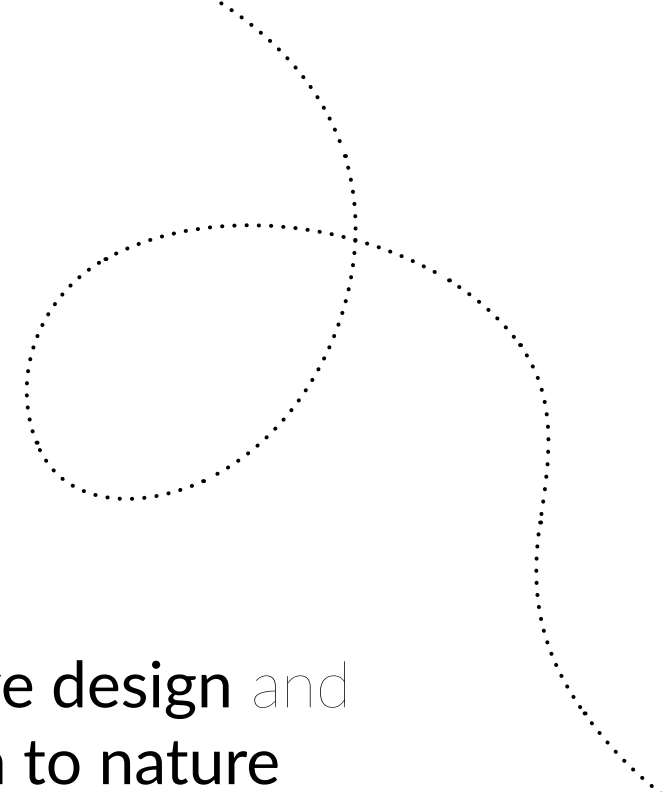





Exploring **regenerative design** and children's connection to nature

ABIGAIL GARBETT
12 November 2020





BEING FOR NATURE: Exploring the design of pedagogical greenspaces to support children's connection to nature in the urban context



Regenerative Design as a frame



- Systems thinking approach
- View of nature as co-participant in design process
- Place-based study

MAIN RESEARCH QUESTION

HOW CAN WE BETTER DESIGN PEDAGOGICAL GREENSPACE TO SUPPORT CHILDREN'S CONNECTION TO NATURE IN THE URBAN CONTEXT ?

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School yards & parks

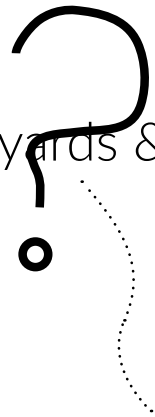
HOW CAN WE BETTER DESIGN OF PEDAGOGICAL GREENSPACE TO SUPPORT CHILDREN'S CONNECTION TO NATURE IN THE URBAN CONTEXT ?

Human-nature
connection
'HNC'

Stockholm
Outdoor school case study

RESEARCH GAP

School yards & parks



HOW CAN WE BETTER DESIGN OF PEDAGOGICAL GREENSPACE TO SUPPORT CHILDREN'S CONNECTION TO NATURE IN THE URBAN CONTEXT ?

Human-nature
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Stockholm



CASE STUDY: I UR OCH SKUR / 'IN RAIN OR SHINE' SCHOOLS

A full-time, experience-based outdoor pedagogy utilised by schools and preschools

Aim: To inspire a deep-rooted connection to the natural world

Characterised by: experiential learning and activities which are mediated by the seasons and the availability of natural materials

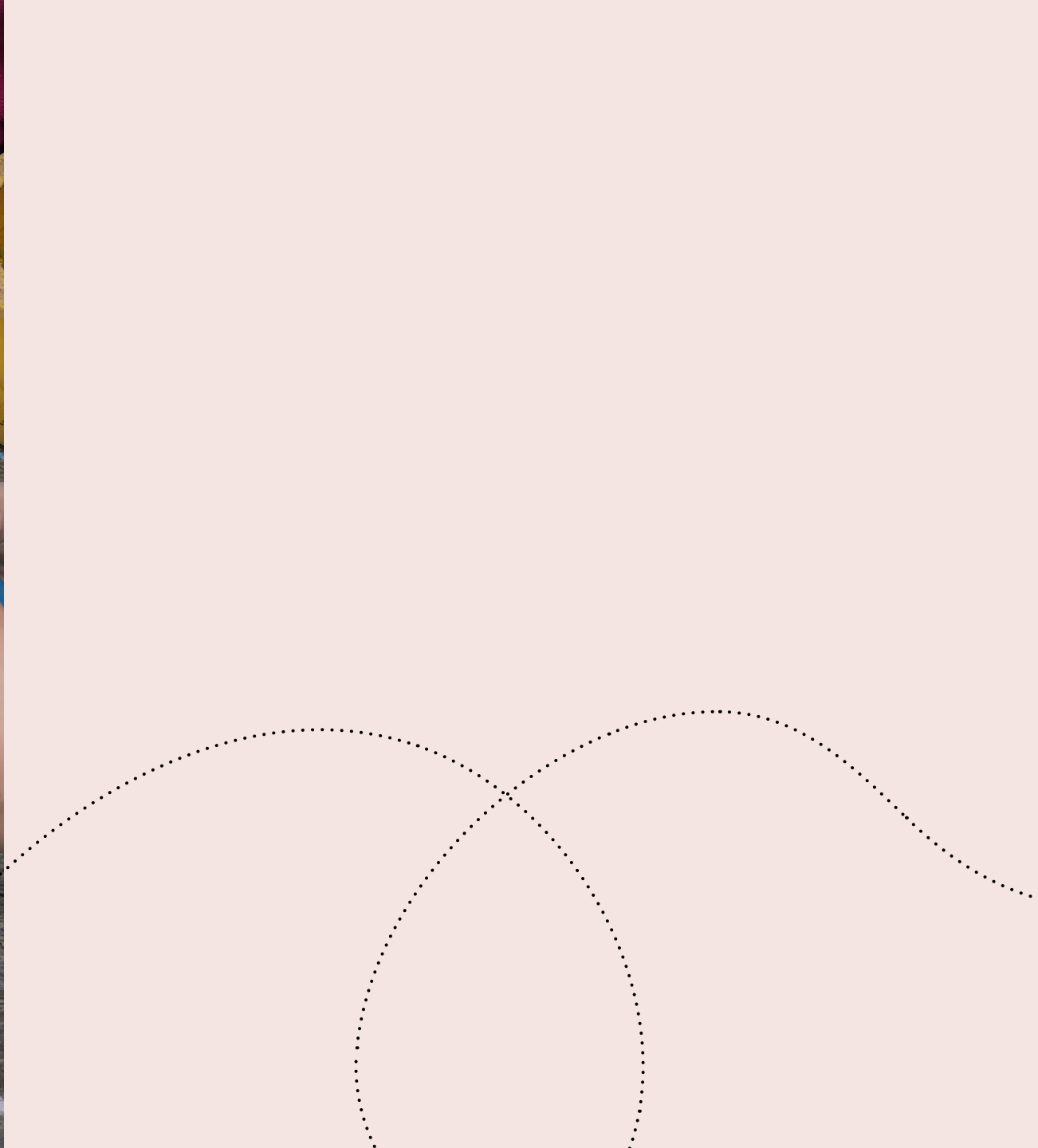
Purpose: To link learning to the environmental context.



