

Abstract ID – 1510

Theme 2: Adaptation/mitigation to change in coastal systems

Invited speaker

The 2nd International Symposium on
Integrated Coastal Zone Management
Arendal, Norway
3 – 7 July 2011

Variable nutrient pathways through the microbial part of the pelagic food web – an insight relevant to management issues?

Tron Frede Thingstad

University of Bergen
Postboks 7800
5020 BERGEN
Norway

Frede.Thingstad@bio.uib.no

Abstract

The old textbook story was one presenting the concept of a linear nutrient-phytoplankton-zooplankton food chain as one able to capture the essence of the lower parts of the pelagic the photic zone food web. Driven by the introduction of new methodologies and their revelation of new taxonomic groups and increasing biological diversity, the emphasis has drifted from this old focus on simplicity, to a focus emphasizing the overwhelming complexity of an ecosystem involving protists, bacteria, archaea and viruses; comprising a large diversity in cell sizes, trophic strategies and gene content. Through this complex microbial food web, there are many alternative pathways from inorganic nutrients to the mesozooplankton level. Much research in this field is best characterized as basic attempts to understand the mechanisms by which ecosystem properties emerges from interactions at the cellular level, but I will argue that this type of knowledge is needed to analyze a large range of applied issues including degradation of oil pollution, duration of phytoplankton blooms, invasion of alien species and survival of pathogens.