

# Federal Register

Monday  
April 29, 1991

RWG  
E

---

## Part III

## Department of the Interior

---

Office of the Secretary

---

43 CFR Part 11

Natural Resource Damage Assessments;  
Notice of Proposed Rulemaking

## DEPARTMENT OF THE INTERIOR

## Office of the Secretary

## 43 CFR Part 11

RIN 1090-AA22

## Natural Resource Damage Assessments

AGENCY: Department of the Interior.

ACTION: Notice of proposed rulemaking.

**SUMMARY:** The Department of the Interior (the Department) is proposing revisions to the natural resource damage assessment rule, codified at 43 CFR part 11, to conform with a court ruling. In that ruling, the court held that: (1) Restoration costs are the preferred measure of natural resource damages under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. 9601, *et seq.*; and (2) all reliably calculated lost use values of injured natural resources should also be recoverable, with no specific hierarchy of methodologies required of natural resource trustees in conducting those valuations. The court also requested clarification as to the extent to which privately owned natural resources might be subject to the natural resource damage assessment rule.

The natural resource damage assessment rule was developed pursuant to section 301(c) of CERCLA. The Department promulgated two types of assessment rules: Standard procedures for simplified assessments requiring minimal field observation (type A procedures); and site-specific procedures for detailed assessments in individual cases (type B procedures). The type A rule and the type B rule were challenged in two separate, but parallel, cases. The Department is now seeking comments on proposed revisions to the type B rule to comply with the court's decision. These proposed revisions will ensure that the type B rule carries out the purpose and requirement of CERCLA for the recovery of damages to be used for the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of injured natural resources as full compensation for the injured resources. Today's proposed rulemaking provides for a unified process for trustees to develop claims for both the costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources and reliably calculated lost values of the injured resources, with no required hierarchy of valuation methodologies for determining those values.

This notice deals solely with issues relating to those provisions of the type B rule remanded by the court for revision or clarification. The statutorily-required two-year review of the type B rule is scheduled to begin when today's proposed rule is published as a final rulemaking. That review will provide an opportunity to address issues beyond those addressed in today's Notice. The Department's proposed revisions to the existing type A rule for coastal and marine environments and comparable modifications to the ongoing development of a new type A rule for the Great Lakes environments will be published separately at future dates.

The date upon which the court-ordered revisions for both type A and type B, whichever is later, become effective as a final rule is the date on which "regulations are promulgated" for the purposes of determining the period in which actions may be brought for natural resource damages.

**DATES:** Comments will be accepted through June 28, 1991.

**ADDRESSES:** Office of Environmental Affairs, ATTN: NRDA Rule, room 2340, Department of the Interior, 1849 C Street, NW., Washington, DC 20240 (regular business hours 7:45 a.m. to 4:15 p.m., Monday through Friday).

**FOR FURTHER INFORMATION CONTACT:** Cecil Hoffmann or David Rosenberger at (202) 206-3301.

**SUPPLEMENTARY INFORMATION:**

This preamble is organized as follows:

- I. Background
  - A. Statutory Background
  - B. Regulatory History
  - C. Judicial Review
  - D. Advance Notice of Proposed Rulemaking
- II. Discussion
  - A. Introduction
  - B. Restoration Costs as the Measure of Damages
  - C. Hierarchy of Valuation Methodologies
  - D. Resource Values
  - E. Scope of Public Ownership
  - F. Other Significant Revisions
  - G. Factors to Consider in Selecting Alternatives
  - H. Considerations in Using the Contingent Valuation Methodology (CVM)
- III. Annotated List of Sections to be Revised
- IV. Response to Comments
  - A. General
  - B. Restoration Costs as Measure of Damages
  - C. Technically Feasible
  - D. Grossly Disproportionate
  - E. Economic Methodologies
  - F. Resource Values
  - C. Public Resources

**I. Background****A. Statutory Background**

Section 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. 9601, *et seq.*, authorizes natural resource trustees to recover compensatory damages for injury to natural resources, as well as the reasonable costs of assessing such injury and any prejudgment interest. The damages that may be sought by natural resource trustees are for the injury to, destruction of, or loss of natural resources resulting from a discharge of oil or a release of a hazardous substance. Natural resource damages are in addition to cost-recovery for response actions. Federal and State natural resource trustees may bring an action for damages under sections 107(f) and 113(g) of CERCLA, 42 U.S.C. 9607(f) and 9613(g), and sections 311(f) (4) and (5) of the Clean Water Act (CWA), 33 U.S.C. 1321(f) (4) and (5) (also known as the Federal Water Pollution Control Act). Indian tribes may commence an action as natural resource trustees under sections 107(f) and 128(d) of CERCLA, 42 U.S.C. 9607(f) and 9626(d). Section 107(f) requires that all sums recovered as damages must be used only to restore, replace, or acquire the equivalent of such natural resources. Section 107(f) also provides that assessments performed by Federal and State natural resource trustees in accordance with the rule receive the evidentiary status of the rebuttable presumption.

Section 301(c) of CERCLA, 42 U.S.C. 9651(c), requires the promulgation of regulations for the assessment of damages for injury to, destruction of, or loss of natural resources resulting from a discharge of oil or a release of a hazardous substance. Section 301(c) calls for the natural resource damage assessment regulations in the following terms:

(2) Such regulations shall specify (A) standard procedures for simplified assessments requiring minimal field observation, including establishing measures of damages based on units of discharge or release or units of affected area, and (B) alternative protocols for conducting assessments in individual cases to determine the type and extent of short- and long-term injury, destruction, or loss. Such regulations shall identify the best available procedures to determine such damages, including both direct and indirect injury, destruction, or loss and shall take into consideration factors including, but not limited to, replacement value, use value, and ability of the ecosystem or resource to recover.



The promulgation of these regulations was delegated to the Department of the Interior by Executive Order 12580, 52 FR 2923 (January 23, 1987).

The Oil Pollution Act of 1990 (Pub. L. 101-380) was signed into law on August 18, 1990. It makes provision for natural resource damage assessment rules for discharges of oil in navigable waters to be developed by the Under Secretary of Commerce for Oceans and Atmosphere, particularly the National Oceanic and Atmospheric Administration (NOAA), in consultation with, among others, the Fish and Wildlife Service of the Department of the Interior. This Department will make itself available to work with NOAA to ensure the coordination of the parallel processes for damage assessments whether they result from releases of hazardous substances or discharges of oil. Section 6001(b) of the Oil Pollution Act of 1990 provides that any rule in effect under a law replaced by the Act will continue in effect until superseded. In particular, Senate committee report language makes it clear that "[t]he existing Interior Department rules, as amended by the court's decisions, may be used with a rebuttable presumption in the interim" until the new regulations are promulgated by Commerce. S. Rep. No. 101-94, 101st Cong., 1st Sess. 15 (1990).

CERCLA mandates biennial review and revision, as appropriate, of the Department of the Interior's damage assessment rule. The revisions are to be based on, among other things, new information or experience in applying the existing rule. The Department proposes to begin its planning of the next biennial update of the type B rule as soon as possible, coordinating input to the greatest extent possible with NOAA. The target date for an advance notice of proposed rulemaking soliciting input for that review process is in June 1991. The first biennial review of the type B rule produced only four comments. Those comments essentially reflected issues that the court was deliberating at the time. However, many comments and suggestions from users or potential users of the rule have been heard by Department staff over the years since the rule has been in use.

One excellent source of such comments has been the State briefing workshops which are scheduled by Interior at the request of individual States, and which have been held since the rule was published late in 1986. These workshops are generally attended by personnel from States' trustee agencies and attorney general offices, response agencies, and field personnel from a variety of Federal agencies with

either trustee or response concerns in the region. Another source of insight on use of the rule is the stream of calls received by Interior staff day-to-day from trustee officials in the field requesting technical assistance as they apply the rule in their individual situations.

The court decision was handed down in July 1989. At that time, the Department considered whether to begin the next biennial review and combine the revisions mandated by the court with those derived from user experience to that date. However, the court expressly mandated expeditious revision. The issues raised by various users did not present easy solutions. Some suggestions offered for addressing issues are diametrically opposed to each other. Thus, the Department decided that the current revisions should just implement the court decision, and that revisions based on experience should await further analysis, consultation with relevant agencies, and public input.

Revising the rule to accommodate known concerns will require considerable analysis and involvement of other governmental agencies and the public. The Department has begun planning for the next biennial revision of the rule mindful of these concerns. Also, as a result of the new provisions of the Oil Pollution Act of 1990, this Department will be coordinating its biennial review efforts with NOAA, since the Under Secretary of Commerce for Oceans and the Atmosphere was designated to write the natural resource damage assessment rules implementing that new Act.

For the information of readers looking forward to the biennial review of the Interior rule, the following are highlights of issues heard to date: The general overall concern about the rule heard most often over time is that it is "too complicated" or "too wordy," and that it should be written in simpler language, "in plain English," with fewer "shalls." There should be an expedited process for (oil) spills. There should be more guidance on pre-assessment coordination. There should be more guidance on post-assessment activities. There should be provisions for starting restoration activities while the damage assessment is still under way (while not precluded, it is not expressly discussed). The standards for injury determination should be relaxed. The standards for injury determination should be more explicit.

One issue heard throughout the Exxon Valdez experience to date has been the lack of public knowledge of both the immediate effects of the spill in the

region and the potential long range effects on the environments affected by the spill. Some members of the public have expressed frustration at the apparent lack of opportunity for those with varied concerns to provide their input to decisionmaking on many aspects of the aftermath of the spill. These are concerns about all aspects of the incident, but some of them center on the natural resource damage assessment process and the potential for restoration of injured resources, and, therefore, they are concerns with any future application of the Department's rule. Some comments heard following the Exxon Valdez incident stressed the need for early public involvement, both in the damage assessment process and in restoration planning, that restoration planning must be a cooperative effort involving the public. A suggestion was made that there be more guidance to trustees on making their restoration decisions, putting the emphasis first on rehabilitation, then on replacement, and finally on acquisition, in effect establishing restoration planning priorities that give the highest priority to rehabilitation. A suggestion was made that socioeconomic effects of restoration alternatives might be added to the list of factors that trustees are to consider in making their selection among restoration alternatives. Another issue is the access of the scientific community and the public to scientific and technical data contributing to damage assessment when that data was gathered for, or might be useful in, litigation of damage claims at a future date.

As soon as the current revisions are completed, the Department will publish an advance notice of proposed rulemaking to request general comments on experience to date, and also to request specific comments on issues, such as those highlighted above. The target date for that advance notice is 1991 June.

Meanwhile, the Department is proceeding with revisions of the type A rule in accordance with the court decision: the existing Natural Resource Damage Assessment Model for Coastal and Marine Environments (NRDAM/CME), and the model under development for Great Lakes Environment (NRDAM/GLE). For efficiency, changes were made first on the work in progress, NRDAM/GLE. A proposed rule for the Great Lakes environment is targeted for May 1991. The contract to amend the existing NRDAM/CME model was advertised in July of 1990, with a target for proposed rulemaking in December of 1991.



### B. Regulatory History

The Department, pursuant to its delegated responsibilities under CERCLA, has promulgated various final rules for the assessment of damages for injuries to natural resources in the following rulemakings: (1) August 1, 1986 (51 FR 27874), "type B" procedures, the general process for conducting natural resource damage assessments, and the alternative methodologies for conducting assessments in individual cases; (2) March 20, 1987 (52 FR 9042), "type A" procedures, the standard procedure for simplified assessments in coastal and marine environments, using a computer model called the Natural Resource Damage Assessment Model for Coastal and Marine Environments (NRDAM/CME); (3) February 22, 1988 (53 FR 5166), to amend 43 CFR part 11 to conform with amendments to CERCLA; and (4) March 25, 1988 (53 FR 9769), technical corrections to the NRDAM/CME. This combination of rulemakings, codified at 43 CFR part 11, is the natural resource damage assessment rule called for by section 301(c) of CERCLA.

The major impact of today's proposal would be in the damage determination phase. Therefore, reviewers should keep in mind the context of the entire natural resource damage assessment rule when considering the proposed revision. Reviewers may wish to refer to the type B rule (43 CFR part 11) in preparation of the comments on today's proposal.

**Existing Assessment Process:** The natural resource damage assessment rule provides an administrative process for conducting natural resource damage assessments with four major components. The first component of this process, the preassessment activities, includes several steps to take before initiating an assessment. All natural resource damage assessments contain these same initial steps. These steps generally begin with the notification of or detection by the natural resource trustee of a discharge or release. The trustee performs a preassessment screen to determine that a CERCLA or CWA-covered incident has occurred and that resources of the trustee may have been affected. The trustee makes a determination upon completion of the preassessment screen as to the appropriateness of further assessment actions. Provisions are made for emergency restoration as authorized by section 111(i) of CERCLA.

The second component calls for the preparation of an Assessment Plan before initiating an assessment using either the type A or type B procedures. The level of detail contained in the Assessment Plan should be consistent

with the rule's requirement for reasonable cost. The trustee must also comply with the rule's requirements for coordination with co-trustees, identification and involvement of the potentially responsible party, and public involvement in the development of the Assessment Plan. Also, the trustee must decide whether to conduct a type A or type B assessment. The trustee documents all decisions on the selection of both the scientific and economic methodologies to be used in the assessment in the Assessment Plan. The Assessment Plan must ensure that only the reasonable costs of assessment will be incurred. The trustee must provide for public involvement in the Assessment Plan with at least a 30-day review and comment period before implementing the Plan or making significant modifications. Comments received during this review, as well as responses to these comments, will be maintained as part of the administrative record of the assessment.

In the third component, the trustee begins either the type A or type B assessment. Both the type A and type B procedures follow the same three steps. Each type of assessment requires an Injury Determination phase, a Quantification phase, and a Damage Determination phase. The discussion that follows relates to a type B assessment.