I UR OCH SKUR
FRILUFTSFRÄMJANDET



BACKGROUND



Human Nature Connection



Routine access & engagement with natural settings in childhood linked to:

- Health & wellbeing benefits
- Positive orientation towards the environment
- Pro-environmental behaviour in later life



and yet...

...Experience of nature is in decline



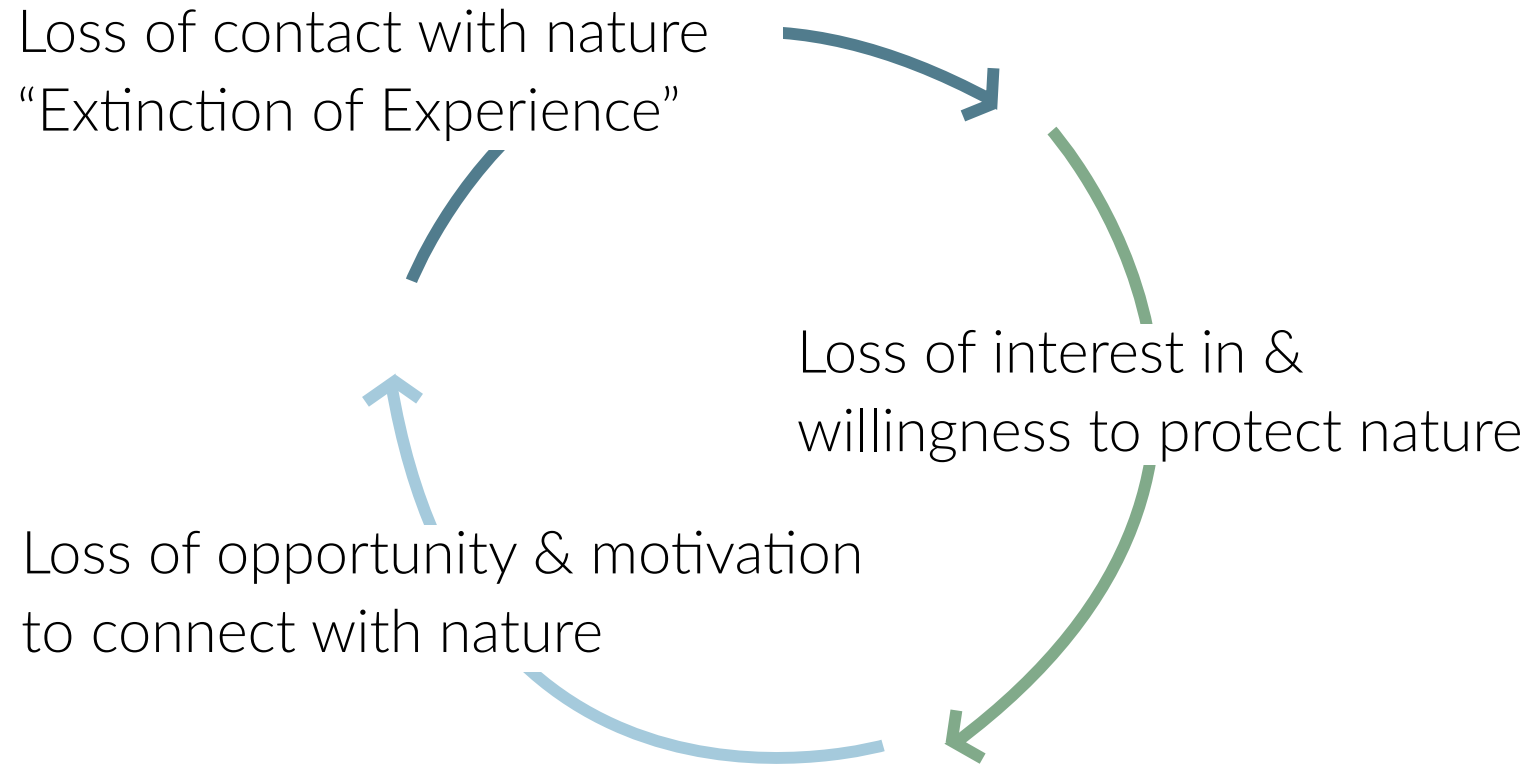
...Experience of nature is in decline



...Experience of nature is in decline



THE CYCLE OF DISAFFECTION





THE DESIGN OF CHILD-FRIENDLY LANDSCAPES



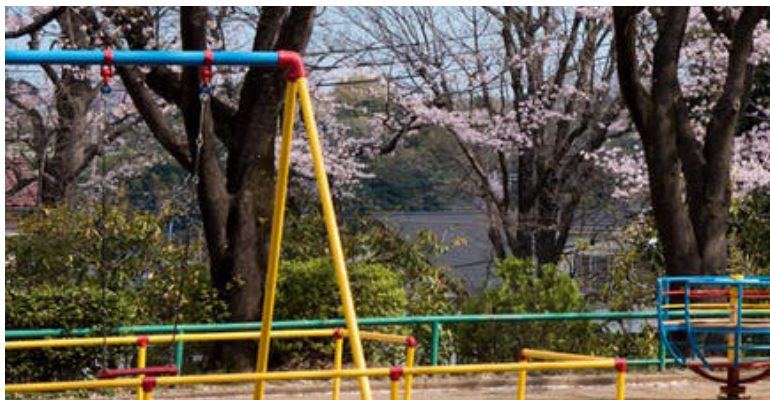
TRADITIONAL PLAYGROUND DESIGN

Characterised by adult priorities of:

