Large Cultural Cedar Field Data Collection
Standard Operating Procedure

Created: November, 2016
Updated: February, 2017

What is Large Cultural Cedar?

Large Cultural Cedar (LCC) is considered a Cultural Heritage Resource as described under Objective 10 in the Forest Planning and Practices Regulation. Objective 10: "Objectives set by government for cultural heritage resources" characterizes a cultural heritage resource as "the focus of a traditional use by an aboriginal people that is of continuing importance to that people" and to conserve or if necessary, protect that resource. Results and Strategies to manage Cultural Heritage Resources are required in a Forest Stewardship Plan. Specifically, BCTS manages Cultural Cedar according to the Guidelines for Managing Cedar for Cultural Purposes (2005) and in conjunction with applicable First Nations. Different First Nations may use varying terminology that describes roughly similar specifications for cedar they require for cultural use. Large Cultural Cedar for the purpose of a broadly applicable Standard Operating Procedure (SOP) includes certain types of *Cultural Cedar, Cultural Trees,* and *Monumental Cedar* (see Definitions section). Large Cultural Cedar is intended as a unifying term that represents the general specifications of First Nations for cedar they require for cultural use. It is larger cedar with the intended use for longhouses, community halls, canoes, totem poles, carvings, and similarly large, rare structures.

For the purposes of identifying a potential Large Cultural Cedar, the technical specifications are:

- western redcedar (*Thuja plicata*) or yellow-cedar (*Chamaecyparis nootkatensis*)
- Diameter at Breast Height (DBH; 1.3m) is greater than or equal to 150 cm
- Minimal or no taper for *log* length
- Grade code "H" or better

Identifying "H" Grade[1]

- Log is ≥ 5m in length for red cedar
- Log is ≥ 4m in length for yellow cedar
- No powder worm damage
- No more than occasional knots up to 8cm diameter on the upper 50% of the visible surface, or
    - Well-spaced knots up to 5cm in diameter on the upper 2/3rds of the visible surface, or
    - Reasonably well-spaced knots up to 4cm diameter over all the visible surface

[1] Derived from the 2011 Scaling Manual. Use your discretion when identifying H grade. If you are not comfortable with your assessment, make a note as part of your identification.

- Maximum twist permitted over 30cm of length is 7% of the top diameter up to a max. deviation of 8cm
- Bark seams, burls, butt rot, catface, checks, heart rot, oversized knots, pocket rot, sap rot, shatter, splits, or other defects are permitted providing the portion of the log free from these defects is sufficient to meet the grade rule LCC Specifications in Your Area

This SOP is intended as a general guide to identifying potential Large Cultural Cedars on the landscape to manage an inventory of cedar for First Nations as a whole. If you are aware that your development area falls within a First Nations' territory claim or treaty area, you will need to further investigate to determine if that First Nation(s) has an existing cedar strategy and/or the specification they indicate for what constitutes a large cultural cedar. You can find this out by speaking with your woodlands supervisor or a planning forester. The known First Nations' cedar strategy should be incorporated into your approach when identifying potential LCCs in the field. For example, the Nanwakolas, as part of their cedar strategy, are *not* interested in yellow cedar for LCC, so yellow cedar would not need to be the focus when identifying LCC within Nanwakolas territory claim area.

Background

There are four primary pieces of legislation that provide foundation for why we manage cultural cedar and consequently the potential LCC field data collection SOP. They are:

- The Forest Act
- Forest and Range Practices Act (FRPA)
- Forest Planning and Practices Regulation (FPPR)
- The Great Bear Rainforest Order (GBRO)

Division 9 of the Forest Act on Free Use Permits for First Nations and Others may be entered with a "person who requires Crown timber for a traditional and cultural activity" and is "not selling the timber to others." Free Use Permits are also extended to "a treaty First Nation that has entered into an agreement with BC, in accordance with its final agreement, for the harvesting of timber specified in the final agreement."

Under FRPA, licensees and BCTS are required to have a Forest Stewardship Plan (FSP) with mandatory content of results and strategies to address the objectives set by government[2]. Additionally, regulation under the Forest Planning and Practices Regulation mandates to apply a result or strategy within the FSP for cultural heritage resources and to mitigate a forest practice that may impact a cultural heritage resource. Large Cultural Cedar is considered a cultural heritage resource. As such, BCTS has incorporated into its FSPs strategies to manage LCC. Generally, these strategies

[2] FRPA section 5(1)b(i)

follow those outlined in the Guidelines for Managing Cedar for Cultural Purposes (2005) and the GBRO which include:

- 'Conserving where it is practicable to do so, a component of the [cultural heritage] species within the total area under prescription of the cutblock,[3]
- a commitment to share info/consult on operational plans regarding Monumental Cedar and Cultural Cedar Stands,[4]
- a mandate to assist First Nations in identifying suitable trees[5]
    - Where possible, to identify or locate LCCs in constrained areas (RRZs, RMZs, WTR, UWR, etc.), and
- actively develop a strategy for the I.D. of western redcedar or cypress for traditional and cultural use.'[6]

Through the GBRO we are committed to:

- maintaining the volume and quality of trees to support applicable First Nation(s) present and future Aboriginal Tree Use,
- maintaining Monumental Cedar (which is included in the definition for Large Cultural Cedar in this SOP) and Cultural Cedar stands with wind firm buffers in a quantity sufficient to support Aboriginal Tree Use, and
- to maintain Aboriginal Tree Use,
    - there is no need to retain LCC if it is within planned road/ road ROW development, 'infrastructure, or to address a safety concern and there is no practical alternative;'
    - there is no need to retain if potential LCCs deemed unsuitable by the applicable First Nations.

