**Aalto University
School of Arts, Design
and Architecture**

METSÄHALLITUS

Ympäristöministeriö
Miljöministeriet
Ministry of the Environment

**Design for Government Course at Aalto University
in Partnership with Metsähallitus & Ministry of Environment Finland**

Growing Nature-Savvy Visitors

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Executive Summary

"Growing nature-savvy visitors" is a strategy for reducing visitor footprint in national parks. The group project took place in spring 2022 as part of the Design for Government course at Aalto University where students partnered with state organizations to co-design solutions for creative future changes. This project resides under the "Sustainable nature recreation" brief given by Metsähallitus and Ministry of Environment Finland.

This report documents the whole project process from research to final proposal. In the following pages, we present our design process in four structured stages, and we walk you through findings and difficulties along the way. To comprehensively explore the problem space, multiple research methods were applied, including fieldwork and observation, interviews and roundtable discussion, workshops. Adding to that, we adopted systemic thinking method to synthesize findings to insights and designed based on them. Through the process, multiple stakeholders were closely involved to help us develop and validate the final proposal.

Our proposal tackles the wicked problem of encouraging visit to nature recreation places while at the same time reducing footprint and biodiversity damages – through sparking and strengthening nature connectedness for beginning nature visitors. It presents a strategy of considering the user journey through different activities and designing for behaviors connected to the activities from planning stage (anticipation) to memory (reflection). For beginning visitors, it enables an enjoyable national park experience with customized journey, and it encourages pro-environmental behaviors and regenerative actions through multi-channel nudges and alignment between digital service and in-park physical touchpoints. The proposal is suggested to the Digital Service and Customer Experience unit in Metsähallitus' Parks and Wildlife Finland. And the digital part of it is specifically proposed to the new digital service which Metsähallitus is currently developing.

Our proposal aims to inspire sustainable nature recreation by tackling the consciousness and values of beginner national park visitors. It sparks and strengthens nature connectedness for visitors starting from their first national park visit, and it guides and invites them into regenerative behavior in nature. We envision a future where nature connectedness is deeply rooted in the mind of each individual in Finland, and where nature is protected and regenerated collectively and proactively by everyone.

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Introduction

Nature is the treasure of Finland. Over 75 percent of Finland is covered with forests (Ministry of Agriculture and Forestry of Finland, n.d.), and over 1,000 acres of the land is protected in 41 national parks (Metsähallitus, n.d.). Not only do national parks feature special landscapes and preserve the biodiversity of Finnish nature, but they also provide quietness and peace for people to relax and revitalize.

The high pressure of modern life and the Covid-19 pandemic prompted a closer interaction between nature and people. However, as people derive physical and mental health benefits from the beautiful environment, their enthusiastic visit and sometimes irresponsible behaviors have caused threats to nature and biodiversity.

In 2020, national parks were visited nearly 4 millions times, which increased by 23% compared to the previous year (Record Number of Visit in National Parks, 2021) (figure 1). And although many efforts had been taken to halt biodiversity, the decline hadn't been stopped - 12% of species and almost half of the natural habitats are in endangered state (Biodiversity is Declining, 2021) (figure 2). People living in Finland have intimate relationships with nature, whether they are raised in Finland or expats who moved here. However, as we are granted with an optimal freedom of exploring and enjoying nature by Everyman's Rights (Ministry of the Environment of Finland, n.d.), we should also collectively take responsibility for it.
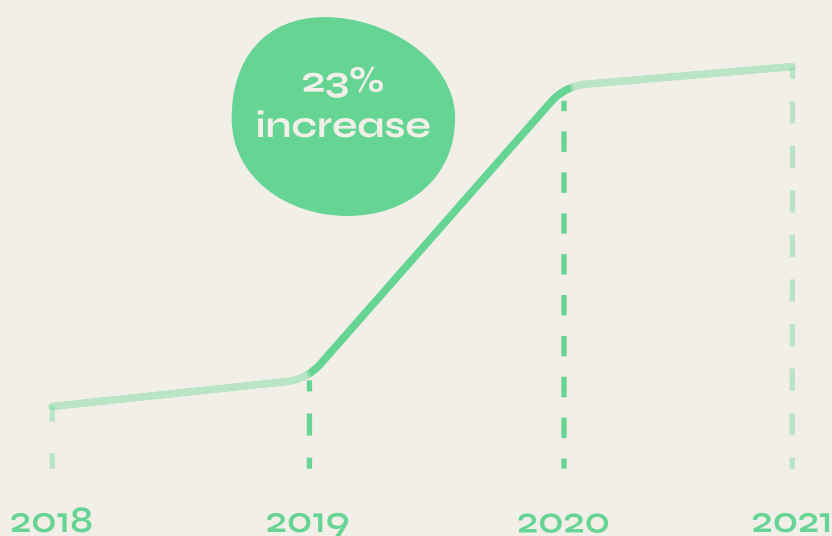
23% increase

2018   2019   2020   2021

Figure 1: increase in number of visitors over the last 4 years
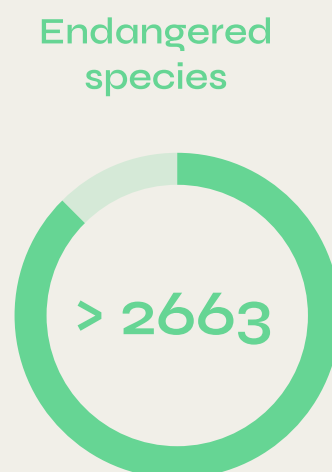
Endangered species

> 2663

Figure 2: number of endangered species

Dilemma & Project Brief

The primary purpose of Finnish national parks is "to ensure the diversity of Finnish nature", while another indispensable purpose is to serve as recreation places for all people living in Finland (Metsähallitus, n.d.). Facing the dilemma between growing visitor numbers and harmful behaviors in national parks and enhancing the conservation values of them, Metsähallitus and Ministry of the Environment approached us to design for the future of sustainable nature recreation, in order to enable continuous use of the national parks while still preserving nature.

Process Overview

We are a team of four master students with experiences in business, industrial design, and interaction as well as user experience design. In 14 weeks, we unpacked the problem brief and approached design solution in an intensive and comprehensive order. We structured the process into four stages: first, the discovery stage in which the problem space was explored through human-centered research and broad desktop research; second, the synthesis stage where previous findings were categorized and analyzed, and the problem space was scoped into four insights through systemic analysis. In the third stage,

design intervention, we studied multiple leverage points, created an ideal scenario and considered possible interventions through which the scenario could be reached. And in the final stage of developing our proposal, we refined the solution, validated it with stakeholders, and presented it through engaging storytelling.

Human-Centered Research

a. Roundtable Discussion

To unpack the project brief and acknowledge our stakeholders' expectations, we and other two groups working on the same project brief had a roundtable discussion with six commissioners from Metsähallitus, Ministry of Environment and Ministry of Agriculture and Forestry in the second week of the project. The discussion was conducted in hybrid mode where two commissioners came in person and the rest attended online.

Several topics were discussed in depth, including biodiversity, visitor footprint, organizational collaboration etc. From the discussion, we learned that the major threat to biodiversity came during the pandemic where overflowing visitors added too much pressure to natural places, especially national parks like Nuuksio. We figured that Metsähallitus expected people to acknowledge the rules in national parks and follow them during their visits – but in reality, irresponsible behaviors and biodiversity damages occurred. Through the discussion, we better understood the commissioners' roles and relationships, as well as motivations,

efforts and challenges in sustainable nature recreation. In the end, we identified an overarching goal: encouraging more visits to national parks while ensuring sustainable nature preservation and biodiversity protection.

With some questions clarified, new ones emerged. For example: what are the harmful behaviors to nature and which visitor profiles cause the most damage? What are the methods for protection? How to take action, and who should take responsibility? And most importantly, what exactly is sustainable nature recreation? We aimed to tackle these questions with desktop research and in-depth stakeholder interviews.

b. Desktop Research

With these guiding questions, and to acquire a comprehensive understanding of the problem context and to discover existing solutions, we conducted intensive desktop research in which we studied e.g. Finnish and international official organization websites, research papers, news and blogs. The reviewed material includes:

- Reports about visitor profiles and number of Finnish national parks
- Sustainable nature recreation strategy by regional, national and international governmental and non-governmental organizations
- Regenerative action / initiative examples
- National Park service design examples in other countries
- Communication and collaboration strategy of Metsähallitus

Through desktop research, the multi-layered meaning of sustainability became clearer – reducing footprint to and in natural areas, preserving biodiversity, encouraging pro-environmental tourism, etc. We also got a greater understanding of all involved stakeholders, which helped us later map the system. The desktop research did not stop here but continued all through the later weeks. However, the research focus was adjusted and redirected with new findings along the way.

c. Stakeholder Interview

Roundtable discussion and initial desktop research inspired us to learn more about the project topic. In week 3 and 4, along with two other teams, we conducted nine interviews with multiple stakeholders to hear their different voices in sustainable nature recreation. The interviewees include:

- Service designer and specialist designer in Parks and Wildlife, Metsähallitus
- Specialist in collaboration with private service providers in Metsähallitus
- Nuuksio National Park foreman
- Professionals in recreative nature usage
- Haltia Nature Center employees
- Tourism specialist in Visit Espoo

The interviews were semi-structured and lasted about 45 mins. Most of the interviews took place online via Zoom and others were conducted in real space, e.g. at Haltia Nature Center. The focus of the interviews and guiding questions were initiated by each group based on their research interest, be it for example the visitor or Metsähallitus. The interviews were attended by representatives from all groups and notes were shared within the larger supergroup in Google Drive and a Miro board. From the interviews, we mapped out the motivations and roles of different stakeholders in sustainable nature recreation, and we acquired a deeper understanding of the visitor profiles, nature and their relationships.

d. Fieldwork in Nuuksio National Park

The roundtable discussion, desktop research and stakeholder interviews sparked our curiosity about visitor experience and in-park activities and behavior, which led us to a one-day field visit to Nuuksio National Park on Sunday of week 5. During the trip, we tested different transportation methods for arriving and returning and explored one of the most visited routes in Nuuksio. We also observed and conducted interviews on site with both Finnish and international visitors. For many of us international students, the trip was the first close interaction with Finnish nature.

