

TITLE: FISH MOVEMENT AMONG LAKES: ARE LAKES ISOLATED?

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Abstract: The concept of a lake as an isolated unit is a central theme in research and management of freshwater systems. Support is based on direct observations of lake communities. Studies undertaken in the last several decades lend tacit support because the methods used in both research and management often do not question the underlying notion that lake communities are essentially isolated. In a study of fish assemblages in interconnected lakes, we noted movement of tagged fish among lakes. We also found that species introduced to one lake were later captured in neighboring lakes. We found that fish species in lake assemblages did not differ from those in inlet and outlet stream assemblages; although relative abundance varied, species richness and composition did not. This finding suggests that fish assemblages in lakes are not isolated. Rather, immigration and emigration from streams and other lakes occurs. Although few individuals migrated to new lakes, any movement can affect population structure (e.g., through recolonization, gene flow) and management goals (e.g., spread of disease). Consequently, we suggest that methods commonly used to assess fish assemblages in lakes and the concept of the lake as a management unit may need to be reconsidered. Rather than be treated as isolated populations, fishes in lake communities may be better treated as a watershed-wide metapopulation.

Full article can be found at: <http://dx.doi.org/doi:10.1656/1092-6194-15.4.577>