



Mapping coastal cultural ecosystem services in Latvia and Estonia

MAREA project final event
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Participatory GIS survey for assessing coastal CES and their linkages to human well-being

General aim of the study – to describe and characterize the spatial distribution of cultural activities and their associated benefits across the coasts of Estonia and Latvia by using participatory GIS survey → to support mapping and modelling of CES in MAREA WP1

Specific aims

1. Generate an overview of the supply and use of CES in the study area.
2. Describe the spatial distribution of use of CES, identifying hotspots for different activities and investigate potential interactions.
3. Determine environmental factors that shape perceived coastal suitability for CES.
4. Describe human well-being linkages with different CES.



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Participatory GIS survey for assessing coastal CES and their linkages to human well-being

- Targeted survey (target group: users of coastal CES)
- Survey developed in four languages: Latvian, Estonian, Russian and English
- Mixed distribution method (online ArcGIS Survey123 + face-to-face) and wide variety of distribution channels
- Implemented from July 2021 to November 2021
- **1414 responses** (810 responses in Latvia; 604 responses in Estonia)
- Age range of the respondents: 12-82 y.o.



Content of the survey

1. **Basic demographic questions** (age, gender, residence only);
2. **Questions about favorite seaside place & activity** (interactive map for marking the favorite seaside place, practiced activities (*list of 17 activities, based on CICES V.5.1 CES classification*), including the favorite one);
3. **Questions focused only on the favorite leisure activity in the favorite seaside place** (practice frequency, factors influencing place's suitability for the activity);
4. **Socio-economic aspects** (motivation for practising the activity (well-being categories), main mode of travel, food, accomodation & equipment costs).



Content of the survey

- 3.1.1.1. – Active recreation – swimming, kayaking/rowing/SUP, sailing, fishing, hiking, running, biking, snorkelling/diving, kite- and windsurfing, skiing/ice-skating
- 3.1.1.2. – Passive recreation – sunbathing, reading, enjoying the landscape, observing plants and animals, enjoying the cultural heritage
- 3.1.2.1., 3.1.2.2. – Education and knowledge – studying/learning from nature, observing plants and animals
- 3.1.2.3. – Cultural heritage – enjoying cultural heritage
- 3.1.2.4. – Aesthetics – enjoying landscape
- 3.2.1.1., 3.2.1.2. – Symbolic and religious meaning – practicing spiritual and traditional rituals
- 3.2.1.3., 3.2.2.1., 3.2.2.2. – *Not included*

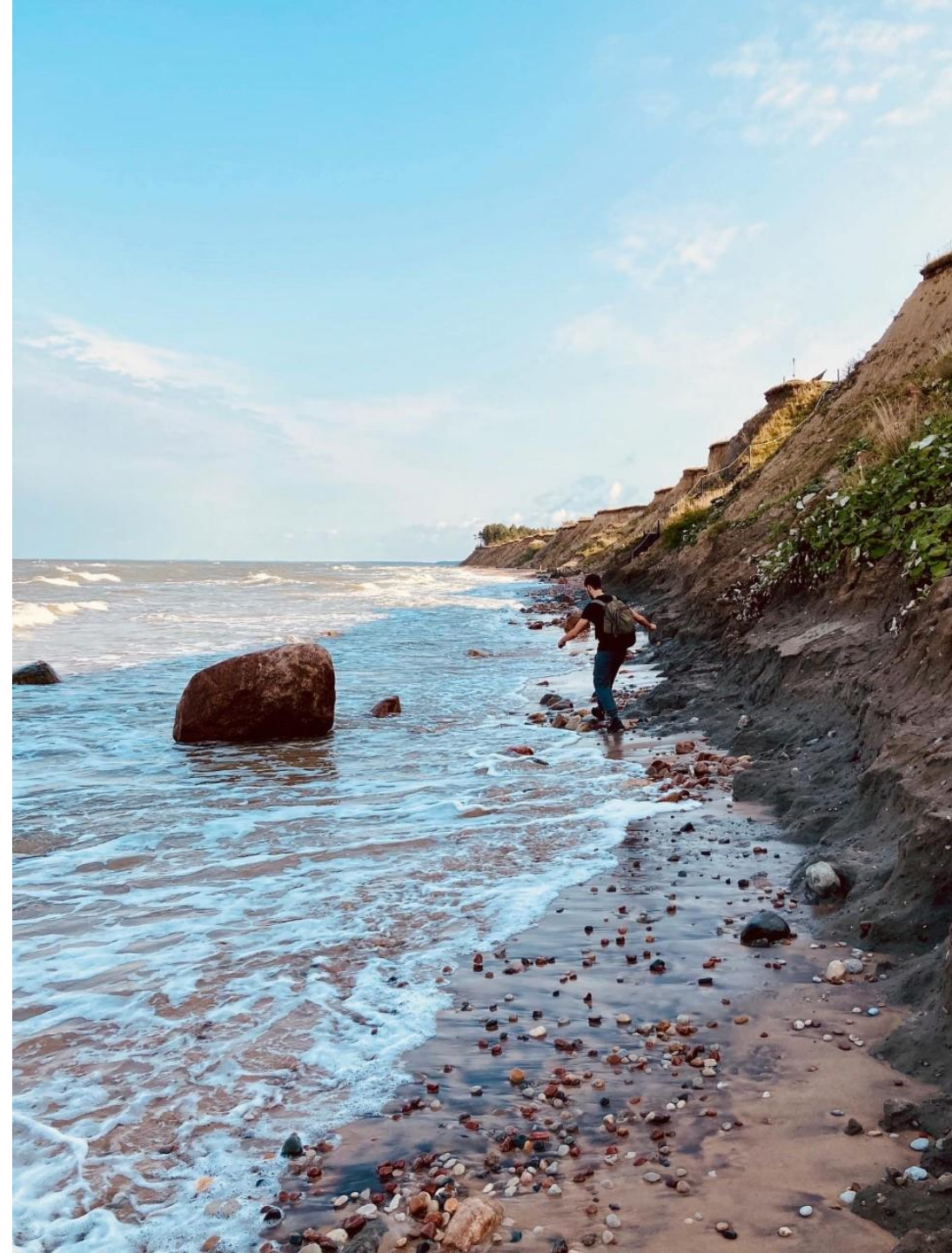
Emphasis on activities through which CES are enjoyed

