



PARAQUA



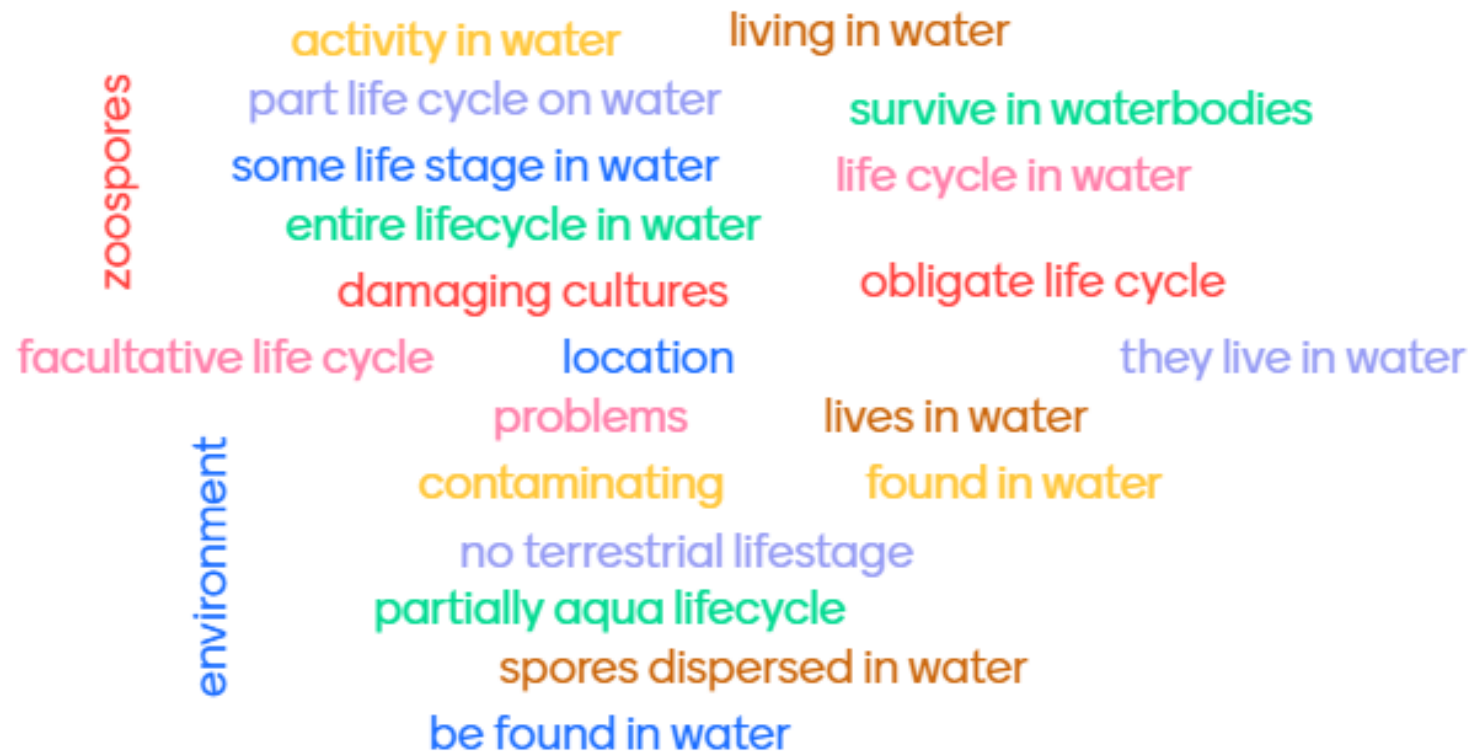
Why is it important to know whether a fungi is aquatic?

34 responses



What makes a fungi aquatic according to you?