During the Injury Determination phase, the assessment focuses on determining that an injury to the resource has occurred and that the injury has resulted from the discharge or release. After injury has been confirmed in this phase, the assessment moves into the Quantification phase. The focus of the Quantification phase is on identifying the services, such as habitat, recreation, or erosion control, provided by the resource, determining the baseline level of such services that existed before the discharge or release, and quantifying the reduction in services resulting from the discharge or release. The Quantification phase is closely related to the third phase of the type B assessment, the Damage Determination phase. The Damage Determination phase focuses on calculating the monetary compensation to be sought as damages for the injury to the natural resources. The calculations are based on the information derived from the Quantification phase as to the extent of the injury sustained and the effects on the services provided by the resource.

At the end of every natural resource damage assessment, whether a type A or a type B procedure is followed, the fourth component consists of several

post-assessment requirements. These requirements include a Report of Assessment to act as the administrative record of the assessment, the establishment of an account for damage assessment awards, and the development of a Restoration Plan to ensure that all damage assessment awards are used for the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the injured resources.

This overall administrative process for conducting a natural resource damage assessment pursuant to the Department's rule would remain basically unchanged by today's proposed revision. There would still be the four phases, or components, in the assessment process: the preassessment phase, the assessment plan phase, the assessment phase (where the trustee conducts a type A or type B assessment), and the post-assessment phase. Also, there would continue to be two planning components in a type B assessment: the Assessment Plan, and the Restoration and Compensation Determination Plan (formerly called the Restoration Methodology Plan), which is to be part of the Assessment Plan.

**Points in the Process Unchanged:** The majority of the issues considered by the court in its review of the type B rule were upheld as valid. Therefore, the rule would still require that assessment costs be "reasonable" when compared to the anticipated amount of damages to be recovered. The biological response acceptance criteria will remain as a method for identifying "actionable" injuries. The concept of valuing "committed" uses would remain when estimating compensable value and still serves to prevent speculative damages. The contingent valuation methodology still is a valid tool in a damage assessment. The requirement that trustees develop a restoration plan for use after the damage award still stands and will assist with the statutory intent that the trustee restore, rehabilitate, replace, and/or acquire resources equivalent to those injured by the discharge or release.

### C. Judicial Review

Section 113 of CERCLA provides that any member of the public may petition the Court of Appeals for the District of Columbia Circuit to review any regulation promulgated under CERCLA. A number of parties filed such petitions for the court to review the natural resource damage assessment rule. The rule was challenged in two separate, but parallel, cases. In *State of Ohio v. United States Department of the*



*Interior*, 880 F.2d 432 (D.C. Cir. 1989) (*Ohio v. Interior*), petitioners challenged a total of twelve issues that pertained to the administrative process and the type B procedures established in the rule. In *Colorado v. United States Department of the Interior*, 880 F.2d 481 (D.C. Cir. 1989), petitioners challenged two issues pertaining to the type A procedures.

The United States Court of Appeals for the District of Columbia Circuit unanimously upheld in part and invalidated in part certain aspects of the administrative process and the type B procedures. In that ruling, the court held that: (1) Restoration costs are the preferred measure of natural resource damages under CERCLA; and (2) all reliably calculated lost use values of injured natural resources should also be recoverable, with no specific hierarchy of methodologies required of natural resource trustees in conducting those valuations. The court also asked the Department to clarify its interpretation of extent to which the rule applies to natural resources that are privately owned.

Today's notice deals only with the three issues remanded to the Department in *Ohio v. Interior* affecting the administrative process and the type B procedures. The revisions to the type A procedures will be conducted under future, separate rulemakings.

#### 1. Issues Remanded for Revision

**Measure of damages.** One issue decided by the court concerned the Department's type B rule requiring the trustee's basic measure of damages for natural resource injuries to be either restoration costs or lost use value of the resources, whichever was estimated to be the lesser amount. The court held that CERCLA indicates a distinct preference for using restoration costs as the measure of damages, although the court acknowledged the role of the Department in determining under what conditions the use of restoration costs as the measure of damages might not be appropriate.

The provisions for calculating restoration costs were set out in the type B rule since restoration costs were one of two possible measures of damages. The rule required the trustee to quantify the effects of the injury to the natural resources in terms of services lost or disrupted as a result of a discharge or release. The trustee then determined alternative management actions that would restore those lost or disrupted services in a cost-effective manner. In addition, the rule allowed the natural resource trustee to claim damages for loss or lessening of use values associated with the lost services over

the time required to accomplish the restoration. Much of this present guidance would be retained.

**Economic valuations.** The other issue upon which the type B rule was remanded for revision was the Department's prescribed ranking, or hierarchy, of economic valuation methodologies for determining use values, and the associated limitation of those valuation methodologies for the recovery of nonuse values only to those situations where no direct uses could be found.

The type B rule provided a listing of economic valuation methodologies to calculate lost use values ranked as to their reliability. The court upheld the methodologies listed in the rule, but said that the rule could not require the use of one methodology over another.

The type B rule categorized various uses to be valued for an injured resource as "use" values and "option and existence" values, and allowed recovery for option and existence values only where the trustee could not apply a valuation methodology to determine a direct use value for a resource. The court held that while option and existence values represent passive use of a resource, they ought to be recoverable in a damage assessment.

#### 2. Issue Remanded for Clarification

On one issue, the court upheld the rule, but asked the Department to clarify the scope of public ownership of natural resources covered by the rule. The preamble to the final type B rule suggested that natural resource damage assessments should not cover privately-owned natural resources. However, the court understood the Department's oral argument to suggest that a substantial degree of government regulation, management, or other form of control over privately-owned natural resources could be sufficient to make the natural resource damage provisions apply to such resources in certain circumstances. The court construed CERCLA to mean that, while purely private resources are excluded from the natural resource damage provisions, some resources not owned by the government are encompassed by CERCLA's natural resource damage provisions. The court's construction was based primarily on the definition of natural resources found in section 101(16) of CERCLA and its legislative history. The court invited the Department to clarify its interpretation of the degree of management, regulation, control, or property interest that might make natural resources subject to the natural resource damage assessment rule.

#### D. Advance Notice of Proposed Rulemaking

The Department published a Federal Register notice on September 22, 1989 (54 FR 39016), to announce the Department's intent to revise the type B rule to comply with the court's decisions. Responses were requested on the following kinds of questions to assist in carrying out that purpose: (1) What possible considerations might trigger the use of a measure of damages other than restoration costs; (2) should the rule provide criteria and, if so, what criteria might be used to determine whether restoration is "technically feasible;" (3) should the rule define the term "grossly disproportionate" and, if so, how; (4) how much guidance should the rule include and what would be possible selection criteria to make available to the trustee in selecting the most appropriate methodology to determine lost use values; (5) what systems were available for classifying resource uses, as to use and nonuse, etc., which would also aid the trustee to avoid double counting; and (6) what degree and type of management, regulation, control, or property interest might make natural resources subject to the provisions of CERCLA for the purposes of enabling public trustees to recover damages for injuries to such resources?

The Department received over 700 pages of comments from 32 submissions on the possible revisions to the type B rule. The discussion of those comments on the type B rule with the Department's response is found in Section IV. of this preamble.

#### II. Discussion

##### A. Introduction

The Department is proposing to revise the type B rule to comply fully with the court order. The court's ruling on the measure of damages centered around the "lesser of" requirement found in § 11.35 of the current type B rule. The rule required that the trustee conduct an assessment for the natural resource injury with the measure of damages being either an estimate of the restoration costs or the lost use value of the resources, whichever was estimated to be the lesser amount. The court held that CERCLA indicates a distinct preference for using restoration costs as the measure of damages for injured natural resources.

The second major issue ruled upon by the court on the type B rule was in the area of the economic valuation methodologies and the kinds of "uses" of the resources that could be valued using those methodologies. The rule



provided a listing of economic valuation methodologies, and listed these methodologies ranked in order of their reliability and accuracy. The rule required first considering the use of market price or appraisal methodologies, then, only if these were not appropriate, moving to other valuation methodologies down the list. In addition, the rule categorized the types of values that a resource might have as "use" or "nonuse" values. The rule allowed the trustee to recover "nonuse" values only when no direct uses could be identified.

The court said that the rule could not require the use of one methodology over another, but that the trustee should be allowed to use any reliable methodologies available. The court also said that, even though "nonuse" values might represent only "passive" or "non-consumptive" use of a resource, they should be recoverable in a damage assessment.

At a minimum, to comply with the court's decisions on these two issues, the Department could do three simple revisions: (1) remove the "lesser of" requirement of § 11.35; (2) delete the language of § 11.83 requiring the economic valuation hierarchy; and (3) delete the language of § 11.83 restricting recovery of nonuse values to those cases where the trustee can determine no direct uses of the injured resource. However, today's proposed revision would provide an approach, particularly affecting the Damage Determination phase of the rule, that provides greater assistance to trustees in planning and recovering for restoration activities. The proposed revision would provide guidance to help trustees recover compensation based on both estimating the costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources and valuing the loss of services to the public. These two components of the measure of damages are presented together throughout the section describing these estimation and valuation activities to provide a comprehensive approach to assessing damages.

#### *B. Restoration Costs as the Measure of Damages*

The court held that CERCLA indicates a preference for using restoration costs as the measure of natural resource damages. However, the court also suggested that there might be circumstances when some factor other than restoration costs could be the measure of damages. The court used the simple term "restoration" costs. The law provides that sums recovered from natural resource damage claims must be

used to restore, rehabilitate, replace, or acquire the equivalent of affected natural resources. The Department proposes to use the phrase "restoration, rehabilitation, replacement, and/or acquisition of equivalent" as encompassing the full range of possible "restoration" actions a trustee might plan to take and, therefore, use to estimate the costs of the selected "restoration" action. It is recognized that, in many cases, trustees will take some combination of these actions, rather than only one. Some portion of this broader list—restoration, rehabilitation, replacement, or acquisition of the equivalent—will always be a part of the trustee's "restoration" activities, because some trustee actions will always be required beyond the trustee's normal management actions. Thus, there will always be some cost attributable to "restoration" or what the proposed revision calls restoration, rehabilitation, replacement, and/or acquisition of equivalent resources. On this basis, the Department does not propose to set out circumstances when some factor other than restoration costs should be the measure of damages as would have been allowable under the court's ruling.

The Department is proposing revisions to the Damage Determination phase to provide some additional guidance to the trustee in estimating site-specific costs of various possible alternatives to bring about the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the injured resources. The guidance discusses such factors as the trustee's consideration of the technical feasibility of the possible alternatives, and also consideration of whether the relationship of the estimated costs of an alternative are proportionate to the anticipated benefits gained from that action.

In addition to recovering the costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources, the trustee may also recover the value of the services lost to the public until the lost services are returned to baseline levels. The proposed revision of the Damage Determination phase would describe the values for which the public may be compensated, and the methodologies that may be used to estimate those values.

Therefore, the measure of damages under the proposed revision would be the estimated cost of the selected alternative for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources, plus the compensable value of the services

that will be lost to the public through the period of recovery to the baseline conditions existing before the discharge or release. The types of costs and the extent of compensable value that may be recovered are discussed together in the Damage Determination phase to ensure that the trustee simultaneously makes plans to recover both, as appropriate, for any given incident.

*Restoration and Compensation Determination Plan:* The proposed revision of the Damage Determination phase provides for the development of a Restoration and Compensation Determination Plan. This Restoration and Compensation Determination Plan would replace the Restoration Methodology Plan of the existing rule. In the Restoration and Compensation Determination Plan, the trustee will identify and consider a reasonable number of possible alternatives for the restoration, rehabilitation, replacement, and/or acquisition of resources equivalent to the injured resources. In the Restoration and Compensation Determination Plan, the trustee would also include an estimate of the services that are likely to be lost to the public during the recovery to baseline associated with the possible alternatives being considered. The trustee would be required to address both: (1) The possible ways to restore, rehabilitate, replace, and/or acquire equivalent resources; and (2) the estimated lost services associated with each alternative, in a single plan for determining damages.

The trustee would include in the Restoration and Compensation Determination Plan the possible alternatives considered, the lost services associated with each, and the estimated period of recovery associated with each alternative. The trustee would list the cost estimating methodologies he plans to use to estimate the cost of the actions that make up the selected alternative. He would also identify the valuation methodologies he plans to use to value the lost services associated with the selected alternative. The trustee would give a brief rationale for the choice of the selected alternative, of the methodologies to estimate the costs, and those to estimate the compensable value associated with that alternative. This Restoration and Compensation Determination Plan would become part of the overall Assessment Plan, and thus, subject to public review and comment.

If the trustee does not have sufficient information to develop the Restoration and Compensation Determination Plan by the time the Assessment Plan is



made available for public review and comment, the Restoration and Compensation Determination Plan could be developed and made available for public review and comment separately, later in the assessment process, at any time up to the completion of the Quantification Phase. At that point, the trustee will have collected the information concerning the extent of injury and the effects of those injuries on the services provided by the injured natural resources. Whenever the Restoration and Compensation Determination Plan is presented for public review, the trustee would allow at least 30 days for review and comment before proceeding with the cost estimating and valuation of the selected alternative. The Restoration and Compensation Determination Plan, along with the public comments received and responses to those comments, would become part of the Report of Assessment.

**Alternatives:** In developing the Restoration and Compensation Determination Plan, the trustee would list a "reasonable number" of possible alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources. For large, complex assessments involving a variety of resources and services, there may exist a very large number of possible alternatives. When there are potentially a very large number of possible alternatives, only a reasonable number of alternatives, covering the full spectrum of possible alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources, should be developed. The trustee has the discretion to decide on a case-by-case basis what constitutes a reasonable range of possible alternatives.

