

## Flora and fauna under protection

Can the apparently contradictory objectives of environmental protection and business growth be reconciled? The answer, it seems, is: yes. The biodiversity protection programme being implemented at the Górażdze quarry together with biologists from Opole University is proof positive that companies can benefit the bottom line while working to protect the planet.



Biologists from Opole university created an individual procedure for each species at the Górażdze quarry



The scientists plan to reintroduce the ground squirrel which flourished in the Opole area in the past

The programme at the Polish plant aims at preserving the diversity of flora and fauna, as well as the landscape and geology of the area. It involves transplanting plants from endangered areas to safe locations with similar habitat and landscape characteristics. "For instance, a growth of *Epipactis microphylla*, an orchid species listed in the Red Book of endangered plants, which grows in only three places in Poland is threatened by blasting," says Dr. Arkadiusz Nowak. "We show the company where the plants grow and make recommendations to minimise losses."

### Three stage programme

The programme has been ongoing since 2005. The first stage involved cataloguing and prioritisation of existing flora and

fauna. During the second stage, the scientists searched for appropriate new places for relocation of endangered plants. The third stage, spread over several years, consists in transferring the most endangered plants to the new habitats. "Before quarrying of the spot where the valuable plants grow, we transplant them to the substitute habitats," says Dr. Krzysztof Spalek.

The biologists created an individual procedure for each species. Some will end up in the forest, others go to nature reserves. *Epipactis microphylla*, for example, is moved to Biesiec reserve. By October 2007, the biologists had transplanted roughly 150 units of four legally protected plant species. For each

move, Górażdze had to obtain permission from the Ministry of the Environment.

### Reintroduction and restoration

The activities are not limited to transplantation of valuable plants. The programme also includes restoration of extinct species. The objective is to enrich the vegetation in such a way that the reclaimed excavation will become a natural botanical garden, with an educational trail leading near interesting species.

Many animals live in the quarry as well: the smooth snake – a constrictor also in the Red Book of endangered animals, and meadow birds, such as the Northern Wheatear, African Stonechat and the Whinchat, as well as broad range of amphibians, insects and butterflies.



*Epipactis microphylla* which grows in only three places in Poland is threatened by blasting at the quarry



Orchid *Plantanthera bifolia*



Orchid *Neottia nidus-avis*

The scientists also plan to reintroduce the ground squirrel: “As soon as the area is quiet and the mining works far off, we have picked out a place for ground squirrels, which flourished here in the past.”

### Dual benefits

In addition to the environmental gains, the programme also brings cost savings on forest land reclamation. With the new ap-

proach, 30% of the excavation area is not planted with forest trees, bringing huge savings to the company. The remaining area is prepared based on the recommendations of the biologists. “There will be some naked rock in the unplanted areas, some natural succession, marshes, vertical and horizontal slopes, islands etc. All of these determine the mosaic character of the landscape and habitats where much

richer biodiversity can develop than in traditionally reclaimed areas,” says Dr. Nowak.

The programme has also featured two scientific conferences where an international group of biologists, as well as local environmental authorities and Górażdże exchanged experiences and discussed other reclamation methods used in Polish, German, and Czech quarries.