

**43 Code of Federal Regulations (CFR) Part 11**

**43 CFR Part 11** provides procedures for determining injuries to natural resources when the environment is harmed by a release of hazardous substances (as defined by CERCLA). A variety of economic methods can be used to estimate the cost or value of either the service losses or the actions needed for compensation. Below is an excerpt from the CFR which includes a list of economic tools routinely used by trustees on NRDAR cases.

**43 CFR 11.83 - Damage determination phase - (2) Valuation methodologies.** The authorized official may choose among the valuation methodologies listed in this section to estimate appropriate compensation for lost services or may choose other methodologies provided that the methodology can satisfy the acceptance criterion in paragraph (c)(3) of this section. Nothing in this section precludes the use of a combination of valuation methodologies so long as the authorized official does not double count or uses techniques that allow any double counting to be estimated and eliminated in the final damage calculation.

Type of Methodology	Description
(i) Market price	The authorized official may determine the compensable value of the injured resources using the diminution in the market price of the injured resources or the lost services. May be used only if:
	(A) The natural resources are traded in the market; and
	(B) The authorized official determines that the market for the resources, or the services provided by the resources, is reasonably competitive.
(ii) Appraisal	The measure of compensable value is the difference between the with- and without-injury appraisal value determined by the comparable sales approach as described in the Uniform Appraisal Standards. Must measure compensable value, to the extent possible, in accordance with the “Uniform Appraisal Standards for Federal Land Acquisition,” Interagency Land Acquisition Conference, Washington, DC, 1973 (incorporated by reference, see § 11.18).
(iii) Factor income (sometimes referred to as the “reverse value added” methodology)	May be used only if the injured resources are inputs to a production process, which has as an output a product with a well-defined market price. May be used to determine: (A) The economic rent associated with the use of resources in the production process; and (B) The in-place value of the resources.
(iv) Travel cost	May be used to determine a value for the use of a specific area. Uses an individual's incremental travel costs to an area to model the economic value of the services of that area. Compensable value of the area to the traveler is the difference between the value of the area with and without a discharge or release. Regional travel cost models may be used, if appropriate.
(v) Hedonic pricing	May be used to determine the value of nonmarketed resources by an analysis of private market choices. The demand for nonmarketed natural resources is thereby estimated indirectly by an analysis of commodities that are traded in a market.
(vi) Unit value/benefits transfer	Unit values are preassigned dollar values for various types of nonmarketed recreational or other experiences by the public. Where feasible, unit values in the region of the affected resources and unit values that closely resemble the recreational or other experience lost with the affected resources may be used.
(vii) Contingent valuation	Includes all techniques that set up hypothetical markets to directly elicit an individual's economic valuation of a natural resource. Can determine:
	(A) Use values and explicitly determine option and existence values; and
	(B) Lost use values of injured natural resources.
(viii) Conjoint Analysis	Like contingent valuation, conjoint analysis is a stated preference method. However, instead of seeking to value natural resource service losses in strictly economic terms, conjoint analysis compares natural resource service losses that arise from injury to natural resource service gains produced by restoration projects.
(ix) Habitat Equivalency Analysis	May be used to compare the natural resource services produced by habitat or resource-based restoration actions to natural resource service losses.
(x) Resource Equivalency Analysis	Similar to habitat equivalency analysis. This methodology may be used to compare the effects of restoration actions on specifically identified resources that are injured or destroyed.
(xi) Random Utility Model	Can be used to: (A) Compare restoration actions on the basis of equivalent resource services provided; and (B) Calculate the monetary value of lost recreational services to the public.