

Simulation modeling of visitor flows: where have we been and where are we going?

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In the United States, simulation modeling of visitor flows had its start in 1972 when Resources for the Future developed the Wilderness Use Simulation Model with programming assistance from International Business Machines. That model has been applied in several roadless settings including wilderness areas, national parks, hiking trails, and rivers. Recent advances in computer technology and behavioral science have rendered the original wilderness use simulation model obsolete. The concepts of interactive use and geographic display have been incorporated into a suite of newer models. An object oriented dynamic simulation package has been used to model visitor flows in front country and backcountry areas of several national parks. A geographic information system was used to derive routes for the model, but there was no graphical output. Concurrently, a simulation package that combines artificial intelligence with geographic information system technology was developed that is capable of predicting travel behavior of visitors. This model has successfully simulated visitor flows in national parks in Australia and the United States. A comparison between the object oriented and artificial intelligence approaches has shown similarities as well as strengths and weaknesses. The future for simulation models of visitor flows is bright and many new applications await the modeler.