2. Determination of the Applicability of HEP to a Wildlife Planning Effort

Wildlife resource planning is a very general term used to define a number of activities concerned with optimizing the supplies of wildlife to meet some stated objective(s). Whether the planning effort is directed at a wildlife problem, such as land and water resource planning, or is a result of other resource problems, such as mineral extraction, there are several common activities involved.

The Habitat Evaluation Procedures may be used in three distinctly separate, but related, planning activities: 1) wildlife habitat assessments, including both baseline and future conditions; 2) trade-off analyses; and 3) compensation analyses. HEP data also may be used in the Human Use and Economic Evaluation (104 ESM).

An important consideration in deciding whether or not to use HEP is the cost and time involved. Although HEP may technically be suited for a particular planning activity, time and budget constraints may not permit its use. There are several major factors that are directly related to the time needed for, and costs of, a HEP application including the size of the study area, the number of cover types, the number of evaluation species, and the number and types of proposed actions. The intensity of the HEP application must be compatible with the stage of planning. In early planning stages, the study design can be generalized to require low levels of data collection and analysis. Time and associated costs may be minimal for such preliminary HEP applications. However, the intensity of data collection and analyses can be expanded as more extensive data are required for decision-making. Judgment must be used to adjust the level of HEP application to mesh with data needs; gathering site-specific information for studies not requiring such data will greatly increase costs.

2.1 Cost estimation for a HEP application. Any specific application of HEP will have its own unique features and the following estimates of study costs should serve only as a general guide. The guidelines provided in this chapter will aid in the calculation of time and associated costs for a HEP application, but do not include related study activities, such as the time needed for study coordination and reporting responsibilities. A HEP application can be completed in several days or may take as long as several months. The following estimates are for an average high intensity HEP application to a water resource development project.

A. Pre-field costs. Costs associated with the pre-field stage of a HEP analysis are related to mapping and development of habitat models. Mapping costs include obtaining aerial photographs of the study area and delineating cover types. Cost and time estimates for these tasks are highly variable and depend on the quality of aerial photography, the level of resolution required, and the availability of photogrammetric equipment. A mid-range estimate for mapping from aerial photographs is about one person-day per 4,000 acres. Aquatic habitat mapping may require supplemental information, such as water gaging station records.

2. Determination of the Applicability of HEP to a Wildlife Planning Effort

Time required to develop habitat models for each evaluation species depends largely on the availability of information. The time required for this task will be minimal if previously developed models are appropriate for the analysis. A minimum of two person-days per species should be allotted for development of basic models in word format (Chapter 4 and 103 ESM).

B. Field costs. Field time depends on the numbers of evaluation species and cover types identified for habitat analysis and the data requirements of the habitat models used. Cover types are identified for purposes of species selection, data collection and analysis and as a convenient means to simplify the habitat evaluation. The amount of time required for data collection and analysis generally corresponds to the number of cover types selected.

The actual number of samples required will depend on the desired reliability of the habitat analysis, the variability of field data collected, and the type of habitat model used. For terrestrial studies, the minimum number of samples per cover type is three, and experience indicates that 10 to 15 sample sites per cover type are usually sufficient to obtain reasonably reliable data. Four to six sites, on the average, can be sampled per day. Therefore, sampling of each cover type will take an average of two to three days if 10 to 15 evaluation species are included in the study and the habitat models for those species require individual site sampling.

C. Analysis of data. Documentation of impact assumptions and data analysis should average from 8 to 14 person-days per proposed action. About half (four to seven person-days) of this time is required to develop and document land use assumptions and record data on HEP forms; the remaining half is required for manual calculations. If HEP computer software is used for analysis, the total time can be reduced to four to seven person-days per proposed action, with the addition of two to four days to enter into the computer the data for all proposed actions.

D. Summary of costs. A detailed water resource study, consisting of a manual application of HEP that considers 3 proposed actions, 20 evaluation species, 5 cover types, and a total area of 20,000 acres, would require approximately 70 to 110 work days according to the guidelines presented in this chapter. A computer assisted application would reduce this time by 12 to 21 days.