

Raw material extraction and nature conservation: Synthesis through innovation



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European Regional Development Fund



CLEANSTONE

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Long-Term
Biodiversity Index

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E.C.O. Institute of Ecology

- Team of ecologists, geographers and landscape planners.
- Tools: Research, consulting, planning and education
- Nature conservation in the 21st century
- Our focus is on protected areas and recognized regions, such as national parks, nature parks, world heritage sites or biosphere reserves.
- Our clients are public institutions, governments and ministries as well as international organizations.

Biodiversity

- Variety of life
- Biodiversity is under increasing pressure
- Global demand for biodiversity assessment and conservation
 - European Biodiversity Strategy (2020 resp. 2030)
 - National strategies
 - Convention on Biological Diversity

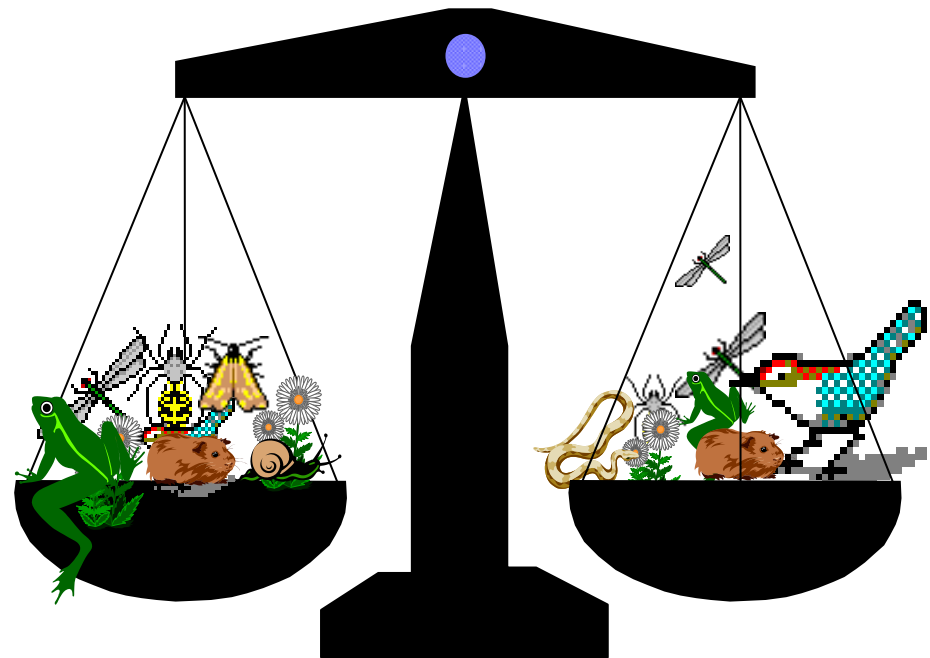
Quarry and conservation

- A quarry can be a place of rich biodiversity
- The biodiversity of a quarry can be measured and „controlled“
- High biodiversity is not compulsory „produced“ by high costs



The basis of the long-term biodiversity index (LBI) is the ratio between potential and actual biodiversity

