

Summary of “Site Rehabilitation” by Daniel Gilbert, University of Franche-Comté

1) TIMELINE

This concept is vital to understanding peatlands, for their timelines differ:

- ⌘ Formation: accumulated over thousands of years
- ⌘ Extraction: for centuries, traditional methods were used; recently, they have become more intensive, for horticultural use since WWII. Overall, peat was mostly used worldwide for energy production.
- ⌘ Rehabilitation: entails the rebuilding of secondary habitats. A recent phenomenon. Development of spreading techniques in general over a few years. Several presentations dealt with this topic.
- ⌘ Restoration: entails the rebuilding of an original habitat. This can take decades, even centuries. It is not certain whether full-fledged restorations have been carried out.
- ⌘ Re-creation of a natural habitat may entail fully recreating that habitat either in a formerly peaty area or in one that is likely to become a peatland.

Hence, it is possible to infer that the race between destroying an environment and its subsequent reconstruction is not equal.

Many of the presentations showed that more than 90% of peatlands have been damaged or destroyed in the southernmost countries of Europe (France, Switzerland, Belgium, Holland, and Great Britain).

More to the north, the damage is less visible due to the fact that peatland cover is quite extensive. However, a large portion of peatlands has been affected by drainage, forestry, etc.

A pressing issue, which explains the importance of this congress, is the difficulty:

- To find out more about the “initial status” of such natural habitats, since disturbances go far back in time
- To take a step back and identify the best practices

Now, as we have seen, rehabilitation is merely empirical; hence the need to exchange information.

2) KEY INDICATORS

2.1 Water:

The issue of water is central to the problem of rehabilitation, particularly in those areas where precipitation is moderate or more irregular. In this case, the peatland is often supplied with natural water resources. The recovery of groundwater may be envisaged by means of different devices. A dry form of rehabilitation is possible (see Quebec case) but needs to be proven effective in Europe where the conditions are somewhat different.

In addition to the problem of water, obviously a key element here, it is also difficult to determine the relevant indicators for restoring peatlands.

2.2 Vegetation

Naturally, many of the works presented here are based on restoring vegetation, in terms of:

- Percentage of peatland cover
- Quality of plant cover, namely the return of certain species potentially capable of producing peat

One of the solutions is to utilize sphagnum and related plants (=plants, parts of plants, or seedings) in order to accelerate or orientate the return of plant growth. These practices have introduced the idea of sphagnum cultures, which could lead to white peat growth, as a type of agriculture (see German case).

2.3 Biodiversity

This element is of paramount importance to many of the conference participants and this concern is totally justified.

Mostly it's about biodiversity of flora and to a lesser extent of fauna. Some presentations touched on the subject of microbial diversity.

Research into the highest degree of biodiversity and, simultaneously, the return of rare and almost extinct species has led numerous administrators to diversify natural habitats by creating more or less wet areas, and very often water bodies located in the middle of marshes.

While the recovery of plant growth appears to be indispensable for returning peatlands to their former function, high biodiversity is not necessarily synonymous with the resumption of carbon retention and storage by the system.

2.4 Carbon storage

The issue of carbon storage resumption was not dealt with much in this congress. For technical and financial reasons, measuring the flow of CO₂ and CH₄ is generally carried out by scientific research centers, such as universities. The European research contract, RECIPE, states that the "carbon storage" function only reappears after several decades.

The models presented here also suggested that this function may be strongly modified due to global climate changes.

3 THE STAKEHOLDERS

The stakeholders, similarly to legislation, vary from country to country:

3.1 "Those damaging peatlands"

Peat-mining companies extracting peat for energy production are largely the majority, but peat is also extracted for horticultural use but only in the past few decades.

Users of peatlands: farmers, largely responsible for the drainage of peatlands in most of southern Europe, and forest industries, largely prevalent in the north.

It is worth noting that while extraction is the most radical method (peat-cutting), agriculture and forestry play a major role in peatland degradation, in terms of surface area.

Nevertheless, as we have seen, the issue of peatland rehabilitation after extraction was often raised.

This problem corresponds to a reality more than to a choice.

In effect, peat production –though quite destructive –offers several advantages:

- It is regulated and requires prior authorization
- It is limited over time, meaning the end of extraction is known
- It is the property of companies that have no interest in conserving such habitats after exploitation so they are inclined to sell or hand them over for management to public authorities or wildlife associations
- It is often required by law to restore peatlands. However, this point is not yet universal.

For all the above reasons, it is far easier to work with industries than farmers, for example. This aspect was highlighted in a number of presentations and also during the field trips.

3.2 “Those who rehabilitate peatlands”

Depending on the country, this aspect is about foundations and associations for the protection of natural habitats. It was also pointed out that local governments (municipalities, regions), sometimes even States, can contribute significantly to the restoration of peatlands, because they can mobilize substantial financial means.

“Those who rehabilitate” are characterized by good motivation and patience but don’t always have the money to do things!

The most remarkable cases of rehabilitation are those in which the two major stakeholders were able to agree on things. For the reasons specified above, very often these cases involve industries on one hand and associations/local governments on the other.

It would be wrong to conclude, however, that the sphere of activity is merely limited to these two stakeholders. Rather, these situations should lead to opportunities for successfully conducting experiments that will prove useful to other cases in the future.

Allow me to come back to the specific case of the Boulieu peatlands in France (see Faliénor Co.). In this situation, a concerted effort permitted:

- Exploitation of an already highly damaged swampland (corn)
- Extraction bearing in mind the site’s future restoration, envisaging an extraction process conducted gradually and according to the best practices so that ensuing restoration is optimal.

In France, another recent case worthy of notice is that of Florentaise, recalling the extraction of ‘Noir de Brière’.

3.3 “Those conducting research”

This category of professionals primarily involves University researchers but also some working for independent research firms, either on a volunteer basis or within the realm of their professional activities.

These stakeholders play a very important role but it goes without saying that interaction with the two previous groups is insufficient. Efforts to carry out a “transfer of know-how” are far from systematic but the need is growing.

To begin with, the problem is raised of how to manage networking among the researchers, producers and administrators upstream the projects. Preliminary coordination and compliance with the scheduling and objectives of each participant are vital to effective cooperation.

One of the solutions facilitating this exchange is the creation of specific testing grounds (or workshop areas), which could involve exploited or pristine areas, thereby permitting better concentration of means and long-term monitoring of natural habitats.

Obviously, these sites will have to be located within the natural habitats owned by the administrators or industries.