2 The Tasks of a Mapping Project

Research Director Russell Diabo displays the stack of overlays, audiocassettes, and research notes produced during the Adams Lake and Neskonlith Bands' land use and occupancy study, near Chase, British Columbia. A typical community project will usually yield as much material, which contains the raw data.

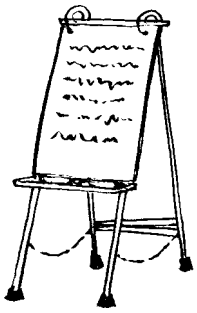
An ideal use and occupancy mapping project includes all of the tasks discussed below. Successful projects include most of them. The tasks obviously have to occur in a general sequence, but in practice the steps are not as linear as they appear. Some of them require months to complete. To meet project deadlines, it is usually necessary to carry out certain tasks at the same time.

The first four tasks produce what is called raw data, which are the many thousands of individual datum, or facts, contained on interview audiocassettes and participants' overlays and maps. Tasks 1-4 take you to the end of the data collection part of land use and occupancy mapping research, and they are the subject of this guide. Tasks 5-13 occur after the data are collected. They are discussed briefly below to provide a sense of the things you will have to do with the raw data to get them into forms that are useable; for example, reports, databases, or community map sets. These are often referred to as research product.

TASK 1 Development of Community Consensus

There is no point starting a land use and occupancy mapping project unless people in the community want it to happen. There must be a substantial number of individuals willing to participate. Seemingly obvious, this requirement is sometimes lost sight of in the flush of excitement when funding becomes available to do research. Community support is one of

the three key factors that must be in place for use and occupancy mapping to succeed. (Its importance is discussed in *Laying the Groundwork for Good Research* in Chapter 4.)

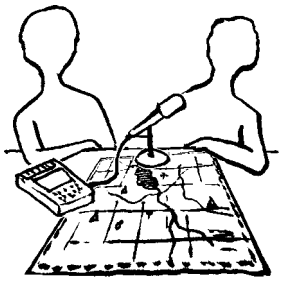


TASK 2 Hiring and Training Personnel

The second key factor for success is the team of people who do the interviewing. These individuals must have dedication to the project and the skills needed to collect data from community members. (Discussion of *Research Personnel and Training* appears in Chapter 4.)

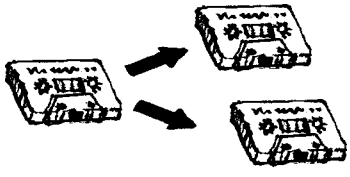
TASK 3 Development of Research Design and Testing of Interview Guide

Data collectors will be using an interview guide when they ask community people for their use and occupancy information. The interview guide points to the third factor that must be in place for the mapping to succeed. It guides the asking of questions, and is the most concrete expression of research design. (This entire book is about research design, but the following sections are most to the point: Chapter 4: *Avoiding Response Burden*; Chapter 5: *Designing the Project;* Chapter 6: *Principles of Research Design and Implementation;* and Chapter 7: *Measuring Quality*.)



TASK 4 Interviewing Participants and Collecting Map Biographies

Use and occupancy data are collected using a standard method known as the map biography. This is a face to face interview during which the participant indicates on a map the places he or she has harvested resources or gone to for spiritual purposes. In some cases the participant also marks places that he or she has never used or even visited, but has knowledge about. (See Chapter 3: *Map Biographies and Composites.*)



TASK 5 Replication and Storage of Raw Data

After data are collected, it is a good idea to make copies of the maps and tapes that contain them. Most nations now recognize the importance of having back-up copies of all raw data, because many communities have lost irreplaceable data through fire, vandalism, water damage, or simply by losing track of materials when community administrations change or move from one building to another. Videocassettes, audiocassettes, and research notes can be easily copied, and maps or overlays can be reproduced using a variety of processes including photography and blueprinting. Copies and originals should be stored in separate and secure locations. One nation carefully copied all its raw data, then stored the copies alongside the originals. An arsonist torched the building, destroying years' worth of data, much of it from elders who had passed on.

TASK 6 Translation of Indigenous Language Interview Tapes

Sometimes it is necessary to have all the interviews done in the indigenous language. For instance, some use and occupancy mapping involves getting information that is best expressed using the first tongue, things like ecological knowledge and aboriginal place names. Other kinds of data can be as easily obtained using English or French.

Is it necessary to interview all participants about where they harvested resources or travelled or camped on their territory, in the indigenous language? Although ideally this would be preferable, the question raises two important issues.

- Many communities now have only a handful of people who understand the old people's vocabulary and their way of using language well enough to make a good translation of their language.
- Translation work is very time consuming, which means it is also expensive.

