
2005 LTABC SEMINAR SERIES BASELINE INVENTORY TRAINING WORKSHOP

Prepared For:



*204-338 Lower Ganges Road, Salt Spring Island, B.C. V8K 2V3
www.landtrustalliance.bc.ca 250-538-0112 fax 538-0172*

Prepared by:

**Ryan Durand
Taara Environmental**

**Naramata, BC
March 17-18th, 2005**

TABLE OF CONTENTS

| | |
|---|-----------|
| INTRODUCTION | 1 |
| PURPOSE OF THIS WORKSHOP | 1 |
| WORKSHOP MATERIALS..... | 1 |
| WORKSHOP SCHEDULE | 1 |
| DEFINITIONS..... | 2 |
| INTRODUCTION TO BASELINE INVENTORIES | 3 |
| PURPOSE AND IMPORTANCE OF BASELINES..... | 3 |
| PLANNING FOR MONITORING NEEDS | 5 |
| ECOLOGICAL VS. COMPLIANCE..... | 5 |
| SUMMARY VS. FULL REPORT..... | 6 |
| TEMPLATES, SAMPLES AND PROTOCOLS | 7 |
| PLANNING THE SURVEY | 8 |
| LANDOWNER PERMISSION/PARTICIPATION | 8 |
| PURPOSE AND OBJECTIVES..... | 8 |
| DEVELOPING A WORK PLAN..... | 10 |
| BACKGROUND INFORMATION..... | 10 |
| TIME OF YEAR..... | 11 |
| MAPPING | 11 |
| SURVEY METHODS..... | 13 |
| DATAFORMS..... | 14 |
| EQUIPMENT, MATERIALS, AND RESOURCES | 15 |
| SAFETY..... | 16 |
| FINAL REPORT AND DATA STORAGE..... | 16 |
| THE FINAL REPORT | 16 |
| <i>Landowner's acknowledgment/signature.....</i> | <i>17</i> |
| DATA STORAGE..... | 17 |
| <i>Project binder</i> | <i>17</i> |
| <i>Photographs, slides, and negatives.....</i> | <i>17</i> |
| <i>Digital data.....</i> | <i>18</i> |
| <i>Paper.....</i> | <i>18</i> |
| <i>Safe back-up location.....</i> | <i>18</i> |

INTRODUCTION

Participant Introductions – i.e. name, organisation, location, baseline experience, what they hope to get out of the workshop – and introduction by Ryan Durand.

Purpose of this workshop

The purpose of the workshop is to provide a capacity building training session for LTABC members to allow them to develop the skills required for the completion of baseline inventories. The participants of the workshop will receive the basic training required to allow them to participate in the collection of baseline data and the completion of baseline inventory reports. As well, participants will be asked to provide input into the LTABC Guideline to Best Practices for Baseline Inventories project from the perspective of the needs of the land trust they are associated with.

Workshop materials

This document is a supplement to the various PowerPoint presentations and other material that will be presented. All presentations, along with sample baseline reports, templates, and protocols can be found on the accompanying CD. The majority of the resources found on the CD are from the LTABC Best Practices CD project and were provided by various BC land trusts and LTABC members.

Workshop schedule

There will be a 15min break at 10:15, with refreshments served in the main hallway. Lunch will be at 12:00 in the Columbia Hall for about a half hour, as the afternoon site visit will require about a half hour drive.

Day 1 - Thursday, March 17th

Presented by Ryan Durand

9:00 to 12:00 - McLaren Hall

The first section of the workshop will introduce participants to baseline inventories. The session will cover the basic aspects of planning, conducting, and creating reports for baseline inventories.

12:30 to 4:30 - Nature Trust of BC's Skaha Eastside property

The second section of the workshop will be held in the field at a property owned by the

Nature Trust of BC.

Due to the limited time of the field section, participants will decide as a group what will be covered.

