



Causes of Fish Kills in Penang, Malaysia in year 2019, in conjunction to Typhoon Lekima

Aileen Tan S.H.¹; Sim Yee K.¹; Norlaila binti M.Z.¹; Nooraini binti I.¹;
Masturah binti A.¹; Nur Aqilah binti M.D.¹; Nithiyaa N.¹ ; Noraisyah binti
A.²

1-Centre for Marine & Coastal Studies, Universiti Sains Malaysia, 11800 Penang, Malaysia.

2-Department of Fisheries Malaysia, Penang State Fisheries Office, Jalan Akuarium, Kampung Gelugor, 11700 Gelugor, Penang, Malaysia.

*Corresponding author's email: aileen@usm.my

Abstract

Mass fish mortalities was recorded, a day after the Typhoon Lekima passed the coastal areas at Penang, Malaysia in August 2019, which caused huge losses among the fish culturists. Being within the vicinity of a National Park, one would think that the water quality around a protected area should be of pristine quality but obviously it is not. Scientists and researchers from both Universiti Sains Malaysia and Department of Fisheries, with the help from NaFish have conducted several test on the water and fish. The dead cultured fishes were mainly groupers, which prefer to stay at the bottom of the nets. The storm created by Typhoon Lekima had churned up all sediments in the shallow coastal areas. This had caused additional sediment and nutrients in the ecosystem, leading to algal bloom and also depletion of oxygen levels in the water, causing mass fish mortality. Water quality monitoring (physical, chemical and biological) was conducted along the coastal areas as well as extending towards the sea and at different depth to further understand the causes of fish kills over a period of three weeks after the incident. Sampling was done 3-days, 11-days and 26 days after the typhoon, Results had shown extremely low dissolved oxygen and high concentrations of nitrate, nitrite and chlorophyll a recorded after the typhoon. However, water quality slowly became normal and within the Malaysian Marine Water Quality Criteria & Standard for Class 2- Marine Life, Fisheries, Coral Reefs, Recreational & Mariculture.

Keywords: Mass mortality of fish, hypoxia, eutrophication, algal bloom