



Council of the Haida Nation

Cultural Feature Identification

Standards Manual

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These standards have been developed by the Council of the Haida Nation for the implementation of the Haida Gwaii Land Use Objectives order.

Due to the nature of adaptive management, and recent adoption of Ecosystem Based Management principles on Haida Gwaii, it is expected that these standards will change over time. For any questions or clarifications on this document, please contact:

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The Haida Nation is the rightful heir to Haida Gwaii.

Our culture, our heritage, is the child of respect and intimacy with the land and sea.

Like the forests, the roots of our people are intertwined such that the
greatest troubles cannot overcome us.

We owe our existence to Haida Gwaii.

The living generation accepts the responsibility to ensure that our
heritage is passed on to following generations.

On these islands our ancestors lived and died, and here too we will make
our homes until called away to join them in the great beyond.

– from the Constitution of the Haida Nation

Purpose of this Document

This document describes the field survey procedures that must be followed when a field assessment, referred to as a **Cultural Features Identification Survey**, is conducted to identify the presence of Cultural Features prior to approvals for road construction or timber harvesting on Haida Gwaii and to meet the requirements of the **Haida Gwaii Land Use Objectives Order (HGLUOO)**.

The standards are designed to be used by a person who has been certified by the Council of the Haida Nation (CHN) to carry out such field assessments. A detailed knowledge of these standards, and their application in different field situations, is part of the training and certification of cultural feature surveyors. The standards are also designed for use by field staff of the Council of the Haida Nation in situations where field assessments of Cultural Features must be carried out by CHN staff.

These standards have been derived from survey techniques developed over a number of years by the CHN for Cultural Features Identification Surveys with a variety of forestry licensees on Haida Gwaii.

Background and the Connection to Higher Level Objectives

These standards for the identification of Cultural Features have been developed as a result of the **Strategic Land Use Agreement (SLUA)** and the subsequent Haida Gwaii Land Use Objectives Order. These two documents outline a series of objectives and required practices that form the basis for Ecosystem Based Management (EBM) on Haida Gwaii. The cultural sections of the HGLUOO prescribe a series of forest management requirements, including Cultural Feature Identification Surveys, to maintain and protect Haida Cultural Features that are most affected by logging, road construction and associated activities.

Use of the Standards

The standards establish the procedures that must be followed when an individual who is certified to carry out Cultural Features Identification Surveys, conducts the surveys that are required by the HGLUOO. The standards apply to surveys carried out in two different situations described in the HGLUOO.

First, the HGLUOO (Section 3) directs that Cultural Features must be identified, prior to logging or road construction, in **Development Areas** where these activities are planned to occur.

Second, the HGLUOO establishes **Cedar Stewardship Areas (CSA)** (Section 9 and Schedule 3) in order to help perpetuate a long term supply of cultural cedar for the Haida Nation. Logging in these areas is restricted, but there is a provision in the HGLUOO that up to 10% of the total area of the CSA may be removed for commercial development provided that certain requirements are met. One of the requirements before there can be any removal of trees from a CSA is that there must be a field assessment of Cultural Features in the CSA completed by a person who has been certified by the Council of the Haida Nation. Other Cultural Features that are not specifically identified in the HGLUOO, such as cedar recruitment and bark-stripping, are also being managed for in these Cedar Stewardship Areas. **For this reason, field staff of the Council of the Haida Nation will**

implement these standards to survey Cultural Features in the Cedar Stewardship Areas where removal of trees is proposed.

Due to the nature of adaptive management and because the implementation of EBM on Haida Gwaii is new, it is expected that these standards will change over time.

1.0 Cultural Features

There are five broad types of **Cultural Features** that are described in this Standards Manual. These do not represent a full or absolute list of features integral to the Haida culture. The listing of these features is specific to the HGLUOO and the management requirements for these features are set out in the Order. Under the HGLUOO, four Cultural Features are identified in Sections 5, 6 and 7. These Cultural Features are:

- Haida Traditional Heritage Features;
- Haida Traditional Forest Features;
- Culturally Modified Trees; and,
- Monumental Cedar

For the purposes of cultural feature identification, individual Western yew trees and Western yew patches are also included in these standards. Objectives for Western yew retention is provided in Section 8 of the Order.

Each of these 5 types of Cultural Features is briefly described below. More detail on the identification of each is provided in Appendix D- Feature Identification.

1.1 Haida Traditional Heritage Features

There are two classes of Haida Traditional Heritage Features (HTHFs) described in Schedule 2 of the HGLUOO. Identification of any of these features during a survey necessitates an independent Archaeological Impact Assessment.

Class 1 Haida Traditional Heritage Features

- Village/ Seasonal Village
- Identified Oral History site
- Burial Site
- Inland Camp/ Camp
- Identified Spiritual site

Class 2 Haida Traditional Heritage Features

- Midden
- Bear trap
- Fish Weir
- Cave
- Petroglyph
- Lithic Production Site
- Trails
- Lookout Site
- Fort
- Cache
- Canoe run
- Shoreline Habitation Site
- Rock Shelters
- Karst Features

1.2 Haida Traditional Forest Features

There are three classes of Traditional Forest Features (HTFFs) described in Schedule 2 of the HGLUOO.

Class 1 Haida Traditional Forest Features

Class 1 HTFFs are plant species that have been identified as being extremely important to the Haida and particularly rare, because they are threatened by logging and/or introduced species. There are five species that are Class 1 HTFFs. Each individual occurrence of these plants is treated as an HTFF regardless of density or distribution. Both Skidegate (S) and Massett (M) names are given.

- skil taawaatl̥x̥aay (S), skil taw (M), **Fairy-slipper** (*Calypso bulbosa*)
- k'anhll (S), xaayuwaa hlk'a.aay (M), **Black hawthorn** (*Crataegus douglasii*)
- 7inhllng (S), stla k'iist'aa (M), **Northern riceroot** (*Fritillaria camschatcensis*)
- ts'iihllnjaaw (S), ts'iihllnjaaw (M), **Devil's club** (*Oplopanax horridus*)
- hlaayaa hlk'a7ii (S), hlaayaa hlk'a.aay (M), **Highbush-cranberry** (*Viburnum edule*)

Class 2 Haida Traditional Forest Features

Class 2 HTFFs are plant species that have been identified as being of importance to the Haida, but may be either less rare or less threatened by logging and/or introduced species. Unlike Class 1 HTFFs where each individual occurrence is the equivalent of a feature (*ie.* an individual Devil's club plant equals one feature), Class 2 HTFFs depend on the species and their density and/or distribution. Some Class 2 species may or may not be considered features when they are individual occurrences. For example, a single occurrence of Common Juniper or Pacific crabapple is a Class 2 feature, but a single occurrence of a cloudberry or a stinging nettle is not a Class 2 feature. Other species are considered features when they occur in small groups or patches. This *classification* of Class 2 Traditional Forest Features is detailed in Appendix D- Feature Identification- for each of the 10 species listed in the Schedule

The following 10 species are Class 2 HTFFs.

- dal(xil)-guhlahl (M), **Common Harebell** (*Campanula rotundifolia*)
- kaayda ka_xawaay (S), hlk'am.aal I (M), **Common Juniper** (*Juniperus communis*)
- k'anhll (S), k'ayanhla (M), **Pacific crabapple** (*Malus fusca*)
- xil gaaydllgins (S), xil giidlagang (M), **Yellow pond lily** (*Nuphar lutea*)
- galgun xil (S), gal.un hlk'a.aay (M), **Stink Currant** (*Ribes bracteosum*)
- gudga gi gayd (S), xaayuwaa (M), **Black swamp gooseberry** (*Ribes lacustre*)
- kaigigunlkai (S), k'iit'agwaandaa hlk'a.aay (M), **Trailing currant** (*Ribes laxiflorum*)
- k'aaxu ts'alaang.gā (S), k'a.àw ts'alaangaa xil (M), **Cloudberry** (*Rubus chamaemorus*)
- gudang.xaal (S), gudang.aal (M), **Stinging nettle** (*Urtica dioica*)
- gwaayk'yaa (S), gwaayk'aa (M), **Indian hellebore** (*Veratrum viride*)

Class 3 Haida Traditional Forest Features

Class 3 HTFFs have been identified as somewhat more locally abundant plants that are important to the Haida. Specific management measures for these plants are less restrictive than other Cultural Features and as such the focus for feature identification is on presence/absence as opposed to spatially locating features. Quantity, density and distribution of Class 3 plants are not recorded, and as such an individual occurrence or patch is equally recorded as species presence in the Development Area. A Class 3 HTFF may influence the placement of a Class 2 HTFF retention area or another EBM feature reserve or management zone.

The following 31 species are class 3 HTFFs:

- Northern maiden-hair *Adiantum aleuticum*
- Old man's beard *Alectoria sarmentosa*
- Narcissus anemone *Anemone narcissiflora*
- Sitka columbine *Aquilegia formosa*
- Kinnikinnick *Arctostaphylos uva-ursi*
- Alpine bitter-cress *Cardamine bellidifolia*
- Snake liverwort *Conocephalum conicum*
- Round-leaved sundew *Drosera rotundifolia*
- Spiny wood fern *Dryopteris expansa*
- Oregon beaked-moss *Eurhynchium oreganum*
- Large-leaved avens *Geum macrophyllum*
- Beach pea *Lathyrus japonicas*
- Running club-moss *Lycopodium clavatum*
- Single delight *Moneses uniflora*
- One-sided wintergreen *Orthilia secunda*
- Cloud lichen *Platismatia glauca*
- Licorice fern *Polypodium glycyrrhiza*
- Sword fern *Polystichum munitum*
- Black cottonwood *Populus balsamifera*
- Common silverweed *Potentilla anserina*
- Bracken fern *Pteridium aquilinum*
- Labrador tea *Rhododendron groenlandicum*
- Thimbleberry *Rubus parviflorus*
- American glasswort *Sarcocornia pacifica*
- Hooker's willow *Salix hookeriana*
- Scouler's willow *Salix scouleriana*
- Sitka willow *Salix sitchensis*
- Bog blueberry *Vaccinium uliginosum*
- Lingonberry *Vaccinium vitis-idaea*
- Oval-leaved blueberry *Vaccinium ovalifolium*
- Giant vetch *Vicia nigricans*

1.3 Culturally Modified Trees

A Culturally Modified Tree (CMT) means, for the purposes of the HGLUOO, a tree that was modified prior to 1920 by Haida people as part of their cultural use. This is distinctly different than the definition of a CMT under the BC Heritage Conservation Act ([s.13(2)(d)(g)]), which only manages for a CMT that is older, or thought to be older than 1846.

