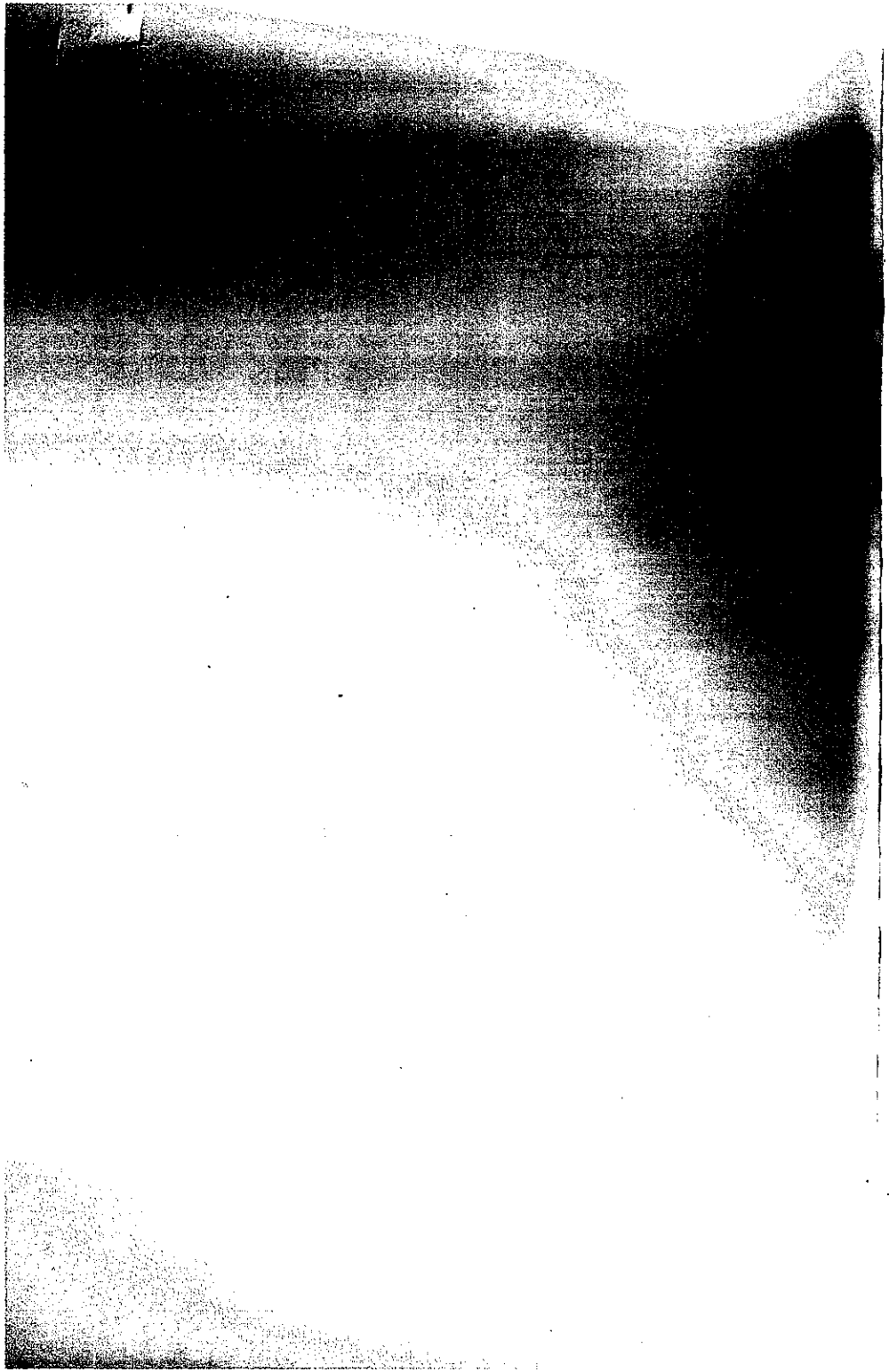

Twenty-fifth Annual Conference

25 Years and Growing: What Lies Ahead for Fisheries

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of less than 60 m in close proximity to the bottom (within 5 m). Overall fish biomass was very low, as would be expected from an extremely oligotrophic lake such as Tahoe. Fish were strongly associated with specific substrates; overall biomass was highest in littoral areas of large boulders. In some cases, littoral biomass was up to 10 times that in profundal or pelagic regions.

