



# Family Forest Network

## Ecological Forestry Pilot Project

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### Technical Note #3

## PTA Data Collection Forms

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## Project Overview

Under the general guidance of ecological forestry recommendations contained in *An Independent Review of Forest Practices in Nova Scotia*,<sup>1</sup> the Family Forest Network (FFN) is working with partners and landowners to plan and conduct a series of harvest and silviculture treatments on small private woodlands across Nova Scotia. The objective of these treatments is to demonstrate and document the costs and benefits of implementing ecologically sensitive management on small private woodlands across a wide range of forest conditions. Results will be used to refine or develop management guidelines and tools, and to inform provincial policies related to silviculture funding.

For the purposes of this project, ecological forestry aims to:

*Manage forests in a manner that promotes the development and/or restoration of stands to climax vegetation types appropriate to local landscape, ecosite, and soil conditions, and with consideration of climate change adaptation needs and objectives.*

Consistent with the views of Palik and D’Amato,<sup>2</sup> our primary goal is to treat forests in ways that bring them closer (compared with traditional management approaches) in structure, function, and composition to healthy, natural forests at all stages of successional development. We aim to improve future growing conditions while taking ecosystem services, traditional and emerging economic opportunities, wildlife habitat, resiliency to natural disturbance, and carbon management into account.

As part of this 5-year pilot project, FFN is planning and conducting approximately 160+ ecological forestry treatments in a range of stand types across Nova Scotia. Building off the recently published *Nova Scotia Silvicultural Guide for the Ecological Matrix*,<sup>3</sup> as well as the *Climate Adaptive Silviculture Decision Tree* developed by Community Forests International,<sup>4</sup> the project will focus on applying a mix of irregular gap and continuous cover shelterwood treatments (both medium and high retention), modified as needed to meet site-specific restoration, climate adaptation, biodiversity, and carbon management objectives. A robust experimental design is being followed to ensure the validity of short-term and long-term data, and to facilitate research partnerships and ongoing monitoring.

FFN Technical Note #1 outlined how target vegetation types (VTs) were selected, while FFN Technical Note #2 outlined protocols for trial site selection and follow up surveys. This Technical Note provides details on pre-treatment data collection forms developed for this project.

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<sup>1</sup> Lahey (2018)

<sup>2</sup> Ecological forestry: Much more than retention harvesting. *Journal of Forestry* 115(1), 51-53.

<sup>3</sup> McGrath et al. (2021)

<sup>4</sup> Davies and de Graff (2022)

## Data Applications

In collaboration with FNN partners and staff, several ArcGIS Survey123 (S123) and QuickCapture (QC) forms have been developed by James MacKay<sup>5</sup> to capture relevant pre-treatment assessment (PTA) data to aid site mapping and prescription planning for FFN harvest sites. Table 1 lists the S123 and QC forms outlined in this Technical Note. Other forms related to research plot establishment, harvest monitoring and assessment, and silviculture treatments will be described in later Technical Notes.

**Table 1. Pre-treatment Survey123 and QuickCapture data collection forms designed for FFN harvest project site assessments.**

Survey123	Comments	QuickCapture	Comments
<b>PTA+2BAF</b>	Main plot data collection form with several components	<b>Access POIs*</b>	Feature point form used when needed
<b>24BAF</b>	Plot data collection form for carbon calculations	<b>Access Paths</b>	Feature point form used when needed
<b>EGS (Ecological Growing Stock)</b>	Feature point form used when needed	<b>Hydrology POIs</b>	Feature point form used when needed
<b>FEC Transition</b>	Feature point form used when needed	<b>Hydrology Paths</b>	Feature point form used when needed
<b>Forest Health</b>	Plot and feature point form used when needed	<b>Geology POIs</b>	Feature point form used when needed
<b>Wildlife Feature</b>	Plot and feature point form used when needed	<b>Human Feature POIs</b>	Feature point form used when needed
<b>Ground Vegetation Feature</b>	Plot and feature point form used when needed	<b>Human Feature Lines</b>	Feature point form used when needed
<b>Stream Measure</b>	Feature point form used when needed	<b>Boundary Lines</b>	Feature point form used when needed

\* POIs = Points of Interest

## PTA+2BAF Form

PTA+2BAF is the main PTA data form applied at the plot level to record site and mensuration data. It includes several components as outlined below. Mandatory fields (\*) must be completed before advancing to the next field. PTA plots are assessed at a minimum intensity of one plot/ha. Location coordinates are automatically recorded when the form is opened, so the assessor must be at plot centre when opening the form.

