

---

# The secret life of benthic microalgae in tidal flats

Koen Sabbe\*<sup>1</sup>

<sup>1</sup>Lab. Protistology Aquatic Ecology, Ghent University (UGent) – Krijgslaan 281-S8 B-9000 Ghent, Belgique

## Résumé

Despite being harsh environments, exposed to strong tidal currents and pronounced fluctuations in light, temperature and salinity, tidal flats teem with animal life. This is largely due to the presence of extensive biofilms of microalgae which inhabit the surface layers of tidal sediments. While the highly productive blooms of this so-called microphytobenthos are visible with the naked eye and even with satellites, many aspects of their biology and ecology are still shrouded in mystery. In temperate tidal flats, the microphytobenthos is dominated by highly diverse communities of diatoms. These communities are structured by environmental variability in e.g. hydrodynamic disturbance (creating silt-sand gradients), light climate and nutrients, which selects for growth forms that are each highly adapted to specific microhabitats. It is also increasingly becoming clear that various interactions between diatoms and other sediment biota such as bacteria and grazers also play an important role in structuring these microalgal biofilms. I will present examples of how the combined use of ecophysiological, molecular, imaging and chemical tools now enables us to advance our understanding of the complex diversity, biology and ecology of the microphytobenthos, and its functional role in tidal flat and coastal ecosystems.

**Mots-Clés:** tidal flat, microalgae, microphytobenthos, diversity, function

---

\*Intervenant