Campbell, Elizabeth A., and **Peter B. Moyle**, Department of Wildlife and Fisheries Biology, University of California, Davis, (916) 752-0205). SUMMER HABITAT SELECTION BY SPRING-RUN CHINOOK SALMON IN THE SACRAMENTO RIVER DRAINAGE.

Spring-run chinook salmon (Oncorhynchus tshawytscha) have an unusual life history pattern in that they move into their spawning streams in the spring, where they hold all summer in pools and then spawn in the fall. We studied the selection of holding habitat by adult spring-run chinook salmon in Butte Creek (Butte County). Chinook salmon tended to hold in larger, deeper pools; number of chinook salmon present was positively correlated with pool length and maximum depth. These results correspond with those from earlier work conducted in Deer and Mill Creeks (Tehama County). However, that work indicated that the fish were less likely to be found in areas of high human use and that their preferred mean water velocity was 60-80 cm/sec. In contrast, certain portions of Butte Creek are subject to heavy human use and this generally did not affect the number of chinook salmon present. Additionally, mean pool water velocity ranged from -2 - 36 cm/sec in Butte Creek and was poorly correlated with the number of chinook salmon present.

Decker, Lynn M., Pacific Southwest Forest and Range Experiment Station, Berkeley, California, (415) 486-3373. CONDITION INDICES AS INDICATORS OF STRESS IN STREAM FISH COMMUNITIES.

Currently there are no widely accepted methods of detecting cumulative watershed effects (CWE) on stream fish. An autopsy based fish health/assessment is tested as a potential tool for detecting CWE on fish. Previously developed and tested for use in hatcheries, this assessment technique provides an indication of departure from "normal" for growth, bioenergetic state, stress, general homeostatic state, and presence of infection. Fish were sampled over a two year period in 41 forested watersheds exhibiting a range of land use histories. Results and evaluation of the method are presented.

Erman, Nancy A., University of California, Berkeley, (415) 642-5285). WHAT AQUATIC INVERTEBRATES CAN TELL US ABOUT STREAMS; OR WHY FISHERIES BIOLOGISTS MUST CONQUER THEIR FEAR OF BUGS.

For over half a century aquatic ecologists have known that changes in aquatic systems are reflected in the invertebrate community. Studies in the past 30 years have refined the use of aquatic invertebrates as indicators of land use and in-stream changes. Such impacts as sedimentation, fluctuations of water levels, and chemical pollution have pronounced, predictable, measurable, and often immediate effects on aquatic invertebrates. Many fishery biologists are not using this rich source of information about stream habitats, or, more surprisingly, do not recognize that changes in invertebrate populations may affect fish populations.

Aquatic insects are not strictly aquatic and are dependent, during terrestrial phases of their life cycles, on riparian or semi-aquatic habitats. In both terrestrial and aquatic stages these organisms compose a major food supply for higher aquatic and terrestrial animals.

An analysis of run-of-river hydroelectric PURPA projects in California shows that not one project approved for construction has considered impacts on the aquatic invertebrate community. This example is one of many and has clear and unfortunate implications for the future of aquatic habitats and biodiversity in California.

Fisher, Robert N., and **Glenn J. Kerns**, University of California, Davis, (916) 752-1112. THE SANTA ANA RIVER, TROUBLED BUT NOT TRASHED.

The Santa Ana River was surveyed for fish during the spring and summer 1987. The surveys were conducted between the Pacific Ocean and Prado Dam, in Orange and Riverside counties, California. The river was divided into 25 sections delineated by bridge crossings. Water was present in 22 of the 25 sections at the time of the survey, and fish were present in all sections that contained water. A total of seventeen fish species were recorded from the river, from two to thirteen species being present per river section. Three native species, Catostomus santaanae, Fundulus parvipinnis, and Mugil cephalus, were present during the surveys. Catostomus santaanae is important because it is a species of special concern in California and was found in large numbers at the study site. Two introduced Central Valley species, Orthodon microlepidotus and Cottus asper, were recorded from the river for the first time.