Definitions

Several terms and acronyms are used throughout this document, including:

Baseline inventory – the overarching term to describe the entire process of collecting field data, background data, the creation of a baseline report, and the storage of critical baseline data.

Baseline report or baseline inventory report– a document that contains the data from the baseline survey, but does not necessarily contain all of the baseline inventory information.

Baseline survey – the collection of data in the field, and the field mapping process.

Cadastral and cadastral maps – legal property maps used by all levels of government to describe parcels of property.

HAT – Habitat Acquisition Trust

IP marker – a white, wooden post with the words “IP” on it that demarks the location of the iron pins placed beneath the ground by land surveyors at all legal property boundary corners.

ITF – Islands Trust Fund

LTABC – Land Trust Alliance of BC.

NAPTEP – Natural Area Protection Tax Exemption Program

NCC – Nature Conservancy of BC

NTBC – The Nature Trust of BC

Photostop – terminology from the NCC/HAT Baseline Inventory Protocol describing a standardised process for establishing, conducting, and documenting a photographic process for baseline surveys.

Photo point and Photostation – interchangeable terms describing the location of a photograph. Photo point is also used for a specific purpose in the process of Photo Point Monitoring (PPM).

SHIM – Sensitive Habitat Inventory Mapping.

Surveyor(s) – the person(s) conducting the baseline survey, not to be confused with a land surveyor.

TEM – Terrestrial Ecosystem Mapping. A standardised and highly technical process of bio-terrain mapping created by the provincial government and maintained by the Resources Inventory Standards Committee.

TLC – TLC The Land Conservancy of BC

TRIM – Terrain Resource Inventory Mapping. Digital base maps of the entire province maintained by the provincial government.

WCEL – West Coast Environmental Law

INTRODUCTION TO BASELINE INVENTORIES

Purpose and importance of baselines

What is a baseline inventory? Following are three descriptions of baseline inventories, their purpose, and what they should contain:

“The collection of Baseline Information, that being the record of the existing state of the land, its flora, fauna as well as other natural or cultural features, is an integral component to any conservation covenant program. The Baseline Inventory Report (BIR) acts as the legal justification for preserving the land, while also providing an invaluable tool when the covenant holder wishes to monitor the property for undesirable change that violates the Covenants mandate. While other groups employ rigorous scientific detailing in their Baseline Documentation, the Islands Trust Fund/Conservancy feels that thoroughness documentation needs to be balanced by the practical consideration that unnecessary detail can waste time and money. With that in mind, a BIR needs to be easy to read and comprehend by the layperson, as serves a management and legal function – and is not to be considered a rigorously scientific document.”

Draft ITF NAPTEP Baseline Inventory Guidelines, 2005

“Baseline information describes the existing state of the land, its flora, fauna and natural and cultural features at the time the conservation covenant is placed on the land. Depending on the particular circumstances, it is generally prepared in the form of a detailed written report accompanied by a combination of surveys, photos, videotapes and maps. It is sometimes referred to as a baseline inventory or baseline documentation report. Baseline information also helps the parties identify conservation objectives and draft the covenant itself. It provides the benchmark against which to measure changes in

the land and its features. It is essential to the monitoring process. Baseline information makes it easier for both present and future landowners to comply with the terms of the covenant.”

Greening Your Title. WCEL. 2000

“Critical to the success of covenants are the establishment of baseline inventory and monitoring procedures that ensure the protection of the ecologically important features. According to the US Land Trust Alliance’s (LTA) 1999 Conservation Easement Study, 115 major easement violations had been reported by US land trusts so far. Of these, 32 violations were surface alterations, such as road or ditch construction. The second most common type of violation, with 28 reported, was vegetation cutting. This was followed by construction of prohibited buildings or other structures, with 25 violations reported. Less frequent violations involved prohibited commercial activity, dumping, subdivision, or denial of access for monitoring. As the LTA study has shown, most covenant violations will be in the form of restricted development or disruption of the property’s features. One of the most crucial functions of the baseline, therefore, is to enable clear differentiation between previous developments and disturbances and new ones. With this aim, written and photo documentation must be used to accurately depict the current status of developments and disturbed sites on the property.

