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Appendix A. Forms for Use in the Habitat Evaluation Procedures

A.1 General instructions. The following forms are designed to aid in the performance of three types of assessment activities: 1) calculation of Habitat Units for one or more study areas under existing conditions or future conditions, or both, caused by one or more proposed actions (Figure A-1); 2) comparison of the change in Habitat Units for one or more different study areas due to one or more proposed actions (Figure A-2); and 3) calculation of how large an area needs to be managed to compensate for losses in productivity of selected evaluation species (Figure A-3).

Before attempting to use these forms, determine which of the three types of activities is (are) pertinent to the study, then use the proper flow chart(s) (Figures A-1, A-2, and A-3) to determine which forms need to be completed. Special terms used on the forms are defined in the Glossary. All three types of assessment activities require the completion of Form B. The completion of a Form B may require the completion of Forms A-1 and A-2 as documentation of how the values on Form B were derived. Figure A-4 illustrates when the completion of Forms A-1 and A-2 is necessary.

Appendix A. Forms for Use in the Habitat Evaluation Procedures

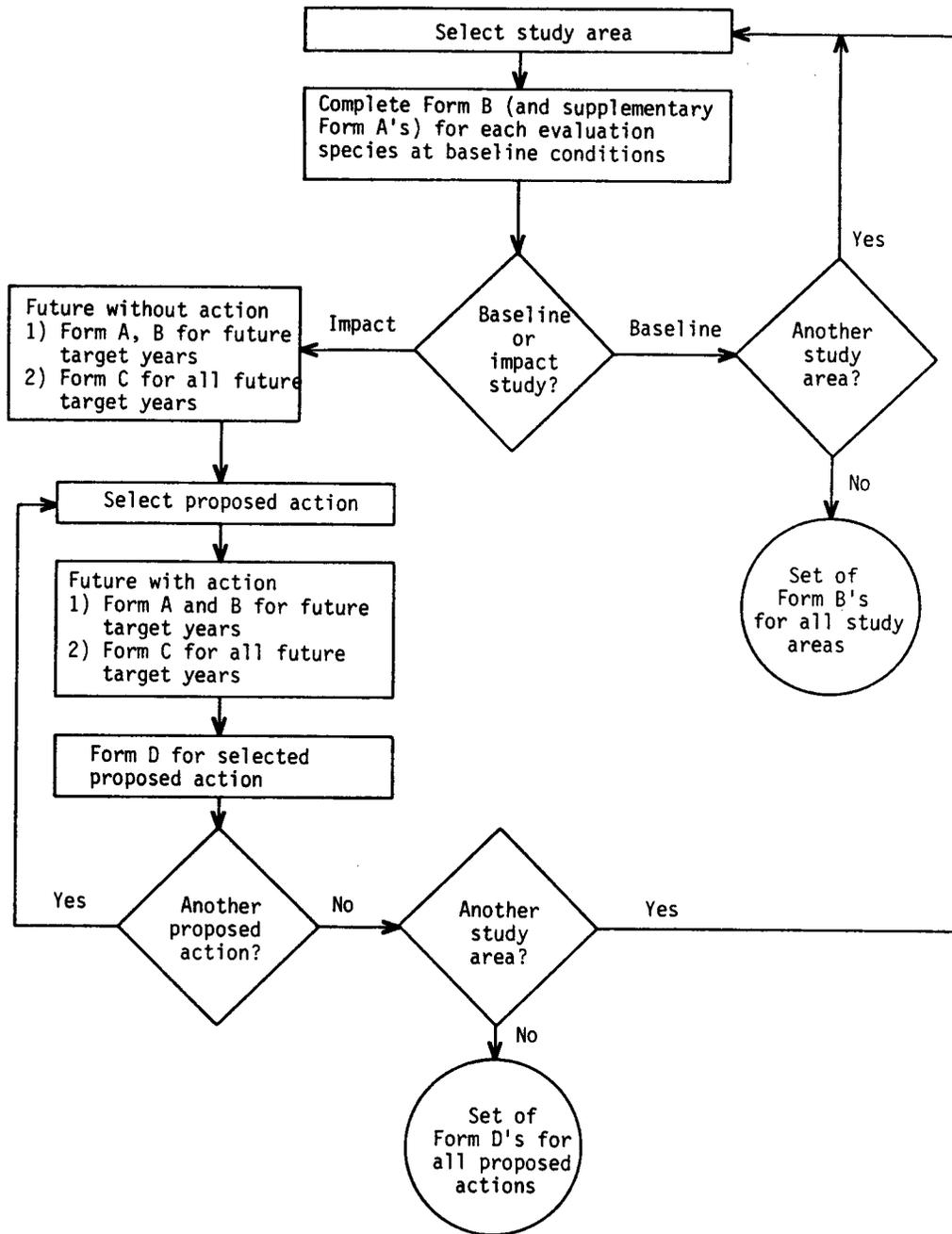


Figure A-1. Calculation of HU's for different study areas and proposed actions (Forms A, B, C, and D).