Which activities do you like to practice in the place you marked on the map?*

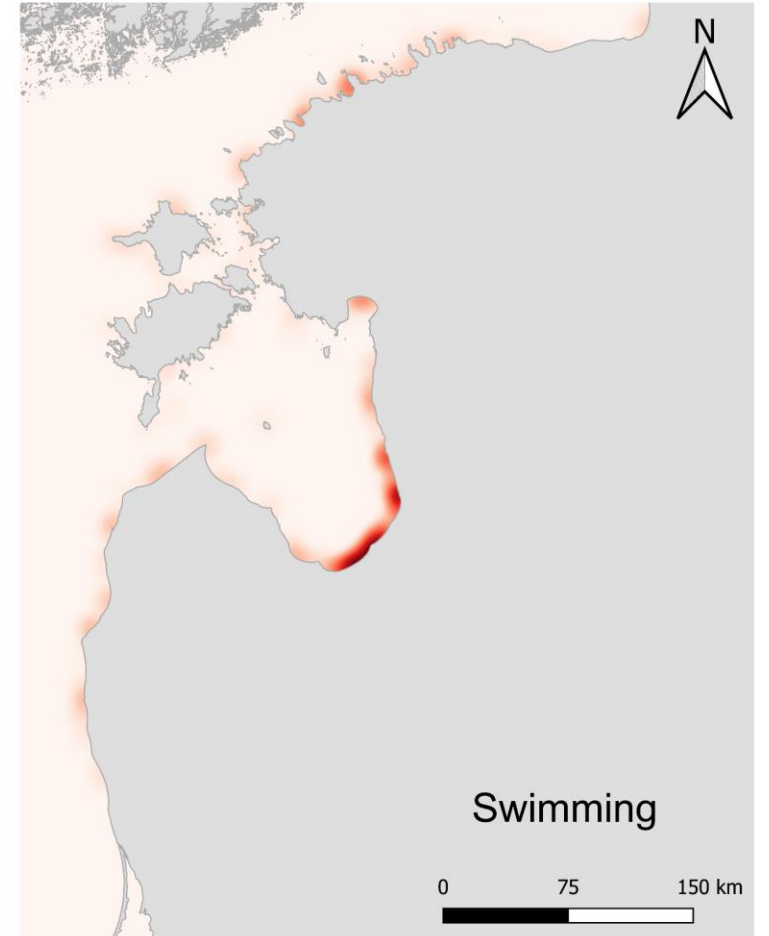
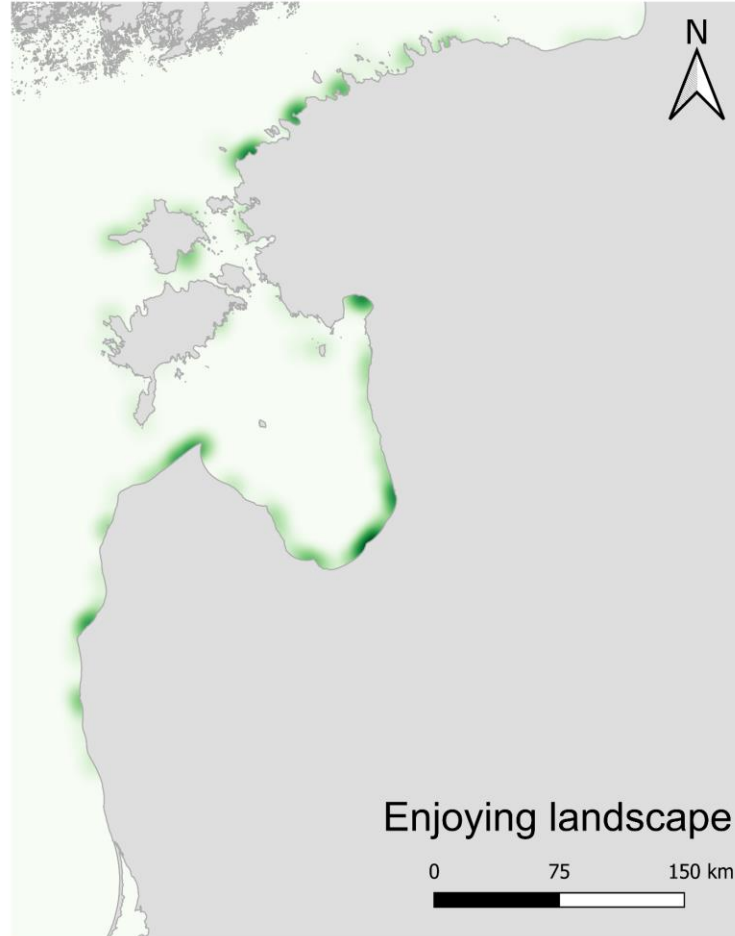
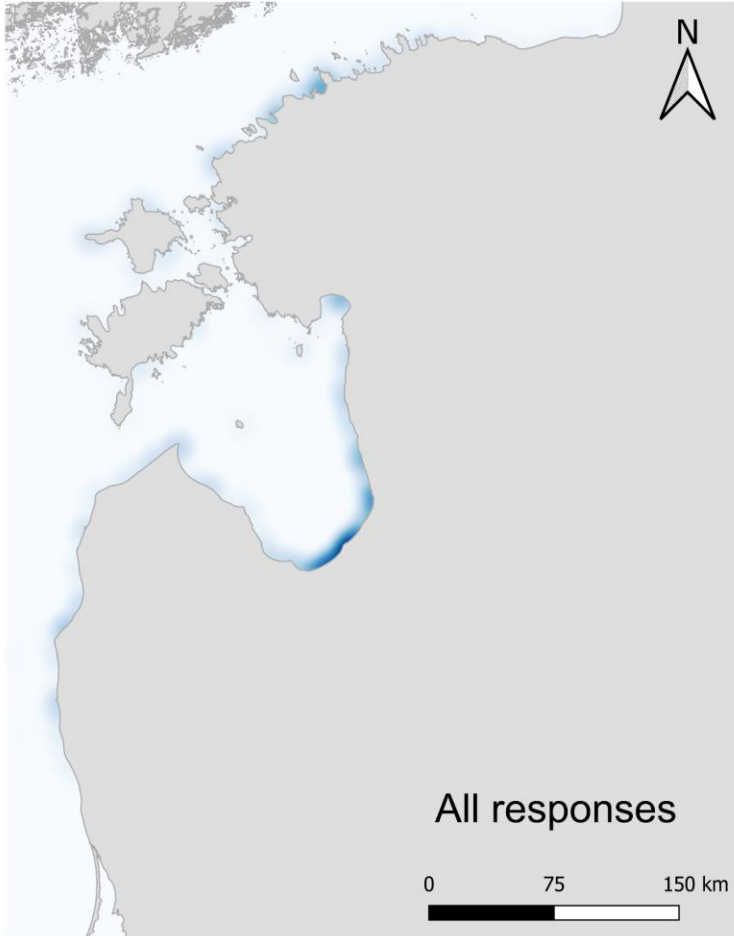
You can select multiple answers.