Many communities have lost irreplaceable data through fire, vandalism, water damage, or simply by losing track of materials.

These two factors can create a situation where the audiocassette data are temporarily, even permanently, unavailable. Also, because of the intensity of translation work and the possibility of burnout, the best research design might involve using your skilled translators only when they are really needed.

Obviously, any elder who does not speak English or French, or who has a strong preference to be interviewed only in their first language, should have her or his wish respected.

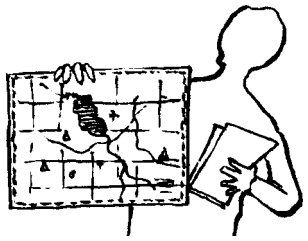
TASK 7 Transcription of Audiocassettes

Interview tapes contain raw data that need to be converted into written or typed form, called transcripts, so that they can be turned into a useable research product like a report. Whenever possible transcripts should be input into a computer because a word processor allows users of the data to search for information electronically.

Sometimes it is necessary to make verbatim transcriptions, in which every word heard on the tape is recorded in the transcript. This is very time consuming and expensive, requiring about nine hours of labour for each recorded hour. It should be undertaken only when really necessary so that more of the project's budget can be used for other tasks. It may be necessary to make verbatim transcripts in preparation for court, but is it necessary to do so when producing a report for presentation at a co-management table? A lot of material can be transcribed using a non-verbatim approach, requiring perhaps three hours of labour for each cassette hour.

TASK 8 Review of Transcripts and Map Biography Data

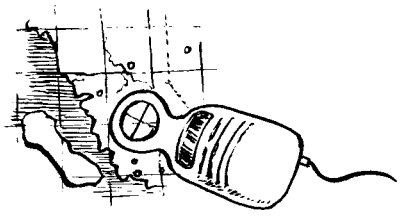
In this task the reviewer carefully reads each participant's transcript while checking the data that were marked on that person's overlays or maps during the interview. There might be a checklist of two or three dozen items that have to be kept in mind while looking at each overlay. This review has three main purposes. One is that the material in the transcript is checked for consistency with the material marked on the overlays. Any contradictions, omissions, or other problems are noted for clarification by the participant. A simple example would be a burial site on the map that is not mentioned in the transcript. Two, the reviewer also makes sure everything marked on each overlay follows the rules the interviewers were supposed to use during data collection (Task 4). Are the titles and labels correct, map symbols readable, and polygons completed? This process makes the digitizers' job (Task 9) much easier and shorter. The third main reason for doing the review is that all the transcript data are coded, in the margin of the transcript copy, in preparation for database entry (Task 11) and report writing (Task 13).

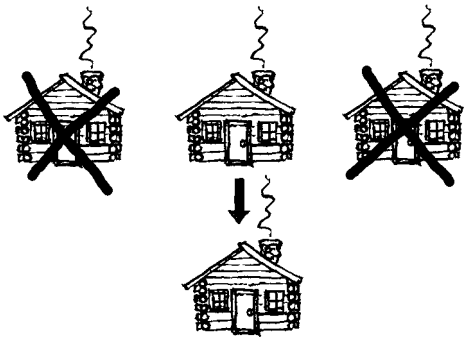


TASK 9 Digitizing Data on Map Biographies and Producing Digital Composites

Digitizing is the process of converting data that have been marked on overlays or paper maps into electronic form. Data are stored in a computer running geographical information systems (GIS) software, which is a mapping software program. All the data appearing on all participants' overlays get digitized. Once they are in electronic form, they are checked against the original hard-copy maps or overlays, to make sure the digitizers did not accidentally omit data or locate some inaccurately. The digitized information can then be stored and combined in different ways. Various combinations are produced as digital composites and can be displayed on the computer screen (Task 10). They can also be printed as composite maps on paper (Task 12), again showing any combination of data. Flexibility alone makes developing GIS capacity a good investment when possible. Producing map sets by hand will meet certain limited objectives, but the disadvantage is that all that work goes into producing a set of maps that can only be used for one or two purposes. GIS costs are high, technicians need a lot of training and experience, and digitizing is time-consuming, but once the data are digitized your nation can always add new data, or go back and print out new maps that show different combinations of old data.

Flexibility alone makes developing GIS capacity a good investment when possible.

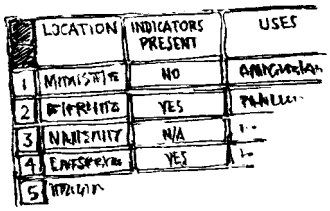




TASK 10 Elimination of Redundant Data

Use and occupancy mapping typically involves interviewing many individuals separately and then combining all their data on one set of maps to represent the community's ties to its territory. This process produces many duplications of mapped features. The same important sacred area or berry site or cabin might be mapped by many dozens of participants. Some individuals will consider the extent of the site to be different than others and some will locate it more accurately than others. When you combine all the data you often end up with a cluster of many markings that represent a single feature. If the maps are to be used as an inventory for management and operational planning, it is important to eliminate as much of the duplicated data as possible.