There are several types of CMT's; however, the most commonly found on Haida Gwaii are bark striped trees, bark boards, CMT test holes, and occasionally a felled tree with the medial section missing (often for a canoe, house post, or totem pole). See Appendix D for further descriptions of these common CMT types.

General descriptions for the most common CMTs are outlined in Appendix D- Feature Identification. Otherwise, detailed descriptions for the identification of CMTs can be referenced in *A Handbook for the Identification and Recording of Culturally Modified Trees* (2001)¹.

1.4 Monumental Cedar

This section outlines the criteria for a tree being classified as a monumental cedar for the purposes of implementing Ecosystem Based Management on Haida Gwaii and addressing the requirements of Section 9 of the HGLUOO. The quality of wood required by carvers varies between individual artists and over time. As such the criteria outlined in this section are subject to change. For purposes of Ecosystem Based Management, the HGLUOO defines a monumental as:

“A visibly sound Western redcedar or yellow-cedar tree that is greater than 100 centimeters in diameter at breast height and has a log length of 7 meters or longer above the flare with at least one face that is suitable for cultural use.”- Haida Gwaii Land Use Objectives Order, December 16, 2010.

Descriptions of visibly sound, log lengths, a face of a tree, and tolerances for defects are outlined in detail in Appendix D- Feature Identification.

1.5 Cultural Cedar Stands

Cultural Cedar sStands, for the purpose of Cultural Feature Identification, are defined in the HGLUOO as three or more culturally modified trees, monumental cedar, or a combination thereof, where each tree is within 50 metres of another tree.

1.6 Western Yew trees

Section 8 of the HGLUOO includes management measures for wWstern yew, but does not specify that a cultural feature survey identify western yew or Western yew patches. However they are included in these standards because of their importance to Haida culture.

Western yew patches are defined in the HGLUOO as five or more western yew trees where each yew tree is within 5 metres of another yew tree.

2.0 Survey Methodology

Who can carry out a Cultural Features Identification Survey

To meet the requirements of the HGLUOO, Cultural Features Identification Surveys must be carried out by surveyors who are certified by the Council of the Haida Nation. Certified surveyors can direct the work of field crews who are not certified. However the certified surveyor must take full responsibility for the survey results.

The surveyors work will be audited on a regular basis by auditors accredited by the CHN.

¹ Resources Inventory Committee. 2001. *A Handbook for the Identification and Recording of Culturally Modified Trees*. Version 2.0. Archaeology Branch, B.C. Ministry of Small Business, Tourism and Culture, Victoria, B.C.

Because Cedar Stewardship Areas (CSA) protect other Cultural Features that are not specifically identified in the HGLUOO, such as cedar recruitment and bark-stripping, any proposal to remove trees from a CSA requires a survey conducted by field staff of the Council of the Haida Nation.

Survey Intensity

There are two (2) levels, or types of surveys:

- **Level 1 Survey** – Is a less intensive site level reconnaissance that involves visual inspection of at least 25% of the Development Area or the stratified portions of a Development Area, but less than 100% of that area;
- **Level 2 Survey** – Is the most intensive site level survey that involves visual inspection of 100% of the Development Area, the stratified portions of a Development Area, or a CSA. Any proposal to remove trees from a CSA requires a Level 2 survey.

While the minimum block coverage must meet the survey level standards, the method of meeting that minimum block coverage is at the discretion of the surveyor. Correct feature identification and data collection, appropriate block coverage and accurate spatial location are the required outcomes of the survey. The surveyor may choose either of two survey methods to meet that goal: hand-traversing using compass, clinometer and chain, or; surveying with the use of differential GPS systems.

It is highly recommended that surveyors use strip-line transects when conducting a Cultural Features survey. Transects are assumed to provide a visual inspection of an average of 25 metres on each side of the survey centre line. Thus, the minimum 25% block coverage that is evenly distributed over the proposed Development Area can be accomplished by transects where the spacing between centre lines is 200 metres. A 100% coverage (Level 2) requires that the centre lines of transects are no more than 50 metres apart.

The intent of allowing 2 different survey types or levels is to match the concentration of survey effort with the potential concentration of Cultural Features.

All surveys begin as a Level 1. A Level 2 survey is required when::

- The Development Area is less than 5 hectares;
- The Development Area is below 25m elevation;
- More than three (3) Culturally Modified Trees are encountered;
- A Class 1 Traditional Forest Feature is encountered;
- More than one Cultural Cedar Stand is encountered;
- A Class 1 or 2 Traditional Heritage Feature is encountered;
- A feature density greater or equal to 2 per hectare averaged over at least 2 hectares is identified (see Section 2.3 for details on calculating feature density) for each strata in a Development Area. The qualifications for features are defined in Appendix D of this manual.

A Level 2 survey is required when there is a proposal to remove trees from a CSA.

Other variables that lead to a change in survey type are at the discretion of the surveyor. In the end, it is the surveyor's responsibility to ensure that Cultural Features are identified. If there is any question that

there is a higher probability of feature occurrence based on site type/ecology, or where the survey does not meet or exceeds Level 1 criteria, then a Level 2 survey should be conducted. Surveyors are to document their reasons for selecting the final survey intensity.

When establishing a second strip-line and if in doubt about a survey intensity level, and a survey of 2 hectares (400m traverse) has not been completed, then use a Level 2 survey until such time as a feature density calculation can be made (see Section 2.3).

2.1 Level 1 Site Level Reconnaissance Survey

The objective of a Level 1 Survey is to identify Traditional Forest Features, Traditional Heritage Features, Monumental, Culturally Modified and Western yew trees by surveying only part of the Development Area so that a minimum coverage of at least 25% of the Development Area can be met.

Data collection transects should not be more than 200 metres apart (i.e. 200 metres between survey center lines), unless other survey methods are used as part of other forest planning activities and meet the minimum block coverage under Section 2.4.

Increasing block coverage is at the discretion of the surveyor. The more features that are being identified generally indicate a higher probability of features throughout a block or block strata and should trigger tighter transect spacing or more block coverage (i.e. higher survey intensity), as illustrated in Figure 1.

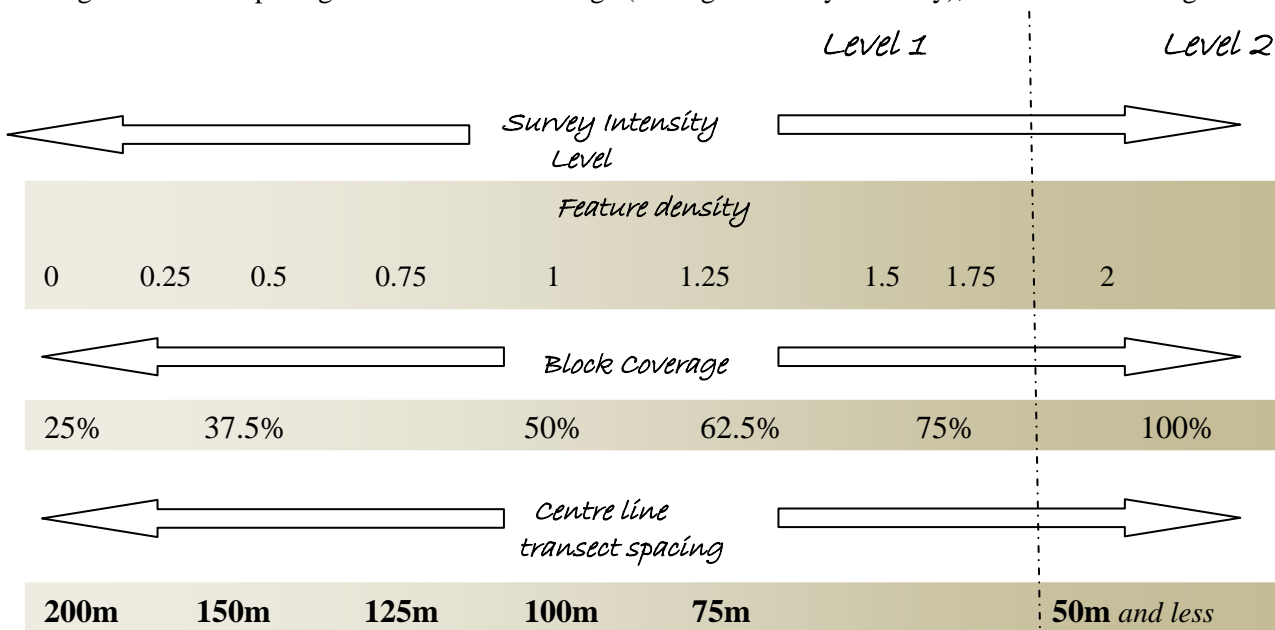


Figure 1. Survey Intensity Level in relation to block coverage.

2.2 Level 2 Intensive Site Level Survey

The objective of a Level 2 survey is to identify Traditional Forest Features, Traditional Heritage Features, Western yew trees, Monumental and Culturally Modified Trees by visually surveying for these features in 100% of the Development Area, a stratified portion of a Development Area, or a CSA where the removal of trees is proposed. When the transect method is used, the maximum required spacing between

centerlines is 50 meters. Some surveyors may cover 100% of a Development Area or CSA through other engineering or forest planning work. Transects are highly recommended and will be the method used to audit a block or block strata.

When transects are used, they are assumed to provide a visual inspection of an average of 25 metres on each side of a survey line. For areas where a Level 2 survey is required and a distance of 25 metres cannot be seen from a centre line, the distance between transect lines can either be reduced accordingly or a surveyor can leave a survey centre line to visually inspect the area, as shown in Figure 2 and 3.

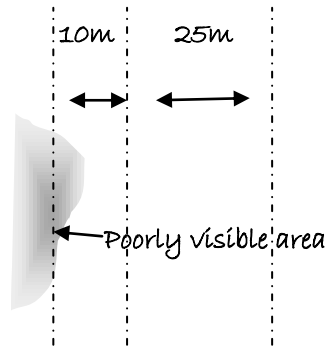


Figure 3. narrow grid spacing to account for poor visibility

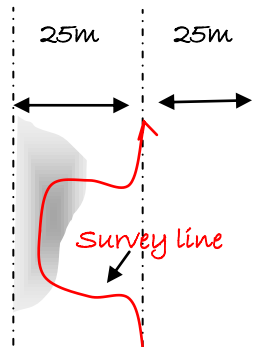


Figure 2. survey off centre line to account for poor visibility

2.3 Calculating Feature Density

Feature Density is used to help determine what survey intensity should be applied in a Development Area or stratified portion of a Development Area (i.e. Level 1 or Level 2). Feature density is calculated by summing the weighted feature score (Figure 4) and dividing it over the area covered by the survey.

