



LIFE projekts

Ekosistēmu pakalpojumu novērtēšanas/ teritoriju plānošanas rīki

Dr. Paed., Aija Peršēvica
Biedrība Baltijas krasti
aija.persevica@baltijaskrasti.lv





Mērķis ir novērtēt, kā cilvēka darbības un klimata pārmaiņas ietekmē ražošanu un vērtību sauszemes un jūras ekosistēmu pakalpojumiem

InVEST

<http://www.naturalcapitalproject.org/invest/hat-is-invest>

natural capital PROJECT

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InVEST

integrated valuation of ecosystem services and tradeoffs

Our flagship tool with 18 different models for mapping and valuing ecosystem services provided by land- and seascapes.

Download InVEST 3.3.2 (Windows)

InVEST User's Guide (Online)

Download InVEST 3.3.2 (Mac)

Individual Sample Datasets for InVEST





InVest Datu bāze

| Name | Date Modified | Size | Kind |
|---|-------------------|--------|-------------|
| invest_carbon | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_coastal_blue_carbon | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_coastal_blue_carbon_preprocessor | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_coastal_vulnerability | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_crop_production | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_deltaest | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_fish_agriculture | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_fisheries | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_fisheries_hst | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_forest_carbon_edge_effect | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_gisdb | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_habitat_quality | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_hydropower_water_yield | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_hra | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_hra_preprocessor | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_marine_water_quality_biophysical | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_ndr | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_overlap_analysis | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_overlap_analysis_mz | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_pollination | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_recreation | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_routeclean | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_scenario_gen_proximity | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_scenario_generator | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_scientific_quality | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_ssd | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_seasonal_water_yield | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_wave_energy | 18 Oct 2016 01:00 | 265 KB | Application |
| invest_wind_energy | 18 Oct 2016 01:00 | 265 KB | Application |

INVEST +VERSION+ documentation

Habitat Quality

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Main Page

The model uses seven types of input data (five are required).

1. Current LULC map (required). A GIS raster dataset, with a numeric LULC code for each cell. The LULC raster should include the area of interest, as well as a buffer of the width of the greatest maximum threat distance. Otherwise, locations near the edge of the area of interest may have inflated habitat quality scores, because threats outside the area of interest are not properly accounted for. The dataset should be in a projection where the units are in meters and the projection used should be defined.

Format: standard GIS raster file (e.g., ESRI GRID or IMG), with LULC class code for each cell (e.g., 1 for forest, 2 for agriculture, 3 for grassland, etc.). The LULC class codes should be in the grid's 'value' column. The raster should not contain any other data. The LULC codes must match the codes in the 'Sensitivity of land cover types to each threat' table below (input # 7).

Sample Data Set: INVEST\HabitatQuality\input\lc_samo_cur_8

2. Future LULC map (optional): A GIS raster dataset that represents a future projection of LULC in the landscape. This file should be formatted exactly like the "current LULC map" (input #1). LULC that appears on the current and future maps should have the same LULC code. LULC types unique to the future map should have codes not used in the current LULC map. Again, the LULC raster should include the area of interest, as well as a buffer of the width of the greatest maximum threat distance. Otherwise, locations near the edge of the area of interest may have inflated habitat quality scores, because threats outside the area of interest are not properly accounted for.

Format: standard GIS raster file (e.g., ESRI GRID or IMG), with LULC class code for each cell (e.g., 1 for forest, 3 for grassland, etc.). The LULC class codes should be in the raster's 'value' column.

Sample data set: INVEST\HabitatQuality\input\lc_samo_fut_8

3. Baseline LULC map (optional): A GIS raster dataset of LULC types on some baseline landscape with a numeric LULC code for each cell. This file should be formatted exactly like the "current LULC map" (input #1). The LULCs that are common to the current or future and baseline landscapes should have the same LULC code across all maps. LULC types unique to the baseline map should have codes not used in the current or future LULC map. Again, the LULC raster should include the area of interest, as well as a buffer of the width of the greatest maximum threat distance. Otherwise, locations near the edge of the area of interest may have inflated habitat quality scores, because threats outside the area of interest are not properly accounted for.