- 'Neatness'
- Risk management
- Ease of manufacture

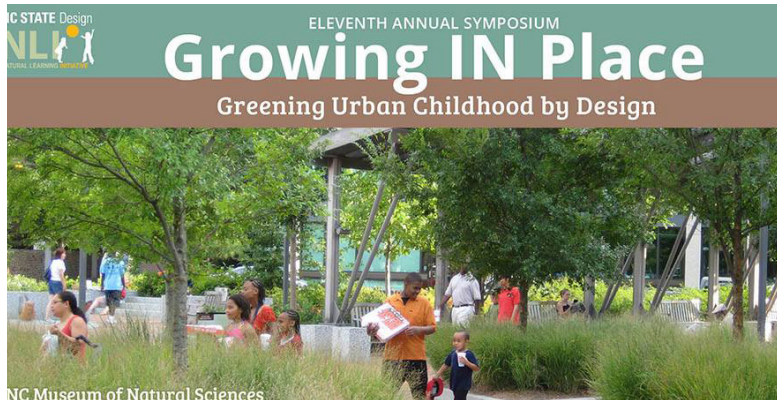
Lacking:

- Input from children
- Opportunities for symbolic or creative play
- The integration of natural elements





PLAYGROUND NATURALISATION MOVEMENT



Advantages of natural environments:

- More possibilities for child free play
- Natural loose-parts and seasonality afford opportunities for creative and symbolic play
- Less competition over toys and longer and more complex play episodes

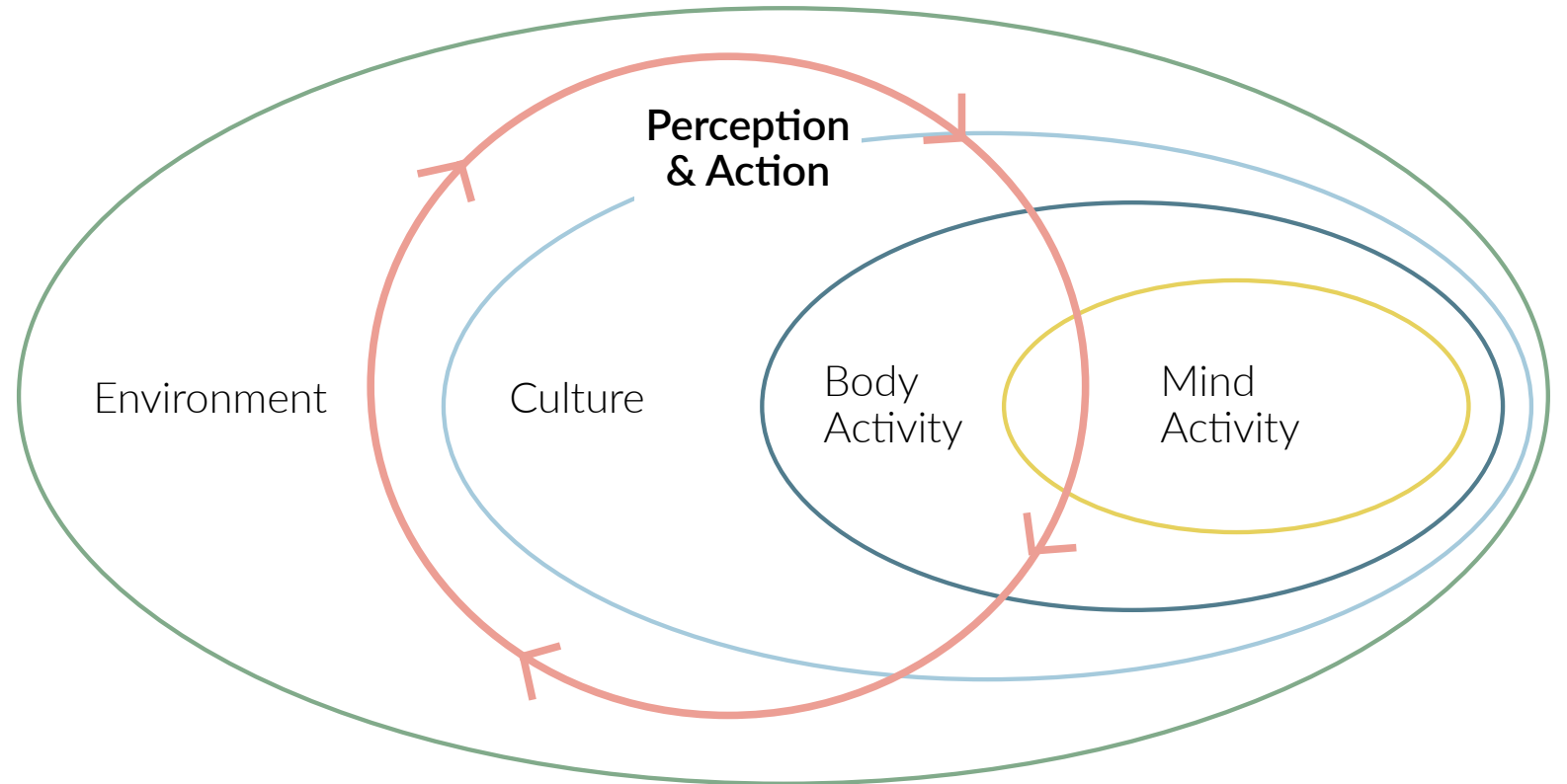




THE THEORETICAL FRAMEWORK

AN EMBODIED ECOSYSTEM APPROACH

A framework for understanding how ecosystems are co-produced by humans and nature.



THE ACHUNAS FRAMEWORK

A practical criterion to assess the child-nature connecting qualities of particular environments.