In the visit, we were amazed by Finnish beautiful natural environment, but we also discovered many unpredicted surprises and problems that visitors might encounter in each stage of their visit. From the fieldwork, we created a customer journey map (figure 3) to present activities, emotions and possible

opportunities before, during and after a visit to the national park. Main findings of the fieldwork included:

- **Arriving Nuuksio National Park by public transportation is inconvenient: the one and only bus was usually overcrowded and infrequent, especially on weekends**
- **In-park physical facilities are confusing: signages and instruction boards don't allow intuitive understanding and easy application for inexperienced visitor**
- **Rules are not easy to follow: most visitors want to behave well in the park while they don't know how**

Overall, the first human-centered research phase was intense and comprehensive. From roundtable discussion to field trip, we unpacked the project brief and explored the problem space from different aspects of multiple stakeholders. The first stage opened the project scope and established the foundation for the next synthesis and design stages.
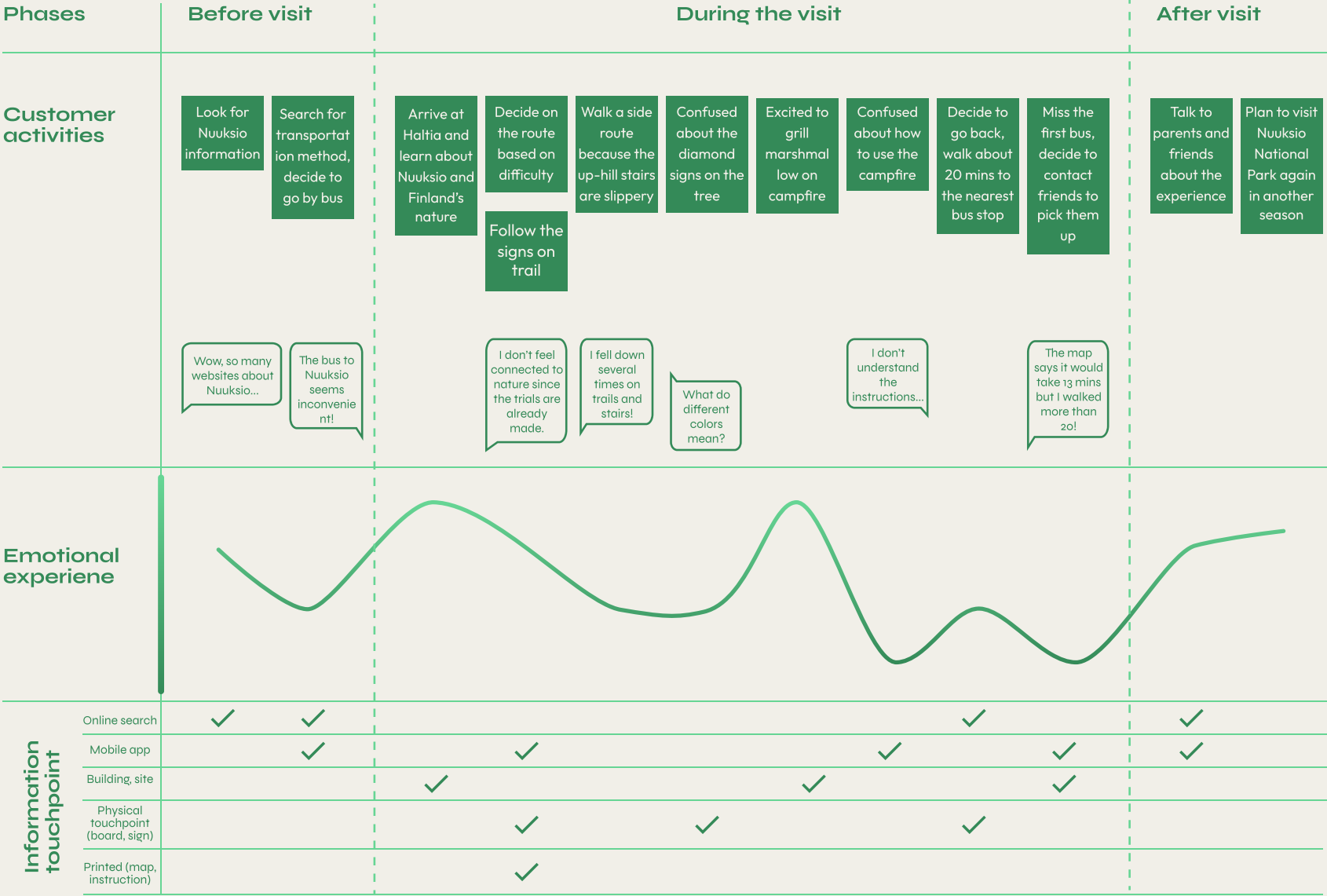
Figure 3: customer journey map of the whole journey to the National Park

Phases

Before visit	During the visit	After visit

Customer activities

Before visit:
- Look for Nuuksio information
- Search for transportation method, decide to go by bus

During the visit:
- Arrive at Haltia and learn about Nuuksio and Finland's nature
- Decide on the route based on difficulty
- Follow the signs on trail
- Walk a side route because the up-hill stairs are slippery
- Confused about the diamond signs on the tree
- Excited to grill marshmallow on campfire
- Confused about how to use the campfire
- Decide to go back, walk about 20 mins to the nearest bus stop
- Miss the first bus, decide to contact friends to pick them up

After visit:
- Talk to parents and friends about the experience
- Plan to visit Nuuksio National Park again in another season

Quote bubbles:
- Wow, so many websites about Nuuksio...
- The bus to Nuuksio seems inconvenient!
- I don't feel connected to nature since the trials are already made.
- I fell down several times on trails and stairs!
- What do different colors mean?
- I don't understand the instructions...
- The map says it would take 13 mins but I walked more than 20!

Emotional experiene

Information touchpoint

	Before visit		During the visit									After visit	
Online search	✓	✓							✓			✓	
Mobile app		✓		✓				✓		✓		✓	
Building, site			✓				✓			✓			
Physical touchpoint (board, sign)				✓		✓			✓				
Printed (map, instruction)				✓									

Systemic Analysis

a. Mapping Exercises for a Systemic View

To understand the context we were working in, it was beneficial to begin with mapping all stakeholders related to the national park. In order to make the context easier to grasp we narrowed down to one single park and the stakeholders related to it, yet not excluding the opportunity to create a solution that could be scaled from park to park. From our roundtable discussion, we learned that the problem is the most urgent in urban areas where many people live. In figure 4, we have thus mapped the stakeholders in relation to Nuuksio national park. The stakeholder map shows the various governmental parties involved, as well as actors from the tourism sector, and sheds light on the vast number of service providers within the national park.

We furthermore looked at the problem from a systemic point of view, seeking to identify the core reasons behind the problem as well as look at the issue through different lenses. We looked at the structures behind the national park – at how different institutions, service providers as well as rules and labels play a role. However, we soon realized that this is a problem of human behavior, which led us to looking at the system from the visitor's

perspective. We started with mapping all the information flows impacting the user, but we soon realized that other things than pure information have impact as well – e.g. the choice of activity and the nature experience itself play a role. Based on the research we had done, we were able to make a new iteration of the map. In figure 5, we consequently looked at which factors have an impact on the visitor behavior in the park, which impact the experience, as well as how the experience ultimately leads to changes in the value system, which again impact behavior. This finding also function as support for our insight 4, which is explained more in the next section.