Appendix A. Forms for Use in the Habitat Evaluation Procedures

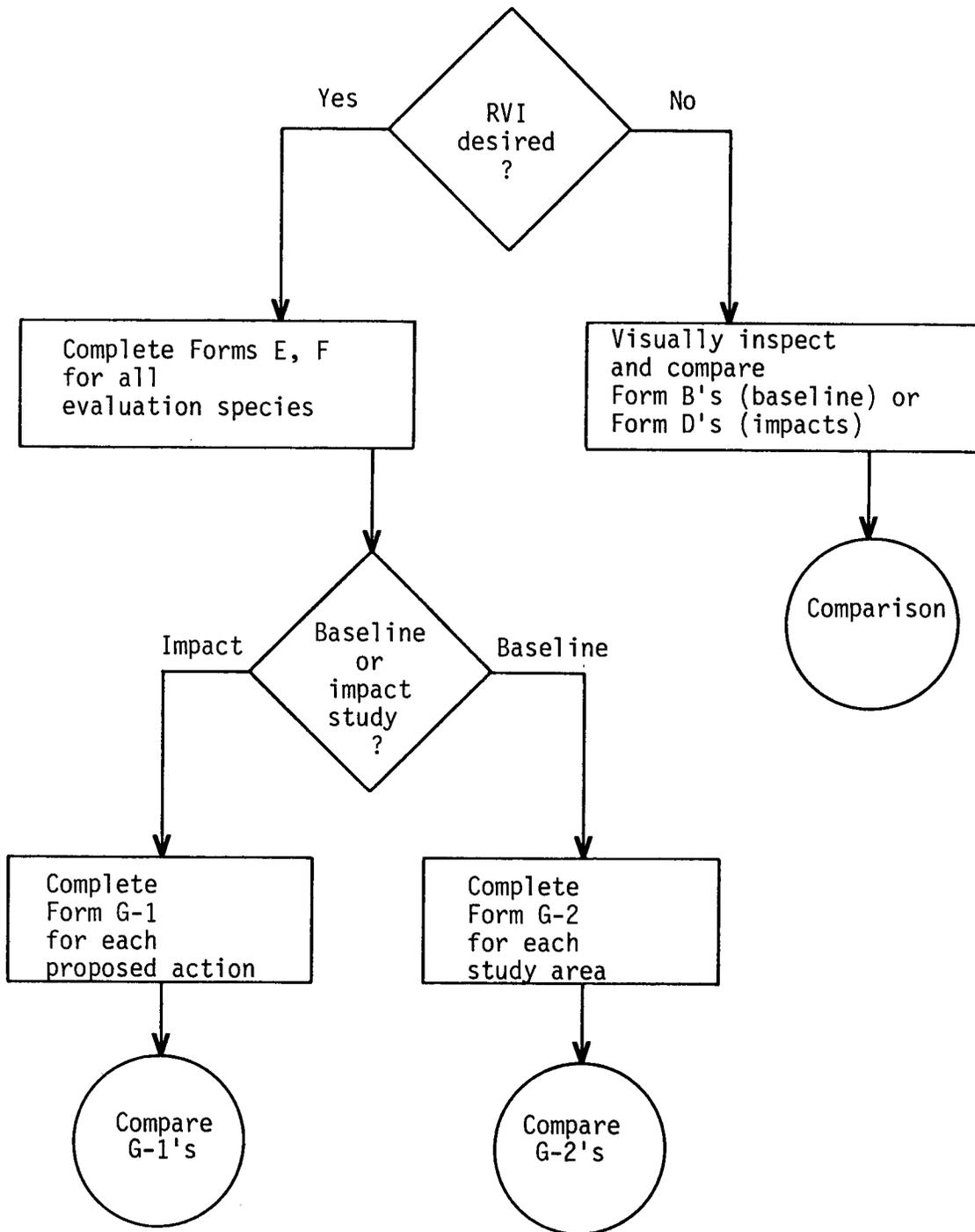


Figure A-2. Comparison of HU's for different study areas and proposed actions (Forms E, F, G-1, and G-2).

