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**BEHAVIOUR OF FOUR CYPRINID FISH
SPECIES IN AN ARTIFICIAL CREEK**

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BEHAVIOUR OF FOUR CYPRINID FISH SPECIES IN AN ARTIFICIAL CREEK

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EXECUTIVE SUMMARY

The preferences for different water flow conditions in four cyprinid species were examined in an artificial creek. The creek simulated a riffle-pool sequence with no substrate differences that would influence the fishes' habitat preferences leaving only water depth and water current as factors. The species investigated were Bitterling, Ide, Gudgeon and Minnow.

The experiments showed differences in the use of different parts of the artificial creek by the four species. Bitterling, the most limnophilic species mostly used the low flow pool region of the creek, similar to Ide that also showed only rare explorations in the riffle section of the creek. Minnow and Gudgeon, both grouped as rheophilic species, used the riffle section, with Gudgeon holding station over prolonged periods in the high current areas.

Differences between the species were also obvious regarding the activity pattern during night and day, with the extremes in Gudgeon, mainly active during the dark phase and Ide, with lowered activity during the night.

The four species also showed differences in their social behaviour with a frequency of shoaling behaviour in Minnows and a very low shoaling tendency in Gudgeon. Bitterling and Ide did not form close shoals.

The experiments demonstrated clear differences in the time fish spent in the different sections of the creek and in the activity patterns of the tested species. Under these semi-natural conditions Gudgeon proved to stay in much faster flowing water than the other species, a result not predictable by previous studies. Ide proved to avoid currents, however, these species had the highest critical swimming speed of all four tested species in the previous experiments. In general the semi-natural long term experimental design proved to be useful to get insights in the otherwise nearly unobservable behaviour of stream fish.