Econ 325  In-Class Work: Can We Value the Environment?

Yes.

→ *Why* do we need to value the environment?

→ *How* can we value the environment?

**Techniques for Valuing the Environment**

1. **Indirect techniques** (*revealed preference methods*) -- use data on observations of actual behavior regarding activities which directly or indirectly involve non-market resources to value those resources.

   a. *Hedonic Pricing Methods* (H) are based on the idea that prices of similar market goods differ because of differences in characteristics. Some of these characteristics are environmental “goods”.

   b. *Travel Cost Models* (TCM) are used to value environmental resources associated with recreation. The basic idea is that the costs you incur in traveling to the recreation site can be regarded as the “price” of access to the site.

2. **Direct techniques** (*stated preference methods*, or *contingent / hypothetical methods*) -- use surveys or questionnaires to elicit values associated with environmental or natural resources.

   a. *The Contingent Valuation Method (CVM)* is used to derive values for either market or non-market goods by asking individuals how much they would be willing to pay for a given improvement in a resource, or how much they would be willing to accept as compensation for degradation of a resource.

   → what are some of the problems associated with CVM?

   b. *Conjoint Analysis* (CA) is a statistical technique for modeling choices that has mostly been employed in marketing and psychology research. The basic idea is to determine preferences among a given good’s attributes by asking individuals to rank goods with various levels of those attributes. The method can be applied to valuation of environmental goods by asking recreationists to rank various choices which differ in levels of environmental attributes.
Questions for Discussion -- work on these questions in groups of 2 or 3

For each of the following scenarios:
(i) Determine whether the “good” to be valued is a market good or a non-market good.
(ii) Determine which valuation procedure(s) would be best suited to determine the value of the good, the contingent valuation method (CVM), conjoint analysis (CA), hedonic pricing (H), or travel cost method (TCM).

1. The national forest service is considering a plan to decrease operating costs at US national parks. You have been hired as a consultant to determine the economic desirability of the following actions.
   a. Part of the plan is to decrease the number of park rangers and other personnel at each park. One result of the labor cuts will be less maintenance of hiking trails and campground areas within the parks. Your task is to determine the value of the lost benefits to the park’s users so that they can be weighed against the cost savings.

   b. Another part of the forest service cutbacks is a proposal to close some parks. The land would be sold to private investors who would open the areas up for development.

2. In order to compete with Lexus, Mercedes is considering marketing a four wheel drive sports utility vehicle. As is the case with the Lexus model, the Mercedes would be very similar to other, less expensive 4wd’s. Mercedes would like you to determine a monetary measure of the “prestige value” associated with owning the Lexus 4wd so that they can make similar pricing decisions.

3. In Southport North Carolina, shrimp harvesters are currently using their boats and gear to clean up an environmental improvement gone bad. In the late 1970’s the state of North Carolina submerged over a half million spare tires near Oak Island as an artificial reef to attract fish. The steel cables which once held the tires together have rusted through, and storms have released the tires into the sea. The state is currently paying the shrimpers $4 per tire, but because of damage done to their nets by the tires, the shrimpers are demanding more. How can we determine if the fee should be increased?

4. Natural Citrus Products corporation grows organic fruits in southern Florida. Some consumers are willing to pay more for these products because they do not contribute to the environmental degradation caused by most pesticides and fertilizers. However, the organic fruits are less attractive in appearance than those grown with conventional means. The corporation would like you to explore the marketability of their products in the Richmond area.

5. To improve the viability of fish stocks in the Chesapeake Bay, the states of Maryland and Virginia are considering a ban on certain lawn fertilizers used primarily by golf courses. During heavy rains the fertilizer chemicals flow into rivers and streams which drain into the bay and harm marine life. Without the chemicals, the grass on the golf courses will not be as green and the owners feel this will adversely affect their business. How can we determine if the fertilizer ban will result in a net improvement in economic welfare?