

Research Trends and Results

A New Survey Technique for Solving the Roles of Sand of Sea Shore - Trench survey -

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1. Why is trench survey in the coast a new approach?

In accordance with the progress of numerical simulation in the coast field, it has become possible to reproduce the topography of the coast consisting of multiple grain sizes that meet the characteristics of Japan's coast as well as changes in bed material. At present, reproduction is possible up to the average water level but is expected to cover seashore (land) in the future. It is, however, essential to grasp depositional environment from beach to dune, while grasp of actual area conditions, which is available as verification material, is never sufficient. To grasp such actual condition, surveys for obtaining as many samples as possible have been mainly conducted, such as boring and pit excavation to obtain point information and survey on the surface of bed material. With such surveys, it is difficult to grasp the history of deposition (growth of seashore). Therefore, the Coast Division has been conducting trench surveys in order to solve deposition phenomenon (Figure 1).

2. Findings from trench survey (Figure 2)

Since results of the survey show that high shores are formed near the river mouth where there is a lot of sand and that sand is also deposited up to the back (mountain side) in the area where drift sand is deposited due to the increase in the ratio of sand, it was found that the height of the ground in the back depends on the amount of sand supply.¹⁾

Moreover, it has become possible to grasp the cross section in case of the maximum erosion, which provides significant information for maintenance of coastline.

In Japan, many of the shores consist of gravel and balance of sand and gravel creates "characteristics of coast." The Coast Division will continue to identify information that serves to solve the mechanism of formation of "characteristics of coast" through trench survey.

[Reference]

- 1) Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 70, No.2, pp. I_681-1_685
https://www.jstage.jst.go.jp/article/kaigan/70/2/70_I_681/_article/-char/ja/



Figure 1. Scene of Trench Survey

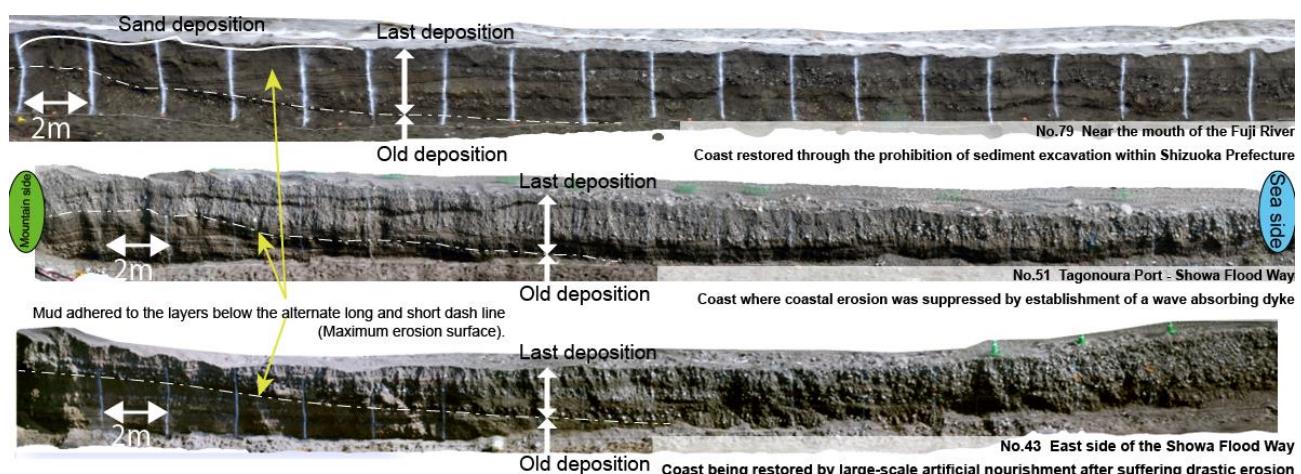


Figure 2. Serial Images of Cross Sections Created with Three-dimensional Space Model Software