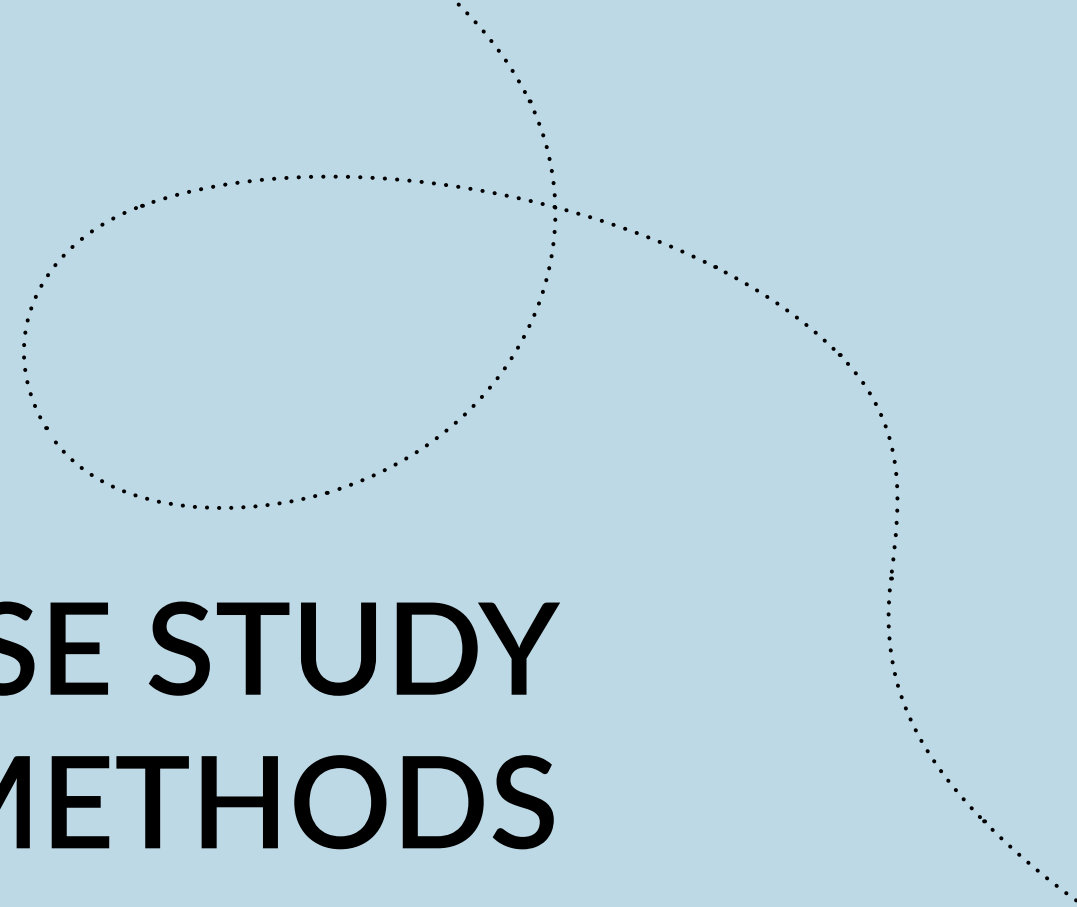
- 16 qualities of significant nature situations (SNS) which have the potential to promote children’s HNC.
- A guide for observing qualities that occur in different outdoor scenarios.

The Qualities of Significant Nature Situations clustered in to six macro categories (Giusti et al., 2018)

ENTERTAINING	ENVIRONMENTAL EPIPHANIES	RESTORATIVE EXPERIENCES	NATURE FREE PLAY	NATURE SCHOOL	ANIMAL ENGAGING
Entertainment	Thought-provocation Awe Surprise	Intimacy Mindfulness Self-restoration	Creative Expression Physical Activity Challenge Engagement of Senses Child driven	Involvement of mentors Structure/ Instructions Social/ Cultural Endorsement Thought-provocation	Involvement of Animals



CASE STUDY & METHODS



I UR OCH SKUR CASES

School 1



Originally designed as a traditional kindergarten

School 2



Utilise public land for all outdoor activities

School 3



Designed specifically for outdoor pedagogy

I UR OCH SKUR CASES - SIMILARITIES



All schools had daily access to:

- A forest area
- Open space
- Loose parts
- A nature reserve / public park within 200m of premise

METHODS & PROCEDURE

Case study of 3 'I Ur och Skur' schools

Method: Participatory observation for 5-6 days at each school for approx. 7 hours per day.

Focus group: Children aged 4-9 years old

Aim: To identify the physical attributes of nature situations that I deemed to be significant for the children involved.

TITLE Den Making

DESCRIPTION Make believe den making, hiding and quiet play.

QUALITIES Intimacy, Mindfulness, Challenge. Creative Expression and Child-driven.

PHYSICAL PROPERTIES Trees, loose pieces of wood, secluded space and forest floor.