b. Making sense of data with affinity diagramming

After our initial research phase, we had gathered a huge amount of data. In order to make sense of it, we used the affinity mapping technique, where pieces of data are added to the same space, regardless of the source. The method enabled us to overview a big data set, through categorizing the data and finding occurring patterns. The exercice resulted in many insights on different levels, equally to the systems mapping.
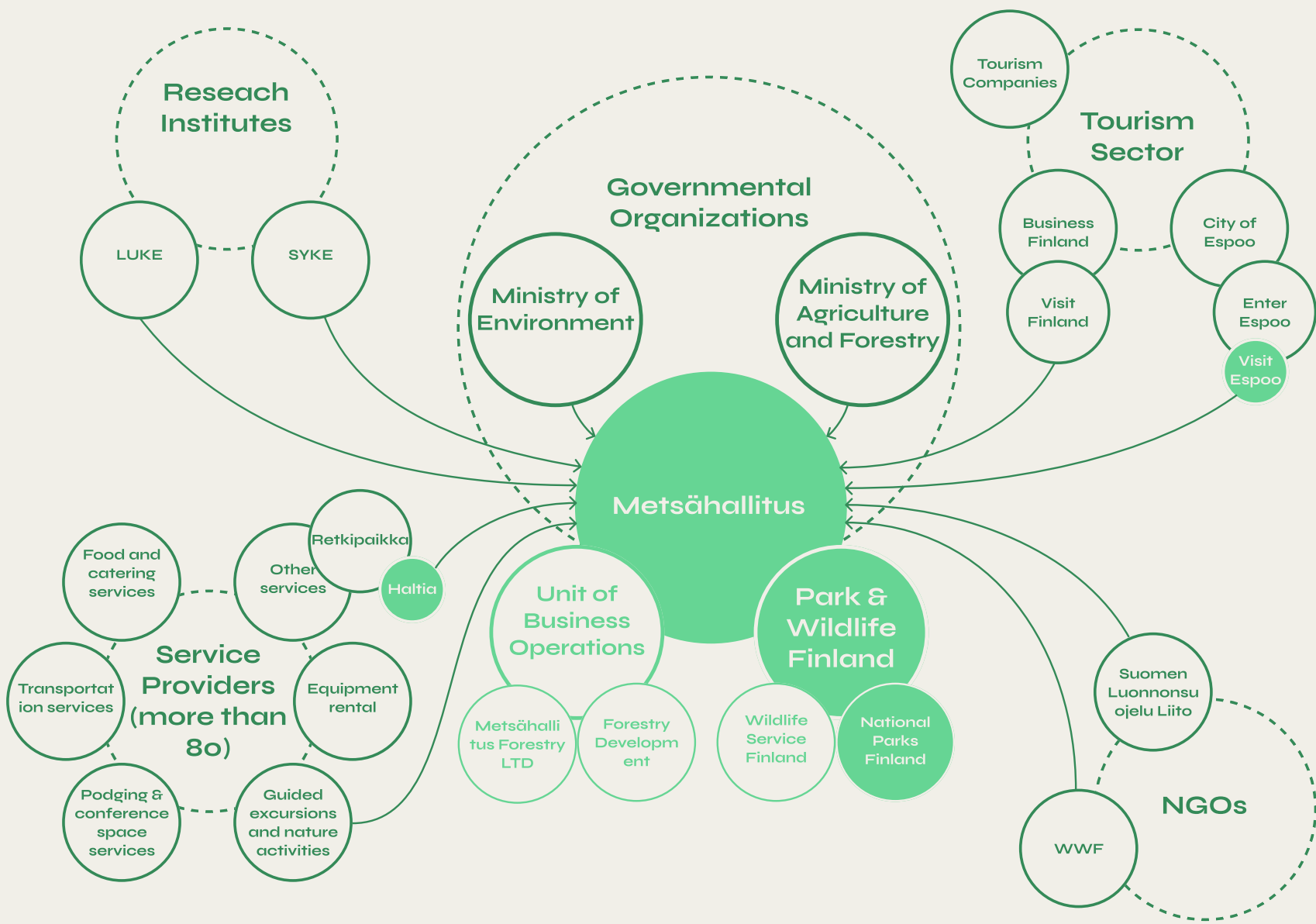
Reseach Institutes

LUKE

SYKE

Governmental Organizations

Ministry of Environment

Ministry of Agriculture and Forestry

Metsähallitus

Tourism Sector

Tourism Companies

Business Finland

Visit Finland

City of Espoo

Enter Espoo

Visit Espoo

Service Providers (more than 80)

Food and catering services

Other services

Retkipaikka

Haltia

Transportation services

Equipment rental

Podging & conference space services

Guided excursions and nature activities

Unit of Business Operations

Metsähallitus Forestry LTD

Forestry Development

Park & Wildlife Finland

Wildlife Service Finland

National Parks Finland

Suomen Luonnonsuojelu Liito

NGOs

WWF

Partners of Metsähallitus

Partners of Metsähallitus

Attitude & values

Biking

Camping

Personal activities

Hiking

Types of activities

Knowledge

Guided tours

Organized activities

Guided tours

VISITOR

Nature experience

World Clean-up Day

Volunteering

Interaction with nature

In-person communication

Social media

Word of mouth

Information

Private service provider

Options

Options   Information

Information board

Word of mouth

Tourism companies

Knowledge

Luonto on.fi

Information

Signs

Touchpoints in the park

Information channels

Metsähallitus' information chaanels

Social media

Knowledge

Haltia
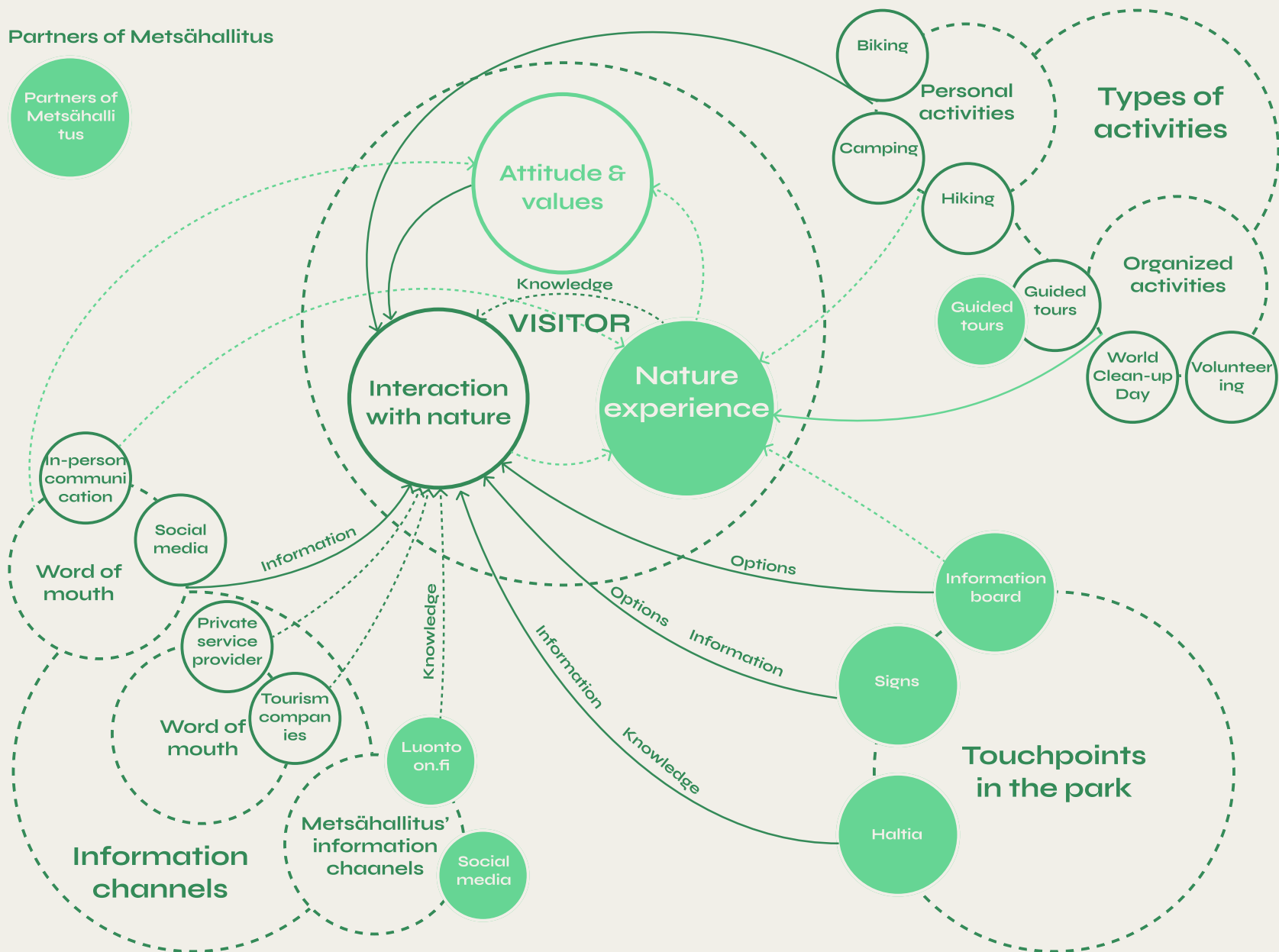
As we learned that biodiversity is closely related to human behavior, we wanted to focus on the things that impact these behaviors. With this as a criteria, we identified four main insights.

c. Four User-Centric Insights

Insight 1: information overload

Metsähallitus' efforts at compiling all possible information at luontoon.fi is impressive. However, although the information exists, it is probably too much to expect that all park visitors-to-be would browse their web page for hours prior to their visit. Figure 7 demonstrates the pages Metsähallitus' wants the visitor to familiarize themselves with before the visit. In addition to Metsähallitus' own channels, there is a huge amount of

information channels by external parties which directly or indirectly may impact the visitor (some of these are shown in figure 7). For Metsähallitus, a major challenge is therefore to ensure that the right information reaches the user and serves their needs.

