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BENEFIT TRANSFER

Application of environmental valuation techniques may be expensive, particularly for local decision-making where research budgets are limited. Benefit transfer offers a lower cost alternative to performing a full-scale study for any particular issue.

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Benefit transfer is an application of a data set developed for addressing one particular environmental or natural resource valuation question to another context. Given the expense and time associated with estimating values of non-market natural resources and services, benefit transfer can be a reasonable method for determining such values. Benefit transfer applications can be divided into three classes:

- Estimates based upon expert opinion (e.g., the transfer of average net willingness-to-pay or proxy values)
- Estimates based on observed behavior (e.g., transfer of the entire demand equation)
- Estimates based upon preference elicitation mechanisms, i.e., the contingent valuation method

Benefit transfers are considered to be valid under well-defined conditions. Factors to consider in conducting a benefit-transfer decision include some of the following considerations:

GENERAL ASSUMPTIONS

- For what purpose were the original value estimates generated?
- What user group(s) were considered in generating the initial estimate (e.g., duck hunters versus all citizens in an area)?
- Did the existing study address a specific or unique problem that may have influenced the magnitude of the estimates obtained (e.g., during a period of heightened concern for the resource in question)?
- Have general attitudes, perceptions, or levels of knowledge changed in the period since the existing study was performed in a way that would influence the value of the benefit estimate? Are these values likely to be consistent over time?
- If the value being considered is for a generic resource category (e.g., common songbirds), are the species considered in the original study relevant to the case at hand?

- Were adjustments to the data made in the existing study? For example, were outliers deleted? Were any adjustments made for perceived biases?
- Does the existing study consider the same or a similar geographic area? Are the demographic and socio-economic characteristics of the two areas similar?

METHODOLOGY

- If the source being used presents a composite of existing values based on an earlier literature review, what methods were used to derive these composite values and what was the nature of the underlying studies?
- Were baseline conditions (e.g., ambient water quality) in the existing study similar to baseline conditions in the case at hand?
- Were variables omitted from the original study that are believed to be relevant to the case at hand? To what extent does such omission prohibit the transfer?
- If current best research practices were not used to generate the value estimate(s), can the estimate(s) be adjusted to reflect changes in the state-of-the-art?

ECONOMIC METHODS/EVALUATION

- Was the study used to generate the value estimate published in a peer reviewed journal, or did it receive other forms of peer review?
- How is the original study viewed in the professional community? How was the study viewed by its sponsor?

RESOURCE

- How does the resource that was affected compare to that considered in the referenced study (e.g., is the species of concern

more common in the policy study area than in the initial study area)?

- What was the nature of substitutes in the initial study area, and how does this compare to the policy study area (e.g., are alternative recreational opportunities more or less available in the policy study area)?
- Was the original analysis conducted to value all organisms of a given species, a sub-population, individual members of the species, or some other grouping?

Decision-makers should consider all available estimates, each based on the factors described above. Once a final set of values has been chosen, consideration should be given to their general magnitudes. If the existing value estimates differ significantly, or if values generated using alternative models differ significantly from one another, consideration should be given to whether they differ in a predictable and consistent manner. In some cases it may be possible to combine these estimates formally through meta analysis.⁵ In all cases, more defensible benefit estimates will result from comparative analysis.

In many cases the defensibility of the transferred economic benefit estimate will depend on the quality of the underlying research. However, no globally accepted, standard criteria are available to judge the quality of existing studies. The professional and academic community can provide guidance with regard to the current minimum conditions for quality assurance of the benefit transfer.

The Economic Analysis and Research Branch of the U.S. Environmental Protection Agency, Office of Policy Planning and Evaluation has prepared *The Environmental Economics Database*, a collection of references for national resources and environmental amenity valuation studies collected over several years. Computer disks of the database are available.

⁵ Smith, V.K. 1992. On Separating Defensible Benefit Transfers from "Smoke and Mirrors." *Water Resources Research*, 28(3):685-694.