LANDSCAPE CHARACTERIZATION OF THE UUSIMAA REGION

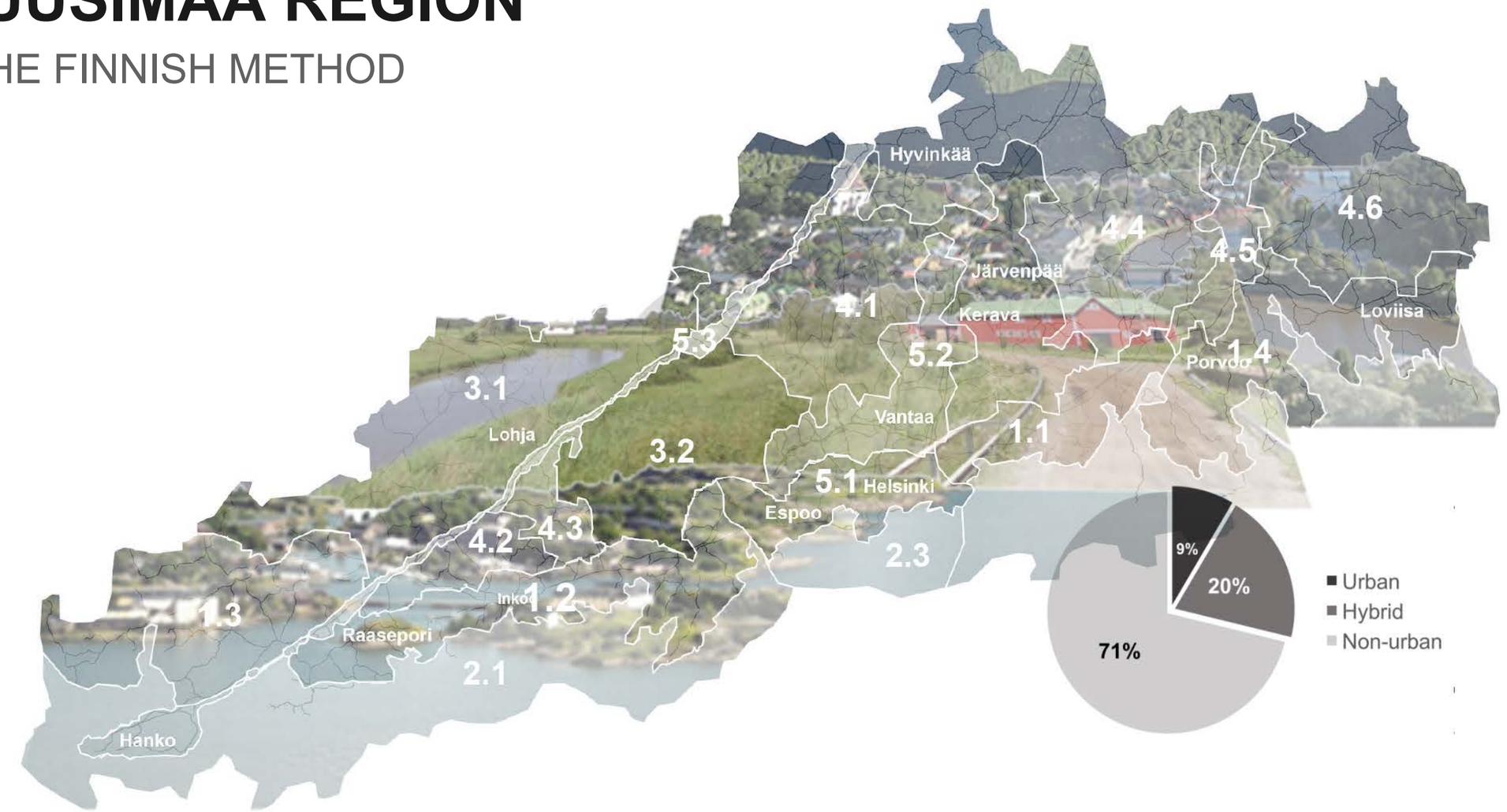
UPDATING THE FINNISH METHOD

WATER

FORESTS

URBANITY

AGRICULTURE



Country / City	Finland
University / School	Aalto University School of Arts Design and Architecture
Academic year	2017
Title of the project	Landscape Characterization of the Uusimaa Region: Updating the Finnish Method
Authors	Pihla Sillanpää, Juhana Havas

