum activities was found to be significantly related to visitor site visitation (Pearson X^2 (2, $N = 810$) = 33.59, $p < .001$). In other words, participants in Naturum programs are more likely to visit Vattenrike visitor sites.



Figure 1. Hercules visitor site.

Discussion

Limitations

Use of this current visitor survey to explore questions of outdoor recreation participation is problematic and caution must be urged in reading too much detail into the results. For example, demographic information was not collected beyond questions of residency. Further, other questions used inexact wording, for example the noted Question 9: *Do you usually participate in Naturum activities?* This raises the important question of interpretation of the word *usually*; the possibility that visitors might interpret *usually* differently is a highly likely. Finally, and fundamentally, this survey was not designed to explore specific questions of outdoor recreation in the Kristianstad Vattenrike. Despite these numerous limitations, a discussion of the results may be useful for framing future empirical investigations.

Encouragement

The statistic of 61% of Naturum visitors having made at least one visit to one of the outdoor visitor sites is highly encouraging. If public engagement with the diverse sites of the Vattenrike is a goal, then this number provides a positive indicator that people are gaining a firsthand experience of the Vattenrike.

The noted significant relationship between visit site use and participation in Naturum programming result may be result of local residents having the easiest access to both the Naturum and the visitor sites. And while this connection does not imply causality, it is an important relationship and may also be reflective of the importance of Naturum programming in regard to encouraging public engagement with the Vattenrike.

Proposal

The results of this preliminary review of survey data point to the need for additional visitor data designed to serve the guiding questions of:

1. Is outdoor recreation currently playing a role in meeting the goals of the Kristianstad Vattenrike? If so, what is the nature of that role?
2. Can outdoor recreation be utilized to a greater degree in pursuit of Vattenrike goals?

Concern over the noted limitations above helped to fuel creation of additional variables more directly tuned to the key outdoor recreation questions. For example, the following information coupled with user data would be useful:

- Wayfinding: From physical signage to web-based directions and maps.
- Connectivity: How do visitors find the sites? How proximate are various modes of transportation to each visitor site (train, bus, car, bike, walk)?
- Proximity: How close are the sites to where people live?
- Focal species attraction: Does seasonal interest in one or more site species exist? Do we see population explosions of key species on site?
- Outdoor recreation amenities: What kind of infrastructure exists to support visitor recreation?

This analysis has led to some of the important emerging questions from this visitor survey review. Questions such as:

- Who are the visitors? (i.e. basic demographic information).
- What are visitor motivations for visitor site visits? (For example: physical fitness, nature appreciation, social experience, etc.)
- How often do individual visitors visit particular sites? Daily, weekly, seasonally? yearly?
- What do visitors value about the use of visitor sites?
- What outcomes do visitors take away from their visits?
- What ideas do visitors have for enhanced use of visitor sites?
- What outdoor recreational opportunities in the Vattenrike are missing?

Further, beyond collection of additional data, three action steps are recommended from this review of visitor data:

1. Additional examples from the scientific literature are needed to gain a better perspective on the relationship between the use of outdoor recreation to support environmental goals in general and within other protected landscapes (e.g. Beery, 2013; Beery & Wolf-Watz, 2013; Berns & Simpson, 2009; Bladh, Sandell, Stenseke & Emmelin, 2013).
2. There appears to be a relationship between Naturum program participation and visitor site visitation. Staff should be commended for this connection and encouraged to continue active promotion of visitor sites to extend the visitor experience from the Naturum and out into the Vattenrike.
3. Given that 5 of the 10 top visitor sites for local respondents were found to be within 5 kilometers of the Naturum, an emphasis on proximate access to Vattenrike ideals should be emphasized. One possibility is the potential for the development of

additional sites proximate to the population center in Kristianstad. A prime candidate for such an expansion is the Health Garden in Tivoli Park (Hälsoträdgård). The garden is within view and less than 1 km distance from the Naturum (see Figure 1). This site provides numerous outdoor recreation and education opportunities closely related to the biosphere ideals of integrating cultural and biological diversity. Further, the site provides a unique opportunity to engage the public in sustainability topics related to food production, waste management, and biodiversity. Finally the site provides excellent opportunity for education and training. The literature of environmental psychology, landscape architecture, and environmental education provides strong support for the potential of gardens to meet human needs while also addressing environmental understanding (e.g. Blair, 2009; Cutter-Mackenzie, 2009; Moore, 2005, Nilsson, et al. 2011).



