

# Benefit Transfer Method

*Estimates economic values by transferring existing benefit estimates from studies already completed for another location or issue.*

[http://www.ecosystemvaluation.org/benefit\\_transfer.htm](http://www.ecosystemvaluation.org/benefit_transfer.htm)

## Overview

The benefit transfer method is used to estimate economic values for ecosystem services by transferring available information from studies already completed in another location and/or context. For example, values for recreational fishing in a particular state may be estimated by applying measures of recreational fishing values from a study conducted in another state.

Thus, the basic goal of benefit transfer is to estimate benefits for one context by adapting an estimate of benefits from some other context. Benefit transfer is often used when it is too expensive and/or there is too little time available to conduct an original valuation study, yet some measure of benefits is needed. It is important to note that benefit transfers can only be as accurate as the initial study.

This section continues with some example applications of the benefit transfer method, followed by a more complete technical description of the method and its advantages and limitations.

## Hypothetical Situation

A park is being upgraded to provide additional recreational opportunities. One proposal is to add a swimming beach to the lake. Agency staff want to know the benefits of the new beach, but do not want to spend a great deal of money on a valuation study.

## Why Use the Benefit Transfer Method?

The benefit transfer method was selected in this case for two main reasons.

First, the agency does not have a large budget for site-specific benefits studies. Second, values for recreational uses are relatively easy to transfer.

## **Application of the Benefit Transfer Method**

### **Step 1:**

The first step is to identify existing studies or values that can be used for the transfer. In this case, the researcher would look for studies that value beach use, specifically for lake beaches if possible. For the purposes of this example, assume that the researcher has found two travel cost studies that estimated values for swimming at lake beaches.

### **Step 2:**

The second step is to decide whether the existing values are transferable. The existing values or studies would be evaluated based on several criteria, including:

1. Is the service being valued comparable to the service valued in the existing studie(s)? Some factors that determine comparability are similar types of sites (e.g., lake beaches in a park), similar quality of sites (e.g., water quality and facilities), and similar availability of substitutes (e.g., the number of other lake beaches nearby).
2. Are characteristics of the relevant population comparable? For example, are demographics similar between the area where the existing study was conducted and the area being valued? If not, are data available to make adjustments?

In the example, the first study is for a similar lake beach. The beach is also in a park, has comparable water quality and facilities, and a similar number of substitute sites in the area. However, it is located in an urban area, while the beach being valued is in a rural area. Thus, the characteristics of visitors can be expected to be different for the two sites. The second study is in a rural area with similar types of visitors, but the lake has many more available substitutes.

### **Step 3:**

The next step is to evaluate the quality of studies to be transferred. The better the quality of the initial study, the more accurate and useful the transferred value will be. This requires the professional judgment of the researcher. In this example, the researcher has decided that both studies are acceptable in terms of quality.

#### **Step 4:**

The final step is to adjust the existing values to better reflect the values for the site under consideration, using whatever information is available and relevant. The researcher may need to collect some supplemental data in order to do this well. For example, in this case, the sites valued in each of the existing studies differ from the site of interest. The researcher might adjust the values from the first study by applying demographic data to adjust for the differences in users. If the second study has a benefit function that includes the number of substitute sites, the function could be adjusted to reflect the different number of substitutes available at the site of interest.

In addition, because the beach will be new, the researcher will need to estimate how many people will use the beach. This might be accomplished by a survey of park visitors, asking whether they would use a beach on the lake, and how many times they would use it. The researcher would then multiply these visitation estimates by the value per day for beach use (adjusted for differences in population and site characteristics), to get an estimate of the economic benefits for the new beach.

#### **Summary of the Benefit Transfer Method**

The benefit transfer method is used to estimate economic values for ecosystem services by transferring available information from studies already completed in another location and/or context. For example, values for recreational fishing in a particular state may be estimated by applying measures of recreational fishing values from a study conducted in another state.

Thus, the basic goal of benefit transfer is to estimate benefits for one context by adapting an estimate of benefits from some other context. Benefit transfer is often used when it is too expensive and/or there is too little time available to conduct an original valuation study, yet some measure of benefits is needed. It is important to note that benefit transfers can only be as accurate as the initial study.

The simplest type of benefit transfer is the unit day approach, where existing values for activity days are used to value the same activity at other sites. These estimates are based on expert judgment in combining and averaging benefit estimates from a number of existing studies. These “unit day values” may be adjusted for characteristics of the study site when they are applied.

A more rigorous approach involves transferring a benefit function from another study. The benefit function statistically relates peoples’ willingness to pay to

characteristics of the ecosystem and the people whose values were elicited. When a benefit function is transferred, adjustments can be made for differences in these characteristics, thus allowing for more precision in transferring benefit estimates between contexts.

Different standards for benefit transfer may be applied in different contexts. For example, a higher standard of accuracy may be required when the costs of making a poor decision are higher. A lower standard of accuracy may be acceptable when costs are lower, such as when the information from the benefit transfer is only one of a number of sources of information, or when it is used as a screening tool for the early stages of a policy analysis.

The benefit transfer method is most reliable when the original site and the study site are very similar in terms of factors such as quality, location, and population characteristics; when the environmental change is very similar for the two sites; and when the original valuation study was carefully conducted and used sound valuation techniques.

### **Applying the Benefit Transfer Method**

Application of the benefit transfer method involves several steps. First, identify existing studies or values that can be used for the transfer. There are a number of valuation databases that can be useful (see the Links section for more information).

Second, evaluate the existing values to determine whether they are appropriately transferable. Consider whether:

- the service being valued is comparable to the service valued in the existing studie(s). This includes determining whether the features and qualities of sites or ecosystems are similar, including the availability of substitutes.
- the characteristics of the relevant population are comparable. This includes determining whether the demographics, and peoples' preferences, are similar between the area where the existing study was conducted and the area being valued.

Third, evaluate the quality of studies to be transferred. The better the quality of the initial study, the more accurate and useful the transferred value will be. This step requires professional judgment of the researcher. Fourth, adjust the

existing values to better reflect the values for the site under consideration, using whatever information is available and relevant. The researcher may need to collect supplemental data in order to do this well. For example, the researcher might survey key informants, talk to the investigators of the original studies, get the original data sets, or collect some primary data at the study site to use to make adjustments. Finally, estimate the total value by multiplying the transferred values by the number of affected people.

### **Advantages of the Damage Cost Avoided and Replacement Cost Methods**

- Benefit transfer is typically less costly than conducting an original valuation study.
- Economic benefits can be estimated more quickly than when undertaking an original valuation study.
- The method can be used as a screening technique to determine if a more detailed, original valuation study should be conducted.
- The method can easily and quickly be applied for making gross estimates of recreational values. The more similar the sites and the recreational experiences, the fewer biases will result.

### **Issues and Limitations**

- Benefit transfer may not be accurate, except for making gross estimates of recreational values, unless the sites share all of the site, location, and user specific characteristics.
- Good studies for the policy or issue in question may not be available.
- It may be difficult to track down appropriate studies, since many are not published.
- Reporting of existing studies may be inadequate to make the needed adjustments.
- Adequacy of existing studies may be difficult to assess.
- Extrapolation beyond the range of characteristics of the initial study is not recommended.
- - Benefit transfers can only be as accurate as the initial value estimate.
- Unit value estimates can quickly become dated.