Appendix A. Forms for Use in the Habitat Evaluation Procedures

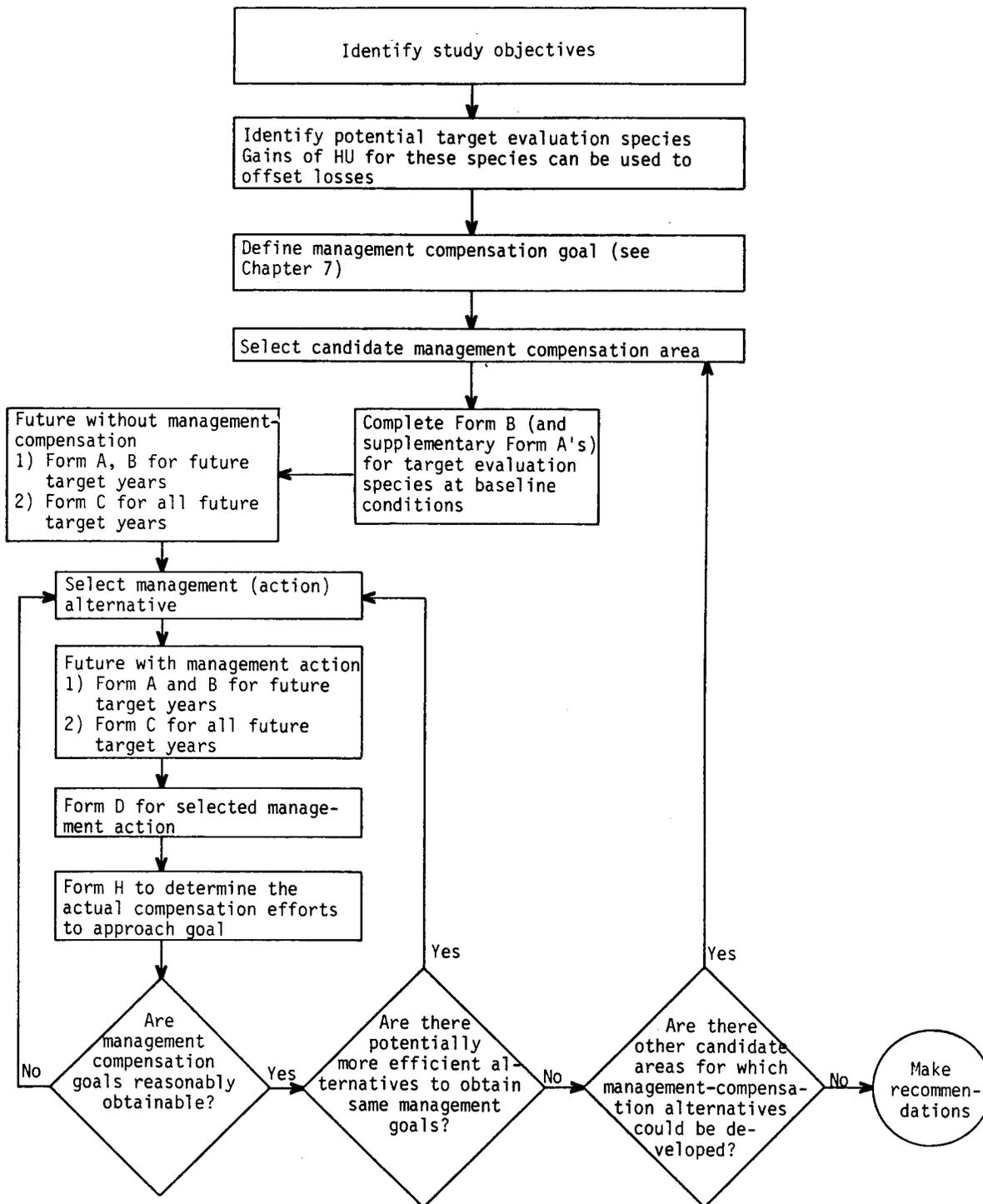


Figure A-3. The compensation process

Appendix A. Forms for Use in the Habitat Evaluation Procedures

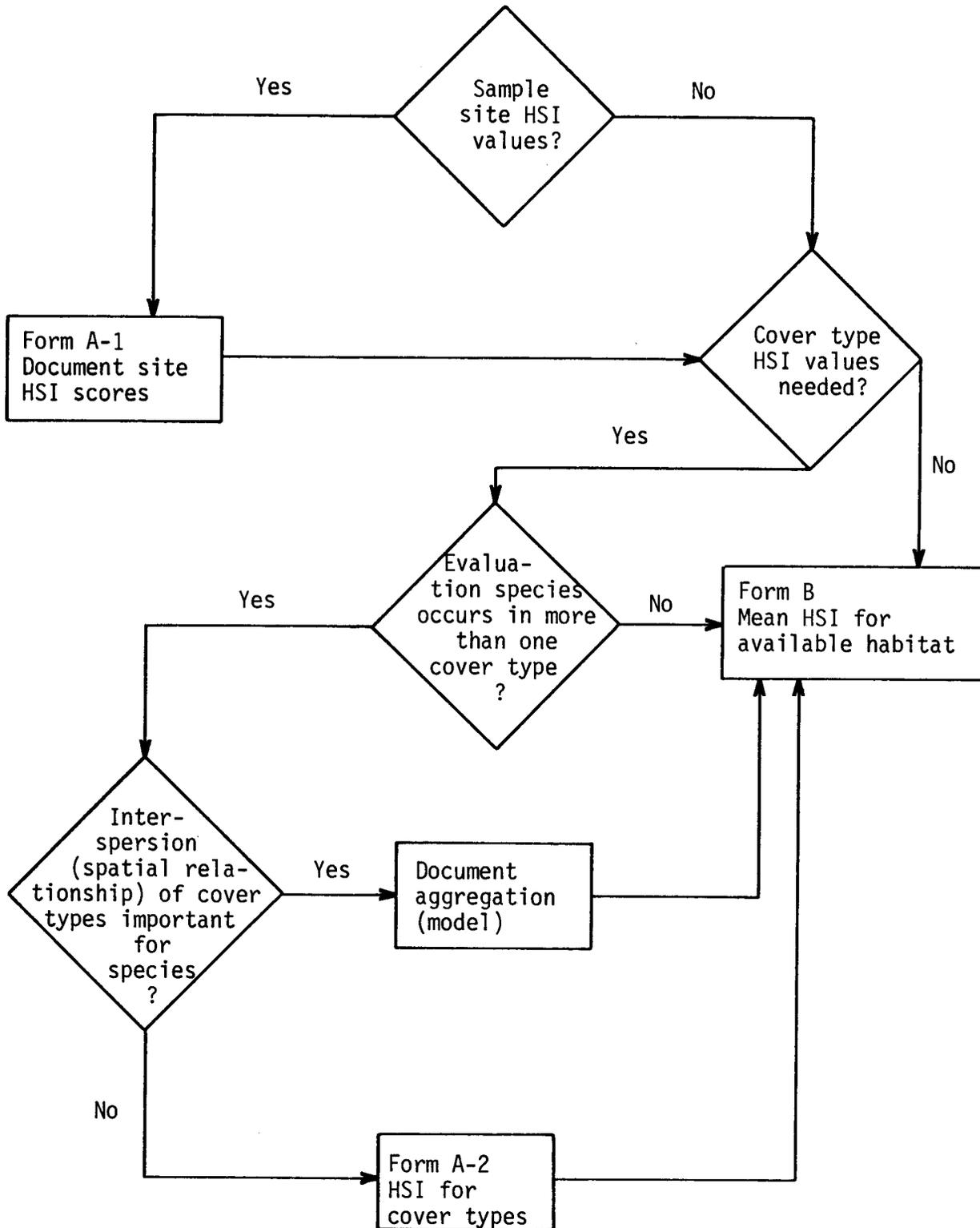


Figure A-4. Determination of when to use Forms A-1 and A-2.

Appendix A. Forms for Use in the Habitat Evaluation Procedures

A.2 Form A-1. Display of HSI's for individual sample sites by cover type.

- A. Purpose. Form A-1 displays evaluation species HSI's at individual sample sites in a cover type or subarea so that a mean HSI for all sample sites in the cover type can be calculated. The form also serves as a permanent record of sample site HSI values for statistical analysis of data. A complete HSI model must be developed to aggregate the mean cover type HSI's (displayed on this form) into an evaluation species HSI before entry into Form B, Column 6.
- B. Instructions.
- (1) Block 1. Enter the study name and the specific study area to which the form applies. For a large study, there may be several specific study areas that are evaluated.
 - (2) Block 2. Enter the name of the proposed action to be evaluated.
 - (3) Block 3. Enter the target year for which the form will apply. If the study area does not vary with the proposed action, it may be possible to evaluate the baseline for all proposed actions on the same form.
 - (4) Block 4. Enter the name of the cover type. If the cover type has been divided into more than one subarea for sampling purposes, enter the subarea number. A different form must be completed for each subarea within a cover type.