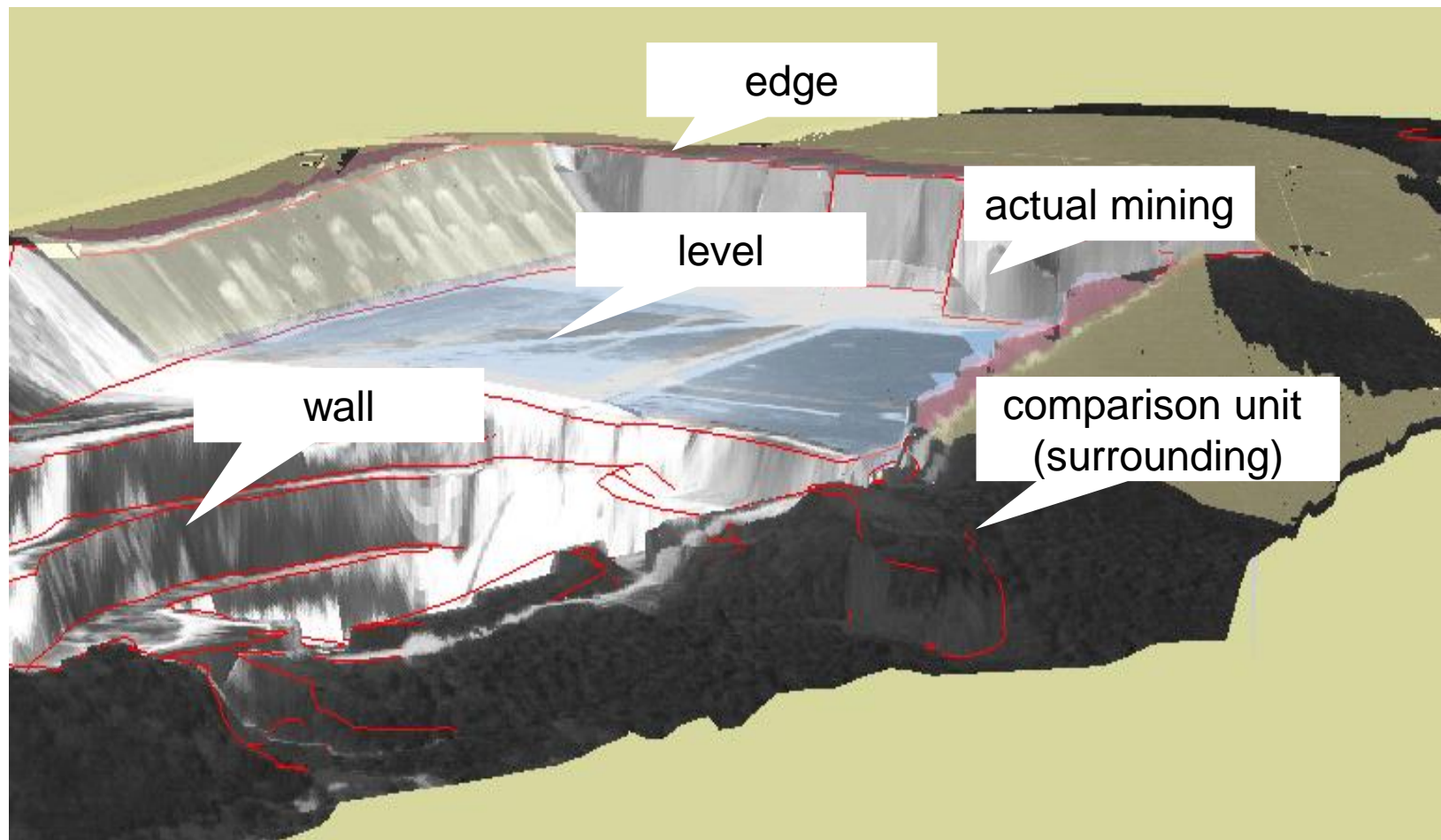
The biodiversity is calculated by the number of different species and their rating in the Red List of threatened species