**Range of Actions:** In developing each possible alternative, the trustee may consider a range of actions that might include restoration, rehabilitation, replacement, and/or acquisition of equivalent resources. The actions may be taken singly or in any combination. The rule would guide the trustee on how to develop the possible alternatives. The proposed revision emphasizes the wide range of actions available to the trustee to return to baseline levels both the injured natural resources and the services that the natural resources provide to the public. For example, the trustee might consider all or parts of the following kinds of possible alternatives: (1) Intensive restoration or rehabilitation actions that are needed to bring the injured resources and their services back to baseline (pre-spill or pre-release

conditions) in a relatively short period of time; (2) restoration, rehabilitation, replacement, and/or acquisition actions combined in a manner that would optimize the recovery of all injured resources and services back to their baseline condition; (3) replacement or acquisition of equivalent resources if the injured resources and their services cannot be restored or rehabilitated through direct management actions or indirect use limitations; or (4) allowing the resources to recover naturally with minimal trustee management action. Moreover, a trustee, or cotrustees, would be afforded the flexibility of defining possible restoration actions to address individual resources or groups of resources in order to adopt an overall restoration strategy that best meets the needs of the trustee(s).

One of the possible alternatives to be considered is allowing the resources to recover naturally, with minimal management actions. Other possible alternatives would provide for actions that reduce the time for recovery to baseline conditions from that expected from natural recovery. In the Restoration and Compensation Determination Plan, the trustee would state the reasons for considering each possible alternative to be viable and worthy of consideration.

**Services through Recovery Period:** Services provided by an injured resource refer to all of the functions performed by that resource for and/or to the public and to other resources and the interactions between them. The term "services" includes "passive" or "non-consumptive" functions performed by the resource for and/or to the public. The trustee would estimate the loss in services provided by the injured resources from the time of the discharge or release through the estimated recovery period associated with each of a reasonable number of possible alternatives. The recovery period is that time between the occurrence of the discharge or release and the successful completion of the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the natural resources and their lost services. The trustee would use the determination of the period of resource recovery associated with each alternative to develop an estimate of the services that would be lost to the public during the implementation of that alternative. The services provided by the resource before the discharge or release constitute the baseline level of services against which the trustee is to measure the loss in services for each of the possible alternatives.

**Selection of Alternatives:** The trustee should select the alternative for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources most appropriate for the particular incident based on a number of different considerations. The proposed revision provides guidance by listing factors that the trustee, at a minimum, shall consider and weigh, among other things, in making this selection. Each of the reasonable number of possible alternatives identified should be evaluated using all relevant factors, but the various alternatives considered may address and balance these factors in different ways. In practice, the alternative selected by the trustee as the most appropriate might not satisfy all of the considerations, yet still be "correct" for the purposes of the assessment. The trustee, after considering all the relevant factors, may make a selection that gives greater weight to some factors over others. The trustee is required to explain, in the Report of the Assessment, the reasoning for giving greater weight to certain factors over others.

**Factors to Consider:** The trustee should consider all relevant factors in selecting the most appropriate alternative. Each alternative would be considered to the extent that a particular factor was relevant to the actual situation faced by the trustee. The factors listed in the proposed revision are: (1) Technical feasibility; (2) the relationship of the expected costs of the proposed actions to the expected benefits from the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources; (3) cost-effectiveness; (4) the results of any actual or planned response actions; (5) potential for additional injury resulting from the proposed actions, including long-term and indirect impacts, to the 32 injured resource or other resources; (6) the natural recovery period; (7) ability of the resource to recover with or without alternative actions; (8) acquisition of equivalent land for Federal management where restoration, rehabilitation, and/or other replacement of land is not possible; (9) potential effects of the action on human health and safety; and (10) consistency with applicable Federal and State laws and policies. Addressing these factors, the trustee will evaluate the list of possible alternatives and the loss in services associated with each, and select the alternative that combines the most appropriate actions to adopt for the particular incident. Most of the considerations are incorporated from the current rule, and are discussed in Section II. G. of this preamble. The two



factors the court said might be considered are described more fully here, "technical feasibility" and "relationship of costs to benefits."

**Technical Feasibility:** The trustee should determine whether the actions considered in each alternative would be technically feasible, as that term is used within a natural resource damage assessment. The term "technically feasible" is defined in the type B rule at § 11.14(gg). In the context of an alternative for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources, the term would mean that the technology and management skills necessary to implement an alternative are well known and that each component or action of the alternative has a reasonable chance of successful completion in an acceptable period of time. The trustee is the one who will make the determination of "technically feasible" on a case-by-case basis. This determination will be subject to public review as part of the Assessment Plan, or separately in the public review of the Restoration and Compensation Determination Plan.

**Relationship of Costs to Benefits:** The trustee should consider the relationship of the expected costs of an alternative to the benefits from the implementation of that alternative, both in terms of the recovery of the resource and the benefits to the public that would result. This consideration is not intended to be a straight cost/benefit analysis. The trustee should weigh circumstances unique to each assessment against the expected alternative costs. Such circumstances might include seasonal conditions, e.g., long winters resulting in a short field sampling season requiring extra personnel, overtime, and high travel costs. All relevant considerations that might affect the weighting of costs and benefits should be taken into account by the trustee on a case-by-case basis. The trustee will document this consideration within the Restoration and Compensation Determination Plan that is subject to public review and comment.

This determination of the relationship of costs to benefits is not an attempt to define in quantitative terms, as suggested by the court, what costs might be "grossly disproportionate" to the value of the services lost. Instead, the proposed revision would require that all of the various factors listed be considered by the trustee in selecting the most appropriate alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources. These factors, when

considered together, would encompass the "grossly disproportionate" determination suggested by the court.

**Costs as a Component of Damages:** The proposed revision describes the kinds of items that could be included as "costs" to be recovered, i.e., direct and indirect costs, comparable to the direct and indirect costs of conducting the assessment. The proposed revision describes methodologies that the trustee could use to estimate these direct and indirect costs to restore, rehabilitate, replace, and/or acquire the equivalent resources, based on standard and accepted accounting practices for estimating costs. The proposed revision includes factors for the trustee to use in selecting which cost estimating or valuation methodologies would be best for the selected alternative.

Direct costs are those that are identified by the trustee as charged directly to the conduct of the selected alternative. Direct costs would include trustee agency expenses for a specific action that is a component of the selected alternative, e.g., salaries and benefits, travel costs, materials and supplies purchased specifically for the implementation of the selected alternative, equipment lease costs, building related costs if a building is leased or purchased for the sole purpose of implementing the selected alternative, payments for goods and services furnished by private companies or other government agencies under contract with the trustee agency. Direct costs can also include all costs of other entities performing actions for the trustee agency. These costs could include a contractor's overhead, labor, and material costs, which the contractor would bill directly to the trustee agency. A trustee, however, should take into account the requirements of reasonable cost when identifying and accounting for direct costs.

Under the proposed revision, compensation for indirect costs could be included in the damage claim in one of two ways. The trustee could either identify indirect costs or claim a certain indirect cost rate for expenses. Indirect costs could be based on costs associated with a particular action for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources where there is no direct way to calculate or attribute them to a particular action or series of actions. Such indirect costs could include offsite expenses involved with labor or materials necessary to restore, rehabilitate, replace, and/or acquire the equivalent resources, such as the part of an agency's offsite personnel involved in

management or review of actions associated with restoration, or of off-site equipment normally involved in regular agency work being used in part for restoration. Indirect costs may also include the administrative management, policy formulation, and reporting costs.

Instead of computing indirect costs, a trustee agency would be allowed to claim an indirect cost rate for recovery of indirect costs. This recovery of indirect costs could be based upon the trustee agency's established practice. The Department notes that recovery of indirect costs are best accomplished where the trustee agency already has an established indirect cost rate.

**Cost Estimating Methodologies:** Also by way of guidance, the proposed revision would add a list of particular cost estimating methodologies. As a result of the court's ruling, costs for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources will be a part of the measure of damages in all cases under CERCLA. Therefore, trustees will need guidance in how to estimate, and then collect for, the costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources in a damage assessment. In most cases trustees will need to estimate in advance the total costs of the selected alternative as accurately as possible. Therefore, full descriptions of reliable and accepted costing methodologies are included in the proposed revision to allow trustees unfamiliar with these procedures to capture an estimate of "total costs." In performing their assessments, trustees will want to have this kind of expertise on their assessment team. This guidance simply serves to familiarize trustee managers with this need.

The Department is proposing to include specific examples of standard and accepted cost estimating practices of the accounting profession that may be used to determine the direct and indirect costs of the selected alternative in the claim for damages. Although their individual designs may differ, the purpose of these methodologies, referred to as "cost estimating" methodologies, is to derive the estimate of costs for the performance of actions within the selected alternative that will be sought as part of the claim for damages. The methodologies range from general to comprehensive estimates in which the level and extent of calculations becomes progressively more detailed. The accuracy of the estimate derived from the respective methodologies depends on the amount and quality of information available to prepare the estimate. The trustee's selection of



methodologies will need to reflect these factors along with the general requirement of the rule that selected assessment methodologies represent reasonable costs. Other cost estimating methodologies may be appropriate for a particular action that is part of the selected alternative. Therefore, the proposed revision also includes an acceptance criterion that provides for a trustee to use methodologies other than those listed in the rule so long as those cost estimating methodologies are standard and commonly accepted methodologies of cost accounting. The rationale for the trustee's choice will be noted in the Restoration and Compensation Determination Plan.

Restoration costs are the preferred measure of damages. They will normally be only part of the total damage claim. The other part will be made up of all reliably calculated values, including option and existence values, as described in Section II.D. below. The court's opinion touched on the methodologies for such calculations, as discussed in the following section.

#### *C. Hierarchy of Valuation Methodologies*

As initially published, the rule stated that if the trustee determined that the market for the injured resource was "reasonably competitive," then the diminution of the market price attributable to the discharge or release should be used to estimate damages. If the market price methodology was not appropriate then the rule stated that appraisals should be used to estimate damages. Only when neither the market price nor the appraisal methodologies were appropriate for the affected resources being assessed, did the rule allow the trustee to use nonmarket valuation methodologies.

The court ruled that the hierarchy, or ranked order, of valuation methodologies established in the original version of the rule incorrectly established a strong presumption in favor of the market price and appraisal methodologies. The court said that neither CERCLA nor its legislative history showed any Congressional intent to limit use values to market prices. The court said that the damage assessment rule should capture fully all aspects of the public loss.

In response to the Court's ruling, the requirement for choice according to a hierarchy of valuation methodologies is being removed. The trustee may now select among the methodologies—or combination of methodologies—to estimate the economic value of the services provided by the injured natural resources before the injury. In removing

the hierarchy requirement for use of various methodologies, the Department is not implying that all valuation methodologies are equally reliable or applicable. Depending on the data available and the nature of the injury, different methodologies may be more or less reliable. The trustee will briefly state his rationale for his choice of any methodology in the Restoration and Compensation Determination Plan that is a part of the overall Assessment Plan.

In cases where the full value of a natural resource is captured by a competitively determined market price, the Department considers the market price methodology to be the most reliable valuation method. The mere presence of a competitive market does not, however, ensure the price will "capture fully" the value of the resource. Where the trustee determines that this is the case, the nonmarketed methodologies may be used. If nonuse values are significant, the only way to quantify these values explicitly is to use the contingent valuation methodology (CVM). CVM is the only nonmarket valuation methodology currently available that is capable of explicitly estimating nonuse values. Thus, for the case of a competitively-sold natural resource with significant nonuse values, the CVM, possibly used in conjunction with the market price methodology, could be used to estimate the value compensable to the public. When nonuse values are not significant, the most reliable valuation methodology to employ for competitively-sold natural resources may be the market price methodology.

Use value damages may be measured using valuation methodologies, known as "revealed preference" methodologies, that are based on observing changes in human behavior and/or actual market transaction data resulting from the injured natural resources (e.g., travel cost model, hedonic pricing, etc., described in the preamble to the August 1986 type B rule). The most common revealed preference valuation methodologies are the market price methodology, land appraisals, factor income methodology, travel cost analysis, and hedonic price analysis. Generally, it is thought that if a value can be quantified using revealed preference methodologies, assuming the needed set of observable data is available, then it is a use value; if it cannot be quantified that way, then it is a nonuse value.

The contingent valuation methodology is not a revealed preference methodology, but it also can be used to quantify use values. The trustee would be free to select any of the listed

methodologies for quantifying use values so long as he explains his selection in the Restoration and Compensation Determination Plan. The fact that a use value can be measured using revealed preference methodologies is not a requirement that all use values must be quantified using revealed preference methodologies. The trustee should select the most reliable methodology for quantifying economic value, while at the same time considering cost effectiveness in applying the methodology and the need to complete the assessment at a reasonable cost.

The proposed revision would group the various valuation methodologies by the type of values to be determined and the type of methodology available to determine that type of value. This grouping lists both marketed and nonmarketed methodologies that are available to determine use values. The grouping also reflects the fact that the only methodology currently available to determine nonuse values is the CVM. A further discussion of the CVM can be found in Section II.H. of this preamble.

For estimating use and nonuse values, the trustee should consider the types of economic values involved and the reliability of different valuation methodologies when selecting an overall economic valuation strategy. Once the choice is made, the rationale for the choice would be documented in the Restoration and Compensation Determination Plan.

#### *D. Resource Values*

Another issue upon which the type B rule was remanded for revision was the limitation on the recovery of nonuse values. The court said that all reliably calculated values of the resource, including option and existence values, should be recoverable, keeping in mind the proscription in CERCLA that the trustee may not double count.

The rule as it exists already allows for computation of use and nonuse values by various economic methodologies. Their use continues to be allowed under this proposal for valuation of lost services during the period of time between the spill or release and the recovery of the resource. The court decision upheld uses of the various economic methodologies already described in the rule. Thus, the revised rule continues its description of how these methodologies work.

The proposed revision would add a new term, compensable value, to stand for the combination of resource value determinations that will go to make up the damage claim in addition to



restoration costs. Compensable value encompasses all of the public economic values associated with an injured resource, including use values and nonuse values such as option, existence, and bequest values. Natural resources have public economic value because of the variety of services they provide to the public. These services include "passive" or "non-consumptive" uses. When natural resources are injured, the flow of services they provide is apt to be disrupted, thereby resulting in economic damage. Compensable value is a dollar measure of this damage.

