LAND

Co-funded by the Erasmus+ Programme of the European Union

Inclusive Coastal Landscapes

Session 6

Friday, 4th of May 2018

Universitatea de Arhitectură și Urbanism "Ion Mincu"

www.emu.ee
Eesti Maaülikool
Estonian University of Life Sciences

Hochschule für Wirtschaft und Umwelt Nürtingen-Geislingen

HOCHSCHULE WEIHENSTEPHAN-TRIESDORF UNIVERSITY OF APPLIED SCIENCES

ULB Faculté d'Architecture La Cambre Horta

LE:NOTRE *Institute*
Linking landscape education, research and innovative practice

ISOCARP
Knowledge for Better Cities

Co-funded by the
Erasmus+ Programme
of the European Union

Introduction: Landscape Assessment and Evaluation

A structured method of landscape assessment can be description, classification, analysis, and evaluation. These provides framework for decision making on land use decision and management.

1980s

Source: http://www.plymothiantransit.com/2006/03/teats-hill.html

2017

Source: Google maps, 2017

Co-funded by the
Erasmus+ Programme
of the European Union

Introduction: Landscape Assessment and Evaluation

A structured method of landscape assessment can be description, classification, analysis, and evaluation. These provides framework for decision making on land use decision and management.

1980s

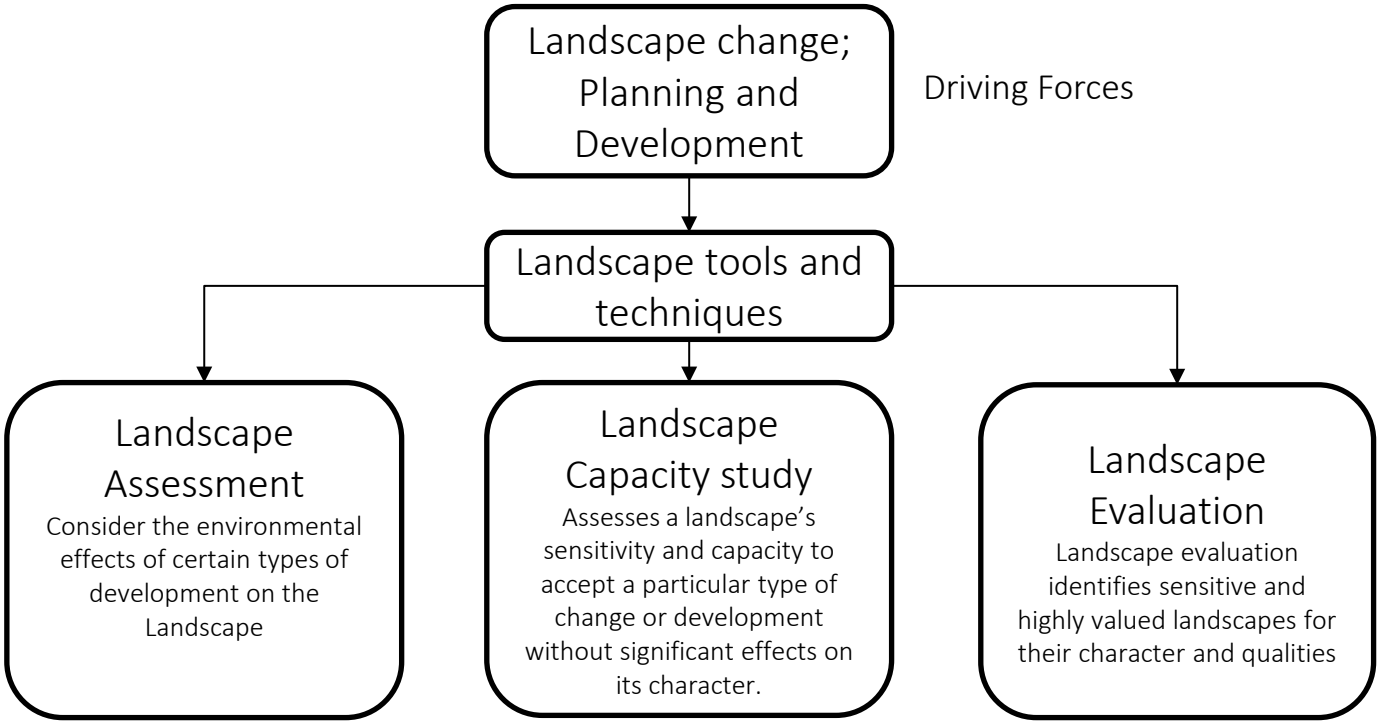
Source: http://www.plymothiantransit.com/2006/03/teats-hill.html

2017

Source: Google maps, 2017

Coastal landscape Teats Hill, Plymouth, UK

Co-funded by the Erasmus+ Programme of the European Union



- Environmental Impact Assessment (EIA) (for projects and development proposals)
- Strategic Environmental assessment (SEA) (for plans, programme and strategies)
- Habitat Appraisals (HA) (for plans or projects affecting Natura sites)
- Landscape Visual Impact Assessment (LVIA) (Assessment of landscape and visual Resources)

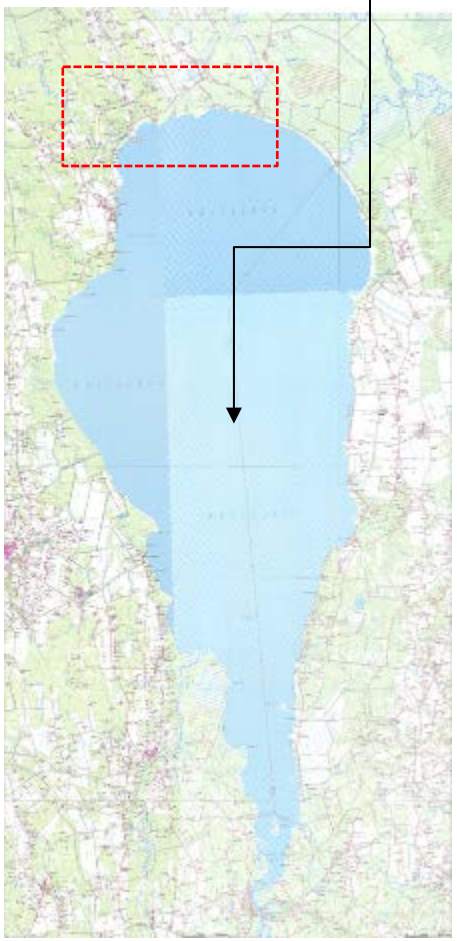
- Landscape Character Assessment (LCA)

- Landscape Character Assessment (LCA)

