

Nova Scotia Interpreted Forest Inventory - Current Forest Data **(Web Version- 2021)**

Type: Shapefile

Description/Source

Layers containing polygons for all lands in the province as described in the [Photo Interpretation Specifications](#). Includes water, forested and non-forested areas with additional identification of freshwater wetlands and coastal habitat area classifications.

The original source data was interpreted and digitized from 1:10,000 air photos into a base layer containing Nova Scotia Geomatics Centre's lakes, rivers and shoreline, in addition to buffered areas (paved roads and railways).

Starting with 2007 photography, the scale of the photographs changed from 1:10,000 to 1:12,500 and the analog photos were digitally scanned and orthorectified so that editing/updating of forest stands could be done using ArcGIS.

Note: Areas of harvests and partial cuts updated from satellite imagery are locationally correct but may not have an exact representation of the boundaries due to pixel size. These areas have been entered on the interim between photo interpretation cycles to allow for on-going forestry analysis. The boundaries will be refined as photo re-interpretation occurs. (Only applicable to **Halifax East** in the current interpretation cycle).

Inventory Types:

The method of updating the forest inventory is currently in a transitional state, with most areas of the province moved towards a new format and a small area being partially updated as a result of additional available information and still in the legacy format, awaiting updates.

A brief description of the inventory format/structures currently in place:

Mapsheet Inventory (MI)

The "original" format as described above (pre-2007 photography). This version of the inventory was based on 1:10,000 mapsheets units and hardcopy aerial photography.

Counties currently in this format: **Halifax East**

Eunit Inventory (EI)

Beginning with the 2007 photography, a change to seamless mapping in the GIS has led to the creation of 181 new "Editing Units". Editing Units eliminate the manual effort of graphically edge matching Map Sheets, improving the efficiency of interpretation and editing. An editing unit consists of several of the old 1:10,000 scale Map Sheets, both partial and whole. The boundaries are comprised of significant physical features on the ground that will rarely deviate, primarily roads, but in some cases rivers, lakes, transmission lines, etc.

Stands in Editing Units will be identified by a stand ID (ID_EFOREST), comprised of the Editing Unit number concatenated with a unique number within the Editing unit (e.g. stand 123 in Editing Unit 23 is identified as 023-00123). This is a change from the previous approach where a stand number was unique to a Map Sheet. With this new process the stand number will be unique to the Editing Unit, NOT the mapsheet.

Comments

When using the forest data for totaling areas, polygons coded with a LNDCLASS code of 95 (offshore non-land), should be removed as these are not considered a part of the province's land base. Further, if totaling all inland waters the polygons coded with a FORNON code of 77 (stand# 9003 - inland water) or a FORNON code of 75 (lake wetland) must be included.

Attribute Descriptions

Shapefile fields contain forestry attribute data for each forest/non-forest polygon. These attributes are a combination of interpreted data and calculated items. The attribute description, length and type differ slightly between [MI](#) and [EI](#) format. Those differences are noted in [red](#) below.

Historical Notes:

Prior to 1998 photography all forested stands were given a site capability based on the softwood site capability. With re-interpretation beginning on Cape Breton Island, any stand where tolerant hardwood species comprises 70% or more of the stand, by basal area, will be assigned a hardwood site capability.