<sup>5</sup> James MacKay (BCS, Acadia University; Diploma Geomatics Programming, NSCC).

## PTA+2BAF Details

Job ID \*



Job ID: Assigned by FFN staff, the same ID is used for all data forms used on the same site.

Plot ID

Optional



Plot ID: Only used if desired for the Assessor's reference.

FEC Forest Group \*

FEC Forest Group: Records the Forest Group associated with the plot (drop down list).

FEC Vegetation Type \*

FEC Vegetation Type: Records the VT associated with the plot (drop down list).

FEC Soil Type \*

FEC Soil Type: Records the ST associated with the plot (drop down list). If an ST phase is potentially associated with the selected ST, these options are listed, and the appropriate phase (or phases) selected as needed. (*Note*: Stony phase is an option for all STs, so it is always listed).

FEC Soil Type - Stony Phase?

Only select if applicable

Stony

Soil Type Call \*

Soil Type Call: Records whether the ST call was made by Direct Observation or Inferred from site conditions (*Note*: direct observation should always be employed if possible).

Exposure \*

- Exposed
- Moderately Exposed
- Moderate
- Moderately Sheltered
- Sheltered

Exposure: Records the Exposure rating of the plot location based on the provincial *Wind Exposure Map* (Provincial PTA Reference Viewer).

(*Note*: This rating is a site location and topographic position rating and is not related to previous land use or harvesting activity. This rating should not be changed from the map rating without prior discussion with FFN staff).

Blowdown \*

Blowdown: Records percentage of trees in the immediate area in and around the plot that have been blown down by wind (fully or partially uprooted > 30° from vertical). This does not include broken stems.

**Maturity \***

- Regenerating / Saplings
- Immature / Pole
- Mature (Seed-Bearing)
- Senescent
- Multi-Aged

**Maturity:** Records the overall dominant development class of trees in the plot.

**Potential Old Growth? \***

**Potential Old Growth:** Yes/No answer – Records whether the plot area could be potential old growth requiring further follow-up assessment.

**Previously Treated? \***

**Previously Treated:** Yes/No answer – Records whether the plot area was previously treated. If Yes, details are added in the Notes section at end of the survey.

**Disturbance Cohorts \***

**Disturbance Cohorts:** Records the number of distinct Disturbance Cohorts (age classes) found within the plot. Each age-class must be at least pole-sized, with age classes separated by at least 20 years.

▼ **Primary Cohort Properties**

**Age \***

**Average Height (Metres) \***

Estimate to Nearest Metre

For each cohort identified, records the Age and estimated Average Height of the cohort to the nearest metre.

**Horizontal Structure \***

**Horizontal Structure:** Records whether plot conditions are uniformly distributed or patchy within the site.

▼ **Tallies**

**Species \***

**Tree Tallies:** Records trees in the plot by species (drop down list) – based on a 2BAF prism sweep.

**Canopy \***

- Super Story
- Dominant
- Co-Dominant
- Intermediate
- Suppressed

For each tree tallied, records Canopy position.

DBH \*  
DBH Class  
Auto-calculated from DBH

For each tree tallied, records DBH to 0.1 cm (DBH Class is auto-calculated based on this measurement).

Growing Stock \*  
 Acceptable  
 Unacceptable

For each tree tallied, records whether it is considered Acceptable or Unacceptable growing stock based on definitions found in the *Nova Scotia Silvicultural Guide for the Ecological Matrix* (McGrath et al. 2021).

Why is it unacceptable? \*  
Select all that apply  
 HD Ratio  
 LC Ratio  
 Rot (Fruiting Bodies)  
 Rot (Wound / Defect)  
 Insect Damage (Severe)  
 Disease

If the tree is classed unacceptable (UGS), records all reasons why.

Wound (Severe)  
 Canker (Severe)  
 Maple Borer (Severe)  
 Poor Form  
 Poor Vigour

Is this Ecological Growing Stock? \*

For each tree tallied, records whether the tree should also be considered Ecological Growing Stock, i.e., of ecological importance regardless of whether it's classed as acceptable (AGS) or unacceptable (UGS).<sup>6</sup>

EGS Type(s) \*  
Select all that apply  
 Mast Tree  
 Seed Source Tree  
 Legacy Tree  
 SAR Tree  
 Tree > 70cm

Cavity / Den Tree  
 Diversity Tree  
 Super Canopy Tree  
 Climate Adaptation  
 Other

If the tree is considered EGS, records all reasons why (potentially applies to both AGS and UGS trees). If Other is selected, details are added by the Assessor.

