



Studies Relating to the Dissemination of Information on the River Environment and Environmental Education

Analyzing the Factors That Make the River Environment Difficult to Understand



For any project involving the manipulation of the river environment, the government needs to share information and to reach consensus with local communities. The government is required to be accountable, and communicating expert knowledge and information to citizens in a plain and understandable form is challenging. Much of the natural phenomena of rivers occur beneath the surface, making it difficult for humans to see these events and providing us with few materials to work with for the dissemination of information, either in terms of theories or methods. In this project, we are identifying and analyzing river phenomena that non-scientists find difficult to understand and examining specific techniques that can facilitate to provide this information more effectively.

What river phenomena are difficult to understand and why?

Floods **Time scale**

Visible only when happening

Floods are phenomena that can be seen only in certain seasons or over a limited time frame.

Example: Fluctuation in river discharges, spawning or upstream migration in the life cycle of fish

Large river basin **Spatial scale**

Too large an area to see

The river basin is too large an area for humans to observe it in its entirety. Links between upstream and downstream regions are also difficult to perceive.

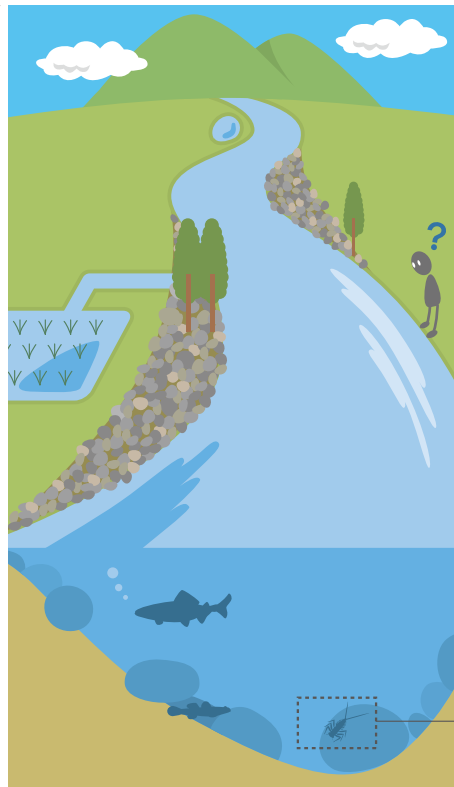
Example: River systems, elevation differences, longitudinal and cross-sectional connections

Varying current **Water**

Variations in current are difficult to see

Complex underwater flow patterns in riffles and pools and flows that erode the riverbed around boulders are difficult to observe.

Example: Flow velocity, flow direction



Tree growth **Time scale**

Slow changes are difficult to perceive

Flood plains affect the growth of trees over a long period of time, making it difficult for humans to perceive change.

Example: Change in topography by sedimentation processes, change in habitat distribution

Small organisms **Spatial scale**

Too small to see

Organisms inhabiting the riverbed are too small to observe.

Example: Fish larvae and juveniles, algae, particulate organic matter, wash load

Underwater **Water**

Difficult to view because of water

Limited visibility of the underwater environment makes it difficult to observe the conditions of the riverbed in detail from land.

Example: Size of riverbed materials, habitat created between gravels

Water quality **Water**

Quality of water is unknown

The condition of water, such as temperature and quality, are difficult to judge visually.

Example: Water temperature, water quality (pH, dissolved oxygen, nutrients)