 - (5) Block 5. Enter the area for the cover type or subarea listed in Block 4.
 - (6) Block 6. Enter the date the sampling was performed. If the form is being used to describe future conditions, enter the date the form was completed.
 - (7) Column 7. Enter the name of each evaluation species for which sample site HSI's were calculated for the cover type listed.
 - (8) Column 8. List sample site HSI's for each Column 7 entry. Additional forms may be required if more than 10 sample sites are used.
 - (9) Column 9. Enter the arithmetic mean of the individual sample site HSI's for each evaluation species.

Appendix A. Forms for Use in the Habitat Evaluation Procedures

- (10) Block 10. Sum vertically all the HSI figures in each sample site to obtain the site score. The purpose of this step is to recognize the HSI of the sample site. The calculation is optional and is not used as the basis of other calculations.
- (11) Block 11. Enter the arithmetic mean of the numbers listed in Column 9. The purpose of this step is to recognize the average HSI for the cover type in question at the given target year. This calculation is optional and is not used as the basis for other calculations.

Appendix A. Forms for Use in the Habitat Evaluation Procedures

A.3 Form A-2. Determination of evaluation species mean HSI in available habitat.

A. Purpose. This form is used to calculate the evaluation species mean HSI in available habitat from evaluation species HSI's for cover types or subareas. The form cannot be completed unless the HSI models used in all cover types or subareas listed on Form A-2 (Column 6) had the same denominator (i.e., definition of optimum habitat) in the HSI equation.