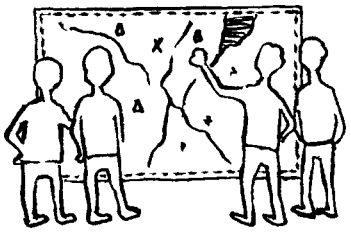
Data are never removed from the individual's map file inside the computer, but rather from the community's composite file. This is done using the GIS while looking at the data on the computer screen, and while referring to the transcript information. Decisions about which data to delete are based on several factors: the known reliability of the participants, their ability to see and read maps, their level of effort during the interview, and so on. A lot of judgment is used in this process, and it is best if the person cleaning up the data is familiar with the participants. By the end of this task you will have a set of community maps (Task 12) that shows only a single datum for each feature. This set is preliminary but it forms a sound basis for community verification (Task 12).



TASK 11 Entry of Descriptive Data into a Database

The information in each participant's transcript (Task 8) that describes the mapped features is entered into a database, on a feature by feature basis. For example, when Henry Patomogan indicated his father Martin's first cabin site, he reported that he first went there when he was about eight years old, and that he was there with Martin and Martin's brother Sam, both of whom were trapping at the time. Henry also reported that he had returned to the site many times to go fishing and also for hunting moose and snaring rabbits. The last time he used the cabin was the summer three years ago when it burned down. All these data are entered into the computer. When everybody's data are entered, the database can easily combine all the information about Martin Patomogan's first cabin site, which then represents a community history of that site. The database is very useful for report writing (Task 13), because it brings together everything recorded about any mapped feature you ask it about.

TASK 12 Verification of Community Maps



It is always a good idea to print off a set of large paper maps that display the community's use and occupancy data, and to have groups of community members examine them closely. These meetings are useful for verifying the overall quality and completeness of the mapped data. A record of all comments should be kept. Corrections to existing information often emerge, as well as additional data, resulting in an improved set of revised community maps.

There is another reason to budget for these meetings when designing your research plan. When people see their community's use and occupancy information shown on maps for the first time, they are almost always surprised and delighted. When use and occupancy research is done well, the maps are always impressive. These occasions are usually the first time that people really understand what the research project is about. They are often the first time that people see clearly how their personal stories are part of a community system, part of a much larger story. There is often a great sense of satisfaction and empowerment in this experience. Verification meetings are an important part of the research plan. They are much more than a simple exercise in getting a stamp of approval from the community.

TASK 13 Report Writing

A description of how the use and occupancy mapping data were collected is necessary if you expect people to take your maps seriously. This is called methodology, and should be as detailed as possible without breaking confidentiality. Sometimes a report may also summarize the material found in the transcripts. The exact nature of your reports can vary a lot, depending on the objectives of your project.

