

# Nature and Animal Assisted Interventions

## – Students' perspective on nature and human health

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### INTRODUCTION

Outdoor Environments for Health and Well-being is an international master's programme offered at the Swedish University of Agricultural Sciences at Alnarp. The programme is for students interested in how plants, animals and other elements of nature can be strategically used to benefit people's health, well-being and development. It takes departure in environmental psychology, but also draws on disciplines such as landscape architecture, medicine and education. The programme offers theoretical foundation within environmental perception, place attachment, landscape architecture and nature-based solutions.

Courses within the programme cover topics on health promoting outdoor environments for different groups of users, ranging from e.g. school environments and public areas for children and youth to health care environments and environments for elderly in sheltered living. Opportunity to investigate the functions of natural environments in promotion and prevention is given, for example, within the two courses Nature Based Interventions and Nature and Animal Assisted Interventions.

The course *Nature Based Interventions* focuses on different types of outdoor environments and employs the nature setting as the bearing element of the interventions. The emphasis is on the landscape and the qualities within. The *Nature and Animal Assisted Interventions-course (NAAI)* focuses on occupations performed with nature elements and/or animals and how these can promote health, well-being and development. These interventions are not place dependent and can be performed either outdoors or indoors.

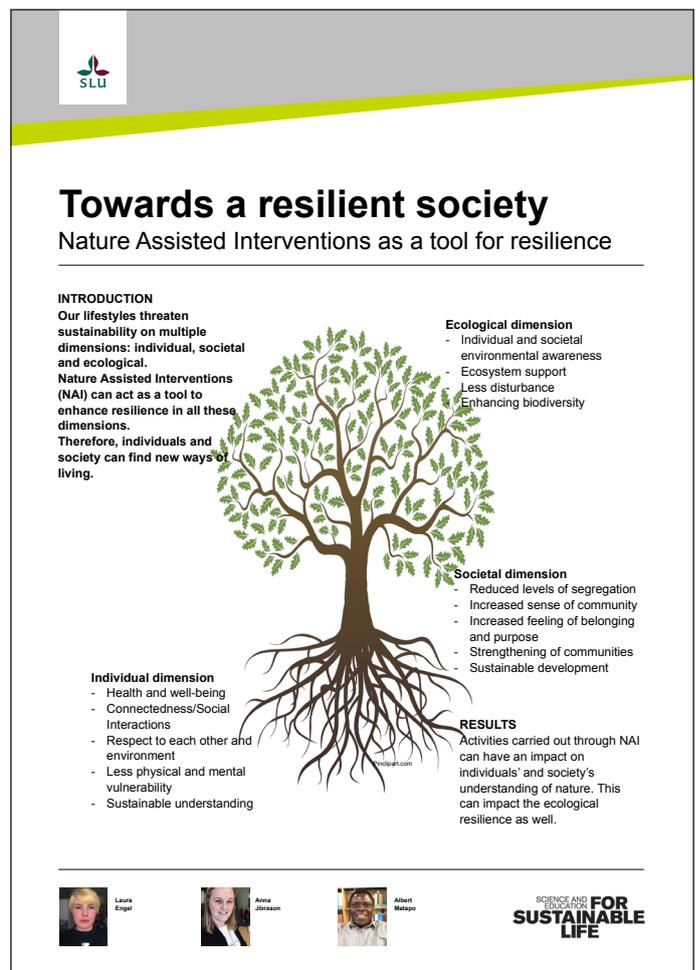
This fact sheet is a product of the students' work within the course NAAI during the spring term of 2019. The course is divided into four blocks with different areas of focus. One block puts specific focus on use of plants and other nature elements, and another section focuses on the assistance of animals in an intervention. Thereafter, a case study follows, where the students investigate practical exam-

les of NAAIs. In the last block, attention is paid to abstractions of knowledge drawn from these case studies.

During the last block, the students present their cases to each other in small groups of four to five people and afterwards extract what they understand as the "core essences" of nature and animal assisted interventions. The students thereafter are organised into new groups, with the task to further discuss the topic, write an abstract and illustrate their findings on a poster. As the final task of the course, the students present their posters at a course-conference that includes poster walks, group discussions and feedback from examiners. Afterwards, the groups adjust or develop their abstracts and posters. Their final products are presented in this factsheet.