Who is this SOP for?

This SOP is intended for BCTS field staff and contractors who will be developing cutblocks, reviewing TSLs and cutblocks, and/or those who are performing timber reconnaissance. LCC data should be collected during these activities. Anything specific you are aware of that an applicable First Nation requires for LCCs within the TSA you are working should be incorporated into data collection when it makes sense to do so.

- When should you collect LCC data?
    - During block development or review
    - While in transit to the block by foot within the TSL

[3] Guidelines for Managing Cedar for Cultural Purposes, 2005.
[4] South Central Coast FSP 2016 (Draft)
[5] Strathcona FSP 2006 (last amended March 2012)
[6] Strathcona FSP 2006 (last amended March 2012)

  - During the initial phases of block development so a FN surveyor can be called in sooner than later if needed (thus avoid unnecessary delay in layout progress)
- Where should you collect LCC data?[7]
  - Outside of the planned cutblock
  - Within constrained areas adjacent to your planned cutblock
  - Within planned reserves of your cutblock[8]
  - Within the THLB in transit to the planned cutblock

Who is the data for?

Ultimately, the goal is to have the means to locate and provide applicable First Nations with a sustained supply of cedar for cultural and traditional use. Building an Inventory under the BCTS cedar inventory strategy using a database will concentrate the data allowing easy access to knowledge of how much Large Cultural Cedar is available and where for both current and future use. An LCC inventory will feed into overall planning and Timber Supply Review, which will in turn affect Land Resource Management Plans.

The Timber Sales Manager, in assessing the decision to advertise a TSL where LCCs have been identified as a concern by the First Nation, will need to quantify the potential impact to Aboriginal interests. This may include knowing how many potential LCCs the TSL may be impacting and how many have been identified. This information will add to the inventory on a Timber Sale basis unless a Cedar Strategy and accompanying inventory is complete.

Potential Large Cultural Cedar data should be sent to the BCTS GIS department to input into a database for:

- BCTS to create an inventory of potential LCC to sustain First Nation needs as part of a larger cedar inventory strategy
- Applicable First Nations to review for their more immediate needs and to send out their own assessor to confirm status of the potential LCC

Procedure

1. Review the specifications for identifying potential Large Cultural Cedars:

[7] Where and how much time you decide to dedicate to locating LCC should be a decision made with your supervisor using the information you have about a given territory, specification from the FN who claims that territory, and any known cedar strategy the given FN have developed. You will need to use your own discretion in cases where applicable FN specifications and a cedar strategy are not defined or not yet well defined.

[8] The number of LCCs you choose to design into reserve area(s) from the cutblock harvesting area is at your discretion and will likely vary based on factors such as terrain, block composition and specifically cedar availability, and engineering practicality.

   a. Western redcedar or yellow-cedar,
   b. DBH ≥ 150 cm,
   c. H grade or better, and
   d. minimal taper for log length.
2. Check with the GIS department or your supervisor for a map of any known or potential LCC in or near your projected development area.
3. Incorporate any known First Nation(s) cedar strategies or specifications for LCC in your working area,
   a. research whether or not potential LCCs within the development area need to be assessed by FN(s) prior to cutting, as some FN do not require an assessment for potential LCCs within a development area.
4. Collect the potential LCC field data (See sections below on Data Collection and Ways to Collect the Data):
   a. Use the Avenza (PDF Maps) schema available for download as a KMZ or the Field card to record:
      i. your full name and date,
      ii. tree specific data (DBH, Height, Harvesting Method, etc.) along with a photograph of the tree, or
      iii. general data about the potential LCC within a polygon, and
      iv. other data as indicated on the form or schema. See Appendix for detailed instructions on how to complete either data recording method.
5. Mark potential LCC according to the In-Field Tree Identification standard.
6. Submit the collected data in a timely fashion to your GIS department.
7. If appropriate, conduct an in-field review of the potential LCCs with the Applicable First Nation(s):
   a. record which trees were assessed,
   b. record which were considered LCC by the FN surveyor, and
   c. provide this data to the GIS department.
8. If potential LCC assessed by the Applicable FN are determined to be unsuitable, make the decision to leave or alter your projected block to log or conserve potential future cedar inventory.
9. If it is practicable to do so, alter your projected cutblock for conservation based on the location and abundance of LCC or potential LCC;
   a. exclude retention of all LCC if it were to render the development area economically unviable.

In-Field Tree Identification

- Single white ribbon
- Written on the ribbon with black permanent marker:
  - "Potential LCC" or "PLCC" and tree #
  - Date

- Assessor initials

Data Collection

This SOP is to identify *potential* Large Cultural Cedar – include as much additional information as you see fit. In particular, if you are not confident with your assessment of "H" grade, make a note but still include the tree if it meets the other specifications for an LCC. Any potential LCC will need to be verified by the Applicable First Nation(s). The procedure for collecting information will depend if individual trees are being identified or if a larger area (>1 ha) that includes several LCC will be identified.

