

Publication

Colonizing islands of water on dry land - on the passive dispersal of fish eggs by birds

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Author(s) Hirsch, Philipp Emanuel; N'Guyen, Anouk; Muller, Roxane; Adrian-Kalchhauser, Irene; Burkhardt-Holm, Patricia

Author(s) at UniBasel Holm, Patricia ; Hirsch, Philipp ; N'Guyen van Chinh, Anouk ; Adrian-Kalchhauser, Irene ; Muller, Roxane ;

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The vast majority of global freshwater ecosystems are small lakes with less than 100ăm 2 surface area. These lakes are often unconnected to other water bodies but frequently host fish populations. Existing explanations for how fish colonize such remote habitats often involve birds as vectors transporting fish eggs as propagules. In this study, we aim to quantify the prevalence of these explanations among relevant societal groups as well as their scientific knowledge basis. We analyzed entries in online blogs and forums and surveyed the opinions of local stakeholders and decision makers using a questionnaire. To collect published scientific knowledge, we conducted a structured literature review. Our results reveal a discrepancy between commonly found beliefs and the empirical knowledge supporting those beliefs: Dispersal of fish eggs by water birds was overall the most frequent explanation online and in the questionnaire. In the scientific literature, however, we found hardly any empirical research on passive fish egg dispersal. We propose research directions for how to close this gap of knowledge and suggest that future empirical studies on passive fish egg dispersal may be inspired by existing work on passive dispersal in aquatic invertebrates. Mitigating the beliefevidence discrepancy on fish dispersal will be essential to better understand the patterns of fish biodiversity across landscapes, to counteract its losses, and inform management strategies for invasive fish species.

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