

Mining vs ecology: adversaries or allies?

Outcome of the Geologica Belgica & BLUG/UBLG brainstorming session 27.11.2015

Definitely allies: creation of better and/or more diverse biodiversity

- Walloon (former) quarries are biodiversity hotspots, although they cover not more than 2% of Walloon territory.
- Geological anomalies are the purpose of exploration and extraction. They also create habitats for anomalous nature, characterised by species which are rare outside the quarry sites.
- Living nature does not make a difference between natural or human-induced habitats (e.g. natural rock or quarry wall or tower).
- Nature outside quarry sites is no more natural than within the quarries, even though the average citizen does not (want to) know this.
- Diversity of habitats with rich biodiversity in our country is largely associated with 'apparent natural landscapes', landscapes which due to former human activities (agriculture, mineral extraction) have been fixed in a transient stage. Nature conservation management then consists of preventing these from moving towards a stable but monotonous climax ecosystem (e.g. cutting of trees in nature reserves is met with disbelief by the general public, nature reserve managers have had a tough time explaining the management plan and convincing the citizens of their intentions : a situation not unlike what is happening when restoring a quarry site).
- Many of our best nature reserves, particularly the wetlands, are the result of former quarrying. They tend to degrade with time, i.e. evolve into an average climax vegetation, thereby losing the rare species for whose conservation they have been established.
- There is increasing convergence in the objectives of the authorities and the nature monitoring and development plans of the extractive industry.
- Reopening quarries for historical building stones is actively supported in all regions. Nevertheless, determination of quality and durability is difficult for resources which have not been produced for centuries and reserves are often rendered useless by land use changes (e.g. housing parks). It demonstrates the problematic dependency on natural resources without an active extractive industry and the long time required for redressing this situation.

But there are challenges :

- Biodiversity implications should be included in all operations through the major phases of a quarry lifetime (permitting, extraction, rehabilitation). Moreover, the extractive industry has a practical reason for addressing biodiversity, namely shorten the permitting phase which tends to be never ending because of NIMBY's but also of nature protesters.
- Move from either quarrying or nature conservation to quarrying and nature conservation, i.e. the lifetime cycle of a quarry generally allows that unique biotopes will be created within the quarry area, already during quarry operation. The challenge is that spontaneous new habitats

may be in the way of further operations, in which case displacement of habitat can be an option (the same applies to stone walls of historical monuments containing a special fauna and flora, under threat during or after restoration unless precautionary measures are taken and habitat conservation is included in the restoration programme, e.g. the medieval walls around Maastricht).

- Nature developers can resort to recreating nature by imitating the former human activities which have led to particular habitats. Why then not accept that the same results can also be obtained from mineral extraction?

- Good cooperation between the mineral extraction industry and the conservationists is a matter of education, for both parties.

- Do not forget geodiversity, which is a value also highlighted by (former) quarries and worth protection. It is not as fragile as biodiversity (e.g. exposures of stratigraphic or lithologic interest) but may be a cause of conflict (e.g. caves swallowed by quarry expansion) and could receive more attention from the extractive industry.

- The UNESCO Geopark could be a good case for combined geodiversity and biodiversity conservation and a showcase for public learning about the geodiversity values. It should also become a forum for harmonising the needs of the extractive industry with sustainable development at the local territorial scale. This could become an example for other nature-sensitive areas as well.

- There is no uniform procedure for valuing biodiversity, meaning that authorities responsible for licensing may use other criteria than those following up the operations (e.g. between the regional administrations for natural resources and for nature conservation), thereby increasing the number of conflicts between the extractive industry and the authorities and increase the rate of rejection of their plans.

- The transient character of quarrying makes that any given place could be in a phase of complete destruction of the original ecosystem whereas other places recreate nature. The overall effect should be considered, bearing in mind that all new biodiversity hotspots have been cleared of their original biological content before.

- Fixation on species is good for visibility and public attention, but managing the physical basis of ecosystems is better for sustained biodiversity. There is ample evidence that this works better on the long term.

- Although the extractive industry faces the same administrative burden and public resistance related to drastic land use change everywhere, there are differences within the sector itself: difference of attitude between the more responsible companies and the few cowboys, differences of scale may favour the larger companies allowing them to have more sophisticated land reclamation and nature restorations programmes, conflicts of interest on certain resources. Each company or federation remains responsible for its own functioning, has invested more or less heavily in knowhow and relations, and may consider this as proprietary. It should not be the purpose to duplicate efforts already made. It is appreciated that FEDIEX is the most advanced in developing a strategy for dealing with nature and also on implementation programmes. However, there is clear willingness to share information and improve the status of the sector as a whole.

There are also drawbacks which are difficult to overcome:

- Nature may be used as an excuse for the ‘not in my (electoral) backyard’ syndrome.
- Ecological disasters provoked by the mining industry elsewhere cause distrust and will be used as an argument against local plans of the extractive industry (e.g. the dam burst occurring early november in Minas Gerais, Brazil, setting the media up against mining).
- The legal protection of nature is fixistic. It considers nature under threat of attack, thereby preventing change. This is completely opposed to quarrying practice. The mineral extraction industry creates evolving landscapes, ultimately leading to different but generally more diverse biodiversity. This process is not in line with the legal framework for the protection of nature.
- The time frame of a quarry is frightening for authorities and the citizens, although comparable to the human life span. In our culture long-term planning and evolution are not accepted any more. The present must be maintained, instead of seeing the present as a transitory stage between past and future.

Additional information

Presentations Dreesen & Duser on geological origin of nature reserves, lessons learnt:

- Biodiversity hotspots are the result of geological anomalies and disturbance of soil/substrate. It does not matter whether this disturbance is of natural (e.g. landslides) or human (e.g. former extraction sites) origin.
- Good cooperation with biologists is possible in the field but does not necessarily lead to changing paradigms (i.e. biologists tend to ignore indicators for immature/disturbed soils or mining/quarrying origin of sites with anomalous biodiversity).
- Different paradigms induce geoscientists to take a more dynamic view of nature, whereas biologists take a more static view. History of human land use is taken into account when describing the values of a nature reserve, but the implications this has on the soil are often neglected.
- Involvement of amateur geologists facilitates cooperation with (amateur) biologists.

Charter quarries and biodiversity, between Walloon government and FEDIEX / Pierres et Marbres de Wallonie:

<http://www.fediex.be/charte-carrieres-et-biodiversite>

http://www.stenenenmarmers.be/uploads/media/Charte_biodiversite.pdf

<http://gouvernement.cfwb.be/les-premiers-madame-monsieur-biodiversit-wallons-diplomes>

<http://www.febe.be/frontend/files/userfiles/files/beton/Beton217/biodiversite-industrie-carrieres-groevenindustrie-diversiteit.pdf>