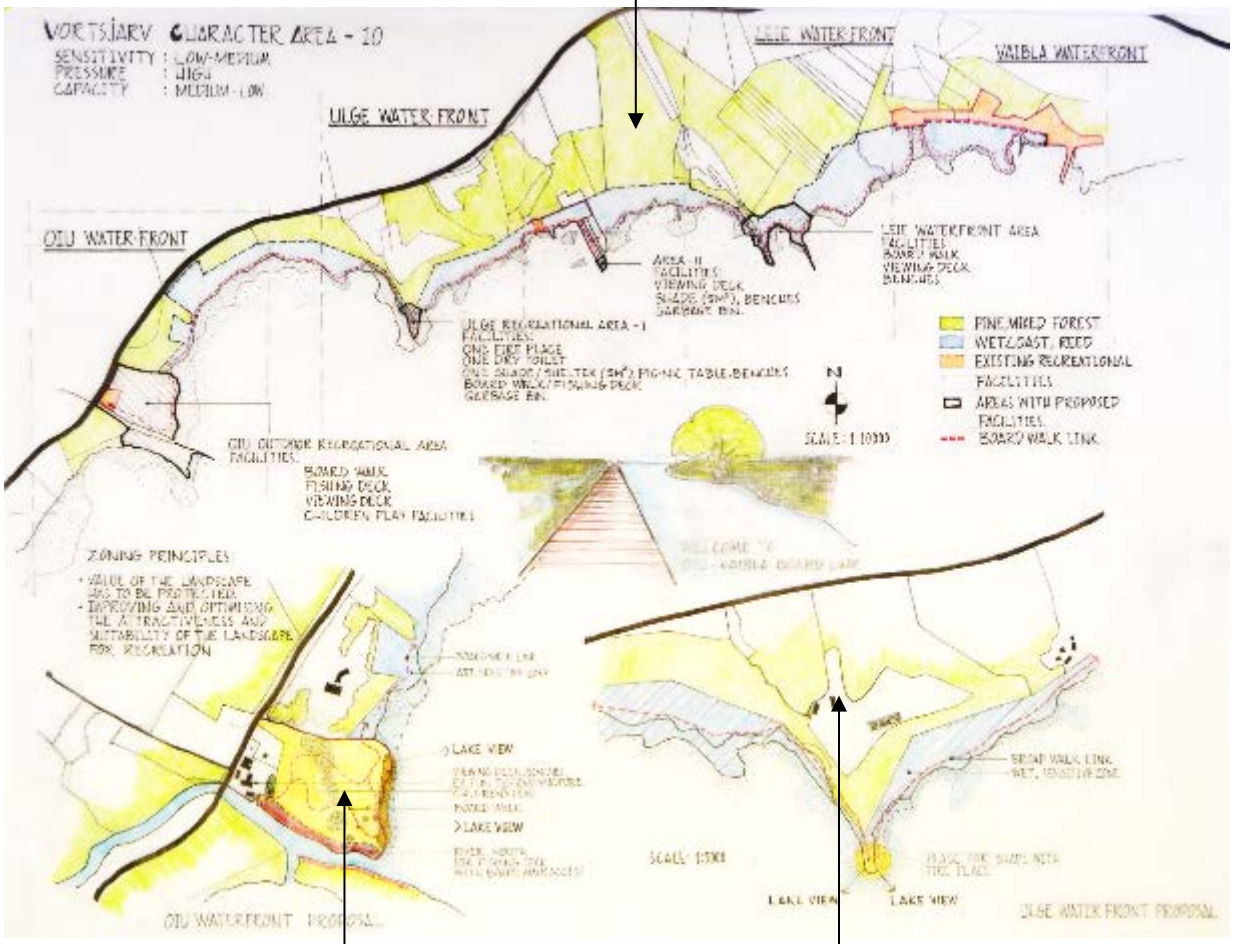
Co-funded by the Erasmus+ Programme of the European Union

Regional Scale

Area Scale



Vortsjarv, Estonia



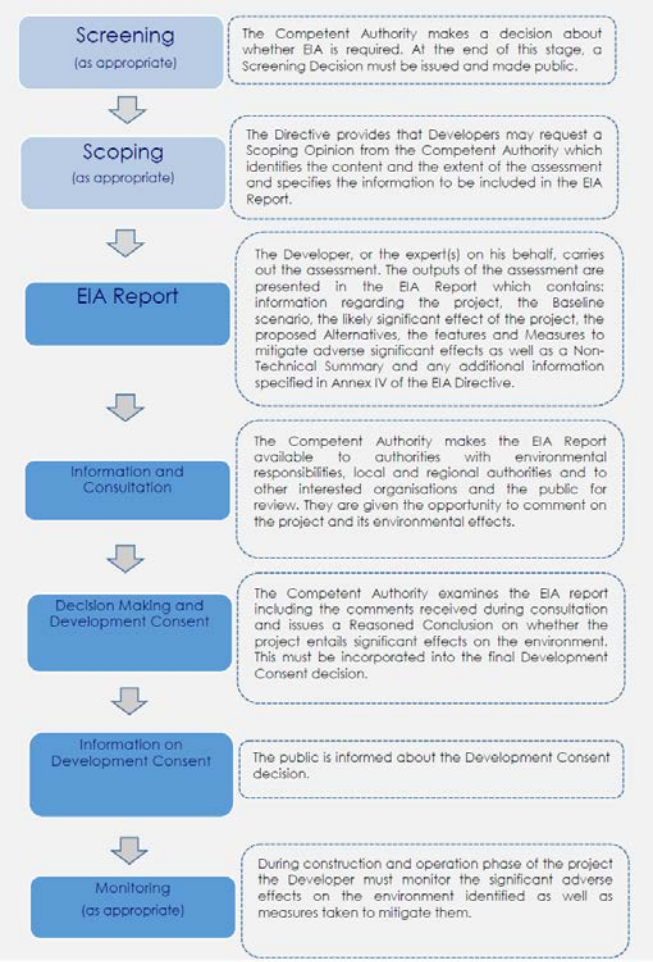
Sub-site Scale

Local/ Site Scale

Coastal landscape and different spatial scale and application of landscape assessment and evaluation tools.

Co-funded by the Erasmus+ Programme of the European Union

Landscape Assessment : Environmental Impact Assessment (EIA)



The International Association for Impact Assessment (IAIA) defines an environmental impact assessment (EIA) as "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made "