Baseline Inventories must be:

Legally defensible. The primary function of a baseline inventory is to enable identification of future covenant violations. The baseline is the only tool available to differentiate between disturbances and developments existing before the covenant is registered and those occurring after registration. As this differentiation may be the subject of court hearings, the baseline must provide legally defensible documentation of the property’s status at the time of registration.

Clear and consistent. For the benefit of staff, monitors, and project partners, each baseline report should be completed in a standard format, enabling easy and efficient reference. Consistency must be maintained between the different people completing the studies, whether contracted professionals, staff, or trained volunteers.

Relevant to the individual covenant restrictions and management goals. A baseline study cannot be effective if it does not specifically address the management issues for the subject property. Each baseline should give special attention to the features the covenant is attempting to protect.

Physically durable and accessible. The written and visual information which makes up the baseline must be presented in a format that ensures it will endure through time, may be registered at the Land Title Office, and may be copied and shared with landowners and co-covenantors.

A useful foundation for monitoring. The baseline report should identify priority areas for monitoring. The baseline may, for example, direct monitoring focus towards a particularly sensitive plant population, an invading species, and possible hydrological alterations resulting from development on neighbouring lands. The format for the baseline report must also allow for comparison of data between the baseline and future monitoring reports to assess change over time, particularly disturbances.

Repeatable. The survey must be repeatable in an accurate and precise manner by future monitors. Sample sites and photostops must be well marked and referenced in the report and the property maps so as to be easily re-located. If data collected during the survey cannot be replicated in the future, then it is of limited use.”

NCC/HAT Baseline Inventory Protocol, 2003

Planning for monitoring needs

When planning the baseline, consideration should always be given to how the baseline will facilitate future monitoring. This is one of the main reasons why the land trust should have a clear protocol that includes a standardised process for conducting baselines. One of the main purposes of creating a baseline inventory is to collect the necessary information to prove if the terms of the covenant or your management plan have been adhered to. Therefore, the baseline survey must be designed and implemented in a manner where the information required to prove compliance can be collected by future monitors and compared to the original data in a meaningful way. In other words, the baseline survey process must be repeatable.

In addition to using a standardised process, surveyors should constantly think about monitoring while planning and conducting the baseline survey. For example, care should be taken to locate photo points and/or sample plots in areas that the surveyor considers the most likely to be disturbed. This is particularly important on properties that are open to public use, as it is important to create a baseline report that can be used to determine if public use is detrimental to the property.

Property boundaries (and boundaries of designated protected/general use zones) should be well marked. Photographic and narrative descriptions should thoroughly document these areas, as this is where most disturbances will occur.

Ecological vs. compliance

There is a large difference between the type of baselines that various land trusts create. The difference is due to a large number of factors that primarily include the land trusts goals and their financial and technical ability.

They vary from the in-depth ecological based inventories done by the NCC to baselines that are focused more on compliance to the terms of a covenant such as the new ITF has created.

This difference of objectives is one of the main things that will be addressed with the upcoming LTABC project to create a best practices guideline for baseline inventories.

Most of the material that we cover today will be based on my experience with the NCC/HAT protocol, but the methods used to collect and record data are more or less the same regardless of the purpose of the inventory.

Summary vs. full report

“In recent months I have been hearing very strong complaints from registrars of the Land Title Office regarding the size of some covenants being submitted for registration. These documents are sometimes as much as 80 or 100 pages long. Most of this is made up of the Baseline Report which contains many lists and dozens of photographs.

Last week TLC was presented by one of its partners with an 83 page covenant. We have refused to attempt to register this document until the 60 something pages of baseline are replaced by a 5 to 6 page summary or overview.