Field Name	Description	Length	Type (M, WI)	Type (EI)
FOREST_	Format conversion artifact. Not a unique identifier, not currently in use	11	I	D
FOREST_ID	Same as STAND_	11	I	D
MAPSTAND_	Unique identifier including the MAPSHEET and STAND_ or EUNIT and STAND_	13	C	C
WETLND	Not currently in use	4	I	I
LNDCLASS	Forest, non-forest, and island groupings. A redefinition of the first two characters of the FOR_NON item.	2	I	I
FORNON	Code indicating forest/non-forest grouping	2	I	I
SPECIES	Up to 4 forest tree species and their percentages in order of percentage values, total percentage 10 (100%), percentage values enter as 01 - 10% 02 - 20%10 - 100%	16	C	C
CRNCL	First story crown closure percentage	2	I	I
HEIGHT	First story height in meters	2	I	I
ALLHEIGHT	Flag for uneven aged stands '*'	2	C	C
SS_SPECIES	Second story species group	2	C	C
SS_CRNCL	Second story crown closure percentage	2	I	I
SS_HEIGHT	Second story height in meters	2	I	I
SITE_SW	Softwood metric land capability m ³ /ha/year	2	I	I
SITE_HW	Hardwood metric land capability m ³ /ha/year	2	I	I
AVDI_SW	Average total diameter softwood cm	2	I	I
AVDI_HW	Average total diameter hardwood cm	2	I	I
AVDI	Average total diameter cm	2	I	I
FLDCHK	Field check code	4	I	I
COVER-TYPE	Cover type classification based on basal area	1	I	I
PHOTOYR	Year forest attributes collected. 0 - depletion from satellite	4	I	I
HECTARES	Stand area in hectares	4	F	D
SWDBA	1st story softwood basal area m ² /ha	4	F	I
HWDBA	1st story hardwood basal area m ² /ha	4	F	I
TOTBA	1st story total basal area sum of SWDBA and HWDBA m ² /ha	4	F	I
SWMRVOL	1st story softwood merchantable volume m ³ /ha	4	F	I
HWMRVOL	1st story hardwood merchantable volume m ³ /ha	4	F	I
TOTMRVOL	1st story total merchantable volume sum of SWMRVOL and HWMRVOL m ³ /ha	4	F	I
SS_SWBA	2nd story softwood basal area m ² /ha	4	F	I
SS_HWBA	2nd story hardwood basal area m ² /ha	4	F	I
SS_TOTBA	2nd story total basal area sum of SS_SWBA and S_HWBA m ² /ha	4	F	I
TOTSTDBA	Stand total basal area sum of TOTBA and SS_TOTBA m ² /ha	4	F	I
SSSWMRVOL	2nd story softwood merchantable volume m ³ /ha	4	F	I
SSHWMRVOL	2nd story hardwood merchantable volume m ³ /ha	4	F	I
SSTOTMRVOL	2nd story total merchantable volume sum of SSSWMRVOL and SSHWMRVOL m ³ /ha	4	F	I

TOTSTDMRVOL	Stand total merchantable volume sum of TOTMRVOL and SSTOTMRVOL m3/ha	4	F	I
MAPSHEET	Mapsheet / tile name. Beginning character indicates the county	8	C	C
STAND_	Unique stand number within the MAPSHEET or within the EUNIT (exception of 9000's) 9000 - Road corridors 9001 - Rail corridors 9002 - Powerline corridors 9003 - Inland water (does not apply to lake wetlands 9005 - Abandoned rail corridors 9006 – Ocean (does not apply to coastal habitat)	5	I	I
FOR_NON	Forest/non-forest - combination of LNDCLASS and FORNON	4	I	I
SP1	Main species type	2	C	C
SP1P	Main species percentage 1-10	2	I	I
SP2	Second species type	2	C	C
SP2P	Second species percentage 1-10	2	I	I
SP3	Third species type	2	C	C
SP3P	Third species percentage 1-10	2	I	I
SP4	Fourth species type	2	C	C
SP4P	Fourth species percentage 1-10	2	I	I
WETCLASS	*Wet forest stand indicator - a value of 1 indicates wet land/poor soil drainage beneath at least part of a forest stand for a significant portion of the growing season	1	n/a	I
WC_TYPE	*Wetland / coastal habitat type	2	n/a	C
EUNIT	*Editing unit number	3	n/a	I
ESTAND	*A unique number for a polygon within the editing unit	5	n/a	I
ID_EFOREST	*Combination of EUNIT & ESTAND for a unique stand number within the province	9	n/a	C

C – Character field, I – Integer Field, D – Double Field

* - New fields beginning 2007 photo year

Note: FOR_NON is a four-digit code used to distinguish between forest/non-forest types. The first two digits describe LNDCLASS, the second two digits describe the forest/non-forest type.

Coding used in attribute fields listed above is as follows:

Field Name: LNDCLASS

95	Offshore Non - Land (Ocean, Coastal Habitat Areas, etc.)
96	Lake islands
97	Offshore islands
98	Mainland non forested
99	Mainland forested

Note: An island is defined as a piece of land surrounded completely by water and not attached to mainland by any natural or man-made structure which provides full time access.