Format: standard GIS raster file (e.g., ESRI GRID or IMG), with LULC class code for each cell (e.g., 1 for forest, 3 for grassland, etc.). The LULC class codes should be in the raster's 'value' column.

Sample data set: INVEST\HabitatQuality\input\lc_samo_fut_8

References

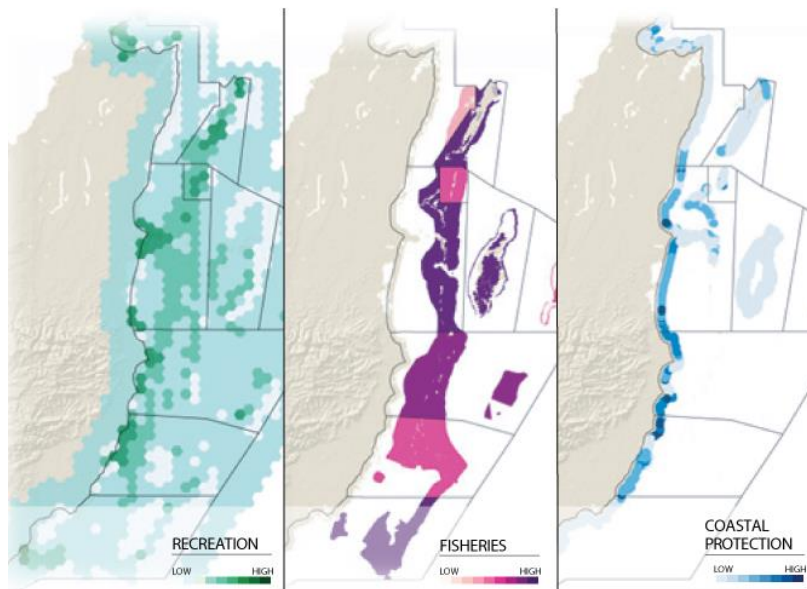
Enter search terms

If possible the baseline map should refer to a time when intensive management of the land was relatively rare. For example, a map of LULC in 1851 in the Willamette Valley of Oregon, USA, captures the LULC pattern on the landscape before it was severely modified to for massive agricultural production. Granted this landscape had been modified by American Indian land clearing practices such as controlled fires.





InVest Rezultāti



Data Requirements and Outputs Summary Table

| InVEST Data and Model Inventory | | | | |
|--|---------|---|---|---|
| | Step | Data requirements | Process | Outputs |
| Biodiversity: Habitat Quality and Rarity (Tier 0) | | | | |
| Required | Supply | Current Land use/land cover Threat impact distance Relative threat impact weights Form of threat decay function Threat maps Habitat suitability (optional: by species group) Habitat sensitivity to threats Half saturation constant Protected status | Calculate habitat quality and degradation based on threat intensity and sensitivity | Habitat degradation index; Habitat quality index |
| Optional | Supply | Baseline land use/land cover | Calculates rarity of current and/or future habitat types relative to baseline; calculates quality and degradation of baseline based on threat intensity and sensitivity | Relative habitat rarity index for current and/or future land use/land cover; Degradation and quality for baseline |
| | | Future land use/land cover | Calculates quality and degradation of future scenario based on threat intensity and sensitivity; optionally calculates habitat rarity relative to baseline | Habitat degradation, quality and optionally rarity for future scenario |
| Carbon Storage and Sequestration | | | | |
| Required | Service | Land use/land cover Carbon in aboveground biomass Carbon in belowground biomass Carbon in dead organic matter Carbon in soil | Looks up carbon stock(s) per pixel | Total carbon stock (Mg/pixel) |
| Optional | Service | Carbon removed via timber harvest First year of timber harvest Harvest frequency Half life of harvested wood products Carbon density in harvested wood Biomass conversion expansion factor | Calculates carbon stored in harvested wood products per pixel | Total carbon stock, including that in HWP (Mg/pixel) |
| Optional | Value | Future land use/land cover Value of sequestered carbon Discount rate Timespan Annual rate of change in price of carbon | Calculates difference between carbon stocks Calculates value of carbon | Carbon sequestration rates (Mg/pixel/yr) Value of sequestered carbon (currency/pixel/yr) |
| Hydropower Production (Tier 1) | | | | |
| Required | Supply | Land use/land cover Mean annual precipitation (mm) Mean annual reference evapotranspiration (mm) Plant available water content (fraction) Evapotranspiration coefficient Root depth (mm) Effective soil depth (mm) Seasonality factor | Calculates pixel level yield as difference between precipitation and actual evapotranspiration | Mean annual yield (mm/watershed/yr, mm/pixel/yr) |





