

Primary Production Structure of Coastal Ecosystems along the Coast of the Shikoku Island in Aki Nada, Japan

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The spatial structure of coastal ecosystems and their primary production structure were investigated along the coast of the Shikoku Island near Matsuyama, Ehime, Japan. There are two shallow sand banks which were located at the northern and middle parts of the present waters faced with a mixing area of a strait in the west direction. The southern part of the present waters is relatively shallow and composed of silt and clay bottom, on the surface of which contained high concentration of chlorophyll a (20-25 mg/m², 15m in depth) derived from benthic diatoms through a year. The two sand banks also contained high concentrations of chlorophyll a on their surfaces (9mg/m³). From July to September 2000, the surface layer, which is the upper layer of stratified area around the sand banks, also contained a high concentration of chlorophyll a. Moreover, the water temperature of the lower layer of the stratified area was identical to that of the well-mixed area of a strait. The mechanism of the curious phenomenon cannot be explained at the present. At the southern part of the present waters, the stratification of water temperature was also observed in the summer but the high concentration layer of chlorophyll a could not be found.