Product Class \*

Records Product Class for each tree tallied (unmerchantable, pulp, sawlog).

Tally Count \*

Tally Count automatically tallies the number of trees with currently recorded attributes at 1. However, there is an option to manually increase this number to avoid the need to re-enter the exact same data for another tree. In most cases, however, this will be kept at 1.

<sup>6</sup> The concept of ecological growing stock (EGS) was added to this assessment as a compliment to AGS and UGS. It recognizes the potential ecological value of trees in addition to their growth and economic potential.

Photo(s)  
Optional

Photo(s): Option to take one or more plot photos.



Option to delete the tally record (if desired) or to add (+) another record.

▼ **Snags**

Hardwood Snags (10-29 cm) \*

Hardwood Snags (30-49 cm) \*

Hardwood Snags (> 50 cm) \*

Softwood Snags (10-29 cm) \*

Softwood Snags (30-49 cm) \*

Softwood Snags (> 50 cm) \*

Snags (if present):

Records the number of snags found in the prism sweep by tree type (hardwood/softwood) and diameter class.

(Note: Snags are defined as: Dead standing trees larger than 10 cm DBH and standing at  $\geq 45^\circ$  from horizontal – counted with prism sweep).

▼ **2BAF Tallies - Heights by Product Class**

Heights by Product Class:

Records 1 representative height value (to 0.1 m) for each combination of tree type (hardwood / softwood) and product class (unmerchantable / pulp / sawlog) recorded from the tree tally. The combinations requiring measurement are automatically listed based on data entered under Tree Tallies.

▼ **Regen General**

Regen General: Records a qualitative estimate of the percent cover of established and acceptable regeneration in visible range around the plot, as well as information on beech stocking and long-lived, shade intermediate to shade tolerant (LIT) species regeneration height.

Regen Stocking (All commercial species at 2.44m spacing) \*

Records % cover value (0-100%)

Regen Stocking (All LIT species at 2.44m spacing) \*

Records % cover value (0-100%)

Is Beech Stocking >25%? \*

Records Yes/No answer.

SW LIT Regen: Is dominant height 2-7m? \*

Records Yes/No answer.

HW LIT Regen: Is dominant height 6-9m? \*

Records Yes/No answer.

▼ **Regen Plot**

Measure regen within a 3.99m radius plot.

Regen Plot: Records a quantitative measure of regeneration within a 3.99 m radius plot located 7 m east of PTA plot centre.

If there is regeneration present (Yes/No answer), records the total numbers found by species (drop down list) and height class (0-30 cm, 31 cm – 1.3 m, > 1.3 m). There is an option to also take photos of the regen plot.

**Notes**

Optional

Notes: Option to record notes to assist with interpretation of overall plot data. This field is also used to describe previous treatments when noted above.

## 24BAF Form

24BAF is the data form used at PTA plot locations to collect representative tree data for calculation of above ground carbon stores. The number, size, and species of trees to be chosen are based on plot conditions. Protocols to be followed are part of training conducted by *Community Forests International* (2023). Use of a 24BAF angle gauge is required.

### 24BAF Details

**Job ID \***



Job ID: Assigned by FFN staff, the same ID is used for all data forms used on the same site.

**Plot ID**

Optional



Plot ID: Only used if desired for the Assessor’s reference.

**Notes**

Optional

Notes: Option to record notes to assist with interpretation of plot data.

**Photo(s)**

Optional

Photo(s): Option to take one or more plot or tree photos.



▼ 24BAF / Tree Measures \*

Species \*

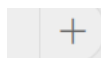
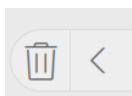
Species: Records the tree species being measured (drop down list).

Diameter (cm) \*

Diameter (cm): Records DBH of the tree being measured to the nearest centimetre (no decimal places).

Height (m) \*

Height (m): Records Height of the tree being measured to the nearest 0.1 metre.



Option to delete the measured record (if desired) or to add (+) another record.

## EGS Form

The EGS form is used to record ecological growing stock (EGS) data when these trees are found between PTA plots. Location coordinates are automatically recorded when the form is opened, so the assessor must be beside the feature when opening the form.