	Website		Mobile app	Physical touchpoint
Metsähallitus	luontoon.fi / nationalparks.fi retkikartta.fi haltia.com YouTube Facebook Instagran Twitter	Activities Directions Services Maps ... (47 pages to go through before the trip)		Information board Signages Haltia Nature Center Haukanpesä guide hut
External	visitespoo.fi myhelsinki.fi nuuksioon.fi Finland Naturally Facebook group Instagram Tourism websites ...		HSL app Google Map	Haltia Nature Center Haukanpesä guide hut Printed map World of mouth

Figure 7: some of the various information channels park visitors might be impacted by

Insight 2: spreading visitor pressure (figure 8)

One of the biggest problems seems to be that simply the number of visitors tears the nature. National parks are not the only places for nature recreation, still most people in the capital region choose to visit Nuuksio or Sipoonkorpi, likely because of the strong brand the national parks have gained (Leppänen, 2021 & senior specialist at Ministry of Agriculture & Forestry, personal communication, 7.3.2022).

When visitors choose to visit the national park, they also make an active decision about where to start their route. In Nuuksio, there are more than one possible starting point, although most visitors start from Haukkalampi (Haltia employee, personal communication, 27.3.2022 & specialist at Metsähallitus, personal communication, 29.3.2022). There have been efforts in spreading the pressure from certain places and trails, for example the Parkkihaukka service that showed how busy parking places were (Metsähallitus, 2018). Everyone we discussed with mentioned this as a successful project, regardless of where they worked (specialist at Metsähallitus, personal communication, 29.3.2022 & director of conventions and tourism, Visit Espoo, personal communication, 30.3.2022), but weirdly, the service is not maintained.

Figure 8: spreading visitor pressure

Insight 3: guidance in the park (figure 9)

The infrastructure in the park plays an important role in informing and guiding the visitor as well as providing options, for example through providing enough campfire sites so that visitors don't need to solve the issue by creating their own. As Byers (1996, p. 37) says: "Lack of options can act as a barrier to behavior change". According to our interview with a specialist at Metsähallitus (personal communication, 29.3.2022), the current infrastructure is designed for people who already know the rules and are familiar with national parks, while inexperienced visitors might need a different kind of support on site.

interesting that there are almost no regenerative activities for adults in Nuuksio (the types of activities which would strengthen their nature connectedness) – the existing activities are targeted mainly at nature lovers (e.g. events arranged by WWF) and activists, or children (for example Nature School). And other types of activities that also would contribute to nature connectedness, such as forest yoga, are only mentioned in a long and not very inspiring list of activities on Metsähallitus' website (Metsähallitus, n.d.).

Figure 9: guidance in the National Park

Insight 4: relationship with nature (figure 10)

Many of the articles we read (e.g. Leppänen, 2021 & Mackay & Schmitt, 2019) explain that people who have a stronger connection to nature are more likely to engage in pro-environmental behavior. Newer visitors with less experience might therefore have a weaker relationship with nature which makes them more likely to cause harm to it. Nature connectedness is something that builds up over time, through experiences that influence our value system and ultimately manifests in actions. This is a lengthy process, but there are means of accelerating it.

As Charles & Chapple (2018, p.11) puts it: "To get to action, the heart and hands are typically engaged as well". It is therefore

Figure 10: Nature connectedness is formed through nature experiences which impact the value system and ultimately manifest in behavior

Design Intervention

a. Going Back & Choosing the Right Insight

After forming our four possible insights, it was time to choose which one of them to tackle. Our team found it difficult at first, but after structuring our thinking we managed to settle on the one we felt confident in tackling further. But how did we do this structuring?

First, it was important to reach mutual understanding in the team. We went back into our background research and the material which supported the insight to really look at what the problem is and on what level it occurs to find leverage points. Is it related to visitor behavior, Metsähallitus' services or perhaps on a more structural level? This way, we were able to determine who could be responsible for solving the problem. When we had identified the leverage points for the different insights, we began ideating on them to create a multitude of possible interventions. We furthermore gathered benchmarks to use as inspiration as well as to see how others have decided to tackle similar problems.

After this, we were able to identify our most promising leverage points and ideas for intervention. We realized that a prerequisite

for all the interventions, whichever we would choose, would be that Metsähallitus would look over their capability to implement projects and not leave them halfway – as our insight about spreading visitor pressure had indicated that this is a tendency. However, we determined that simply resolving this problem would not tackle the core issue in the national parks.

Now we were left to choose between three main interventions that answered some of our initial insights:

- **A communications strategy for streamlining Metsähallitus' online channels and aligning external communication**
- **Strengthening the national park visit experience through aligning online and offline touchpoints**
- **A strategy for regenerative activities through collaboration with partners and community**

To find the intervention with biggest potential, we went back to the initial brief given by Metsähallitus, to refresh our memory and to make sure we weren't forgetting something crucial. This helped us to look at each individual insight and see how much it aligned with the brief. Adding to that, our team found

it meaningful to set our own criteria for the intervention, to ensure that we would develop something that would answer the goals of our project. These are the criteria we established:

1. Nature connectedness. The fourth of our initial insights, the one about nature connectedness, was the one which both Metsähallitus and Ministry of the Environment wished us to explore further after the mid-term presentation. In addition, we saw this as the most important insight – we want the visitors to feel strongly connected to nature, since our research proved it'll have an affect on the behavior as well. Therefore, the change in values would also translate into a change in behavior. Nature connectedness should thus be the corner stone of our proposal.

2. Feasibility. We want our client, Metsähallitus, to be able to actually use our solution in practice and justify the value it would bring by implementing it.

After going through all these criteria and structuring we settled on the intervention of "Strengthening the park visit experience through aligning online and offline touchpoints". We found that this insight was the most feasible, since Metsähallitus is in the process of renewing their digital services and overall we could support this insight the strongest. In addition, through designing the park experience, we would have the opportunity to foster nature connectedness in a tangible way.

b. Scenarios, Leverage Points & Nudges

Having decided to develop a solution that would strengthen the national park visit experience, each of our teammates formed a scenario of the insight, i.e. what an ideal park experience should look like. But before that, we started with the current situation. We used our persona Anna, a first time national park visitor, as we saw the strengthening nature connectedness as most urgent in this group. After we had finished our scenarios we formed them into a story depicting the current situation (figure 11):

A group of friends and our protagonist Anna have planned on going on a spontaneous trip to one of Nuuksio park's campfire sites, so they break some twigs and branches from a nearby tree without reflecting on it in order to use them in the fireplace. After arriving at their destination, they realize the campfire site is so crowded that they decide to start a fire on the ground where someone had previously lit a small fire. After not finding a trashcan in the forest, they decide to burn the paper trash they have and leave their uneaten food behind, as they think it might be nice for the animals and bugs to eat and since they didn't think to bring their own trash bag with them.

Overall, Anna's Nuuksio park visit was nice, however, she is oblivious to the impact she and her friends have made during their short trip.

To be able to improve Anna's visit, we had to envision the ideal scenario as well – a scenario in which Anna gets the needed support during the journey, has an easy time making the right choices in the park and is inspired to act responsibly. Ultimately, this would inspire Anna to continue exploring nature and develop her nature connectedness so that, in the future, the default for Anna would be to take care of nature. This scenario sparked the ideation process within our group and inspired us to think about the possible leverage points. How could Anna's journey be improved so that it would improve her experience, while also supporting and protecting the National park's biodiversity?

Breaking this question down even further, more questions and thoughts arise regarding the different phases and aspects of a visit to a National Park for Anna's scenario:

Before the visit: Being informed in advance of practical information, recommendations and routes - how would Anna's journey be different then?

During the visit: Information and instructions once entering the park – how could they help transform Anna's trip into a learning experience that evokes empathy towards nature and wildlife?

Supporting decision making while in the park – how can Anna more easily understand her impact on the park to better support her decisions while in the park?

After the visit: Takeaways and goals from a visit to the park – encouraging a deeper empathic connection with nature, with an understanding of why national parks must be viewed differently from other forest areas.

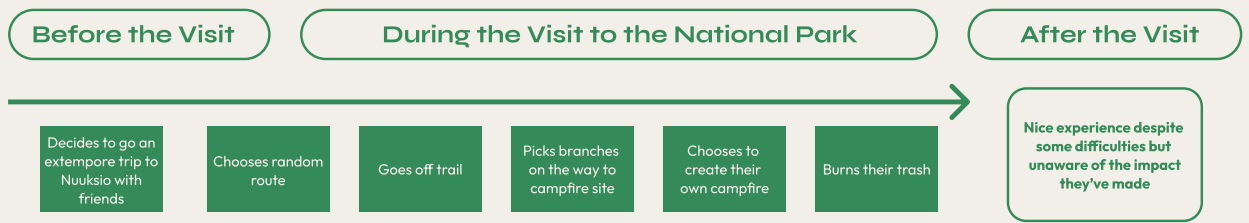**Disseminating the experience** – Anna could share her successful experience with people and help educate them.