The concept of compensable value allows for many different reasons why the public may value natural resources—including reasons not represented by market prices. For example, some individuals might be willing to pay to avoid an injury to a favorite recreation area. Others may be willing to pay to avoid the loss associated with knowing wildlife were injured, even though they will never visit the injured area. This willingness to pay by people who will never visit the area is a nonuse value. It is the natural resource trustee who recovers on behalf of the public for these losses, rather than the individual person. The term compensable value incorporates a wide spectrum of values, and is intended to address the court's ruling that option and existence values may be included as a part of damages.

The rule subdivides compensable value into two parts: use values and nonuse values. Use values refer to economic values that arise because of direct public use of the resource or the services that a resource provides. Some examples of use values include on-site recreation of all types, including hunting, fishing, wildlife viewing, hiking, camping, driving for pleasure, etc.; extractive uses of natural resources, including energy production and mining; use of renewable natural resources to produce products such as timber, fish, or agricultural products; uses of stream flows for irrigation, municipal and industrial water supplies, and for power generation; and transportation services provided by navigation over public waterways, lands, or airspace.

Nonuse values are the difference between compensable value and use values. This concept of nonuse values is being used because there are many categories of nonuse values that have not been consistently defined. Any attempt to categorize explicitly different types of nonuse value would involve arbitrarily selecting a single definition. In contrast, almost all economists accept that the difference between

compensable value and use value represents nonuse value. As a practical matter, it is usually not necessary to subdivide among the various types of nonuse values. Included in the definition of nonuse values are the concepts commonly referred to as existence value, bequest value, preservation value, and intrinsic value, which are discussed in the preamble of the August 1986 type B rule. At present, there is controversy over whether option value is more accurately considered a use or nonuse value. Regardless of its category, if it is applicable, it is clearly a part of compensable value.

Although nonuse values can theoretically exist for any natural resource, they are most significant for irreversible or long-lasting changes to well-known, unique natural resources. For environments that quickly recover to the baseline condition following a discharge or release, nonuse values may not normally be significant. Also, an injury to a common natural resource with many substitutes (e.g., a typical small stream), may not generate large nonuse values, particularly for those residing outside the area where the injury occurred, even if the recovery takes a long time. However, a permanent injury to a unique resource (e.g., the Grand Canyon) may generate significant nonuse values, even for those residing in areas far removed geographically from the site where the injury occurred. Trustees might best substantiate their claims for lost nonuse values—particularly as they relate to persons who do not directly use the injured resource—by demonstrating irreversible, or very long-lasting, adverse impacts to unique, widely-recognized natural resources.

For a situation where there are significant use and significant nonuse values potentially at stake, the trustee may wish to first quantify the lost use values using either a marketed or nonmarketed method. He may then wish to quantify the total compensable value (use plus nonuse), using CVM. This dual quantification of use value may help increase the reliability of the assessment because the estimate of use values would not become solely tied to a CVM-based estimate where use and nonuse are estimated simultaneously. If this dual quantification approach is adopted, the trustee would subtract the previously determined use values from the total estimated compensable value in order to arrive at a separate estimate of the nonuse component of the total compensable value.

Compensable value continues to have two important limitations. First, adverse

effects on human health could not be included within compensable value because they are not covered under the natural resource damage liability provisions of CERCLA. Second, compensable value would not include any private economic damages related to the secondary or indirect economic effects on individuals, businesses, or other non-governmental organizations associated with a discharge or release, and the associated cleanup activities. For example, an oil spill may have regional economic impacts that cause some private businesses to grow (e.g., charter boats for cleanup) and others to diminish (e.g., resort hotels). Although private individuals might gain or lose money as a result of these activities, the losses cannot be included in compensable value because they are not covered in the natural resource provisions of CERCLA. Only losses related to the public's use of the injured resource, or the services provided by the resource, are included in compensable value.

#### *E. Scope of Public Ownership*

The court asked for a clarification of the Department's views on the extent to which the natural resource damage assessment rule applies to natural resources that are privately owned. Commenters to the Department on this rulemaking offered no previously validated criteria or readily transferable procedure for such determination. Several commenters said that trustees must have the flexibility to determine the scope of their trusteeship on a case-by-case basis. Therefore, the proposed revision in response to the court's concern directs the trustee, or co-trustees, to state briefly the authority for asserting trusteeship, or co-trusteeship, in the Assessment Plan, and also in the Notice of Intent to Perform an assessment that is sent to the potentially responsible party. In describing the natural resources of concern to the trustee, the trustee will cite the relevant treaty or other provision of international law, constitution, statute, common law, regulation, order, deed or other conveyance, permit, or agreement providing the basis for the trusteeship. This authority statement within the Assessment Plan, which is available for public review and comment, will enable an early notice to the public as to the trustee's assertion of trusteeship. This statement in the Notice of Intent to Perform an Assessment will also serve to inform the potentially responsible party of the various agencies involved in an assessment and of their natural resource concerns.



On the issue of the scope of public ownership of natural resources, the court did not dispute the rule, but asked the Department for "its consideration and explanation" of the rule insofar as it may extend to natural resources not "owned" by a government entity. The court concluded that CERCLA, primarily the definition of natural resources, and its legislative history mean that purely private resources are excluded from the natural resource damage provisions. CERCLA defines natural resources as "land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by" the United States, any State or local government, any foreign government, or any Indian tribe, or, if such resources are subject to a trust restriction on alienation, any member of an Indian tribe. The court noted that the rule defines the term "natural resources" consistent with the statutory definition found in section 101(16) of CERCLA.

The court looked at the preamble to the final type B rule that said "Section 101(16) of CERCLA clearly indicates that privately-owned natural resources are not to be included in natural resource damage assessments" (54 FR 27696). The court understood the Department's oral argument to suggest that a substantial degree of government regulation, management, or other form of control over natural resources could be sufficient to make the natural resource damage provisions apply to such resources in certain circumstances. The court did not call for any changes in the definition of natural resources in the rule itself. However, the court suggested that it would be too narrow a reading of the statute to prohibit recovery for publicly-managed natural resources that were privately owned. Thus, the court asked the Department to clarify whether the application of the rule might extend to lands not owned by a government entity.

In response, the Department notes that it had not meant to suggest that recoveries under the rule hinge solely on ownership or exercise of a formal document transferring the property to a government entity. The Department used in its rule the CERCLA definition of natural resources that provides for various degrees of government regulation, management or other form of control over the natural resources to make the CERCLA natural resource damage provisions applicable. The rule repeats the statutory language of "belonging to, managed by, held in trust by, appertaining to, or otherwise

controlled by," and thus covers a broad range of government interest in natural resources on behalf of the public. Pursuant to that language, general sources of authority for recovery under the rule could include, but not necessarily be limited to, relevant treaty or other provision of international law, constitution, statute, common law, regulation, order, deed or other conveyance, permit, or agreement.

The statutory phrase "belonging to" connotes ownership and would cover government-owned lands, as well as resources affixed, i.e., permanently attached, to such lands. However, the remaining terms, "managed by, held in trust by, appertaining to, or otherwise controlled by," ensure a wide range of legitimate government interest in natural resources that may, in fact, be held in private ownership.

#### F. Other Significant Revisions

**Need for preliminary estimate:** One other revision is related to the way the Department is proposing to amend the rule in accordance with the court's ruling that restoration costs be the preferred measure of damages. As described in section II.B. above, the Department is proposing to remove the requirement that the trustee base his damage determination on the lesser of restoration costs or the diminution in use values. This "lesser of" requirement was contained in the Economic Methodology Determination of § 11.35. The Economic Methodology Determination in the existing rule served two purposes: (1) To establish the method of determining damages to be used in conducting the assessment; and (2) to assist in ensuring that the assessment as planned could be performed at a reasonable cost. Although the "lesser of" requirement would be removed, it is still important to plan for an assessment that could be performed at a reasonable cost. Therefore, it would still be necessary for the trustee to develop a preliminary estimate of damages that may prove to be recoverable before he begins the development of an Assessment Plan. This preliminary estimate would help to structure the Injury Determination, Quantification, and Damage Determination phases of the assessment.

Thus, the proposed revision keeps the idea that the trustee must develop a preliminary estimate of the anticipated costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources and the compensable value of the lost services resulting from the discharge or release. The trustee uses this "preliminary estimate of damages" solely for the

purpose of scoping the Assessment Plan to ensure that the assessment will be performed at a reasonable cost. The proposed revision would provide guidance to the trustee to make this preliminary estimate at the assessment planning stage, although the estimate may be revised as the assessment proceeds. The trustee would make this preliminary "back-of-the-envelope" estimate based on existing information. The trustee would include this estimate in the Report of the Assessment at the end of the assessment. *funding*

**Statute of Limitations:** With respect to the period in which actions may be brought for natural resource damages, section 113(g) of CERCLA provides that

... no action may be commenced for damages ... unless that action is commenced within 3 years after the later of the following:

(A) The date of the discovery of the loss and its connection with the release in question.

(B) The date on which regulations are promulgated under section 301(c).

For the purposes of the statute of limitations encompassed by (B), the "date on which regulations are promulgated" is the date upon which both sections of the rule, type A and type B, including the court-ordered revisions, become effective as a final rule.

#### G. Factors to Consider in Selecting Alternatives

Section II.B. above notes factors to consider in selecting the actions that will comprise the trustee's selected alternative for restoration, rehabilitation, replacement, and/or acquisition of equivalent of the injured resources. Two of those factors were recommended by the court, and were detailed in Section II.B. Several other factors represent considerations already inherent in the existing rule. There are other considerations in selecting an alternative, such as:

**Cost-effectiveness:** Cost-effectiveness is defined in the damage assessment rule as achieving an objective with the least expenditure of financial or other assets. Cost-effectiveness generally means that whenever the same or a similar benefit can be obtained in several ways, the least costly means of obtaining that benefit is selected. Cost-effectiveness is not intended to be used as a measure to select between alternatives or actions that provide very different levels of benefits at different costs.

**Response Actions:** The law and the existing rule provide that natural resource damages are for injuries



residual to those injuries that may be mitigated in the response action. In some instances it may be necessary to anticipate an eventual or continued response or remedial action in planning a natural resource damage assessment. In addition, the damages include compensation for the lost services from the time of the injury caused by the discharge or release until resource recovery results from actions to restore, rehabilitate, replace, and/or acquire equivalent resources.

**Additional Injury:** Actions to carry out a proposed alternative could in themselves result in additional injury to the injured resource or to other resources. The trustee should consider whether the actions for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources would result in an unreasonable amount of long-term and indirect impacts on other resources.

**Ability of the Resource to Recover:** The trustee should consider the ability of the injured resource to recover naturally and/or with assistance by various actions. This consideration encompasses whether all important and measurable services of the lost or injured resources are being restored.

**Recovery Period:** The trustee should estimate the time necessary for recovery, both without restoration efforts beyond the removal or remedial action and normal management practices, and with alternative actions to restore, rehabilitate, replace, and/or acquire equivalent resources. The trustee should then consider the extent to which the alternative would lessen the period of recovery of the resource and its services when compared to the estimated period of natural recovery absent any actions on the part of the trustee. This recovery period will be determined according to the facts of the given site or incident situation.

**Federal Land Acquisition:** Federal trustees should generally consider first restoration, rehabilitation, or replacement actions, looking to the acquisition of land to carry out some component of a possible alternative when restoration, rehabilitation, or replacement are not feasible. This consideration would apply only to acquisition of land by Federal trustees.

**Human Health and Safety:** The trustee should consider whether any actions of the alternative under consideration would be likely to have any adverse impact on human health and safety.

**Other Laws and Policies:** The trustee should look to applicable Federal and State law or policy, including his own agency's mandates, to ensure that the

alternative is consistent with any directives and policies concerning administration of his programs and responsibilities. A potential conflict would have to be considered and resolved if that alternative were to be selected.

#### *H. Considerations in using the Contingent Valuation Methodology (CVM)*

Compensable value, discussed in Section II.D. of this preamble, includes both use and nonuse values. The Court ruled that CVM is a "best available technology." For nonmarketed use values, such as those associated with publicly provided outdoor recreation, CVM, when properly applied, has produced values comparable to values based on "revealed preference" methods.

It is difficult to get a consensus on the reliability of CVM. It may be much harder to set up a hypothetical market for nonuse values, such as a unique recreational opportunity that respondents have never taken or the existence of an endangered species they will never see, than it is to set up a hypothetical market for resource use opportunities with which respondents are quite familiar. It is currently difficult to get a consensus as to whether it is possible to set up hypothetical markets to measure nonuse values to the same degree that is possible to define existing markets to determine use values compared to the reliability of values based on the revealed preference approaches. A body of research comparing nonuse values to values based on revealed preference approaches does not yet exist to the same degree as for CVM use values. Thus, it is more difficult to evaluate the reliability of CVM nonuse values, compared to use values. It is because of this that the Department has characterized CVM, when used to determine nonuse values, as the least reliable method.

Nevertheless, CVM is the only method currently available for estimating nonuse values. A trustee should, at the outset of a damage assessment, determine whether nonuse values are likely to be a significant part of compensable value. As noted in Section II.D., the magnitude of the injury, its irreversible or long-term effects, the uniqueness of the resources involved, and other such factors are likely to be important in this determination.

In order to help the trustee in the application of CVM, the following books may be of assistance: Cummings, Donald G., Brookshire, David S., and Schulze, William D.; Valuing

Environmental Goods: An Assessment of the Contingent Valuation Method; Rowman & Allanheld; Totowa, NJ (1986); and Mitchell, Robert C., and Carson, Richard T.; Using Surveys to Value Public Goods: The Contingent Valuation Method; Resources for the Future; Washington, DC (1989).

