

LANDSCAPE CHARACTER ASSESSMENT AND LANDSCAPE AND VISUAL IMPACT ASSESSMENT

What are the practical applications?

Simon Bell

THE EUROPEAN LANDSCAPE CONVENTION

Estonia signed up the ELC several years ago but compared with many other countries has not incorporated it into planning activities or undertaken many of the actions required by the convention.

Definition: The landscape is "... an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors".

THE EUROPEAN LANDSCAPE CONVENTION

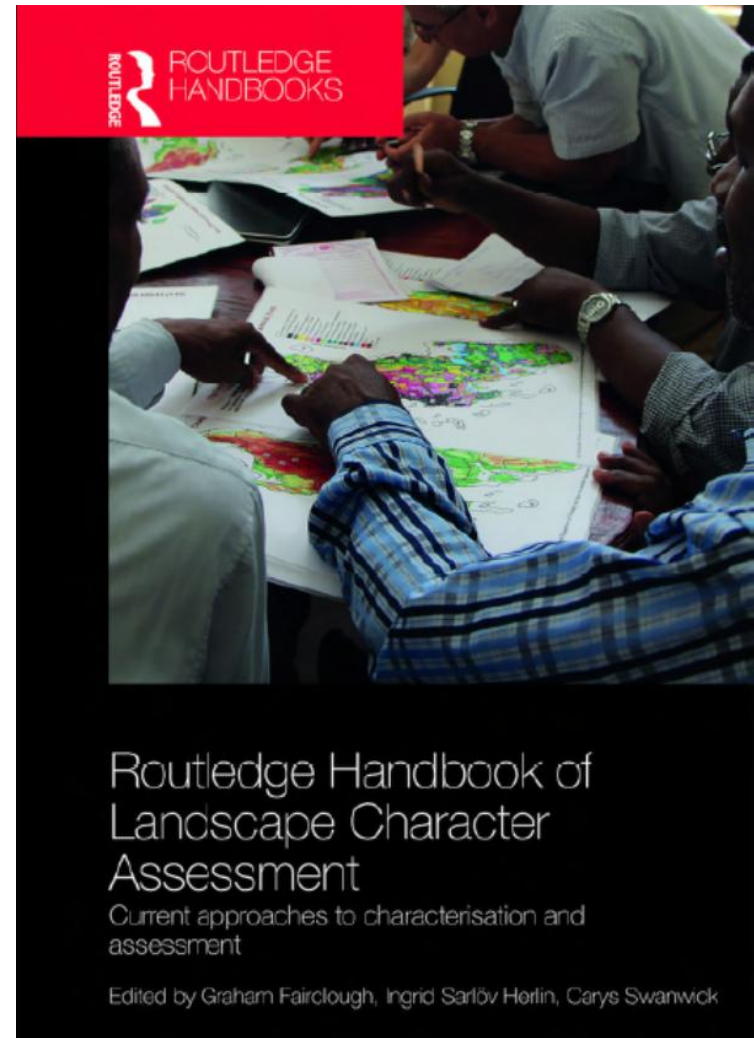
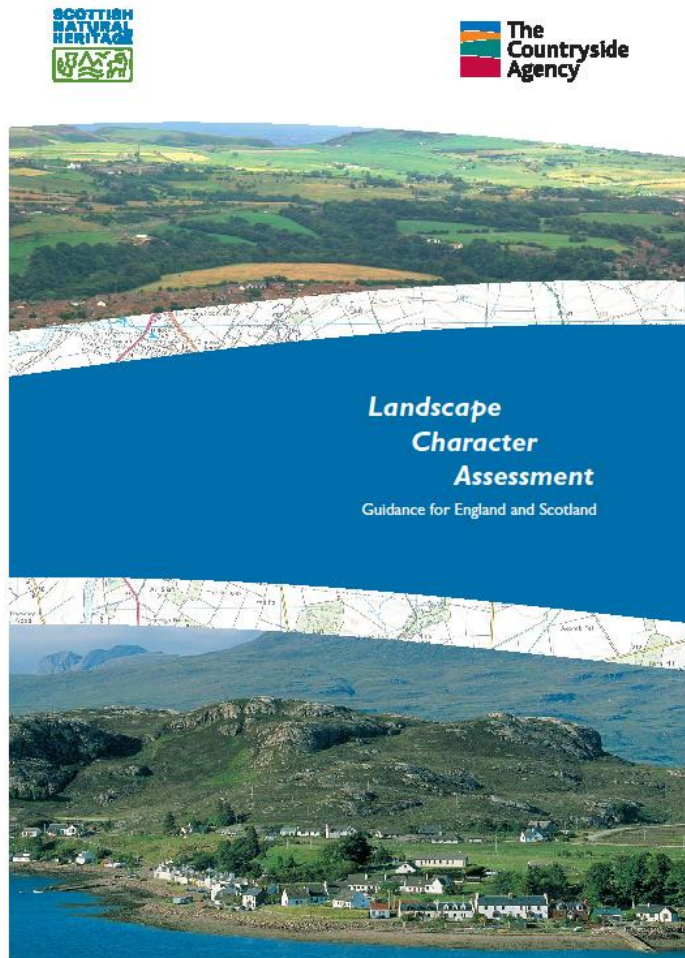
With the active participation of the interested parties, as stipulated in Article 5.c, and with a view to improving knowledge of its landscapes, each Party undertakes:

- a)i to identify its own landscapes throughout its territory;
- ii to analyse their characteristics and the forces and pressures transforming them;
- iii to take note of changes;
- b) to assess the landscapes thus identified, taking into account the particular values assigned to them by the interested parties and the population concerned.

