Final Project Report

One photo says more than thousand of words

Abstract

The aim of this project is to raise the knowledge about the biological value of mining sites and about possibilities of their restoration. The project focuses on general public – pupils, students of grammar schools and universities, teachers, employers of cement plant, visitors of cinema etc. Photos from Mokrá quarry were exposed with short titles and introduction to inform general public about above mentioned topics by very easy and quickly way.

Introduction

Topic of high biodiversity in abandoned quarries and close to nature restoration of these areas are highly discussed issues in scientific literature. There are many papers in the Czech Republic dealing with an issue of natural regeneration of quarries, their biological value and comparison of this type of restoration with classical technical reclamations (Cílek 2008, Gremlica et al. 2013, Hodačová and Prach 2003, Prach and Pyšek 2001, Prach and Hobbs 2008, Prach 2009, 2012, Prach, Pešout, Jongepierová 2012, Řehounek and Řehounková 2012, Tropek et al. 2012, Václav 1956). Above mentioned authors confirm that natural regeneration and assisted regeneration are the best ways of restoration mainly from the point of biodiversity and economy.

However general public is not familiar with this issue. Many people think that mining sites are without life and technical reclamations are the best solution to “help” nature. Not many people know that abandoned quarries often become unique ecosystems and place to live for many organisms. If we compare abandoned quarry with crop field composed from one species of plant, chemically and technically treated, quarry can pose island of nature in human affected monocultures. Similar information could people read in the introduction to the exposition. On the photos visitors could see how abandoned quarry looks like, if it is restored in close to nature way and how is the process of spontaneous succession going.
Objectives

The main objective of this project is to raise the knowledge about the biological value of mining sites and about possibilities of their restoration in close to nature way. We try to say the information by very easy and quickly way to as many people as possible. There are two main ideas of this project. The first one is to inform people, that quarries are not places without life oppositely they pose unique ecosystems. The second idea is that these unique ecosystems usually form if natural restoration or assisted restoration is used.

Methods

This project is not scientific and methods are not difficult. At the first literature overview was completed. Photographing part started in April 2014 in the East part of Mokrá quarry called Břidla. We were looking for interesting places which can give information and make people come to see it. We took approximately one thousand of photos by ordinary camera. This project is not based on high quality technique; we tried to take original and interesting photos. After six weeks of photographing, and waiting for good weather we started to select the best photos and prepare the composition of the expositions. Finally we decided to not compare technical reclamation with natural regeneration because general public usually do not assess monoculture needle leaved forests negatively even they are not native in these conditions, suffer by diseases and are of low biodiversity. We ask many institutions by email or written letters, for the possibility to expose the photos. Most of answers which we got were positive but not possible to expose in so short time.

Selected photos were printed without any modification. Calibration of printing machines was professional and gave nice photos (many thanks to my brother, Pavel Cihlář). After printing we selected twenty photos and these were printed again for expositions. Two sets of photos were prepared. One set was prepared in glass clips and the second one glued on the special art paper. Clips could be fixed only on the walls while paper almost everywhere, but they were not so nice. We prepared titles, introduction and information papers. Schedule of expositions was made and then implemented.
Results

Overall eight expositions were organized. The first one began at Mendel grammar school in Opava where approximately 630 students and their teachers could see the exposition. An article about the project and planning vernissage was published in regional newspaper. One week later there was vernissage with students and teachers. The second exposition took place at primary school in Mokrá village where 320 pupils and their teachers could see the photos. The teachers were so glad they organized vernissage with pupils. Third exposition was at Mendel University in Brno and fourth at Masaryk University in Brno. We are not able to say how many people could see the photos since it was time of examinations and graduations. Fifth exposition took place in cinema Lucerna in Brno. Sixth exposition was in Cement plant in Mokrá. This exposition was started by vernissage with employers of the plant. Seventh exposition took place in Moravian library in Brno. Eighth exposition was installed at municipal office in Hrušky village.

Students from Mendel grammar school are supposed to elaborate scientific work on the topic of “Spontaneous succession in abandoned quarries” under supervising of the author.

Information leaflets with webpage of the Quarry Life Award competition were provided to visitors of the expositions.

Electronic form of the exposition was sent to many students.

Discussion

This project definitely fulfills its aims and we can say that thousands of people saw the photos. Most of comments were positive and there were three discussions where people could discuss this topic.

There was not enough time and high quality technique to make better photos, however most of people like it. The printing was on the other hand professional. If there is bigger budget for installing panels and better camera the photos might look much better.
Conclusions

General knowledge and every vote mainly in public referendum are important in decision making. We hope we make many people familiar with the topic of biodiversity in abandoned quarries and possibilities of their restoration. If the idea of natural regeneration of human affected areas remains only in scientific literature we cannot suppose that reality will change.

This project is opened and it can continue for long time. New photos can be taken and new institutions can be asked. Information leaflets can be printed as well as calendars for example.

Literature:


Appendix:

Quarry Mokrá is situated approximately 10km from Brno city, the area is app. 150ha and it is divided to three parts (West, Central - on the photo and East).

Dominantly limestone is mined in Mokrá quarry. Limestone originates from Devonian time when bodies and covers of marine organisms sedimented (typical layers can be seen).
This exposition is focused on the East part of the quarry called "Břísla", you can see the view to this part.

When mining is ended, quarries are usually restored. Restoration can be artificial (technical) or close to nature. Artificial restoration is usually very expensive and poses low diversity ecosystems. You can see spontaneous restoration of the East part of Mokrá quarry.
First organisms of spontaneous succession are usually cyanobacteria, algae, lichens and mosses, which prepare better conditions for plants.

Speed or intensity of weathering when fine grained material is produced, play also important role for spontaneous succession.
Weathering grooves are important places where fine grained material and water accumulate; mosses can grow there and make weathering process faster. Better conditions for plants are prepared.

If fine grained material is present in quarry first plants and also first seedlings can grow (you can see Acer pseudoplatanus on the photo).
Water bodies can occur or can be created in depressions. These places are very important for amphibians and insects.

Larix decidua (larch) is typical pioneer tree species (after spring rain on the photo).
Nature is able to regenerate in extreme conditions, for example Pinus sp. is able to resist these conditions.

The view to the biggest natural water body in Mokrá quarry.