

Zonation in waterbodies

Doç. Dr. M. Bora Ergönül

Ecological Zones in Lakes

There are 3 different zones in lakes (like oceans):
pelagic, benthic zones and a **littoral zone**.

Doç. Dr. M. Bora Ergönül

Benthic zone starts from the shoreline and includes whole lake bottom. Pelagic zone refers to the water column that covers the lake (or ocean) which is not related to the bottom. Some researchers use «**limnetic**» for lakes instead of pelagic.

Littoral zone starts from the shoreline and ends where rooted aquatic plants disappear. It is generally characterized by abundant dissolved oxygen (DO), nutrients, water motion, and **high biodiversity**.

Doç. Dr. M. Berra Ergönül

In general organisms living in these particular zones are called **benthos or pelagos**. These terms refer to the all communities living in benthic or pelagic zones, respectively. Benthos mainly includes bottom dwelling invertebrates, while pelagos is dominated by plankton and nekton.

Doc. Dr. M. Berya Ergonül

There is one more zone differing from benthic zone; **profundal zone**. It is the water column (not bottom) where light penetration is very low or absent. The water is usually cold and DO levels are lower in profundal zone.

Doç. Dr. M. Bora Ergönül

Light penetration is the major limiting factor for photosynthetic organisms presence. **Photosynthesis is higher where light penetration is high.** However, respiration (decomposition of organic matter) is higher where light penetration is low. Based on this, there 2 layers: **trophogenic and tropholytic zones.**

Doç. Dr. M. Bora Ergönül

Estuaries

Estuaries and their surrounding wetlands are water bodies usually found where rivers meet the sea. Aquatic organisms both from freshwater or marine environments may occur here. They are also home to unique plant and animal communities that have adapted to brackish. Estuaries can be partly closed (**lagoon**) or open (**delta**; mouth of a river).