### 1) NATURE ASSISTED INTERVENTIONS AS A TOOL FOR RESILIENCE

Laura Engel, Anna Jönsson and Albert Mugove Matapo



**Towards a resilient society**  
Nature Assisted Interventions as a tool for resilience

**INTRODUCTION**  
Our lifestyles threaten sustainability on multiple dimensions: individual, societal and ecological. Nature Assisted Interventions (NAI) can act as a tool to enhance resilience in all these dimensions. Therefore, individuals and society can find new ways of living.

**Ecological dimension**

- Individual and societal environmental awareness
- Ecosystem support
- Less disturbance
- Enhancing biodiversity

**Societal dimension**

- Reduced levels of segregation
- Increased sense of community
- Increased feeling of belonging and purpose
- Strengthening of communities
- Sustainable development

**Individual dimension**

- Health and well-being
- Connectedness/Social Interactions
- Respect to each other and environment
- Less physical and mental vulnerability
- Sustainable understanding

**RESULTS**  
Activities carried out through NAI can have an impact on individuals' and society's understanding of nature. This can impact the ecological resilience as well.

Laura Engel, Anna Jönsson, Albert Matapo

SCIENCE AND EDUCATION FOR SUSTAINABLE LIFE

Our modern lifestyles today are characterised by individual stress, diminution of public services in many states and an unsustainable resource usage which threaten sustainability within multiple dimensions: individual, societal and ecological. Research show that Nature Assisted Interventions

(NAI) have positive effects on personal well-being. We raise the question of how NAI can have an influence on society. Our poster shows ways of working towards a more resilient society, where the usage of NAI as a tool can be applicable in a wider sense. With knowledge about the already existing results from using NAI, we would like to propose that NAI can influence several other dimensions, directly or indirectly, and should therefore be accessible to as many people as possible.

The aim of our study is to be able to promote a wider use of NAI as a substantial part of a salutogenic approach. This would make it possible to achieve prevention rather than cure for the numerous experienced physical and mental health issues that many people can relate to today. If people can achieve individual resilience with the help of NAI, it might also affect society's resilience positively in many ways. Lastly, we propose that positive outcomes through using NAI could be gained to achieve ecological resilience as people are likely to learn to respect nature more in the process of performing NAI in a permeate way.

To investigate the possibilities of using NAI in a wider sense, we conducted case studies, field trips, qualitative interviews, literature studies and group work.

Our results found that activities carried out in NAI are likely to have positive impact on individuals and society's understanding of nature. It might have great effects on personal health and well-being, social interactions, physical and mental strength, sense of community or belonging and in the end, higher resilience and sustainable development at large. By making NAI more accessible to people of different backgrounds, the

overall quality of life might be enhanced. We find that in achieving this, resilience could be reached in the previously mentioned dimensions.

## 2) NATURE AS AN EQUALIZER - USING NATURE TO PRACTICE OCCUPATIONAL BALANCE

Anna Wetterberg, Linnéa Larsson  
and Anna Marcuson

In modern society, there is an imbalance where some of us work too much and some lack meaningful daily occupation. Both these situations create stress for the individual and increase the risk of mental health issues. Today, we see rising numbers of people who are on sick leave due to stress related illnesses. We also know that people with different disabilities suffer from health issues to a greater extent than the rest of the population. Our labour market is becoming more and more exclusive, where those who are not highly performing find it difficult to find a job. Our high technology society prioritises economic growth before individuals' well-being. Our society creates an artificial environment that results in losing our connection with nature. Nature is known to be beneficial for us, both physically and psychologically. It also has the potential to help people create a balance between work and rest. Activities such as gardening and taking care of animals are meaningful occupations that can be used as tools to practice occupational balance. Occupational balance is finding the balance between work and rest, but also between occupational values. The importance of balance between daily occupations was formulated already in 1922 by Adolf Meyer. This