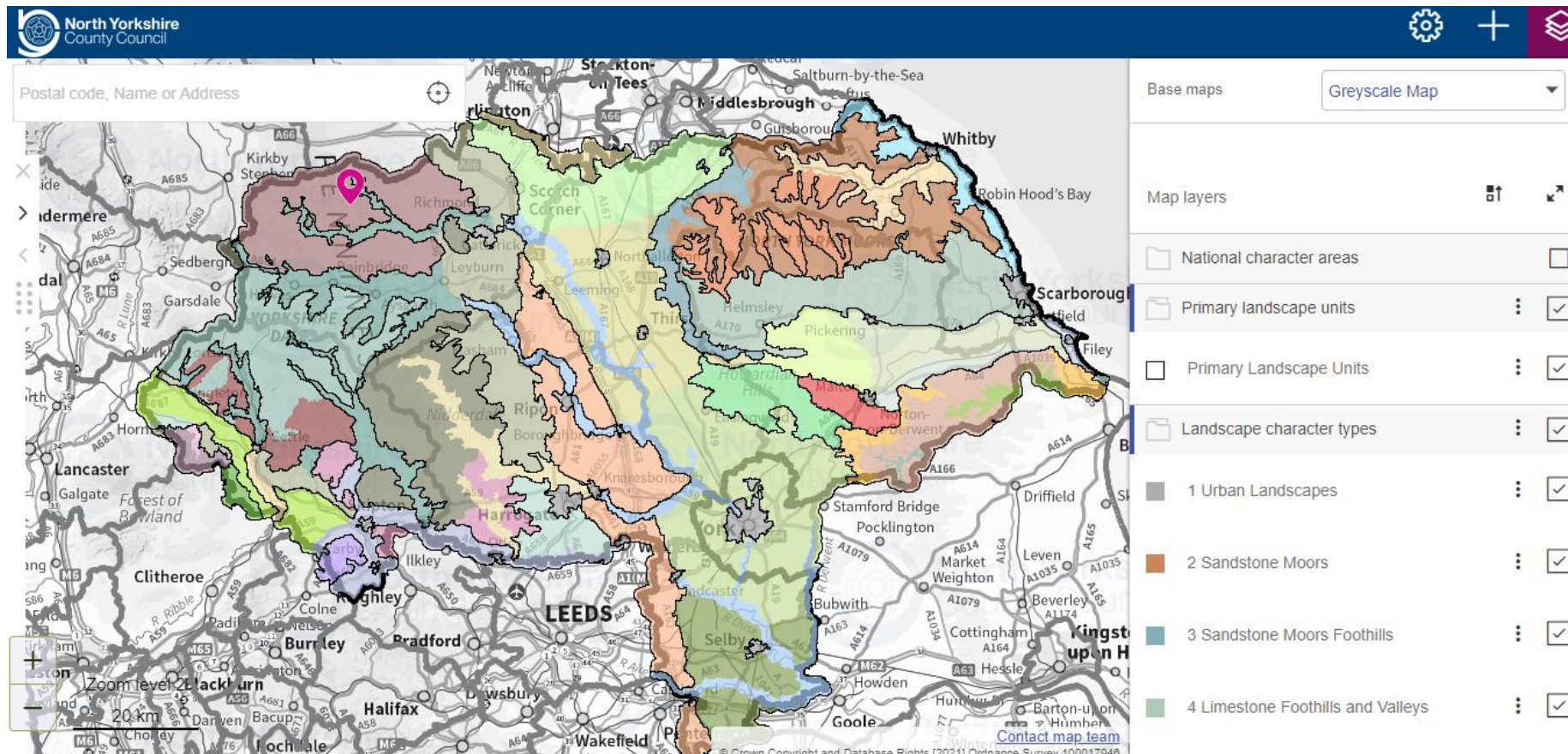
LANDSCAPE CHARACTER ASSESSMENT

- For almost four decades this has been the main way of taking landscape into account in wider landscape planning and policy development.
- It is based on a well-defined process carried out at a range of scales, often a regional scale and below this a local scale.
- It can provide a baseline against which to monitor landscape change.