It seems that there is an impression out there that it is necessary to file these detailed baselines as a part of the covenant. That is not the case. Please look at "Greening Your Title" for discussion regarding the filing and storage of the Baseline. It should be adequate to have the parties to a covenant sign copies of the complete and very detailed Baseline document and keep those documents in each of their possession. An overview or summary should be attached to the covenant and reference in the covenant should clearly say where the full documents are held.

While it is important to do a high quality and detailed Baseline Documentation Report it is equally impossible to document every tree or blade of grass on anything but the smallest of properties. There is a need to common sense to prevail in determining how much information goes into the report and into the summary.”

Bill Turner, TLC – Sept. 2002

See the two TLC baseline reports on the accompanying CD to see the difference between a summary report for the Land Title Office and a complete report.

“If the length and format of the baseline documentation report permit, it can be included as a schedule to the covenant. For example, if the baseline documentation report and all attachments are in a format that can be reproduced on paper, it would be appropriate to include it in the covenant. Lengthy reports and those accompanied by information in other than written format, such as audio or video tapes, generally will be stand-alone documents.

Whether or not the baseline documentation report forms part of the covenant, the covenant should refer to it and describe its purpose. A typical provision in a covenant might state:

The Parties agree that the Land and the Amenities are described in the Report, a copy of which is on file with each of the parties at the addresses set out in section ***, a further copy of which [or an overview of which] is attached as Schedule *** to this Agreement.

This Report will serve as an objective information baseline to enable the parties to monitor compliance with the terms of this Agreement.

The typical provision will also acknowledge that the features and ecological values of the land will change naturally over time and that these natural changes will be taken into account and incorporated into the baseline report.

If the full baseline documentation report is not included as part of the covenant, it is a good practice to include an overview of the report so that the information is readily available as part of the covenant.

A baseline documentation report that forms part of the covenant will be registered in the Land Title Office with the covenant. Anyone requesting a copy of the covenant from the Land Title Office will receive a copy of the report as part of the covenant.

If the full report is not included as part of the covenant, the Land Title Office may or may not accept the report for registration. If possible, the covenant itself should also refer to the document filing number of the report. See the sample clause above. Future owners of the land will be alerted to the existence of the report and able to obtain a copy.

It is essential that each party to the covenant has a copy of the full baseline documentation report whether it forms part of the covenant or stands alone. Both the landowner and covenant holder should keep a copy in a safe place to which they have ready access. Since the baseline information is essential to the monitoring process, covenant holders should also keep a copy of the full baseline documentation report with monitoring records.

Greening Your Title. WCEL. 2000

TEMPLATES, SAMPLES AND PROTOCOLS

Included on the CD are examples of numerous baseline inventory reports, templates, and protocols from various land trusts. There is no one “correct” method for creating a baseline, but there specific components that make up a “bare minimum” of a report.

- [NCC/HAT Baseline Inventory Protocol](#)
- [ITF Guidelines](#)
- [NTBC Template](#)

The LTABC Baseline Inventory Guideline Project will address what the bare minimum is for different types of baseline reports. This project is still in the development stage, but assuming the funding is secured, it should be completed by this summer.

Quick introduction to the draft overview of the LTABC guidelines and ask for their feedback on the overview.

- [LTABC Baseline Inventory Guideline Project](#)

PLANNING THE SURVEY

“Baseline inventories are carried out in three main stages. The first stage involves collecting background data on the subject property. The background data (such as air photos and maps) are used to plan the survey. The second stage is the actual field survey of the property. The field survey is based on the use of the dataforms, therefore, the procedures for collecting data in this chapter are organised by dataform. The third stage is the creation of the baseline inventory report (Chapter 3), and the archiving and storage of all data collected (Chapter 4).”

NCC/HAT Baseline Inventory Protocol, 2003

Landowner permission/participation

Prior to conducting any field work, make sure to have the permission of the landowner (if applicable). If you have not done so before, it is invaluable to walk the property with landowners. Landowners will typically be able to provide you with information on the history and land use of the property and adjacent properties, and will be able to show the locations of any anthropogenic structures, disturbances, interesting features, and most importantly, the property boundaries.