B. Instructions.

- (1) Block 1. Enter the name of the study and the specific study area being evaluated.
- (2) Block 2. Enter the name of the proposed action being evaluated.
- (3) Block 3. Enter the name of the evaluation species.
- (4) Block 4. Enter the date the sampling was performed. If future conditions are being evaluated, enter the date of form completion.
- (5) Block 5. Enter the target year.
- (6) Column 6. List the different cover types or subareas into which available habitat was divided.
- (7) Column 7. Enter the area of each Column 6 entry.
- (8) Column 8. Enter the evaluation species mean HSI for each cover type or subarea listed in Column 6. This value is derived by entering habitat variable measurements from each cover type into an HSI model.
- (9) Column 9. For each cover type or subarea, multiply the number in Column 7 by the number in Column 8 and enter the product.
- (10) Block 10. Enter the sum of the numbers in Column 7. This is the area of available habitat (for entry in Form B, Column 5).
- (11) Block 11. Enter the sum of the numbers (HU's) listed in Column 9 and enter the result. This is the total number of HU's in the study area available to the evaluation species.
- (12) Block 12. Divide the total number of HU's in Block 11 by the area of available habitat in Block 10 and enter the quotient. This is the evaluation species mean HSI in available habitat in the study area (for entry in Form B, Column 6).