The Ecosystem Valuation Toolkit (EVT) Ekosistēmu ekonomiskās vērtēšanas rīks – paredz arī aprēķinu veikšanu <http://esvaluation.org/>

EARTH
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ecosystem valuation toolkit

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welcome to the ecosystem valuation toolkit

The Ecosystem Valuation Toolkit (EVT) gives nature a voice at the negotiating table. We advance sustainable economies by providing transparent and defensible monetary values for natural assets.

The Ecosystem Valuation Toolkit offers:

Researcher's Library: An ever-growing, searchable database of ecosystem service values collected from carefully vetted sources and managed by

why value nature?

Nature provides a wide array of market and non-market benefits to society, including the moderation of extreme events, climate change mitigation, provisioning of food and water, recreation and over a dozen other services. Our entire economy is dependent on these **natural goods and services** for everything we produce and consume. Ecosystem service valuation is a process that quantifies these economic benefits for inclusion in decision-making at scales from local to global.





The Ecosystem Valuation Toolkit (EVT) SERVES - (Simple and Effective Resource for Valuing Ecosystem Services) <http://esvaluation.org/>

Demonstration Dataset Report 1

[Back to Reports](#)

Annualized values per area in USD (2014 values)
Dataset used by this report: Demonstration Dataset

View report by:

Annualized values per area
 Annualized values
 Asset values

Attributes ▾ Round Value To --

| | Proximate | | | | Food | | | | | | | | | | | | Water Quality | | | | Totals | | | | | |
|-------------------------|-------------------|--------------|-----------|------------|-------------------|----------|------------------------|-------|-------|--------|-------------------|--------|--------|------|-------|------|---------------|--------|----------|--------------|-----------------|-----------|----------|----------|--------|----------|
| | Agricultural Land | Coastal Area | Shoreline | Urban Core | Climate Stability | | Energy & Raw Materials | | Crops | | Fishery / Fishing | | Forage | | Other | | Unspecified | | Habitat | | Waste Treatment | | Low | High | | |
| | | | | | Low | High | Low | High | Low | High | Low | High | Low | High | Low | High | Low | High | Low | High | Low | High | Low | High | | |
| Cultivated | | | | | 253.77 | 253.77 | | | 17.31 | 217.41 | | | | | | | | 147.06 | 147.06 | | | 433.34 | 533.43 | | | |
| Forests | | | | | 323.33 | 323.33 | | | | | | | | | | | | | | | | 323.33 | 323.33 | | | |
| Underwater | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Continental Shelf | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Grasses or Algae | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eelgrass, Kelp, Milfoil | | | | | 215.34 | 215.34 | | | | | 815.61 | 815.61 | | | | | | | 308.71 | 308.71 | | | 1,339.66 | 1,339.66 | | |
| Unspecified | | | | | 4,856.10 | 4,856.10 | | | | | | | | | | | | | | | | | 4,856.10 | 4,856.10 | | |
| Water | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Estuaries | | | | | | | | | | | | | | | | | | | | | | | 436.48 | 726.42 | | |
| Lakes | | | | | | | | | | | | | | | | | | | | | | | 105.98 | 496.32 | | |
| Ocean / Sea | | | | | | | | | | | | | | | | | | | | | | | 9,086.26 | 9,202.21 | | |
| Rivers | | | | | | | | | | | | | | | | | | | | | | | 401.36 | 795.26 | | |
| Wetlands | | | | | 5.00 | 1,031.98 | 7.49 | 24.08 | | | | | | | | | | | | | | | 0.12 | 0.12 | | |
| Totals | | | | | 5,660.91 | 8,494.18 | 18.03 | 50.09 | 17.31 | 217.41 | 815.61 | 815.61 | 0.14 | 0.14 | 0.46 | 1.01 | 213.96 | 329.91 | 9,588.67 | 6,178,193.99 | 24,295.43 | 29,113.07 | 780.63 | 2,918.54 | 880.44 | 1,230.29 |