is still appropriate, maybe now more than ever. People with stress related illnesses often have few occupations with self-rewarding value, while they have many occupations with a concrete value. Self-rewarding occupations such as enjoying your favourite hobby can make you lose track of time. On the other hand, concrete occupations such as providing a report before deadline demands more results. Taking care of plants can have beneficial effects, in terms of watching something grow but also letting it take time and understanding that we cannot rush it. This can work as a symbol in our own lives; taking care of ourselves and leaving room for both work and rest. Interacting with animals motivates us towards activity in many ways such as communicating, feeding, mucking manure, etc. At the same time, we know that petting an animal raises our oxytocin levels, which has a stress reducing effect. A garden, a tree or an animal can also serve as a refuge, a safe and undemanding place when the environment becomes too overwhelming. Nature has the potential to make us slow down and relax but it can also motivate us to be active and move forward. It all depends on our needs and goals with the interaction. No matter which situation you are facing, interacting with nature and animals can equalise the imbalance in our society.

## 3) HAVE WE LOST OUR CONNECTION WITH NATURE?

Emma Crawley, Karin Bellman,  
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Stress-related psychiatric illnesses and other stress-related health problems are on the rise in Sweden as well as worldwide. Long-term sick leaves have become problematic and may be connected to our increasingly sedentary indoor lifestyle and lack of connection to nature. Research have shown that interacting with elements of nature improves our physical and mental health. Organisations working with or wishing to implement Nature and Animal Assisted Intervention (NAAI), nevertheless, seem to face difficulties in receiving funding, setting up and replicating effective programmes. In light of the health-related issues we face today, and the existing evidence on nature assisted interventions, it is vital to promote and maintain purposeful and meaningful interventions. What needs to be considered to reach many different target groups and what factors are essential for an effective NAAI?

We have studied four different NAAIs through fieldwork and presented it to each other first in one group and then we brought what we learned from that to the next meeting with the new group and analysed the similarities. By analysing the field data together, we have been able to distinguish the results on how NAAIs can be successful.



**Nature as an equalizer**  
- Using nature to practice occupational balance

**CONCLUSION**  
Nature has the potential to help people achieve a balance between work and rest. Activities assisted by plants and animals can be useful tools.

**HOW?**

- Nature has a rhythm that can inspire us to move forward but also to slow down.
- Activities such as gardening and taking care of animals are meaningful occupations that can be used as tools to practice occupational balance.
- These tools can work motivational as well as restorative.
- A garden, a tree or an animal can also serve as a refuge, a safe and undemanding place when the environment becomes too stressful.

**BACKGROUND**  
In modern society there is an imbalance between those of us who work too much and those who lack a meaningful daily occupation. Nature is known to be beneficial for us both in a physical and psychological way.

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**Have we lost our connection with nature?**  
Opportunities and challenges in nature and animal assisted interventions (NAAI)

**CONCLUSION**  
Interacting with nature and animals is essential to human well-being. Preventive and rehabilitative measures can significantly contribute to public health.

**Effective NAAI-program**

- Purpose & meaning**
  - Animals
  - Horticulture
  - Phenomena
- Quality**
  - Education
  - Skills
  - Experience
  - Evaluation
- Costs**
  - Short term costs
  - Long term gains
  - Decreased sick-leaves etcetera
- Design**
  - Target groups
  - Team
  - Environment
  - Time plan
- Ethics**
  - Evidence based
  - Animal welfare
  - Sustainability

Engaging in meaningful activities and targeted nature experiences can enhance our much needed relationship with nature.

**SCIENCE AND EDUCATION FOR SUSTAINABLE LIFE**

**Using nature for health**  
A model for Nature and Animal Assisted Interventions (NAAI)

**Health & Functioning**

**BACKGROUND**  
NAAI are goal oriented interventions for, with, or on behalf of a user group that intentionally uses activities with nature and natural elements such as animals and plants in indoor or outdoor environments for the purpose of health and functioning promotion.

**AIM**  
To illustrate the process of how health and functional benefits are achieved in NAAI.

**METHOD**  
Synthesis of a model of NAAI through analysis of:

- Individual NAAI case studies.
- Theoretical framework from the course "Nature and Animal Assisted Interventions" (SLU).
- Deconstruction of AAI definition (IAHAIO) and the International Classification of Health Interventions (ICHI).

**CONCLUSION**  
There are six components that together compose a basic framework to ensure a qualitative ground for NAAI.

**RESULTS**  
We found that there are four main components of NAAI: (1) a user group, (2) the use of nature or animals, (3) activities and (4) practitioners.

