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Minutes of the Percis II working group

Early life stages of percid fishes

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The charge of the Workshop was to try and point out those areas of the discussion topic where future work should be directed or those areas where effort should continue to be concentrated. While our discussions were wide-ranging, the following areas were seen to be of the most interest:

What environmental cues are important in controlling dispersal of larval percids?

There was general agreement that measurements of physical parameters including light (total flux and spectral distribution), water clarity (Secchi depth), temperature, pH, O_2, carbonates, conductivity, ammonium and nitrate levels, calcium and other mineral content, wind speed and direction, and rheology at different depths. These measures should be done not only in lakes, but in river and coastal ecosystems as well. Quantification of biological determinants should include population density of larvae, predators and prey. These measures should be correlated with the physical data, as well as age.

What are the ecological, physiological and genetic substrates for larval behaviours such as site fidelity, migration and dispersal?

These studies would concentrate on the sensory systems and behavioural effectors. Physiological studies would determine how each of the relevant environmental parameters are senses and how they alter the physiological state of the animal. Included here would be how this information may result in a behavioural response. For example, newly hatched sturgeon dispersal is partially regulated by negative phototaxis, rheotaxis and geotaxis. How are these sensed and involved in the regulation of swimming? There may also be genetic variability such that dispersal within a population is spread out due to different behavioural thresholds. The significance of cannibalism and predation on 0+ percid behaviour and abundance.

Are there really larval migrations, or are we looking at the effects of predation and mortality?

This will require careful study of larval populations as they move from the littoral zone to deeper waters. Such data would then be correlated with information on the predator and prey populations.

Do the early life stages of percids in rivers differ from those in lake and coastal populations?

In Central Europe, perch are one of the three most common river species, yet little is known about early life stages in river systems. Studies such as those mentioned above should be extended to this ecosystem. From the point of view of fisheries and aquaculture, the working group felt that the following areas were of greatest interest:

How can the information gained in studies such as those mentioned above be used for the benefit of aquaculture to decrease mortality and increase growth rate?

How do community interactions affect young of the year?

Where and when is the most significant mortality occurring in a given year class?

These areas will require continuation and expansion of population studies and data gathering in various ecosystems and the testing of measured environmental variables on cultured populations.

The group adjourned on a positive note, feeling that the study of percids had a bright future and would be of continued importance to the general area of fish ecology, physiology, behaviour and fisheries management.