Activities for Practical Environmental Management of Rivers

FUKUHAMA Masaya,Research Coordinator for Water Environment
HATTORI Atsushi (Dr. Eng.), Head
NAKAMURA Keigo(Dr. Eng.), Senior Researcher
SUZUKI Hiroyuki, Researcher
MAEDA Yoshiyuki (Dr. Agr.), Guest Research Engineer
KAI Takashi, Guest Research Engineer
River Division, River Department

Key words: River environment, environmental management, environmental target

1. Introduction

Building a society that lives in harmony with nature by conserving biodiversity is a goal of social infrastructure. For rivers, this goal should be achieved through environmental management, but practical environmental management has not been established in many river systems due mainly to the difficulty of setting environmental targets. To improve the environmental management of rivers, we try to provide insight into solving this issue based on a review and discussion of practical activities conducted to date. [1)]

2. Environmental management under basic principles

In environmental management, it is desirable to set specific targets and manage the environment toward those targets. However, any attempt to set environmental targets is inevitably accompanied by difficulties in building consensus and converting qualitative targets into practice, even if established. These issues already have been discussed in the River Environmental Target Review Committee, but no conclusion has been reached.

Therefore, the authors are proposing an approach to setting "basic principles," without environmental targets, and applying them to practical environmental management. Considering that "basic principles" for environmental management could more easily obtain a consensus and could be commonly applied to all rivers if defined as "preserving in principle the existing environment and possibly improving it," we discussed specific measures as follows in accordance with this approach.

3. Practical measures for environmental management

As a specific measure of environmental management under the "basic principles," we propose a method of conservation in which areas with a relatively good environment are designated as "good sites" in each longitudinal river category (e.g. "sub-segment"), while the environments of other sites in the same segment are improved in relation to the "good sites." The advantage of designating "good sites" is that the river managers can feel and touch the site because it actually exists. Furthermore, as shown in the figure, we prepared three sheets necessary for selecting "good sites" and environmental management activities. Thus, we are devising measures that enable us to "comprehend / assess the conditions" of a river environment in a quantitative and easy-to-understand manner using already existing data. We are still improving this method and identifying issues by applying it to some rivers. This method is already applicable in part to actual operations, but there are issues to solve in the future, including how to designate "good sites" in rivers with severely deteriorated environments, establish appropriate habitat indicators for each segment, and devise appropriate scales for that purpose.

Furthermore, we are constructing a database system for enhancing our efficiency to "comprehend and assess conditions" of river environments. Utilizing this system, we aim to increase the findings useful for the environmental management of rivers and to be able to refer to cases in other rivers with similar environments.

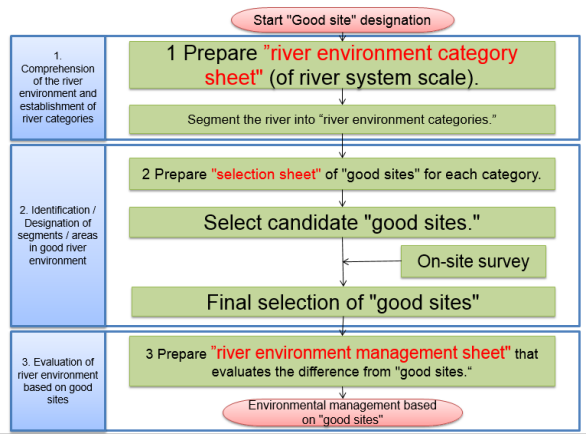

Figure. Selection of Good Sites and Sheets Required

[Reference]

1) NAKAMURA Keigo, HATTORI Atsushi, FUKUHAMA Masaya: "Approaches and Problems for Practical River Environment Management" Civil Engineering Journal, Vol. 57(2), pp. 10-13, 2015