Summary of Data Needed

- Assessor's Full Name
- Date of Assessment
- GPS point for individual trees
- GPS polygon for groups of trees
- Tree or polygon number
- Individual Tree Information:
  - Species
  - DBH (cm)
  - Height (m)
  - Harvesting Method
  - Slope (%)
  - Comments
  - Picture of tree that best represents bole shape
- Polygon information:
  - Approximate # of LCCs in polygon
  - Average DBH of LCC
  - Average height of LCC
  - Average slope
  - Harvesting method
  - Comments

Ways to collect the data

- Completing the Avenza point table or pdf field card
- Collecting a GPS point using Avenza, a Trimble GPS, or any reliable handheld GPS unit[9]
- Use sequential numbers (i.e. 1, 2, 3…) for potential LCC tree identification
- Use the **GPS File-naming standard**
  - For Trimble or other GPS units: LCC-yyyymmdd-initials

[9] If you are recording LCCs in a crucial area (i.e. legal boundaries, territorial boundaries, or other constraint) it is recommended that a gps unit such as Trimble is used for better accuracy than can be achieved using an iPad.

        - Ex. LCC20160101JD
    - For Avenza KMZ or GPX files: LCC-yyymmdd-full name
        - EX. LCC20160101JohnDoe
- "Comment" on any potential obstacle (to access, falling, or yarding) that is not captured in the fields of the Avenza point scheme or the LCC Field Data Collection Card; or anything else of special note, such as "log is windfall on the ground"
- Polygons of LCCs vs. individual trees
    - Polygons identifying areas with numerous potential LCC's should be at least approximately 1 ha in size,
    - otherwise data should be collected for each individual tree and the tree marked using the In-Field Tree Identification standard (below)

Submitting the Data

BCTS Field teams should submit the data from themselves or contractors to the GIS department. Data includes the GPS point file for LCC and field cards, if they were used. At this time, the contacts for the Strait of Georgia are currently Victoria Sticha (victoria.sticha@gov.bc.ca) and 'cc' Clark Lowe (clark.lowe@gov.bc.ca). Check with your GIS department for confirmation of to whom you should send your LCC field data.

The GIS team will clean up and forward the data to the District for inclusion in the Provincial Large Cultural Cedar Inventory Data Catalogue[10].

General Considerations

Encountering a potential LCC that is identified as a Culturally Modified Tree (CMT):

- If you recognize that the potential LCC would also be considered a CMT add to the database and include in the comments that it is a CMT and the type of cultural modification
- If a potential LCC has been assessed by both an archeologist as a CMT and by the applicable FN as an LCC, and the applicable First Nations would like to harvest the CMT identified LCC, then an Alteration Permit will be required to harvest the tree
    - The process to receive an Alteration Permit can be pursued by either the First Nation or BCTS

[10] Hyperlink address: https://catalogue.data.gov.bc.ca/dataset/provincial-large-cultural-cedar-inventory

Encountering a potential LCC that is a bear den:

- If you recognize the potential LCC is also a bear den (active or inactive), continue to collect data with a GPS point for the tree as per the guidelines and record in the "Comments" as such. It is recommended that you do not flag the tree with ribbon

Accessibility:

- Leave some potential LCC accessible by conventional logging methods where it is feasible within your block design and does not overly expose the potential LCC to blowdown
- Ensure the potential LCC is not overtly visible from the roadside if it is in a high traffic area

Definitions

Aboriginal Tree Use – (from GBRO) the use of Monumental Cedar, other cedar or other tree species to fulfill the domestic needs of the Applicable First Nation for such things as shelter, transportation, tools, fuel, and art, but does not include the use of Monumental Cedar, other cedar or other tree species for purposes of commercial production or sale

Applicable First Nation (Applicable FN) – any First Nation with an asserted or established aboriginal right, aboriginal title or treaty right to the area under consideration.[11]

Cultural Cedar – sometimes used to describe stands of large cultural cedar, contemporary culturally modified tree(s), and/or monumental cedar.

Cultural Trees – described in the Hupacasath Cedar Strategy broadly as any cedar that is used in cultural practices, from large cedar to as small as 50cm.

Great Bear Rainforest Order (GBRO) – Land use order replacing south and north coast land use orders. Will implement eco-system based management and be monitored for ecosystem integrity. Part of a larger, government-to-government strategic arrangements contributing to reconciliation of First Nations.

Large Cultural Cedar – Western redcedar or yellow-cedar that are of suitable size and quality, being of H grade or better and with a diameter of 1.5m or more.

Monumental Cedar – a large old western redcedar tree or a large old yellow-cedar tree that has the attributes necessary to fulfill the Aboriginal Tree Use needs of the Applicable First Nation primarily for totem poles, canoes, or long beams and poles to build longhouses, community halls, or similar community structures.[12]

[11] Definition taken from the Great Bear Rainforest Order, 2016.
[12] Definition taken from the Great Bear Rainforest Order, 2016.

