

Freshwater Fish Invasions the Result of Human Activity

February 5 2008



Global hot spots of freshwater fish invasion. Image: Richard Robinson

Globally, invasive species represent a major threat to native species. A new paper published this week in the open-access journal *PLoS Biology* shows that, for rivers and lakes, where these invasions occur is predicted by human activity; find an area where economic activity is high and, in nearby lakes and rivers, up to a quarter of species will be migrants to the region.

In the first global analysis of invasions in aquatic habitats, Fabien Leprieur, Olivier Beauchard, and colleagues investigate what factors can predict invasion events and find that human activity is to blame.

Prior to this work, ecologists have debated the relative importance of human activity and intrinsic features of an ecosystem when trying to explain the distribution of invasive species. Researchers have suggested

that the number of native species would predict the number of invasive species settling in an area. This is because either an environment that is good for fish generally, and therefore hosts lots of natives, would be good for invaders too; or, conversely, because an environment that was host to many natives would be “open” to hopeful migrants.

Leprieur and colleagues from France, Belgium, and Canada investigated the fish species found in over 1000 river basins and found that the number of native species does not correlate with the number of invasive species.

Instead, they found that invasion was related to gross domestic product, with higher human population density, and with nearby urbanized land. This raises serious concerns for the future of many aquatic ecosystems as the rate of global economic expansion continues to rise, predicting an increase in invasive species and, with it, an increase in the extinction of native animals.

Citation: Leprieur F, Beauchard O, Blanchet S, Oberdorff T, Brosse S (2008) Fish invasions in the world's river systems: When natural processes are blurred by human activities. PLoS Biol 6(2): e28. doi:10.1371/journal.pbio.0060028 (www.plosbiology.org)

Source: Public Library of Science

Citation: Freshwater Fish Invasions the Result of Human Activity (2008, February 5) retrieved 18 April 2024 from <https://phys.org/news/2008-02-freshwater-fish-invasions-result-human.html>

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