### EGS Form Details

Job ID \*

Job ID: Assigned by FFN staff, the same ID is used for all data forms used on the same site.

Species \*

Species: Records the tree species being assessed (drop down list).

EGS Type(s) \*

Select all that apply

- Mast Tree
- Seed Source Tree
- Legacy Tree
- SAR Tree
- Tree > 70cm

- Cavity / Den Tree
- Diversity Tree
- Super Canopy Tree
- Climate Adaptation
- Other

EGS Types(s): Records all EGS features that apply. If Other is selected, details are added by the Assessor. (*Note*: this form is used for Mast Tree info, shrub mast info is captured using the Ground Vegetation Feature form).

Photo(s)  
Optional

Photo(s): Option to take one or more tree photos.

Notes  
Optional

Notes: Option to record notes to assist with interpretation of EGS feature data.

## FEC Transition Form

The FEC Transition Form is used to record changes in FEC units encountered when travelling between PTA plots (VT and/or ST). These FEC observations are critical for accurate ecological site assessment and mapping, and it is expected that several of these transition points will be recorded during a PTA survey. Location coordinates are automatically recorded when the form is opened.

### FEC Transition Form Details

Job ID *	<input type="text"/>	<u>Job ID</u> : Assigned by FFN staff, the same ID is used for all data forms used on the same site.
Transition Type *	<input type="radio"/> Transition Edge <input type="radio"/> Inclusion	<u>Transition Type</u> : Records the type of FEC transition found: Transition Edge (boundary) or Inclusion.
FEC Forest Group *	<input type="text"/>	<u>FEC Forest Group</u> : Records the Forest Group associated with the FEC transition (drop down list).
FEC Vegetation Type *	<input type="text"/>	<u>FEC Vegetation Type</u> : Records the VT associated with the FEC transition (drop down list).
FEC Soil Type *	<input type="text"/>	<u>FEC Soil Type</u> : Records the ST associated with the FEC transition (drop down list). If an ST phase is potentially associated with the selected ST, these options are listed, and the appropriate phase (or phases) selected as needed. ( <i>Note</i> : stony phase is an option for all STs, so it is always listed).
FEC Soil Type - Stony Phase? Only select if applicable	<input type="radio"/> Stony	
Soil Type Call *	<input type="text"/>	<u>Soil Type Call</u> : Records whether the ST call was made by Direct Observation or Inferred from site conditions ( <i>Note</i> : direct observation should always be employed if possible).
Notes Optional	<input type="text"/>	<u>Notes</u> : Option to record notes to assist with interpretation of FEC transition data.

## Forest Health Form

The Forest Health Form is used in the PTA plot to document the type and extent of observed tree health problems. If needed, the form can also be used to record health observations at feature points between PTA plots. Location coordinates are automatically recorded when the form is opened, so the assessor must be at plot centre or beside the feature when opening the form.

### Forest Health Form Details

<b>Job ID *</b> <input type="text"/>	<b>Job ID:</b> Assigned by FFN staff, the same ID is used for all data forms on the same site.
<b>Species Affected *</b> If multiple species affected, use "Multiple" <input type="text"/>	<b>Species Affected:</b> Records the species affected (drop down list). If more than 1 species has the same health problem, multiple species is selected.
<b>Cause *</b> <input type="radio"/> Insect <input type="radio"/> Physical <input type="radio"/> Vigour <input type="radio"/> Disease <input type="radio"/> Die-Back <input type="radio"/> Other	<b>Cause:</b> Records the health problem being assessed. Depending on what is chosen here, another window opens asking for more details (e.g., insect species if known) or comments. ( <i>Note:</i> If more than one health problem needs to be recorded, the form must be closed after the first record and reopened again for each additional record).
<b>Tree Part(s) Affected *</b> <input type="checkbox"/> Foliage <input type="checkbox"/> Bole <input type="checkbox"/> Branches <input type="checkbox"/> Bark <input type="checkbox"/> Roots	<b>Tree Part(s) Affected:</b> Records all tree parts affected by the health problem.
<b>Tree Damage % *</b> <input type="text"/>	<b>Tree Damage %:</b> Records the percentage of the tree <u>affected</u> by the health problem (or average % if more than 1 tree is affected). ( <i>Note:</i> this is not the percentage of trees with the health problem – that is addressed below).
<b>Stand Damage % *</b> <input type="radio"/> Light: 1-30% <input type="radio"/> Moderate: 31-50% <input type="radio"/> Severe: 51-80% <input type="radio"/> Extreme: >80%	<b>Stand Damage %:</b> Records the percentage of trees in the plot and/or immediate area with the identified health problem.
<b>Damage Distribution *</b> <input type="radio"/> Uniform <input type="radio"/> Patchy <input type="radio"/> Scattered	<b>Damage Distribution:</b> Records the distribution of trees with the identified health problem.

