

Pre **TREE** セミナー

Seasonal dynamics of chytrid fungal parasitism of freshwater diatoms in the lower Columbia River, U.S.A.

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This study combined hourly biogeochemical data with weekly phytoplankton abundance and species composition analysis to examine the role of river discharge on chytrid-phytoplankton interactions in the lower Columbia River. Infected diatoms were enumerated using fluorescent stains and parasites were identified by sequencing the 18S rDNA.

The dominant diatom, *Asterionella formosa*, was infected at high levels (40%) in the primary spring bloom prior to elevated river discharge events.

Diatom abundances and infections decreased as river discharge and turbidity increased.

High resolution data showed that river discharge controlled the timing, magnitude, and number of diatom bloom events that occurred each spring.

River discharge may play an important role in modulating chytrid-diatom interactions and preventing epidemic events by influencing host growth and contact rates of host and parasites.

The data indicate that during maximal infection, chytrid parasites could divert up to ~20% of the large diatom carbon pool away from export to the estuarine microbial food webs and into the river food web via zooplankton grazing of chytrid zoospores.