<input type="checkbox"/>	Swimming
<input type="checkbox"/>	Sunbathing
<input type="checkbox"/>	Kayaking/rowing/paddle boarding (SUP)
<input type="checkbox"/>	Sailing
<input type="checkbox"/>	Fishing
<input type="checkbox"/>	Hiking/walking
<input type="checkbox"/>	Running
<input type="checkbox"/>	Biking
<input type="checkbox"/>	Reading
<input type="checkbox"/>	Snorkelling/diving
<input type="checkbox"/>	Kite- and windsurfing
<input type="checkbox"/>	Practicing spiritual and traditional rituals (e.g. meditating, doing yoga, celebrating Summer solstice, religious activities)
<input type="checkbox"/>	Enjoying the landscape
<input type="checkbox"/>	Observing plants and animals (e.g. bird watching)
<input type="checkbox"/>	Enjoying cultural heritage (e.g. historical buildings, lighthouses)
<input type="checkbox"/>	Studying nature/learning from nature
<input type="checkbox"/>	Skiing
<input type="checkbox"/>	Other

Results

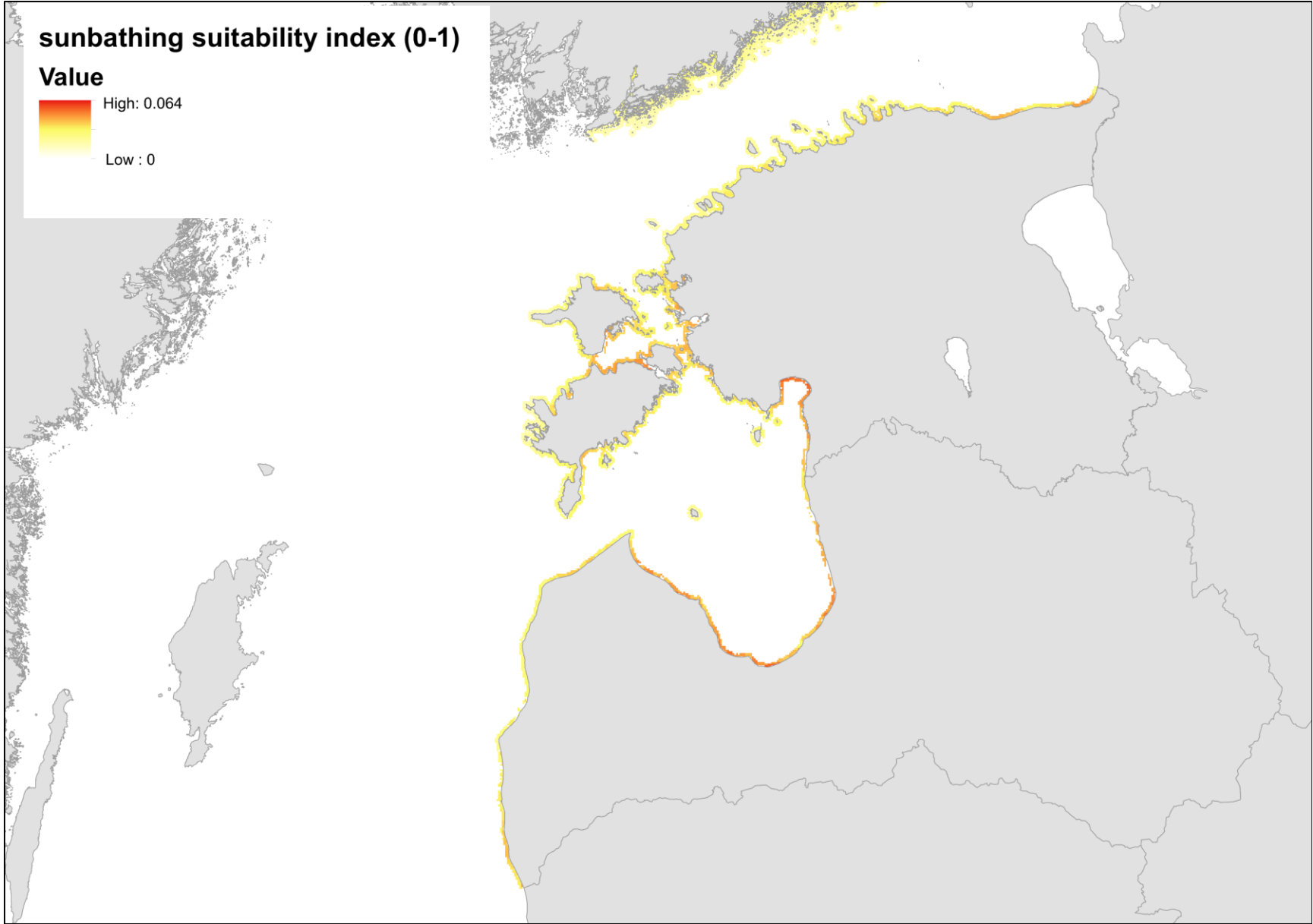
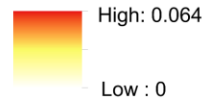


Use of coastal cultural ecosystem services

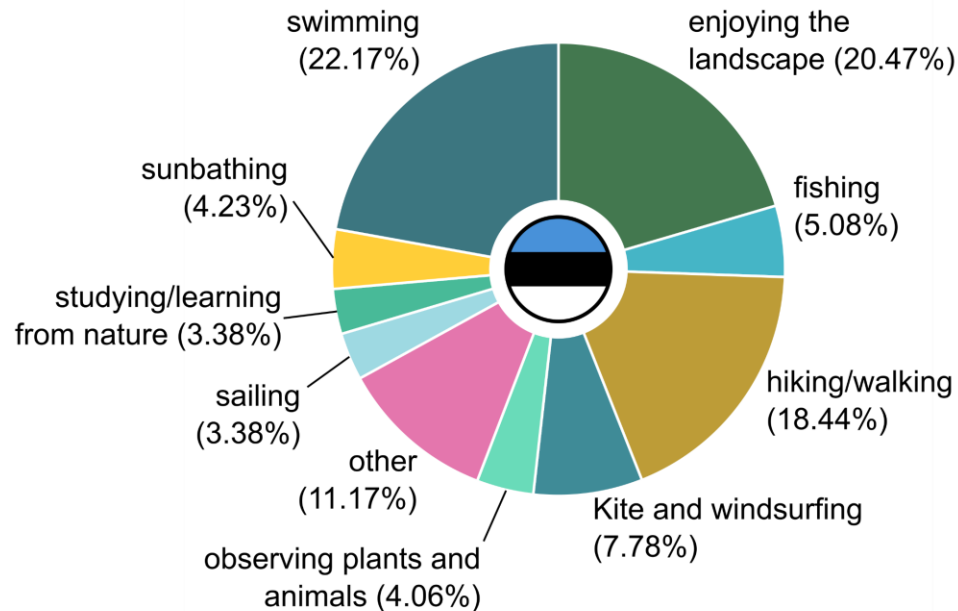
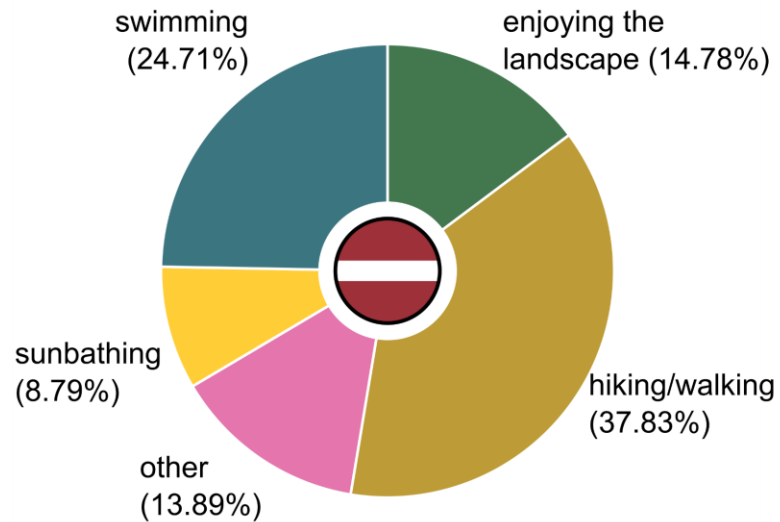