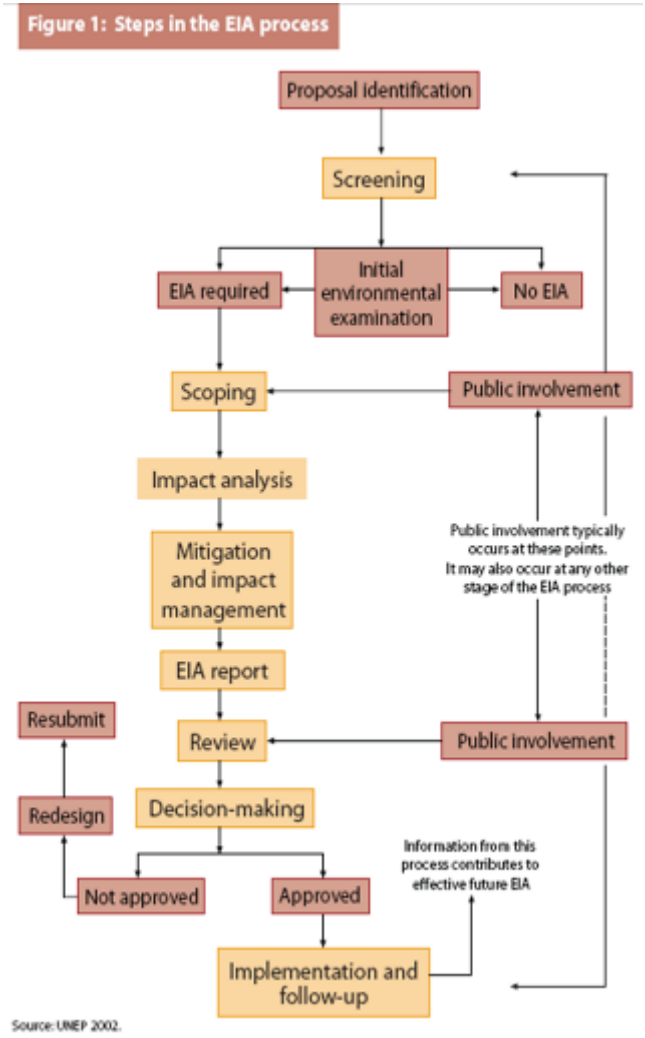
Steps in EIA

- Project Screening
- Scoping
- Consideration of alternatives
- Description of projects/development actions
- Description of environmental baseline
- Identification of key impacts
- The prediction of impacts
- Evaluation and assessment of significance
- Mitigation
- Public consultation and participation
- EIS presentation and review
- Decision-making
- Post-decision monitoring
- Auditing

Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report(Directive 2011/92/EU as amended by 2014/52/EU)

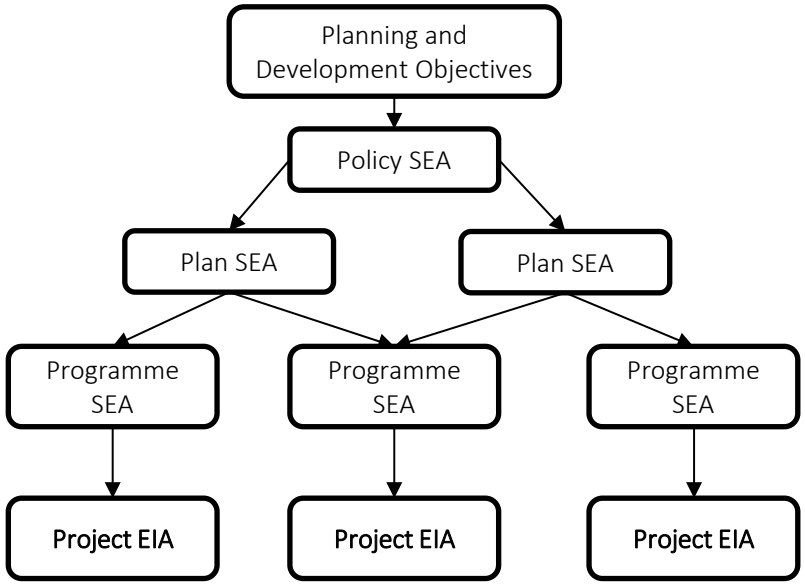
Co-funded by the Erasmus+ Programme of the European Union

Landscape Assessment : Environmental Impact Assessment (EIA)



Environmental Impact Assessment (EIA) may be required for:

- proposals requiring planning permission
- proposals requiring Electricity Act consent
- motorway and trunk road proposals
- forestry and agriculture related projects
- marine works
- oil and gas pipelines



Useful resource: http://ec.europa.eu/environment/eia/eia-support.htm

Co-funded by the Erasmus+ Programme of the European Union

Landscape Assessment : landscape and Visual Impact Assessment (LVIA)

LVIA is used to help design the proposed change as well as assess its effects, so that negative landscape effects are avoided, reduced or offset. Where a development is likely to have negative impacts on landscape, LVIA usually forms part of the environmental assessment. It can also be used as part of the appraisal of development proposals and planning applications.

LVIA examines two independent but related aspects:

- landscape effects
- visual effects

https://www.nature.scot/professional-advice/landscape-change/landscape-tools-and-techniques/landscape-and-visual-impact-assessment

https://wattsupwiththat.com/2017/10/30/16000-additional-wind-turbines-required-to-power-british-electric-car-fleet/

SOURCES OF EFFECTS

- Changes in land use e.g. arising from mineral extraction, afforestation, recreation or land drainage.
- Development of buildings and structures such as power stations, industrial estates, roads and housing.
- Changes in land management such as intensification of agriculture.
- Changes in production processes and emissions such as those from chemical plants.

Co-funded by the Erasmus+ Programme of the European Union

Landscape Assessment : landscape and Visual Impact Assessment (LVIA)

The methodology to carry out LVIA:

1. Establishment of the extent of the study area
2. Description of the setting and context of the development including land use and local development and landscape policies
3. Identification of the landscape resources likely to be affected occurring within the study area and their sensitivity
4. Identification of the visual resources likely to be affected occurring within the study area and their sensitivity

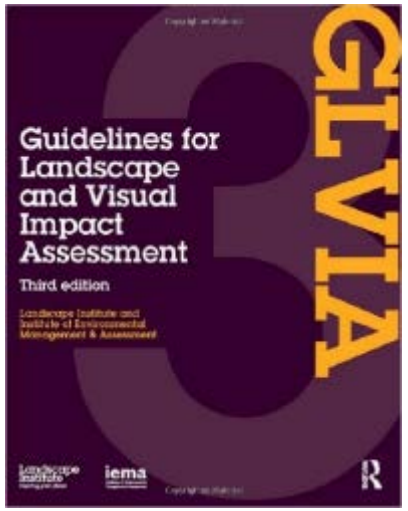
Baseline information

5. Assessment of the magnitude and significance of effect on the **landscape resources** during construction, during operation and during decommissioning of the development.
6. Assessment of the magnitude and significance of effect on the **visual resources** during construction, during operation and during decommissioning of the development.

Assessment

7. Identification of mitigation measures to reduce any assessed effects

8. Cumulative impact assessment with other similar or related developments in the study area or overlapping with it.



Reference: Guidelines for Landscape and Visual Impact Assessment, Landscape Institute

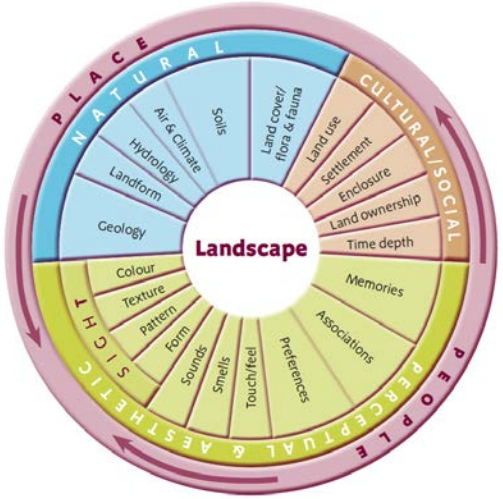
Co-funded by the Erasmus+ Programme of the European Union

Landscape Capacity Study : Landscape Character Assessment (LCA)

Understanding the landscape, the processes that formed it and the pressures for change

Landscape Character Assessment (LCA)
is the process of identifying and describing variation in the character of the landscape. It seeks to identify and explain the unique combination of elements and features (characteristics) that make landscapes distinctive. This process results in the production of a Landscape Character Assessment.