References & Resources

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Ministry of Forests, Lands and Natural Resource Operations. 2011. *Scaling Manual*. Effective November 1, 2011. https://www.for.gov.bc.ca/ftp/hva/external/!publish/Web/Manuals/Scaling/2011/Scaling2011NovMaster.pdf

Ministry of Forests, Lands and Natural Resource Operations. 2016. *Great Bear Rainforest Order*. (Land Use Order) https://www.for.gov.bc.ca/tasb/slrp/lrmp/nanaimo/CLUDI/GBR/Orders/GBR_LUO_Signed_29jan2016.pdf

Ministry of Forests, Lands and Natural Resource Operations, West Coast Region, and Forest Analysis and Inventroy Branch, Ministry of Forests, Mines, and Lands. 2011. *Summary of Cedar Management Consideration for Coastal British Columbia: Discussion Draft*. https://www.for.gov.bc.ca/rco/stewardship/crit/docs/Coast%20Cedar%20Discusion%20Paper%2018Mar2011.pdf

Quintry Management Consulting Inc. 2009. *Cultural Cedar Inventory: An Approach with Case Studies*. Version March 31, 2009. Prepared for the Province of B.C.

Pacheedaht First Nation. 2010. *Pacheedaht First Nation Cedar Conservation Strategy*.

Kawnipi Consulting Ltd. 2007. *Hupacasath Cedar Strategy: BCTS Field Survey.*

Ministry of Forests, Lands and Natural Resource Operations: BC Timber Sales Strait of Georgia Business Area. 2012. *2006 Strathcona Forest Stewardship Plan.* Consolidated Amendment #8 (Approved March 2, 2012) – extension, update designations, changes to FDU.

Ministry of Forests, Lands and Natural Resource Operations: BC Timber Sales Strait of Georgia Business Area. 2016. DRAFT *South Central Coast Forest Stewardship Plan.* Submitted September 14, 2016.

Appendix A

Fillable PDF / Field Card Example

BCTS
BC Timber Sales

Large Cultural Cedar Field Data Collection Card
Strait of Georgia Business Area
Updated November, 2016

GPS File Name*:		**Date:**	
Area:		**Assessor**:**	
Block/TSL:		**Company:**	

**File name format: "LCC"-yyyymmdd-initials ex. "LCC20160125KA" **Please use your full name (first - last)*

Large Cultural Cedar (LCC) Specifications

- **Grade code "H" or better**
- **DBH (1.3m) is ≥ 150 cm**
- **Minimal or no taper for log length**

Identifying "H" Grade*

- Log is **≥ 5m** in length for **red cedar** (Cw; *Thuja plicata*)
- Log is **≥ 4m** in length for **yellow cedar** (Yc; *Chamaecyparis nootkatensis*)
- No powder worm damage
- No more than occasional knots up to 8cm diameter on the upper 50% of the visible surface, or
    - Well-spaced knots up to 5cm in diameter on the upper 2/3rds of the visible surface, or
    - Reasonably well-spaced knots up to 4cm diameter over all the visible surface
- Maximum twist permitted over 30cm of length is 7% of the diameter up to a max. deviation of 8cm
- Bark seams, burls, butt rot, catface, checks, heart rot, oversized knots, pocket rot, sap rot, shatter, splits, or other defects are permitted providing the portion of the log free from these defects is sufficient to meet the grade rule

**The LCC assessment is for reference purposes. Grade to the best of your ability as a final assessment will be performed by the First Nation should they choose to pursue interest in the tree. H Grade definition according to the 2011 Scaling Manual.*

Individual Potential LCC Tree Information

Tree #	Species	DBH (cm)	Height (m)	Harvesting Method	Slope (%)	Comments

Appendix B

Avenza (PDF Maps) How-to Directions

Consider checking the BCTS Application Communiques and Updates intranet page for any updates or new versions of Avenza.