Deepening the connection – Anna may continue to visit the park and potentially engage in regenerative activities, leading to her feeling more connected to nature.

Ultimately we want the visitors to feel informed but also connected to and responsible over nature. Laying down the possible leverage points first supported us in ideating possible nudges. Nudges are used to influence human choices and we as designers are the ones creating the context and environment to support the choices the visitors make (Thaler et al., 2016). The nudges we look to design for our project would take place during the first visit of a newbie into a national park, since this kind of visit is usually the first touchpoint into the world of national parks. However, we cannot focus on the nudges that just take part during a visit, but we also need to look into nudges that can lead to reflective and recreational activities even after the park visit and hopefully lead to a continuous and connected relationship with natural areas.
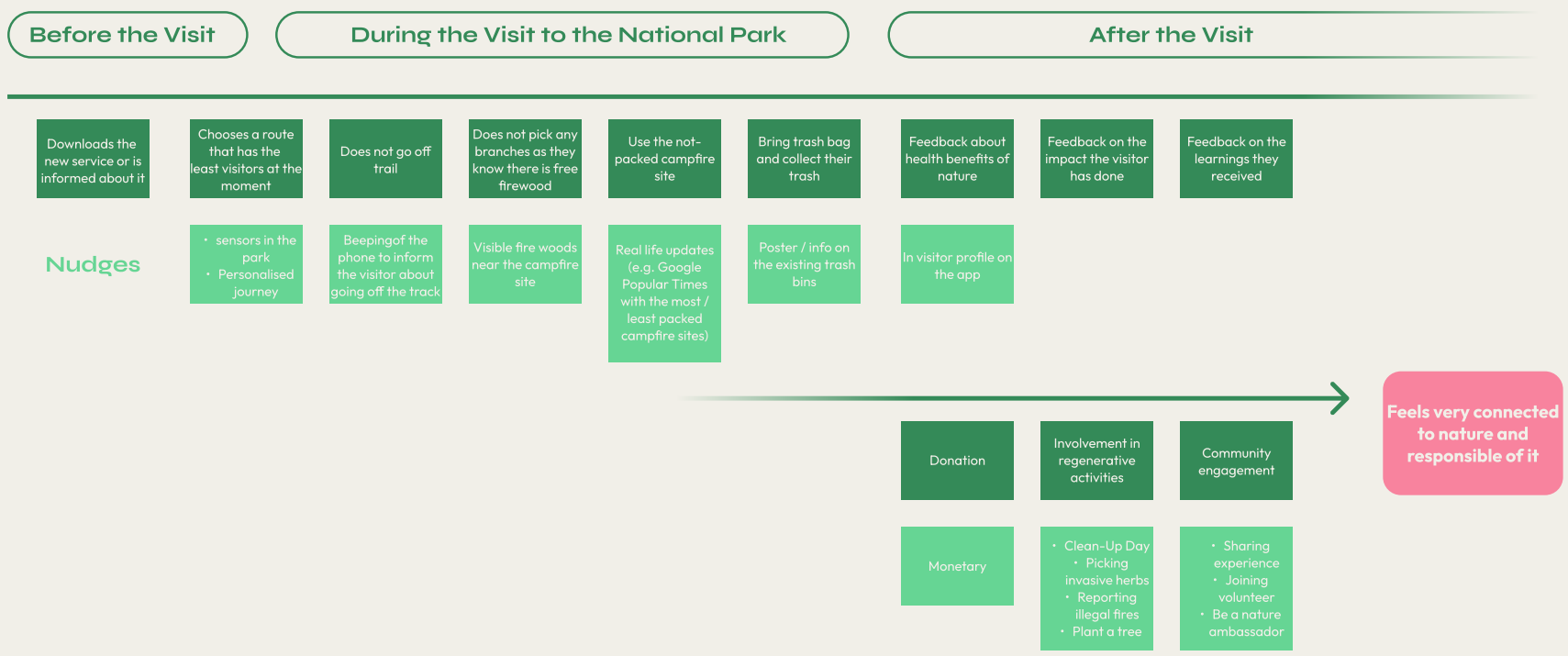
Therefore, the nudges we look to develop have to do with:

Figure 11: current journey vs. ideal journey to the National Park

Current Journey

| Before the Visit | During the Visit to the National Park | After the Visit |

Decides to go an extempore trip to Nuuksio with friends

Chooses random route

Goes off trail

Picks branches on the way to campfire site

Chooses to create their own campfire

Burns their trash

Nice experience despite some difficulties but unaware of the impact they've made

Ideal Journey

| Before the Visit | During the Visit to the National Park | After the Visit |

Downloads the new service or is informed about it

Chooses a route that has the least visitors at the moment

Does not go off trail

Does not pick any branches as they know there is free firewood

Use the not-packed campfire site

Bring trash bag and collect their trash

Feedback about health benefits of nature

Feedback on the impact the visitor has done

Feedback on the learnings they received

Nudges

- sensors in the park
- Personalised journey

Beepingof the phone to inform the visitor about going off the track

Visible fire woods near the campfire site

Real life updates (e.g. Google Popular Times with the most / least packed campfire sites)

Poster / info on the existing trash bins

In visitor profile on the app

Donation

Involvement in regenerative activities

Community engagement

Feels very connected to nature and responsible of it

Monetary

- Clean-Up Day
- Picking invasive herbs
- Reporting illegal fires
- Plant a tree

- Sharing experience
- Joining volunteer
- Be a nature ambassador

1. Defaults, so those actions people take which take the least amount of effort. For our context, choosing a campsite and route which are the most popular and seemingly easiest to access. How do we change it so that the default would be different from this?

2. Understanding mapping, which makes tasks and decisions in the park easier for the visitors. Could there be a service or something in the infrastructure which would already recommend the perfect route for the visitor, thus making decisions a lot easier?

3. Feedbacks, which refer to a system where feedback is given based on good or bad.

All these tools helped us in forming our idea into a more feasible concept and in communicating the intervention to our stakeholders – our scope of deepening nature connectedness and encouraging behavior within visitors which would affect biodiversity positively. Therefore we also consider nature connectedness as one of the actors in the system.

c. Validation with Metsähallitus

With an idea of where our solution was heading we wanted to validate it with Metsähallitus, to get confirmation for that we were heading in the right direction as well as

to get additional input from them. Adding to that, we also wanted to know more about the new digital service they're currently developing. This was because we wanted to see if the current solution could be part of this development and which direction we should take it. Therefore, we organized an hour-long meeting on zoom with Metsähallitus, during which we got some feedback on our idea but the main topic of discussion was the digital service and mobile app. Something that was surprising for our team was that the mobile application is still in the beginning steps of the development – no major decisions have been made. Another interesting factor to learn was that the current national park infrastructure and the upcoming development have not been included in the development of the online service as much as it should be.

In the end, Metsähallitus was positive of the direction of the idea, but hoped to see more concrete ideas on how the nudges and features could be implemented on it. Therefore, when we eventually started forming our final proposal, we knew we needed to give grounding examples on the context, use and implementation of our strategy. This also gave value on the insight we chose, since our findings and solution would be likely to be included in the development process.

d. User Research (Workshop)

To be able to apply real visitor insights on our approach, we organized an online one hour long co-creation workshop with 4 recent nature enthusiasts. An invitation message was posted in a few Telegram chats. That's how we ended up recruiting our participants. The aim of the workshop was to gain a better understanding of the visitor's needs and pain points from their previous visits to the National Parks. Besides, to ideate an ideal park experience that would support them in behaving respectfully to nature and foster the connection to it. The workshop was divided into 5 tasks, followed step by step. Each task was allocated with a certain amount of time. However, some participants took a bit longer to complete the initial three tasks, leading us to rush through task 5.

Task 1: goals and purpose
The aim of the task was to understand the visitor's goals and purposes of visiting the National Parks.

Task 2: journey mapping
The task focused on understanding the visitor's journey to the National Park in depth, exploring their actions and feelings before, during and after the visit.

Task 3: testing nudges
Providing the workshop participants with three different possible situations on their visits to the National Park. Their task was to pick provided options or come up with their own and place them on the journey – so that they would nudge them in acting differently in a given situation.

Task 4: after the visit & reflection
The aim of this task was to understand what contributed to a memorable and impactful experience in the National Park, as well as to understand what kind of feedback, based on proposed options, they would like to receive after their visit.

Task 5: after the visit & payback
The goal was to understand how the workshop participants would like to pay back to nature after the visit to the National Park.

Workshop was a great opportunity for us to learn more about what is truly needed and wanted by the visitors. After analyzing the participants' insights, 2 main learnings have emerged:

Learning #1: a good experience is well-guided – but requires low effort.

Information visitors obtain before the visit should not be overwhelming. Instead, it should make them feel well-prepared for the upcoming journey.

The visitors are not interested in spending hours online before the visit. Nonetheless, there are certain aspects, such as awareness of various trail and campfire site options, availability of firewood on-site, rules that are meant to be followed during the visit would

help them in advance to prepare for the upcoming visit.

Learning #2: a good park experience is offline.