Figure 2. Hälsoträdgård within view of Kristianstad Vattenrike Naturum.

Conclusion

The Swedish approach to the biosphere concept is somewhat unique, while most UNESCO Man and the Biosphere sites are called *reserves*, in Sweden the term *område* is used with an English translation of *area*. This nuanced distinction between *reserve* and *area* is important; the term *reserve* can connote a separation and may create linguistic support for the nature-culture dichotomy, while use of the term *area* avoids this possible dualistic interpretation and acknowledges the human element as a key part of these important places. Fully exploring the human element of the Vattenrike is at the core of this report.

There is a strong need for scientific information to guide outdoor recreation planning in Sweden's protected landscapes (Stenseke & Hansen, 2013). Such empirical effort is recommended in this report. The Vattenrike is an excellent candidate for such research for three reasons. One, the Vattenrike has an impressive visitor site infrastructure. Two, the Kristianstad municipality is renowned for its outdoor recreation efforts having recently and regularly been a finalist for *municipality of the year* in the annual SEPA award (2010, 2012, & 2013). And finally, there are a wide variety of additional public and private outdoor

recreational opportunities in the region (easily accessed via the Vattenrike website *Activities* section).

Public engagement in sustainability and biodiversity can come in many different forms, from household environmental behavior to citizen science to environmental activism to outdoor recreation, etc. If we fully intend to engage the public in these questions of biodiversity and sustainability, while building an awareness of ecosystem services, we need both grass roots effort and quality scientific investigation. This report wishes to acknowledge the effort underway in the Vattenrike and proposes to compliment that effort with additional empirical support.

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Appendix

Kristianstad Vattenrike Visitor Survey.

Naturum Kristianstad 2013

1) * Svensk eller utländsk besökare?

- Svensk besökare
- Utländsk besökare



2) * Varifrån kommer du?

- Kristianstad
- Övriga Skåne
- Blekinge
- Dalarna
- Gotland
- Gävleborg
- Halland
- Jämtland
- Jönköping
- Kalmar
- Kronoberg
- Norrbotten
- Stockholm
- Södermanland
- Uppsala
- Värmland
- Västerbotten
- Västernorrland
- Västmanland
- Västra Götaland
- Örebro
- Östergötland



3) Varifrån kommer du?

- Danmark
- Finland
- Frankrike
- Italien
- Nederländerna
- Norge
- Polen
- Schweiz
- Storbritannien
- Tyskland
- USA
- Annat



4) * I vilket sällskap har du kommit till naturum?

- Jag är här själv
- Med familj/vänner
- I en turist- eller bussgrupp
- På konferens eller möte
- Med en undervisningsgrupp/skolklass

5) * Hur många är ni i sällskapet inklusive dig själv?



6) * Om du är tillrest turist: Hur många nätter omfattar ditt besök i Kristianstad kommun?

7) * Var det naturum/Vattenriket som gjorde att du valde att besöka Kristianstad?

Ja

Nej



8) * Hur fick du först information om naturum Vattenriket?

- Känt sedan tidigare
- Släkt
- Vänner
- Via arbetet eller skolan
- Tidning/tidskrift
- Radio/TV
- Via Vattenrikets hemsida
- Via annan hemsida
- Turistbyrån
- På någon av båtturena i Vattenriket
- Såg byggnaden blev intresserad
- Annat, vänligen specificera



9) * Brukar du vara med på naturums aktiviteter?

- Ja
- Nej



10) * Vilket är då den främsta infokanalen som du fått information från?

- Programbladet
- Hemsidan
- Affischer på Naturum
- Facebook
- Information vid Naturumbron
- Annonser i dagstidningar
- Annat

11) * Har du besökt någon av Vattenrikets besöksplatser?

- Ja
- Nej
- Vet ej



12) * Vilken eller vilka platser har du besökt?

- Aosehus
- Balsberget
- Degeberga backar
- Ekenabben
- Fjällmossen
- Forsakar
- Gropahålet
- Utemuseum Hercules
- Håslövs ängar
- Karpalundsdammarna
- Utemuseum Kanalhuset
- Lillöområdet
- Lägsta punkten
- Mosslunda
- Näsby fält /Araslövssjön
- Utemuseum Pulken
- Storkcenter
- Utemuseum Sännarna
- Vramsån
- Utemuseum Åsums Ängar
- Äspet/ Korran
- Annat

13) * Vilken månad gjordes denna intervju?

- April
- Maj
- Juni
- Juli
- Augusti
- September
- Oktober
- November
- December