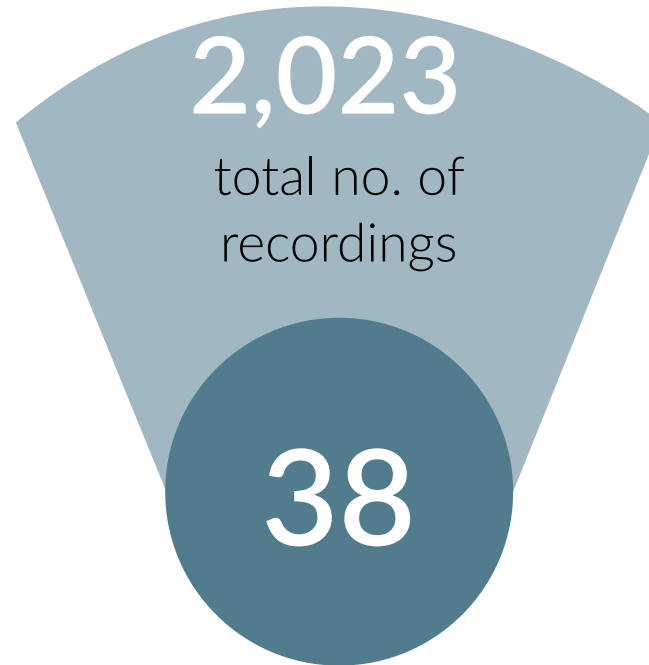
Example of SNS recording



RESULTS



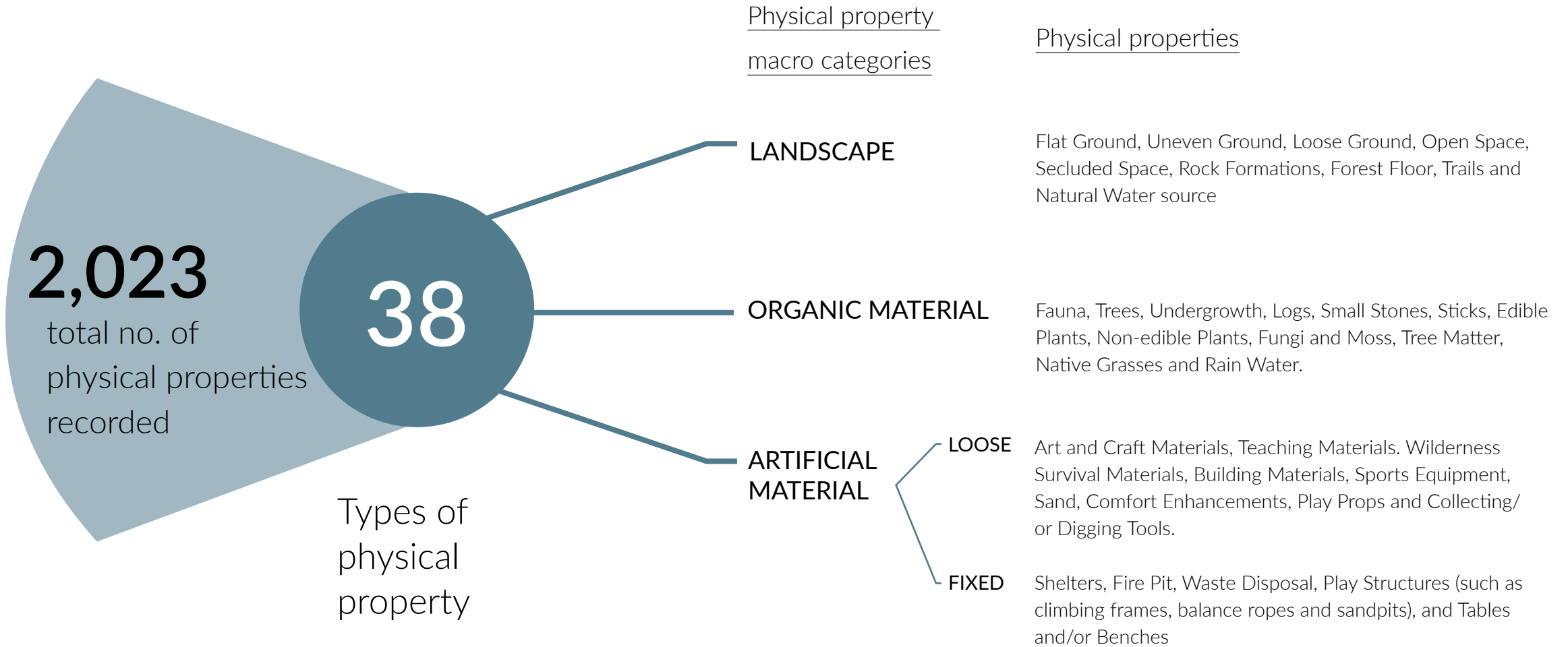
OVERVIEW OF FINDINGS



The results show:

- An overview the most and least recorded physical properties
- The most/least recorded properties for different types of significant nature situations

OVERVIEW OF FINDINGS - PHYSICAL PROPERTIES



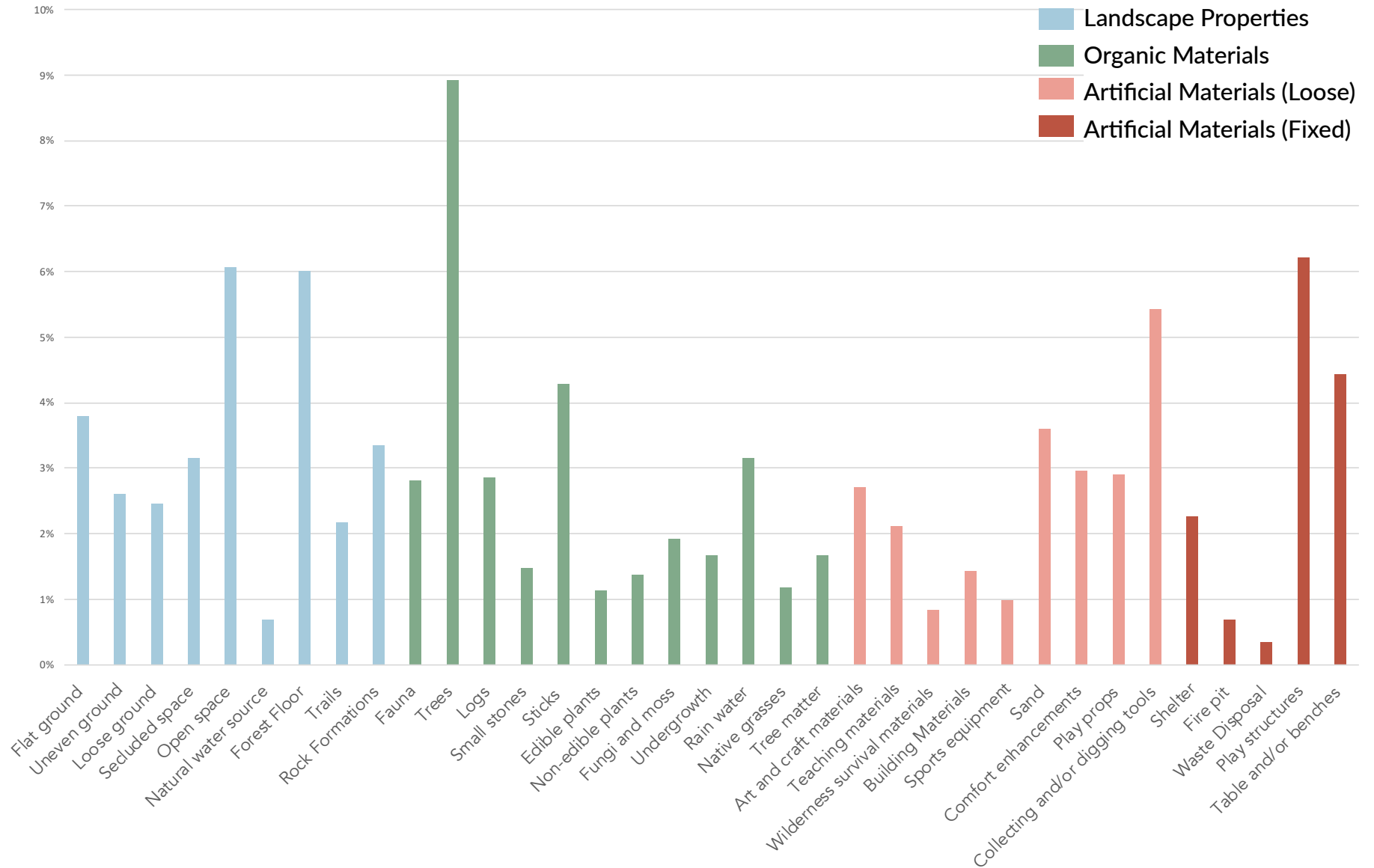
PHYSICAL PROPERTIES OF PEDAGOGICAL GREENSPACES

Most recorded overall:

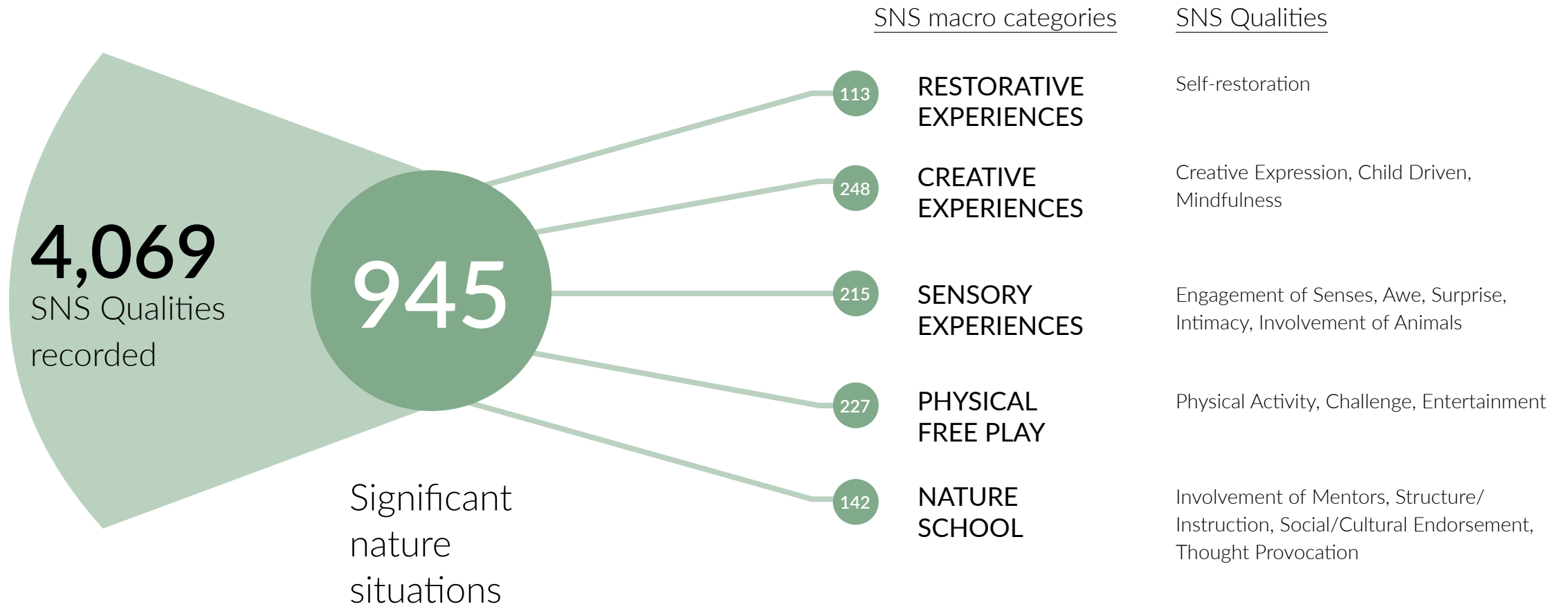
- Trees
- Play structures
- Open space
- Forest Floor

Least recorded overall:

- Waste disposal
- Fire pit
- Natural water source
- Sport equipment
- Wilderness materials
- Edible plants
- Native grasses



OVERVIEW OF FINDINGS - SIGNIFICANT NATURE SITUATIONS



RESTORATIVE EXPERIENCES



...promote psychological, physical or social restoration.

CREATIVE EXPERIENCES



...grasp children's focus through forms of open ended creative expression and imaginative play.

SENSORY EXPERIENCES



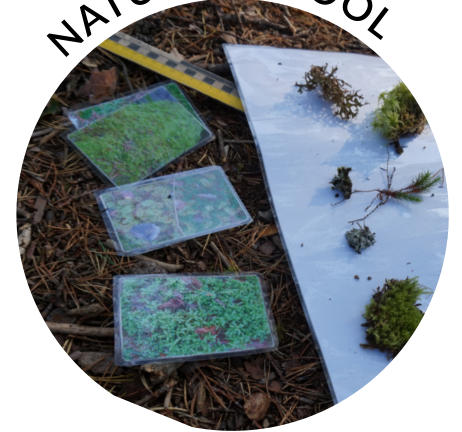
...activate children's senses with the potential to promote unexpected, personal or mesmerising outcomes.

PHYSICAL FREE PLAY



...involve different forms of body movement and physical or psychological challenge.