Source: Author, Landscape characterisation



Defining landscape

The Landscape Character Assessment process is used increasingly to inform urban, or townscape, assessments, and Seascape Character Assessments6. The scope of the ELC applies to natural, rural, urban and peri-urban areas and includes land, inland water and marine areas.

An Approach to Landscape Character Assessment, October 2014
Christine Tudor, Natural England, www.gov.uk/natural-england

Co-funded by the Erasmus+ Programme of the European Union

Landscape Capacity Study : Landscape Character Assessment (LCA)

Main steps in Landscape Character Assessment

STAGE 1: CHARACTERISATION
Step 1: Defining the scope.
Step 2: Desk study.
Step 3: Field survey.
Step 4: Classification and description.

Characterisation, which is relatively value-free and is concerned with identifying, classifying and describing areas of distinctive character;

STAGE 2: MAKING JUDGEMENTS
Step 5: Deciding the approach to judgements.
Step 6: Making judgements
i.e. landscape strategies; landscape guidelines; attaching status to landscapes; landscape capacity.

Making judgements to inform particular decisions, which may use one or a combination of approaches depending on the purpose of the exercise.

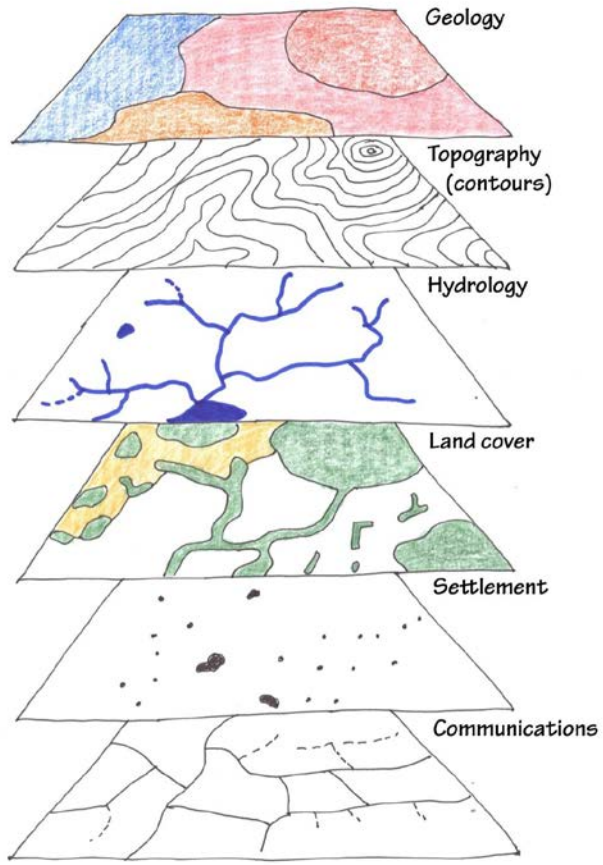
Source: Author

Stage 1: Step 1: Defining the scope of LCA.
All Landscape Character Assessments need a clearly defined purpose. This will critically influence the scale and level of detail of the assessment, the resources required, those who should be involved in its preparation, and the types of judgement that are needed to inform decisions.

Co-funded by the Erasmus+ Programme of the European Union

Landscape Capacity Study : Landscape Character Assessment (LCA)

Step 2: Desk study- Overlay of maps



Source: Bell, S (2014)

Step 3: Field Study

Field Survey Sheet: Vortsjarv Lowland

1 **View point No.** **Location** **Date**
2 **Camera Pic. No.**
3 **Landscape character type**
4 **Landscape character area**
5 **Geology**
6 **Topography**

flat	plain	dry valley
undulating	rolling lowland	deep valley
rolling	plateau	broad valley
steep	scarp/cliffs	narrow valley
verticals	Hills	

7 **Dominant landcover and landscape element**

Building	Heritage	Farming	landcover	woodland/trees	Hydrology	Communication
Farm	vernacular	wall	parkland	deciduous	river	road
mast/poles	county house	fences	scrub	coniferous	stream	track
pylons	field system	hedges	marsh	mixed	reservoir	footpath
industry	prehistoric ritual	fields	peat bog	shelterbelt	dry valley	lane
settlements	hill top enclosure	arable	moor/heath	hedge trees	winter bourne	railway
urban	ecclesiastic	improved pasture	rough grassland	orchard	pond	military
follies	monument of war	rough grazing	water meadows	clumps	lake	pylons
military	coppice	hedge banks	grassland	isolated trees	drainage ditch	communication mast
		orchard	species rich grassland			

8 **Brief description (including main elements, features, attractors, detractors)**

9 **Key characteristics/ distinctive features and why they are important?**

10 **Rarity**
11 **Conditions**
12 **Visual Assessment Criteria**

pattern	dominant	strong	broken	weak	
Scale	intimate	small	medium	large	
Texture	smooth	textured	rough	very rough	
colour	monochrome	muted	colourful	garish	
complexity	uniform	simple	diverse	complex	
remoteness	wild	remote	vacant	active	
unity	unified	interrupted	fragmented	chaotic	
form	straight	angular	curved	sinuous	
enclosure	expansive	open	enclosed	constrained	
visual dynamics	sweeping	spreading	dispersed	channelled	

13 **Perception**

Security	intimate	comfortable	safe	unsettling	treatening
Stimulus	monotonous	bland	interesting	challenging	inspiring
Tranquility	inaccessible	remote	vacant	peaceful	busy
Pleasure	unpleasant	pleasant	attractive	beautiful	

14 **Architecture (condition and quality)**

Local material	stone type, colour, texture, brick, colour, sixe, render
Combination	stone and brick pattern
Vernacular Style	window style, roof pitch
Settlement Form	villege green, cluster, military, scattered