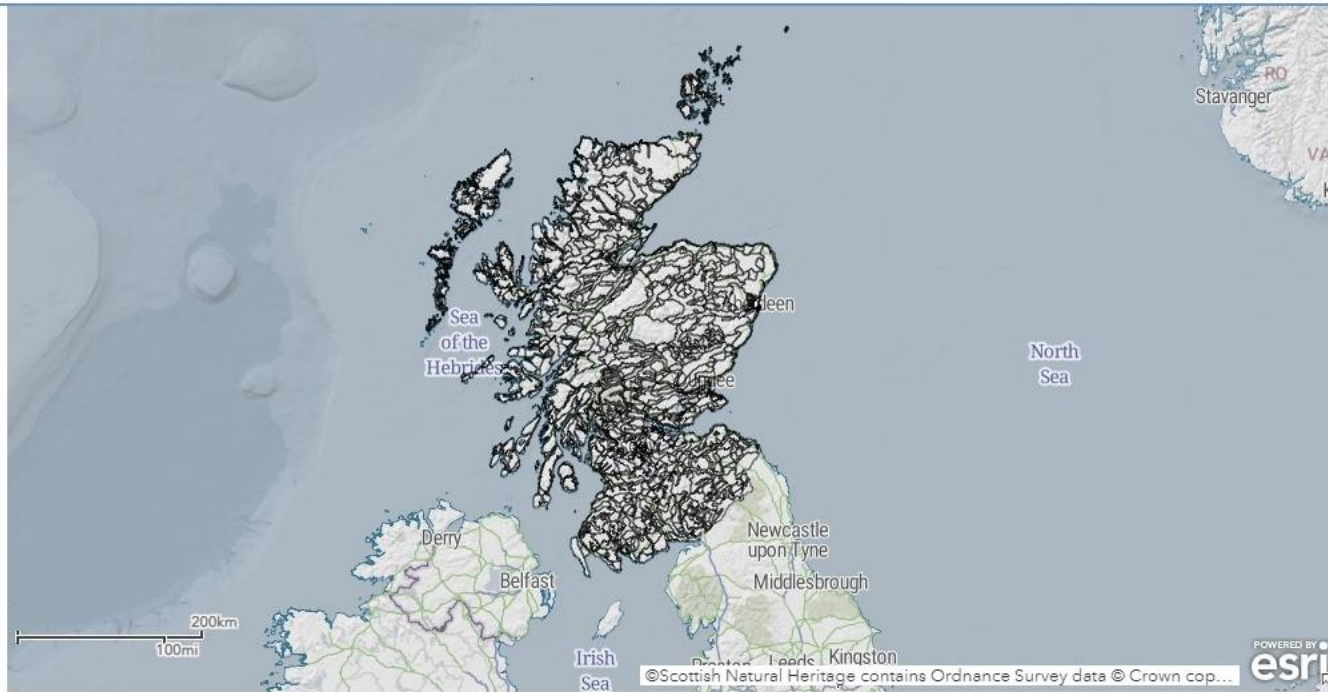
GUIDANCE



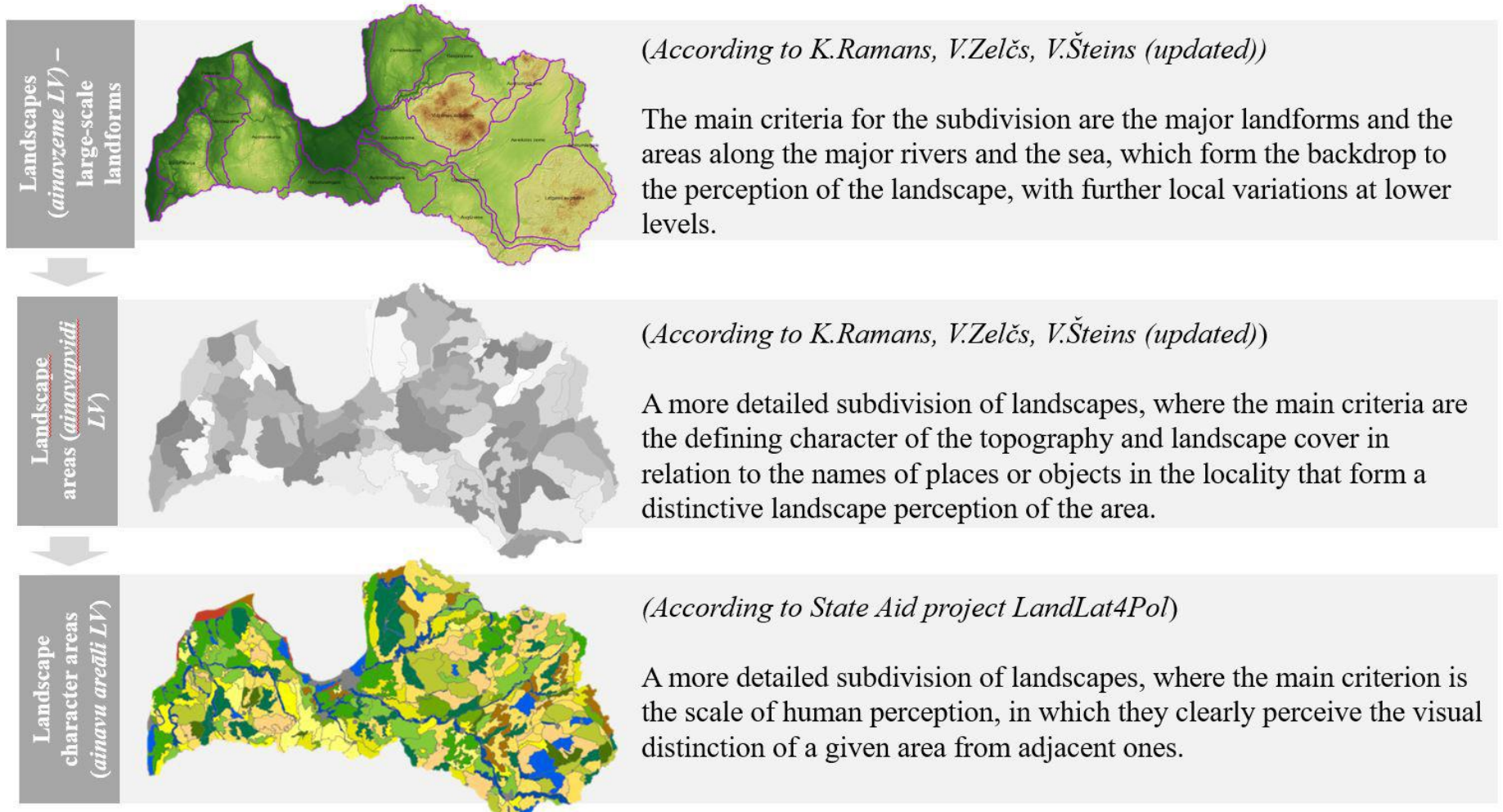
England: online system – searchable database for whole counties within the national system