PERFORMATIVE NATURE

Barcelona International Landscape Architecture Biennial

September 2018 Barcelona

SCHOOL PRIZE

X International Landscape Architecture Biennial

Máster d'Arquitectura del Paisatge -DUOT - UPC
ETSAB- Escola Tècnica Superior
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TECHNICAL DOSSIER

Title of the project	Landscape Characterization of the Uusimaa Region: Updating the Finnish Method
Authors	Juhana Havas, Pihla Sillanpää
Title of the course	Basics of GIS
Academic year	2017
Teaching Staff	Juanjo Galan
Department/Section/Program of belonging	Department of Architecture, Master Landscape Architecture
University/School	Aalto University, School of Arts, Design and Architecture

The scope of traditional landscape characterization methods is limited to the non-urban realm. While the European Landscape Convention has broadened the concept of landscape character to include built components in the landscape definition, methodologies to characterize such in-between landscapes are scarce.

The objective of the studio course was to maximize the use of GIS software in the definition of landscape units, character areas, regional networks and to explore existing or new methods for Landscape Charcaterization.

The Uusimaa region located on the south coast of Finland is home to around 1.6 million inhabitants – 30 percent of the country's total population. It also contains the only metropolitan area in Finland. The methodological approach developed particularly for this project involved identifying territories within the Uusimaa region where urban and rural areas merge, forming so-called 'hybrid' landscapes that currently fall outside the scope of characterization methods. In order to identify the landscape character areas, both quantitative and qualitative methods were used.

For further information
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1. GIS ANALYSIS PROCESS DESCRIPTION

Step I: Data

Step II: Analysis

Step III: First combination

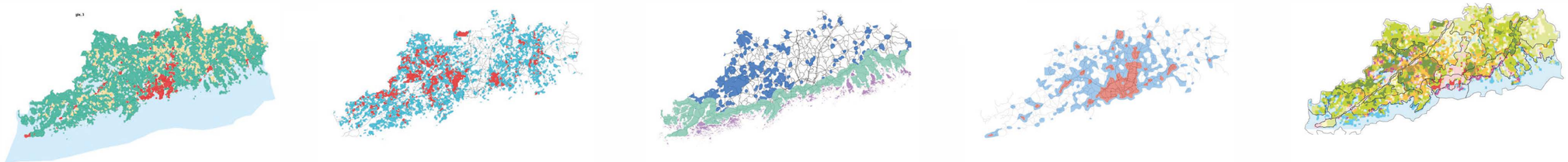
LAND COVER	URBANITY	VISIBILITY	LANDFORM	DEM	SLOPE
Reclassification	Amount of built surfaces per cell	Reclassification	SAGA-GIS: Landform analysis	Reclassification	Reclassification

