WILZBACH 2000
Cummins
Summary

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Dear Steve:

Thanks for the tour of sites in the Barnum holdings on Redwood Creek. We have some comments about what we saw and the discussions we had with you concerning assessing the status of salmonid populations in Redwood Creek and its tributaries and shedding light on the factors contributing to the status of the fishery.

The screw trap set up and the data you are collecting is excellent. We strongly recommend that the trap be operated this fall to catch any older fish that may be present, and that the trap be operated again next year. It would seem that a coalition of landowners in the basin all would have a great deal to gain by extending the trapping data record as long as possible. Only with a multi-year record will it begin to be possible to separate the signal (the result of land management practices) from the noise (other variations such as weather and flow years). Such data would provide the best basis for informed decisions about land management designed to enhance salmonid production.

If not already being done, it may be useful to have an outside observer present during processing of fish from the trap at times of peak catches. This in no way reflects on your ability to collect accurate data, but would provide you some protection in having outside corroboration of fish numbers. Such an individual could come from the university community, a state or federal agency, or watershed group. As we discussed, a critical issue for the landowners to resolve is providing full scientific access to data with restrictions retaining ownership and permissions regarding use of the data for publication.

The sites that we looked at on the main stem of Redwood Creek were quite interesting. Both sites were well lighted and dominated by coarse substrates and appeared to support a rich and diverse invertebrate fauna. This fauna likely includes significant populations of organisms, such as baetid mayflies (i. e. Ephemeroptera in the family Baetidae) that are well known to be important food for salmonid fry. These mayflies belong to a functional group of stream invertebrates termed behavioral drifters. The term refers to those invertebrates that have larval (nymphal) stages that enter the drift on a regular diurnal basis with peaks in abundance in the water column at dusk and dawn and generally higher numbers drifting at night than during the

daylight hours. This reliable food source that appears in abundance in the drift at predictable times each 24 hours allows for a regular feeding strategy for salmonid fry that translates into greater growth.

These open sites have at present (late July) only sparse coverage by filamentous algae. This suggests that nutrients (nitrogen and phosphorous) are most likely in generally low concentrations. The algal community seems to be dominated by single cell and small colony green algae which would serve as an excellent food resource for the invertebrate types termed scrapers, who acquire their food by scraping the attached algae loose and into their mouths. If not already being done, it would be worth while having some water samples analyzed for nutrient concentrations (nitrate and orthophosphate) just to set a general figure for the main stem.

The tributary stream (Miners Creek) that we looked at was also quite interesting. Again a diverse invertebrate fauna was present, with a number of forms that depend on terrestrial plant litter from the riparian zone (especially hardwoods) as a food source. These invertebrates belong to a group termed shredders because of the effect their feeding has on the leaf litter. Skeletonized red alder leaves were quite evident in the shaded section of the channel.

If possible, it would be advantageous to bring out an HSU graduate class in stream ecology to the sites so that they could observe fish and make some collections of invertebrates. The work up of these samples would be a start toward producing a taxonomic list that could be compared to material previously collected by the Park in the 70s. A copy of this list and any comments about a comparison with historical information would be provided to you. Another possibility would be to set some drift nets to collect water column-transported invertebrates for the students to analyze to see how dominant the behavioral drifter group is in the system.

Thanks again for showing us around. We will be contacting you about the possibility of having the graduate stream ecology class gather some data on the sites.

Regards,

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