

Spatial distribution of meso and macro plastic in surface sediments at Kii Channel, Southwest Japan.

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The plastic pollution in marine environment expands to global scale. Most studies focused of microplastics with size of <5 mm which is likely absorb by chemical substances and influenced to ecosystem. The information of transport process and quantity of meso (5~25 mm) and macro(>25 mm) plastics provide to understand the formation process of secondary microplastics derived from the breakdown of large plastic debris. Therefore, this study forced on plastics with size of >5 mm in surface sediments and researched in Kii Channel, December in 2021. Sediment samples collected by grab sampler were washed used by 5 mm size mesh on the ship and plastics were picked up from the residue. We collected plastics with size of 1~20 cm in 13 sites. Sites collected plastics were mainly located in the eastern area from the offshore of Yoshino River mouth. Although numbers of collected plastic in each site were mainly 1~3 pieces, the site located near the Yoshino River mouth collected 13 pieces. The shapes of collected plastics were mainly films, secondary lines. It the site near the Yoshino River mouth, two fiber aggregates were collected. We will discuss the depositional and formation process of plastics by chemical analyze results and comparing with sediment properties.

Keywords: meso and macro plastics, surface sediment, Kii Channel