

Abstract

One of the key elements of animal social behaviour is the recognition of individuals on the basis of previous experience. This relationship is called familiarity and affects individual's behaviour. We know many examples of familiarity-based behaviour among fish. Many results show that familiarity is advantageous. Familiar individuals are less aggressive, forage more, make more cohesive shoals and grow faster.

We tested the influence of the familiarity on the spatial distribution of juvenile wels catfish *Silurus glanis* from two unfamiliar groups, which were held in separate tanks. In a laboratory experiment was the spatial distribution of individuals monitored in the artificial stream by using passive integrated transponders. Shelters, which were occupied by individuals, were placed in the stream. Two groups of fish were subsequently added into the experiment under conditions of limited or unlimited shelters. These groups came from the same tank (so they were familiar) or from different tanks (so they were unfamiliar).

1080 individuals were used in this experiment and over three million individual fish positions were recorded. We discovered changing levels of activity under different conditions. When we compared activity of original and additional individuals, we measured higher level of activity in an additional group. Higher activity level was found in situation when there were more shelters than individuals. Comparing familiar and unfamiliar group, individuals from unfamiliar group were more active.

Our results suggest that familiarity influences activity of individuals and sharing resources (shelters) among familiar fish. Familiarity could be an important component for explaining spatial distribution, activity level and sheltering behaviour.