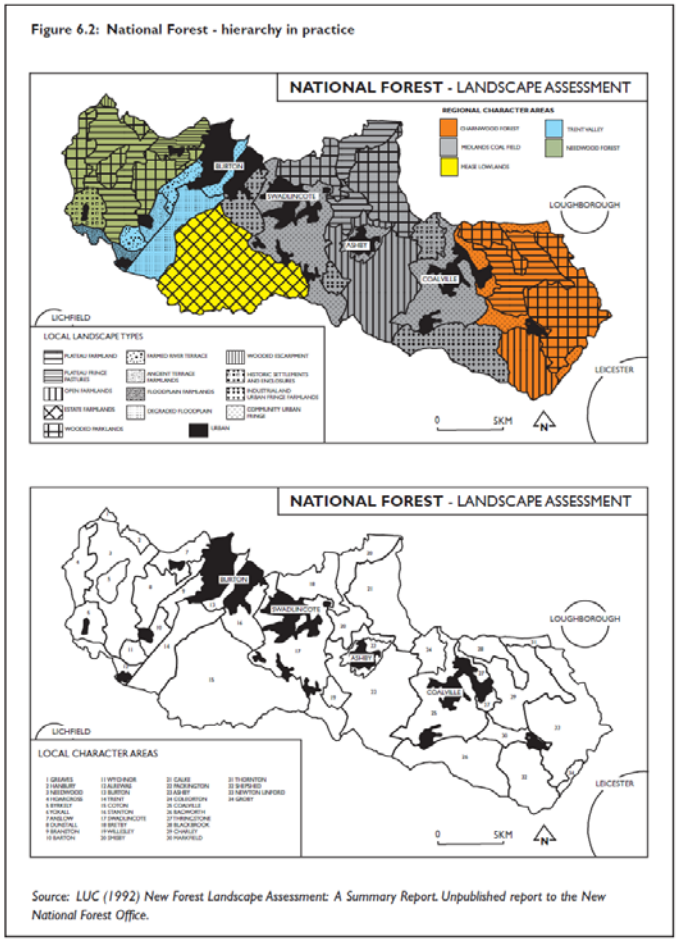
15 **Additional Comments**
pollution,
errosion bare or disturbed ground,
condition of historical feature,
new planting,
restoration work.

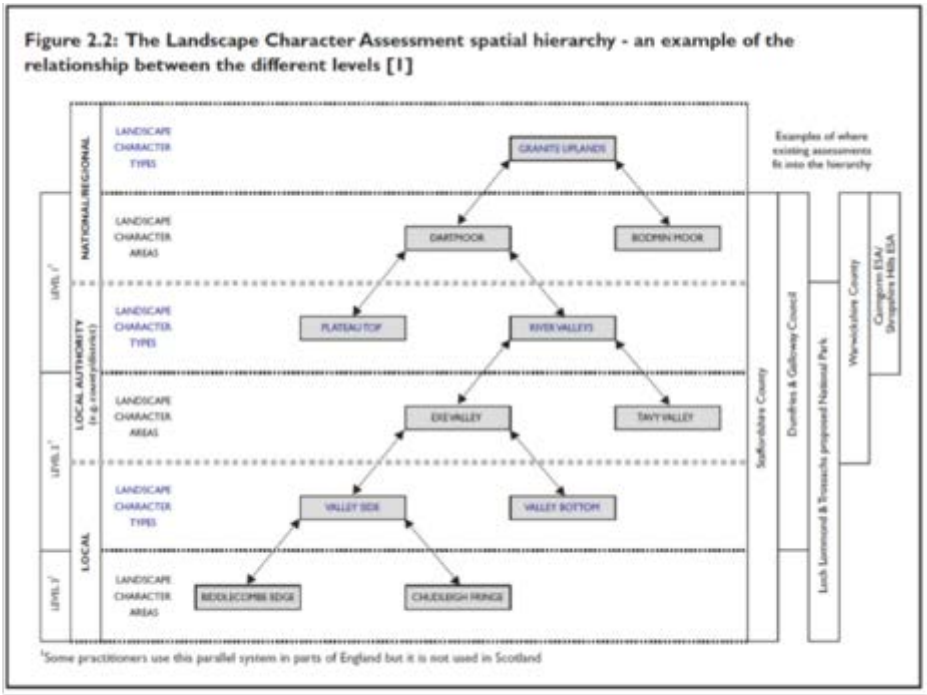
Source: Landscape Character Assessment Guidance for England and Scotland, 2002

Co-funded by the
Erasmus+ Programme
of the European Union

Landscape Capacity Study : Landscape Character Assessment (LCA)

Step 4: Landscape Characterisation –





Application of LCA at different scale :
1: 50,000; 1: 25,000; 1: 10,000

Source: Landscape Character Assessment Guidance for England and Scotland, 2002

Co-funded by the Erasmus+ Programme of the European Union

Landscape Capacity Study : Landscape Character Assessment (LCA)

Sensitivity analysis–

	Landscape Sensitivity																			Visual Sensitivity										
	Soil			Hydrology				Heritage				Land Cover			Forest Type															
Landscape Character Area	Till	Clay Silty/ Mud	Peat	Lake	River	Canal	Migratory bird	Natural Heritage	cultural Heritage	Landscape Protection	Amphibian	Pattern	complexity	Consistency	Dry forest	Wet forest	Bog	Settlement	Road	OVER ALL SENSITIVITY	Skyline	Landform	Inter-visibility	External View, Vistas, Landmarks	Receptors	Pleasure	Sense of Remoteness	Scale	OVER ALL SENSITIVITY	OVER ALL SENSITIVITY
1	L	0	0	0	M	L	0	M	L	L	LM	L	L	M	L	0	0	M	M	LM	M	L	M	M	L	M	M	L	LM	LM
2	L	0	0	L	M	L	H	M	M	M	LM	M	M	H	L	0	0	L	L	M	M	L	M	M	M	M	M	L	M	M
3	L	0	0	0	0	L	0	L	L	L	L	M	M	M	L	0	0	M	M	LM	M	M	H	M	H	M	M	M	MH	M
4	L	0	0	0	0	L	0	L	H	L	LM	L	L	L	L	0	0	L	L	LM	L	L	L	M	H	L	L	M	LM	LM
5	L	0	0	0	M		H	L	M	M	L	M	M	M	L	0	0	M	M	M	M	L	M	M	M	M	M	M	M	M
6	L	0	0	0	0	L	0	0	0	L	0	M	M	M	L	0	0	M	M	LM	L	L	M	L	H	L	L	M	LM	LM
7	0	H	0	0	M	0	0	H	0	H	LM	M	M	M	0	H	0	H	H	H	H	L	L	M	L	H	H	H	H	H
8	L	0	H	0	0	L	0	0	L	M	M	M	M	M	M	0	0	L	L	ML	M	M	M	M	H	M	L	M	M	M
9	0	M	H	L	M	0	0	0	M	H	LM	M	M	M	M	0	0	M	M	MH	L	L	M	M	H	H	L	M	M	MH
10	L	0	0	0	0	L	0	0	L	M	LM	L	L	L	L	0	0	L	L	LM	L	L	M	M	H	H	L	M	M	LM
11	L	M	0	M	0	L	0		L	MH	LM	M	L	L	L	M	0	M	M	M	L	L	H	H	L	H	H	L	MH	MH
12	L	M	H	H	M	0	H	M	L	L	LM	M	M	M	L	H	0	M	H	MH	L	L	L	M	L	M	H	L	LM	M
13	L	0	H	L	0	0	H	0	M	M	L	L	L	L	L	0	0	M	M	MH	M	L	H	M	L	H	H	L	MH	MH
14	L	0	0	0	0	L	0	0	L	H	LM	L	L	L	L	0	0	M	M	MH	L	M	L	L	L	M	H	L	M	MH
15	L	0	0	0	M	0	0	M	L	L	L	M	M	M	L	0	0	M	M	LM	M	L	M	M	M	M	M	M	M	M
16	L	0	0	0	L	0	0	0	M	L	L	M	M	M	L	0	0	M	M	LM	M	L	M	M	M	M	M	M	M	M
17	0	M	H	0	0	L	0	0	M	M	L	M	M	L	0	H	0	H	H	MH	L	L	L	L	L	M	H	L	LM	MH
18	L	M	H	H	0	0	H	0	L	MH	L	L	L	L	0	M	H	M	M	H	H	L	L	H	L	H	H	M	MH	H
19	L	0	H	0	0	L	0	0	M	L	L	M	M	M	L	H	0	M	M	MH	L	L	M	M	L	M	M	M	LM	M
20	0	0	H	0	0	H	0	H	0	H	L	L	L	L	0	0	H	H	H	H	L	L	M	M	L	L	H	M	M	MH
21	0	M	0	0	0	0	0	0	M	L	0	M	M	M	L	0	0	H	L	M	L	M	M	L	L	M	H	M	M	M
22	0	H	0	H	M	0	0	0	L	H	M	M	M	M	0	0	H	H	H	MH	M	M	M	M	L	H	H	M	MH	MH
23				H			H			H										H					L	H	H	M	H	H