22 responses

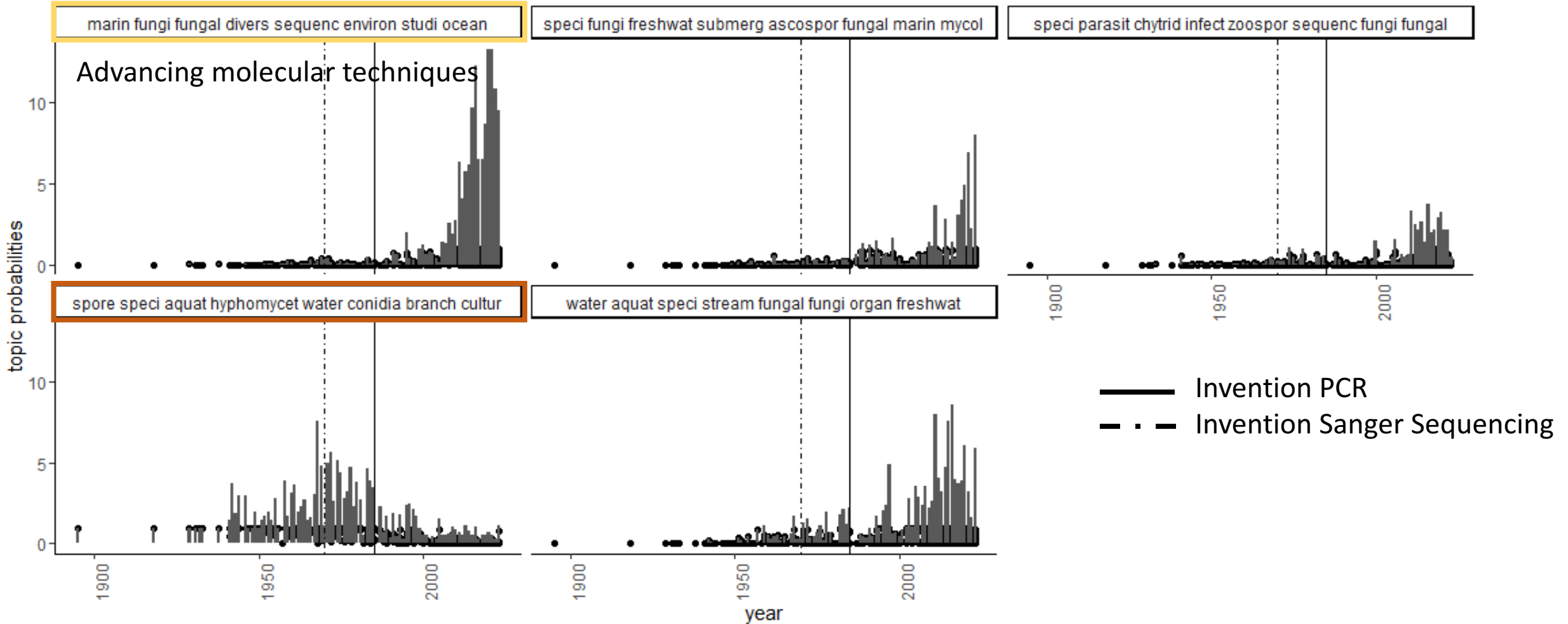


Aquatic – why does it matter?

- Ecological information essential in species descriptions, and documentation of type material for all life cycles and phenotypes
- Demographic and habitat data critical to understanding conservation needs, locating populations and assessing an organisms range
- Only a small share of fungal taxa have been formally described to date (~ 5% to date) due to difficulties in cultivation

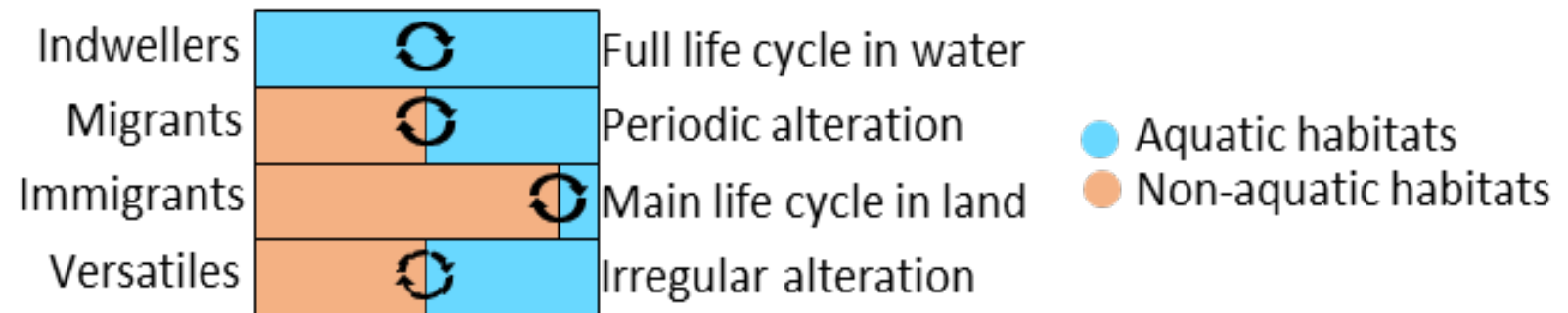


Topic modelling of AF related studies and their development since the late 19th century (~ 700 papers)



Classic concept of aquatic fungi

- There are classic definitions of AF:
 - They have been priorly isolated from an aquatic environment (Michaelides and Kendrick 1978; Ingold 1979)
 - They have been further categorized into indwellers, immigrants, migrants, and versatiles Park (1972) i.e., they spend all or parts of their life cycle in water



What are the missing elements in the current definition?

We do not know whether the isolated fungi is:

- Continuously or periodically active in the aquatic environment
- Their trophic interactions and metabolic functioning in the aquatic ecosystem



Is such a definition true and/or useful?

- Since freshwater environments are in close contact with their surrounding habitats it is unclear whether a fungus is aquatic, just because it was isolated from water (e.g., based on spores)
- When these concepts were established, methods were not established to monitor the occurrence and distribution of fungal species over time and space

Can the definition be improved?

- Through combining traditional taxonomy with advancing molecular methods, we are now able to characterize species occurrences, distribution, and potential trophic interactions



The aim of this study therefore is...

- To show insufficiencies in classic definition of aquatic fungi (a historical narrative of how the concept of aquatic fungi was developed, pointing out the complexities and confusions that arise from such definitions)
- To show how new technologies will make us able to tackle previously mentioned problems
- To highlight three major elements that we think should be part of the definition: **FREQUENCY**, **ACTIVITY** and **INTERACTIVITY**



- By **Frequency**, we mean that isolating/detecting a fungal taxa in a specific timepoint doesn't necessarily make it an aquatic organism. It needs to be proven that this taxon is somehow frequent. To show this, we will discuss current methodologies (e.g. metabarcoding).
- By **Activity**, we mean that being in an aquatic ecosystem doesn't necessarily guarantee that this organism is doing something. It needs to be shown that activity must be observed in a fungi before naming it aquatic.
- By **Interactivity**, we mean to show that fungi, if claimed to be aquatic, should not operate in vacuum. They should interact with other organisms around them, such as algae, bacteria, etc.