Appendix A. Forms for Use in the Habitat Evaluation Procedures

A.4 Form B. Habitat Units in the study area for selected target year and proposed action.

- A. Purpose. This form is used to calculate the total number of HU's in a specific study area for a specific proposed action and a specific target year. A target year may be baseline or any future year. Form B is not a field form; it is used after the data necessary to utilize an HSI model have been collected. Field data must be documented and may be displayed on Forms A-1, A-2, or a user developed data sheet. Figure A-4 provides guidance on when Forms A-1 and A-2 must be completed in addition to Form B.
- B. Instructions.
- (1) Block 1. Enter the study name, specific study area, and size of the specific study area to which the form applies. For a large study, there may be several specific study areas that are evaluated.
 - (2) Block 2. Enter the name of the proposed action to be analyzed. If evaluating conditions without a specific proposed action, enter the word "none".
 - (3) Block 3. Enter the target year.
 - (4) Column 4. List the evaluation species chosen.
 - (5) Column 5. Enter the area of available habitat for each evaluation species in the study area.
 - (6) Column 6. Enter the evaluation species mean HSI in the available habitat. This number is determined by applying an HSI model (HSI model development is described in Sections 4.1 and 4.2) to the areas of available habitat listed in Column 5. The data used to derive this value must be documented. Figure A-4 is used to determine if Form A-1 or Form A-2, or both, must be completed before completing this column.
 - (7) Column 7. For each evaluation species listed, multiply the number in Column 5 by the number in Column 6 and enter the product. This is the number of HU's in the study area for the listed evaluation species at the specific target year.
 - (8) Block 8. Enter the sum of all Column 7 entries. This represents the total number of HU's available on the study area at the specific target year for all evaluation species listed.

Appendix A. Forms for Use in the Habitat Evaluation Procedures

A.5 Form C. Calculation of Average Annual Habitat Units available for an evaluation species under a proposed action.

- A. Purpose. This form is used to calculate the AAHU's for an evaluation species over a specified time period (see Chapters 4 and 5 for discussion). In general, annualization uses HSI and area figures predicted for specific points in time to estimate the average number of HU's available over the specified time frame. Some types of analyses do not require annualized data; for those projects point-in-time analyses for the target years are used instead of annualized data (see Chapters 4 and 5).
- B. Instructions. Prepare one Form C for each evaluation species being considered under each proposed action.
- (1) Block 1. Enter the study name.
 - (2) Block 2. Enter the name and size of the geographic area of the study.
 - (3) Block 3. Enter the name of the proposed action to which this form will apply. If evaluating the future without a specific proposed action, enter the word "none".
 - (4) Block 4. Enter the name of the evaluation species.
 - (5) Block 5. For the evaluation species listed in Block 4, enter the HSI in available habitat (from Form B, Column 6) and area of available habitat (from Form B, Column 5) for the baseline and each target year (TY). Target years should be identified relative to the baseline year (TY-0).
 - (6) Block 6. Calculate the HU's that will be present between successive target years by using the formula in Block 6.
 - (7) Blocks 6A-6E. Calculate the number of HU's in the interval between the baseline year (TY-0) and target year one (TY-1) using the formula provided and enter the answer in Column 7. The first calculation will always involve a 1-year time interval. For example, if baseline conditions are determined in 1980, and will remain stable until 1985 when changes due to a proposed action will start to occur, TY-0 would be 1985, and TY-1 would correspond to 1986. Conditions from 1980 to 1985 are not included in the annualization calculation. Continue by calculating the HU's between each successive pair of target years and enter the results of the calculation in Column 7. For example, if the target years TY-0, TY-1, TY-20, and TY-100 are used, calculations are performed between TY-0 and