



SCRAWLS

PRESERVING WETLANDS

by John Marshall

The Columbia River Estuary Study Taskforce is a regional planning agency charged with natural resource and economic planning for the Columbia River Estuary. This mandate leaves CREST with a mission to balance economic development with resource preservation. CREST is faced with two major tasks: (1) identification and protection of irreplaceable natural resources and (2) determination of reasonable tradeoffs for "less valuable" natural resources.

Both of these tasks require decisions on relative values of estuarine and freshwater nontidal wetlands. Numeric/qualitative methods of wetland value assessment are tools that aid in the decision making process.

Essentially, wetland value assessments are attempts to display wetland values within a framework that is reproducible by others when applying the same system to the same area. This helps facilitate decisions that are reasonably consistent and defensible. They also offer an itemized display of criteria that have traditionally been discounted in wetland preservation versus development decisions. More recently, they are being used to make wetland mitigation tradeoff decisions (mitigation is a term that describes a group of strategies designed to soften the impacts of development on wetlands and other natural sources).

Users and teachers of numeric assessment methods should be aware of certain philosophical implications of their use. The remainder of this article will focus on some procedural considerations and philosophical reflections that, in my opinion, should be considered when using these models and when reviewing the results of their application.

First, before a model can be applied, a wetland site must be selected. How do we know it is a wetland? For our purposes we will use the U.S. Fish and Wildlife Service definition:

"Wetlands are lands transitional between terrestrial and aquatic systems when the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes (plants especially adapted to wet soil conditions) (2) the substrate is predominantly undrained hydric (wet) soil; and (3) the substrate is saturated with water or covered by shallow water at some time during the growing season of each year."

Second, we must clarify more precisely what we are trying to do when we assess a wetland's values.

Essentially, we are looking at complex natural systems about which we have imperfect knowledge, and attempting to interpret meaningful qualitative and numeric values that can be used for decision making purposes.

The underlying assumption is, of course, that wetlands have certain values and functions. What do we mean by "values" and "Functions"? Using a real estate appraiser's definition, the concept of land value has four components:

Utility — the ability of a parcel of land to satisfy a human desire;

Scarcity — the present or anticipated supply of a given type of land in relation to the demand for it;

Desire — human wants beyond basic life support needs;

Effective Purchasing Power — the ability of individuals or groups to participate in the market transaction relevant to a given parcel of land, also known as "value in exchange."

Functions are defined as a contribution or service performed. Some functions commonly attributed to wetlands include foodchain support, habitat for fisheries, habitat for wildlife, active recreation, passive recreation and heritage value, floodwater storage, shoreline anchorage, sediment and nutrient trapping, etc.

Wetland value can be defined under three components: (1) opportunity to perform a function, (2) effectiveness of performing a function, and (3) significance of a function as measured by society's perception of its value, which is partially based on a perception of scarcity.

For our purposes, functions can be absorbed by the utility component of value, which can be paraphrased as human desire for wetlands based on perceptions of utility and scarcity (wetland value in exchange is considered a connection between the definition of value and the system that measures and facilitates trading values).

There are many options to choose from for model selection. Each method has its merits and limitations. The following criteria are suggested when making a decision:

— The complexity of the model should be selected to conform with the background of

the teacher and the level of the students.

— The model should be applicable to the types of wetlands you wish to assess.

— The model should assess the values you wish to consider.

— Which values should we assess? This, of course depends on the objectives of the assessment. There may be a broad or narrow focus. For our purposes we will consider wildlife value.

Wildlife value assessment models focus on criteria that establish a wetland's ability to support wildlife, that is, habitat as defined by various configurations and amounts of food, water and cover. The underlying assumption is that humans desire at least some kinds of wildlife. Since the concept of a value is meaningless without sifting the object(s) of a value through human perceptual filters, all wetland values, including wildlife, should be considered cultural values. Aldo Leopold wrote in the Sand County Almanac, "Man brings all things to the measure of himself." This is certainly the case with wildlife and wetlands.

Why do we need these models to aid decision making? Isn't that why we have legislators, courts, land use planning and a well developed market system?

The numeric assessment models are not designed to replace any existing system of decision making. They are designed to offer perspectives that are often discounted under existing decision processes. Legal mechanisms for wildlife protection are available but they are difficult to implement with documentation of an area's wildlife value. In many cases, the opposing development-driven political interests are strong enough to thwart protection of well documented highly valuable sites. But without documentation there would be no contest. The primary goal of wetland value assessment models is, in my opinion, to decrease the disparity between development interests and preservation interests with regard to wetlands (to even the scales, so to speak). They propose to do this by displaying, in an itemized fashion, wetland values with the hope of raising the level of consciousness of decision makers and the general public.

"Wait a minute!" you say. "Are you trying to tell us you would give these models equal credibility with, say, a cost-benefit feasibility report for a shopping mall? You've already admitted that values are perceptual. Look, how can you seriously say you have a means of determining how much wildlife or scenic quality are worth? Their perceived value varies from one person to the next. All you are giving us are numbers based on some highly nebulous assumptions. How can you expect us to give your models equal credibility with sound economic analysis?"

I am glad you asked that question. First, you are correct in assuming that a model's credibility depends directly on the assumptions that its criteria are based on. And, I might add, many assumptions are not empirically tested and proven. Further, the rating process often requires some rather subjective judgement



"He didn't say 'al dente,' did he?"

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