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Title: Using Actual and Contingent Behavior Data with Differing Levels of Time Aggregation to Model Recreation Demand

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Abstract:

This paper estimates how often individuals would take trips to each of several federal reservoirs and rivers in the Columbia River Basin under various patterns of water levels (real and hypothetical) and estimates recreational values of each of those waters under current conditions and with changes in the pattern of water levels. An individual travel cost model is used to derive recreational values, based on both actual and contingent behavior data. Data was collected through a mail survey of water-based recreation trips for four different months with the respective water levels. Hypothetical water levels were introduced for the contingent behavior data to determine if individuals would change the number of trips based on various descriptions of changed water levels.

After giving extensive results for the different variables tested at each of the nine water bodies, two hypothetical policy scenarios are given with the intention of improving recreational visitation: filling and maintaining an ideal water level during the summer or assisting with fish migration and enhancing conditions for salmon spawning. The baseline expected monthly trips under 1993 water levels can get quite low for some locations (Lake Pend Oreille fitted trips vary from 0.5 to 1.06 per month), with the lowest value at John Day (0.09 in July) to the highest at the Kootenai River (1.7 in July). Overall, the reservoir maintenance strategy resulted in higher average trips per month at all nine locations, with difference reaching as high as 50% lower for the fisheries strategy. The monthly average willingness to pay represents the level of consumer surplus, or amount of money an individual would pay per month rather than lose the recreational opportunity. This ranges from \$13 (for each summer month) for Lake Kooconusa to \$99 (in August) for Lake Roosevelt. Again, the willingness to pay is more pronounced in the reservoir filling policy scenario, sometimes twice as much as the fisheries scenario. The authors conclude that water levels at a particular water do strongly contribute to the probability that an individual will visit a federal water.