Field name: FORNON

	Forested
0	Natural stand - any forested stand which has not been treated silviculturally and does not qualify under clear cut, partial cut, burn, old field, wind throw, alders, brush or dead categories.
1	Treated - treatment not classified, an area where silviculture activity has occurred, but the actual treatment is not identified in field data from other Department programs. This treatment excludes stands that are defined by other forest codes, such as plantations, Christmas trees, sugar bush, etc.
2	Burn - Any stand that has been destroyed by fire leaving less than 25% crown closure. In cases of partial burn, the remaining live stand is to be categorized and not classed as burn.
3	Christmas trees - any stand being used for Christmas tree cultivation. Former Christmas tree stands greater than 3 meters will be considered natural stands.
4	Sugar bush - Any stand being used to produce maple sugar products. The stand may or may not have been silviculturally treated. (Discontinued 2014 photography)
5	Old field - Any field that has an indication of merchantable tree species growing in with less than 25% crown closure. All normal attributes are assigned to existing commercial tree material as the main story.
6	Wind throw - Any stand where more than 25% of the trees have been pushed over to more than 45 degrees from the vertical by wind action. All normal attributes are assigned to live tree material as the main story.
7	Dead - Any stand that contains dead trees greater than 5 meters due to any cause which contains less than 25% crown closure of live residual material (or 75% or more of dead material) and which contains evidence of dead material either standing or laying on the ground with little or no evidence of regeneration. If a portion of the stand with dead material is contiguous then a new stand can be created if the area is a hectare or more in size. Beginning with 2002 photography, species, crown closure and height were assigned to the live residual material.
8	Dead - 1 - Any stand that contains dead trees greater than 5 meters due to any cause which contains 25-50% crown closure of live residual material (or 50 to 74% of dead material) and which contains evidence of dead material either standing or laying on the ground with little or no evidence of regeneration. Usually the dead material is spread throughout the stand. If a portion of the stand with dead material is contiguous then a new stand can be created if the area is a hectare or more in size. All normal attributes are assigned to the live residual material.
9	Dead - 2 - Any stand that contains dead trees greater than 5 meters due to any cause and which contains 51-75% crown closure of live residual material (or 25 to 49 % of dead material) and which contains evidence of dead material either standing or laying on the ground with little or no evidence of regeneration. If a portion of the stand with dead material is contiguous then a new stand can be created if the area is a hectare or more in size. All normal attributes are assigned to the live residual material. Stands with less than 15% of dead material are to be classed as a natural forest stand.
10	Research stand - Stands treated in some manner primarily to provide data on growth, etc. which contain sample plots for evaluation of response rather than intended as operational treatment.
11	Seed orchard & seed production area - Any stands designated by the Department as an area reserved for seed production.
12	Treated stand - treatment classified-an area where silviculture activity has occurred, and the actual treatment has been identified primarily by field data from other Department programs. This treatment excludes stands that are defined by other forest codes, such as plantations, Christmas trees, sugar bush etc.
13	Dead - 3 - Any stand that contains 26-50% of equivalent crown closure of dead material and which contains regeneration which will be categorized in the stand classification section. Equivalent crown closure being an estimate of what the crown closure would be if the dead material was alive.
14	Dead - 4 - Any stand that contains 51-75% of equivalent crown closure of dead material and which contains regeneration which will be categorized in the stand classification section. Equivalent crown closure being an estimate of what the crown closure would be if the dead material was healthy, exclusive of regeneration. Residual live material is classified in the second story and the crown closure is for the live material only.
15	Dead - 5 - Any stand that contains 75+% of equivalent crown closure of dead material and which contains regeneration which will be categorized in stand classification attributes. Equivalent crown closure being an estimate of what the crown closure would be if the dead material was healthy, exclusive of regeneration. Residual live material is classified in the second story and the crown closure is for the live material only.
16	Moose Meadow - Any stand solely found in the Cape Breton highlands with the appearance of old field returning to forest. Generally white spruce will be the only commercial species present with a crown closure less than 25%. All normal attributes are assigned to the existing commercial tree species as the main story. There can be no second story.