The workshop participants mentioned that relying on the phone during their visit to the national park takes away from the experience in nature and noted that reliance should be kept at minimum.

The physical infrastructure in the park should provide clear and easy instructions for the visitors to follow during their trip and more importantly support them in respectful behavior to nature.

Final Proposal

The proposal of "growing nature-savvy visitors" is aimed at strengthening nature connectedness among national park visitors. From newbie to nature-savvy is a strategy for reducing the visitor footprint by building nature connectedness for beginner-level visitors. Cross-channel thinking and personalized nudges are used for activating reflection and sustainable behavior among the visitors throughout the whole park visit.

The approach of the strategy is to think about the visit in a holistic manner. Thus, incorporating what happens before, during and after the visit and providing the right information when and where it is needed. The proposal takes into account that when it comes to forming nature connectedness among the beginner-level visitors, the most important stage is what happens after visit.

a. 4 Key Stages of the Strategy

The four key stages of "growing nature-savvy visitors" strategy are personalized nudges, immersive park visit, reflection activation and inspiring future experiences. They are meant to be followed in a circular order with the intention of considering the visit from a holistic approach.

Personalized nudges

The effect of information and reminders is the most impactful when they are targeted at visitors' intentions. Personalized nudges are different depending on the visitor's planned activity. The stage happens before the visit to the national park. For example, if a visitor is interested in picnicking, they would be provided with information on where to find a less crowded picnic spot or a reminder to take a trash bag with them. Whereas, a visitor interested in biking, would be suggested with the best track to follow, being reminded not to go off the route during their visit.

When it comes to beginner visitors, it is important that the instructions are given as a part of something that gives them other benefits – such as getting a personalized route recommendation.

As the visitor's experiences add up, the personalization enables providing new nudges and encourages not only neutral, but also pro-environmental behavior in the park.

Immersive park visit

In order for the visitors to be fully immersed in their park experience, they have to be present

in the physical environment. At this stage, which happens during the visit, digital tools can be helpful. However, it should be possible for beginners to rely fully on the physical touchpoints as guidance within the park.

Reflection activation

To build nature connectedness, the impact of the visit should not end as the visitor finishes their trip to the national park. To prolong the visit and stimulate thoughts, the end of the visit is a good place to encourage reflecting back on the visit. This stage happens after the visit to the national park.

Inspiring future experiences

One visit is not enough to build nature connectedness. This is why this last stage, which also happens after the visit, is regarded as the most important one. By providing the visitor with personalized recommendations of routes and activities, they are inspired to continue exploring nature.

This is also the perfect stage for, as the experience adds up, nudging towards activities that are shown to strengthen nature connectedness – such as activities where the visitor interacts with nature in a regenerative way.
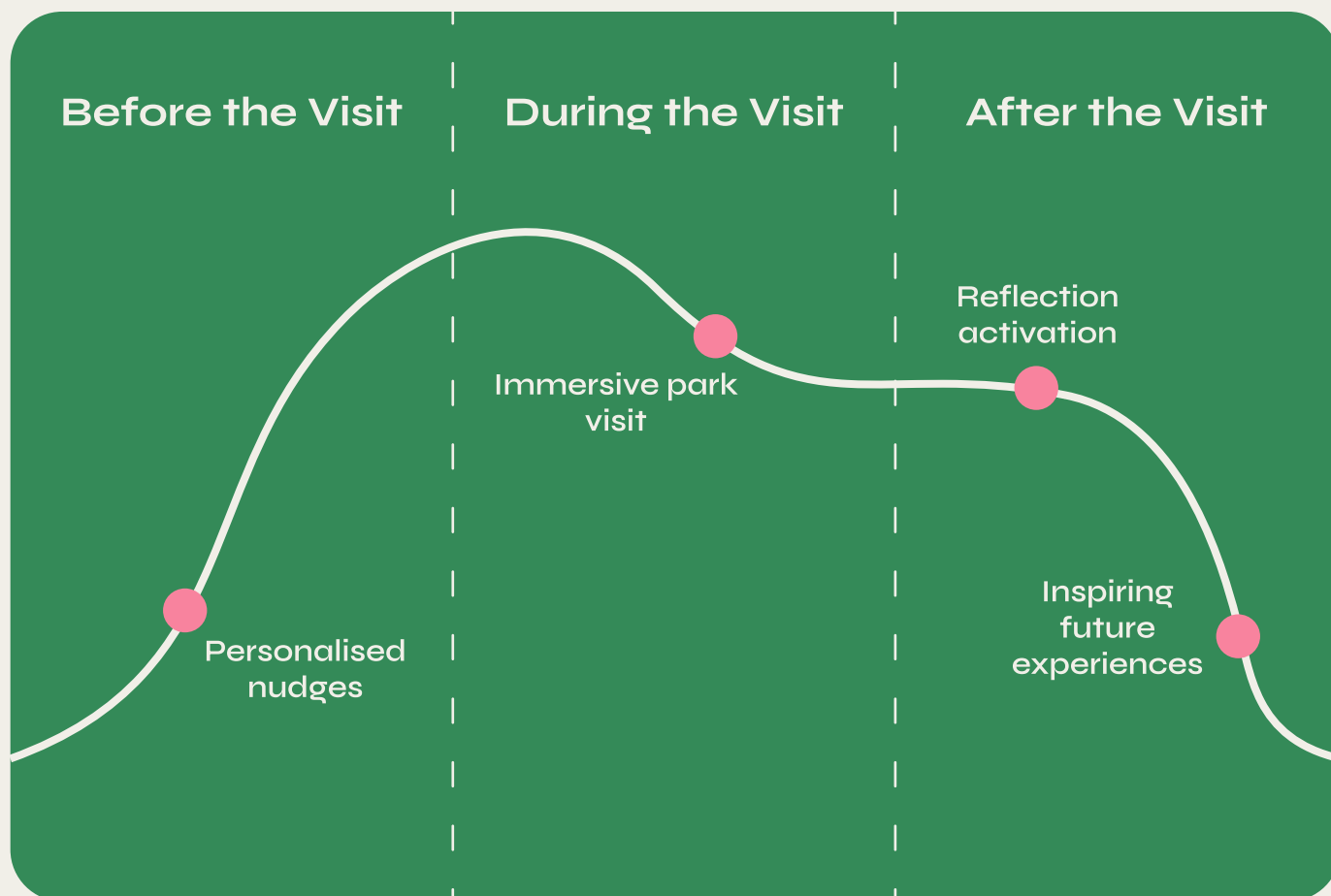

Before the Visit   **During the Visit**   **After the Visit**

Reflection activation

Immersive park visit

Personalised nudges

Inspiring future experiences

Figure 12: 4 keys stages of the stages throughout the whole trip to the National Park

b. Example of User Journey based on Strategy's Stages

The strategy is implemented in different nudges and touchpoints along the way – and it is customized depending on the visitor's intended activity and experience level. Thus, the nudges will not look the same every time, and they need to be designed properly.

To illustrate how our strategy can be applied, we provide an example in which we focus on how Anna, a beginner-level visitor who due to lack of knowledge and lack of nature connectedness causes harm to nature, can be transformed from a newbie to a conscious and frequent visitor of nature.

Anna's visit to the Nuuksio national park

Anna is a new visitor to the national parks. Although she has heard about Nuuksio National Park previously, she has never been there. She is planning to go there with some of her friends to do barbecuing. Before the visit, Anna does a quick Google search and stumbles across the National Parks website, where she immediately gets the chance to explore customized routes according to her wishes.

She fills in that she doesn't have much experience and is planning on going there for a picnic and grilling. Based on the provided information, the platform recommends several routes that could fit the needs of Anna

and her friends. She selects one of these routes to study in more detail (figure 13).
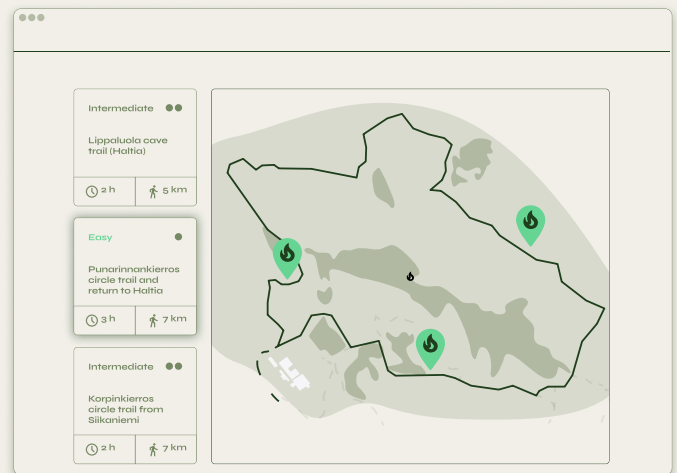

Figure 13: selection of the route on the map

The route is displayed on a map with clearly highlighted campfire sites. When she clicks on one of them, she sees a message saying "please use the existing campfire sites". Anna notices that there is a tip on where to find free firewood within the park. There is also information about when the firesite is the busiest, so that she can plan her trip accordingly (figure 14).
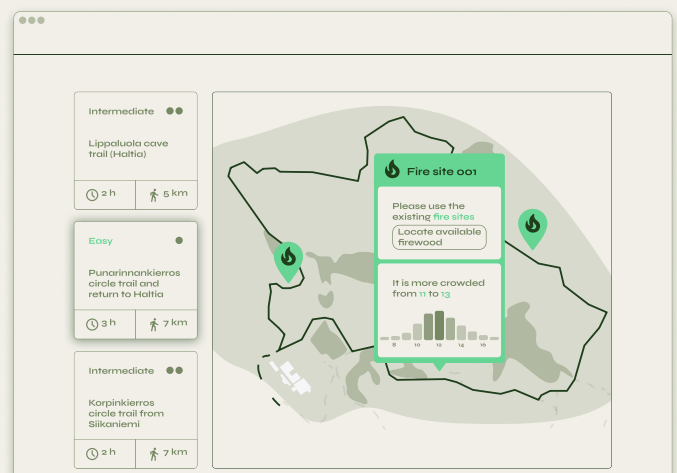

Figure 14: informing the visitor about the campfire sites

Now Anna is given the opportunity to save the route so that she can track the visit once she goes to the park. Anna downloads an app as suggested. When the visit is approaching, she opens the route in her map to take a closer look at where the starting point is. Now, the app reminds her of bringing a trash bag (figure 15).