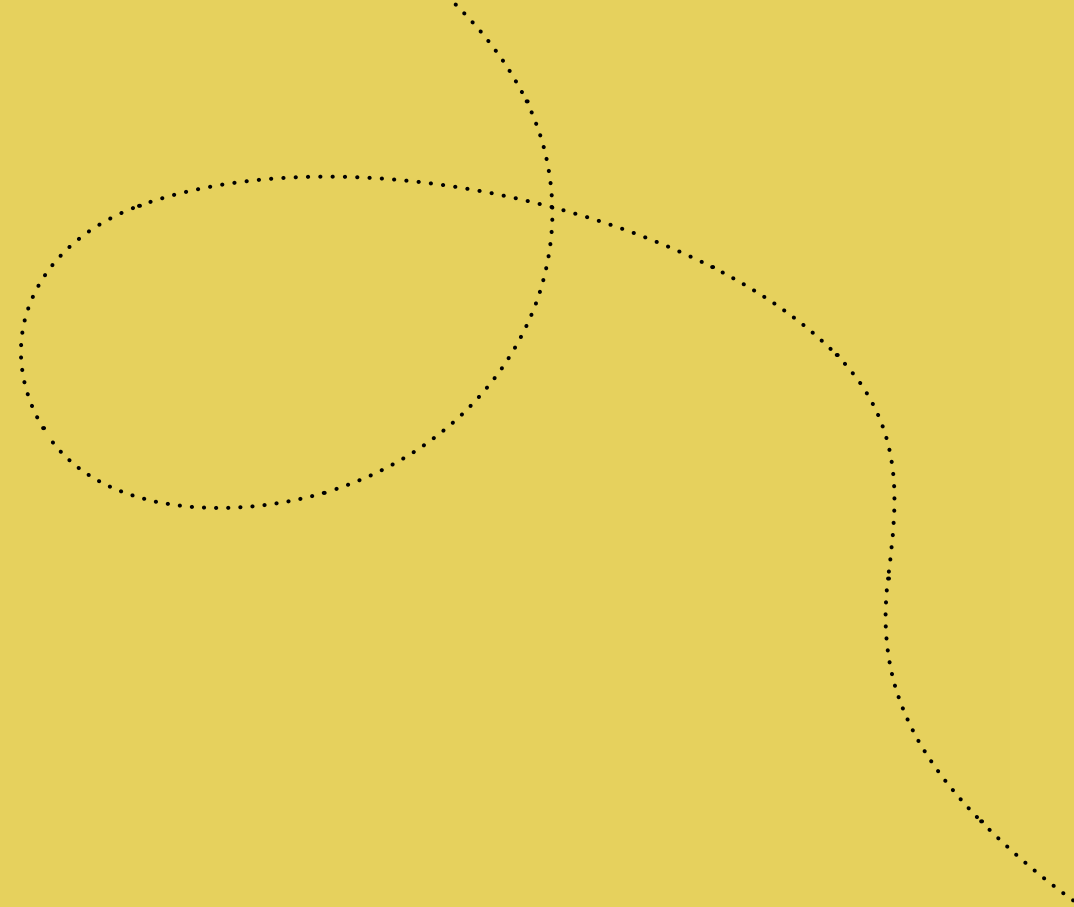
NATURE SCHOOL



...are initiated by adults leaders and defined by a set of rules that frame the way in which a child can act.



DISCUSSION & CONCLUSION



DESIGN FOR URBAN PEDAGOGICAL GREENSPACE / THE MOST AND LEAST IMPORTANT PHYSICAL PROPERTIES

Trees were the most important physical quality



- Climbing, balancing, building, collecting / creating with loose parts
- Natural decay -> move away from adult priorities of neatness and risk management

DESIGN FOR URBAN PEDAGOGICAL GREENSPACE / THE MOST AND LEAST IMPORTANT PHYSICAL PROPERTIES

The low number of certain organic qualities caused by lack of opportunity rather than lack of importance



DESIGN FOR URBAN PEDAGOGICAL GREENSPACE / BALANCING THE NEED FOR SPACE AND PLACE MAKING

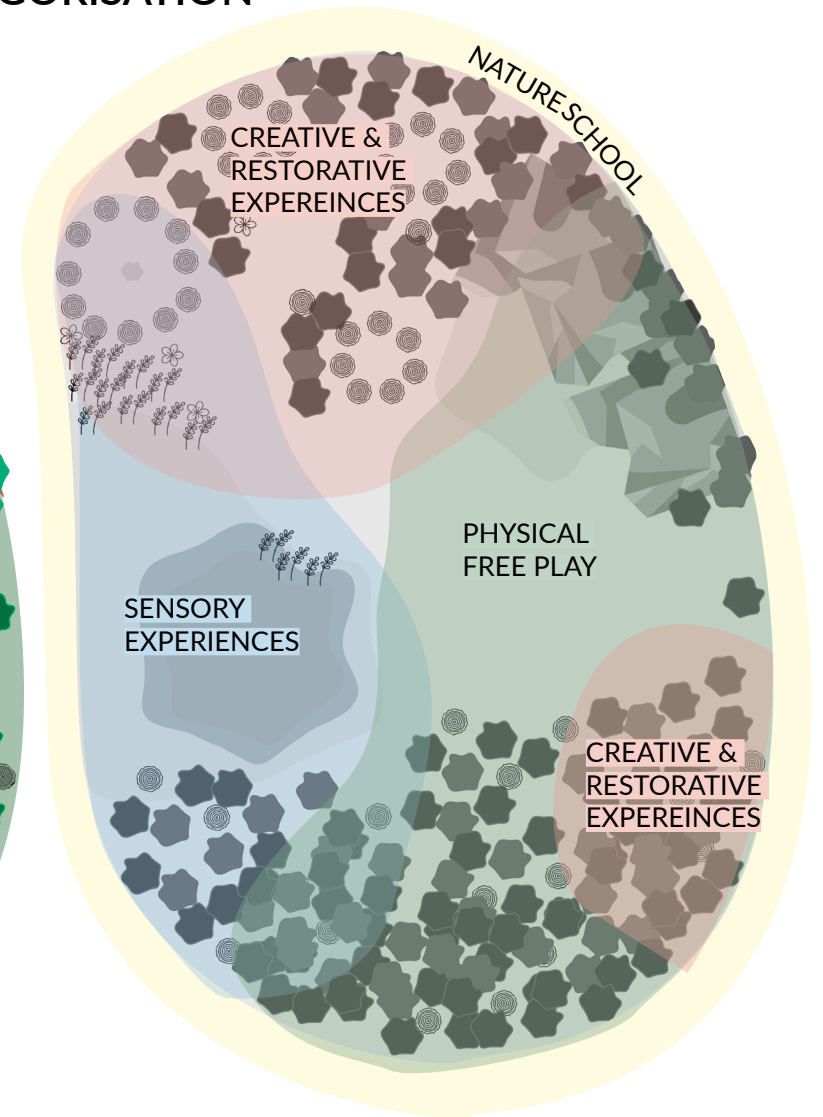
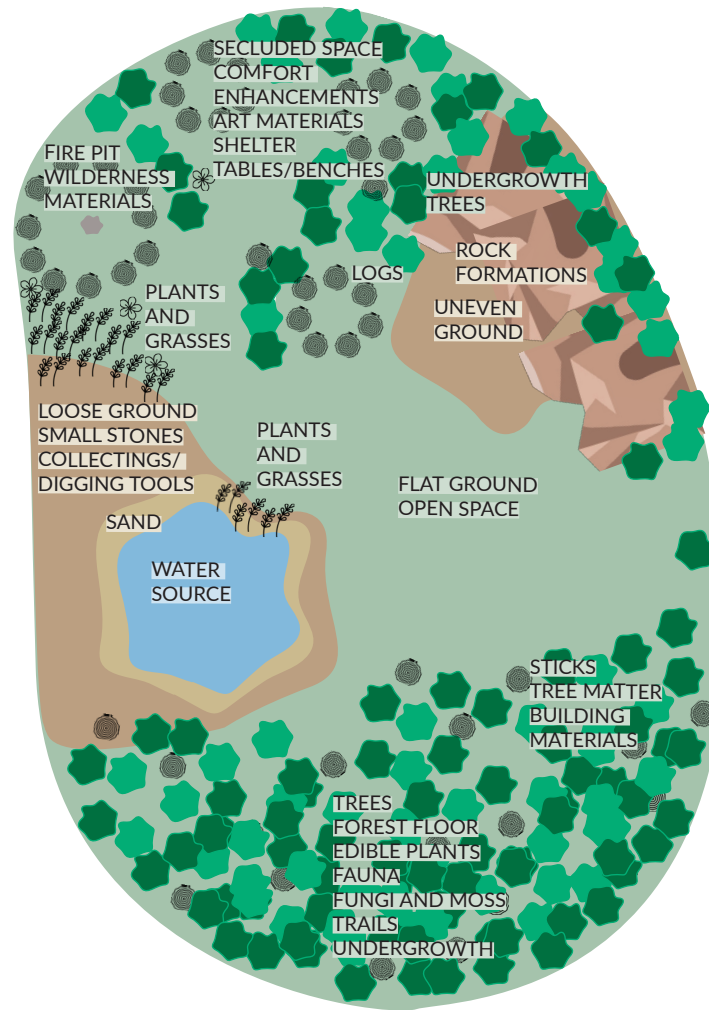
- Size of greenspace is an important factor for the development of diverse SNS
- How much use can an area of land support while maintaining high levels of biodiversity and resilience?
- Potential trade-offs between place making and need for more space / using spaces on rotation



