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Title: Estimating Recreational Trout Fishing Damages in Montana's Clark Fork River Basin: Summary of a Natural Resource Damage Assessment
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Abstract:

This paper summarizes a natural resource damage assessment for a 145-mile stretch of the Silver Bow Creek and Clark Fork River in Montana at 26 study sites during the 1992 fishing season. Mining wastes have led to significant reductions in trout stocks, so economic damages are based on decreases in catch rates and how that affects where and how often an angler will fish when considering travel costs, catch rates, and other influential attributes of the sites and individuals. This is measured in willingness to pay (WTP) to avoid the damages and represents the travel cost model. This makes the model a joint estimation technique (along with catch rate) to determine damage and catch rates are reinforced by the travel cost portion.

The model estimates the annual WTP for Montana resident anglers ranges from $0.01 to $42.96 with a mean of $6.31 and a median of $4.54. For non-residents who fish in Montana, the model estimates annual WTP to range from $1.19 to $40.35 with a mean of $14.17 and a median of $12.62. Aggregate annual damage totals based on the mean values and 71,000 resident and 65,000 non-resident anglers are $448,000 and $921,000. Closer location, higher degree of avidity, and more time are likely components in increased WTP and sensitivity to catch rates. The model predicts that if baseline conditions were restored (no damage), the expected catch rates would be almost twice as high. This leads to 0.36 more trips per year to the impacted site being improved and 0.32 fewer trips to other sites in Montana. This is a 66% increase in trips to the site relative to the number under current conditions. The effects differ among the various sites based on their unique attributes but results in the sites becoming more desirable and draw visitors from further away.