When the group of friends reach the park, Anna opens the app to start tracking their trip and to be able to see where they are on the route. Now the app encourages her to put the phone away and rely on the physical signage – the app is not needed anymore (figure 16).

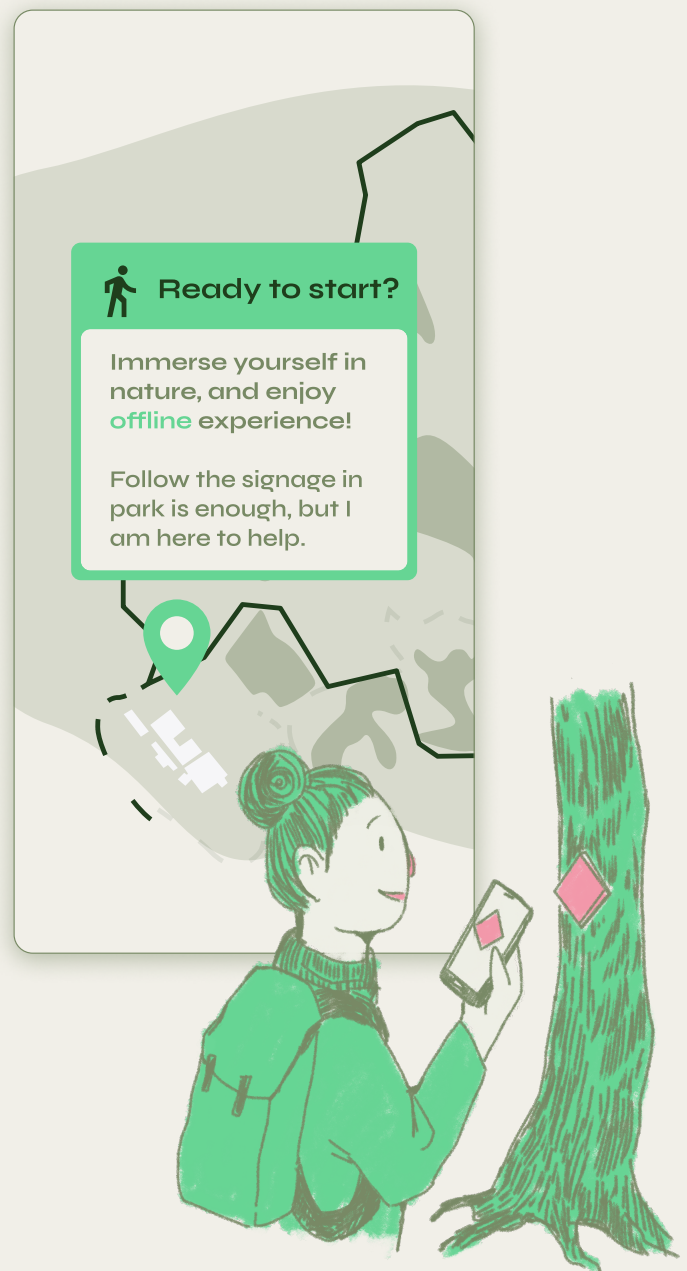Figure 15: last reminders before starting the trip

Figure 16: app reminding visitor Anna to put phone away

Anna and her friends enjoy their park visit. They pick firewood from the place that was marked on the map and find a free spot at a campfire site. Anna is happy that she remembered to bring her trash bag as there are no trash bins near the fire site (figure 17).

Figure 17: visitor Anna and her friends enjoying the hiking route

When the group gets on the bus to go back home, Anna saves her trip. She is asked a couple of short questions: about her visit's overall mood and how the route matched her expectations. Based on her feedback, the app recommends new routes in Nuuksio and places nearby which she might enjoy. She is happy to also see some recommended activities and events taking place. For example, she gets suggested to experience forest yoga in Nuuksio National Park that she did not know of previously (figure 18).

? **How was your visit?**

How was your overall feeling?

🥴 🙁 😐 🙂 😛

The route was...

(Too hard) (Too easy)
(Just right)

After the journey, I feel...

(Calm) (Stressed) (Fullfilled)
(Connected to nature)
+ Add my own...

🏳 **Congrats on your first Nuuksio visit! We have some suggestions for you next journey!**

Explore other routes!

Lippaluola cave trail (Haltia)   🕐 2 h
                                          🚶 5 km

Korpinkierros circle trail   🕐 2 h
from Siikaniemi   🚶 7 km

Try other activities!

(Bird watching)
(Canoeing) (Forest yoga)
(Pick berries & mushrooms)
(Fishing) (Swimming)

Figure 18: visitor Anna getting a few questions after her visit to the National Park about overall experience

Anna gets inspired to continue exploring nature sites. In the future, when planning a new route, the app knows that Anna has gained some experience and instead of being reminded of bringing the trash bag, she gets tips on how she can take care of nature during her visit. One time when visiting Nuuksio she for example picks some invasive species. Now

Anna has a library of past visits in her app. She takes a moment to look back at the experiences and remembers those which were particularly outstanding. Anna has grown from someone who just visited the national park to hang out with friends to someone who is actively looking for ways of being closer to nature and taking care of it (figure 19).
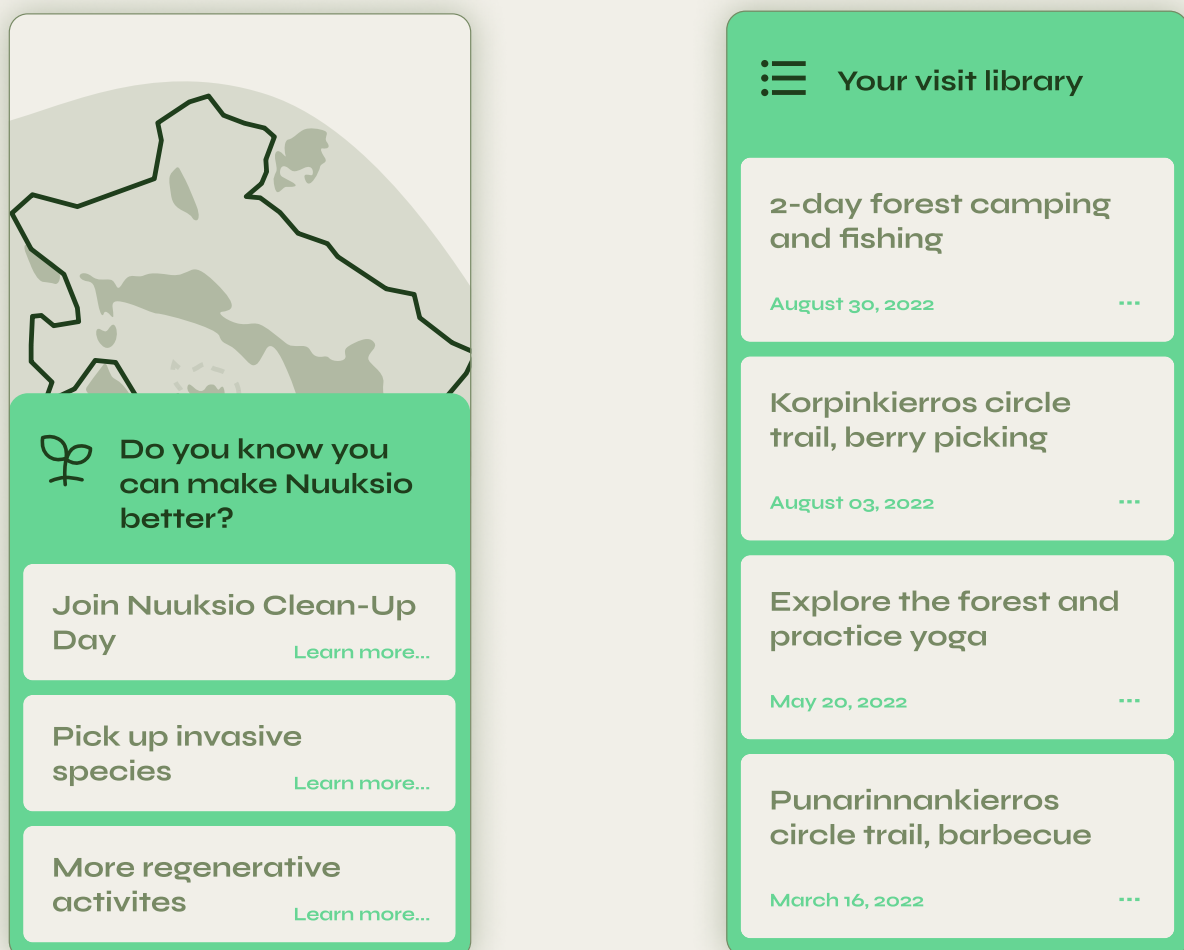
Do you know you can make Nuuksio better?