sunbathing suitability index (0-1)

Value



Favourite leisure activities by the sea



Latvia:

1. Hiking/walking
2. Swimming
3. Enjoying the landscape

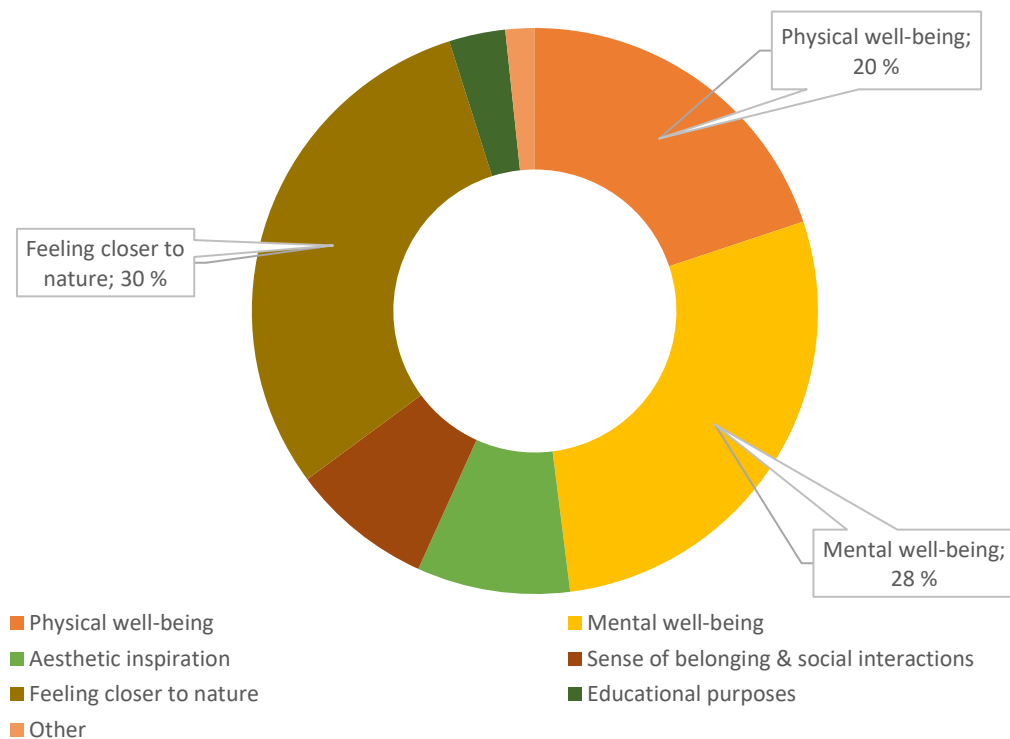
Estonia:

1. Swimming
2. Enjoying the landscape
3. Hiking/walking

* Activities with score under 3% pooled in grouped «other»

