Forest Service Handbook
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Forest Service Handbook 2509.16 – Water Resource Inventory Handbook
Chapter 1 - Water Resource Inventory Process

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Approved by: F. Dale Robertson, Chief

Date approved:

Responsible Staff:

Last Change:

Superseded Document(s): Title Page, 00--1 thru 1.22; Amendment 1, October 1980; Entire Handbook, August 1979

Digest: Following is an explanation of the changes throughout the directive by section.

This amendment is a reissuance of FSH 2509.16 to conform the format and structure of the Handbook to the requirements of electronic directive issuance.

This amendment makes no substantive changes to the text. The only changes made are those necessary to meet new format requirements or to correct spelling, punctuation, or unit names.

This Handbook is now available electronically in the National Information Center in the same format as the paper copy. Henceforth, amendments to this Handbook will be issued to Forest Service units electronically on a document basis.

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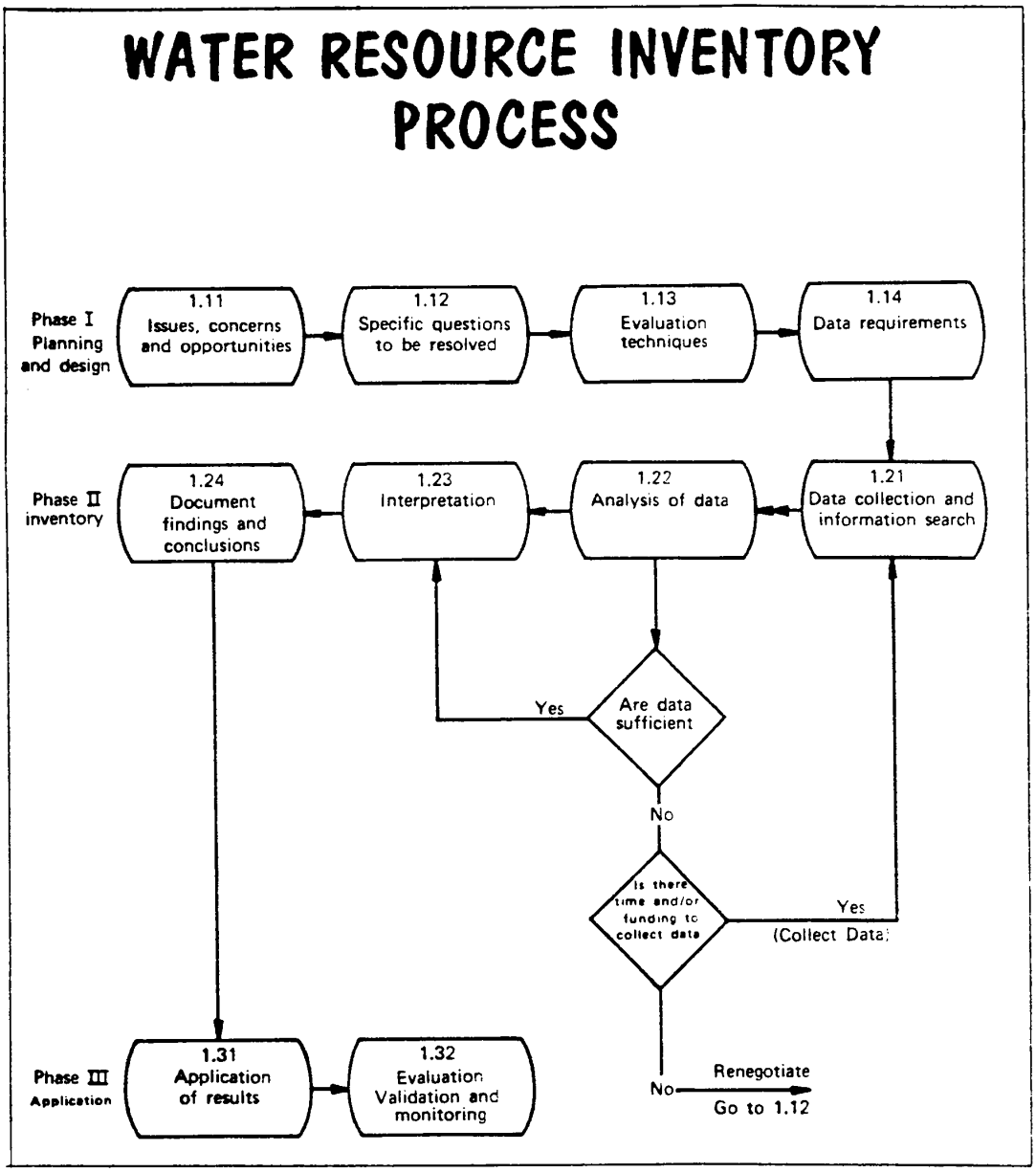
1.1 - Plan and Design Phase