Join Nuuksio Clean-Up Day
Learn more...

Pick up invasive species
Learn more...

More regenerative activites
Learn more...

Your visit library

2-day forest camping and fishing
August 30, 2022 ...

Korpinkierros circle trail, berry picking
August 03, 2022 ...

Explore the forest and practice yoga
May 20, 2022 ...

Punarinnankierros circle trail, barbecue
March 16, 2022 ...

Figure 19: visitor Anna being suggested on other activities and events in the National Parks

c. Application Framework

In order to implement our strategy, we have developed a framework that we encourage Metsähallitus to utilize in order to approach the visitor's needs in a holistic manner.

The framework is divided into 3 sections:

Intended activity and experience level. It focuses on the visitor's intended activity within the national park by taking into consideration their experience level in nature.

Behavior. Based on the intended activity (from the previous section), we encourage Metsähallitus to start off by considering what is the current unwanted visitor's behavior, related to the activity in question, and what is the ideal visitor's behavior.

Nudges and where. The last section focuses on providing the visitor with right and simple nudges that would transform their unwanted behavior into the ideal one. It is important to consider where in the journey the information or the nudge would serve its purpose best.

Personalized recommendations based on the visitor's profile would furthermore allow Metsähallitus to suggest events and hands-on activities for visitors to be part of regenerative actions after their initial visit to the national park.

As one of the concrete examples of how the framework can be used, our team has thought through the experience of barbequing. It portrays how the experience can be personalized and nudged for the beginner-level visitor. See figure 20 for reference.

Intended Activity & Experience Level		Behavior		Nudges
What is visitor's intended activity?	What is their experience level?	What are the unwanted behavior?	Ideal behavior	Where should it be?
Barbecue	Beginner	Illegal firesite	Uses available campfire sites	Information in **planning** Signage **in park**
		Leaves trash behind	Picks up trash	Information in **planning** Available trash bag **in park** Reflective reminder **after the visit**
		Picks branches from trees for making fire	Brings firewood / uses provided ones	Reminder in **planning** Clear instructions **in park**
Fatbiking	Intermediate	Goes off the marked tracks	Follows the marked tracks throughout the whole trip	Information in **planning** Clear route instructions **in park**
Berry picking	Beginner	Damages plant while berry picking	Only berry is picked; no damage to plant	Information in **planning** Reminder **in park**

Figure 20: application of framework with 3 examples

d. Implementation

In the current setting, Metsähallitus is working on aligning multiple information channels with a new mobile app that enables a more customized journey for the visitors. Besides, they have recently renewed in-park physical touchpoints to better assist the needs of user groups with various nature experiences and skill levels. However, at the moment, these two projects are operating separately and there is no alignment among them.

To better create customized journeys for visitors, and to trigger reflective thoughts and encourage regenerative behaviors, we suggest our proposal to be taken over by the Digital Services and Customer Experience unit in Park and Wildlife Finland of Metsahallitus.

We suggest a closer collaboration between the persons working on the building of in-park physical touchpoints and the team developing the new digital app. We expect them to think in a cross-channel mode and communicate actively in every decision-making and service-establishing.

The framework suggestion in the previous section helps in developing the customized journeys. We recommend thinking in the same way as we did in figure 11 – mapping the current journey related to a behavior and experience level and the ideal journey, after which the nudges can be thought out. This requires deeper insight into the different user journeys, related behaviors and motivation, and we thus suggest more user research in order to successfully implement the strategy for nature connectedness.

As the actual development work of digital service will start soon, this work needs to start as soon as possible if the strategy is to be successfully implemented in the new service.

Reflection

a. Teamwork

In general, we are happy to have had a functioning team with good team dynamics. This is likely a result of the proper work three of us did in the beginning of the course, discussing the expectations for the course as well as how best we can all contribute. The team also managed to quickly integrate the fourth member, who at first was abroad.

One reason for the success was likely the big amount of time we spent together. The hours spent in the same space led to a climate of psychological safety being established. We got to know each other, and we were able to express our feelings and concerns as well as differing opinions. These differing opinions never led to unreasonable arguments but forced us to push ourselves and expand our mindsets.

As we established two days per week for working together, scheduling was made effortless and we automatically put in an equal amount of work. During the meetings, we decided on individual tasks that had to be executed until the next time we met. However, although the many hours spent together turned out to be valuable in certain ways, we could perhaps have been more efficient if we had cut the meeting time slightly and allocated more time for individual work.

During the course we experienced working in one more team setting, namely the super group consisting of three individual teams working on the same project brief. This opportunity taught us the value of sharing knowledge and resources as opposed to competing with each other. But, at the same time, a big team setting came with challenges in terms of e.g. communication and coordination. In the future, when working in large teams, we will bare in mind that the bigger the team is, the more structure and processes for management are needed. Luckily the reflection session at the end of the course resulted in many good ideas: for example the importance of clear roles and working in new teams within the super group instead of sticking to the old teams and simply sharing knowledge from team to team.

b. Methods

Throughout the course, we have been introduced to many useful methods that are particularly applicable when it comes to government briefs. While all of them have not been directly applicable on our project, it is good to now have an extensive toolkit to choose from if we find ourselves working on similar briefs in our future careers.

In our research phase, the roundtable discussion showed us the value of bringing together different stakeholders in the same room, to gather multiple perspectives on the project brief and identify shared goals among the stakeholders. If we work on similar projects in the future, this would be a good way of kicking off. We furthermore realized the importance of experiencing the thing you are designing for yourself instead of simply designing from a distance. The site visit in Nuuksio led to a deeper understanding of the visitor experience – both concrete knowledge about the existing knowledge and an increased ability to empathize with the visitors.

At some point, we had to neglect conducting more research. It was difficult but necessary to be content with the amount of data we had gathered in order to be able to narrow down on time. As we followed a set course structure, the phases of the design process ultimately were rather separate, while in a different setting, they perhaps would have been more overlapping with more research and more iterations.

Yet another thing we will remember is the potential of scenarios in envisioning an ideal future. We have all been familiar with using storytelling for communicating things, but using it as a tool in the process was a new approach. This turned out to be very useful. We were forced to put words on vague thoughts, and transform the fuzzy vision into a tangible scenario that all team members as

well as outsiders could understand and ideate upon.

Besides this, we used storytelling and visualization in a more traditional way. We explored the benefits of visualizing the problem as well as the proposal to efficiently communicate with the client and make abstract thoughts tangible. Visualizing abstract concepts turned out to be rather difficult, but with no pure visual designer in the team it was a great challenge to undertake. In contrast, storytelling was an easier tool for our team to work with, and it ultimately became the tool that enabled us to come up with concrete examples of how our strategy should be applied.

When working on client briefs, one more thing that we will keep in mind is taking on the client's mindset and speaking their language, as well as delivering appropriate proposals that can actually be implemented. This of course requires extensive collaboration with the client.

c. Project Deliverables

The concept that we designed was initially rather vague and difficult to communicate. It was when we presented it to different audiences and understood that we needed to make it more tangible and hands-on that we were able to evolve and improve. In a way this functioned as a form of prototyping – after the testing we had a chance to iterate. We also

realized that we should take advantage of the efforts already undertaken by Metsähallitus, rather than designing something completely new. These two moments of insight came to lead us to a proposal that we are happy with.

If we would have done anything differently, it would perhaps have been beneficial to arrange one more meeting with the representatives from the client side to get a better insight into what kind of deliverable would assist them the best. Unfortunately, we did not have time for this, but it would have been of value to understand what support they would need in order to successfully implement the concept.

If we would have had more time to work on the project, it would also be very interesting to do more user research in order to actually provide concrete tips for how Metsähallitus should implement our strategy based on different activities in the forest. Through learning more about the users and the different visiting journeys, we would be able to actually design the nudges and provide more extensive recommendations for the in-park experience. This is something that we would be more than happy to assist Metsähallitus with, if they choose to move forward with our concept.

d. Summary

During the timeframe of this course, we have managed to explore a complex problem with many causes, as well as narrowed down and prioritized among identified problem areas. We have explored a variety of tools and ultimately designed a strategy that has the potential to have actual impact on the visitors in the national park.

The process has been filled with moments of anxiety, but it has also contended many rewards. In conclusion, the course made all team members inspired to continue working in the governmental context in the future – with this project as a great entry point.

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