

## RIVER NETWORKS AS ECOLOGICAL CORRIDORS

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This Lecture draws together several lines of argument to suggest that an ecohydrological framework, i.e. laboratory, field and theoretical approaches focused on hydrologic controls on biota, has contributed substantially to our understanding of the function of river networks as ecological corridors. Such function proves relevant to: the spatial ecology of species; population dynamics and biological invasions; the spread of waterborne disease. As relevant examples, I choose to describe: metacommunity predictions of fish diversity patterns in the Mississippi--Missouri river basin; geomorphic controls imposed by the fluvial landscape on elevational gradients of species' richness; the zebra mussel invasion of the same Mississippi--Missouri river system; and finally an integrated field, laboratory and theoretical study the spread of proliferative kidney disease in salmonid fish within Alpine river networks.

I conclude that spatial descriptions of ecological processes in the fluvial landscape, constrained by their specific hydrologic and ecological dynamics and by the ecosystem matrix available for interactions (say, the directional dispersal embedded in fluvial and host/pathogen mobility networks), have already produced a remarkably broad range of significant results. Notable scientific and practical perspectives are thus open, in the author's view, to current applications and future developments in ecohydrologic research.

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