Note

Topography : Simple, featureless, absense of strong topographical veriety : Sensitivity (L)

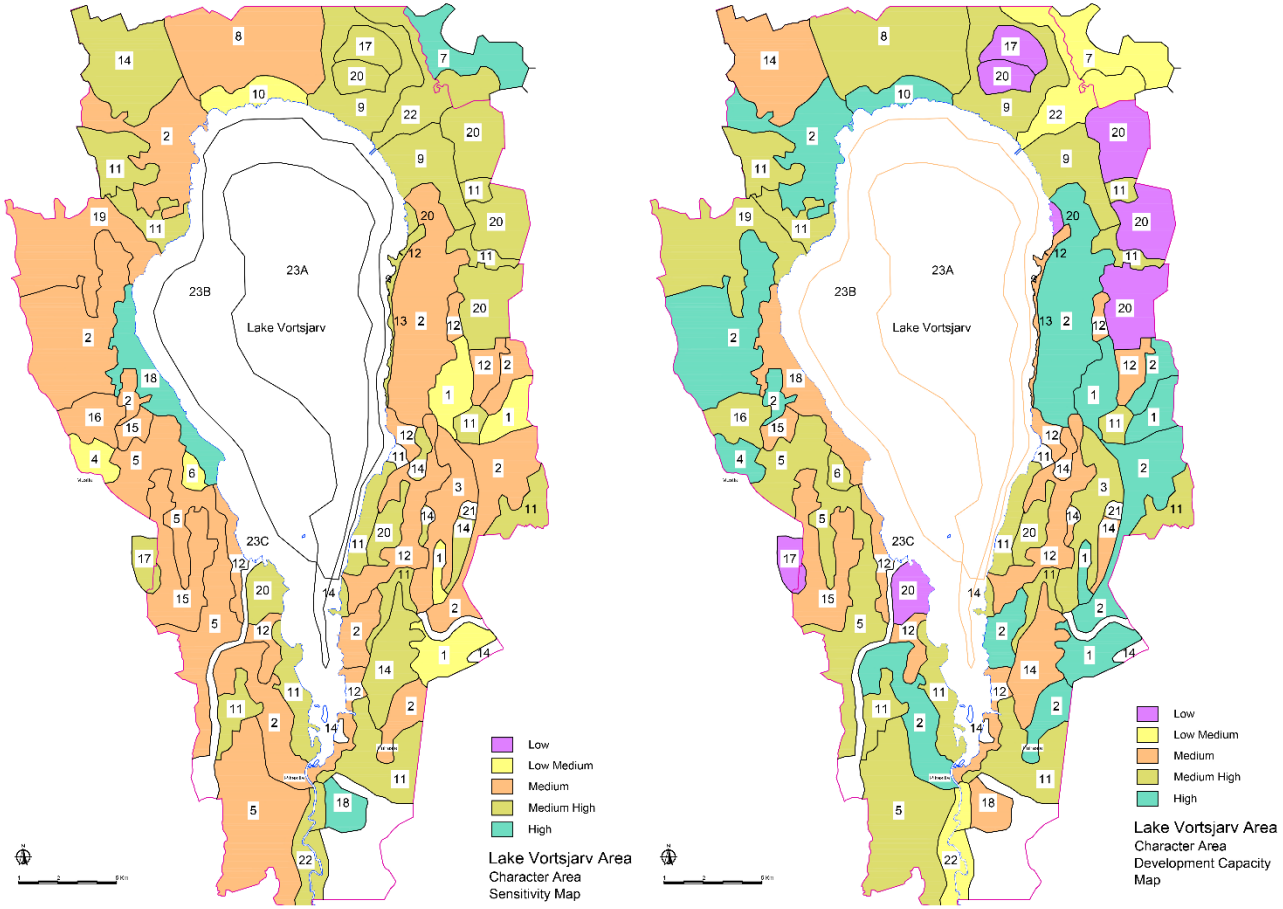
L- Low Sensitivity
M-Medium Sensitivity
H- High Sensitivity

Source: Author, 2014

Co-funded by the
Erasmus+ Programme
of the European Union

Landscape Capacity Study : Landscape Character Assessment (LCA)

