京都大学防災研究所年報概要集 第 50 号 平成 19 年 4 月
Abstracts for Annuals of Disas. Prev. Res. Inst., Kyoto Univ., No. 50, 2007

増水低減過程における 微細土砂･粒状有機物･底生動物の河床分布動態

竹門康弘・今井義仁*・高津文人**・永田俊***・池淵周一

* 京都大学大学院工学研究科
** 独立行政法人科学技術振興機構
**** 京都大学生態学研究センター

要 旨

流況変動による撹乱の作用が生息場に及ぼす影響について調べるため，増水の低減過程において堆積物の分布変化を調べた。その結果，平水時には淵尻の瀬頭および淵頭の蛇行内側でそれぞれ他生性有機物（陸域から供給される落葉落枝など）と自生性有機物（河川で生産される藻類など）が多く堆積していた。また，小規模増水とその低減過程において堆積粒状有機物量の経時変化を調べたところ，淵頭の蛇行内側では常に有機物が多く堆積していたのに対して，淵尻の瀬頭では増水により有機物が一度流出し，減水後再び堆積する現象が確認された。したがって，淵尻の瀬頭では流況変動による侵食堆積を受けやすく，ここでは餌資源の供給や再配置，河床へのDO供給が生じやすいと考えられた。

キーワード：撹乱，淵尻の瀬頭，他生性有機物，自生性有機物，堆積粒状有機物

Redistribution Patterns of Benthic Particulate Organic Matter on the Riverbed through a Descending Period after Rising

Yasuhiro TAKEMON, Yoshihito IMAI*, Ayato KOZU**, Toshi NAGATA*** and Shuichi IKEBUCHI

*Graduate School of Engineering, Kyoto University
**Japan Science and Technology Agency
***Center for Ecological Research, Kyoto University

Synopsis

We examined role of spates and pool-riffle structure for redistribution of benthic particulate organic matter (BPOM) on the riverbed in the upper reaches of the Kamo River without reservoir dams upstream, located in Kyoto city, Japan. Quantity and quality of BPOM is a good environmental indicator for river health and thus we investigated spatial distribution of BPOM on the riverbed and its origin by measuring the stable isotope of carbon and nitrogen using each BPOM samples. The field sampling was conducted before, during and after a spate. In a low water-level condition before a spate, BPOM concentrated at the inner side of meander and in the upper side of pool. The BPOM deposited there was composed more of allochtonous organic matter originated to terrestrial plants, whereas that deposited in the lower side of pool was composed more of autochtonous organic matter originated to algae. Once a spate came, the distribution pattern broke down into a uniform one, and then, during a descending period after rising, the allochtonous BPOM increased again in the upper side of pool and the autochtonous BPOM in the lower side of pool. Repetition of this redistribution process of BPOM through disturbance may have an ecological function for habitat conditioning essential for inhabitants of the riverbed such as benthic animals.

Keywords: pool-riffle structure, sandy bar, benthic particulate organic matter, ecosystem function, allochtonous, autochtonous