DESIGN FOR URBAN PEDAGOGICAL GREENSPACE / UTILISING THE SNS CATEGORISATION

Uses:

- Assess the use of existing outdoor spaces
- Plan curriculum around places developed to enhance particular SNS
- Design new greenspaces informed by type of SNS you can want to foster

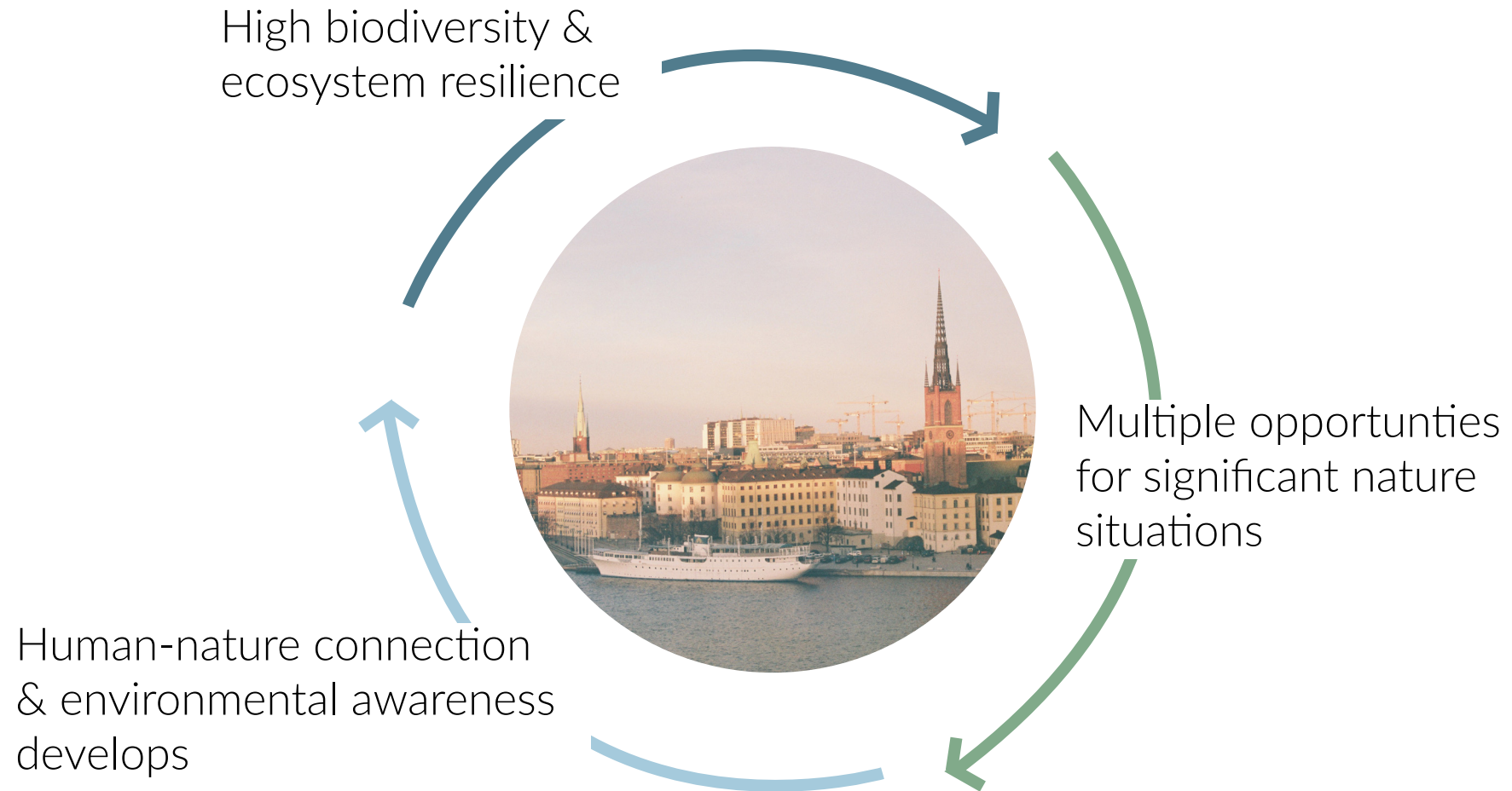


DESIGN FOR URBAN PEDAGOGICAL GREENSPACE / COMBINATIONS OF MATERIALS & LANDSCAPES

- There is not a single way to design a pedagogical greenspace
- High levels of artificial materials are not necessary though they may be useful for children not used to engaging with outdoor environments
- Not all nature situations took place in design places



DESIGN FOR THE SOCIAL ECOLOGICAL CITY



TO CONCLUDE...

- Urban design is a major contributor to the problem of human-nature disconnection but it also has the potential to rebuild this relationship
- There is a potential to design spaces based on the types of nature situations you wish to encourage
- 2 interconnected constraints in the design of pedagogical greenspace are size and biodiversity potential
- Many of the physical properties that enhance children's connection to nature occur within healthy ecosystems

LIMITATIONS & POSSIBILITIES FOR FURTHER RESEARCH

Limitations

- The number / nature of the research methods
- The length of study
- The number / diversity of case studies

Future Research

- Spatial analysis of the design criteria for SNS
- A comparative study with schoolyards not used for outdoor pedagogy
- Action research project into co-designing pedagogical greenspace with children
- Research into 'enabling factors' such as the presence of mentors and appropriate clothing

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