Project Day „Life along the River"

July, 19th in 2011 at Dürrröhrsdorf-Dittersbach

Cooperation of LfULG and LANU within the INTERREG IV B Project „LABEL" and the Ziel3/ Cíl3 Project „Elbe River"

Organizer:

R. Herold, M. Grafe, Saxon Flood Center (Landeshochwasserzentrum, LHWZ)

K. Schöne, Saxon Regional Conservation Foundation (Landesstiftung Natur und Umwelt, LANU)

F. Kissauer, National Park Centre "Sächsische Schweiz" (NationalparkZentrum, NLPZ)

The project day was developed and implemented as a cooperation of the Saxon Regional Conservation Foundation within the framework of the EU project "Elbe River" and the Saxon Flood Center within the framework of EU project "LABEL". In focus of this project

day were the biodiversity in the river Wesenitz and the causes for floods. This report mainly refers to the flood module.

Participants in this event were 36 children of ages 6 to 10 years of the primary school at municipality Dürrröhrsdorf-Dittersbach. The children were divided into four groups of nine children. While two groups lead biological and chemical investigations, the other two groups were engaged in the flood module. The handover took place in the rotation system and proved to be very good for this project day.

The flood module consisted of two different stations. The first station informed to different types of precipitation and its effects on the incidence of flooding. It also includes an experiment to infiltration and storage of rain water at four different land use types. The effect of different rain events was explained with a watering can. The soil was irrigated with the same amount of water, once with and once without sprinkler. In the experiment with sprinkler a good infiltration capacity of the soils was to be observed, because the amount of water was spread over a longer period. In the experiment without sprinkler the soil did not have the time to take all the water of the watering can. Large puddles are formed and the water flowed at the surface due to the slope. This surface water fast passes into the river or stream and leads to flooding.
The second experiment at this station was another model: vessels were presented with different soils and different land use. On all four vessels, the same amount of water was poured. It could be observed by the children, that the loose forest soil is best and quickest to take the amount of water. Cropping soil and grassland took some time and in the sealed area it quickly came to the "overflow".

At the second station, the children studied the relationships between river structure and flow velocity and their impact of flooding the river environment. On a slightly inclined surface once a naturally curvy extensive river system has been modeled in the ground by the children, with bridges and houses made of earth and wood. It was stopped the time, how long the water takes for the way and watched whether there were floods. Then it was explained that the humans requires space for settlements and roads and therefore constrains the river in a narrow bed. The children now modeled a straightened river into the ground and watched that the water is much faster. Because of the amount of water floods occurred and destroyed the modeled houses if they were too close to the river. Based on these observations finally the houses were built on a new, remote location or dikes were built around the model homes by the children.

A third station to technical flood control was developed by the cooperation partners but was not used on this project day, because the project area was at a natural part of river Wesenitz.

Conclusion:

The stations were designed in a way that the children could experiment independently with guidance of the supervisor. As a result, they were thrilled with the topic and even built their own ideas in the experiments (dikes, bridges, houses). The complex system of flood generation was provided child-friendly and easy to understand as a result of the kind of experimentation and evaluation at each station as well as an overall evaluation at the end of the project day. Advantageously was, that the municipality Dürrröhrsdorf-Dittersbach was flood affected in August 2010 (Wesenitz River) and so each child had own experiences with flooded homes and streets.

Due to the large number of participants (36 children, but only 20 were previously registered), it occurred sporadically, that children were not busy with experiments and so the interest waned. To integrate these children actively into the action of the group was a problem, which was not easy to solve due to the group size. That's why a group size of around 6 children is recommended. Additional planned games could not be carried out by time problems. Therefore, good planning and the exact number of participants are necessary for an active work with all children.

For future project days one adviser should be available for each individual station. Since this often will not be possible, operating procedures for children have been created for each station. This requires a personal responsibility of the children. Also explanation sheets were developed on the various aspects of floods (river structure, technical flood protection, precipitation, infiltration) in order to get the technical background to flood generation closer to the advisers.

Station "Precipitation and Infiltration"

Model with vessels and different soils

Experiment with a watering can to simulate moderate and heavy rain (thunderstorm)

Station "River Structure and Flow Velocity"

Modeling of several river systems with bridges and houses

Station "Biodiversity"

Study of fauna in the river Wesenitz