

Van Sickle, John, Joan Baker, Alen Herlihy, Peter Bayley, Stanley Gregory, Patti Haggerty, Linda Ashkenas and Judith Li. "Projecting the Biological Condition of Streams Under Alternative Scenarios of Human Land Use." *Ecological Applications* 14.2: 368-380. 2004. (Reviewed by Niko Hoskins)

This study used regression models to estimate the status of fish and aquatic invertebrates that inhabit all second- to fourth-order streams in the Willamette Basin. The variables used were physiographic, land-use/land-cover, and stream flow, with the latter two being allowed to vary according to the projected policy plans. The three plans were a Development plan, where market-driven forces ruled policy, a Conservation plan, where policy leaned towards conserving environment, and a Plan Trend, where future policies remained the same as today's. All models were developed using sample data collected between 1993 and 1997 from 149 streams in the basin.

The study didn't find a dramatic decrease in status between 1990 and the projected 2050 for the Plan Trend or Development plan, largely because of a conversion of agriculture-use land to rural residential and urban-use land. For the Conservation plan, however, an increase of 9-24% in regional medians of biotic status indicators is projected. The authors warn that this interpretation of "status" is crude and shouldn't be mistaken for "wellbeing." They also note that any fluctuation in biotic status found in this study is significantly smaller than decline in status projected between pre-European settlement and 1990 biotic status.

Critique

This article is part of a larger section in *Ecological Applications* on projecting the future of the Willamette Basin with all three of the stated plans referenced in all the articles. This article is a bit hard to take seriously at times considering how much error is acknowledged by the authors in the model. Additionally, projecting something as dynamic as public policy on land use seems extremely sketchy in its accuracy. Although the long-term projections made by the Alternative-Futures Analysis are probably a rough idea of things to come, narrowing those projections to the streams in the basin amplifies the roughness of these projections.

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