2. RECLASSIFYING DATA

Step IV: Data

Step V: Second analysis

Step VI: Second combination



L1 CORINE	L2 LANDFORM	L3 WATER	L4 URBAN / HYBRID	RESULTS: RASTER CALCULATOR

BUILT | AGRIC. | NATURE | WATER | RIDGES | SLOPES | PLAIN | LAKES | COAST | ARCHIPELAGO | URBAN | HYBRID | NON-URBAN

GIS PROCESS STEPS

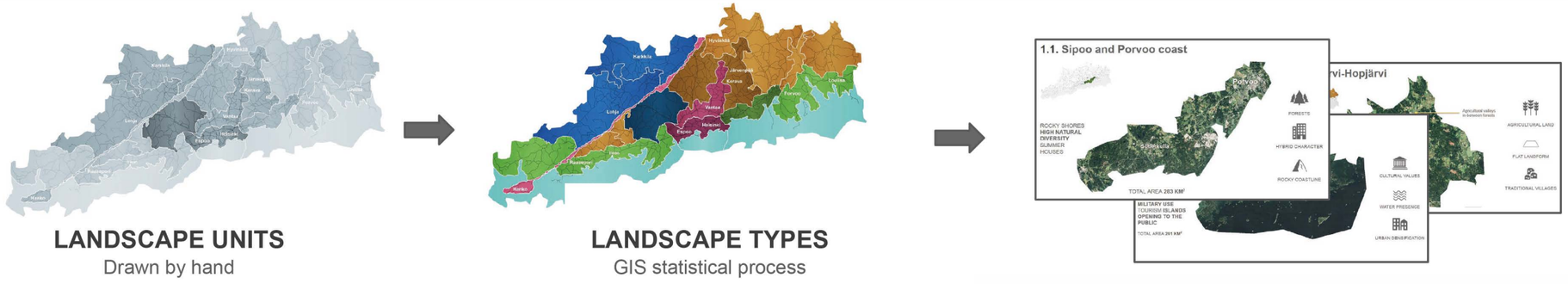
CORINE	ELEVATION MODEL	TOPOGRAPHY	CORINE
Cell size 20 m	Cell size 25 m	Vector	Cell size 20 m
SAGA-GIS LANDFORM	**SAGA-GIS LANDFORM**	**EXTRACTING LAYERS**	**EXTRACTING BUILT SURFACES**
Reclass 4	Reclass 4	From polygon data	Cell size 500 m
RECLASSIFY	**LINEAR VALUE**	**LAKES**	**PERCENTAGE**
To 4 classes	To integer	Buffer 1 km	Of built surfaces
RESAMPLE	**RECLASSIFY**	**COAST**	**RECLASSIFY**
Cell size 500 m	To 3 classes	Buffer 5 km	To 3 classes
FOCAL MAJORITY	**FOCAL MAJORITY**	**ARCHIPELAGO**	**KERNEL DENSITY**
Rectangle 3	Rectangle,3	Rectangle 3	3 km search radius

3. DIVISION TO LANDSCAPE UNITS

Step VII: Units

Step VIII: Types

Step IX: Descriptions



LANDSCAPE UNITS	LANDSCAPE TYPES
Drawn by hand	GIS statistical process

RESULT: LANDSCAPE UNITS

1. COASTAL LANDSCAPES

HYBRID
1.1 Sipoo and Porvoo hybrid coast

NON-URBAN
1.2 Tammisaari-Inkoo-Kirkkonummi coast
1.3 Tenala coastal area
1.4 Porvoo and Loviisa coastal area

2. ARCHIPELAGO

NON-URBAN
2.1 Western archipelago
2.2 Eastern archipelago

URBAN
2.3 Helsinki and Espoo archipelago

3. HILLY LAKES AND FOREST AREAS

NON-URBAN
3.1 Lohja lake uplands
3.2 Nuuksio lake uplands
3.3 Karkkila lakes and forests