Included Values

| Regularized Value | Value | Author | Status |
|-------------------------------------|--------------|---------------------------|----------------------------------|
| <input checked="" type="checkbox"/> | 0.03 | Anaghi, Mani, et al. | <input checked="" type="radio"/> |
| <input checked="" type="checkbox"/> | 0.04 | Knowler, Duncan J, et al. | <input checked="" type="radio"/> |
| <input checked="" type="checkbox"/> | 0.12 | Knowler, Duncan J, et al. | <input checked="" type="radio"/> |
| <input checked="" type="checkbox"/> | 0.36 | Wilson, Sara J | <input checked="" type="radio"/> |
| <input checked="" type="checkbox"/> | 1.01 | Wilson, Sara J | <input checked="" type="radio"/> |
| <input checked="" type="checkbox"/> | 796.44 | Cleveland, Nancy | <input checked="" type="radio"/> |
| <input type="checkbox"/> | 538,163.82 | Loomis, John B, et al. | <input type="radio"/> |
| <input checked="" type="checkbox"/> | 6,166,599.17 | Loomis, John B, et al. | <input checked="" type="radio"/> |

Cancel Submit



NEAT Tree Nacionālais ekosistēmu novērtēšanas rīks (UK)

Nodrošina instrumentus, kas ļauj pieņemt pārskatāmus, uz pierādījumiem un sadarbību balstītus lēmumus.

<http://neat.ecosystemsknowledge.net/index.html>



[Home](#) [NEAT Tree](#) [Principles](#) [Tools](#) [Case Studies](#) [The Project](#)

Tools Overview

Tools are mechanisms or methods that aid, influence or inform policy- and decision-making processes and outcomes. The focus is on those used for policy, project, programme or plan (PPPP) formation, implementation and evaluation.

It is rare to find a 'one-size-fits-all tool' - the challenge is to use the best combination of tools at the relevant stage of the policy cycle shown within the NEAT tree.

Tools have been organised into six types, shown in the table on the right. Within each type, explore specific guidance on tools (shown here in the right-hand column of the table) that have been 'ecosystem-proofed' to incorporate the Ecosystem Approach, as well as literature reviews and additional short tool reviews.

| Tool categories | Ecosystem-proofed tools |
|--------------------------|---|
| Ecosystem Services tools | Corporate Ecosystem Valuation tool |
| Engagement tools | Cost-Benefit Analysis tool |
| Futures tools | Ecosystem Assessment tool |
| Incentive tools | Ecosystem Mapping tools |
| Regulatory tools | Environmental Impact Assessment tool |
| Valuation tools | Futures Tools toolkit |
| | Natural Capital Asset Check tool |
| | Payments For Ecosystem Services tool |
| | Strategic Environmental Assessment tool |





NEAT Tree Nacionālais ekosistēmu novērtēšanas rīks (UK) <http://neat.ecosystemsknowledge.net/index.html>

National Ecosystem Approach Toolkit



Valuation Tools

Decisions are generally conceived of as choices and trade-offs between competing alternatives across environmental, social and economic priorities. Such choices often require some form of valuation to reveal the relative weights given to aspects of a decision. One of the main aims of valuing ecosystem services is to make the overlooked and 'hidden' values of nature explicit.

Many valuation tools are still under development. Divergent applications and hybrid forms such as 'social multi-criteria evaluation' or 'deliberative mapping' are evolving. This makes the selection of valuation tools both complex and a crucial element of any decision-making process. To ensure that the application of valuation tools provides robust and reliable outcomes it should be mandatory that tools are not just applied by experts, but also well written up and reported, including a critical and transparent interpretation covering limitations and caveats.

Read a short literature review about Valuation tools

Read a full literature review about Valuation tools (with reference list)

Read the 'Shared and cultural values assessment handbook'

Specific guidance has been developed to incorporate the Ecosystem Approach within the following Valuation tools:

- Corporate Ecosystem Valuation
- Cost-Benefit Analysis

Additional short reviews of Valuation tools





Bioloģiskās daudzveidības plānošanas rīks

Mērķis ir palīdzēt lietotājiem
iekļaut daudzveidību
plānošanas sistēmā.

