Theme Buttons: Lakes, Nature & Environment

Title of case
Ruzinov Strkovec Lake in Bratislava, Slovakia # 275

Subtitle
How a polluted gravel pit lake in the suburbs of Bratislava was revived for the benefit of both nature and the local residents.

Description
The Ruzinov Strkovec Lake covers some 56,000 m2 in the suburbs of Bratislava, Slovakia's capital. The lake is surrounded by blocks of houses, shops, schools and other urban infrastructure.
The lake was formed as a result of gravel mining for construction purposes in the 1960s.

Ten years ago, the lake was contaminated by illegal sewage pipes making it a source of annoying smell and putrescent products. In summer period, when the water level decreased, the polluted banks of the lake became a harbour for rats and mice and the lake surface was covered by algae. As a result the water quality was of the worst possible category (class V). The lake was considered to be dying and dangerous for any use. The situation was regarded as critical, as the lake is located the vicinity of human settlements and urban infrastructure facilities, such as hotels, schools, kinder gardens, and hospital.

The Association of Industry and Nature Protection (APOP) initiated and organised a project to both revitalise the lake and draw the attention of local people to its flora and fauna. Educational notice boards were installed describing the lake's life with its inhabitants: birds, water flowers, fish, cane grass, and phytoplankton. The total cost of the project was US$480 000, of which a half was granted by the local municipality and half from the APOP and other sponsors. The revitalisation project was conducted between 1994 – 1996.

The result is the improved environmental quality of the lake, which has become an area used as a recreational area for people interested in activities such as fishing, boating, swimming, skating and relaxing. The lake has also become a haven for wildlife including scarce and protected birdlife. Annual harvest of water vegetation is used as a biomass (composting). Regular monitoring of lake quality is conducted by the municipal authorities.

Lessons learned and replicability
- Many worthwhile projects that have the aim of improving the local environment are started. However, it is not uncommon for them to fail due to lack of financing and effective managment. For various reasons existing governance structures cannot always be relied upon to drive projects that amount to additional work and expense. In this case, the APOP was able to bring in money (via sponsors) and effectively allocate the necessary work, in collaboration with the local municipality, in order to complete the project.
- In relation to the above point, when it comes to environmental regeneration projects, local municipalities may not have the required knowledge base and capacity. For example, in this instance while the municipality would be able to conduct an operation aimed at cleaning the lake, it would be beyond its capacity and expetise to revitalize the lake for benefit of both nature and the local population. The municipality simply did not know what to do with the dirty lake, and did not have any intention of inviting

ecologists to design the revitalisation project. Again, the role of the APOP was critical for attracting the likes of experts such as water engineers, biologists and zoologists to make a proposal (including a feasibility study).

- The third most important point is appreciating that such cases can be promoted in various ways. Selecting a way to promote such work is important for gaining buy-in and support from relevant stakeholders, and is dependent upon the local circumstances.

Importance of the case to IWRM

The case describes how the partnership between the NGO and municipality resulted in a successful revitalisation of the local lake – the implementation capacity strengthened.

The case shows that deteriorating water quality is connected to threats to ecosystems and human health. Once the water quality is improved, the lake become to be attractive for inhabitants and environmental quality improved.

Tools used

B1.9. Civil society and CBOs,
B1.10 Local authorities,
B1.11. Building partnership,
A3.2. Financing options (grants and internal sources),
C1.5. Ecosystem assessment

Keywords

water initiatives, revitalisation, urban lake, gravel pit

1. Problems

Initiator

The Association of Industry and Nature Protection (APOP) is a Slovakian non-governmental organisation with a long term strategy to "establish harmony between nature protection and industrial activities". The APOP merges together representatives of municipalities, industries, private companies and some governmental nature protection organisations in Bratislava and the surrounding region. APOP was established in 1993 and is supported by sponsors` contributions, as well as domestic and international grants. Between1995-1998 the APOP organised and managed the revitalisation project: Ruzinov Strkovec Lake.

Problems addressed

Ruzinov Strkovec Lake is a gravel pit lake that was formed by gravel mining for construction when Bratislava was expanding its housing stock in the 1960s. "Strk" in English means "gravel". Ruzinov" belongs to one of the most industrialised and urbanised areas of

Bratislava.. The gravel pit lake was initially planned as a recreation area for local people and the lakeside was adjusted by cement panels and covered by grass. In the 1980s, health authorities prohibited the use of the lake for bathing, as faecal contamination had significantly increased. Contaminated sediments, illegal dumping and leakage of local sewage without treatment further reduced the aesthetic value. Also, an increased number of rodents and mosquitoes threatened the health and quality of life of the local people. They complained to local authority, and in response the local authority declared a willingness to revitalise Strkovec Lake. However, two problems complicated the situation:

- There was a technical problem regarding how to excavate contaminated sediments in a highly urbanised area while ensuring the sustainable status of the lake.
- There was a lack of finance to support the revitalisation of the lake.

2. Decisions and Actions Taken

The APOP established the team that consisted of a broad range of experts: engineers, ecologists, hygienists, municipal representatives and other partners that were willing to financially support the project. Two parallel actions were taken by the APOP:

- Experts were encouraged to design the revitalisation project.
- Sponsors who might financially or personally contribute to the project were attracted.

The main question was how to revitalise the lake with a minimum disturbance of local settlement. The character of the urbanised area restricted the use of a dragline excavator. The excavator would be noisy and would disturb the sludge making it difficult to collect. Furthermore, there was no space for the temporary storage of excavated hazardous waste. The proposed solution was to use a special vacuum vehicle operated by divers. During the first phase of revitalisation works, the divers step-by-step siphoned the contaminated sediments away from the lake and pumped them into tankers. The sludge was transported into the waste water treatment plant of Slovnaft – the Slovak refinery company and one of the partners of the project. A total of 14,270 m3 of contaminated sludge was excavated from the lake. Also, the divers removed more than 10 tons of bulky waste including tyres, barrels, baby-prams, bicycles, wheelbarrows and fridges.