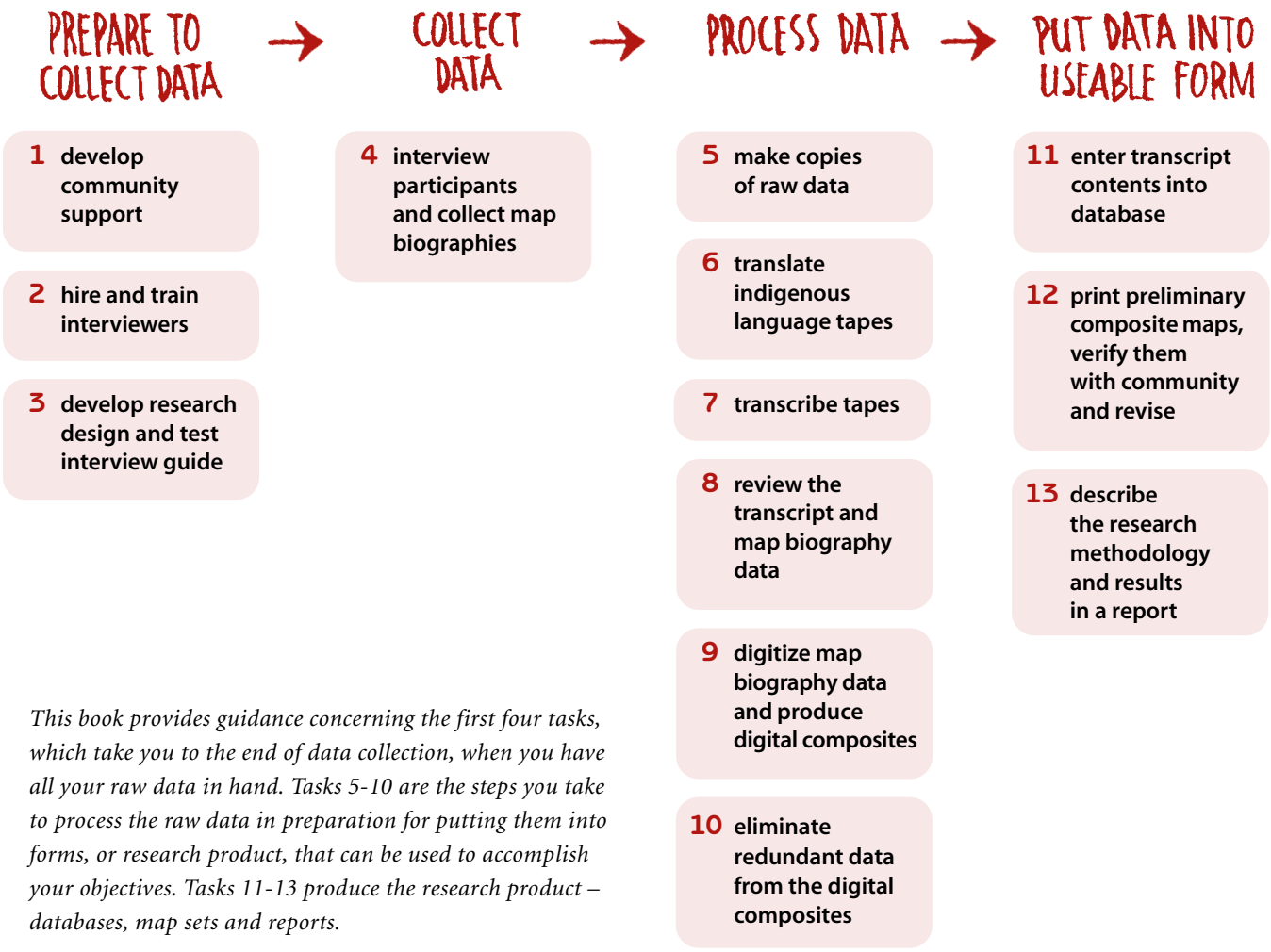
◆ ◆ ◆

In addition to the 13 tasks shown in Figure 2 (on the following page), there is a lot of administrative work involved in a land use and occupancy project, including the development of work plans and budgets and obtaining funds. Interviewing participants is only one of a number of tasks, most of which can take weeks or months to complete. Sometimes use and occupancy mapping is started before administrators know how much budget is required for later tasks. Avoid the mistake of assuming that data collection is the sole major expense. Budget realistically for all the tasks.

It is important that people doing the major tasks shown in Figure 2 are consulting with each other on an ongoing basis. As much as possible, consultation should begin prior to the start of their tasks. For instance, you

When people see their community's maps for the first time, they are almost always surprised and delighted.

FIGURE 2 Major Tasks of Land Use and Occupancy Mapping Projects



This book provides guidance concerning the first four tasks, which take you to the end of data collection, when you have all your raw data in hand. Tasks 5-10 are the steps you take to process the raw data in preparation for putting them into forms, or research product, that can be used to accomplish your objectives. Tasks 11-13 produce the research product – databases, map sets and reports.

should think about GIS use when designing data collection procedures. You can make the GIS activities much easier by building in small details to data collection. Digitizers often have preferred ways for interviewers to label overlays, mark data, and indicate the grid locations on the map biographies.

Budget realistically for all the tasks.

The way in which interviewers, translators, transcribers, transcript reviewers, digitizers, data entry clerks, and report writers do their jobs greatly helps, or hinders, those who work with the material later on. For example, the manner in which an interviewer marks data on the overlays can make an enormous difference to digitizers, speeding up their work tremendously if the marking of symbols is done carefully. Each person involved in any of the major mapping tasks should have a solid understanding of the

other tasks, and each should have easy access to the others' methodologies. Digitizers, for instance, should have copies of the data collection methodology for quick reference. The more understanding that project personnel have about each others' methods and responsibilities, the more smoothly the project will progress.

Just as each mapping project task should be done with reference to all other tasks, each use and occupancy project itself should be done with all other past community research projects in mind. For example, you should choose a database that is compatible with databases used in earlier projects. Paying attention to database compatibility saves huge headaches and unnecessary expense later on.

Michel Thusky of the Algonquins of Barriere Lake stands beside the stone foundation of a nineteenth-century trading post that had remained lost to historians until the day this photograph was taken. Old habitation sites like this post hold special significance to First Nations, and are usually mapped during land use and occupancy studies.