### Notes

Optional

Notes: Option to record notes to assist with interpretation of health data.

### Photo(s)

Optional

Photo(s): Option to take one or more plot or tree photos.

## Wildlife Feature Form

The Wildlife Feature form is used to record wildlife features encountered within PTA plots and/or when travelling between PTA plots. These observations are critical for biodiversity assessment and accurate site mapping. Location coordinates are automatically recorded when the form is opened, so the assessor must be at plot centre or beside the feature when opening the form.

### Wildlife Form Details

#### Job ID \*

Job ID: Assigned by FFN staff, the same ID is used for all data forms on the same site.



#### Feature Type \*

- SAR Species Observed
- Cavity Tree Species Observed
- Banks Containing Swallow Nests
- Moose Sign
- Wildlife Trail
- Other
- Large Stick Nest
- Den
- Beaver Dam/Lodge
- Cave
- Occupied Bird Nest

Feature Type: Records the wildlife feature found. Depending on what is chosen here, another window opens asking for more details (e.g., species or den type) or comments.

#### Photo(s)

Optional

Photos: Option to take one or more wildlife feature photos.

#### Notes

Optional

Notes: Option to record notes to assist with interpretation of wildlife feature data.

## Ground Vegetation Feature Form

The Ground Vegetation Feature form is used to collect ground vegetation data of management significance encountered within PTA plots and/or when travelling between PTA plots. Location coordinates are automatically recorded when the form is opened, so the assessor must be at plot centre or beside the feature when opening the form.

## Ground Vegetation Form Details

**Job ID \*** Job ID: Assigned by FFN staff, the same ID is used for all data forms on the same site.



**Feature Type \***

Invasive Species

Mast Shrub

SAR

Regen Patch

Feature Type: Records the ground vegetation feature found. If Invasive Species, SAR, or Mast Shrub is selected, another window opens asking for species information.

(*Note*: This form is used for Mast Shrub information, tree mast is captured with the EGS form).

If Regen Patch is selected, a different data window opens.

**Regen Patch Diameter (m) \***

Regen Patch Diameter: Records the estimated diameter of the significant regen patch to the nearest metre.

▼ **Regen Patch Species \***

Regen Patch Species: Records the species being measured (drop down list after clicking on + button). This is the same list found in the PTA+2BAF form.

**Species \***

**Average Height (m) \***

Average Height (m): Records the average representative height of the regen species to the nearest metre.

**Photo(s)**

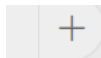
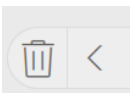
Optional

Photo(s): Option to take ground vegetation photos.

**Notes**

Optional

Notes: Option to record notes to assist with interpretation of Ground vegetation data.



Option to delete the measured regen record (if desired) or to add (+) another record if more than one species presence is significant.

## Stream Measure Form

The Stream Measure Form is mainly used to assess a stream channel for possible Watercourse Regulation buffer requirements ([Regulations - Forests - Wildlife Habitat and Watercourses Protection \(novascotia.ca\)](http://www.novascotia.ca)). It can also be used to inform BMP and layout planning; however, the Hydrology QC

form may be a quicker option to record stream information if exact width measurements are not needed. Starting location coordinates are automatically recorded when the form is opened.

### Stream Measure Form Details

**Job ID \*** Job ID: Assigned by FFN staff, the same ID is used for all data forms on the same site.



#### ▼ Width

All width measurements should be in centimetres.

**Measurement Type \***

- Single Measure from One Location
- Ten Measures from Equidistant Locations
- Single Measure at Point of Interest plus Ten Equidistant Measures

Measurement Type:

Records whether the width measurement(s) is (are) associated with a single measurement from one location, 10 measurements at equidistant locations, or a combination of both. Depending on

what is chosen here, another window opens asking for the appropriate number of width measurements to the nearest centimetre.

**Average Width**

If 10 measurements are being taken, an Average Width will auto-calculate after all measurements are entered (click cell to activate).