Perceived well-being benefits

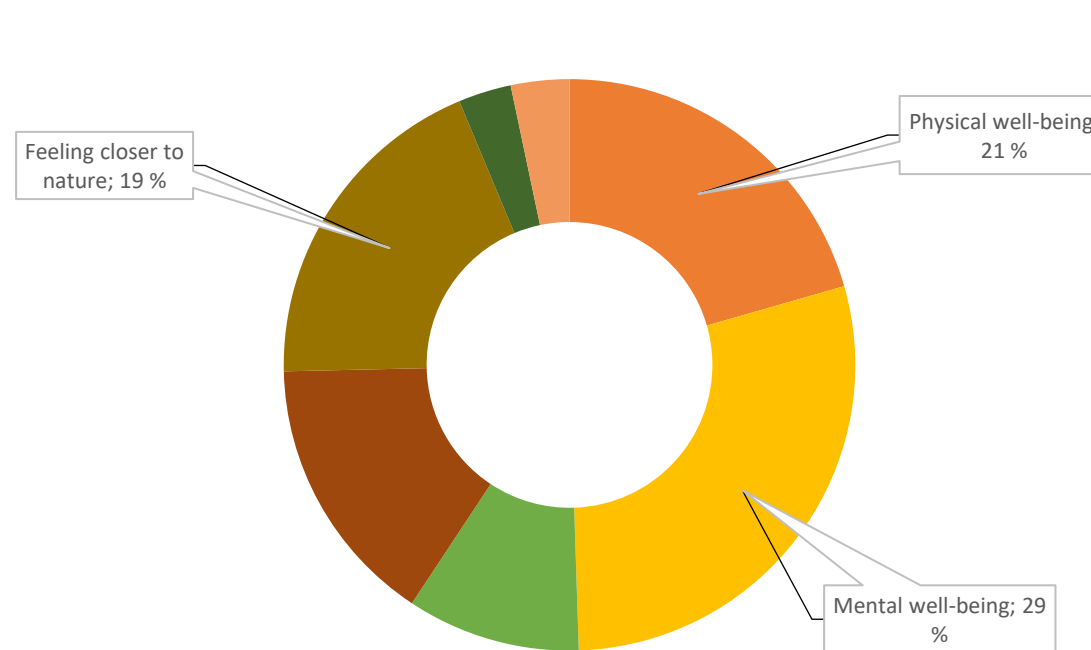
Estonia



Estonia:

1. Feeling closer to nature
2. Mental well-being
3. Physical well-being

Latvia



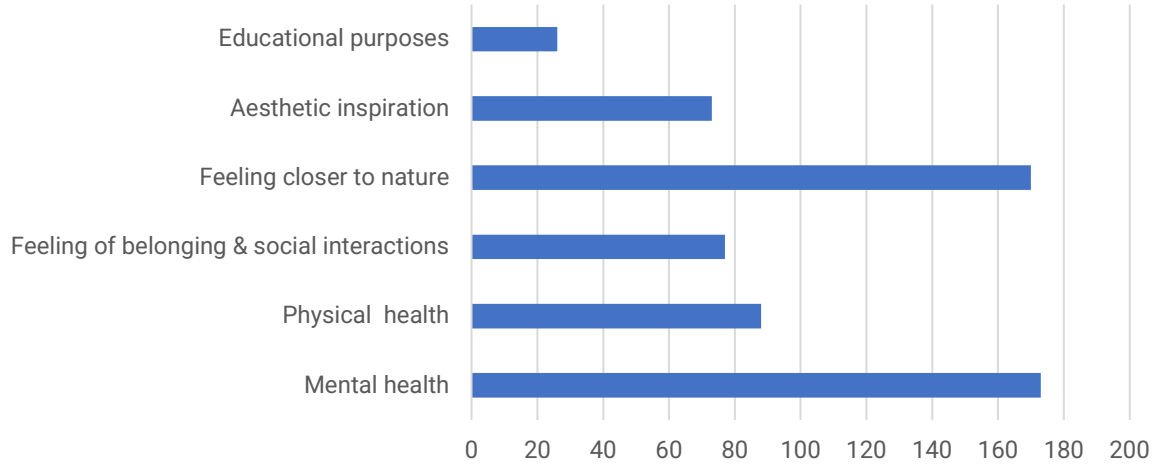
Latvia:

1. Mental well-being
2. Physical well-being
3. Feeling closer to nature

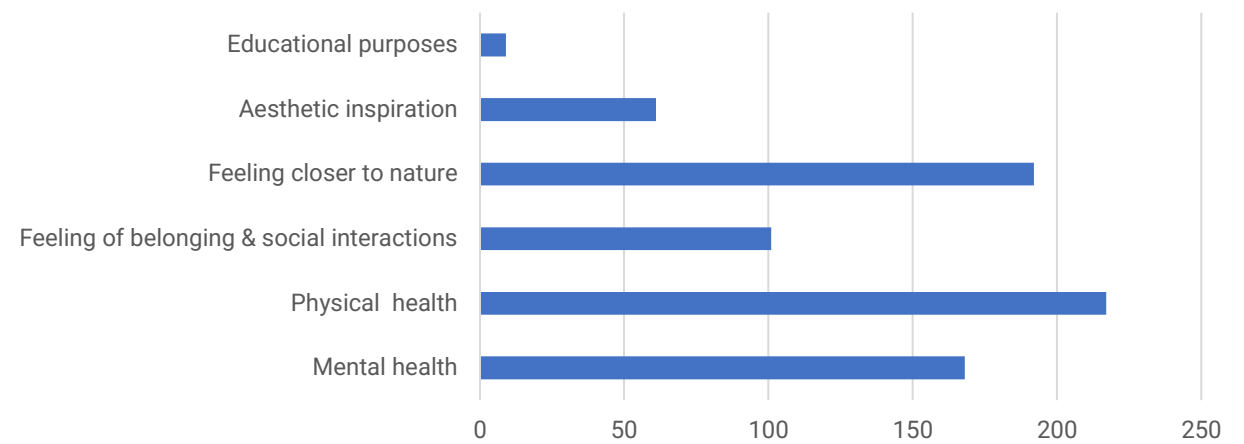
Perceived well-being benefits of different activities