LBI_{pot}

LBI_{act}

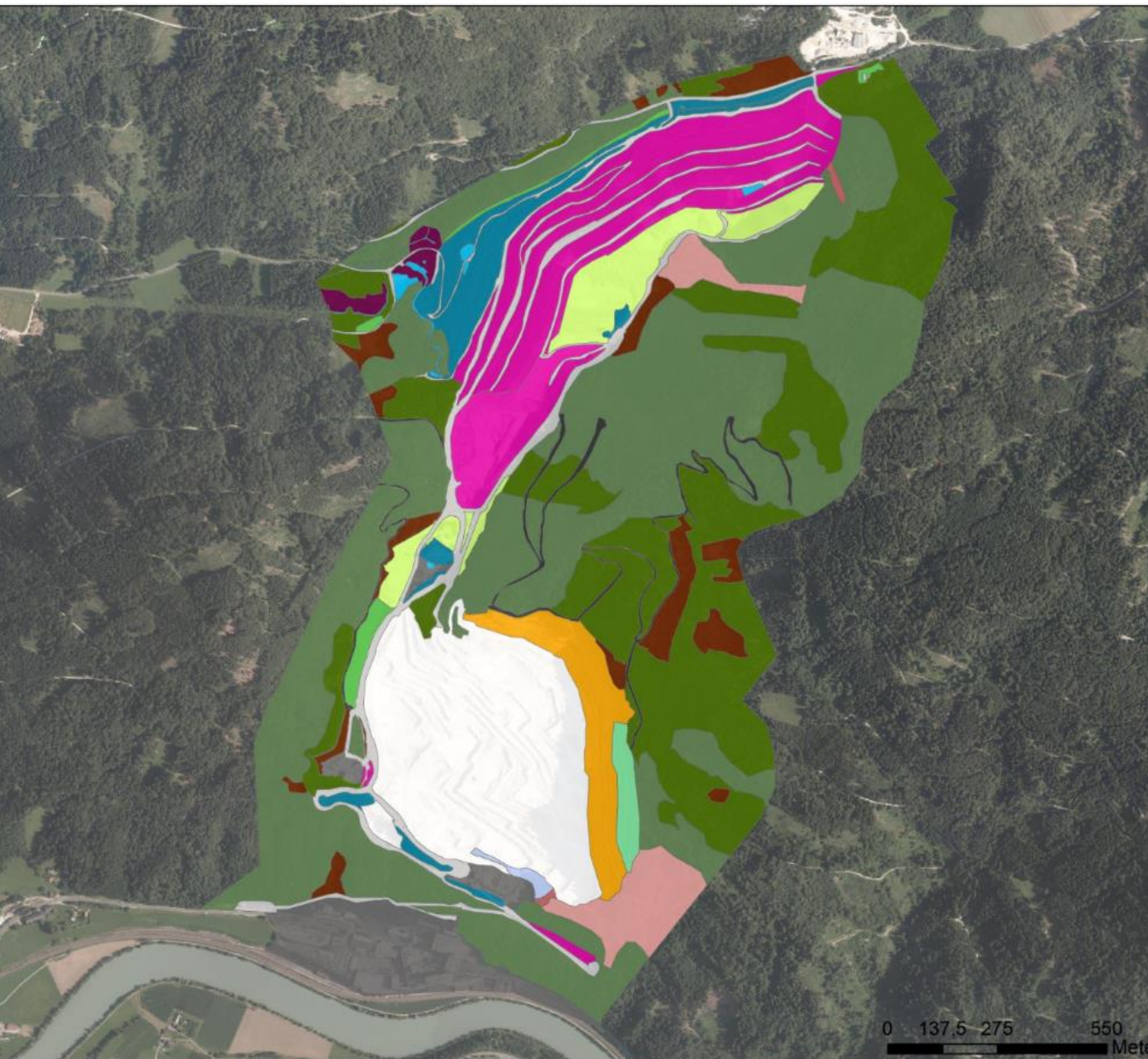
Ecological quarry units



Overview

- LBI is being calculated via „Habitat Types“ and selected „Animals“
- sampling plots within habitat types
- Survey design
 - 10x1m transects per sampling plot for vegetation mapping
 - Presence/absence analysis for
 - Habitat types (standard)
 - Birds (standard)
 - Spiders (optional)
 - Bats (optional)
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Typical Habitat types within and outside a quarry



Lebensraumtypen

- Abbaufäche
- Abraumhalde
- Bermen rekultiviert alt
- Bermen rekultiviert jung
- Betriebsgelände
- Buchen-Mischwald
- Fichtenwald
- Gewässer
- Infrastruktur
- Rekultivierungsböschung alt
- Rekultivierungsböschung jung
- Rotföhrenwald
- Schwarzerlenwald
- Waldschlag
- Wand Sukzession
- Waldweg
- Wiese
- Wärmegetönter Buchenmischwald

Auftraggeber: OMYA GmbH



Bearbeitung:



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LBI



How can the biodiversity assessment be designed to fit the needs of mining?

