

The Status of Ecological Environment and Protect Strategy in Sanya Bay

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Sanya Bay is located in the southmost of Hannai Island(109° 20'-109° 30'E, 18° 11'-18° 18'), with a water area of 90km², it is a typical tropic bay in China.

The seasonal physiochemical and biological investigation were conducted from 1998 to 1999 and in April 2000 in Sanya Bay. It is suggested that the water-related environment in Sanya Bay is in good condition. The level of dissolved oxygen, nitrogen, phosphorus and heavy metals are within the first class of National Seawater Quality Standards. The annual mean value of Chlorophyll of 0.93mg.m⁻³ and primary productivity of phytoplankton of 440.8mgCm⁻²d⁻¹ were found respectively in the waters in this area, which had shown a significant correlation with inorganic nitrogen. A mean new productivity of 144.6 mgCm⁻²d⁻¹ was recorded in summer.

Sanya Bay is rich in natural resource, with 235 species of phytoplankton and 129 species of zooplankton sampled in the survey. The annual mean abundance of phytoplankton and zooplankton were 1564 × 10⁴cell.m⁻³ and 121 ind.m⁻³ respectively, a annual mean biomass of zooplankton of 129mg.m⁻³ were obtained. A total of 243 species of fish were sampled in the survey including high economic species such as *Clupanodon punctatus*, *Stloephorus sp.*, *Saurida undoquamis*, *Trachinocephalus myops*, *Gerres filamentosus*, *Sparus berola*, *Upeneus subvittataus*, *Trichiurus haumela* and *Inegocia guttatus*.

Sanya Bay encompasses a high diversity of natural habitats, ranging from coral reefs, rocky, sandy shores, mudflats and mangroves. 384 species of benthos in 121 families were founded by mud sampling and trawling. The average biomass of benthic organisms was 11.585g.m⁻³, with a density of habitat of 31ind.m⁻³. Mollusca was the dominant group, followed by Crustaceans; Coelenterate is in the lowest biomass. There were 126 species from 48 families intertidal organisms were collected by framing, with a mean annual biomass of 644.7g.m⁻³ and average density of habitat of 816ind.m⁻³ respectively. The highest biomass of 1673.5g.m⁻³ was collected in coral reef region, while the highest density of habitat 1219ind.m⁻³ was in mangrove region. The coastline is characterized by coral reefs that accounts for 30% of the total coastline length in Sanya Bay, so coral reefs is a key ecosystem and had become a important region for protecting the marine resources and biodiversity. The coral reefs have been seriously degraded since 60's in Sanya Bay. We should pay much attention to protect the diverse resources to keep the biological balance.