(results for Latvia and Estonia together)

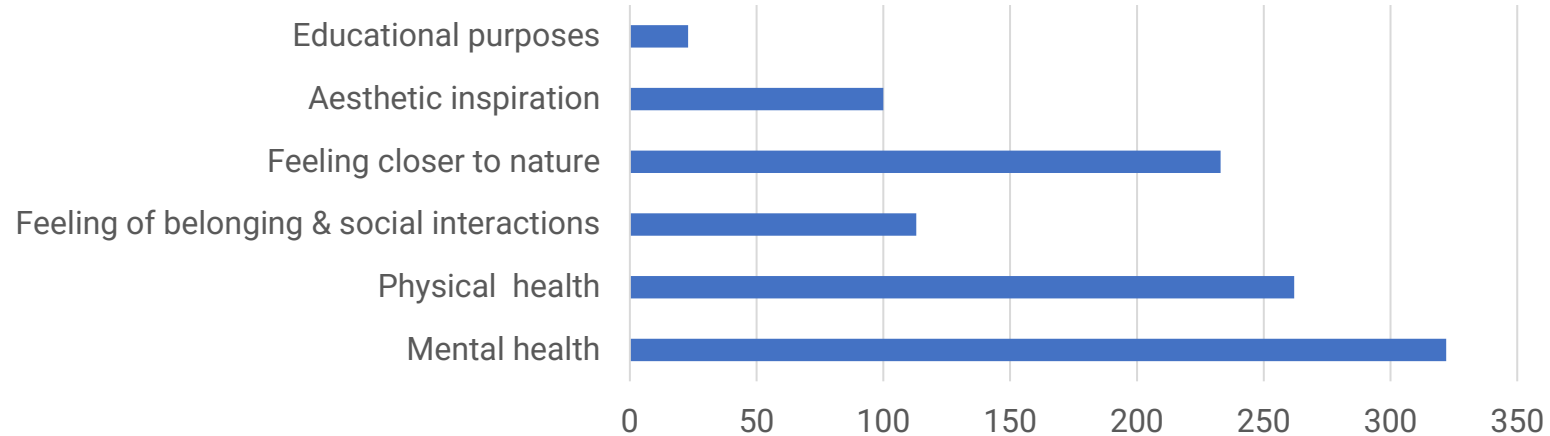
Enjoying landscape



Swimming

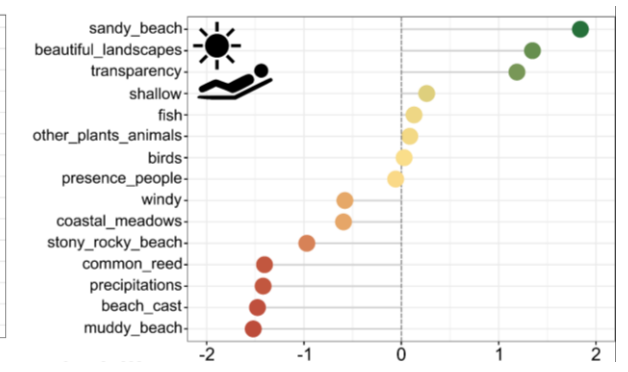
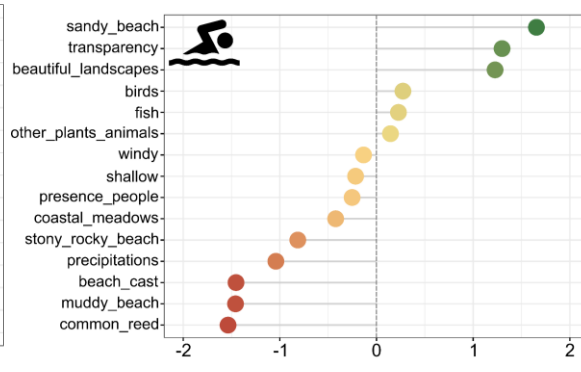
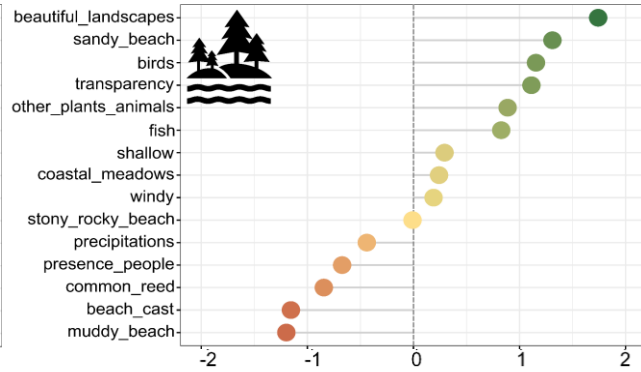
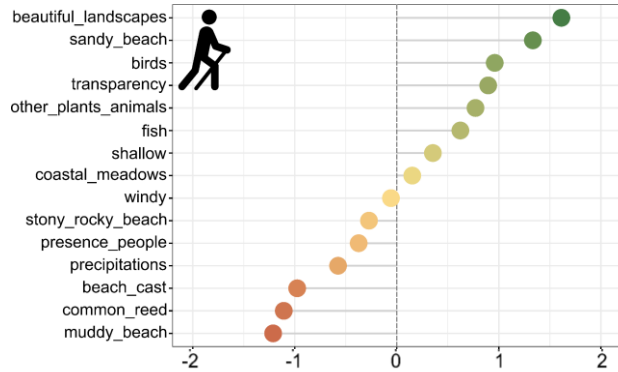