The trustee should always attempt to use the most reliable method to estimate the dollar value of all the components of compensable value. The proposed revision makes a distinction between the methodologies listed for determining use and nonuse values. In the Department's view, the reliability of CVM varies greatly, and is dependent upon the type of values quantified. When CVM is used to quantify use values alone, it is judged to be just as reliable as the other nonmarket valuation methodologies. When CVM is used to quantify use values alone, the survey population would normally consist of actual users of the resource. Use value estimates based on general population surveys would be considered in the least reliable category when survey respondents are asked to allocate a portion of their bid to nonuse values. When CVM is used to quantify either nonuse alone or use plus nonuse values, it is in the least reliable category of the other nonmarketed valuation methods. As the state of the art advances, CVM estimates of nonuse values may become more reliable. Although any estimates of nonuse will generally be less reliable than corresponding estimates of use values, the Department recognizes that CVM is the only method available to determine explicitly nonuse values.

#### **III. Annotated List of Sections to be Revised**

*Section 11.13* would be revised to state that the Damage Determination phase includes guidance on determining damages based on the costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources, plus the compensable value.

*Section 11.14(qq)* would be revised to replace the reference to the Restoration Methodology Plan with a reference to the Restoration and Compensation Determination Plan.

*Section 11.15(a)(3)(ii)* would be revised to include the costs of planning and undertaking the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources among recoverable damages.

*Section 11.30(c)(1)* would be revised to include the costs of making the preliminary estimate of damages among recoverable assessment costs.



Section 11.31(a)(2) would be revised to include the trustee's statement of authority for asserting trusteeship in the Assessment Plan.

Section 11.31(c)(2), referring to the Economic Methodology Determination, would be removed.

Section 11.31(c)(4) would be added to include the Restoration and Compensation Determination Plan of § 11.81 in the Assessment Plan.

Section 11.32(a)(2) would be revised to include the trustee's statement of authority for asserting trusteeship in the Notice of Intent to Perform an Assessment that is sent to the potentially responsible party.

Section 11.32(f)(2) would be revised to remove the reference to the Economic Methodology Determination of the old § 11.35.

Section 11.32(f)(3) would be revised to include the trustee's statement of authority for asserting trusteeship in the Assessment Plan.

Section 11.35 would be revised to remove the Economic Methodology Determination (the "lesser of" requirement). This language would be replaced with the preliminary estimate of damages, in which the trustee would make a preliminary estimate of the costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources and compensable value.

Section 11.60(d)(1) would be revised to replace the reference to the Restoration Methodology Plan with the reference to the Restoration and Compensation Determination Plan and to replace the phrase "Use value methodology" with "Valuation methodology."

Section 11.71(a)(2) would be revised to delete the reference to the Economic Methodology Determination.

Section 11.71(1)(4) would be revised to restate that baseline data are needed for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources efforts and for calculation of compensable value.

Section 11.72 (b)(4) would be revised to remove the reference to the Economic Methodology Determination.

Section 11.73(a) would be revised to replace the reference to the old § 11.81 with the reference to the revised § 11.82 and to replace "restoration" with "restoration, rehabilitation, replacement, and/or acquisition of equivalent resources."

Sections 11.80, 11.81, 11.82, and 11.83 would be replaced with new sections providing guidance on determining damages based on the cost of restoration, rehabilitation, replacement, and/or acquisition of equivalent

resources, plus compensable value. (See Section III of this preamble.)

Section 11.60 would incorporate references to the new materials and organization of §§ 11.81, 11.82, and 11.83.

Section 11.81 would be revised to call for the development of the Restoration and Compensation Determination Plan that is part of the Assessment Plan. The trustee would list in the Restoration and Compensation Determination Plan a reasonable number of possible alternative actions to restore, rehabilitate, replace, and/or acquire the equivalent of the injured resources; identify the alternative selected; and identify the methodologies to be used to estimate the costs and compensable value. Provisions would also be made for the public review of the Restoration and Compensation Determination Plan for times when that plan cannot be made available with the rest of the Assessment Plan.

Section 11.82 would describe the phrase alternative for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources and would give: (1) Guidance on the development and selection of the alternative; and (2) guidance on estimating the loss of services and period of recovery associated with each possible alternative.

Section 11.83 would be revised to combine consideration and estimation of the costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources and compensable value into one unit. This section would give guidance on the types of costs (i.e., direct and indirect) to include in the damage estimate and guidance on methodologies the trustee may use to estimate those costs. This section would also describe the term "compensable value" to include use and nonuse values, to allow recovery of the total value lost to the public.

Section 11.84, implementation guidance, would be revised to reflect the determination of damages based on the estimated costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources plus compensable value.

Section 11.90 would be revised to replace the reference to the Restoration Methodology Plan with a reference to the Restoration and Compensation Determination Plan.

Section 11.91 would be revised to establish the time period within which natural resource damage actions may be brought.

Section 11.92 would be revised to replace references to "restoration" actions with actions for restoration,

rehabilitation, replacement, and/or acquisition of equivalent resources.

Section 11.93 would be revised to reflect the use of sums recovered to restore or replace the injured resource and the services it provided prior to the discharge or release.

#### IV. Response to Comments

##### A. General

The Advance Notice of Proposed Rulemaking (ANPRM) published in Federal Register by the Department on September 22, 1989, requested comments on the following kinds of questions to assist in carrying out the court ordered revisions: (1) What possible considerations might trigger the use of a measure of damages other than restoration costs; (2) should the rule provide criteria and, if so, what criteria might be used to determine whether restoration is "technically feasible;" (3) should the rule define the term "grossly disproportionate" and, if so, how; (4) how much guidance should the rule include and what would be possible selection criteria to make available to the trustee in selecting the most appropriate methodology to determine lost use values; (5) what available systems for classifying resource uses exist, as to use and nonuse, etc., which would also aid the trustee to avoid double counting; and (6) what degree and type of management, regulation, control, or property interest might make natural resources subject to the provisions of CERCLA for the purposes of enabling public trustees to recover damages for injuries to such resources?

The comments received in response to these questions covered a wide range of issues and points of view. Few comments, however, had specific technical suggestions or language that could be used in the revision of the rule. Although there is no consensus among the commenters on any of the issues being considered in the revision, most of the commenters expressed the opinion that the decisions concerning "grossly disproportionate" and "technically infeasible" should be left to the judgment of the trustee on a case-by-case basis. Differing points of view were expressed on whether guidance should be provided to the trustee in either the preamble or the rule itself.

The issue of the economic methodologies resulted in a split of opinion among the commenters. Some commenters said that the trustee should be free to choose among the list provided in the current rule. Others felt that there should be criteria or guidance given in the rule to guide trustees in

their decisions as to which methodologies should be used in a particular situation.

On the issue of the application of the rule to natural resources not "owned" by a government entity, comments also represented a split of opinion as to whether guidance or criteria should be given to trustees.

Finally, many commenters provided extensive suggestions concerning criteria and/or guidance on the use of contingent valuation methodology in a natural resource damage assessment, a subject which was not an issue in the court remand.

#### *B. Restoration Costs as Measure of Damages*

The court's decision established restoration costs as the preferred measure of damages in a natural resource damage assessment. However, the court suggested that there might be times when the trustee could use a different measure of damages. Therefore, in the ANPRM of September 22, 1989, the Department asked what possible considerations might trigger the use of a measure of damages other than restoration costs in various stages of an assessment. Commenters presented a broad range of opinions on what those factors might include.

All of the commenters either stated or implied that there might be times when a trustee would not be able to use restoration costs as the measure of damages. When commenters directly addressed the issue of what considerations might trigger the use of a different measure of damages, they basically discussed whether to give the trustee specific criteria in the rule itself, or to give no guidance. Quite a few of the commenters said that the decision as to the measure of damage should be made on a case-by-case basis by the trustee based on best professional judgment, with no guidance or criteria given in the rule.

Other commenters said that some guidance or criteria are needed within the rule because a rebuttable presumption will be granted to the assessment. These commenters listed certain factors that should be considered by a trustee: the degree to which the restoration actions would shorten the rate of recovery; the feasibility, utility, and cost of restoration actions; the degree to which restoration actions would avoid injury or destruction of other resources and significant risks to human health and the environment; the degree to which substitute resources nearby would lessen the need for total restoration; and

whether the restoration actions are "reasonable."

Some of the commenters who said that restoration costs should be the measure of damages said that although the Department might develop or suggest some exceptions to that measure, these exceptions should *never* be allowed in cases where: (1) There is willful misconduct or negligence on the part of the PRP, or (2) where "special" resources, i.e., resources that have been identified for special protection, have been injured. Another commenter said that the trustee should be required to always base a natural resource damage assessment on restoration costs, or lose the benefit of the rebuttable presumption, even if the trustee found that restoration was impossible.

*Response:* The court said that restoration costs are to be the preferred measure of damages under CERCLA and the Clean Water Act, but suggested that there might be situations where "exceptions" to this measure would be warranted. After careful consideration of CERCLA, the court decision, and the comments received, the Department finds that exceptions to this preferred measure of damages are not needed. The law requires sums recovered as damages for injuries to natural resources to be used "only to restore, replace, or acquire the equivalent of such resources" (CERCLA 107(f)(1)). Therefore, within the rule, the term "restoration" includes restoration or rehabilitation, as well as replacement or acquisition of equivalent resources. So long as the term "restoration" is always understood to include also "replacement or acquisition of the equivalent," there would always be some part of the trustee's work effort that will constitute "restoration." Thus, there is no need for "exceptions" to the use of restoration costs as the preferred measure of damages. The proposed revision uses the phrase restoration, rehabilitation, replacement, and/or acquisition of equivalent resources to reinforce the idea that the possible alternatives would include a mixture of all actions.

Putting this idea in terms of trustee actions, the trustee will be looking at a range of possible alternatives that could restore or replace the resource, and the services provided by that resource to the public or to other resources before the discharge or release in question. To do this, the trustee considers allowing the resource to recover naturally, with a minimal amount of trustee management action; the trustee considers intensive restoration or replacement actions that would bring the injured resource and its services back to baseline in a shorter period of time than natural recovery

would take; and, the trustee considers replacement or acquisition of equivalent resources in cases where the injured resource cannot be restored. (In actual practice, the trustee's choices will likely be combinations of these actions.) Whatever the case, there will be some restoration costs, and, therefore, there need be no exception to the rule that restoration costs form the preferred measure of damages. Even if the trustee were to choose natural recovery, restoration costs would cover whatever minimal management actions were appropriate (e.g., preventing public access, or monitoring the condition of the resource).

The total bill for damages will include the costs of the selected alternative for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources added to a dollar figure computed for the compensable value of the services lost to the public for the period of the recovery—whether a natural recovery, which might be longer, or an assisted recovery, which might be shorter. If the selected alternative encompasses minimal restoration activities and a long recovery period, the value of lost services, in most cases, would form a higher proportion of the total damages claimed. If the selected alternative includes maximum restoration activities and a shorter recovery period, then the value of lost services, in most cases, would be a smaller proportion of the total damages. In each instance, both restoration costs and compensable value will be represented.

The revised rule would instruct the trustee to select the most appropriate method of restoring or replacing the resource and its services, based upon several considerations. The kinds of concerns expressed by the commenters are included in these selection factors. For example, factors the trustee would now consider in evaluating a particular alternative would include: the technical feasibility of the alternative; the extent to which the alternative is likely to reduce the recovery period; whether the estimated cost of the alternative would be proportionate to the expected benefits to the resource and to the public; the possibility of the alternative itself having an adverse impact on resources that have been set aside for special protection; applicability of any other statute to resources affected by the proposed restoration alternative; and other considerations that might be applicable to that resource. (See section II. B. of this preamble.)

The trustee, using his expertise and best professional judgment, and



applying factors such as those above, will be able to determine the most appropriate course of action to restore or replace the injured resource and the services it provides to the public. The selection of the alternative would be subject to public review when the Restoration and Compensation Determination Plan is published for public review and comment.

### C. Technically Feasible

In the ANPRM of September 22, 1989, the Department asked if the revised rule should give criteria on the subject of whether restoration is "technically feasible" and, if so, what criteria might be used.

The majority of the commenters said that the determination of "technically feasible" should be left to the judgment of the trustee on a case-by-case basis. Some of these commenters said that there should not be guidance or criteria in the rule. Other commenters said that there should be specific guidance given within the rule on "technically feasible." Other commenters suggested specific revisions to the current definition of the term "technically feasible."

**Response:** The Department agrees that determination of technical feasibility should continue to be left to the trustee in the proposed revision. The rule already defines the term "technically feasible," at § 11.14(qq). Within the rule, the term means that the technology and management skills necessary to implement an assessment are well known and that each element of the plan has a reasonable chance of successful completion in an acceptable period of time. The proposed revision would not change that definition. Technical feasibility depends upon site-specific circumstances. Therefore, the Department can only give a generic definition that the trustee must apply in each instance.

### D. Grossly Disproportionate

In the ANPRM of September 22, 1989, the Department asked whether or not the rule should define the term "grossly disproportionate" and, if so, how should it be defined. The court decision had suggested a factor of three times the value of the loss in use as the area where restoration costs could be viewed as disproportionate.

Almost all commenters said there should be no numeric factor such as that suggested by the court for determining when restoration costs are "grossly disproportionate" to the value of the services of the resource that are lost to the public. Many of these commenters said that "grossly disproportionate" should be determined by the best

professional judgment of the trustee on a case-by-case basis, with no guidance or criteria given in the rule. Some said costs should be reasonable. On the other hand, several commenters said that some guidance should be given within the rule.

A few commenters said that a numeric factor might be helpful. One commenter suggested a sliding scale where the factor by which restoration costs are multiplied decreases as the magnitude of damages increases. An alternative approach suggested by some commenters would be to use a "reasonableness" standard, with a "grossly disproportionate" determination used only to determine when costs would be prohibitive. Some commenters said that, if the Department were to give guidance on this issue, such guidance should not apply to resources that have been set aside for special protection.

