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Effect of water level variation on the channel width in the river mouth

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River flow, sediment transport and channel width influence one another, and channel width generally changes toward the equilibrium state in sediment transport. When the tidal range is large with the water level fluctuating periodically, the sediment transport capacity of the river channel increases in the river mouth due to the drawdown effect during low tide, whereas the backwater effect becomes dominant during high tide. Therefore, the channel width is determined by the flow discharge during low tide and tends to be wider toward the mouth. On the other hand, when the channel in the river mouth is submerged during the rainy season in tropical regions, the channel width is defined by the flow discharge during the transition period from the rainy season to the dry season. This presentation explains a mechanism that determines the channel width in the river mouth by taking rivers in Japan and Southeast Asia as examples.