The second phase of the project was to modify the lake banks and a surrounding park with appropriate vegetation. The lake bank was covered by 600 m3 of quarry stone. The edge of the lake was braced with 2,000 m3 of gravel stone. The immediate vicinity of the lake was turned into a park with trees, foliage plants, and bushes.

A children play areas was created, as well as benches for parents. The educational notice boards were installed to inform visitors about the history of the lake, the importance of the lake fauna and flora, the protection activities that have been carried out, as well as the rules and regulations for visitors.

The revitalisation project also addressed the issues of birds` nests and the planting of water plants. Cane grass coverage was established to serve as a breeding and nesting area for birds. Subsequent monitoring and documentation of birdlife noted that there were about 25 bird species of which 19 are protected and 11 are noted on the Red List of Threatened and Scarce species.

In the year following year the excavation of sediments, a massive increase in the number of the water plant *Myriophyllum spicatum* was observed. This was as a result of good living conditions after the decontamination of lake bottom and release of nutrients that accelerated plant growth. Botanists were invited to the project to assess the negative impacts of macrophytes that reduced the aesthetic value of the lake. The task was how to ensure an optimal vegetation regime in the lake. An annual harvesting of water flowers as a source of biomass (suitable for composting) was the chosen solution.

An integral part of the project was to establish water quality monitoring. Local authorities decided to implement regular biological and chemical monitoring of the lake.

The APOP played a very important role in the financial planning of the project by attracting sponsorship. The APOP concluded an agreement with Ruzinov municipality regarding a contribution to the revitalisation works. The agreement established a "fifty-fifty" contribution deal which meant that the municipality of Ruzinov would invest 50% and the APOP would find 50% of the total cost. The final total cost of the project was US$480,000. Half of the financing came from 14 companies and institutions located in the Bratislava region including Slovnaft – refinery, Volkswagen, Shell Slovakia, Matador (rubber processing company), Istrochem (chemical processing company), Vodohospodarska vystavba, Konsip-R, Presskam, Stavoprojekt, Geotest – construction companies, Volksbanken – AG, and the State Environmental Fund. The APOP used its managerial know-how to coordinate partners carrying out the bulk of the revitilisation work, despite having just two fulltime staff.

In addition, the APOP and Ruzinov municipality cooperated with the local fish association to form the "Flipper Club". The club regulates fishing activities on the lake as well as renting out fishing kits, boats and water bicycles.

3. Outcomes

The main outcome of the project is improved water quality in the lake, from class V (the worst) to between class II-III (moderate). In addition, the establishment of green areas in a vicinity of the lake resulted in the attractiveness of the area to local people. The measures applied could be summarised as follows:

- development of the revitalisation project (technical and environmental aspects)
- removal of contaminated sediments, sludge and mud from the bottom of the lake
- establishment of nets and planting of water plants in a vicinity of the lake
- harvesting of water macrophytes
- reconstruction of sewers to divert waste water away from the lake
- instalment of education notice boards and other facilities for relaxation and children's games
- establishment of regular water quality monitoring of the lake.

There should also be noted one important outcome beyond the revitalisation project: it is the establishment of the partnership of industrial companies and environmental protection institutions. Every year, the APOP - including its industrial and public environmental institutional partners - meets to discuss and carryout concrete revitalisation projects.

4. Lessons learned and replicability

The cooperation of experts from the APOP together with municipal representatives resulted in revitalisation of the local lake. Cleaning and revitalisation of the lake contributed to biodiversity of the area. The revitalisation of the lake enhanced its aesthetic appeal with local residents. This case could well be replicable in other urbanised areas – these are usually very limited to a "nature beauty". The positive response of local people introduced an educational aspect which should help to preserve the lake and surrounding area.

5. Contacts, references, organisations and people

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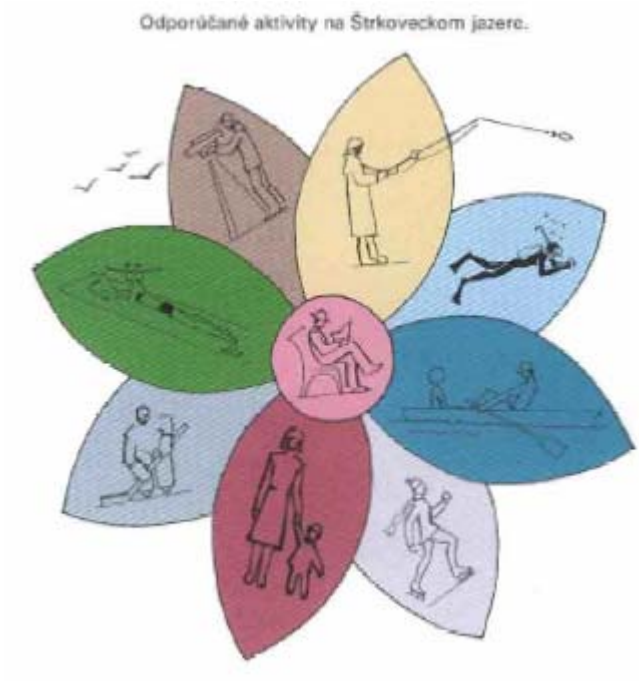
Photo documentation:
Picture 1: A diver retrieves a rusting children's bike

Picture 2: Divers at work

Picture 3: Educational Notice Board

Picture 4: Recommended activities – guide displayed at the panel



Picture 5: Playing children and resting people

Picture 6: Section of illustration from the educational notice boards