We argue that health and functioning benefits are generated in the relations between the main components and therefore needs to be considered in order to achieve interventions with high quality.

In addition, we found that there are two more vital parts of NAAI: (1) an external quality auditor that evaluates the intervention and (2) an organisation which provides it.

**SCIENCE AND EDUCATION FOR SUSTAINABLE LIFE**

The study and analysis of various NAAI point to some significant factors that need to be emphasised in designing successful interventions.

The core of NAAI is to create meaning and purpose through opportunities of contact with nature through animals, horticulture and/or phenomena - it does not need to be a directive activity, it is the occupation offered that creates the positive effects of the intervention.

Many quality interventions are developed through common sense and a longing for a closer relationship to nature and has not sprung from the academic knowledge of all the positive health benefits. Quality affordances in the environment as well as building up leader's capacity within established institutions play a significant role when designing programmes that reach many different and needing target groups. Cooperative efforts between professionals, who may represent different governmental agencies and private entrepreneurs, play an important role. Having said that, it is also important that evaluation of the activities and programmes are done continually in order to highlight their efficacy. Local ethical and welfare aspects, both for participants and for animals cooperating in NAAI, need to be taken into consideration, as well as a direction towards sustainability

and global goals. The long-term gains from NAAI should be considered to create arguments to finance short-term costs.

Interacting with nature and animals is essential to human well-being. Preventive and rehabilitative measures can significantly contribute to public health. Engaging in meaningful activities and targeted nature experiences can enhance our much needed relationship with nature.

In the end, it is vital that an NAAI takes off. Even small scale interventions, designed in many different ways, are welcome. If we consider evidence-based design, user needs, ethics and animal welfare, we will have a good start. With continuity over time, we allow the participants a chance to build a relationship to each other, to animals and to nature; to harvest what has been sown.

#### 4) A MODEL FOR NATURE AND ANIMAL ASSISTED INTERVENTIONS

Amanda Gabriel, Caroline Hansson and Linn Hultin

Nature and Animal Assisted Interventions (NAAI) are goal oriented interventions for specific user groups, where activities involving nature or animals are used to generate positive effects

for human health or functioning. The research field of NAAI is lacking a general working model that incorporates all the central elements and aspects of the intervention. Recognising the need to address this issue, we aimed to develop an explanatory model that defines the central components of NAAI, the relations between them and how they generate health and functional benefits. The group deliberated using insights from our individual NAAI case studies and knowledge acquired in the course "Nature and Animal Assisted Interventions". The Animal-Assisted Interventions definition by IAHAIO and the International Classification of Health Interventions (ICHI) were used to define fundamental aspects of NAAI.

We suggest that there are four main components of NAAI: (1) a user group, (2) the use of nature or animals, (3) activities and (4) practitioners. We argue that the health and functioning benefits are generated in the relations between the main components and therefore need to be considered in order to achieve high quality. In addition, we suggest that there are two more vital parts of NAAI: (1) an external quality auditor that evaluates the intervention and (2) an organisation that provides it. This model is intended to strengthen

and outline the definition of NAAI, facilitating the central goal of health and functioning promotion. The model can be used as a working model for further deliberations about core aspects of NAAI and can aid both in the external communication and quality evaluation of NAAI.

## SUMMARIES OF ABSTRACTS

By Kelvin Mui

Group one provides a brief summary of the dimensions of concern for modern society, which have necessitated an approach that uses nature as a salutogenic approach to health. They have chosen this type of approach to be promoted as a tool to help in an individual's ability to become resilient from illness, which can then be extrapolated across society.

Group two provides the background behind an element of illness in modern society born from an increasing lack of connection with nature and a disproportionate focus on technology, labour markets and artificial environments. Through occupational therapy and reconnection with nature, individuals can improve their well-being by participating in meaningful activities.

Group three first describes the connection with nature that humans possess and suggests that there is a benefit for humans' well-being using elements of nature. They then illustrate the problems humans face in modern life and their causes. Finally, they promote awareness of the challenges facing nature-assisted interventions, namely, the lack of quality control and evaluation, which can potentially expand its efficacy.