Landscape Sensitivity and capacity analysis–

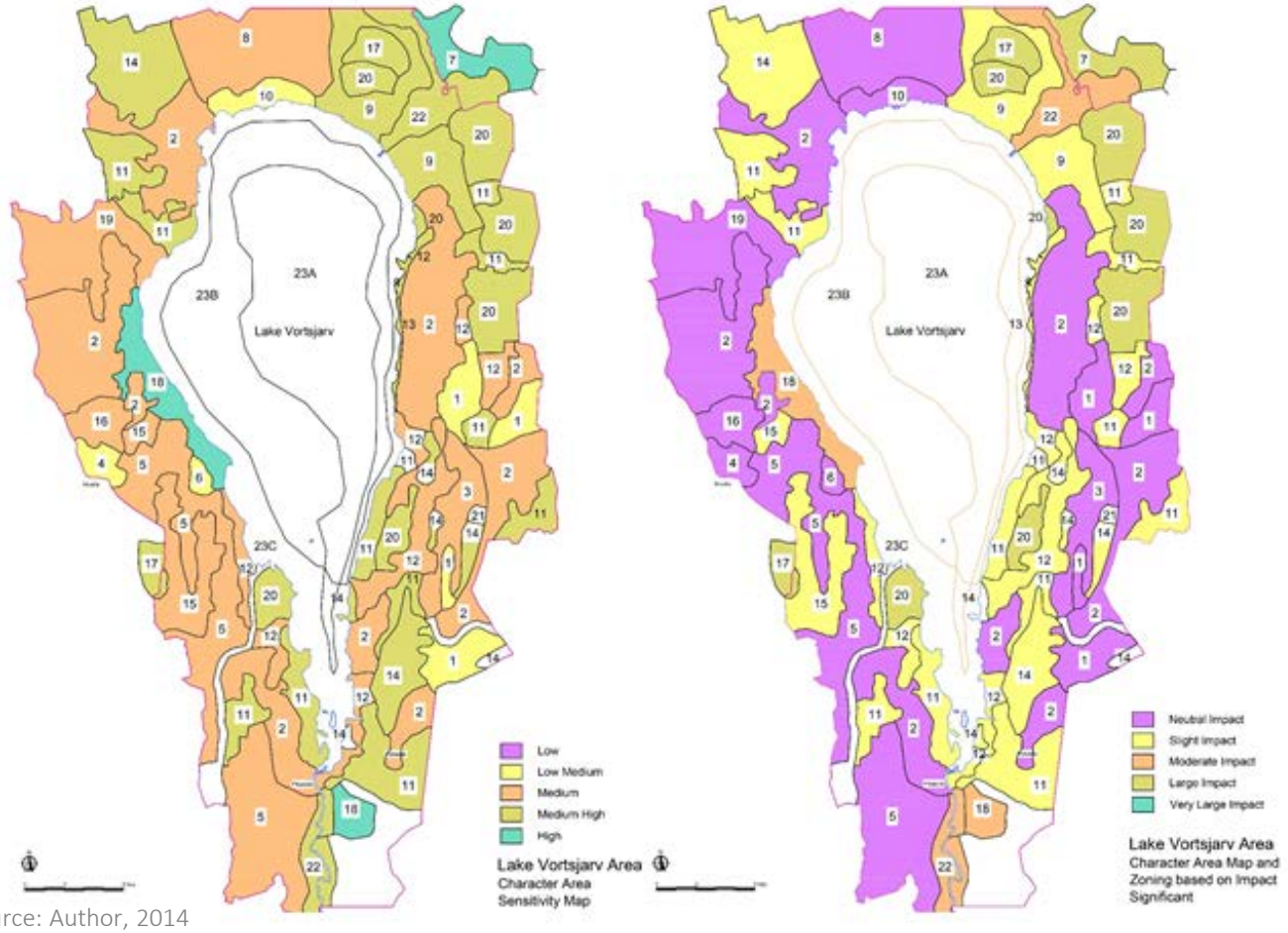


Source: Author, 2014

Co-funded by the
Erasmus+ Programme
of the European Union

Landscape Capacity Study : Landscape Character Assessment (LCA)

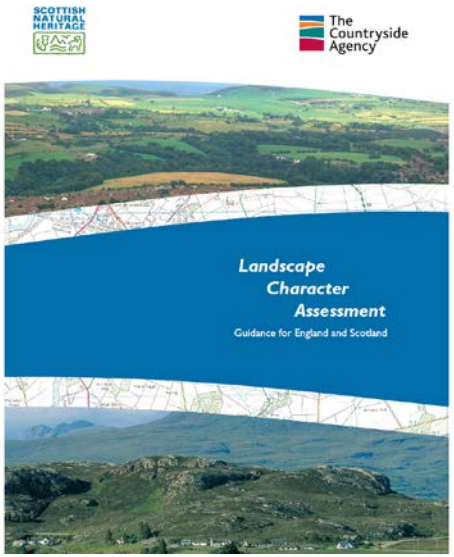
Landscape Sensitivity and Impact significance analysis–

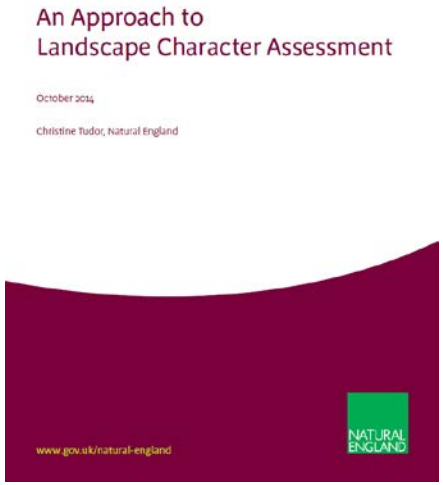


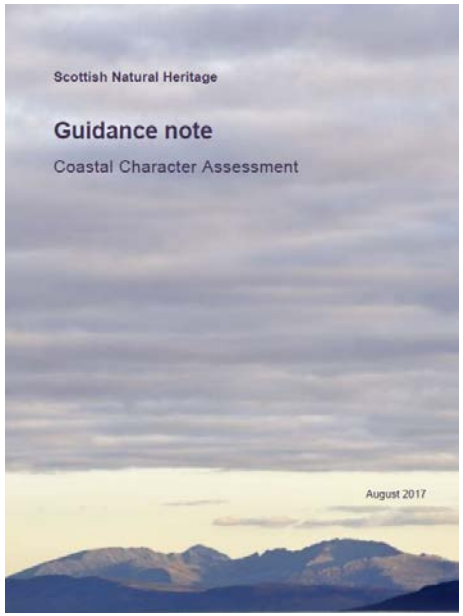
Source: Author, 2014

Co-funded by the
Erasmus+ Programme
of the European Union

Landscape Capacity Study : Landscape Character Assessment (LCA)





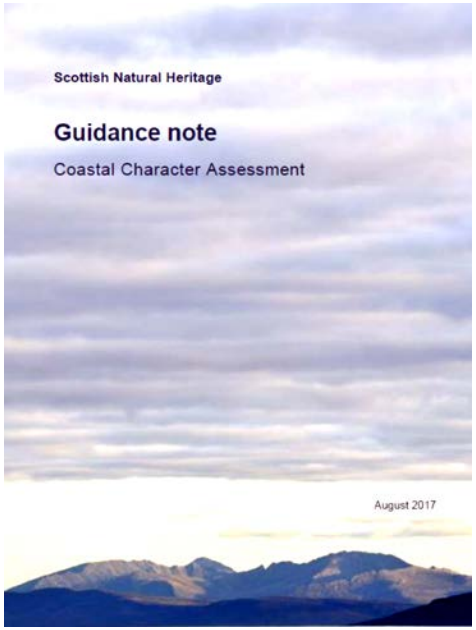


Useful Sources

https://www.nature.scot/professional-advice/landscape-change/landscape-tools-and-techniques/landscape-evaluation

Co-funded by the Erasmus+ Programme of the European Union

Landscape Capacity Study : Coastal Character Assessment (CCA)



- By complementing LCA, Coastal character assessment informs and guides coastal and marine planning, and individual development proposals, by informing landscape/seascape and visual impact assessments.
- It defines Coastal character as:
- Coastal character is made up of the often narrow margin of the coastal edge, its immediate hinterland and areas of sea. These three key components of coastal character include what is commonly known as ‘seascape’.
- Coastal characterisation is directly related to landscape character assessment. It uses the same principles and methodology of desk and field analysis.
- Coastal characterisation can be applied at a number of different scales, from the broad strategic level to finer grained assessments at the local level.

Key Principles of coastal character assessment

- Desk study and review,
- Field survey,
- Classification and description of coastal character.