Scotland: online system – searchable database for the whole country and downloadable as Excel files for GIS



Latvia's system created in the early 2020s operates at three scales

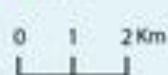


EXAMPLE OF APPLICATION

- A study by Fiona Nevzati, PhD student, of Harku Municipality, examining the relationship between the landscape character and specific Cultural Ecosystem Services (CES)
- Found a distinct association of some CES (mental restoration, cognitive benefits and social values) with particular LCA types

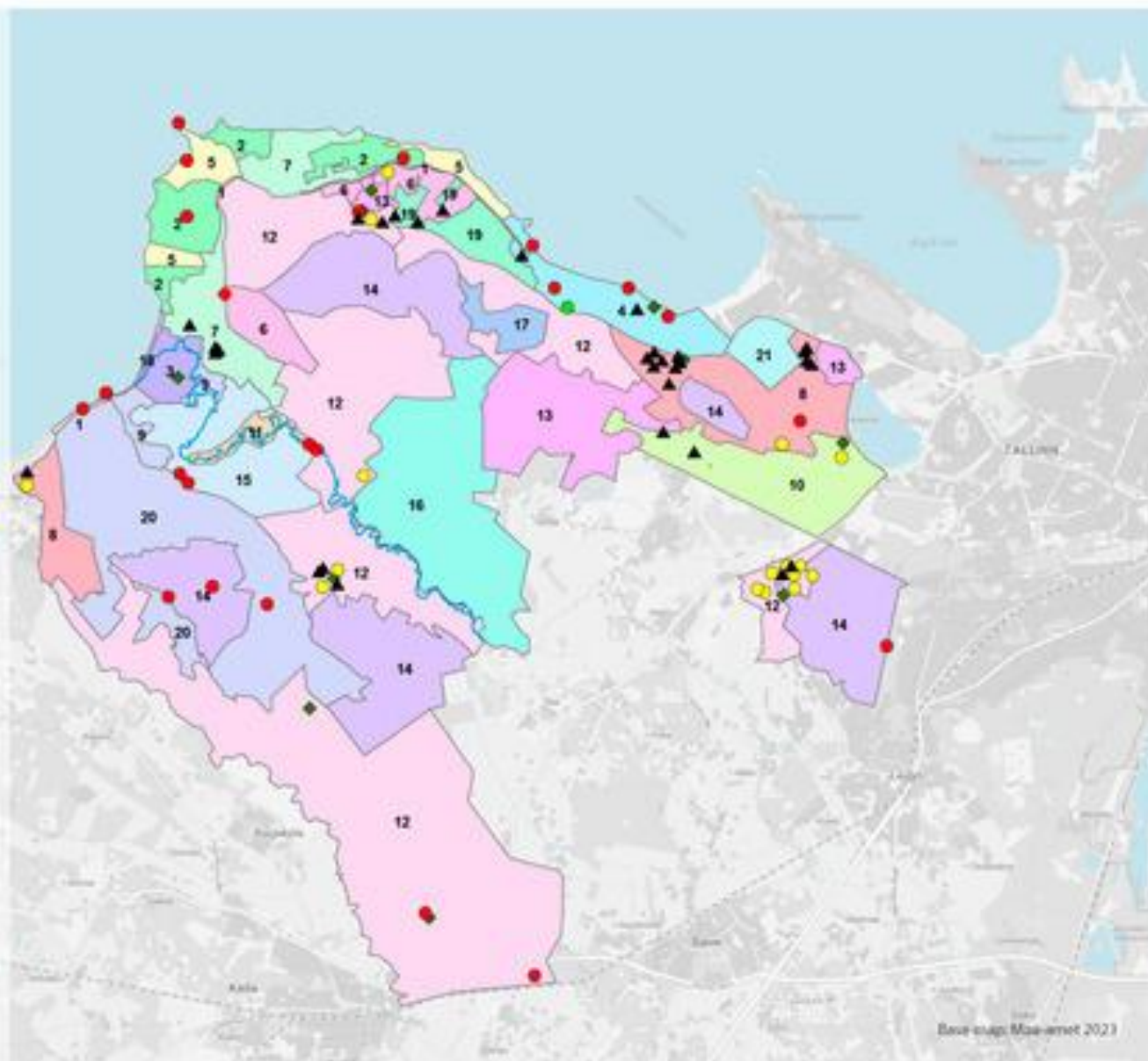
Natural Environment Types

- ▲ Activity Areas
- Community/Blockhouse Gardens
- ◆ Public Parks
- Nature Protected Area
- Various

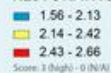


LANDSCAPE CHARACTER TYPES (LCTs)

1. Cliff
2. Coastal Forest
