

Methodology for Aquatic Ecology

1. Aquatic Habitat Assessment

The assessment of habitat quality of aquatic environment is based on the important physical characteristics of the water body (Aquatic stations have been added. The EPA's reference was given for use in habitat assessment.) and the surrounding terrains, particularly the catchment areas of the investigated site. All habitat parameters evaluated are related to the use of aquatic life and are a potential source of limitation of the aquatic environments.

These Studies will be carried out using the EPA's method (Rapid Bioassessment Protocols for Use in Streams and Wadable Rivers: Periphyton, Benthic Macroinvertebrates and Fish" (EPA 841-B-99-002, 1999).

In addition, the "Qualitative Habitat Evaluation Index (QHEI)" (U.S. EPA, 2006) will be used in the studies.

2. Sampling of Aquatic Organisms

Planktonic Studies (Phytoplankton and Zooplankton) and Attached Algae

In order to identify phytoplanktonic and zooplanktonic organisms, a plankton net with a pore size of 55 μm , a diameter of 20 cm and a length of 50 cm will be used. The plankton net will keep horizontally in the direction of the flow rate of the water for 5 minutes and the samples will be taken into 250 cc plastic bottle. In addition, since freshwater algae occupy very different habitats in aquatic environments (on plants and Stones, depending on the sediment at the bottom), samples will be taken by scraping the surfaces of the plants, stones and sediments. Planktonic samples will be fixed by buffering with 4% formaldehyde. The studies will be conducted to investigate the presence of existing species in the stations and will not be used to calculate biological water quality indices.

Benthic Invertebrates

Benthic invertebrate specimens will be collected at the study sites by dredging the stream bed with a Kick net bottom scoop for five minutes. The samples collected, will be stored in 80% alcohol, and will be examined and identified with a binocular microscope in the laboratory.

Fishes

Fishes will be sampled using electro-shockers on the route axis. A half-hour study will be carried out at each sampling station and the number of caught fish samples will be determined according to the species. The caught fish samples will be fixed in formaldehyde in the field and then in alcohol in the laboratory.