It may also be advantageous to contact adjacent landowners to let them know you are working in the area. They may also be able to assist with locating property boundaries.

Purpose and objectives

The most important aspect of planning the inventory is to clearly define the purpose and objectives of the property. This will differ greatly depending on the type of conservation agreement, the mission of the land trust, the terms of the covenant of stewardship agreement, and the abilities and resources of the land trust. The objectives should closely mirror the conditions set out in the conservation covenant, if the property is covenanted.

The purpose is simply “why are you protecting this property?” For example, if a property is to be protected to preserve wildlife habitat within an existing or planned greenbelt and no public use will be allowed, then you could have specific objectives for the baseline inventory such as:

- Assessing current and monitoring for future public use – does the public currently use the property? If so what areas do they use, how can use be controlled, where are signs needed, how can future use be monitored, etc.
- Assessing landscape level connectivity/encroachment – identifying adjacent land uses, predicting which areas may be disturbed/developed and how this may impact the property, determining what mammals may migrate through the property and what their habitat needs are, etc.
- Assessment of existing wildlife habitat.

Alternatively, if the purpose of a property is for the preservation of a property for both ecological integrity and public use and enjoyment, then the objectives of the inventory could include:

- Documenting and monitoring of trail system – mapping and creating photo points of the trail system, determining where signs should be put up, creation of a method for assessing the condition of the trail, etc.
- Documenting and monitoring of public use and disturbance – description of areas most heavily used by the public, location of garbage, disturbances to vegetation and other natural features, determining if public use will impact sensitive ecosystems/rare species, etc.
- Assessing invasive species – inventorying invasive species in a manner which allows for monitoring to determine if the species are increasing and need to be controlled, etc.

Once you have determined what the objectives of the baseline are, then you can plan the inventory and determine the amount of time, resources, and technical expertise will be required to document the property in a manner which your objectives can be assessed and monitored over time.

Developing a Work Plan

After you have determined the objectives of the survey, you should create a work plan. This can be as simple as a list of what needs to be done, preferably in chronological order. Having a work plan will make sure that you do not miss important steps, or fail to be prepared when doing field work. An example may look something like this:

1. Collect background information
2. Determine when the survey should be conducted
3. Create base maps and make rough survey route/sampling plan
4. Determine what equipment and supplies will be needed
5. Collect data
6. Analyses and process data
7. Write report and make final maps
8. Send draft to landowner
9. Finalise report and have landowner sign off on it
10. Submit report or summary document to the Land Title Office
11. Create data backup of all important information

Background Information

Background information consists of all types of maps, reports, and personal communication that relate to the general area of the property. The more information you can collect on the property the better. Some of the main types that are readily available include:

- Draft covenant, reserved rights
- Zoning maps, Official Community Plan (OPC)
- Soil maps
- Sensitive Ecosystem Inventory (SEI) maps/reports
- Biogeoclimatic ecosystem classification (BEC) maps
- Air photos
- TRIM, TEM, SHIM, watershed, and topographic maps
- Legal information, lot plan, cadastral maps
- History of property, especially disturbance history (from owner, others)
- Any other biological inventory or study you can obtain (through local and provincial governments, stewardship groups, etc.)

This information can be used to obtain the majority of data you will need to plan your survey, as well as significant amount of the information needed to complete the baseline report.

Time of year

The time of year that you conduct the baseline may be important, particularly if the property contains rare species. Certain species of plants, for example, only flower at particular times of the year, then you may have to plan your survey during a very short time period in order to determine if the species is present. This information can be determined by obtaining the tracking list of species-at-risk from the BC Conservation Data Centre for your region. Then based on the habitat requirements for each species (mainly the BEC unit and site series), you can get a good idea of what species may occur and at what time of the year they are present/identifiable. This process is time consuming and takes a certain degree of expertise to do.

