

Dr David JS Montagnes

Through fieldwork in the mid-80s, I assessed the biomass and abundance of ciliates, to determine their role in the aquatic ecosystems. During this time, I developed a *Quantitative Protargol Stain* (QPS) and described a number of new ciliate species, allowing me to evaluate ecosystem biodiversity and function. I also began forays into meta-analyses – specifically examining the predictive relation between ciliate growth rate and cell size – an approach I then used in many of my further studies. In the late 80s, I shifted towards laboratory studies on ciliates, to provide measurements of growth and grazing rates that could be incorporated into ecosystem models. In the mid-90s, I continued to examine the ecology of ciliates (and other protists), especially their response to temperature; this included changes in composition, changes in rates, interactive effects of temperature and food, and the impact on food webs. By the turn of the century, I had started to combine my taxonomic and ecological expertise with laboratory and field studies to explore how protists and metazoa behave in relation to a range of issues, including temperature shifts caused by global climate change. By about 2010, I had established a new direction: using ciliates (and other taxa) as model organisms to assess fundamental and applied biological issues, such as assessing predator-prey dynamics, examining thermal performance behavior, and their use as bioassay organisms – this work combined laboratory studies and dynamic systems modeling. Concomitantly, I pursued another applied-ecological role of ciliates: they can, through top-down control, reduce the infection rate of zoosporotic diseases and the development of toxic cyanobacterial blooms. In short, with a focus on ciliates, my career has examined a wide range of pure and applied aspects biology – it has been a fun journey. However, I am now retired, and although I still contribute to some studies, I mainly do editorial work for the journal *Marine Life Sciences and Technology*. In this respect, one of my greatest aims is to ensure that published scientific studies provide a cohesive narrative. That is the purpose of the talk I will provide at this *International Symposium on Ciliate Biology 2025*.