

The recreational value of river inflows into South African estuaries

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Abstract

Estuarine habitats are subject to increasing demand pressures. Some of these are direct, for the appealing space they provide for residences and recreation; and some are indirect, in the form of competitive demand for the inputs required to maintain their ecological functionality, for instance, river inflows. As a result of increasing demand for river water the connection of many of South Africa's estuaries with the sea has been undermined and their recreational appeal reduced. This paper reports findings on these negative impacts for selected estuaries. The contingent valuation method was used to estimate the value of recreational benefits that would result at 40 South African estuaries if water-inflow reductions were averted. The studies were undertaken between 2000 and 2007. All the estuaries selected were known to be vulnerable to changes in river inflows. Expert opinions on the consequences of specified hypothetical changes to water inflows into estuaries were used to generate the scenarios valued. User populations were estimated and surveys administered to samples of these populations. From the elicited responses median estuary user willingness to pay bids were predicted using Tobit and OLS models. An internal credibility assessment was conducted over the plausibility of the predictive model, the consistency of the values to those estimated using an alternative valuation method (the contingent travel cost method), and the reliability of the estimates. For the 37 estimates deemed reliable (but not necessarily valid), the average of the predicted median values of river inflow into estuaries was calculated to be 3.4 c/m³ (South African cents, ZAR) and standard deviation 3.84 c/m³. The average of the predicted mean values was calculated to be 7.4 c/m³ and the standard deviation 6.7 c/m³. It was also found that where there had been extensive economic development around the river system, the values of inflows into estuaries tended to be less than the value of water abstracted upstream.

Keywords: recreational value, river inflows, estuaries, South Africa