**Water Present at Moment? \***

Water Present at Moment: Yes/No answer. Records whether water is present at time of assessment.

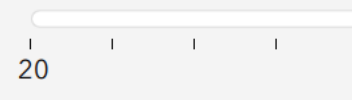
**Flow Present at Moment? \***

Flow Present at Moment: Yes/No answer. If water is present, records whether water is flowing at time of assessment.

**Is there a slope greater than 20% within 20 metres of the waterbody? \*** Yes/No answer – If the calculated average stream width is  $\geq 50$  cm, records whether the adjacent slope is more than 20%.

**Slope \***

Slope: If adjacent slope is  $> 20\%$ , a window opens to record slope %.



**Special Management Zone Size**

Metres, calculated based on width and slope

Special management Zone Size: This auto-calculates a minimum required stream buffer width based on data entered above.

Photo(s)  
Optional

Photo(s): Option to take stream related photos.

Notes  
Optional

Notes: Option to record notes to assist with interpretation of stream data.

## QuickCapture Forms

Several QC forms have been created to quickly record the occurrence and location of various features and points of interest (POIs) that may be encountered during PTA surveys. This includes access related features, hydrology features, geology features, and human created features. Knowledge of where these features are (or could be placed) is important for mapping and planning purposes. Where deemed potentially helpful, a single photo option was also added to these forms. Location coordinates are automatically recorded when a form is opened, so the assessor must be at the POI or beside the feature when opening the form. See Appendix 1 for more details.

## Discussion

Having accurate, comprehensive, and spatially referenced data is fundamental for ecological forest management that considers biodiversity features, site features, and ecological stand conditions. Key components of the FFN pre-treatment assessment (PTA) protocol that facilitate this are:

- Increasing sampling intensity to one full PTA plot/ha to provide more accurate summary data.
- Having more information on ecological growing stock (EGS) for biodiversity interpretations.
- Having more information on unacceptable growing stock (UGS) for interpretive purposes, especially assessment of blowdown and breakage risk.
- Having more quantitative data on regeneration for better post-treatment planning and to protect desirable regeneration during harvest operations.
- Having the ability to capture key features and ecosystem transition data between PTA plots. The ability to spatially locate changes in ecosystem conditions, biodiversity features, and hydrology features is especially important for accurate ecosystem mapping, soil damage mitigation, and biodiversity sensitive harvest planning.
- Having the ability to calculate Carbon: Basal Area Ratio (CBAR) and carbon storage estimates in tonnes CO<sub>2</sub>e by FEC stand type (using *Community Forests International* protocols).
- Having the ability to capture stand and feature conditions if desired through spatially referenced photographs.

Except for coarse woody material (CWM) assessment, PTA protocols developed for this project match or surpass new PTA protocols developed by NSDNRR for SGEM planning on Crown land. For the FFN

project, detailed CWM data in harvest areas are being collected with pre- and post-treatment research plot assessments.

## Literature

Community Forests International (2023). *Covariate (Big BAF) forest carbon sampling procedure v3*.

Davies, G. and M. de Graaf. 2022. *Managing forests for climate change: Climate change resilience and carbon storage silvicultural prescriptions for the Wabanaki-Acadian Forest Region*. Community Forests International.

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McGrath, T., M. Pulsifer, R. Seymour, L. Doucette, G. Forbes, R. McIntyre, R. Milton, L. Cogan, M. Retallack, and T. Crewe. 2021. *Nova Scotia Silvicultural Guide for the Ecological Matrix*. Nova Scotia Department of Lands and Forestry.

Palik, B.J. and A.W. D'Amato. 2016. *Ecological forestry: Much more than retention harvesting*. *Journal of Forestry*, 115(1), 51-53.



## Appendix 1

QuickCapture (QC) form images.

Access POIs: Records the occurrence and location of possible access hazards, existing infrastructure, and/or potential crossings.

The screenshot shows a mobile application interface titled "Access POIs". It features five large, white, rounded rectangular buttons arranged in a grid. Each button has a small camera icon in the top-left corner. The buttons are labeled: "Hazard", "Gate", "Bridge", "Culvert", and "Potential Crossing". The "Potential Crossing" button is located on the left side, while the others are arranged in two columns on the right.

Access Paths: Records the occurrence and location of various Access Path types (if found).

