

Environmental History in dialogue with river ecology River trajectories and river management - What can we learn from historical studies?

29. Minisymposium des Zentrums für Umweltgeschichte

Didier Pont

Director of Research

Hydrosystems and Bioprocesses Research Unit, Cemagref – Science, Water & Land Management, Paris (Anthony) FR

Abstract:

Due to the constant fluxes of water, sediment, and chemical compounds, rivers are one of the most open ecosystems of the earth. They often react on a short time scale to changes of human activities within the whole catchment (land use) or within the floodplain and/or the river bed itself. The ways by which such co-evolving systems of humans and nature can react are complex and unexpected responses are the rule.

From a theoretical point of view, several concepts have been used to account for the evolution of such “anthroposystems” on both, short and large time scales: successional-driven system (toward a climactic stage), habitat-templet theory, resilience or panarchy to name some of the most important. Behind these different concepts, at least two questions are addressed:

- To which point can the evolution of a river system be considered as dominated by stochastic or deterministic processes.
- To which point is this evolution controlled by endogenous factors or by external driving forces?

From an applied, societal-oriented point of view, European environmental laws such as the Water Framework Directive (WFD) aim at improving the ecological status of rivers. One basic principle of the Directive is that in the absence of any human disturbance, each river stretch would reach a “reference condition” which has to be considered as a target for restoration. Depending of countries, this reference condition status refers mainly to a “pristine” state, i.e. the situation prevailing historically before the industrial revolution, or to “natural-like” present rivers.

The aim of the presentation is to highlight the way by which historical studies on rivers and fish communities can be fruitful for the establishment of future River Basin Management Plans with three examples:

- (1) the long-term evolution of the Drôme river (South-East French Alps) and the interactions between landscape use and climatic conditions change,
- (2) the use of historical information to reconstitute the previous distribution of long migratory fish species,
- (3) an attempt to reconstruct the fish species communities prevailing in the Rhône catchment one century ago by using statistical modelling techniques.

Kontakt: umweltgeschichte@uni-klu.ac.at

Ort: IFF, 1070 Wien, Schottenfeldgasse 29, 6. Stock, Seminarraum 6

Zeit: Mittwoch, 6. 5. 2009, 18.00 bis 20.00