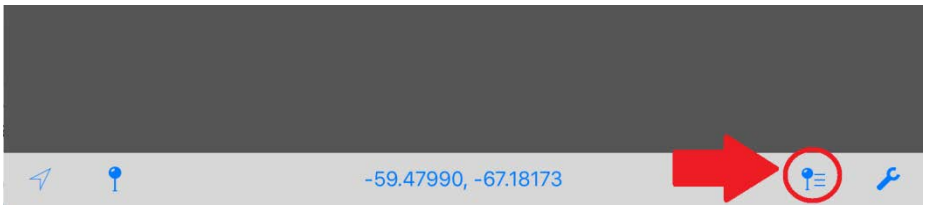
Index

1. Download the KMZ File to the iPad (from Mail, iTunes File Sharing, etc.)

Potential LCC Schema v1.0.kml

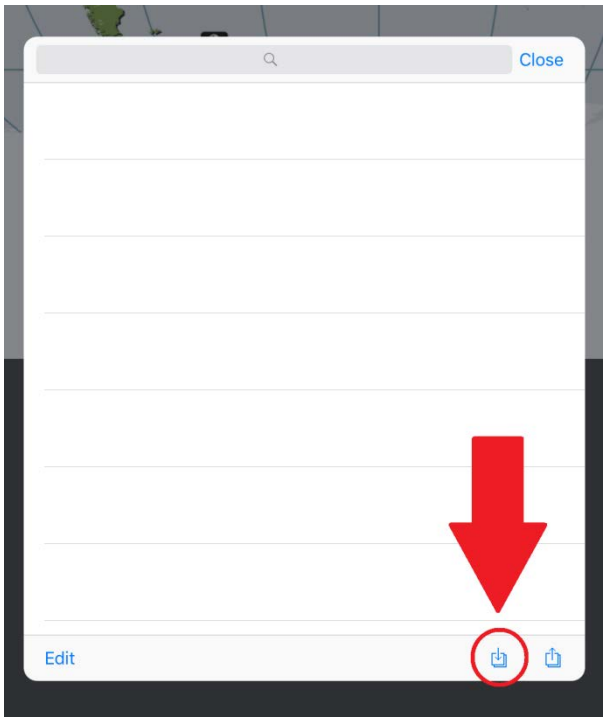
2. Import the KMZ File into Avenza App

a. Open the map for your working area
b. Tap the pushpin icon in the lower right hand corner next to the wrench:



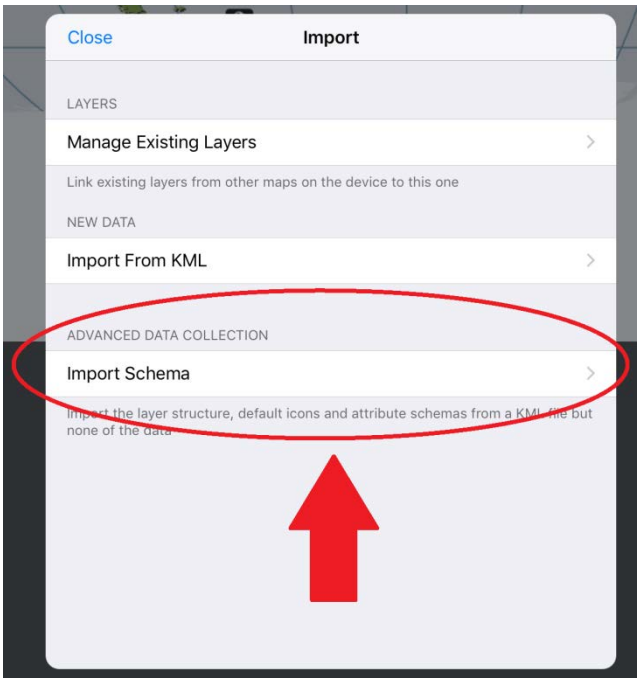
   i. This opens your layer files and any Schemas you may already have within the App

c. Tap the download button in the lower right hand corner of the pop-up box:

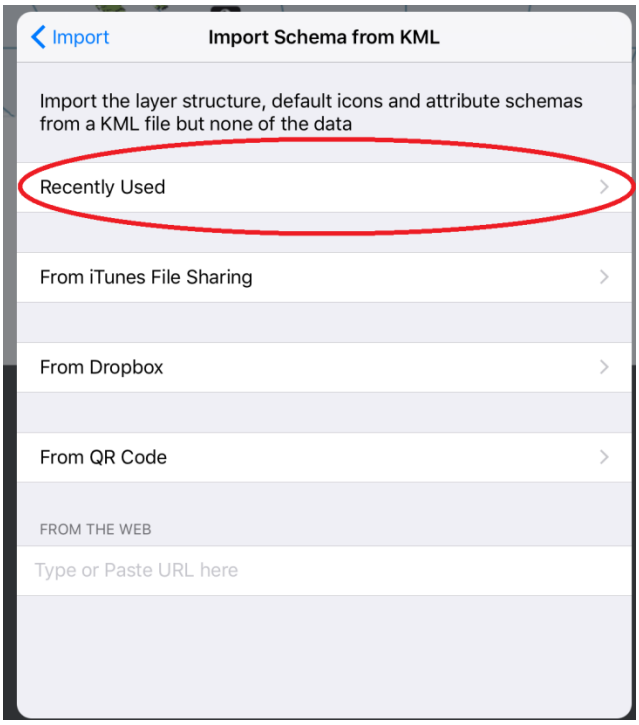


i. This opens the Import pop-up box (above)

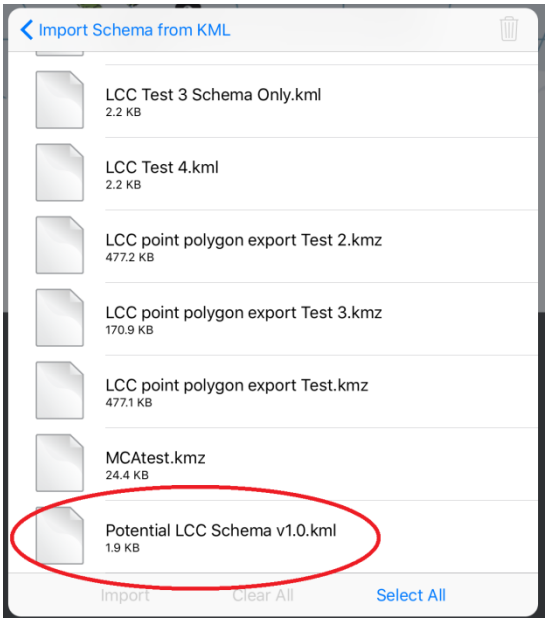
d. Tap on “Import Schema” under “Advanced Data Collection”:



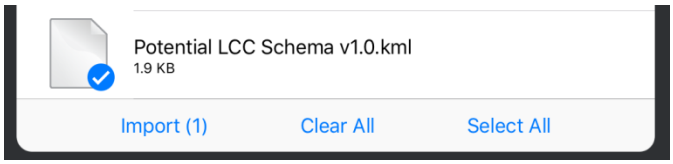
i. Choose “Recently Used” if you have already opened the file (ex. From “Mail” inbox), or wherever you have downloaded the file to:



e. Tap on "Potential LCC Schema v1.0.kml file from the list in the pop-up box:



i. Then tap "Import":

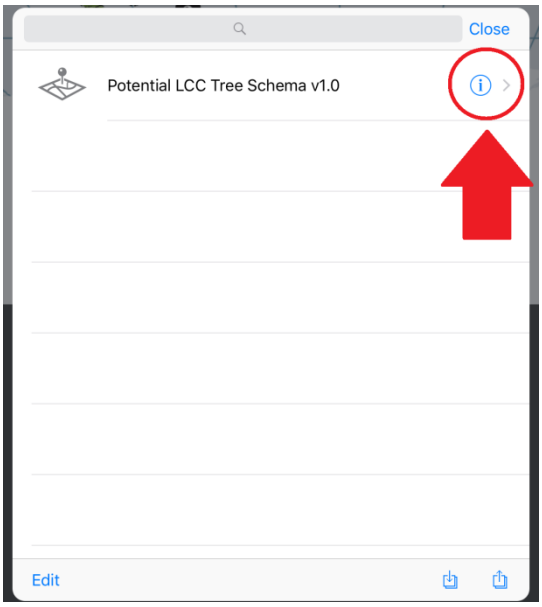


3. Make the Schema default while taking points on potential LCCs

a. Tap again on the pushpin adjacent the wrench in the lower right hand corner:

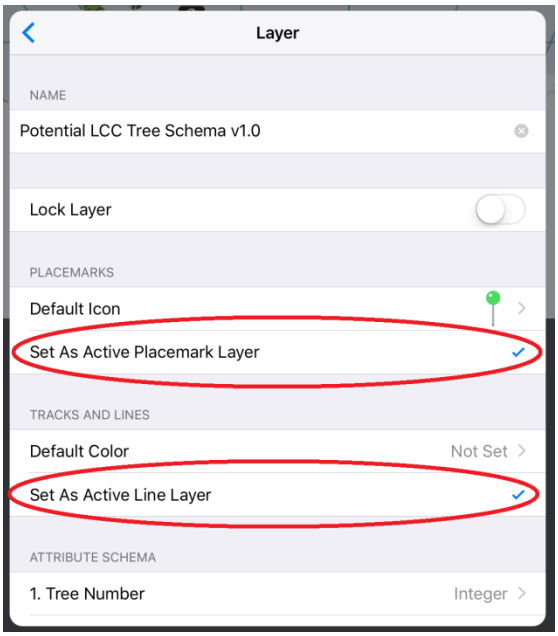
i. The potential LCC Tree Schema file should now be on the list in the pop-up box (you may need to scroll down to find it if you have numerous layers)

b. Tap the info icon next to the layer name:

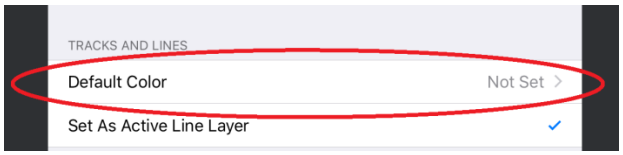


c. Tap on “set As Active Placemark Layer” under “Placemarks”

d. Tap on “Set As Active Line Layer” under “Tracks and Lines”:



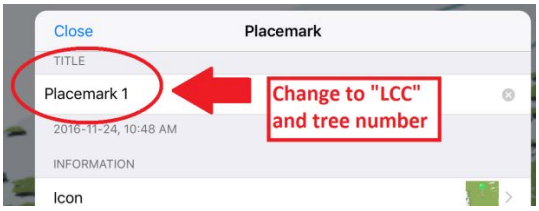
e. Tap on "Default Colour" under "Tracks and Lines":



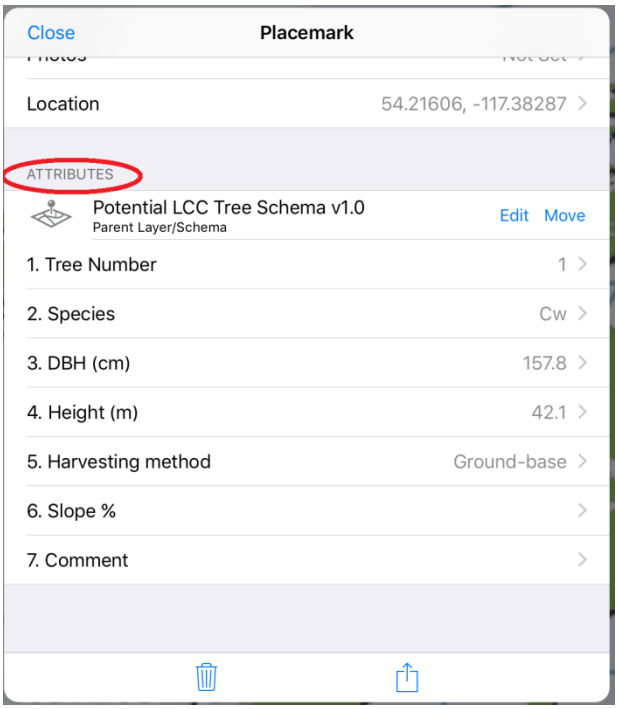
f. Set the default colour to Green
g. Click in the dark grey area anywhere outside of the active pop-up box to exit Layer Settings.