Hiking/walking

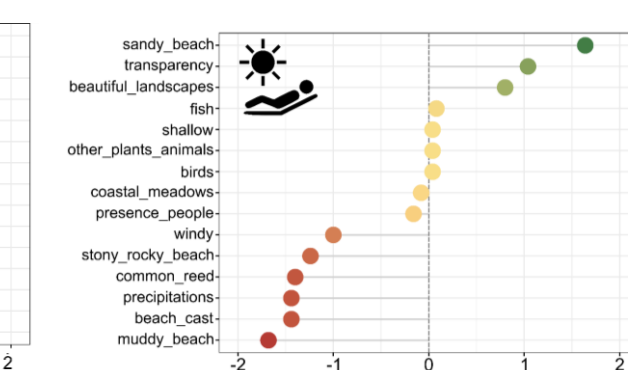
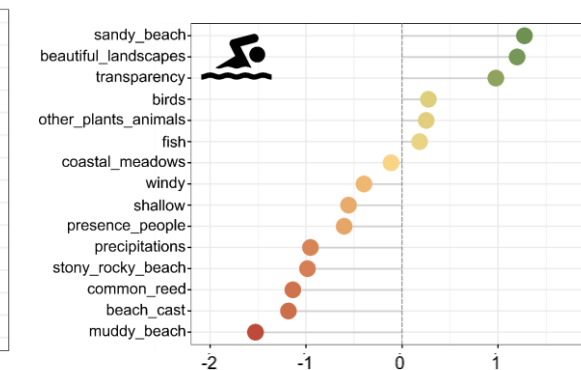
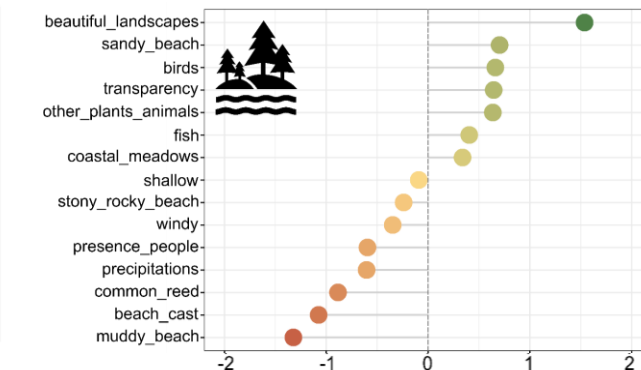
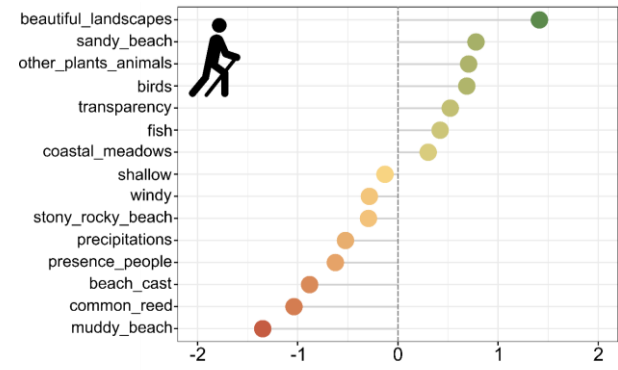


Perceived environmental suitability

Latvia



Estonia



Main conclusions

- PGIS is a valuable and effective method for assessing CES – it provides not only insights into the opinions and preferences of CES users, but also spatial data that can be used for mapping and modelling purposes and later on – in planning and decision making regarding coastal development.
- Coastline characteristics determine the set of preferred activities – larger diversity of activities in Estonian coastline.
- CES hot-spots concentrate mostly around urban settlements, as well as tourism attractions.
- Top preferences in both countries are related to active interactions (hiking, swimming), as well as intellectual and representative interactions (enjoying the landscape).
- In general, people prefer sandy beach type, transparent water and beautiful landscape (strongest positive factors), however, this depends on respondent's favorite activity.
- Active and intellectual interactions with nature are essential for mental and physical well-being, and stimulates a sense of closeness to nature.



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Thank you for your attention!