Carol Anderson Landscape Associates for Scottish Natural Heritage
August 2017

Co-funded by the Erasmus+ Programme of the European Union

Landscape Capacity Study : Coastal Character Assessment (CCA)

Table 2 : Checklist for establishing coastal character

Topic	Analysis of physical characteristics	Analysis of experiential characteristics	Relevant considerations	Recognised values
Maritime influences	• aspect and orientation • existing marine based activities • maritime processes (e.g. tides/tidal rapids; open/enclosed coast) scale, distance and expansiveness of open sea	• sense of space and light • sense of exposure • sense of containment/open-ness • sounds associated with the sea, smell of the sea • movement	• unit of landscape character • aesthetic qualities, including characteristics, experiences, and perceptions which create exceptional aesthetic quality • assessing importance of physical characteristics • assessing nature and intensity of experiential characteristics • identification of dominant physical or experiential characteristics determining the extent of the relevant setting for distinctive features and landmarks • identifying relevant cultural associations with place • degree of variability e.g. due to exposure, weather, tidal state.	• landscapes and seascapes designated because of their scenic, landscape or recreational value • landmarks designated because of their cultural or historic significance • longer distance routes • ferry routes • roads designated as scenic or tourist routes • path network/recognised routes and trails • Identified Wild Land Area
Character of the coastal edge	• shape and scale of coastline; degree of indentation and enclosure • presence of offshore islands • fragmentation of edge deposition features, tidal variations • landmarks • shoreline development	• sense of exposure • sense of containment or open-ness		
Character of immediate hinterland	• key elements of landscape character • topography and relief • vegetation pattern existing settlement pattern and land use • landmarks	• sense of containment or open-ness • presence of maritime influence		
Human activity: presence or absence	• presence of natural processes • presence of development/ human activity • actual accessibility • ruggedness of terrain	• extent of activity • sense of naturalness • perceived remoteness • sense of isolation	• degree of human activity, recreation and access • intensity of sense of wildness • degree of ruggedness and perceived accessibility • degree to which natural processes dominate the experience of place	

Table 3: Checklist for establishing visual character in coastal areas

Topic	Analysis of physical elements	Analysis of type of views	Relevant considerations	Recognised values
Views and visibility	• presence of the coastal edge • presence of the open sea • focal points or features within the views • presence of existing marine and coastal developments • aspect and orientation of viewpoint, character of seascape	• overlook from settled areas • views experienced as part of a sequence • elevated viewpoints panoramas • sudden revelations • glimpse views	• significance of views and viewpoints • significance and dominance of compositional elements • quality of visual composition from viewpoints • significance of aspect and transient qualities such as quality of light and reflectivity • significance of presence of existing marine and coastal developments and influence on existing visual composition	• views which contribute to the experience of a landscape or seascape designated for its scenic quality • views to and from features designated because of their historic significance • views from longer distance routes • views from popular recreational areas or specific facilities

Carol Anderson Landscape Associates for Scottish Natural Heritage
August 2017

Source: http://www.forallworld.com/44893-coastline.html

Source: Google images

Co-funded by the Erasmus+ Programme of the European Union

Landscape Evaluation:

Landscape evaluation identifies landscapes that are by their nature sensitive and highly valued for their character and qualities. Such landscapes can be given special protection as protected areas.

Landscape designations apply at local and national levels:

- local designations
- National Scenic Areas

Three phases of landscape evaluation that is the driving force behind the planning and design of the landscape

a) Landscape measurement;
b) Landscape value;
c) Landscape evaluation;

Unwin (1975)

Various models have been developed to illustrate different processes of landscape evaluation

1) Descriptive inventories models
2) Public preference models
3) Quantitative holistic technique

http://www.macaulay.ac.uk/ccw/task-two/evaluate.html

Co-funded by the Erasmus+ Programme of the European Union

Landscape Evaluation:

Descriptive Inventory Model: ecological and formal-aesthetic models, methods which are mostly applied by experts in an objective manner.

Public preference models: such as psychological and phenomenological, are often undertaken using questionnaires, interviews

Quantitative holistic technique: uses a mixture of subjective and objective methods, and include psychological and surrogate component model.

It is important to examine their **reliability and validity** of landscape evaluation models.

Source: http://www.townshipdesign.com/blog/site-survey

Source: Author

Co-funded by the Erasmus+ Programme of the European Union

Other Place and Space Evaluation Tools:

- Place Standard (PS)

COMMUNITY PLANNING AND PUBLC HEALTH

- Green Space Audit: Green space Strategy- a Good Practice Guide (CABE)
- WIAT Environmnetal Audit Tool- Evaluating impacts of Woodlands in and aroound Towns (WIAT) interventions
- Green Flag Award scheme (GFAS)
- Blue Flag Award Programme (BFAP)
- Landscape Evaluation and Quality Survey (LEQS)
- Social Impact Assessment of Urban Waterfronts (SIAUW)

LANDSCAPE ARCHITECTURE, LANDSCAPE MANAGEMNET

- Urban Stream Condition Assessment (USCA)

ENVIRONMENTAL MANAGEMENT

- Assessing the Sustainability of Public Space (ASPiS)
- Local Action Toolkit: Ecosystem Benefit Assessmnet in Urban Water Environment (LAT)
- Neighbourhood Green Space Quality Assessment Tool (NGST)

URBAN DESIGN & URBAN SUSTAINABILITY

- NATLAND: Evaluation of Public Spaces in Urban Areas
- Place Game
- Spaceshaper: CABE
- Facebook 4 Urban Facelift (F4UF)
- Model for Assessment of Public space Quality in Town Centres (APQTC)

PLACE MAKING, DESIGN & ARCHITECTURE

Co-funded by the Erasmus+ Programme of the European Union

Other Place and Space Evaluation Tools:

Audit Tool Checklist Version	Neighbourhood Environmnet (Road segmnets)
Audit Tool analytical Version	Neighbourhood Environmnet (Road segmnets)
Active Neighbourhood Checklist (ANC)	Neighbourhood Environmnet (Road segmnets)
BRAT-Do Instrument	Urban Park
Community Park Audit Tool (CPAT)	Urban Park, Community Park
Environmental Assessment of Public Recreation Spaces (EAPRS) Tool	Parks and Playground
Path Environment Audit Tool (PEAT)	Trails and Paths
Physical Activity Resource Assessment (PARA) Instrument	Parks,churches, schools, sports facilities, fitness centers, community centers, and trails)
SOPARC	School Play arae setting
SOPARNA	Park and trails
SOPLAY	Pack and Greensapce
Systematic Pedestrian and Cycling Environmental Scan	Oedestrain and cyclist environment
Walking and Bicycling Suitability Assessment (WABSA)	Walkinga nd Bicycle routes
Walking Route Audit Tool for Seniors (WRATS)	Pathways and walking and cycle routes

Place evaluation tools contributing to public health and planning and design

These site level place evaluation tools forms the basis for the development **BEAT with a focus to improve the blue place quality for improved health and well-being benefits**

Co-funded by the
Erasmus+ Programme
of the European Union

Thank you for your attention