The time of year in which you conduct the survey is also important in terms of how your photos will portray the property, any vegetation or ecosystem classification you do, your ability to access specific areas of the property, etc. All are specific to a given property and should be considered when planning the survey.

Mapping

“Specific mapped features should include: Property boundaries, north arrow, topographic lines, roads, trails, watercourses, photo stations locating the properties important ecological or historical features, as well as types of land use, including any existing restoration work. Equally important should be information detailing the route that the initial survey and subsequent monitor took during the collection of Baseline Information or monitoring inspection.”

Draft ITF NAPTEP Baseline Inventory Guidelines, 2005

Reports should contain several types and scales of maps. The actual maps that you create will be based on your needs, capabilities, and objectives for property management. Although maps are often created in colour, they should always be tested to see how they will reproduce in black and white and if they are still legible after being photocopied. This is very important for all maps that are registered in the Land Title Office.

Several types that may be useful include:

- Location map – a map that shows the location of the property in relation to nearby towns and cities.

- Direction map – if the property is in a hard to reach or hard to describe location, then a simple map showing the route to get to the property. This map does not necessarily have to be put in the final report, but should be kept in the project binder or folder for monitoring use.
- Adjacent land use – depending on the objectives of the property conservation, a map that shows landscape level connectivity and adjacent land use may be useful. There are several online mapping services offered by the government and several regional districts that may be suitable for making these maps.
- Basic property map – a basic map that shows the property boundaries. Maps can be some the Land Title Office, regional district or municipal cadastres, or surveyors. The map should clearly show the property boundaries. Preferably the map will also have distances and azimuths of all property lines.
- Polygon and site location map – if you are stratifying the property based on biophysical units (polygons) and conducting ground sampling to verify the map, then a map should be created that shows the polygons and sample site locations.
- Photo point location map – a map that shows the location of all points where photographs were taken is important. Make sure to clearly make the locations with a number or code that corresponds to the associated photos and data for each location.
- Disturbances, anthropogenic structures, sensitive features, and habitat features – one or several maps can be produced to show the location of any other features that are important to your organisation or for monitoring. If you do not have to many mapped features, then much or all of this information could go one map, but make sure it is easy to understand.

Mapping techniques

- Air photo interpretation to delineate polygons
- Ground-truthing air-photo interpretation
- Terrestrial Ecosystem Mapping (TEM)
- Biogeoclimatic zones and site series
- Mapping small areas
- Transects
- Plot sampling techniques

Mapping resources

- BC Government directory - <http://maps.gov.bc.ca>
- Land Information BC - <http://srmwww.gov.bc.ca/g/makeamap.html>
- Species Inventory Web Explorer (wildlife species information database) - <http://srmwww.gov.bc.ca/wildlife/wsi/siwe.html>
- Local resources – municipalities, regional district, local surveyors, etc.
- Government agencies
- Conservation organisations
- *Giving the Land a Voice; Mapping out home places*. Edited by Sheila Harrington. Salt Spring Island Community Services.
- *Standard for Terrestrial Ecosystem Mapping in British Columbia*. May 1998. Resource Inventory Committee. Province of BC.

Survey methods

For consistency and ease of future monitoring, it is a good idea to make a general map and describe how the survey was conducted. This is not information that would necessarily be included within the report, but could be placed in the project binder/folder for future use. The map should show the route taken when conducting the baseline with sample site and photo points marked.

If you are not using a specific protocol, then make a general description of what and how you collected data and took photos. This specific information is important to enable future monitors to replicate the data and photo selection process as precisely as possible.

The following is an example of field procedure descriptions:

“The following is an outline of the general procedure to be used in the field. The next section contains more detailed instructions for recording the information obtained at each step.

1. Complete all Property Description Form components requiring fieldwork.
2. Label the polygons with capital letters. Have Polygon A contain the starting point and label the rest in the order they will be visited.
3. Mark approximate locations for sample sites on the map, distributing them so that they cover all polygons and important features listed in the Photos section above.

