BBI Matra Project
Design of the Carpathian Ecological Network

Report on the results of data collection in Romania, encountered problems, suggestions….

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Main outputs

- 180 plant species – 168 in Romania

  Distribution of *Hylotelephium argutum=Sedum fabaria* is missing

  GIS layers for 3 priority plant species

- 103 alliances (=89 initially+14 new ones)

  13 new alliances proposed to be included + 25 new alliances???

  GIS layers for 32 priority alliances

- 172 animal species – 152 in Romania

  Distribution of priority species by orographical unit is missing in the database

  GIS layers for 10 priority animal species

1. Database Bibliography

- It would have been useful if for each alliance/plant species/animals, when entering an orographical unit in the database we could also introduce the literature source. This would have been of a great help in future work.

2. The use of a Reference Literature Source for the country

- **Advantage** – it helps acquire an objective/uniform view of the process
- **Disadvantages**
  - There is no work to cite all existing sources. Therefore, some alliances initially were not considered part of CERI and later were found in other sources. Also, for existing alliances many additional locations were found from other sources.
  - The associations under a certain alliance may differ between such reference sources from different countries. As a result, the map of a certain alliance may not represent the same information across the entire Carpathians.
- A list with associations included under each alliance would have been helpful although probably impossible to make.

3. Literature used for the study

- The literature used is rather old (more than 10-15 years).
- As a result there is no certainty that some alliances are still present (especially those from succession areas).
- This situation is common also to certain species of animals (e.g. fish).
- A more accurate analysis would have been possible searching through Ph.D. dissertation databases (or other more recent sources) in different universities across the country.

4. Existing (or not) Databases with biodiversity data

- For large mammals were used GIS databases (distribution of estimated number of individuals on game management units)

- For most of the alliances/species we could not really see (reach) the databases some institutions pretend they have. Additionally:
  - Those based on UTM grid (10 x 10 km) would not be too useful especially when a more precise locations is needed or when the square crosses the boundaries of an orographical unit
  - Other data bases don’t have precise locations for alliances (Natura 2000)
  - Others are not based on this vegetation classification (e.g. Forest Vegetation Map) – they could be used only for certain small and rare types (e.g. bog woodlands)

5. Discrepancies among orographical units

- The vegetation in the most well known protected areas is well documented (scientific articles, PhD dissertations, research projects etc.). These units may seem to have more biodiversity than others.
- On the other hand, other areas (even entire orographical units) may seem less biodiverse, although this may be the result of not finding literature sources to cite (they do not exist or are hard to find).
- Therefore, it is hard to judge objectively a potentially low diversity within a certain orographical unit.

6. Priority/Non-priority alliances

- Some entire alliances became priority due to one association which is a priority habitat under Natura 2000.
- This could be a problem especially for widespread alliances such as *Piceion excelsae* (priority due to the correspondence with 91D0) or *Symphyto-Fagion* (priority due to the correspondence with 9180).
- As a result, the entire Carpathians may look as covered with a priority alliance (exaggerating the biodiversity value).
- For a better evaluation, probably it would have been better to keep separate the part of each alliance which is priority and the rest of it.

7. More precise locations for Priority Alliances

- We used different existing GIS layers for more precise locations. Therefore, if these layers have problems, we imported them in our work.
- When the citation referred to a protected area (small ones) without detailing the location inside, we used the entire area to be sure we include the location we are looking for.
- For priority alliances known as present almost everywhere (the case of *Alnion incanae*) we did not have more precise locations. Therefore, some orographical units were lost due to this reason, others due to the lack of a literature reference for it.
- The precision is different, depending on the source used:
  - there were precise GIS layers from other projects (LIFE) or locations easy to find on a map (peaks, gorges etc.)
  - less precise locations like: “Mures Valley”
  - even less precise locations (usually avoided) such as: “Ramnicu Sarat” watershed

8. Determining the location within an orographical unit:

- Printed map 1:250.000
- Auto Atlas
- Touristic maps
- Topographical maps 1:50.000
- The entire work was much easier using simultaneously the GIS data available (search for rivers, peaks, towns, villages etc.)

9. GIS

- For each expert (plants/animals/alliances) a set of printed maps was provided

  (Carpathian Ecoregion with orographical units - source: 1:100.000 plans; result - 4 sheets A0+, 1: 250.000)

- Two Methods for data acquisition:
  - a) Drawing (vectorize) new polygons
  - b) Using existing layers

GIS -Methods for data acquisition:

- **Drawing (vectorize) new polygons with more precise location for priority animals/alliances/species**
  - experts wrote down the locations according to the available literature
  - drawing limits (together with the GIS expert) directly in GIS instead of drawing on printed maps and vectorising later. *This is more helpful as gives the possibility of zooming (in and out), adding/hiding more layers, adding maps with more information (1:50.000), finding names (search for rivers, peaks, towns, villages etc.), using DTM etc.*
- **Using existing layers (if available)**
  - Final locations were obtained through combining such layers or extracting from them the needed parts. Further, the final layer was overlapped with the orographical units to obtain the presence in certain such units.

GIS - Checking the database for priority alliances/species/animals

- For each priority alliance/species/animal, the GIS data (orographical units layer and alliance/species/animal layers) was interrogated and the list of orographical units was compared against the one from the MS Access database

  → database integrity

GIS - Encountered problems:

- Most common: although locations were provided by the literature, it was impossible to identify them on the map
- Names of places without enough details about area (e.g. peak “Puzdrele”, “Somes” Valley etc.)
- Very large areas for certain species (especially carnivores) – due to their large natural habitat and the possibility of overlapping between adjacent pairs, packs etc.
- No locations for certain animal species (e.g. otter)

10. Remarks for Animal species

- **Mammals** - for *Lutra lutra* and *Mustela lutreola* there were found only general information about distribution across Romanian Carpathians (no PhDs or other field research studies);
- **Birds** – well documented in recent atlases and distribution maps;
- **Fishes** – lack of available recent information regarding most of the species;
- **Mollusks** – most of the data acquired from PhD and field studies;
- **Amphibians and reptiles** – well documented in recent studies and within inventory lists of national/natural parks;
- **Invertebrates** – some recent published materials are based on old field data. The available information is rather concentrated in certain locations (e.g. Transilvanian Plateau, south – west Romania) where field studies were conducted in the last years.

THANK YOU

FOR

YOUR ATTENTION