4. You are now ready to use the schema to record LCC data. Place a pushpin on your map to record data within the LCC Schema

a. Click on "info" of the placemark once you have placed a pushpin. The pushpin should be green.
b. Change the "Title" to "LCC" or "PLCC" for "(Potential) Large Cultural Cedar" and the tree number (the tree number is optional, but will help you keep track as you record data):



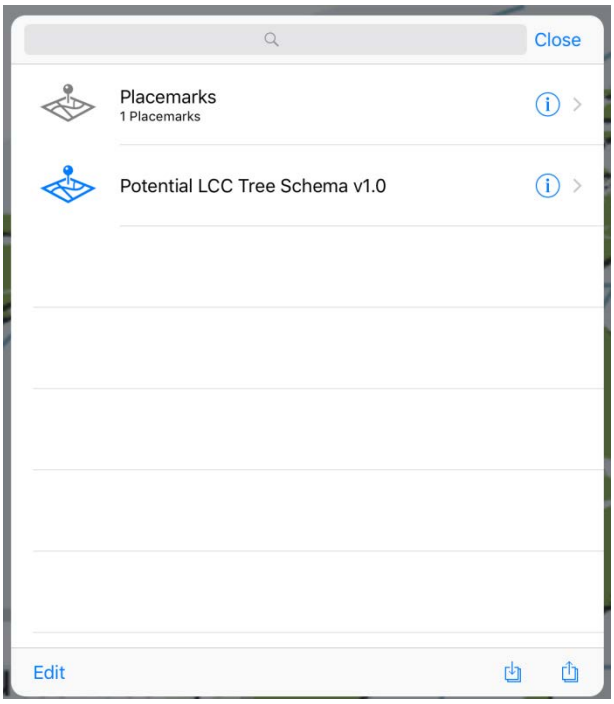
c. Scroll down to the "Attributes" and begin inputting data:



i. Tap on each field to enter new data for the point

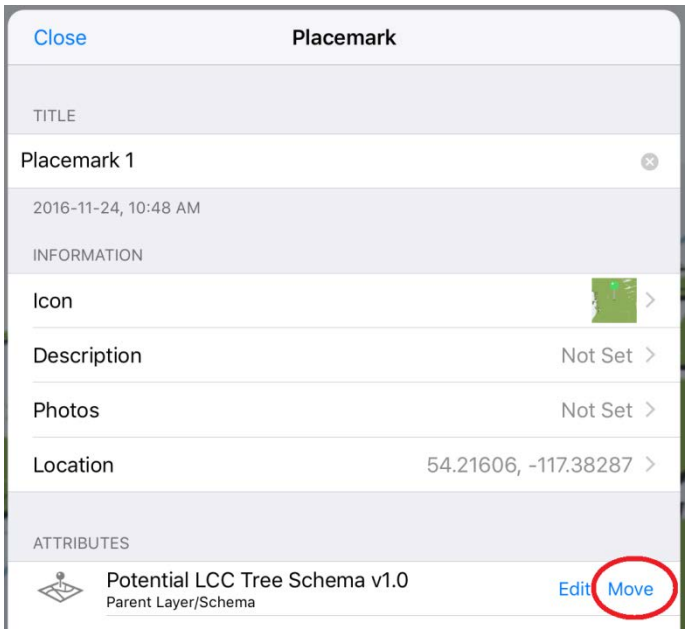
5. Once you are finished recording potential LCC data or no longer want the Schema to be active, navigate to another layer file, click on info, and change it to the "Active Layer":

a. Notice that the "Active Layer" has a blue icon whereas the inactive layers are grey:



6. If you have accidentally added a point that is not a potential LCC or LCC polygon within the LCC schema and would like to keep the data, you can easily move the point to another layer by:
    a. Tap on the info icon next to the point's name:

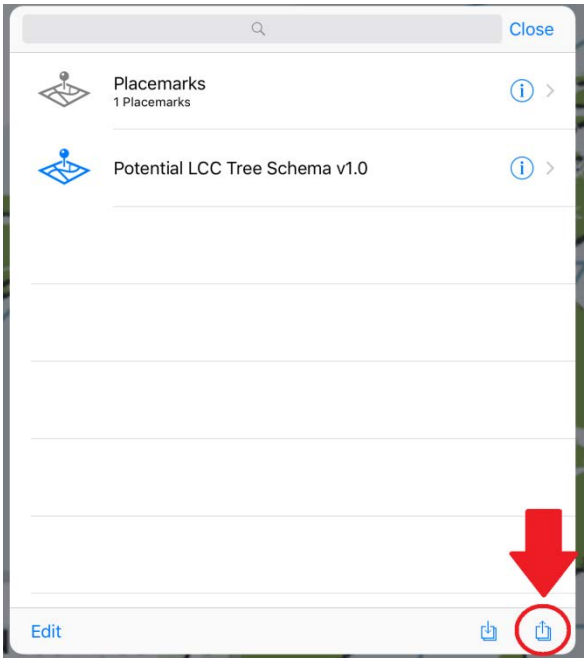
    b. Tap on the word "Move" next to the Layer name under "Attributes:



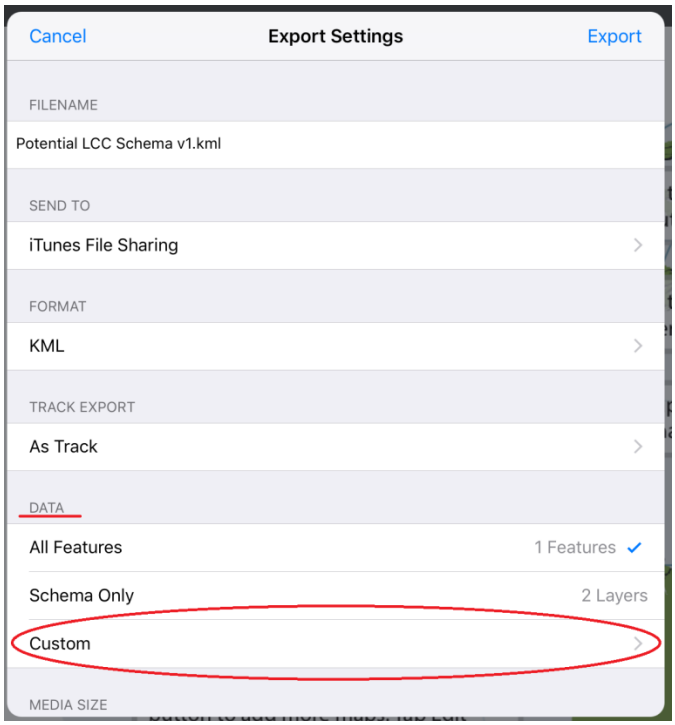
c. Tap on the desired layer you would like to move the point to

7. If you are ready to export the data, while in your map tap on the pushpin icon next to the wrench icon:

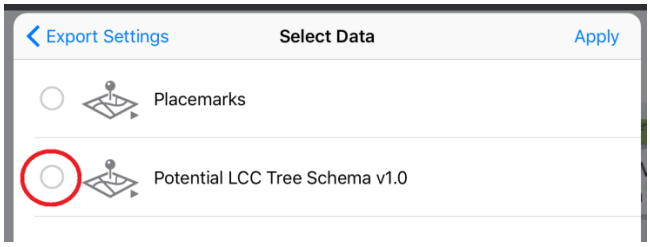
a. In the pop-up box, click on the export icon:



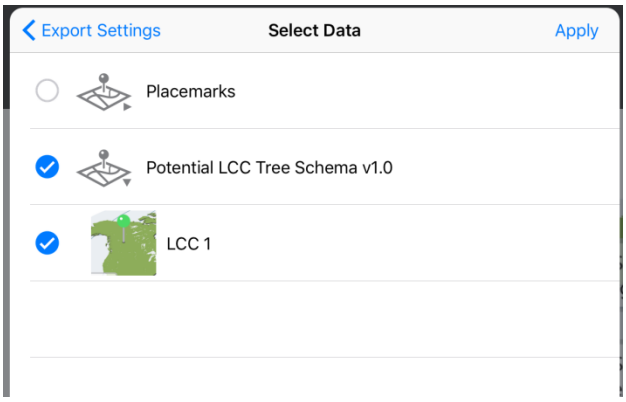
b. Change the selected item under “Data” from “All Features” to “Custom”:



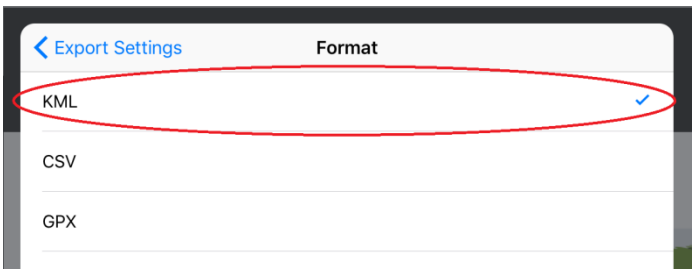
i. When you tap on “Custom” the following “Select Data” screen pops up:



c. Select the button next to the LCC Tree Schema Layer
   i. If you tap on the icon itself associated with the file, the points recorded under the schema should show on the list:



d. Click “Apply” in the top Right Corner. You will automatically be taken back to the “Export Settings” pop-up.
e. Under “Send To” choose where you would like the file sent (Email, Dropbox, iTunes file sharing, etc.)
f. Under “Format” ensure “KML” is check marked. A CSV file may be additionally requested by the GIS department. This will need to be sent in a separate email if requested.



    i. If you have also recorded a track around a potential LCC polygon, you will need to additionally export the file as a KMZ to send to your GIS department

g. Click “Export” in the top right corner (as in image 7.b)
h. Your file should export and the following pop-up will show: