

Carefully read the description of the experiment below. Be prepared to answer the questions that follow the design description as a class quiz.

An investigator in fisheries science wants to describe the effect of urban development on stream benthos. The metric that is used to describe the biota is the “index of biological integrity (B-IBI) based on benthic macroinvertebrates”. The variable that is used to describe the urban development is the total impervious area (buildings, asphalt, cement, etc). A depiction of this relationship is given below. What type of analysis would be used to assess the possible relationship between the two variables, biological integrity and urban development?

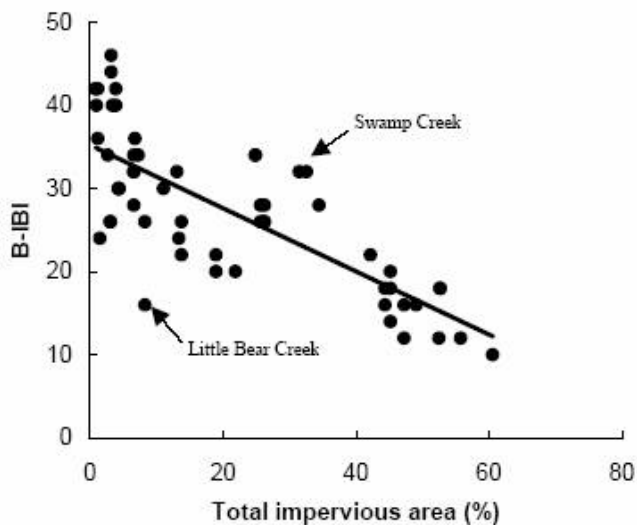


Figure 1. The relationship between B-IBI and total impervious area. This measure of basin urbanization applies to the entire sub-basin upstream of each sample point (May 1996). The dataset plotted here is for 1994 and 1995 (Karr and Chu 1999a, Kleindl 1995).