**Response:** The Department agrees that there should not be a numeric standard imposed upon a trustee to make a "grossly disproportionate" determination for establishing natural resource damages. The proposed revision provides that the decisionmaking process includes factors that help keep in balance the several possible elements of the damage assessment, all of which would be added together to arrive at the damage claim. The proposed revision provides that the trustee would choose to conduct some actions for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources in all instances, whether as a smaller or larger proportion of the total possible damage claim, and that the costs of these actions will be included in total damages claimed along with all reliably calculated compensable value. The proposed revision would require the trustee to consider the expected costs of the actions as a factor in selecting the appropriate alternative for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources. The determination is left to the judgment of the trustee based upon a comparison of the expected costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources with both the length of the recovery period and the loss in services to the public during that recovery period. If such a numeric factor were to consist of the sliding scale comparing estimated costs and compensable value as suggested by the one commenter, it could not take into account all the factors a trustee should consider in making a "grossly disproportionate" determination in each case.

Reasonableness is not listed in the proposed revision as a separate factor to consider, since all of the factors listed should enter into the trustee's decisionmaking as to the "reasonableness" of the selected alternative. Overall, the guidance in the proposed revision is intended to aid the trustee in making reasonable choices, using his best judgment in light of the various circumstances of the particular case. Trustee decisions and the justification for them appear in the Restoration and Compensation Determination Plan to be published for public comment.

### E. Economic Methodologies

In the ANPRM of September 22, 1989, the Department asked how much guidance to include in the rule and what possible selection criteria could be made available to the trustee on selecting the most appropriate methodology to determine lost use values.

Several of the commenters said that no criteria, or even guidance, on the selection of economic methodologies should be given in the rule. Other commenters, however, said that some guidance or criteria should be given as to which methodology should be used under specific circumstances. One of these commenters suggested that the Department should direct the trustee to use the most reliable of the possible methodologies applicable to a particular incident or to document why a less reliable methodology was chosen by the trustee for the assessment. The commenter said that, where a trustee uses a less reliable technique for valid reasons, certain defined parameters must be met to use that technique. Other commenters suggested specific guidance that the Department should provide in the rule to direct the trustee in the choice of a methodology.

A large portion of the comments received on the question of selection criteria for choosing an economic valuation methodology dealt instead with the validity of, and the allowance for, contingent valuation methodology (CVM) in a natural resource damage assessment. Comments in effect reiterated the arguments for and against CVM that the court had heard. Several commenters provided technical suggestions on guidelines for applying CVM in an assessment. While the use of CVM was specifically at issue in the court's review, it was upheld by the court. For that reason, the use of CVM was no longer at issue, and was not included in the Department's ANPRM of September 22, 1989. Nevertheless, several commenters did provide general



technical information concerning the application of the contingent valuation methodology.

*Response:* Though it has deleted the requirement for trustees to choose economic methodologies in a particular order or hierarchy, the Department has maintained the general list of economic valuation methodologies that may be used in conducting a natural resource damage assessment pursuant to the rule. The description of that listing reflects the generally accepted reliability of the methodologies, including that of CVM. The Department has decided not to include required criteria for selection of an economic valuation methodology since that could be perceived to be equally as constraining as the original constraints to which the court objected. Instead, the proposed revision provides factors the trustee would consider in selecting both cost estimating and valuation methodologies or a combination of those methodologies. The proposed revision asks the trustee to choose, and to explain his choice briefly.

The use of CVM was expressly upheld by the court, thus no change was required within its description, once constraints on its use were deleted. Thus, it remains in the revised rule as an acceptable methodology that may be used by trustees. Considerations in using the CVM are discussed in section II.H. of this preamble.

#### *F. Resource Values*

In the ANPRM of September 22, 1989, the Department asked what systems might be available for classifying different types of resource uses, as to use and nonuse, etc., which might also aid the trustee to avoid double counting.

A number of commenters said that trustees should be able to assess all resource values within an ecosystem to allow full recovery of all damages. Several of these commenters said that there should be no guidance or criteria in the rule that would constrain the exercise of judgment of the trustee in his decisions on what and how to value those resources.

Several commenters suggested criteria for the trustee to follow in order to assess and recover for "nonuse" values of injured resources. While some commenters said that there should be some classification of resource values to avoid double counting, others concluded that there is no need for any guidance on double counting since use and nonuse values are concurrent. One commenter said that the Department should not attempt, at this time, to construct a system for classifying resource uses that would further define

such uses beyond that of use and nonuse. The commenter said that there is an element of arbitrariness in any system of classification and recommended that the rule acknowledge the importance of the total value of the flow of services from natural resources. The commenter said that the rule should distinguish between use and nonuse values primarily on the basis of the availability of indirect or observational methods (e.g., travel cost models) for measuring use values. Beyond this, there should be no further attempt to distinguish among various categories of nonuse values.

*Response:* In accordance with the court's order, the proposed revision no longer contains the restriction that limited recovery of "nonuse" values to only those cases where the trustee could determine no "direct" use values. Instead, the trustee may recover all "compensable value." Compensable value is defined in broad terms to include all values for the services provided to the public by the resources, including "passive" or "nonconsumptive" uses of the resources.

As the definition of "compensable value" is written, all values lost to the public, both use and nonuse, of a resource resulting from an incident may be recovered. The trustee is to make a decision to seek recovery for any component of those values on a case-by-case basis. Reasonable costs, uncertainty of the estimates, and the potential for double counting are among the factors that the trustee is to consider in determining the categories of compensable value that will be sought.

The definition of "compensable value" includes a description of "use" and "nonuse" to aid the trustee in avoiding double counting and to clarify the extent of compensable value for which the trustee may claim damages. The Department has, of course, retained the prohibition on double counting, since it is a statutory requirement.

#### *G. Public Resources*

The court requested clarification on the application of the rule to natural resources not "owned" by a government entity, noting that preamble language in the existing rule appeared to provide an overly narrow interpretation of the law. In the ANPRM of September 22, 1989, the Department asked for comments as to what degree and type of management, regulation, control, or property interest should make natural resources subject to the provisions of CERCLA for the purposes of enabling public trustees to recover damages for injuries to such resources.

A few of the commenters said that there should be no change in the rule concerning "public resources," but that preamble language should be added to clarify this issue. Several commenters said that the determination of a "public resource" should be left to the judgment of the trustee on a case-by-case basis.

One commenter suggested a continuum of public interest, from purely government ownership, to purely private interest. Other commenters suggested the kinds of interest (substantial connections) that would allow recovery under CERCLA and also cited problems that might result from allowing overly-broad recoveries by public trustees.

*Response:* The court did not directly remand this issue to the Department to provide a regulatory definition of "public resources," rather it asked for clarification. Neither the public comments received nor the Department's analysis of its various jurisdictions has yielded a definitive line between public resources and private. In general, the Department agrees that this determination must be left to the trustee. The trustee, as the one who has the responsibility for the management and protection of the resources, is the one best able to determine whether he has trust responsibilities for a particular resource. Thus, the proposed revision of the rule would ask the trustee to cite the basis for his trusteeship in the Assessment Plan which is presented for public comment.

The Department disagrees that the lack of a regulatory definition of "public resources" would necessarily result in "overly-broad recoveries." Apparently, no comparable decision process already exists as a model among trustees' or other commenters' current management practice. No clear position was suggested or reached during Department of the Interior staff discussions on the amount and nature of guidance to be offered trustees in making this determination, nor on whether the guidance should be presented in an interpretive rule or as information discussed in preamble language. The question remains open and may be addressed in the final rulemaking for the proposed revisions or in the biennial reviews, based on further comments that may be received. In time, experience gained from the proposed revision's new requirement for the trustee to select and explain the authority on which that trustee bases a particular natural resource damage claim should assist the Department in developing further guidance.



**National Environmental Policy Act,  
Executive Order 12291, Regulatory  
Flexibility Act, and Paperwork  
Reduction Act**

The Department of the Interior has determined that this rule does not constitute a major Federal action significantly affecting the quality of the human environment. Therefore, no further analysis pursuant to section 102(2)(C) of the National Environmental Policy Act of 1969 (43 U.S.C. 4332(2)(C)) has been prepared.

The Department of the Interior has determined that this document is not a major rule under Executive Order 12291 and certifies that this document will not have significant economic effect on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). The rule provides technical procedural guidance for the assessment of damages to natural resources. It does not directly impose any additional cost. In addition, the estimate of the potential economic effects of this rule is well below \$100 million annually. As the rule applies to natural resource trustees, it is not expected to have an effect on a substantial number of small entities. The information collection requirement contained in § 11.41(c) has been approved by the Office of Management and Budget under 44 U.S.C. 3501 *et seq.* and assigned clearance number 1084-0025.

**List of subjects in 43 CFR Part 11**

Continental shelf, Environmental protection, Fish, Forests and forest products, Grazing land, Indian lands, Hazardous substances, Mineral resources, National forests, National parks, Natural resources, Oil pollution, Public lands, Wildlife, Wildlife refuges.

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, and the Superfund Amendments and Reauthorization Act of 1986, and for the reasons set out in the preamble, title 43, subtitle A of the Code of Federal Regulations is proposed to be amended as set forth below.

Dated: March 15, 1991.

John E. Schrote,  
Acting Assistant Secretary, Policy,  
Management, and Budget.

**PART 11—NATURAL RESOURCE  
DAMAGE ASSESSMENTS**

1. The authority citation for part 11 continues to read as follows:

Authority: 42 U.S.C. 9651(c), as amended.

**Subpart A—Introduction**

2. Section 11.13 is amended by revising paragraph (e)(3) to read as follows:

**§ 11.13 Overview.**

(e) \* \* \*

(3) *Damage Determination phase.* The purpose of this phase is to establish the appropriate compensation expressed as a dollar amount for the injuries established in the Injury Determination phase and measured in the Quantification phase. The sections of subpart E of this part comprising the Damage Determination phase include guidance on acceptable cost estimating and valuation methodologies for determining compensation based on the costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources, plus compensable value.

3. Section 11.14 is amended by revising paragraph (qq) to read as follows:

**§ 11.14 Definitions.**

(qq) *Technical feasibility or technically feasible* means that the technology and management skills necessary to implement an Assessment Plan or Restoration and Compensation Determination Plan are well known and that each element of the plan has a reasonable chance of successful completion in an acceptable period of time.

4. Section 11.15 is amended by revising paragraph (a)(3)(ii) to read as follows:

**§ 11.15 Actions against the responsible party for damages.**

(a) \* \* \*

(3) \* \* \*

(ii) Administrative costs and expenses necessary for, and incidental to, the assessment, assessment planning, and restoration, rehabilitation, replacement, and/or acquisition of equivalent resources planning, and any restoration, rehabilitation, replacement, and/or acquisition of equivalent resources undertaken; and

**Subpart C—Assessment Plan Phase**

5. Section 11.30 is amended by revising paragraph (c)(1)(v) to read as follows:

**§ 11.30 Assessment Plan—general.**

(c) \* \* \*

(1) \* \* \*

(v) Preliminary estimate of damages costs; and

6. Section 11.31 is amended by revising paragraph (a)(2), removing paragraph (c)(2), removing the word "and" at the end of paragraph (c)(3) and replacing the period at the end of paragraph (c)(4) with the words "; and"; redesignating paragraphs (c)(3) and (c)(4) as paragraphs (c)(2) and (c)(3) respectively, and adding a new paragraph (c)(4) to read as follows:

**§ 11.31 Assessment Plan—content.**

(a) \* \* \*

(2) The Assessment Plan shall be of sufficient detail to serve as a means of evaluating whether the approach used for assessing the damage is likely to be cost-effective and meets the definition of reasonable costs, as those terms are used in this part. The Assessment Plan shall include descriptions of the natural resources and the geographical areas involved. The Assessment Plan shall also include a statement of the authority for asserting trusteeship, or co-trusteeship, for those natural resources considered within the Assessment Plan. In addition, for type B assessments, the Assessment Plan shall include the sampling locations within those geographical areas, sample and survey design, numbers and types of samples to be collected, analyses to be performed, preliminary determination of the recovery period, and other such information required to perform the selected methodologies.

(c) \* \* \*

(4) The Restoration and Compensation Determination Plan developed in accordance with the guidance in § 11.81 of this part. If existing data are not sufficient to develop the Restoration and Compensation Determination Plan as part of the Assessment Plan, the Restoration and Compensation Determination Plan may be developed later, at any time before the completion of the Injury Determination or Quantification phases. If the Restoration and Compensation Determination Plan is published separately, the public review and comment will be conducted pursuant to § 11.81(d) of this part.

7-8. Section 11.32 is amended by revising paragraphs (a)(2)(iii)(A) and (f)(2), and by removing paragraph (f)(3) to read as follows:

**§ 11.32 Assessment Plan—development.**

(a) *Pre-development requirements.*



(2) \* \* \*

(iii)(A) The authorized official shall send a Notice of Intent to Perform an Assessment to all identified potentially responsible parties. The Notice shall invite the participation of the potentially responsible party, or, if several parties are involved and if agreed to by the lead authorized official, a representative or representatives designated by the parties, in the development of the type and scope of the assessment and in the performance of the assessment. The Notice shall briefly describe, to the extent known, the site, vessel, or facility involved, the discharge of oil or release of hazardous substance of concern to the authorized official, and the resources potentially at risk. The Notice shall also contain a statement of authority for asserting trusteeship, or co-trusteeship, over those natural resources identified as potentially at risk.

(f) *Plan review.* \* \* \*

(2) The purpose of this review is to ensure that the selection of methodologies for the Quantification and Damage Determination phases is consistent with the results of the Injury Determination phase, and that the use of such methodologies remains consistent with the requirements of reasonable cost, as that term is used in this part.

9. Section 11.35 is revised to read as follows:

**§ 11.35 Assessment Plan—preliminary estimate of damages.**

(a) *Requirements.* When performing a type B assessment pursuant to the requirements of subpart E of this part, the authorized official shall develop a preliminary estimate of: the anticipated costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources for the injured natural resources; and the compensable value, as defined in § 11.83(c) of this part, of the natural resources. This preliminary estimate is referred to as the preliminary estimate of damages. The authorized official shall use the guidance provided in this section, to the extent possible, to develop the preliminary estimate of damages.

