Rooted in discovery
Field experience in environmental education

Barbara Immerova, Daphne – Institute of Applied Ecology, Slovakia
Daphne – Institute of Applied Ecology

Environmental non-governmental organisation focused on:
- nature preservation,
- applied research,
- management and restoration of habitats and reserves,
- environmental education.

**Topics**
- Non-forest ecosystems (meadows, wetlands, peatlands, sand steppes, salt marshes)
- Natura 2000 network

**Regions**
- Bratislava and surroundings, Banská Štiavnica
- Other region of Slovakia (High Tatras, Slovak Paradise, Danube Region...)
- Danube region
- Carpathian region

**Projects:**
- More than 130 projects
- National and International (Danube, Carpathians, Trilateral Ramsar Projects..)
- EU – LIFE, EU - LIFE+, World Bank, UNDP, GEF, Interreg, DBU....
Daphne – Environmental Education

Scientific background → Applied Ecology → Active Nature Protection → Environmental Education

Environmental education = important part of the process of nature conservation

Daphne environmental activities

Integral part of each PROJECT

Non-project education activities (Offer for schools)

• Indoor interactive educational programmes
• Outdoor environmental programmes, excursions
• Special residential programme/trip for elementary schools (Banská Štiavnica)
• Environmental education trainings, seminars for teachers
• Publications – methodological materials, education tools
Target group:
• Infant schools
• Primary schools
• High schools
• University students
• Teachers
• Public

Aim:
• True discovery, understanding, adventure and personal experience → create/improve relationship to nature → change attitudes, behaviour
• Popularization of science = excitement, knowledge, adventure
• Learning as a pleasure
• Self development – getting a better understanding of who I am, where I am living, how I am living, what kind of relationships I have with others/with my surroundings, what impact I have....
Present Projects – LIFE+

Restoration of Endemic Pannonic Salt Marshes and Sand Dunes in Southern Slovakia

• Conservation of priority habitats, strengthening the Natura 2000 network
• Main threats: ploughing and abandonment of farming → succession by shrubs, invasive species

Activities are focused on:
• Active protection → restoration management of salt marshes and sand dunes (mowing, pasturing, improving hydrological condition...)
• Increasing awareness about the value of these ecosystems – target group: public, stakeholders, professional, schools – primary, high school, university

Schools
• Environmental programmes – special interactive indoor eco-programmes, outdoor eco-programmes – excursions)
• Seminars for teachers from local region
• Publications, identification keys
Present Projects – LIFE+

Restoration of NATURA 2000 sites in cross-border Bratislava capital region / NATURA 2000 BA

• Natura 2000 sites near Bratislava
• Habitats: xerotherms, forest (floodplain, oak-beach), wetlands, river floodplain
• Main threats: abandonment of management, tourists
• Active protection ➔ preparation of management and restoration of non-forest and forest habitats (cutting shrubs, eliminating of invasive species, restoration of pasturing, improving hydrological cycle...)
• Increasing awareness --> public, schools, tourists, stakeholders

**Schools** → teacher, children (Primary schools)
• Special interactive indoor eco-programmes, outdoor eco-programmes – excursions
• Publications, materials
Outdoor programmes

- Nature = life book
- Discovering
- Observing
- Touching the nature
- Perceiving nature with all the senses
- Knowledges through personal experience
- Adventure

„Expedition“ for class

- Preparation, study
- Research, field work
- Determination
- Results, evaluation

Type of activities

- Research – discovering
- Games
- Sensory activities
- Physical activities
- Art
Expedition – preparation for research

Understand the task

Be prepared

What kind of habitats are we going to study

Equipment
Expedition – sampling

- Life in ecosystems
- Invertebrates -> easy to catch (water, soil, forest...)
- Catching -> Be a predator
- Success -> Excitement -> Happiness -> Motivation
- Out of comfort zone
Research - Invertebrate biomonitoring

Studying

Identify keys

Discovering

Observing

Water invertebrate – indicators of water quality
Research - chemical analysis of water

Chemical box

- Movable laboratory
- Young scientists
- Application of knowledges from class
- Precision
- Water pollution
Experiments

Simple experiments

- Easy to realise in the field
- Explicit demonstration of processes
- Why?
- Better understanding of processes and properties
- Wetland functions, water surface tension
Games

- Ecological games → population dynamics, predator-prey relationships, invasive species....
- To relax, to move, to switch concentration, to have a fun
- Understanding processes
Touching nature with senses

- Animals without eyes
- Is a handicap always a handicap?
- Smell as a determination tool
- Touch experience -> body experience, memory of body
Landart
Grasslands

World of grasslands and pastures

- Excursions, field trips
- Using existing educational pathway -> interactive tables and elements

To understand:

- Why are grasslands valuable
- High biodiversity of grasslands (Orchids program)
- Threats and protection
Salt marshes and sand dunes

Hidden treasure

- Southern part of Slovakia (Podunajsko region)
- Excursions, field trips

Focus on

- Biodiversity of salt marshes and sand dunes
- Natura 2000 sites
- Endangered species
- Biodiversity loss
Forest

Forest life

- Discovering life
- Biodiversity
- Life of a tree
- A dead tree is full of life
- Forest beasts
- Observation
Forests

Forest spirit

- Deeper experience
- Sensory experience
- Physical experience
- Confirmation knowledges throughout games and activities
Wetlands, peatlands, bogs

Wet adventure

- Discovering wet ecosystems
- Water beast
- Adventure
- Out of comfort zone
Wetlands, peatlands, bogs

Beauty of hydrobiology

- Observing
- Studying
- Determination
- Young scientists
Streams

Life of a river

- Similarities and differences between static waters (lentic ecosystems – ponds, lakes, swamps, marshes) and flowing waters (lotic ecosystems – rivers, brooks)
- Hydrobiology
- Biomonitoring -> water pollution
- Adventure
Back to prehistoric world

- Natura 2000 site - SCI Devinska Kobyla
- Sandberg (Bratislava) = famous paleontological locality, sandstones (more than 300 fossils from - The Cenozoic Era)
- Threats: erosion, non-disciplined tourists, ignoring of signage, pilferage, destroying of fossils, lack of knowledge among public about value of this place
Paleontology

Back to prehistoric world – Educational program with excursion

- History of life on the Earth, species loss
- Process of fossilisation
- Young palaeontologist ➔ Find your fossil in a sand (cast from gypsum), determination
- Art
LIVING TEXTBOOK

Residential Programme
• Special week education programme
• For primary schools
• In UNESCO city Banská Štiavnica
• Experience-based learning
• Indoor & Outdoor activities
• Activities focused on children learning as individuals and getting them to share their experience
• Special groups – journeyman, novice
• LARP (Live Action Role Playing Game)
LIVING TEXTBOOK

ALCHEMIST GROUP

Geology

Fire

Metal processing
LIVING SCHOOL BOOK

HERBWOMAN GROUP

Observation
Coordination

Cooking
Tradition
Art
LIVING TEXTBOOK – Final day - LARP

LARP – Live Action Role Playing
Test your skills
Various tasks

Various stands

Mystery
Team work – sharing knowledges
LIVING TEXTBOOK – Final day - Celebration

Preparation for celebration

Building a tent

Cooking
LIVING TEXTBOOK – Final day - Celebration

Presentation by each team

Presentation by each „workshop“

Celebration

Evaluation
Thanks for your attention

barbara@daphne.sk www.daphne.sk