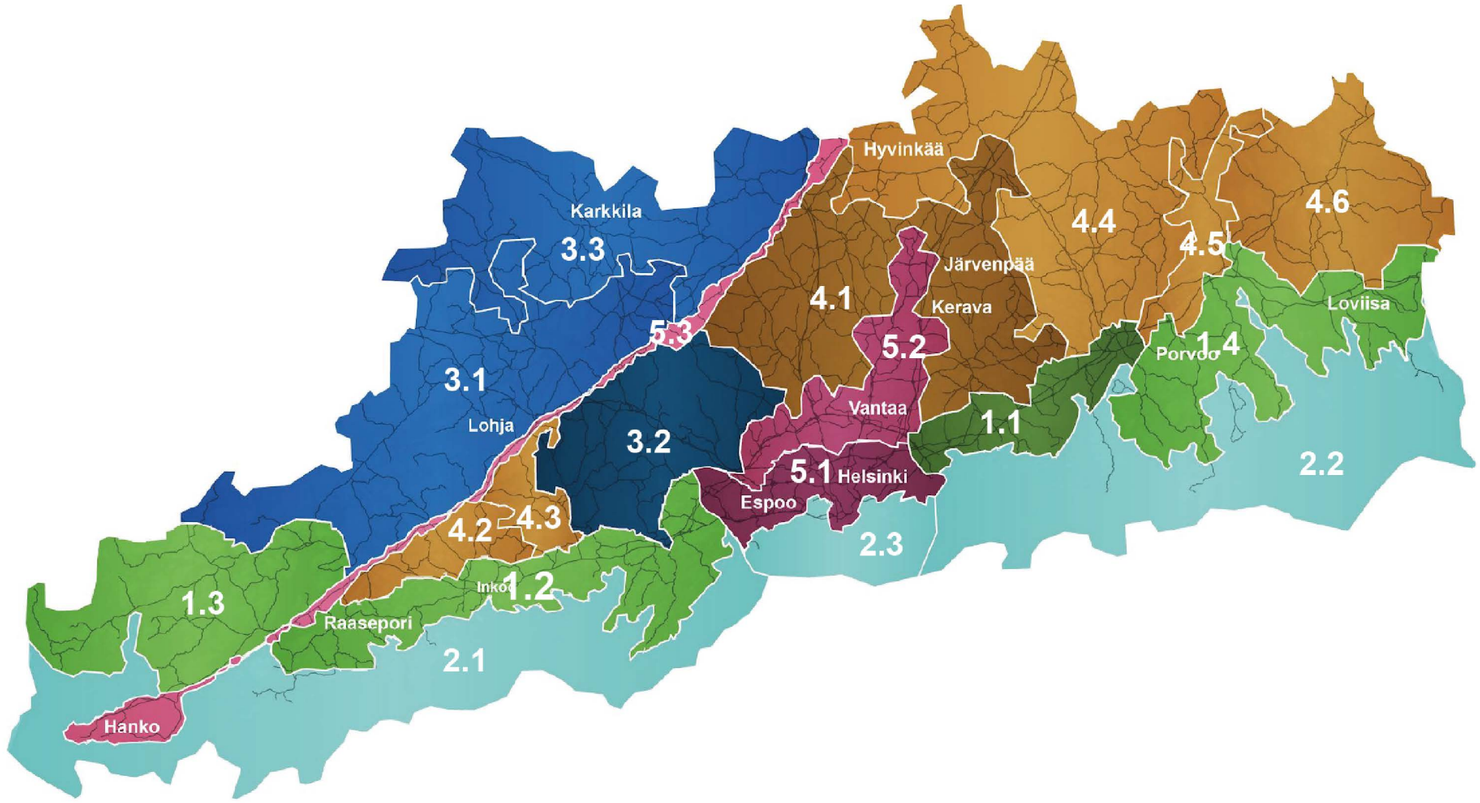
4. AGRICULTURAL AND FOREST MOSAICS

HYBRID
4.1 Central Uusimaa agricultural and residential mosaics

NON-URBAN
4.2 Johannesberg forest and agricultural mosaics
4.3 Siuntio valley depression
4.4 Northern field and forests mosaic
4.5 Porlammi-Vanhakylä ridge
4.6 Lapinjärvi and Hopjärvi valley depression

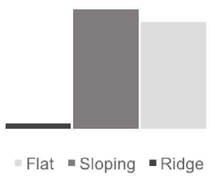
5. MIXED RESIDENTIAL LANDSCAPES

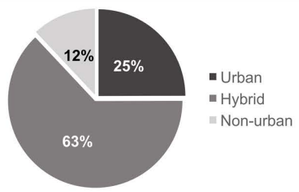
5.1 Helsinki and Espoo urban coast
5.2 Vantaa-Järvenpää expanding residential area
5.3 Salpausselkä