The planning and design of cost-effective inventories is critical to efficient use of personnel and funds. This phase includes identification of issues and concerns, specific questions that must be answered, evaluation of available techniques (orders), and specific data requirements (elements) (ex. 01, 1.11 through 1.14).

1.1 - Exhibit 01



1.11 - Issues, Concerns, and Opportunities

Specific issues, concerns, and opportunities to be resolved are the driving force for the inventory process.

The importance of the issues, concerns and opportunities, the time available for resolution, and the risk acceptable in the resolution will dictate the order of inventory; that is, required precision for the required elements.

1.12 - Specific Questions To Be Resolved

Issues, concerns, and opportunities need to be further defined by specific questions. At this point, the hydrologist should interact with other disciplines to clarify the questions and identify discipline involvement.

1.13 - Evaluation Techniques

Each of the questions identified must now be carefully considered in terms of methods for evaluation. Literature reviews, specific concepts, rules of thumb, professional judgment criteria, or models should be identified. The precision required and the time available are major considerations for selecting evaluation techniques.

The selected techniques will be documented. Selection of the proper technique will avoid the collection of extraneous or insufficient data.

1.14 - Data Requirements

Each evaluation technique selected will have unique data and information needs for the required elements which will require the hydrologist to interact with other disciplines. The purpose for interaction is to identify the type of data and information required from other disciplines.

1.2 - Inventory Phase

During this phase the inventory is conducted and the results are documented. A data and information search is conducted, analysis and interpretations are accomplished, and findings and conclusions are documented (ex. 01, 1.21 through 1.24.)

1.21 - Data and Information Search

After determining the specific data requirements, a search for available data and information is completed. The objective for this search is to determine which data are already available from other sources and which must be obtained by the hydrologist or requested from other disciplines. When data are identified as not available or insufficient to meet the specific need, a decision must be made to either collect the data or renegotiate the specific questions.

1.22 - Analysis of Data

Once the data have been put into a usable format, they are analyzed using the selected evaluation techniques (sec. 1.13). If analysis cannot be completed with the predescribed techniques, then either a reevaluation of section 1.14 is required or the data must be collected (sec. 1.21), or the specific question to be resolved must be renegotiated (sec. 1.12).

1.23 - Interpretation

It is at this point that the forest hydrologist must apply professional judgment and experience to interpret the results of analysis. Interpretations answer specific questions which resolve the issues, concerns, and identify opportunities.

1.24 - Document Findings and Conclusions

Much of the information developed during this process may not be reproduced by the user of the inventory results. In order to preserve all the data and information developed during the inventory process, a separate report will be developed using the format described in FSM 2531.4.

1.3 - Application and Monitoring Phase

This phase applies the interpretation to the specific questions and directs evaluation and validation.

1.31 - Application of Results

After the interpretations are made, the forest hydrologist must meet with appropriate line and staff to discuss results, describe and display alternatives, management prescriptions, and identify best means for implementing the selected alternative.

1.32 - Monitoring, Evaluation, and Validation

As a result of implementation, additional monitoring may be required. The purpose is to evaluate the effects of the implemented action against the predicted effects and to validate the results. This will allow for modification of the implemented action as it progresses and will add to knowledge which will improve future inventory results.