

PREFACE

In recent years, beach erosion has become severe, and beaches with white sand and pine trees, characteristic of the natural coast of Japan, are rapidly disappearing. When visiting a coast, of which we have many fond memories, after a long interval, we find that much of it has been covered with concrete blocks, and the coast we remember is gone. However, even if an ordinary person thinks about why this happened, he does not know who to ask for the answer, and even if he asks the administrator of the coast for the reason, he cannot always receive a satisfactory reply.

The beach erosion problem, to be sure, can be classified as a sophisticated and difficult issue from the scientific point of view. The coast is the common property of the people, and therefore, everyone has a right to know why the coast has changed the way it has. The coastal areas suffering severe beach erosion are not limited to only some regions, and there are a number of eroding coasts in Japan. Taking this condition seriously into account, beach erosion is not a problem only for engineers, but a problem to be tackled by all people.

First, from among the number of examples of worsening beach erosion nationwide, some typical examples are selected and classified into several patterns. Then, the details of these classified examples are described. Second, concerning the possibility of predicting topographic changes, several predictive models, which have mainly been developed by this author and co-workers and are useful for applications in practical engineering, are introduced along with their results. These discussions may not differ from ordinary discussions and lack originality, except for the inclusion of many actual examples.

When we investigate the issue of beach erosion in depth, we soon arrive at a very important conclusion. Apart from the superficial technological discussion, almost all beach erosion originates from the

many anthropogenic activities that we Japanese have carried out extensively throughout our coastal zone during the last 30 to 40 years. Accordingly, even if measures are taken to solve the superficial problems, the basic problems will not be solved at all, and actually many become worse.

Under the strong sector-by-sector administration system in Japan, the administration tends to think that even if some scientific problem proves to be an obstacle to a once-determined plan, they should stick obstinately to the previous decision, instead of considering that fundamental issues must be learned from events that have occurred, and the points to be reflected upon must be recognized to prevent future recurrences of problems. This behavior has been a sturdy barrier in solving fundamental issues.

Here, we consider these fundamental issues to really improve the condition of the coast in Japan. Many administrators involved with coastal work must be directed toward the common goal, although they will each take charge of their own work. For this purpose, information must be made available to the public to change the sector-by-sector system and to accelerate cooperative work among several sectors. In the text, a number of figures and photographs have been used and detailed discussion was avoided, while keeping clarity in mind.

Takaaki Uda

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Executive Director
Public Works Research Center

and

Visiting Professor
Department of Oceanic Architecture and Engineering
College of Science and Technology
Nihon University