

CONTENT

I PELAGIC NITROGEN CYCLING

1 Primary Productivity and Pelagic Nitrogen Cycling	3
2 Pelagic Primary Production in Nearshore Waters	33
3 Microfauna in Pelagic Food Chains	59

II BENTHIC NITROGEN CYCLING

4 Benthic Primary Production and Oxygen Profiles	69
5 Benthic Nitrogen Fixation	85
6 Amino Acid and Amine Biogeochemistry in Marine Particulate Material and Sediments	125
7 Distributions and Metabolism of Quaternary Amines in Marine Sediments	143
8 Benthic Mineralization and Bacterial Production	175
9 Nitrogen in Benthic Food Chains	191
10 Nitrification in Estuarine and Coastal Marine Sediments	207
11 Nitrate Reduction and Denitrification in Marine Sediments	251
12 Benthic Fauna and Biogeochemical Processes in Marine Sediments: microbial activities and fluxes	275
13 Benthic Fauna and Biogeochemical Processes in Marine Sediments: the role of burrow structures	301

III MODELS OF NITROGEN CYCLING

14 Modelling Benthic Nitrogen Cycling in Temperate Coastal Ecosystems	341
15 Nitrogen Models at the Community Level: plant-animal-microbe interactions	379
16 Nitrogen Biogeochemistry and Modelling of Carmarthen Bay	415
Index	443