DIATOM IMMIGRATION DRIVES BIOFILM RECOVERY AFTER CHRONIC COPPER EXPOSURE

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We investigated the impact of immigration on diatom community recovery after chronic exposure to copper in laboratory microcosms.

We examined the recovery trajectories of copper-contaminated biofilms after reducing copper stress and with or without facilitated connectivity to unimpaired communities. The biofilms mixed with unimpaired communities went back to a "control" community structure within 6 weeks, with differential recovery patterns depending on the endpoint considered (i.e. 2 weeks for relative abundances of diatom species but 6 weeks for total diatom biomass). In contrast, no recovery was observed in the communities placed under water control conditions without external immigrants.

These results suggest that immigration has prominent effects on the recovery of quantitative and qualitative characteristics compared to unconnected biofilms.