

§ 11.73

(i) Aerial photographs or maps showing distribution and extent of habitat types or other biological resources before the discharge or release;

(ii) Biological specimens in systematic museum or herbarium collections and associated records, including labels and collectors' field notes; and

(iii) Photographs showing the nature of the habitat before the discharge or release when the location and date are well documented.

(3)(i) Control areas shall be selected for biological resources subject to the general criteria in paragraph (d) of this section and additional criteria as follows:

(A) The control area shall be comparable to the habitat or ecosystem at the assessment area in terms of distribution, type, species composition, plant cover, vegetative types, quantity, and relationship to other habitats;

(B) Physical characteristics of the control and assessment areas shall be similar; and

(C) If more than one habitat or ecosystem type is to be assessed, comparable control areas should be established for each, or a control area should be selected containing those habitat types in a comparable distribution.

(ii) To the extent they are available, historical data should be gathered and used for the control area. Lacking adequate historical data for both the control and assessment areas, the control areas shall be used for the following purposes, as appropriate to the quantification:

(A) To measure baseline biota population levels or habitat or ecosystem quality, as discussed in §11.71(1) of this part; and

(B) To measure the natural frequency, if any, of the injury being assessed in unaffected populations or to demonstrate the lack of that injury in unaffected populations if these have not been done for purposes of the Injury Determination, and if needed for purposes of the Quantification.

(4) In addition, a control area should be used to collect control specimens, as needed, for the Injury Determination procedures.

(5) The identity of species for which Damage Determinations will be made

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or that play an important role in the assessment shall be confirmed except in the case where collecting the specimens of a species is likely to compromise the restoration of the species. One or more of the following methods shall be used:

(i) Specimens of the species shall be provided to an independent taxonomist or systematic biologist, who has access to a major systematic biology collection for that taxon, and who shall provide written confirmation of their identity to the species level;

(ii) A reference collection of specimens of the species, prepared and preserved in a way standard for systematic collections for that taxon, shall be maintained at least through final resolution of the damage action at which time it should be transferred to a major systematic biology collection; or

(iii) In the case of a species where collecting specimens is likely to compromise the recovery or restoration of that species population, the authorized official shall determine and use an alternative method for confirming species identity that will be consistent with established management goals for that species.

[51 FR 27725, Aug. 1, 1986, as amended at 53 FR 5175, Feb. 22, 1988; 59 FR 14283, Mar. 25, 1994]

§ 11.73 Quantification phase—resource recoverability analysis.

(a) *Requirement.* The time needed for the injured resources 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 must be used as the recovery period for purposes of §11.38 and the Damage Determination phase, §§11.80 through 11.84.

(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.

(b) *Restoration not feasible.* If the authorized official determines that restoration will not be technically feasible, as that phrase is used in this part, the reasoning and data on which this decision is based shall be documented as part of the justification for any replacement alternatives that may be considered or proposed.

(c) *Estimating recovery time.* (1) The time estimates required in paragraph (a) of this section shall be based on the best available information and where appropriate may be based on cost-effective models. Information gathered may come from one or more of the following sources, as applicable:

- (i) Published studies on the same or similar resources;
- (ii) Other data sources identified in § 11.72 of this part;
- (iii) Experience of managers or resource specialists with the injured resource;
- (iv) Experience of managers or resource specialists who have dealt with restoration for similar discharges or releases elsewhere; and
- (v) Field and laboratory data from assessment and control areas as necessary.

(2) The following factors should be considered when estimating recovery times:

- (i) Ecological succession patterns in the area;
- (ii) Growth or reproductive patterns, life cycles, and ecological requirements of biological species involved, including their reaction or tolerance to the oil or hazardous substance involved;
- (iii) Bioaccumulation and extent of oil or hazardous substances in the food chain;
- (iv) Chemical, physical, and biological removal rates of the oil or hazardous substance from the media involved, especially as related to the

local conditions, as well as the nature of any potential degradation or decomposition products from the process including:

- (A) Dispersion, dilution, and volatilization rates in air, sediments, water, or geologic materials;
- (B) Transport rates in air, soil, water, and sediments;
- (C) Biological degradation, depuration, or decomposition rates and residence times in living materials;
- (D) Soil or sediment properties and adsorption-desorption rates between soil or sediment components and water or air;
- (E) Soil surface runoff, leaching, and weathering processes; and
- (F) Local weather or climatological conditions that may affect recovery rates.

[51 FR 27725, Aug. 1, 1986, as amended at 59 FR 14283, Mar. 25, 1994; 61 FR 20612, May 7, 1996]

§ 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 injuries to natural resources resulting from a discharge of oil or release of a hazardous substance. The measure of damages is the cost of (i) restoration or rehabilitation of the injured natural resources to a condition where they can provide the level of services available at baseline, or (ii) the replacement and/or acquisition of equivalent natural resources capable of providing such services. Damages may