AREA COMPARISON

1.1. SIPOO AND PORVOO COAST



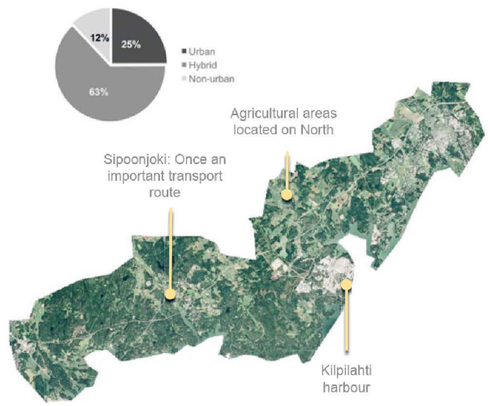


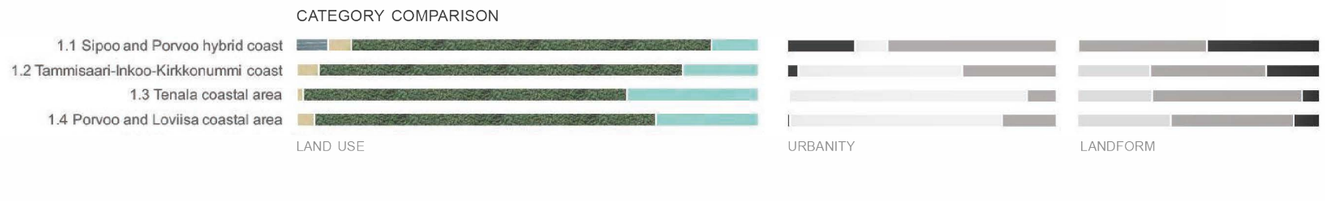
HUMAN FACTORS

CULTURAL LANDSCAPE
Cultural tradition influenced by the presence of Finnish Swedish communities. Estates have had a major impact for the development of cultural landscape. Porvoo is one of the six medieval towns in Finland. Agricultural activities are concentrated on the more plain area on the north.

LAND USE
Settlements mostly concentrated around rivers and waterfronts. Mostly small patches of agricultural land is situated along the rivers. Industrial areas: Kalkkiranta - long tradition of limestone mining from 1500s. Kilpilahti harbour: oil refining and chemical industry

FUTURE
Helsinki is expanding towards Östersundom: scheduled completion of the development is in the 2040's and will provide homes or 50,000 people



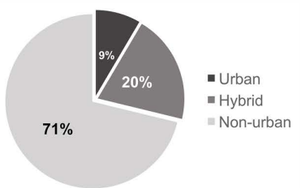


Old town, a dense medieval street pattern with predominantly wooden houses (nationally remarkable built cultural heritage)

Inhabitated since the stone age

Porvoonjoki was a route of commerce

2.3. HELSINKI AND ESPOO ARCHIPELAGO

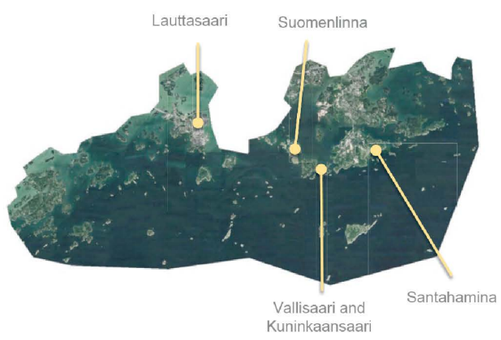


HUMAN FACTORS

CULTURAL LANDSCAPE
The sea and archipelago forms an integral part of Helsinki's image. There are approximately 300 islands in the Helsinki area – many of which are quite small. Islands have had settlements from the Middle Ages and they have been used for grazing cattle. Summer house culture emerged during the 19th century on islands near the city.

LAND USE
Most of the islands located in front of Helsinki are owned by the Finnish State. In the past majority of the large islands have been entrusted to the Defence Forces. The City of Helsinki owns most of the western islands and skerries.

FUTURE
Archipelago's value for tourism has been recently recognised as many islands previously entrusted to the Defence Forces have been opened to the public. Services and connections



The Swedish crown commenced the construction of the fortress in 1748 as protection against Russian expansionism

Suomenlinna World Heritage Site