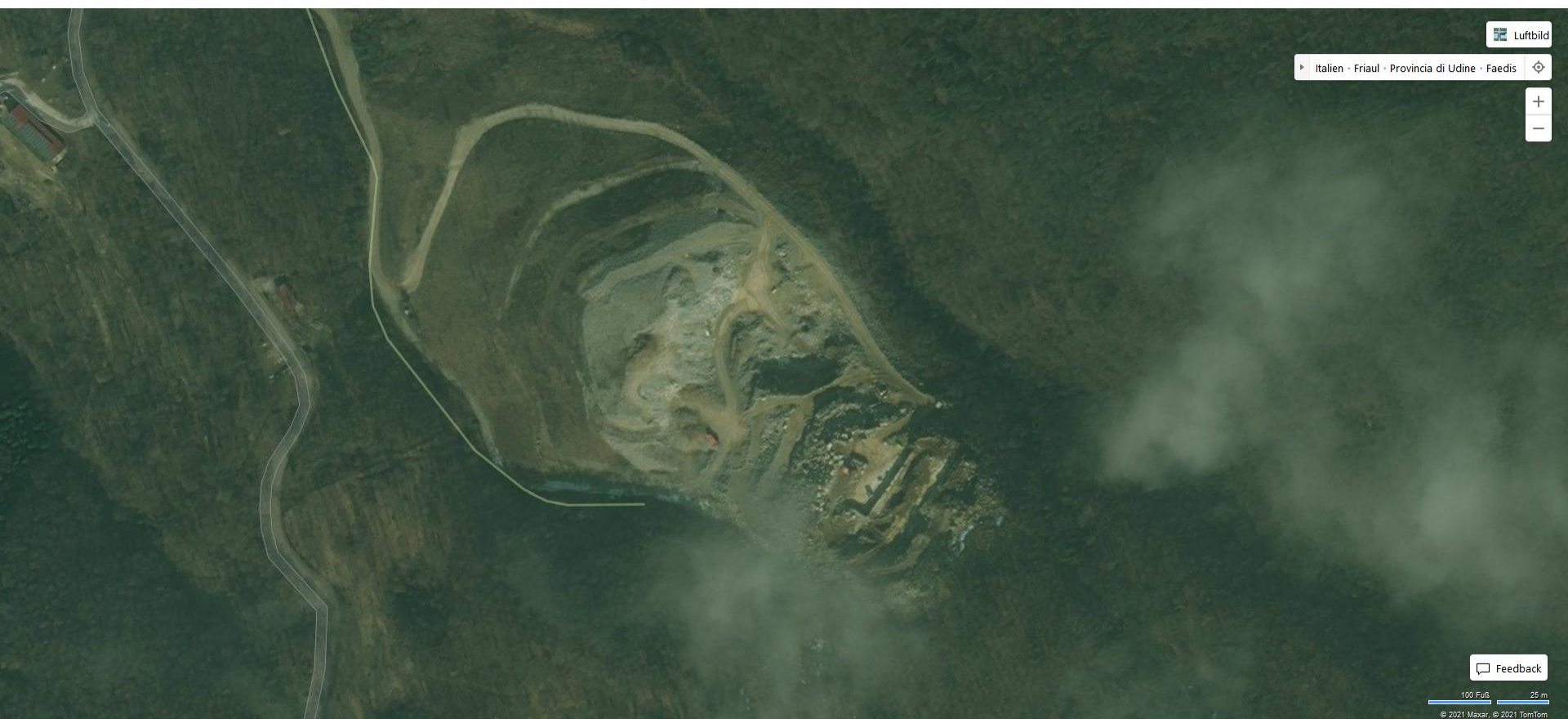
Requirement:

- „Proper but simple“
- Transferable, potential to aggregate
- Long-term significance (whole mining process)
- Possibility for individual adaptation
- Moderate costs

Solution:

- Index based on indicators (red listed species)
- Standardized sampling and calculating data
- Standardized quarry units





Cava „Clastra“ Julia Marmi



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