4. While traversing the property, add sample sites as necessary to cover important features.
5. Number the sample sites in the order they are visited, beginning at Site 1.
6. Fill in the Polygon Description Form for each polygon as it is traversed.
7. Mark all developments, disturbances, key species occurrences, physical features, and wildlife features on the map, using the appropriate symbols (see section G, Report Completion) and capital letters. The centre of the letter represents the location of the feature.

Also record these features on the Mapped Features Form. For features that are photographed record the photo numbers. Measure the distance and compass bearing to each feature from a known reference point and record this information in the Location column of the Mapped Features Form.

8. Record all vegetation and wildlife identified on the Vegetation and Wildlife forms. The polygon letter must always be entered; the site number needs to be entered only if at a site.
9. At each sample site;
 - a. Refine the location to capture important features nearby and make the centre of the sample site easy to locate in the future.
 - b. The site is a circle with radius 10m. Set up the tripod at the centre of the site.
 - c. Mark the site with a post or piece of survey tape clearly labelled with NCC, the date, and the site number. Record the type of marker used on the Property Description Form under “Procedure.”
 - d. Measure the horizontal distance from the centre of the tripod to the marker and record this distance, as well as the compass bearing from the marker to the tripod.
 - e. Take a slide of the tripod, attempting to include any useful reference objects. Using the tripod and the camera, take slides facing due north, east, south and west, in that order. Record the number for each slide. If there are any natural features, disturbed sites, or developments that are not included in the compass point pictures, photograph them and record photo number and subject in the Extras section.
 - f. If using a video camera, place it on the tripod, facing north, and film a full clockwise rotation, zooming in and out as necessary.
 - g. Complete the Site Description Form.
 - h. Record all vegetation and wildlife identified on the Vegetation and Wildlife forms, along with the polygon letter and site number.”

NCC/HAT Baseline Protocol, 2000

Dataforms

The use of pre-formatted data sheets is essential and makes the process more efficient. Dataforms are standardised forms that you use to enter specific information. By using

such forms, you ensure that all the data you need is collected while in the field in an organised format.

Forms can be simply made with MS word to reflect the needs of your organisation. They should be made to enable the recording of specific information, while being general enough to cover a variety of types of property that your organisation may be involved with.

- [NCC/HAT dataforms](#)

The NCC/HAT forms shown here are extensive and very detailed.

Equipment, Materials, and Resources

Equipment and Supplies List

- Measuring tapes (50 to 60m)
- Compass with adjustable declination and mirror
- Clinometer
- Stereoscope
- Magnifying glass
- Scaled ruler
- Scientific calculator
- GPS with fully charged battery
- Camera (and extra film if SLR)
- Extra batteries for Camera and GPS
- DBH tape
- Binoculars
- Clipboard
- Camera and tripod
- Reference markers
- Hammer
- Flagging tape or metal tags
- Plant press
- Write-in-the-rain notebooks or sheets for field binders
- Write-in-the-rain 8½ x 11 paper for basemaps
- Pencils for field notes
- Photocopier-safe mylar
- Fine-tipped permanent markers – various colours
- Airphoto and base map – blown-up copies of the airphoto are useful

Reference Materials

- Soil manual for the area or geological references
- Field guides (plants, birds, mammals, fish, moss, indicator species)
- Keys for plant identification

- Site Identification Handbook (BEC)

Safety

Safety is an issue with any kind of field work. Most organisations have safety procedures, but either way, you should:

- be dressed appropriately
- work in pairs if possible
- bring a cell phone
- bring a first-aid kit (including specialised materials such as bee sting kits as required) and find out the location of the closest medical assistance
- make sure co-workers know your schedule, location, and when your expected to return
- know local species such as poison ivy
- be aware of local hunting seasons and wear appropriate clothing as needed
- bring food and water as appropriate
- enquire about your organisation's or a consultant's insurance coverage

FINAL REPORT AND DATA STORAGE

Preparing the actual baseline report with field data, maps, and photos is based on the capabilities and desire of your organisation. The following section describes some of the sections that should be included in the final report, and the very important topic of long-term data storage. The NCC/HAT Baseline Inventory Protocol contains detailed information about the storage of photographs, as well as other forms of data.

The Final Report

Example reports – both are on the CD for you to review more thoroughly at a late point.

- [*TLC baseline report*](#)
- [*TLC Summary Report*](#) – summary should have reference to all material collected for the baseline report (eg. Photos, maps, etc.)
- [*NCC Morte Lake Report*](#) – not created with the most recent version of the NCC/HAT Baseline Inventory Protocol.

Landowner's acknowledgment/signature

Having the landowner sign the baseline in acknowledgement of accuracy of the baseline is critical. As this document may be used in legal proceedings to prove non-compliance with covenants, the “signing-off” by landowners is very important. An example used by the NCC is as follows:

Example:

Attached to and forming part of the Conservation Agreement between the Quadra Island Conservancy and Stewardship Society and the Nature Conservancy of Canada dated as of the 6th day of November 1995.

The Owner hereby acknowledges and agrees that the following report and photo documentation provide an accurate representation of the Property, as of the reference date of this Agreement.

Signed by: _____ on behalf of the Quadra Island
Conservancy and Stewardship Society on _____

Signed by: _____ on behalf of the Nature Conservancy of
Canada on _____

Data Storage

Project binder

The use of a project binder is a simple and effective way to organise and store the baseline information, photographs, correspondence, and monitoring data. This is simply a large D ring binder with a variety of dividers and plastic sleeves in which data is stored. CD pockets can be placed on the back cover to ensure that digital data is kept with the hard copies as a back up. Make sure to regularly make new copies of the CDs, as they gradually deteriorate over time.

A monitoring list can be placed in the front cover. This list can be used to easily track when monitoring or any other work has been performed on the property. It is useful for being able to quickly check to see when the property was last monitored and should be monitored next.

Photographs, slides, and negatives

Photographs, slides, and negatives must be stored properly or they will deteriorate over

time. As well, scanning can have negative affects on the quality of slides and negatives, and should be done only once if possible.

Each photo, slide, or negative container should be well marked with information describing the image. If writing directly on the photo or slide, make sure to use archive quality pens that will not damage the photo.

As photographs are a major part of both baselines and monitoring, you should take the time to create a system to uniquely identify each and every photo, regardless if you are using photos, slides, or digital images. When taking the photos in the field, a record sheet must be used to describe the rolls and image number, location, description of what is being photographed, and the corresponding identification number/symbol on your map.

The procedure for taking and recording photographic data will be discussed in detail during the site visit this afternoon.

Digital data

Digital data are extremely valuable, but also the most vulnerable to loss. Hard drives are not a secure way to store your digital data. CD and DVD writers are cheap and should be used to make copies of all important baseline information. Copies should always be made in duplicate and only be marked with approved pens. Labels should be avoided. Copies of the CDs and DVDs (as well as all other important data) should be stored in a separate location from the original for security.

CDs and DVDs have a limited (and mostly unknown) lifespan, particularly when not handled and stored properly. They should be periodically copied and the date which the CD was made should be recorded directly on it.

Paper

Paper and ink have limited life spans as well. In particular, any inkjet ink often fades within a couple of years. Fax paper is even worse. When ever possible, make sure to print with laser printers, or at the very least make photocopies.

Safe back-up location

It is essential that every land trust develop a procedure for the creation of an alternative back-up location for important information. As the data that you have stored within your project binder or folders may be required to enforce the terms of covenants, the importance of having copies stored in alternative locations cannot be overstated. Many of the larger land trusts make arrangements with other land trusts to store copies of each other important information.