3. Coastal Forest on River Mouth Plateau
4. Coastal Forest with Dense Settlement
5. Coastal Forest with Settlement Clusters
6. Densely Settled Area On Clint
7. Densely Settled Area Under Clint
8. Densely Settled Area with Mixed Land Use
9. Densely Settled River Plateau
10. Industrial Area
11. Meandering River with Grasslands and Single Farms
12. Mixed Agricultural Land with Settlement Clusters
13. Mixed Forest
14. Mixed Forest and Wetland
15. Mixed Forest On River Plateau
16. Mixed Forest with Settlement Clusters
17. Polder
18. Sandy Beach
19. Semi-natural Grassland with Fossil Fields
20. Semi-Natural Grassland with Private Farms
21. Agricultural Land

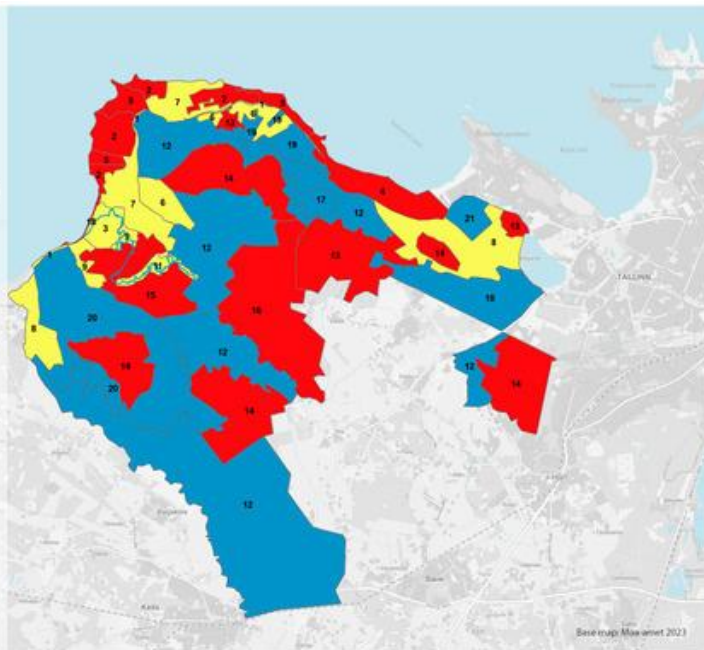


RESTORATIVE



LANDSCAPE CHARACTER TYPES (LCTs)

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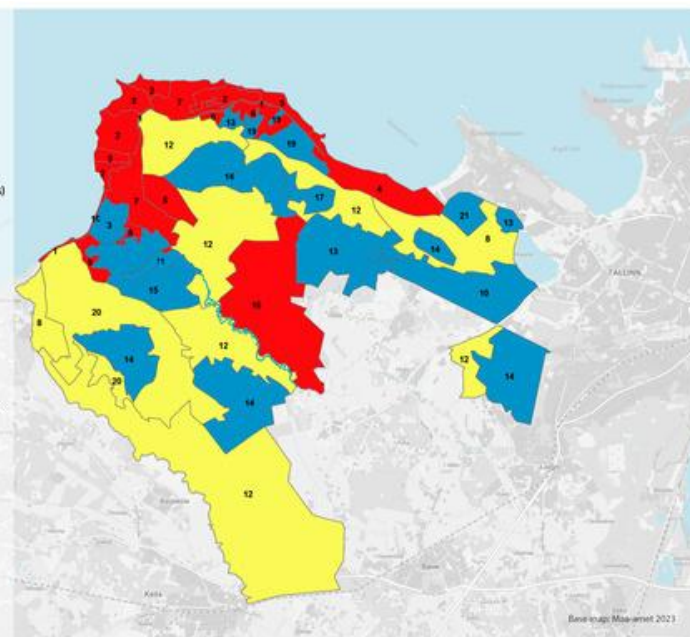