(b) *Purpose.* The purpose of the preliminary estimate of damages is for reference in the scoping of the Assessment Plan to ensure that the choice of the scientific, cost estimating, and valuation methodologies expected to be used in the damage assessment fulfills the requirements of reasonable costs, as that term is used in this part. The trustee will also use the preliminary estimate of damages in the review of the Assessment Plan as required in

§ 11.32(f) of this part, to ensure the requirements of reasonable costs are still met.

(c) *Steps.* The authorized official shall make a preliminary estimate of damages, i.e., the anticipated costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources for the injured natural resources and the services those resources provide, plus the anticipated compensable value of the lost services to the public through the period of time until completion of the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources and recovery of the services. The preliminary estimate of damages should include consideration of the ability of the resource to recover naturally and the compensable value through the recovery period with and without possible alternative actions. The authorized official shall consider the following factors, to the extent possible, in making the preliminary estimate of damages.

(1) The preliminary estimate of costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources should include consideration of a range of possible alternative actions that would accomplish the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources of the injured natural resources.

(i) The preliminary estimate of costs should take into account the effects, or anticipated effects, of any response actions.

(ii) The preliminary estimate of costs also should represent the expected present value of anticipated costs, expressed in constant dollars, and should include direct and indirect costs, and include the timing of those costs. The provisions detailed in §§ 11.81–11.84 of this part are the basis for the development of the estimate.

(iii) The discount rate to be used in developing the preliminary estimate of costs shall be that determined in accordance with the guidance in § 11.84(e) of this part.

(2) The preliminary estimate of compensable value should be consistent with the range of possible alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources being considered.

(i) The preliminary estimate of compensable value should represent the expected present value of the anticipated compensable value, expressed in constant dollars, accrued through the period for the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources to baseline conditions, i.e., between the

occurrence of the discharge or release and the completion of the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the injured resources and their services. The estimate should use the same base year as the preliminary estimate of costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources. The provisions detailed in §§ 11.81–11.84 of this part are the basis for the development of this estimate.

(ii) The preliminary estimate of compensable value should take into account the effects, or anticipated effects, of any response actions.

(iii) The discount rate to be used in developing the preliminary estimate of compensable value shall be that determined in accordance with the guidance in § 11.84(e) of this part.

(d) *Content and timing.* (1) In making the preliminary estimate of damages, the authorized official should rely upon existing data and studies. The authorized official should not undertake significant new data collection or perform significant modeling efforts at this stage of the assessment planning phase.

(2) Where possible, the authorized official should make the preliminary estimate of damages before the completion of the Assessment Plan as provided for in § 11.31 of this part. If there is not sufficient existing data to make the preliminary estimate of damages at the same time as the assessment planning phase, this analysis may be completed later, at the end of the Injury Determination phase of the assessment, at the time of the Assessment Plan review.

(3) The preliminary estimate of damages, along with its assumptions and methodology, shall be included in the Report of the Assessment as provided for in § 11.91 of this part.

(e) *Review.* The authorized official shall review, and revise as appropriate, the preliminary estimate of damages at the end of the Injury Determination and Quantification phases. If there is any significant modification of the preliminary estimate of damages, the authorized official shall document it in the Report of the Assessment.

**Subpart E—Type B Assessments**

10. Section 11.60 is amended by revising paragraphs (d)(1) (iii) and (iv), to read as follows:

**§ 11.60 Type B assessments—general.**

\* \* \*

(d) *Type B assessment costs.* (1) \* \* \*



(iii) Restoration and Compensation Determination Plan development costs including:

- (A) Development of alternatives;
- (B) Evaluation of alternatives;
- (C) Potentially responsible party, agency, and public reviews;
- (D) Other such costs for activities authorized by § 11.81 of this part;
- (iv) Cost estimating and valuation methodology calculation costs; and

11. Section 11.71 is amended by revising paragraphs (a)(2) and (l)(4)(ii) to read as follows:

**§ 11.71 Quantification phase—service reduction quantification.**

- (a) \* \* \*
- (2) This determination of the reduction in services will be used in the Damage Determination phase of the assessment.

- (l) *Biological resources.* \* \* \*

- (4) \* \* \*
- (ii) Provide data that will be useful in planning efforts for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources, and in later measuring the success of those efforts, and that will allow calculation of compensable value; and

12. Section 11.72 is amended by revising paragraph (b)(4) to read as follows:

**§ 11.72 Quantification phase—baseline services determination.**

- (b) \* \* \*
- (4) Baseline data collection shall be restricted to those data necessary for conducting the assessment at a reasonable cost. In particular, data collected should focus on parameters that are directly related to the injury quantified in § 11.71 of this part and to data appropriate and necessary for the Damage Determination phase.

13. Section 11.73 is amended to revise paragraph (a) to read as follows:

**§ 11.73 Quantification phase—resource recoverability analysis.**

- (a) *Requirement.* The time needed for each injured resource to recover to the state that the authorized official determines services are restored, rehabilitated, replaced, and/or the equivalent have been acquired to baseline levels shall be estimated. The time estimated for recovery or any lesser period of time as determined in the Assessment Plan shall be used as the recovery period for purposes of § 11.35 and the Damage Determination

phase, §§ 11.80 through 11.84, of this part.

- (1) In all cases, the amount of time needed for recovery if no restoration, rehabilitation, replacement, and/or acquisition of equivalent resources efforts are undertaken beyond response actions performed or anticipated shall be estimated. This time period shall be used as the "No Action-Natural Recovery" period for purposes of § 11.82 and § 11.84(g)(2)(ii) of this part.

- (2) The estimated time for recovery shall be included in possible alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources, as developed in § 11.82 of this part, and the data and process by which these recovery times were estimated shall be documented.

14. Section 11.80 is revised to read as follows:

**§ 11.80 Damage determination phase—general.**

- (a) *Requirement.* (1) The authorized official shall make his damage determination by estimating the monetary damages resulting from the discharge of oil or release of a hazardous substance based upon the information provided in the Quantification phase and the guidance provided in this Damage Determination phase.

- (2) The Damage Determination phase consists of § 11.80—general; § 11.81—Restoration and Compensation Determination Plan; § 11.82—alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources; § 11.83—cost estimating and valuation methodologies; and § 11.84—implementation guidance, of this part.

- (b) *Purpose.* The purpose of the Damage Determination phase is to establish the amount of money to be sought in compensation for injury to natural resources resulting from a discharge of oil or release of a hazardous substance. The measure of damages is the cost of restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the injured natural resources and the services those resources provide, plus the compensable value of the services lost to the public for the time period from the discharge or release until the attainment of the restoration, rehabilitation, replacement, and/or acquisition of equivalent of the resources and their services to baseline.

- (c) *Steps in the Damage Determination phase.* The authorized official shall develop a Restoration and

Compensation Determination Plan, described in § 11.81 of this part. To prepare this Restoration and Compensation Determination Plan, the authorized official shall develop a reasonable number of possible alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources and select, pursuant to the guidance of § 11.82 of this part, the most appropriate of those alternatives; and identify the cost estimating and valuation methodologies, described in § 11.83 of this part, that will be used to calculate damages. The guidance provided in § 11.84 of this part shall be followed in implementing the cost estimating and valuation methodologies, as appropriate. After public review of the Restoration and Compensation Determination Plan, the authorized official shall implement the Restoration and Compensation Determination Plan.

- (d) *Completion of the Damage Determination phase.* Upon completion of the Damage Determination phase, the type B assessment is completed. The results of the Damage Determination phase shall be documented in the Report of Assessment described in § 11.90 of this part.

15. Section 11.81 is revised to read as follows:

**§ 11.81 Damage Determination phase—Restoration and Compensation Determination Plan.**

- (a) *Requirement.* (1) The authorized official shall develop a Restoration and Compensation Determination Plan that will list a reasonable number of possible alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources and the related services lost to the public associated with each; select one of the alternatives and the actions required to implement that alternative; give the rationale for selecting that alternative; and identify the methodologies that will be used to determine the costs of the selected alternative and to determine the compensable value of the services lost to the public associated with the selected alternative.

- (2) The Restoration and Compensation Determination Plan shall be of sufficient detail to evaluate the possible alternatives for the purpose of selecting the appropriate alternative to use in determining the cost of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources for the injured natural resources and the services those resources provided, plus the compensable value of the services lost to the public through the completion



of the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources and their services to the baseline.

(b) The authorized official shall use the guidance in §§ 11.82, 11.83, and 11.84 of this part to develop the Restoration and Compensation Determination Plan.

(c) The authorized official shall list the methodologies he expects to use to determine the costs of all actions considered within the selected alternative and to determine the compensable value of the lost services through the recovery period associated with the selected alternative. The methodologies to use in determining costs and compensable value are described in § 11.83 of this part.

(d)(1) The Restoration and Compensation Determination Plan shall be part of the Assessment Plan developed in subpart B of this part. If existing data are not sufficient to develop the Restoration and Compensation Determination Plan at the time that the overall Assessment Plan is made available for public review and comment, the Restoration and Compensation Determination Plan may be developed later, after the completion of the Injury Determination or Quantification phases.

(2) If the Restoration and Compensation Determination Plan is prepared later than the Assessment Plan, it shall be made available separately for public review by any identified potentially responsible party, other natural resource trustees, other affected Federal or State agencies or Indian tribes, and any other interested members of the public for a period of no less than 30 calendar days. Reasonable extensions may be granted as appropriate.

(3) Comments received from any identified potentially responsible party, other natural resource trustees, other affected Federal or State agencies or Indian tribes, or any other interested members of the public, together with responses to those comments, shall be included as part of the Report of Assessment, described in § 11.90 of this part.

(4) Appropriate public review of the plan must be completed before the authorized official performs the methodologies listed in the Restoration and Compensation Determination Plan.

(e) The Restoration and Compensation Determination Plan may be expanded to incorporate requirements from procedures required under other portions of CERCLA or the CWA or from other Federal or State statutes applicable to restoration or replacement of the injured resource or may be

combined with other plans for related purposes, so long as the requirements of this section are fulfilled.

16. Section 11.82 is revised to read as follows:

**§ 11.82 Damage Determination phase—alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources.**

(a) *Requirement.* The authorized official shall develop a reasonable number of possible alternatives for the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the injured natural resources and the services those resources provide. For each possible alternative developed, the authorized official will identify an action, or set of actions, to be taken singly or in combination by the trustee agency to achieve the restoration, rehabilitation, replacement, and/or acquisition of equivalent natural resources and the services those resources provide to the baseline. The authorized official shall then select from among the possible alternatives the alternative that he determines to be the most appropriate based on the guidance provided in this section.

(b) *Steps.* (1) The authorized official shall develop a reasonable number of possible alternatives that would restore, rehabilitate, replace, and/or acquire the equivalent of the injured resources. Each of the possible alternatives may, at the discretion of the authorized official, consist of actions, singly or in combination, that would achieve those purposes.

(i) Restoration or rehabilitation actions are those actions undertaken to return an injured resource to its baseline condition, as measured in terms of the injured resources' physical, chemical, or biological properties or the services previously provided by those resources. Such actions would be in addition to response actions completed or anticipated pursuant to the National Contingency Plan (NCP).

(ii) Replacement or acquisition of the equivalent means the substitution for an injured resource with a resource that provides the same or substantially similar services, when such substitutions are in addition to any substitutions made or anticipated as part of response actions and when such substitutions exceed the level of response actions determined appropriate to the site pursuant to the NCP.

(iii) Possible alternatives are limited to those actions that restore, rehabilitate, replace, and/or acquire the equivalent of the injured resources and services to no more than their baseline,

that is, the condition without a discharge or release as determined in § 11.72 of this part.

(2) *Services provided by the resources.* (i) In developing each of the possible alternatives, the authorized official shall list the proposed actions that would restore, rehabilitate, replace, and/or acquire the equivalent of the services provided by the injured natural resources that have been lost, and the period of time over which these services would continue to be lost.

(ii) The authorized official shall identify services previously provided by the resource in its baseline condition in accordance with § 11.72 of this part and compare those services with services now provided by the injured resource, that is, the with-a-discharge-or-release condition. All estimates of the with-a-discharge-or-release condition shall incorporate consideration of the ability of the resource to recover as determined in § 11.73 of this part.

(c) *Range of possible alternatives.* (1) The possible alternatives considered by the authorized official that return the resource and its lost services to baseline level could range from: intensive action on the part of the authorized official to return the various resources and services provided by that resource to baseline conditions as quickly as possible; to natural recovery with minimal management actions. Possible alternatives within this range could reflect varying rates of recovery, combination of management actions, and needs for resource replacements or acquisitions.

(2) An alternative considering natural recovery with minimal management actions, based upon the "No Action-Natural Recovery" determination made in § 11.73(a)(1) of this part, shall be one of the possible alternatives considered.

(d) Factors to consider in selecting which alternative to pursue. In selecting which alternative to pursue, the authorized official shall evaluate each of the possible alternatives based on all relevant considerations, including the following factors, when appropriate:

(1) Technical feasibility, as that term is used in this part.

(2) The relationship of the expected costs of the proposed actions to the expected benefits from the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources.

(3) Cost-effectiveness, as that term is used in this part.

(4) The results of any actual or planned response actions.

(5) Potential for additional injury resulting from the proposed actions, including long-term and indirect



impacts, to the injured resource or other resources.

(6) The natural recovery period determined in § 11.73(a)(1) of this part.

(7) Ability of the resource to recover with or without alternative actions.

(8) Acquisition of equivalent land for Federal management where restoration, rehabilitation, and/or other replacement of land is not possible.

(9) Potential effects of the action on human health and safety.

(10) Consistency with applicable Federal and State laws and policies.

17. Section 11.83 is revised to read as follows:

**§ 11.83 Damage determination phase—cost estimating and valuation methodologies.**

(a) *General.* (1) This section contains guidance and methodologies for determining:

(i) The costs of the selected alternative for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources; and

(ii) The compensable value of the services lost to the public through the completion of the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the injured resources and their services to baseline.