The screenshot shows a mobile application interface titled "Access Paths". It features seven large, white, rounded rectangular buttons arranged in a grid. Each button has a small camera icon in the top-left corner. The buttons are labeled: "Asphalt Road", "Gravel Road", "Primary Rec Trail", "Secondary Rec Trail", "Pipeline Trail", "HV Line Trail", and "Machine Trail". The buttons are arranged in two columns, with "Machine Trail" being the only button on the left side.

Hydrology POIs: Records the occurrence and location of various Hydrology POIs (if found).

Hydrology POIs

Vernal Pool	Pond
Watercourse <50cm	Watercourse >50cm
Ephemeral Stream	Spring/Seep
Treed or Shrub Swamp Edge	Marsh Edge
Other Wetland Edge	Riparian Zone

Hydrology Paths: Records line transects for Hydrology POIs when needed. Water (Left) or Water (Right) is chosen to indicate which side the water feature is in relation to the direction of travel.

Hydrology Paths

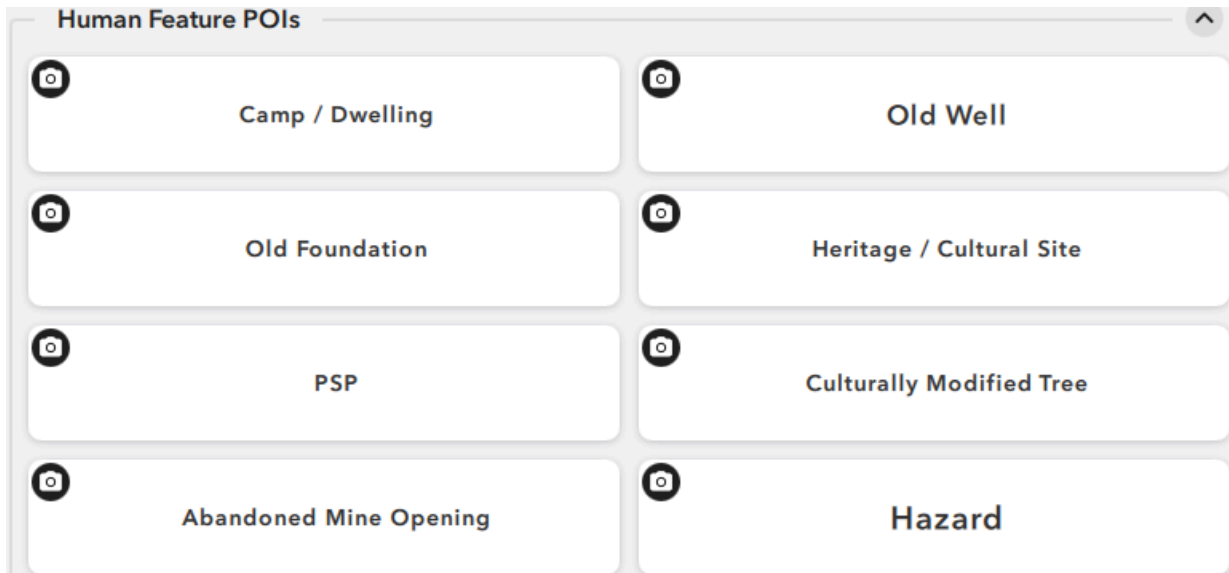
Water (Left)	Water (Right)
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Geology POIs: Records the occurrence and location of various Geology POIs (if found).

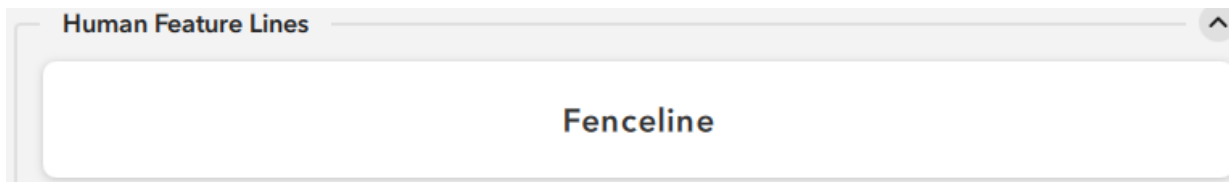
Geology POIs

Rock Outcrop	Boulder Field
Ravine	Karst / Sinkhole
Talus	

Human Features POIs: Records the occurrence and location of various Human Feature POIs (if found).



Human Feature Lines: Records the occurrence and location of Fencelines (if found).



Boundary Lines: Records the occurrence and location of Boundary lines (if found).