Feature type	Weighted feature score
Class 2 Traditional forest features	0.5
Western yew trees	0.5
Monumental cedar	1
Culturally Modified Tree	1
Traditional Heritage Feature	2

Figure 4. Weighted feature scores for density calculations.

Example A²

An initial survey of 600m in length and 50m in width (assuming 25m visibility on either side of a centerline) covers a 3 hectare area and 2 Traditional Forest Features (0.5 points each) are found along with 1 monumental (1 point):

$$\text{The density would be } \frac{(0.5 + 0.5) + (1)}{3} = 0.67$$

Example B

An initial survey of 800m in length and 50m in width (assuming 25m visibility on either side of a centerline) covers a 4 hectare area and 8 Traditional Forest Features (0.5 points each) are found along with 4 monumental (1 point each):

$$\text{The density would be: } \frac{(0.5 \times 8) + (4 \times 1)}{4} = 2$$

Example A has a final Feature Density score of 0.67, therefore a Level 1- Reconnaissance Site Level survey is adequate for the site. Example B has a Feature Density score of 2, therefore a Level 2 Intensive Site Level survey is required.

2.4 Minimum Block Coverage

At least 25% of each Development Area must have an evenly distributed survey, unless a Level 2 survey is required to meet the criteria in Section 2.0 for a Level 2 survey. Any proposal to remove trees from a CSA requires a Level 2 survey – 100% coverage.

2.5 Block Stratification

Development Areas and CSAs may cover a variety of ecological site series. Each cultural feature can be strongly correlated with a Biogeoclimatic Ecosystem Classification (BEC) site series. Different site series or timber types may have higher concentrations of features and merit higher survey intensity. The type of survey can be divided (stratified) within a Development Area or CSA as long as the minimum block coverage is met. Block stratification is not mandatory, but may prove to be efficient.

Determining stratification in a Development Area or CSA is at the discretion of the surveyor. Pre-existing divisions in the blocks can be used, for example: blocks may be divided by site series, terrain types (often following timber type or site series breaks); by Standard Units; or by forest inventory types. Data collection standards, outlined in this manual, require the surveyor to justify the stratification of a block. See Figure 5 for an example.

² To calculate the area (hectares) covered by a transect: (width x length) ÷ 10 000

The survey type for each strata can be determined by calculating the Cultural Feature Density in each strata, or by meeting criteria outlined in Section 2.0.

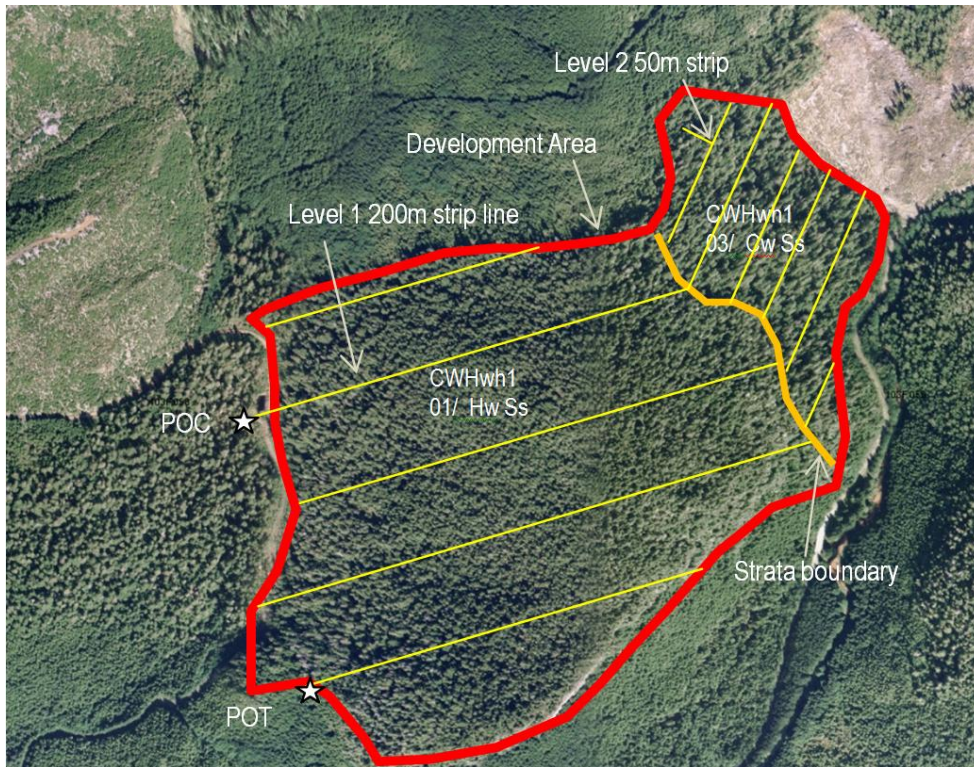


Figure 5. Block stratification example. In this case, the left or western most area, denoted by the 01 Site Series, is a Level 1 survey type and requires a minimum of 25% block coverage. The right, or eastern most area, denoted by the 03 Site Series with a high concentration of Cultural Features, is a level 2 survey type and requires 100% block coverage.

3.0 Survey Establishment

This section outlines minimum standards and recommendations for establishing a cultural feature identification survey. There are several techniques for conducting traversing and data collection that may be used through the course of forest engineering.

However, when cultural feature identification surveys are standalone surveys (not associated with other forestry engineering/planning), methods must follow either the hand-traversing protocols or the protocols for the use of differential GPS (DGPS) established in Sections 3 and 6 of this manual. Different quality assurance standards are outlined for each survey method. This section outlines whether each survey component is mandatory, or recommended.

3.1 Pre-field Assessment

The pre-field assessment of Development Areas and CSAs will help establish the survey type and block stratification needs. Pre-field assessments will also identify adjacency or inclusion of existing archaeological sites or known Cultural Features. The assessment may also include a review of available maps and data to determine proximities to coast or major water bodies, and potentiality of raised beach features. In addition, the surveyor should also review technical data. Such data may or may not include

information on timber type, elevations, mapped ecological site series, surveyed streams, gullies, rock outcrops or other operational scale features.

3.2 Tie-Points

A Cultural Feature Identification survey tie-point should be a permanent topographic feature distinguishable on air photos and on the ground. The tie-point can be a location like a creek junction, road location, or falling corner. Once identified, choose a healthy tree closest to this tie-point as the tie-point tree.

The tie-point or reference point of each transect should be well marked (*ex.* three strands of plastic flagging tape).

The tie-point is the navigation tool used by the surveyor to locate the Point of Commencement (POC). While the tie-point is an important point for survey establishment, it is not a required attribute for data submissions under these standards.

3.3 Point of Commencement (POC)

The point of commencement must be a map feature (creek, road junction, falling corner etc.) or GPS station, which is accessible and within or on the edge of the Development Area.

One POC must be used in the case of multiple openings (patches) in the Development Area. A POC is a required attribute for data submissions under these standards, unless all Cultural Features are identified during other forestry planning/engineering activities.

3.4 Strip-Lines

When hand-traversed transects are used, the strip-line must be run using compass, clinometric and metric surveyor tape (hip-chain) or electronic measuring devices. Allowances for slope must be made since all distances must be horizontal. Strip-lines must run parallel or perpendicular to one another.

The strip-line should be marked with plastic marking tape so it is easily visible and at set distances (*ex.* 25m).

While strip-lines are recommended, they are not required if the survey method uses differential GPS.

3.5 Stations

Stations are fixed points with recorded co-ordinates (distance and bearing to a known location) along a strip-line. Stations are used to help a surveyor identify where they are along a strip-line transect.

For Cultural Features surveys, it is highly recommended that stations are marked throughout the survey, however stations are only **required** when a feature is present along a strip-line transect **and** when the survey method is hand-traversing. This allows a feature to be tied to a known reference point along the survey in the event that there are errors with the spatial location of the feature. The recommended spacing for stations is approximately 50 metres or less.

Stations that are the reference points for **offsets** (also called radial shots) that tie in a feature to a strip-line must be well marked (flagged with station information) (see the example in Figure 6 and 7).

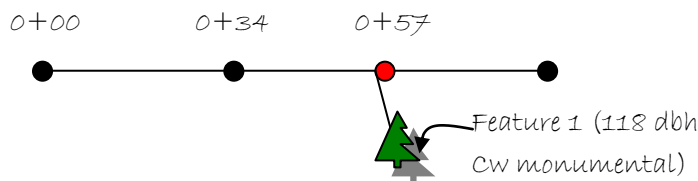


Figure 6. Tying in a feature (monumental in this case) with a station on a strip-line (ex. 0+057). Make sure to flag and mark the station information when hand-traversing.

Traverse Notes		start point		easting (x)		northing (y)		Date		Traverse
S.L	STA	Azimuth	SD	Slope%	HD	LAT	DEP	x	y	Comment
1	0+00									
		92	34	15%	33.6	-1.2	33.6			
	0+33.6							679033.6	5934199	
		92	24	26%	23.2	-0.8	23.2			
1	0+56.8	~	~	OFFSET	~			679056.8	5934198	station for offset
		177	17	23%	16.6	-17	0.9			
	feature 1							679057.7	5934181	monumental cw 118 dbh

Figure 7. Example of station points along a strip-line in traverse notes. Note that X and Y coordinates are often calculated in the office using post-processing tools (such as RoadEng).

3.6 Offsets

Offsets, also known as radial shots, are lines used at the surveyors discretion in order to either: a) extend the coverage of a survey to an area of a polygon to meet the minimum block coverage requirements, or b) to tie in identified features to a centerline. The offset bearing can be anything in relation to the centerline bearing, however are typically perpendicular to the centerline bearing.

3.7 Marking Features

All features must be marked with flagging tape so they are visible. For Class 2 Traditional Forest Features, or Western yew patches, flag the geographic centre of a patch or area. For hand-traversing, bearings or 'shots' should be taken from the station to the flagging as a patch (or even a feature) can extend over a wide area.

Flagging should, at minimum, note the feature type and associated feature number.

4.0 Data Gathering Standards

4.1 Data collection

The identification of Cultural Features requires the collection of a series of data that licensees must report to the Council of the Haida Nation and the Province of BC to meet reporting requirements established under the HGLUOO.

This section outlines both required and optional data to be gathered during a survey. A *Cultural Feature Identification Field tally sheet* is included in Appendix A. While this tally sheet contains the required and optional data fields the formatting of the tally sheet is provided as guidance. The tally sheet may be modified by the surveyor but the mandatory reporting fields must be filled in and the tally sheet content must be consistent with the attributes outlined in this section.

The mandatory and optional information is identified in Appendix A. Surveyors should document the reasons for decisions about survey intensity or methodology so that they are clear to subsequent auditors.

4.2 Minimum Reporting Requirements

Appendix B is a template that includes the minimum reporting requirements for a Cultural Feature Identification Survey once a survey has been completed in a Development Area. While the data fields and report content are mandatory, the reporting format is only a recommendation and may be modified by the surveyor.

4.3 Digital Spatial Data

The format for the submission of data collected in the field by a cultural feature surveyor to a license holder is made by agreement between the surveyor and the license holder. Digital spatial data in the form of a Geographic Information System (GIS) shapefile, feature class or coverage, is not a specific requirement that Cultural Feature Identification surveyors must deliver. However spatial locations (i.e. UTM's) of features are mandatory and digital spatial data about cultural feature information must be submitted annually by license holders to the CHN and the Province under the HGLUOO.

5.0 Cultural Feature Identification Certification

Cultural Feature Identification certification is awarded by the Council of the Haida Nation based on competency, as proven through testing.

Training courses that cover the identification of cultural plants, monumental cedar, heritage features, culturally modified trees and survey standards and methodology will be offered through the Council of the Haida Nation on a demand basis (approximately 10-12 participants required). Individuals can challenge the certification exams.

5.1 Testing

Testing for Cultural Feature Identification certification will include both a written (or oral) examination and a practical examination.

The passing grade for both examinations is 65%.

A passing grade in both the written (or oral) examination and the practical examination is required for certification. Examinations will focus on feature identification, feature classification and appropriate adherence to survey standards (survey intensity levels, stratification, data collection, reporting and accuracy).

5.2 Certification Timeline

Cultural Feature Identification certification is valid from 5 years from the date of issuance. Re-certification requires a passing grade from a written (or oral) and practical examination.

6.0 Quality Assurance and Auditing

Cultural Feature Identification Surveys carried out by certified surveyors are subject to audits to ensure standards are being met. This section outlines auditing standards and quality assurance standards.

6.1 Auditor Qualifications

Auditors will hold a valid Cultural Feature Identification certification from the Council of the Haida Nation.

6.2 Audit Frequency

Audits may be in two forms: spot checks or full audits.

Spot Checks: Spot checks are a low intensity, random reconnaissance type audit, whereby an auditor will review the quality of a Cultural Feature survey in accordance to the acceptable limits of error (outlined in Section 6.1), prior to road building and timber harvesting. Spot checks will only occur for Development Areas where cultural feature surveys have been completed (not *in situ*) and will occur with the knowledge of the original surveyor. Field notes or data collected during the cultural feature survey may or may not be required to be given to an auditor. Random spot checks may lead to a full audit.

Full Audits: Full audits are comprehensive reviews of Cultural Feature survey areas, including data and report submissions, and are to be conducted prior to road building or timber harvesting. Choosing Development Areas that will have full audits will be random, however non-random audits may occur based on the findings from spot checks. Stratified sampling will occur to ensure that the auditing of the surveyors will be proportionately divided among certified surveyors. Audit efforts will also be distributed across tenure boundaries in proportion to the number of areas being developed by tenure holders. **Note that it is not the tenure holders or the Development Areas that are being audited, rather the work conducted by the surveyor that is being audited.**

Approximately 10% of the surveys will be fully audited annually.

6.3 Audit Process

The following outlines the auditing process.

- Completion of Cultural Features identification survey in a given Development Area;
- Communication with Cultural Features surveyor re: audit for a specific Development Area;
- Appropriate data and/or report submissions given to auditor;
- Audit occurs prior to road building or timber harvesting;
- When completed, audit report submitted to surveyor.

6.4 Audit Principles

The following summary outlines the general principles that guide the process for auditing cultural feature identification surveys:

- The auditor has the necessary experience and knowledge to perform the audit.
- The auditor will take responsibility for the Cultural Feature survey by signing and dating the original data collection card and any subsequent changes they made to that data.
- The auditor will strive to select plots to audit using a random process or by a process agreed to by the surveyor and the auditor;
- The auditor will audit at least 10% of all established surveys;
- The auditor will provide an opportunity for the surveyor to attend the audit by

- providing advance notice;
- A copy of the audit report will be provided to the surveyor;
- Benefit of the doubt will be extended to the surveyor. **To support a benefit of the doubt, the surveyor must document their rationale for any borderline calls;**
- Feature identification or their reference points, must be marked in the field in such a fashion so as to provide a reasonable level of identification to support the audit function.

6.5 Acceptable Limits of Error

The following outlines the acceptable limits of error for a given survey:

- Block coverage:** At least 25% coverage of a Development Area or the stratified portions of a Development Area is surveyed, unless criteria outlined in Section 2.0 of this document applies;
- Spatial Accuracy:** Two types of surveys are recognized: hand-traversed surveys, or; surveys using differential Global Positioning System (DGPS). Spatial accuracy for all points should be within ± 10 metres regardless of survey method. This is achievable using the following hand traversing or differential GPS protocols:
 - Protocols for the use of differential GPS**

The GPS must store data, which can be differentially corrected and points must be fixed with the following minimum specifications /configurations for all static (point) surveys:

(Position Dilution of Precision) PDOP=	8
General DOP (only if PDOP is not available)=	10
Minimum of satellites	4
Degrees elevation angle	15
Signal to Noise Ratio (SNR) =	33
Minimum occupation time=	30 seconds

- Protocols for the hand traversing**

Locating points using strip-lines and stations:

Horizontal distance =	+/- 2%
Bearings=	+/- 2 degrees

- Criteria for Feature Identification**

The following tables outline data field attributes and the standard for judging their accuracy and completion. Data field attributes that are not listed here, such as *Surveyor Name* may be mandatory data requirements, but may not lead to a survey passing or failing an audit if they are not correctly filled in. A point value system is being established, whereby points represent the importance of each attribute, however an individual attribute may not necessarily have a major impact on the overall result of the audit. This point value system currently does not lead to a pass/fail outcome, rather it will **inform** the result of the audit. Points are given when the standard is not met.

The point value system may also be divided by feature identification (actually recognizing a feature and locating it) and for following data collection protocols (weighted as 80% and 20% of the overall scoring respectively).

A general guideline of 15 points per hectare surveyed may be tolerated.

Feature Identification Scores

Attribute	Description	Point Value (error value)
Block stratification	determined by surveyor- no minimum	-
CMT feature	correctly identified	7.5
Class 1 Heritage Feature	correctly identified	10
Class 2 Heritage Feature	correctly identified	10
Monumental Feature	correctly identified	7.5
Monumental Feature	additional incorrect feature	2.5
Cultural Cedar Stand	correctly identified	7.5
Class 1 Traditional Forest Feature Identification	correctly identified	7.5
Class 2 Traditional Forest Feature Identification	correctly identified	2
Class 2 Traditional Forest Feature Classification (<i>ie</i> classifying a patch vs. individual plants as features)	90% correctly classified	2
Class 3 Traditional Forest Feature	correctly identified as present	1
Western yew tree or patch	Correctly identified	2

Data fields/collection protocol scores

Attribute	Description	Point Value (error value)
Monumental DBH	± 3%	4
Missing Monumental DBH		5
Monumental Feature	correct species	2
Spatial Location	within 10 metres of feature	2
Inconsistent data descriptions		2
Missing feature number		2
Missing data descriptions		3
Missing POC information and access notes		3
Data attributes not consistent with CHN protocol (<i>ie</i> codes or naming convention)		2
Number of features in a patch missing		1
Development Area name missing		2

Should the result of the audit lead to a survey being classified below these standards then:

- i. The surveyor may be asked to re-survey a Development Area; or,
- ii. The auditor may recommend a higher proportion of non-random audits for that surveyor; or,
- iii. If multiple audits consistently indicate that the surveyor falls below the standards identified in this document, then the CHN may revoke the surveyors' certification.

In addition to these data collection standards, reporting requirements will need to be consistent with standards provided in Appendix C.

6.6 Right to Revoke

The CHN retains the right to revoke certification if a surveyor consistently falls below the standards outlined in this Section 6 of this document.

Glossary of Terms

“Cultural Cedar Stand” means three or more culturally modified trees, monumental cedar, or a combination thereof, where each tree is within 50 metres of another tree;

“Cultural Feature” means any Haida traditional forest feature, Haida traditional heritage feature , culturally modified tree or monumental cedar;

“Culturally Modified Tree” means, for the purposes of the HGLUOO, a tree that was modified prior to 1920 by Haida people as part of their cultural use;

“Development Area” means a specific location defined by boundaries shown on a site plan where timber harvesting is planned or carried out, and includes any stand level retention, management zones, reserve zones, mapped reserves or other areas where timber harvesting is restricted or managed;

“DBH” means diameter at breast height;

“Feature Density Ranking” is a way of determining the applicable survey intensity (survey type) based on the occurrence of Cultural Features over a given area surveyed;

“GPS” means Global Positioning System;

“Monumental Cedar” means a visibly sound western redcedar or yellow-cedar tree that is greater than 100 centimetres in diameter at breast height and has a log length of 7 metres or longer above the flare with at least one face that is suitable for cultural use;

“Offsets” are strip-lines perpendicular to a survey centerline, also known as radial shots;

“POC” means Point of Commencement and is commonly used as a reference point in forest surveying;

“Strip-lines” are a series of survey transects than typically run parallel to one another;

“Tie-point” means a specific location, marked or identified, that can be used to locate a survey Point of Commencement or a point along a survey/transect;

“Traditional Heritage Feature” means a feature that is listed in Schedule 2 of the HGLUOO and requires special management measures as outlined in the HGLUOO;

“Traditional Forest Feature” means a feature that is listed in Schedule 2 of the HGLUOO and requires special management measures as outlined in the HGLUOO;

“Site Series” means a site capable of producing the same late seral or climax plant communities within a biogeoclimatic subzone or variant;

“UTM” means a Universal Transverse Mercator position format or units for determining geographic location;

“Western yew patch” means five or more Western yew trees where each yew tree is within 5 metres of another yew tree.

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Appendix A FIELD TALLY SHEET



Cultural Feature Identification Field CHN
Sheet v 1.0

Date dd/mm/yy

--	--	--	--	--	--

Survey ID _____

Development area _____
Client _____
Hectares _____
Tie point info _____

Surveyor & Crew _____
Access point location _____

Distance to PoC _____
Bearing to PoC _____
PoC Description _____

PoC UTM zone

--	--

 PoC Easting

--	--	--	--	--	--

 PoC Northing

--	--	--	--	--	--

Strata 1 Surv.Level Strata 2 Surv.Level Strata 3 Surv.Level Strata 4 Surv.Level Traverse Type _____
Total Traverse _____

Navigation notes

Survey comments/borderline calls

Appendix B DATA FIELDS

HEADER INFORMATION

1. **(Mandatory)** Development Area: name of the block or Development Area;
2. **(Mandatory)** Client: name of the licensee authorized for cutting under the Forest Act and/or Forest and Range Practices Act;
3. **(Mandatory)** Hectares: area in hectares of the entire block or Development Area (including in-block reserves and retention areas);
4. **(Mandatory)** Surveyor and crew: the name of the surveyor certified by the Council of the Haida Nation as well as assisting field crew;
5. **(Optional)** Access point location: general description of the point of access. *Ex. North side, 4km Bragg main;*
6. **(Optional)** Tie Point Info: description of tie point. *Ex. Double flagged, yellow-25cm Hw.* UTM's for tie point can be put under the Navigation Notes section;
7. **(Optional)** Dist to POC: distance in metres from the tie point to the Point of Commencement (POC);
8. **(Optional)** Bearing to POC: bearing from the tie point to the Point of Commencement;
9. **(Mandatory)³** POC UTM Z: the UTM zone of the POC;
10. **(Mandatory)** POC easting: the UTM easting of the POC;
11. **(Mandatory)** POC northing: the UTM northing of the POC;
12. **(Mandatory)** POC description: description of the POC. *Ex. Triple flagged, red- 33cm Ss.*
13. **(Optional)** Navigation notes: General descriptions of access to the POC. *Ex. Creek crossing at 0+75m- go upstream 40m for log crossing;*
14. **(Mandatory)** Strata 1 Survey Level to Strata 4 survey level: the survey type per stratum identified in the block. Mark with either a *L1* or *L2*;
15. **(Mandatory)** Traverse Type: the method for surveying, either Hand Traversing, DGPS, or Other.

³ Spatial coordinates for the POC are required unless all Cultural Features are identified during other forestry planning/engineering activities.

16. **(Mandatory)** Total traverse: The aggregate number of metres covered by all the strip-lines in the survey (sum all strata). The rule of thumb for determining hectares surveyed is 200m equals 1 hectare (assuming 25m visibility on both sides of centerline);

17. **(Optional)** Survey comments/borderline calls: Any survey comments or description of borderline calls for features (*ex.* Strip-line 1, Sta 0+99 (*or UTM*) = borderline Monumental, not a feature).

FEATURE INFORMATION

1. **(Mandatory)** Strata No.: The number that represents the stratified portion of a block. Note that there may be as little as 1 strata for a block;

2. **(Optional)** Strip-line: The number that represents the strip-line on which the feature is located;

3. **(Mandatory)** Feat No.: The feature number. Begin at 00 for each block. Ensure that feature numbers are continuous across block strata;

4. **(Mandatory)** Feature types:

- i. CMT: check if the feature is a Culturally Modified Tree. Acceptable attribute values to be entered under #5 *Description* include:

BS-T	Bark-stripped, tapered bark strip scars
BS-R	Bark-stripped, Rectangular bark strip scars
BS-G	Bark-stripped, Girdled bark strip scars
BS-O	Bark-stripped, Other bark strip scars
AL-T	Aboriginally Logged tree, Tested tree
AL-U	Aboriginally Logged tree, Undercut tree
AL-F	Aboriginally Logged tree, Felled tree
AL-S	Aboriginally Logged tree, Sectioned Tree
AL-N	Aboriginally Logged tree, Notched tree
AL-P	Aboriginally Logged tree, Planked tree
AL-C	Aboriginally Logged tree, Canoe tree
OM-P	Other Modified tree, Pitch Collection tree
OM-K	Other Modified tree, Kindling Collection tree
OM-D	Other Modified tree, Delimbed tree
OM-M	Other Modified tree, Message tree
OM-A	Other Modified tree, Arboglyph Tree
OM-G	Other Modified tree, Arborgraph Tree
OM-B	Other Modified tree, Blazed Tree
OM-S	Other Modified tree, Sap Collection Tree
OM-O	Other Modified tree, Other

- ii. CLS1 HF: check if the feature is a Class 1 Heritage Feature: Acceptable attribute values to be entered under #5 *Description* include:

V/SV	Village/Seasonal Village
IC/C	Inland Camp/Camp
BS	Burial Site
IOHS	Identified Oral History Site
ISS	Identified Spiritual Site

- iii. CLS2 HF: check if the feature is a Class 2 Heritage Feature: Acceptable attribute values to be entered under #5 *Description* include:

M	Midden
BT	Bear Trap
FW	Fish Weir
C	Cave
PG	Petroglyph
LPS	Lithic Production Site
T	Trails
LS	Lookout Site
F	Fort
C	Cache
CR	Canoe Run
SHS	Shoreline Habitation Site
RS	Rock Shelters
KF	Karst Features

- iv. MON: Check if the feature is a Monumental cedar: Acceptable attribute values to be entered under #5 *Description* include:

CW	Western redcedar	Ts'uu
YC	Yellow cedar	Sgaahlan

- v. CLS1 FF: check if the feature is a Class 1 Traditional Forest Feature: Acceptable attribute values to be entered under #5 *Description* include:

Fairy-slipper	skil taawaatllxaay	skil taw
Black hawthorn	k'anhll	xaayuwaa hlk'a.aay
Northern riceroot	7inhllng	stla k'iist'aa
Devil's club	ts'iihllnjaaw	ts'iihlanjaaw
Highbush-cranberry	hlaayaa hlk'a7ii	hlaayaa hlk'a.aay

- vi. CLS2 FF: check if the feature is a Class 2 Traditional Forest Feature: Acceptable attribute values to be entered under #5 *Description* include the following:

Common harebell	dall(xil)-guhlahl	dall(-xil)-sgid
Common juniper	kaayda kaawaay	hlk'am.aal
Pacific crab apple	k'anh17l	k'ayanhla
Yellow pond-lily	xil gaaydllgins	xil giidlagang

Stink currant	galgun xil	gal.un hlk'a.aay
Black swamp gooseberry	gudga gi gayd	xaayuwaa
Trailing black currant	kaigigunlkai	k'it'agwaandaa hlk'a.aay
Cloudberry	k'aaxu ts'alaang.ga	k'a.àw ts'alaangaa xil
Stinging nettle	gudang.xaal	gudang.aal
Indian hellebore	gwaayk'yaa	gwaayk'aa

vii. CLS3 FF: check if the feature is a Class 3 Traditional Forest Feature. Note that Class 3 Forest Features are recorded as presence/absence for the area and spatial information (UTM coordinates) are not required: Acceptable attribute values to be entered under #5 *Description* include Haida spellings, or the following:

Northern maiden-hair	Licorice fern
Old man's beard	Sword fern
Narcissus anemone	Black cottonwood
Sitka columbine	Common silverweed
Kinnikinnick	Bracken fern
Alpine bitter-cress	Labrador tea
Snake liverwort	Thimbleberry
Round-leaved sundew	American glasswort
Spiny wood fern	Hooker's willow
Oregon beaked-moss	Scouler's willow
Large-leaved avens	Sitka willow
Beach pea	Bog blueberry
Running club-moss	Lingonberry
Single delight	Oval-leaved blueberry
One-sided wintergreen	Giant vetch
Cloud lichen	

viii. CLT STND: check if the feature is a CMT or Monumental cedar and is part of a Cultural Cedar Stand. Acceptable attribute values to be entered under #5 *Description* include:

01-99	The Cultural Stand Number
-------	---------------------------

AND

CW	Western redcedar
YC	Yellow cedar



Example in the #5 *Description* column:
01 CW

- ix. YW TREE: check if the feature is a Western yew tree or patch. Acceptable attribute values to be entered under #5 *Description* include:

01-99	The number of individual stems in the patch
-------	---------------------------------------------

5. **(Mandatory)** Description: Fill out the descriptor for the feature, as defined in the previous section 4 (i-ix);
6. **(Mandatory)** DBH: Diameter at breast height. This field is only filled out for the Monumental features. Note that there are different management objectives for monumental trees greater than (>) 120 cm DBH, therefore care must be taken to ensure accurate measurements;
7. **(Mandatory)** UTM Zone: Enter the Universal Transverse Mercator zone;
8. **(Mandatory)** Easting: Enter the UTM easting;
9. **(Mandatory)** Northing: Enter the UTM northing.

Appendix C REPORTING TEMPLATE

Cultural Feature Identification Report _____

Report number _____

General Location
(watershed) _____

Survey start date ___ / ___ / ___ (mm/dd/yy)

Block/Development
Area name _____

Survey end date ___ / ___ / ___ (mm/dd/yy)

Surveyor name _____

Total Traverse (m) _____

Crew names

Percent surveyed (%) _____

Block hectares _____

Survey level by stratum

Strata no	Survey level (1 or 2)	Strata description	Traverse (m)	Area (hectares)

Survey comments

Appendix D FEATURE IDENTIFICATION

Traditional Cultural Features identified in this section of the manual do not represent a full or absolute list of features used in the Haida culture. The listing of these features is specific to the Haida Gwaii Land Use Objectives Order (HGLUOO) as it describes criteria for the management of these values in relation to forestry.

1.1 Traditional Heritage Features

People who are certified to conduct Cultural Feature Identification surveys have access to cultural data or requests for access to the Remote Access to Archaeological Data (RAAD) through the Council of the Haida Nation's Natural Resource Department.

There are two classes of Traditional Heritage Features identified in Schedule 2 of the HGLUOO.

Class 1 Traditional Heritage Features

Village/Seasonal village – nearly every headland and waterway that meets the ocean have these important heritage sites on Haida Gwaii.

Inland Camp/Camp- important sites used continuously for travel, hunting, fishing, and harvesting. These sites may be associated with lakeshores, rivers, rock shelters, and inland places of work.

Burial Site- may include a mortuary pole- a carved pole with a hollow at the top where a box containing human remains were placed, or; tree burial (box or platform holding human remains that is placed in a tree), or; rock shelter/cave, or; internments.

Identified Oral History site- identified through oral tradition and ethnography as significant historical cultural sites throughout Haida Gwaii.

Identified Spiritual site- Areas of spiritual significance to the Haida, as identified through current practice, oral tradition and ethnography.

Class 2 Traditional Heritage Features

Bear Trap- a baited trap used to catch bears. A log was set to fall on the game when the bait was taken, often weighted with large rocks to increase the force. Indicators include a pile of large cobbles or boulders, possibly stumps of frame or post molds. Also could include pitfall traps: a hole up to 3m deep used to capture bear. Sharpened sticks may have been placed in bottom, often placed alongside fallen tree so that when animal jumps over log it falls in hole. While rope snares were also used, their identification in the field is difficult due to material decomposition. Traditional knowledge and ethnographic histories indicate that bear traps were historically commonly found on Haida Gwaii.

Fish Weir- a fishing device built in shallow estuaries, rivers, and streams consisting of a barrier of rocks or wooden stakes which allows water to pass though but stops the movement of fish. Indicators include short wooden stake knobs that often remain blackened where air has come in contact with them. Located in rivers, streams or seeping freshwater at coastlines. Can occur several kilometres upstream from the mouth.

Cave - a physical feature of cultural or natural origin utilized on a temporary or permanent basis for shelter or other significant social or ceremonial purposes. Caves were used for habitation as well as for burials, storage, etc. The living space of caves included the area in front of and outside the caves. Caves often contain very fragile material. Indicators include hearths, cultural material including lithics, fire cracked rock, faunal remains. Perishable materials such as basketry, ropes, adzed wood chips etc. may be preserved in dry caves.

Petroglyph- Symbols or designs pecked, carved or incised on rock surfaces. Found on boulders or bedrock in the intertidal zone; also found on relatively smooth rock outcrops.

Lithic Production Site- These are commonly surface sites. Lithics are stone objects that either include flakes as waste products formed while manufacturing a tool, may have been sharpened for use as a tool, or may have been used as is for cutting or scaping. Indicators include stones or tools that have been culturally altered, flake scards, points of percussion and sharp, thin edges. A quarry is a source of lithic materials from which the rock must be dug or cut, usually for geological properties such as basalt for stone tools (such as obsidian), ochre sources for painting, or argillite for carving. Associated with rock outcrops, boulders or rocky floats left by glaciers. Indicators include lots of lithic material, formed tools, and rounded rocks that may have been used as hammerstones.

Trail- Often marked with blazes, CMTs; exposed and compacted soil; and will often follow natural features such as rivers, valleys or alpine ridges.

Lookout Site- A prominent view point used continuously over time for travel, hunting or defensive purposes. Often associated with a point of topographic high relief such as a hill or ridge top.

Fort – A defensive structures usually located on islands with steep sides or high hills along shorelines; areas easily defendable. Used principally as defense locations, or used for everyday activities, such as drying fish and planting gardens, given they were commonly located in wind and sun exposed locations.

Cache – Most often a subsurface feature, described as a pit in which food, equipment, etc. was placed for safekeeping; often circular but also square or rectangular. Soil stratigraphy differs from surrounding soils. Indicators are burnt bark at bottom. Unlikely to have artifacts or ash, but are likely to be rich in other information such as pollen or seeds (requires a special expertise and is important not to disturb unnecessarily).

Canoe Run- A type of petroform where a strip of beach is cleared of stones so that the hulls of canoes are not damaged when hauled onto the beach. Usually in a sheltered or semi-sheltered location. Canoe runs can also be associated with canoe skids: a series of large sticks or planks laid parallel to the beach and held in place with stakes. These are seen as parallel lines of wooden stakes running between high and low tide lines.

Shoreline Habitation Site- Includes raised beach sites, which may be located several kilometers inland at major drainages and are very vulnerable to forestry and road construction activities. The potential for raised beach sites at locations at and below 25m above sea level (asl) on Haida Gwaii is significant, particularly adjacent to ancient marine bays, estuaries or creeks.

Karst Feature- This feature is made up of carbonate bedrock (limestone). These soluble rocks are associated with subterranean cave systems and unique ecosystems. These physical features are

associated with high potential habitation sites, utilized on a temporary or permanent basis for shelter or other significant social or ceremonial activity. These sites also often contain important paleontological remains that inform the cultural and natural heritage of Haida Gwaii.

Midden: One of the most common archaeological site types. May be either subsurface or surface features, that are not necessarily located beside the ocean (paleo/raised beach and paleo shoreline habitation sites). Indicators include dark soil, marine shells, mammal bone, fire-cracked rock, charcoal, and artifacts. Commonly associated with village sites (seasonal and permanent), there are several ways to identify a midden: the most common way is to visually inspect the roots of a tree throw/blowdown, and exposures.

Middens may include shell-free deposits, which can be identified by the color and texture of soil (are commonly dark and greasy/silty), and occasionally associated with fire cracked rock.

Rock Shelter: Usually a rock overhang large enough to be used for shelter, or ceremonial purposes such as burials. Commonly associated features can include visible stone tool debitage, animal bones used as tools, occasionally a hearth feature is visible, and occasionally a bentwood box, etc.

1.2. Traditional Forest Features

There are three classes of Traditional Forest Features identified in Schedule 2 of the HGLUOO.

Class 1 Traditional Forest Features (HTFFs)

Class 1 HTFFs are plant species that have been identified as being particularly rare, threatened by logging or introduced species as well as being extremely important to the Haida. The following lists the species that are Class 1 TTFs. Each individual occurrence of these plants is treated as a feature regardless of density or distribution.

Name: skil taawaatl̥xaay (S), skil taw (M), **Fairy-slipper** (*Calypso bulbosa*)

Name: k'anhll (S), xaayuwaa hl̥k'a.aay (M), **Black hawthorn** (*Crataegus douglasii*)

Name: 7inhllng (S), stla k'iist'aa (M), **Northern riceroot** (*Fritillaria camschatcensis*)

Name: ts'iihl̥njaaw (S), ts'iihl̥njaaw (M), **Devil's club** (*Oplopanax horridus*)

Name: hlaayaa hl̥k'a7ii (S), hlaayaa hl̥k'a.aay (M), **Highbush-cranberry** (*Viburnum edule*)

Class 2 Traditional Forest Features

Class 2 HTFFs are plant species that have been identified as being of importance to the Haida, but may be either less rare or less threatened by logging. Unlike Class 1 HTFFs where an occurrence is the equivalent of a feature (*ie.* an individual Devil's club equals one feature), a Class 2 feature can be comprised of more than one individual occurrence, depending on the species and their density and/or distribution. This has been done to reflect the difficulty of surveying for certain plant species, the impractical nature of collecting data on individual plants, and to account for the general abundance of some species. Figure 8 outlines the types of plant distribution used to help classify Class 2 HTFFs.

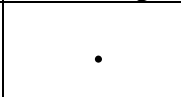
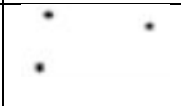
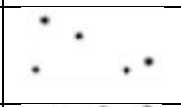
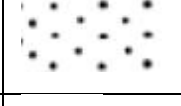
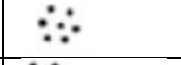

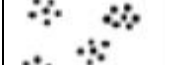
Distribution Codes		
Code	Image	Description
1		Individual, a single occurrence
2		Few sporadically occurring individuals
3		Several sporadically occurring individuals
4		Continuous uniform occurrence of well-spaced individuals
5		Single patch or clump of a species
6		A few patches or clumps of a species
7		Several well-spaced patches or clumps

Figure 8. Distribution codes used for identifying a feature.

Class 2 Traditional Forest Feature Species and their Classification as a Feature

The following 10 species are listed as Class 2 Traditional Forest Features in the HGLUOO *Schedule 2*. This section gives the name of the HTFF species and the criteria for their feature classification. Note that (S) and (M) denotes the Haida names in both Skidegate and Massett.

Name: dall(-xil)-sgid (M), dall (-xil)-guhlahl (S), **Common Harebell** (*Campanula rotundifolia*)

Feature Classification: Few to several sporadically occurring individuals where the distance between plants are less than 3 metres, is considered a feature (see Figure 8 and 9).

A patch (*distribution code 5*) where the density is greater than 2-5 plants /m² is considered a feature. Individual occurrences are not considered a feature.

Name: kaayda kaḵawaay (S), hl̥k'am.aal I (M), **Common Juniper** (*Juniperus communis*)

Feature Classification: Individual occurrences are considered a feature. Few to several sporadically occurring individuals where the distance between plants are less than 5 metres, are considered a feature (see Figure 8 and 9).

Name: k'anh̥l̥71 (S), k'ayanh̥la (M), **Pacific crabapple** (*Malus fusca*)

Feature Classification: Individual occurrences are considered a feature. A patch (*distribution code 5*) is also considered a feature.

A Pacific crabapple patch is when there are five or more Pacific crabapple trees where each crabapple tree is within 5 metres of another crabapple tree.

Name: xil gaaydligins (S), xil giidlagang (M), **Yellow pond lily** (*Nuphar lutea*)

Feature Classification: Any occurrence of this plant (regardless of density and distribution) is considered a feature.

Name: gal.un hlk'a.aay_(M), galgun xil (S), **Stink Currant** (*Ribes bracteosum*)

Feature Classification: Any occurrence of this plant (regardless of density and distribution) is considered a feature.

Name: gudga gi gayd (S), xaayuwaa (M), **Black swamp gooseberry** (*Ribes lacustre*)

Feature Classification: Few to several sporadically occurring individuals where the distance between plants are less than 3 metres, are considered a feature (*see Figure 8 and 9*).

A patch, (*distribution code 5*) where the density is greater than 2-5 plants /m² is also considered a feature.

Name: kaigigunlkai (S), k'iit'agwaandaa hlk'a.aay (M), **Trailing currant** (*Ribes laxiflorum*)

Feature Classification: Individual occurrences are considered a feature. Few to several sporadically occurring individuals where the distance between plants are less than 3 metres, are considered a feature (*see Figure 8 and 9*).

A patch (*distribution code 5*) where the density is greater than 5-10 plants /m² is also considered a feature.

Name: k'aaxu ts'alaang.ga (S), k'a.àw ts'alaangaa xil (M), **Cloudberry** (*Rubus chamaemorus*)

Feature Classification: Few to several sporadically occurring individuals where the distance between plants are less than 3 metres, is considered a feature (*see Figure 8 and 9*).

A patch (*distribution code 5*) where the density is greater than 2-5 plants /m² is considered a feature.

Individual occurrences are not considered a feature.

Name: gudang.xaal (S), gudang.aal (M), **Stinging nettle** (*Urtica dioica*)

Feature Classification: Few to several sporadically occurring individuals, where the distance between plants is generally less than 3 metres, is considered a feature (*see Figure 8 and 9*).

A patch (*distribution code 5*) where the density is greater than 5-10 plants /m² are also considered a feature.

Multiple patches (*distribution code 6 or 7*) can be considered one feature where the distance between them is less than 5 metres.

Individual occurrences (*distribution code 1*) are not considered a feature.

Name: gwaayk'yaa (S), gwaayk'aa (M), **Indian hellebore** (*Veratrum viride*)

Feature Classification: Few to several sporadically occurring individuals, where the distance between plants is generally less than 3 metres, is considered a feature (*see Figure 8 and 9*).

A patch (*distribution code 5*) where the density is greater than 2-5 plants /m² are also considered a feature.

Multiple patches (*distribution code 6 or 7*) can be considered one feature where the distance between them is less than 5 metres.

Individual occurrences (*distribution code 1*) are not considered a feature.

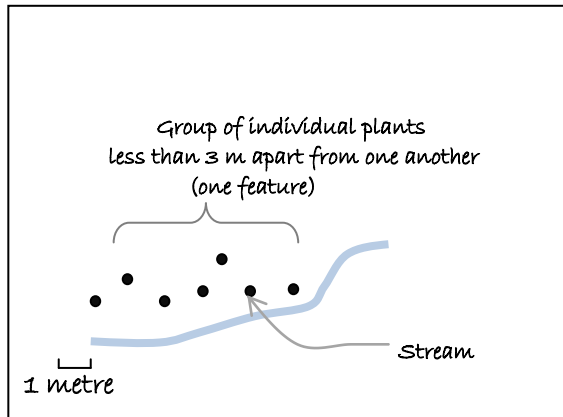


Figure 10. a group of individual plants that constitute 1 feature.

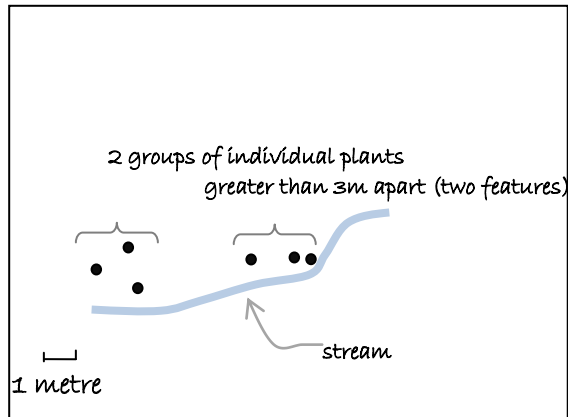


Figure 9. 2 groups of individual plants that constitute 2 features.

Field Identification of Traditional Forest Features

Seasonality/ Plant Phenology

Depending on what time of year a survey is completed, plants can be identified in a variety of life stages with winter identification being the most difficult and sometimes not possible. Fortunately many of the Class 1 and 2 Traditional Forest Features are woody perennials (*Black hawthorn, Devil's club, Highbush cranberry, Pacific crab apple, Stink currant, Black swamp gooseberry and Trailing black currant*) and therefore may be recognizable throughout the year. Otherwise, forest planning, (from the administrative onset through engineering of cutblocks), typically occurs 6 months to 1 year prior to harvest. If possible plan ahead (or encourage a forest licensee to) so that surveying can occur within the optimal time period between May 15th and September 31st.

Traditional forest features for the most part are:

- significantly rare, or;
- occur on the edge of or within non-forested ecosystems, or;
- grow in early successional forests or along forest edges, or;
- are associated with special coastal sites, or;

- grow in areas that are afforded protection through other Ecosystem Based Management measures.

Due to these reasons, there are relatively few species that might be identified in closed canopied old growth forests, and fewer found in closed canopy second growth forests. For this reason, pay particular attention to Devil’s club (Class 1), Pacific crabapple, Stink currant, Trailing black currant and Indian hellebore (all Class 2).

1.3 Culturally Modified Trees (CMTS)

Many different types of CMTs are found on Haida Gwaii. For purposes of this feature identification manual, only a few of the most common CMTs are detailed here. Otherwise, detailed descriptions for the identification of CMTs can be referenced in *A Handbook for the Identification and Recording of Culturally Modified Trees* (2001)⁴.

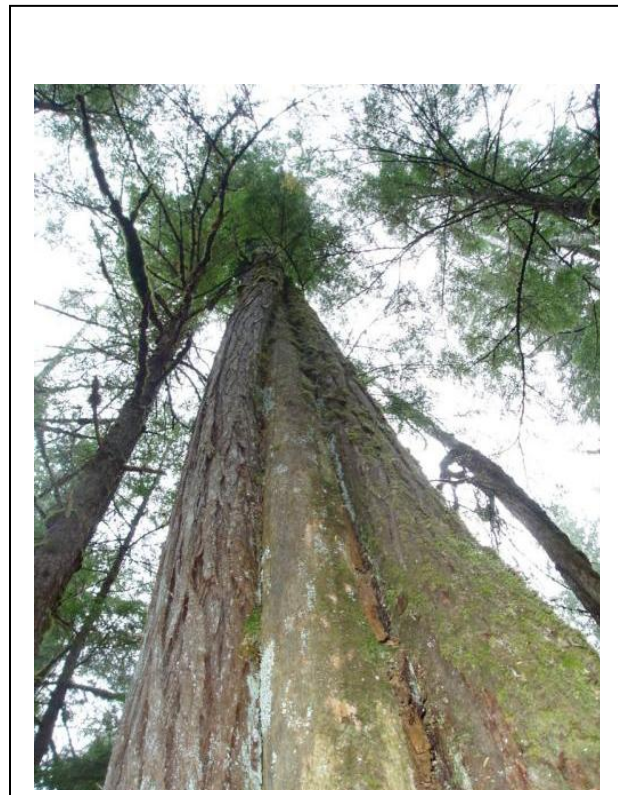
Bark-stripped Tree:

A class of CMT where the bark has been partially removed by Haida for social or ceremonial use. Characterized by the presence of one or more areas of removed bark and exposed wood referred to as bark-strip scars. Several types of bark stripped trees including tapered scar, rectangular scar, girdled or other. Indicators for the most common types of bark stripped trees on Haida Gwaii are as follows:

Tapered Barkstrip

Indicators include:

- ‘scar-crust’, which forms as smooth bark against a smooth wood face (most often dark/black in colour)
- Tapered scar from the base of the tree to a tip (elongated triangle in shape)
- Scar on the clear face of the tree (often the shaded side with fewer branches)
- Presence of healing lobes on either side of the scar
- Presence of tool marks, or
- Absence of bark on face of scar



⁴ Resources Inventory Committee. 2001. *A Handbook for the Identification and Recording of Culturally Modified Trees*. Version 2.0. Archaeology Branch, B.C. Ministry of Small Business, Tourism and Culture, Victoria, B.C.

Rectangular bark-strip also known as ‘Bark-board’

Indicators include:

- Tool marks at the base and top of scar
- Healing lobes taper, making the scar appear less parallel
- ‘scar-crust’ present on inside of healing lobes, or
- Edges of scar face (‘window’) run parallel to each other



Photo 1. Example of a rectangular (type) bark-strip (class) CMT.

Haida Logged Trees/Aboriginally logged trees)

Felled Trees

Also known as ‘stump and logs’, these typically have a stump and a log that has been felled beside it.

Stumps may be:

- Flat (level or sloping on a single plain)
- Step (characterized by a level top on two planes separated by a vertical step)
- Barberchair: a distinctive spire of wood on one side of the stump
- Basin: a concave top with sides that slope down gradually from the outside of the tree towards the centre

Logs are unmodified (un-cut)

Sectioned Trees

As with felled trees, these features have stumps, but the logs have been cut into two or more sections.

Often sections have been removed.

Sections are commonly referred to as the butt section (closest to the stump), medial section (s) and crown sections (section with live limbs and crown).



Canoe Trees

A felled or sectioned tree where the log is partially shaped into a canoe. These can have varying degrees of completion for a shaped bow or stern, sides and/or sheer line.



Tested Trees

A test hole is a four sided hole cut into a standing tree. Normally the hole has a flat bottom and top that slopes down into the hole. Tool marks (wedge or splitting-adze marks) may be found. Test holes can range in size- widths and lengths can exceed 50cm. Note that if the two sides aren't cut, but have healing lobes, and the hole is of significant size with a prominent and slanting top side, then it is recorded as an *undercut scar* (not recorded as a *test hole*)



1.4 Monumental Cedar Identification

This section outlines the criteria for a tree being classified as a monumental cedar only for the purposes of implementing Ecosystem Based Management on Haida Gwaii. Carving needs will vary between carvers and over time, and as such the criteria outlined in this section is subject to change. For purposes of Ecosystem Based Management, the Haida Gwaii Land Use Objectives order defines a monumental as:

“A visibly sound western redcedar or yellow-cedar tree that is greater than 100 centimeters in diameter at breast height and has a log length of 7 meters or longer above the flare with at least one face that is suitable for cultural use.” – Haida Gwaii Land Use Objectives Order.

Visibly Sound: Visibly sound means externally sound wood (outer 2/3rds of tree). Heart rot is generally acceptable for cultural uses, however the tree has higher risks of damage during falling and transport that may render it unusable.

Face: Face is measured as 1/3rd of the circumference of a log (Figure 1).

Log Length: Log length is measured as a minimum 7 metre length with at least one face that meets the defect allowances set out in this section.

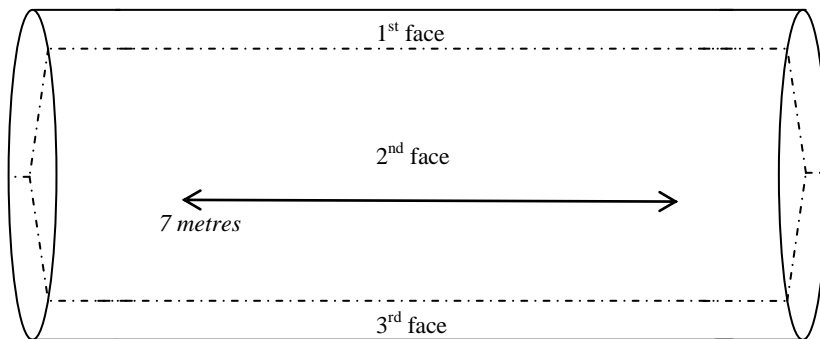


Figure 11. 'Face' of a monumental log is one-third of its circumference and the log length is minimum of 7 metres with one face that meets the defect allowances.

Tree Defects

This section outlines tolerances for tree defects. Note that tolerance for each type of defect should not be judged in isolation of any other defects. While this section describes allowable tolerances for individual defects, a combination of multiple defects likely contributes to a tree not being classed as a monumental.

Live Limbs: Occasional sound knots less than 5 cm diameter. The allowable tolerance for live limbs/knots greater than 5cm (estimated as the diameter inside bark thickness) on a **log length** are as follows:

Tree DBH

100-120cm	1 knot >5cm
120-150cm	2 knots >5cm
150-200cm	3 knots >5cm
+200cm	4 knots >5cm

Candle Limb(s): Candle limbs (*epicormic branching*) should be counted as a regular live limb.

Corrugation: Seams of bark, or creases of bark that are deep into the trunk of a tree will have an effect on the aesthetics of the tree. While the lower portion of a trunk may have some corrugation, the **log length** must be free of significant corrugation.

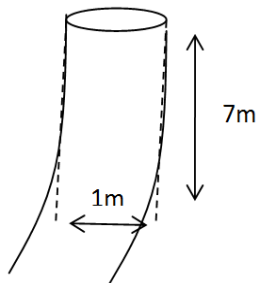
Additional considerations

Corrugation within the log length is equal to a live limb greater than 5cm. For example, a 117 cm DBH cedar meets all the Monumental Tree requirements and defect allowances except that its log length has 1 live limb or knot greater than 5cm AND it has corrugation. The combination of these defects would mean the tree is NOT a monumental.

Scar: Scars are acceptable as long as there is no visible decay or rot and that the scar covers less than 1/3rd of the log length.

Additional considerations

A significant scar is equal to a live limb greater than 5cm. For example, a 125cm DBH cedar meets all the monumental requirements and defect allowances except that its log length has 2 live limbs or knots greater than 5cm AND has a significant scar. The combination of these defects would mean the tree is NOT a monumental.



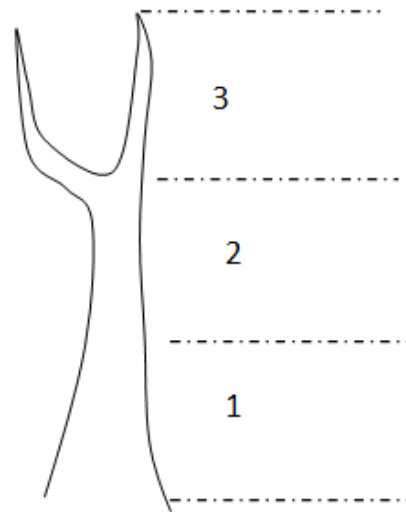
Sweep: If the trunk of the tree is curved or bowed it is called a sweep. Sweep is a defect that will cause a reduction in the diameter of usable wood.

Therefore only moderate sweeps in logs over 120cm DBH may be considered on the condition that you can get a straight 100cm by 7m section out of the tree.

If you can get your **log length** above the sweep and the tree is greater than (>)120cm DBH, then it can be considered a Monumental.

Figure 12. Potentially acceptable sweep in a log.

Forked Top: If the tree has 2 leaders it is considered a forked top. A forked top is acceptable as long as it is in the **upper** one-third of the tree and does not significantly affect the wood quality of the **log length**.



Candelabra: If the tree has more than 2 leaders it may only be considered Monumental if the DBH is over 120cm and occurs in the upper one-third of the tree.

Figure 13. Division of a tree into 3rds for measuring forked tops

Broken Top: If a Western red cedar has a broken top it and is exposed for long enough, it may affect the external soundness of the wood. However, if the broken top is in the upper one-third of the tree and does not significantly affect the quality of the **log length** (*cracks, shakes*) then it may be considered a monumental.

If a Yellow cedar has a broken top, it is not considered a Monumental.



Figure 14. Stages of decay. left image is a suspect living tree; middle image is dead tree with foliage missing (snag); right most image is a snag in a more advanced stage of decay (no twigs).

Spike Top: A cedar with a spike top up to one-third of the height of the tree is considered a Monumental.



Figure 15. examples of spike tops on cedars.

Dead Snag: if the tree is dead it is not discounted as a Monumental cedar as long as it is visibly sound and is not in advanced stages of decay. Acceptable snags (illustrated as the middle tree in Figure 4) will have:

no foliage present; up to 50% of twigs lost; most branches present; and a possible broken top. It is recommended that snags of Monumental quality be carefully harvested during normal operations and made available for cultural use.

Twist: Twist, or spiral grain, is divided into different tolerance classes for right-hand and left-hand twist. Significant left-handed twist or spiral grain is not considered a Monumental, as per maximum tolerances outlined in Figure 16.

Diameter class	Right-hand twist	Left-hand twist
100-150 cm DBH	20 cm over 1m length	5 cm over 1m
Greater than 150 cm DBH	25 cm over 1 m length	

Figure 16. Maximum acceptable twist.

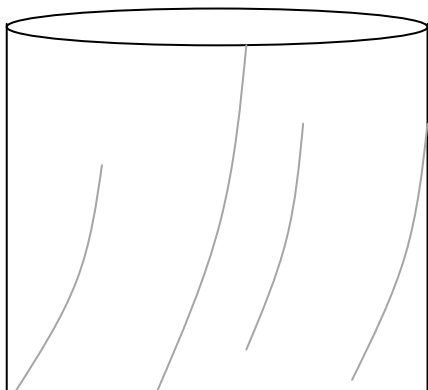


Figure 18. example of right hand twist

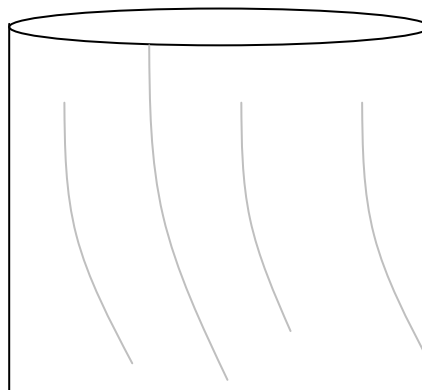


Figure 17. An example of left hand twist

Additional defects for Yellow Cedar

Frost Cracks: Yellow cedar trees with frost cracks above the log length are not considered monumental cedar.

Flat Tops: Yellow cedar trees with frost cracks (regardless of its placement on the tree) **in addition** to flat tops are not considered monumental.

1.5 Cultural Cedar Stands Identification

Cultural Cedar Stands, for the purpose of Cultural Feature Identification, are defined as three or more Culturally Modified Trees, Monumental Cedar, or a combination thereof, where each tree is within 50 metres of another tree. Figure 19, example A, shows two trees within 50 metres of each other, and a third that is a greater distance, therefore not qualifying it as a cultural cedar stand. Example B shows 3 trees where each tree is within 50 metres of at least one other tree, therefore qualifying as a cultural cedar stand.

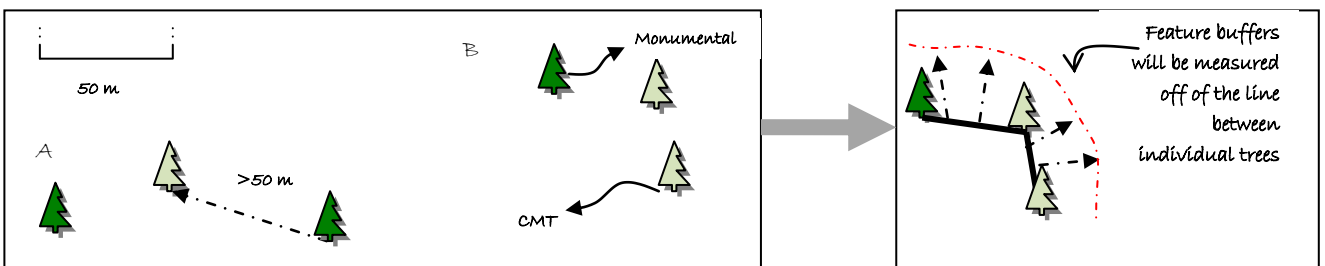


Figure 19. Example A is *not* a cultural cedar stand. Example B is a cultural cedar stand.

Distances between trees are measured between the tree centres, as shown in Figure 10.

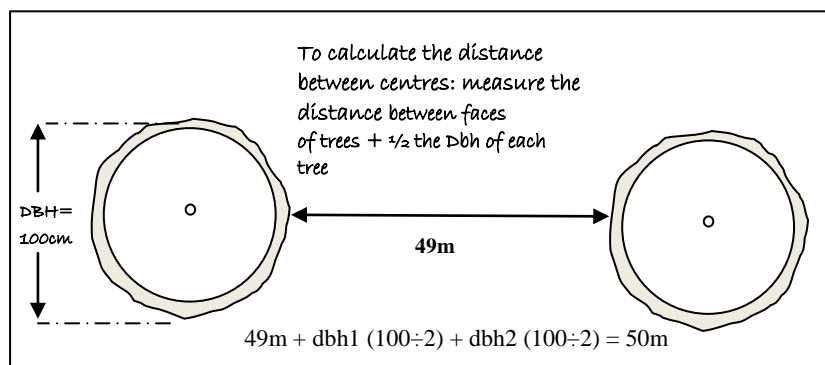


Figure 20. Measuring 50 metre distance between trees.

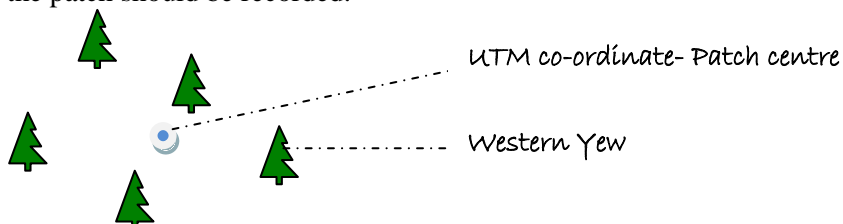
For identifying a cultural cedar stand, ensure that location coordinates (UTMs) are measured for each tree.

1.6 Western Yew Patch Identification

Western Yew Patches are defined as five or more Western yew trees where each yew tree is within 5 metres of another yew tree. In this case, much like Cultural Cedar Stands, the feature can be linear (straight lined) as long as one tree is within the required distance on another tree.

Note that a Western Yew Patch is a polygonal feature made up of 5 or more separate points. Individual stems do not require UTM locations. Rather the UTMs for the estimated geographic centre of the patch should be recorded.

Ex.



Layering, or epicormic/adventitious rooting sometimes occurs with Western yew trees. This is when a branch or stem sends new roots into the ground and establishes a semi-independent tree, as shown in Figure 21. In these cases, each new stem is considered a separate tree for the purposes of patch identification.

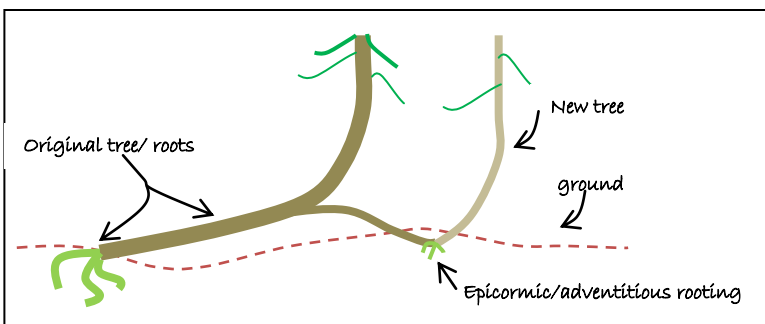


Figure 21. Epicormic rooting in Western yews