SOCIAL

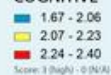


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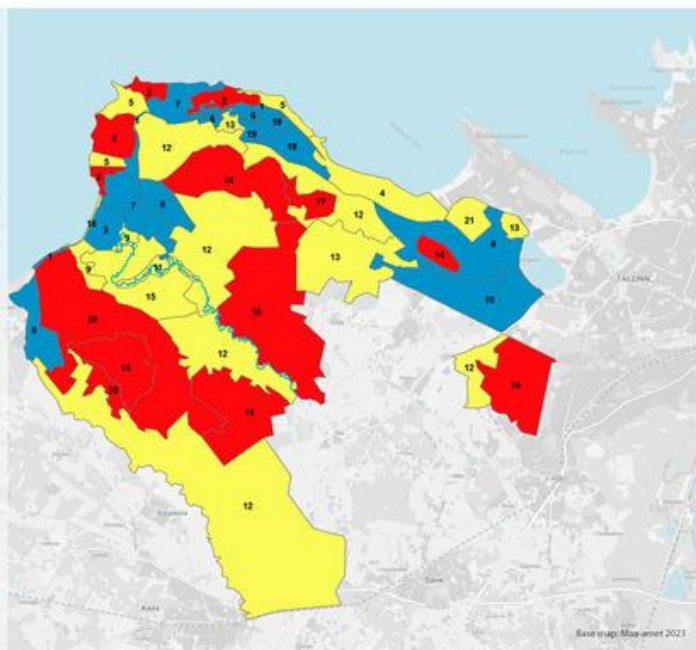


COGNITIVE



LANDSCAPE CHARACTER TYPES (LCTs)

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LANDSCAPE AND VISUAL IMPACT ASSESSMENT

- LVIA is an integral part of an Environment Impact Assessment and should be treated with the same degree of importance as all other aspects
- A LVIA is not just a few photomontages of how a development might look and it has its own well-developed and tested methodology

WHY LANDSCAPE AND VISUAL IMPACT ASSESSMENT?

- Article 3 of the 1997 Directive states:
“The environmental impact assessment shall identify, describe and assess....the direct and indirect effects of a project on:

Human beings, fauna and flora

Soil, water, air, climate and the **landscape**

Material assets and the **cultural heritage**

The **interaction between the factors...**”

Guidelines for Landscape and Visual Impact Assessment

Third edition

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ASSESSMENT OF EFFECTS

- It is current practice to assess two related effects:
 - On the landscape (landscape impact) using LCA as part of the landscape resource along with heritage areas
 - On people (visual impact) as seen eg. from settlements, transport routes and recreational areas

ASSESSMENT OF EFFECTS

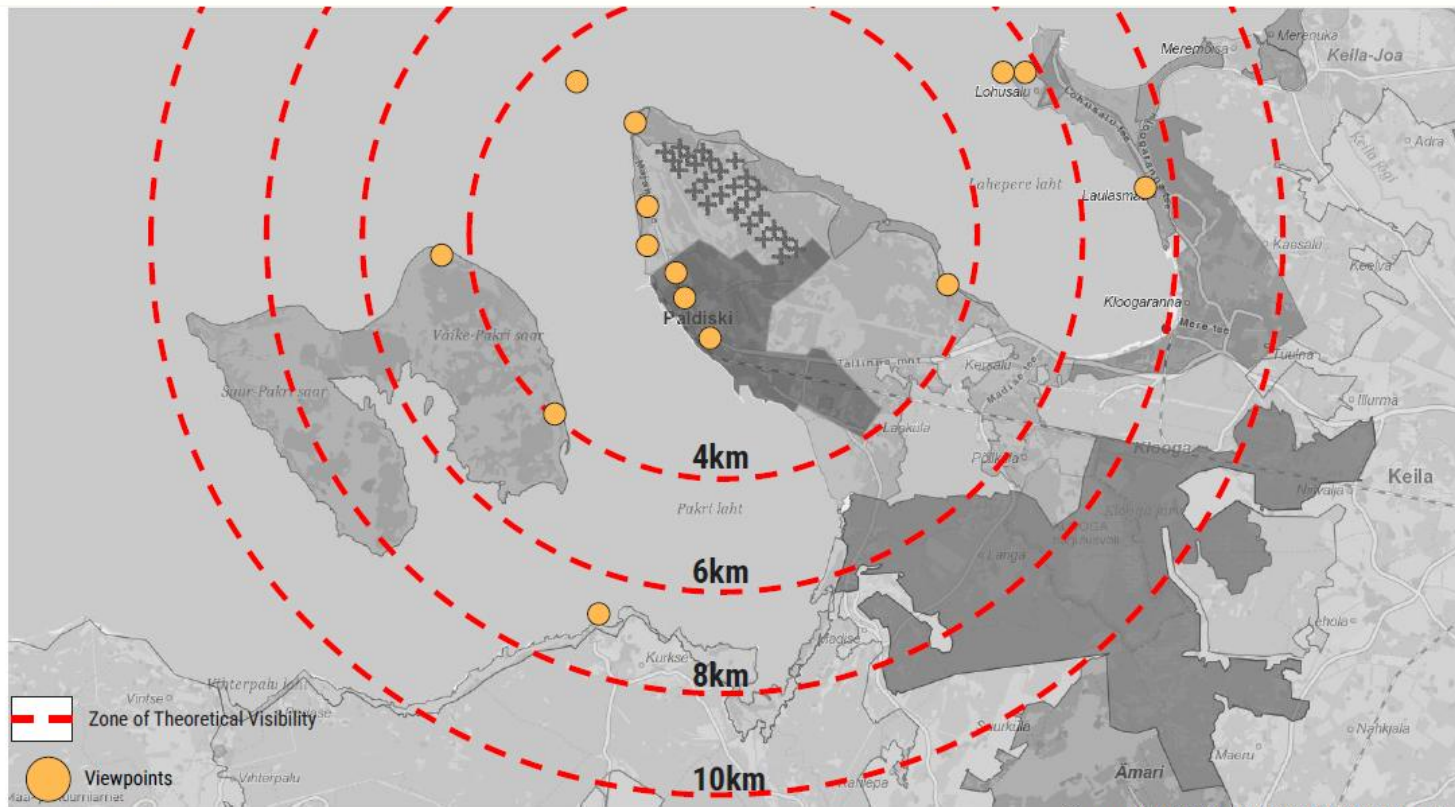
- The aim is to
 - Identify systematically the likely effects of a proposed development
 - Estimate the magnitude of the effects
 - Assess the nature and significance of these effects in a logical and well-reasoned fashion.
 - Indicate measures to avoid, reduce, remedy or compensate for those effects (mitigation measures)