<http://www.biodiversityanningtoolkit.com/default.asp>

BIODIVERSITY PLANNING TOOLKIT Change Contrast Contact: info@biodiversityplanningtoolkit.com

Key Habitats & Species | Key Geodiversity | Biodiversity Offsetting | Ecosystems Services | Planning Applications | Green Infrastructure

Developer's Calculator

Complete the table and press Calculate to see **Baseline Offset Requirement**:

| Habitat Type | Area in Hectares | Distinctiveness (automatically calculated) | Condition of Habitat | Offset Requirement |
|----------------------------------|---|--|--------------------------------|--------------------|
| Select from drop down menu below | Enter data manually if Habitat not listed | High 6 Medium 4 Low 2 | Good 3 Moderate 2 Poor 1 | |
| Coastal Sand Dunes | 4 | High | Good | 72 |

Click Add to List to temporarily store multiple calculations.

Calculate





Latvijā <http://www.toolkit.balticclimate.org/>

BalticClimate Baltijas reģionālā un vietējā attīstība klimata izmaiņu izraisīto izziņājumu un iespēju kontekstā

Lapas karte Latviešu

Rīkkopa Par klimata pārmaiņām Klimata pārmaiņu scenāriji Klimata pārmaiņu ietekme Piemēri Projekts Terminu vārdnīca

Meklēt

▼ Politikas veidotāji

- Ievads
- Problemas identificēšana
- Darbības uzsākšana ▶

▼ Telpiskie plānotāji

- Ievads
- Inventarizācijas analīze ▶
- Neaizsargātības novērtējums ▶
- Plānošana un klimata pārmaiņas ▶

▼ Uzņēmēji

- Ievads
- Izziņājumi un iespējas uzņēmējdarbībā ▶
- SVID analīzes instruments ▶

Rīkkopa

Mēs runājam par klimata pārmaiņām, jo uzskatām, ka to apšaubīšana ilgāk nav pieļaujama. Zināšanu pārnese ir risinājums, kas palīdz saprasties un dod iespēju rīkoties. Tādēļ iesaistījām pusēm, kas pārstāv dažādus līmeņus, dažādas zinātniskās un praktiskās darbības virzienus, ir jāstrādā roku rokā.

BalticClimate rīkkopa ir zināšanu pārneses instruments iesaistījām pusēm vietējā un reģionālā līmenī. Šīs iesaistītās pusēs nav ekspertes klimata pārmaiņu jautājumos, taču tām ir svarīga loma, lai pieņemtu lēmumus, sagatavotu un finansētu ar klimata pārmaiņām saistītus pasākumus.

Tādējādi šī rīkkopa ir adresēta trīs galvenajām iesaistīto pušu grupām: **politikas veidotājiem, telpiskajiem plānotājiem un uzņēmējiem**. Iesaistītās pusēs ir tās, kurām ir jāuzņemas saistības un atbildība par to, kā tikt galā ar klimata pārmaiņu ietekmēm. Rīkkopa ir orientēta šajā sarežģītajā un izziņājumiem pilnā procesā.

Politikas veidotājiem paredzētā informācija aptver būtiskākos aspektus - problēmas apzināšanu un aktivizēšanu. Sīkāka informācija iegūstama, izvēloties saites uz galvenajām jautājumu grupām, kas izvietotas horizontālajā navigācijas panelī, vai pārējo iesaistīto pušu informācijas sadaļām.

BalticClimate video

Lietuvā arvien populārākas kļūst no salmiem būvētas mājas. Jo tās uzskatāmas par energoefektīvām un to celtniecībā izmantojot dabiski vietējie materiāli. 2011. gada decembris. Ar subtitriem angļu valodā.

Germany

Eiropas Savienības Reģionālās attīstības fonda daļēji līdzfinansēts projekts

BalticClimate galvenais partneris: Academy for Spatial Research and Planning (ARL) Hohenzollernstr. 11, 30161 Hannovere, Vācija tel.: +49-511/348 42 0, e-pasts: BalticClimate@ARL-net.de