Finally, group four focuses on what is lacking in the research field of NAAI and offers a model to be considered in future research. This model comprises of four main components and their successful interaction is necessary to be fully effective. They also discuss the need for effective evaluation of companies offering this type of service. Combined, these concepts help strengthen the definition of NAAI.

## DISCUSSION

Each of the four groups begins by identifying the need for interventions in people's lives. Most groups mention the psychological health problems and stress-related illness, including the first group. This group also makes reference to salutogenesis, which is a model that focuses on supporting health and well-being rather than seeking the causes of ill health. This is a good

starting point for helping to define what a NAAI is and what it can help to accomplish. Group one uses this concept to help emphasise that NAAIs can build resilience in an individual's health and well-being so they may better cope with the challenges of modern life. In fact, they extend that concept to society as a whole and suggest that perhaps there can be a reciprocal effect as nature is used and respected. This is an interesting concept which suggests that by letting nature help us, we can in turn see the benefit of nature in another way, thereby giving us good cause to help preserve it. Group one provides a very good reason for using NAAIs but does not provide any concrete examples thereof in the abstract. This would have helped better explain to a general audience what NAAIs are.

Group two's description of the need that humans have for interventions is quite detailed. They make a clear linkage between modern lifestyles with a loss of connection with nature. This is the starting point for their promotion of a therapy that involves nature. But then, they also introduce the concepts of occupations and occupational therapy to help people with their illnesses described earlier. This group has chosen to combine occupational therapy with natural elements such as planting, tending gardens and taking care of animals. They provide examples of this, which is helpful for those who are not familiar with the concepts. They continue to stress that health can be regained through meaningful self-rewarding occupations that involve nature. Again, the focus is on addressing mental illness and stress-related disorders, which, through the right balance of meaningful occupational therapy, can be treated. This is the only group that has included the concept of occupational therapy in their abstract, and it appears to support their definition of health recovery through NAAIs.

Group three has a very straightforward approach to NAAIs. They choose to outline the health problems and state the ability of nature to assist in therapy very directly. They then promote the need for NAAIs, stating that they face challenges. They suggest that these challenges can be overcome via participation from various entities. Finally, they end by promoting widespread use of NAAIs, without really explaining the mechanism of benefit clearly through examples. Their layout is quite organised and clear; however, examples would improve their assertions. As a general abstract, this group is able to coherently show the need for NAAIs and the problems they face, with

some suggestions on how they may overcome them, but they are not able to adequately support their claim that the interventions are vitally important, even though I believe they are.

Finally, group four takes a wholly unique approach and frames a perspective of NAAIs by creating a working model thereof. This is quite innovative as it also serves to contribute to future research by giving it a framework, should other researchers adopt it. Their approach provides a focal point to their opinion of what makes NAAIs effective, and also highlights the dynamic nature of the interactions among the elements, which is crucial for its success. This group does not provide much detail to the needs of the user groups or who they are, nor do they provide any examples that would help explain the nature of the intervention. They choose to jump directly to a definition and conceptual tool that can be used perhaps at an academic level; thus, this is perhaps the intended audience of this particular abstract.

## CONCLUSION

The process of coming up with a united abstract is challenging, considering the different backgrounds of each member of the group. However, the process of a consensus among this group holds the real value. Especially after having completed this exercise in another course, it is remarkable to read abstracts that contain so much cohesive thought. The groups have been very successful in being able to extract the core ideas of NAAIs, with essential elements such as: the need (humans' health issues), the benefit, the mechanism of the interaction within the intervention, and the challenges facing the practice of NAAIs. As a type of therapy that is relatively new in the scientific world, it is important that there is a positive promotion of the activity; however, it must be done in a way that the scientific community deems valid. People must first be engaged by the narrative of human health and therapy using Nature and animal-assisted interventions, before they further engage in discovering the evidence behind it. The best way to do this is to engage the average person at a basic level- in a way that they can relate to. By providing a poster and abstracts that illustrate the core ideas to a general audience, this awareness can be spread and ultimately developed.

For further information about the master programme Outdoor Environments for Health and Well-being, see [www.slu.se/ohw](http://www.slu.se/ohw)

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- Faktabladet är utarbetat inom LTV-fakultetens område Arbetsvetenskap, ekonomi och miljöpsykologi.
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