NATURE OF EFFECTS

- Effects can be:
 - Negative (adverse) or positive(beneficial), although for most developments it is adverse effects that are of concern;
 - Direct or indirect, secondary or cumulative;
 - Permanent or temporary (short, medium or long-term);
 - Arise at different scales (local, regional or national)

Worked example: student project retro-assessment of Paldiski Windfarm

Study Area

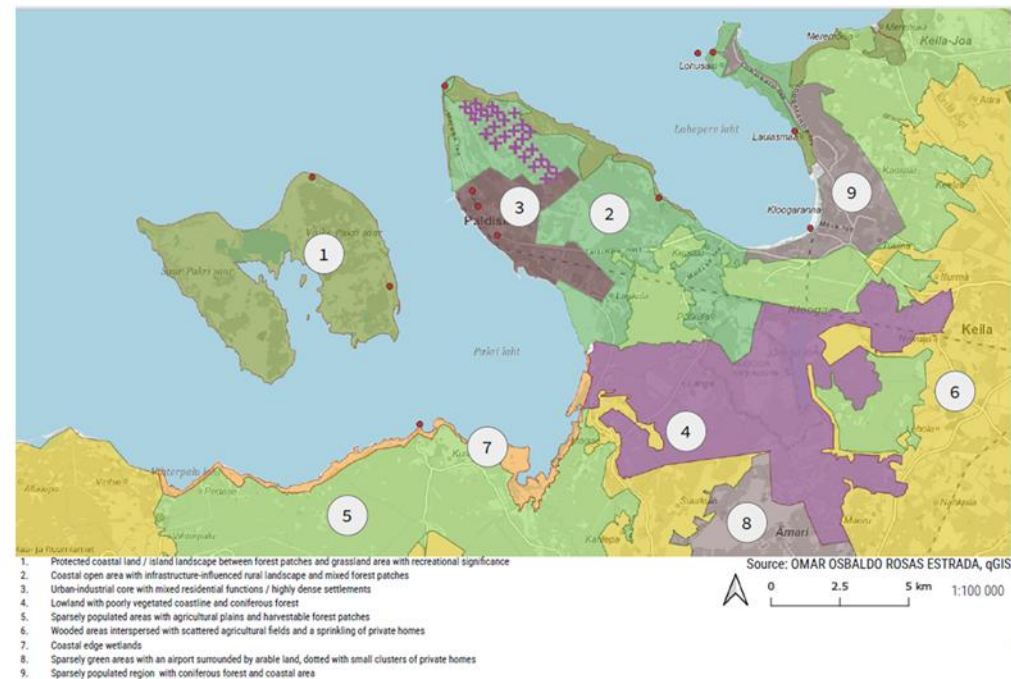


Note: The study area is based on a 1:100,000 scale, which allows for a maximum visible distance of 10 km. Most of our selected viewpoints fall within a 4 to 8 km radius.

Source: OMAR OSBALDO ROSAS ESTRADA, qGIS



2.3 Landscape character map

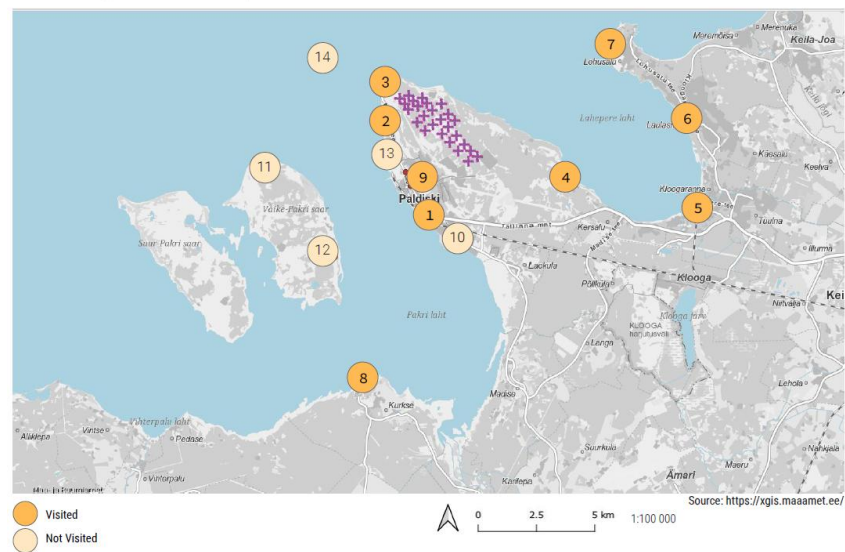


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2.8 Significance of impact for landscape resources

Landscape resources	Sensitivity	Magnitude of impact	Significance of impact
LCA types:			
1 Protected coastal land / island landscape between forest patches and grassland area with recreational significance	High	Medium	Severe
2 Coastal open area with infrastructure-influenced rural landscape and mixed forest patches	High	Large	Severe
3 Urban-industrial core with mixed residential functions / highly dense settlements	High	Large	Severe
4 Lowland with poorly vegetated coastline and coniferous forest	Medium	Negligible	Moderate
5 Sparsely populated areas with agricultural plains and harvestable forest patches	Low	Negligible	Minor
6 Wooded areas interspersed with scattered agricultural fields and a sprinkling of private homes	Low	Negligible	Minor
7 Coastal edge wetlands	Medium	Large	Moderate
8 Sparsely green areas with an airport surrounded by arable land, dotted with small clusters of private homes	Medium	Negligible	Moderate
9. Sparsely populated area with coniferous forest and coastal area	Medium	Medium	Moderate

3.1 Viewpoints area map



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Viewpoint 2: Rogerkivi pankrannik beach (59°22'43.7"N 24°02'11.6"E)

Open area with a cliff to the sea. Low sparse vegetation does not hide the close location of wind turbines



Source: Ziqian Wang

View with turbines removed using Photoshop

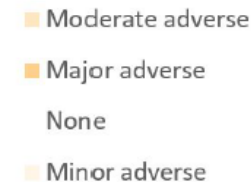
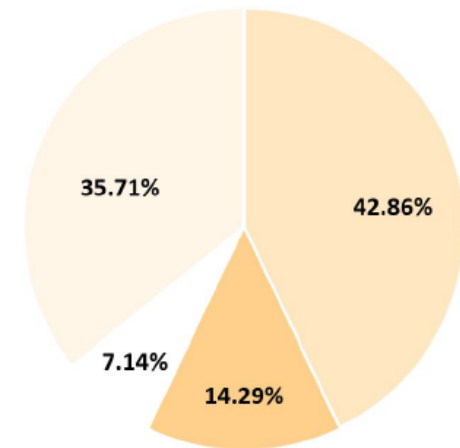


	Name/Location	View description	Turbines on views	Type of visual receptor
Viewpoint 2	Rogerkivi pankrannik beach	Long distance view to the North-East	19	Nature recreation, local people

3.4. Calculation of visual significance

N	Viewpoint name	Sensitivity	Magnitude of impact	Significance of Impact
1	Paldiski downtown	High	Negligible	Moderate adverse
2	Rogerikivi pankrannik beach	Medium	High	Major adverse
3	Pakri lighthouse towards East	High	Medium	Moderate adverse
4	Vana-Tallinna maantee, 41	Low	None	None
5	Klooga beach	Medium	High	Moderate adverse
6	Laulasmaa Beach	Medium	High	Moderate adverse
7	Nabessaar ("bird island")	High	Medium	Moderate adverse
8	Kurkse sadam	Low	Negligible	Minor adverse
9	Paldiski Ühisgümnaasium	Medium	Medium	Moderate adverse
10	Paldiski town cemetery	Low	Negligible	Minor adverse
11	Väike Pakri Island - A	Medium	Negligible	Minor adverse
12	Väike Pakri Island - B	Medium	Negligible	Minor adverse
13	Paldiski downtown West parking lot	Low	Negligible	Minor adverse
14	Paldiski peninsula overall drone-view	High	High	Major adverse

Significance of impact diagram



CONCLUSIONS

- Landscape character assessment provides an important database of the landscape for use in various planning and assessment activities including description, valuation, protection, sensitivity and capacity, as well as monitoring change over time.
- LVIA when carried out fully ensures that the landscape and visual aspects of EIA are properly taken into account and treated seriously.