(2)(i) The authorized official shall select among the cost estimating and valuation methodologies set forth in this section, or methodologies that meet the acceptance criterion of either paragraph (b)(3) or (c)(3) of this section.

(ii) The authorized official shall define the objectives to be achieved by the application of the methodologies.

(iii) The authorized official shall follow the guidance provided in this section for choosing among the methodologies that will be used in the Damage Determination phase.

(iv) The authorized official shall describe his selection of methodologies and objectives in the Restoration and Compensation Determination Plan.

(3) The authorized official shall determine that the following criteria have been met when choosing among the cost estimating and valuation methodologies. The authorized official shall document this determination in the Report of the Assessment. Only those methodologies shall be chosen:

(i) That are feasible and reliable for a particular incident and type of damage to be measured.

(ii) That can be performed at a reasonable cost, as that term is used in this part.

(iii) That avoid double counting.

(iv) That are cost-effective, as that term is used in this part.

(b) *Costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources.* (1) Costs for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources are the amount of money determined by the authorized official as necessary to complete all actions identified in the selected alternative for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources, as selected in the Restoration and Compensation Determination Plan of § 11.81 of this part. Such costs shall include direct and indirect costs, consistent with the provisions of this section.

(i) Direct costs are those that are identified by the authorized official as attributed to the selected alternative. Direct costs are those charged directly to the conduct of the selected alternative including, but not limited to, the compensation of employees for the time and effort devoted to the completion of the selected alternative; cost of materials acquired, consumed, or expended specifically for the purpose of the action; equipment and other capital expenditures; and other items of expense identified by the authorized official that are expected to be incurred in the performance of the selected alternative.

(ii) Indirect costs are costs of activities or items that support the selected alternative, but that cannot practically be directly accounted for as costs of the selected alternative. The simplest example of indirect costs is traditional overhead, e.g., a portion of the lease costs of the buildings that contain the offices of trustee employees involved in work on the selected alternative may, under some circumstances, be considered as an indirect cost. In referring to costs that cannot practically be directly accounted for, this subpart means to include costs that are not readily assignable to the selected alternative without a level of effort disproportionate to the results achieved.

(iii) An indirect cost rate for overhead costs may, at the discretion of the authorized official, be applied instead of calculating indirect costs where the benefits derived from the estimation of indirect costs do not outweigh the costs of the indirect cost estimation. When an indirect cost rate is used, the authorized official shall document the assumptions from which that rate has been derived. Such amounts determined in lieu of indirect costs shall be treated as an offset to the total indirect costs of the selected alternative before allocation to the remaining activities. The base upon

which such remaining costs are allocated should be adjusted accordingly.

(2) *Cost estimating methodologies.* The authorized official may choose among the cost estimating methodologies listed in this section or may choose other methodologies that meet the acceptance criterion in paragraph (b)(3) of this section.

(i) *Comparison Methodology.* This methodology may be used for unique or difficult design and estimating conditions. This methodology requires the construction of a simple design for which an estimate can be found and applied to the unique or difficult design.

(ii) *Unit Methodology.* This methodology derives an estimate based on the cost per unit of a particular item. Many other names exist for describing the same basic approach, such as order of magnitude, lump sum, module estimating, flat rates, and involve various refinements. Data used by this methodology may be collected from technical literature or previous cost expenditures.

(iii) *Probability Methodologies.* Under these methodologies, the cost estimate represents an "average" value. These methodologies require information which is called certain, or deterministic, to derive the expected value of the cost estimate. Expected value estimates and range estimates represent two types of probability methodologies that may be used.

(iv) *Factor Methodology.* This methodology derives a cost estimate by summing the product of several items or activities. Other terms such as ratio and percentage methodologies describe the same basic approach.

(v) *Standard Time Data Methodology.* This methodology provides for a cost estimate for labor. Standard time data are a catalogue of standard tasks typically undertaken in performing a given type of work.

(vi) *Cost- and Time-Estimating Relationships (CERs and TERs).* CERs and TERs are statistical regression models that mathematically describe the cost of an item or activity as a function of one or more independent variables. The regression models provide statistical relationships between cost or time and physical or performance characteristics of past designs.

(3) Other cost estimating methodologies. Other cost estimating methodologies that are based upon standard and accepted cost accounting practices and are cost-effective are acceptable methodologies to determine the costs of restoration, rehabilitation,



replacement, and/or acquisition of equivalent resources under this part.

(c) *Compensable value.* (1) Compensable value is the amount of money required to compensate the public for the loss in services provided by the injured resources between the time of the discharge or release and the time the resources and the services those resources provided are fully restored to their baseline conditions. The compensable value includes the value of lost public use of the services provided by the injured resources, plus lost nonuse values such as option, existence, and bequest values. Compensable value is measured by changes in consumer surplus, economic rent, and any fees or other payments collectable by the government or Indian tribe for a private party's use of the natural resource; and any economic rent accruing to a private party because the government or Indian tribe does not charge a fee or price for the use of the resource. Compensable value does not include any losses related to secondary economic impacts caused by the discharge or release.

(i) Use value is the value of the resources to the public attributable to the direct use of the services provided by the natural resources.

(ii) Nonuse value is the difference between compensable value and use value, as those terms are used in this section.

(2) *Valuation Methodologies.* The authorized official may choose among the valuation methodologies listed in this section to estimate willingness to pay or may choose other methodologies provided that the methodology can satisfy the acceptance criterion in paragraph (c)(3) of this section. The following methodologies are grouped as "use value: marketed methodologies," "use value: nonmarketed methodologies," and "nonuse value: contingent valuation methodology." Generally, the "use value: marketed valuation methodologies" are more reliable than the "use value: nonmarketed valuation methodologies," which, in turn, are more reliable than the "nonuse value: contingent valuation methodology." Nothing in this section precludes the use of a combination of valuation methodologies so long as the authorized official does not double count.

(i) *Use value: marketed valuation methodologies.*—(A) *Market price methodology.* This methodology may be used if the natural resource is traded in the market. In using this methodology, the authorized official should make a determination as to whether the market for the resource is reasonably

competitive. If the authorized official determines that the market for the resource, or the services provided by the resource, is reasonably competitive, the diminution in the market price of the injured resource, or the lost services, may be used to determine the compensable value of the injured resource.

(B) *Appraisal Methodology.* Where sufficient information exists, the appraisal methodology may be used. In using this methodology, compensable value should be measured, to the extent possible, in accordance with the applicable sections of the "Uniform Appraisal Standards for Federal Land Acquisition" (Uniform Appraisal Standards), Interagency Land Acquisition Conference, Washington, DC, 1973 (incorporated by reference, see § 11.18). The measure of compensable value under this appraisal methodology will be the difference between the with- and without-injury appraisal value determined by the comparable sales approach as described in the Uniform Appraisal Standards.

(ii) *Use value: nonmarketed valuation methodologies.*—(A) *Factor Income Methodology.* If the lost resource is an input to a production process, which has as an output a product with a well-defined market price, the factor income methodology may be used. This methodology may be used to determine the economic rent associated with the use of a resource in the production process. This methodology is sometimes referred to as the "reverse value added" methodology. The factor income methodology may be used to measure the in-place value of the resource.

(B) *Travel Cost Methodology.* The travel cost methodology may be used to determine a value for the use of a specific area. An individual's incremental travel costs to an area are used as a proxy for the price 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. When regional travel cost models exist, they may be used if appropriate.

(C) *Hedonic Pricing Methodology.* The hedonic pricing methodology 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.

(D) *Contingent Valuation Methodology.* The contingent valuation methodology includes all techniques that set up hypothetical markets to elicit

an individual's economic valuation of a natural resource. In order to fall within the "use valuation: nonmarketed methodologies" category, the contingent valuation methodology must be limited to quantifying use values.

(E) *Unit Value Methodology.* 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 resource and unit values that closely resemble the recreational or other experience lost with the affected resource may be used.

(iii) *Nonuse value: Contingent Valuation Methodology.* The contingent valuation methodology includes all techniques that set up hypothetical markets to elicit an individual's economic valuation of a natural resource. If the contingent valuation methodology is used to quantify nonuse values, or use plus nonuse values, then it falls within this category.

(3) *Other valuation methodologies.* Other valuation methodologies that measure compensable value in accordance with the public's willingness to pay, in a cost-effective manner, are acceptable methodologies to determine compensable value under this part.

18. Section 11.84 is amended by revising paragraphs (a), (b)(1), (d)(2), (f), and (g) heading, (1), (2) introductory text, (i), (ii), and (iii); removing paragraph (h); and redesignating paragraph (i) as new paragraph (h) and revising it to read as follows:

**§ 11.84 Damage Determination phase—Implementation guidance.**

(a) *Requirement.* The authorized official should use the cost estimating and valuation methodologies in § 11.83 of this part following the appropriate guidance in this section.

(b) *Determining uses.* (1) Before estimating damages for the compensable value under § 11.83 of this part, the authorized official should determine the uses made of the resource services identified in the Quantification phase.

• • • • •  
(d) *Uncertainty.* • • •

(2) To incorporate this uncertainty, the authorized official should derive a range of probability estimates for the important assumptions used to determine damages. In these instances, the damage estimate will be the net expected present value of the costs of restoration, rehabilitation, replacement, and/or acquisition of equivalent resources and compensable value.

• • • • •

(f) *Substitutability*. In calculating the compensable value, the authorized official should incorporate estimates of the ability of the public to substitute resource services or uses for those of the injured resource services. This substitutability should be estimated only if the potential benefits from an increase in accuracy are greater than the potential costs.

(g) *Compensable value during the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources*. (1) In determining the amount of damages, the authorized official should also compute the compensable value for the period of time required to achieve the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources.

(2) To calculate the compensable value during the period of time required to achieve restoration, rehabilitation, replacement, and/or acquisition of equivalent resources, the authorized official should follow the procedures described below. The procedures need not be followed in sequence.

(i) The ability of the resource to recover over the recovery period should be estimated. This estimate includes estimates of natural recovery rates as well as recovery rates that reflect management actions or resource acquisitions to achieve restoration, rehabilitation, replacement, and/or acquisition of equivalent resources.

(ii) A recovery rate should be selected for this analysis that is based upon cost-effective management actions or resource acquisitions, including a "No Action-Natural Recovery" alternative. After the recovery rate is estimated, the compensable value should be estimated.

(iii) The rate at which the uses of the injured resources and their services will be restored through the restoration or replacement of the services should be estimated. This rate may be discontinuous, that is, no uses are restored until all, or some threshold level, of the services are restored, or continuous, that is, restoration or replacement of uses will be a function of the level and rate of restoration or replacement of the services. Where practicable, the supply of and demand for the restored services should be analyzed, rather than assuming that the services will be utilized at their full capacity at each period of time in the analysis. The compensable value should be discounted using the rate described

in paragraph (e)(2) of this section. This estimate is the expected present value of uses obtained through restoration, rehabilitation, replacement, and/or acquisition of equivalent resources.

(h) *Scope of the analysis*. (1) The authorized official must determine the scope of the analysis in order to estimate the compensable value.

(2) In assessments where the scope of analysis is Federal, only the compensable value to the Nation as a whole should be counted.

(3) In assessments where the scope of analysis is at the State level, only the compensable value to the State should be counted.

(4) In assessments where the scope of analysis is at the tribal level, only the compensable value to the tribe should be counted.

#### Subpart F—Post-Assessment Phase

19. Section 11.90 is amended by revising paragraph (c) to read as follows:

##### § 11.90 Post-assessment phase—Report of Assessment.

(c) *Type B assessments*. For a type B assessment conducted in accordance with the guidance in subpart E of this part, the Report of Assessment shall consist of all the documentation supporting the determinations required in the Injury Determination phase, the Quantification phase, and the Damage Determination phase, and specifically including the test results of any and all methodologies performed in these phases. The preliminary estimate of damages shall be included in the Report of Assessment. The Restoration and Compensation Determination Plan, along with comments received during the public review of that Plan and responses to those comments, shall also be included in the Report of Assessment.

20. Section 11.91 is amended to add a paragraph (e) to read as follows:

##### § 11.91 Post-assessment phase—demand.

(e) *Statute of limitations*. The date on which regulations are promulgated for the purposes of section 113(g) of CERCLA is the date upon which the court-ordered revisions for both type A and type B, whichever is later, become effective as a final rule.

21. Section 11.92 is amended to revise paragraph (b) to read as follows:

##### § 11.92 Post-assessment phase—restoration account.

(a) \* \* \*

(b) *Adjustments*. (1) In establishing the account pursuant to paragraph (a) of this section, the calculation of the expected present value of the damage amount should be adjusted, as appropriate, whenever monies are to be placed in a non-interest bearing account. This adjustment should correct for the anticipated effects of inflation over the time estimated to complete expenditures for the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources.

(2) In order to make the adjustment in paragraph (b)(1) of this section, the authorized official acting as trustee should adjust the damage amount by the rate payable on notes or bonds issued by the United States Treasury with a maturity date that approximates the length of time estimated to complete expenditures for the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources.

22. Section 11.93 is amended to revise paragraph (a) to read as follows:

##### § 11.93 Post-assessment phase—Restoration Plan.

(a) Upon determination of the amount of the award of a natural resource damage claim as authorized by section 107(a)(4)(C) of CERCLA, or section 311(f)(4) and (5) of the CWA, the authorized official shall prepare a Restoration Plan as provided in section 111(i) of CERCLA. The plan shall be based upon the Restoration and Compensation Determination Plan described in § 11.81 of this part. The Plan shall describe how the monies will be used to address natural resources, specifically what restoration, replacement, or acquisition of the equivalent resources will occur. The Plan shall also describe how monies will be used to address the services that are lost to the public until restoration, rehabilitation, replacement, and/or acquisition of equivalent resources is completed. The Restoration Plan shall be prepared in accordance with the guidance set forth in § 11.81 of this part.