20	Plantation – A group of trees artificially established by direct seeding or setting out seedlings, transplants or cuttings.
33	Brush - Any area containing less than 25% merchantable tree cover and contains non-merchantable woody plants consisting of at least 25% cover. All normal attributes are assigned to existing commercial tree material as the main story. Replaces non-forested class, (FORNON 83), December 1998.
38	Alders less than 75% cover - Any forested area containing alders that compose less than 75% crown closure. Commercial tree cover must be less than 25 % crown closure. All normal attributes are assigned to existing commercial tree material as the main story. Replaces non-forested class, (FORNON 88), December 1998.
39	Alders 75% or greater cover - Any forested area containing alders that compose 75% or more crown closure. Commercial tree cover must be less than 25 % crown closure. All normal attributes are assigned to existing commercial tree material as the main story. Replaces non-forested class, (FORNON 89), December 1998.
60	Clear cut - Any stand that has been completely cut and any residuals make up less than 25% crown closure and with little or no indication of regeneration. Site values are retained. Residual live commercial material is described as the second story.
61	Partial depletion verified - Any stand that has been cut and residuals make up 25% or more of the crown closure on the site. Site values are retained.
62	Partial Cut - Any stand that has been cut and has been identified by satellite imagery and not yet verified by photo interpretation. Site values are retained.
	Non-Forested
70	Wetlands general - Any wet area, not identified as a lake, river or stream, excluding open and treed bogs, and beaver flowage. (In the Interpreted Forest Inventory Database, wetland complexes may include open and treed bogs).
71	Beaver flowage - Any area that is or has been occupied by beavers. No Forest information is provided for these areas (i.e. site, height, species, crown closure) as this designation refers only to the water flowage area or may be for grassy areas created by the beaver dam.
72	Open bogs - Any area consisting primarily of ericaceous plants, sphagnum or other mosses with less than 25% live tree cover and poor drainage and wet all year. Indicator plants: Bog Rosemary, Leather Leaf, Labrador Tea, Cranberry and Lambkill. Ericaceous plants being plants in or related to the heather family (ericaceae). They are typically plants indicative of acid soils, bogs and woodlands.
73	Treed bogs - Any area consisting primarily of ericaceous plants, sphagnum or other mosses with stunted softwood or hardwood species having 25% or more live tree cover.
74	Ocean Wetland - Ocean water portion of a wetland.
75	Wetland In Lake - Lake water portion of a wetland.
76	Cliffs, dunes, coastal rocks – the area of land between the high tide mark and the forest or non-forest stand and consists of cliffs (a high steep face of a rocky or soil mass), dunes (a ridge or hill created by windblown sand), or coastal rock (a toque shaped or lobate area of bedrock, may or may not extend into the water).
77	Inland water - May include lakes, rivers, reservoirs, canals and ponds (STAND_ value: 9003)
78	Ocean - Any area of salt water beyond harbour mouths as indicated by virtual boundaries assigned as part of original interpretation. (STAND_ value of 9006)
83	Brush - Any area containing less than 25% merchantable tree cover and contains non-merchantable woody plants consisting of at least 25% cover. Being replaced with forested class, (FORNON 33) December 1998.
84	Rock barren - Any area covered by at least 50% exposed rock outcrop and/or boulders with less than 25% live tree cover. (Boulders being rock fragments over 60cm in diameter.)
85	Barren - Any area of less than 25% live tree cover containing "ericaceous" vegetation with less than 50% rock out crops and/or boulder cover and less than 50% other woody plant cover. Area is dry and firm in summer. Indicator plants: Bearberry, Rhodora, Blueberry, Huckleberry and Lambkill.
86	Agriculture - Any hay field, pasture, tilled crop, or orchard which contains no merchantable tree species.

87	<p>Urban - Any area used primarily as residential, industrial and related structures such as streets, sidewalks, parking lots, etc. Also includes house lots in wooded areas outside of towns and villages which are not adjacent to agricultural land and those lots surrounded by forest will have to be delineated according to these specifications. In cases of ribbon development along some roads then a strip may be delineated along the road and coded accordingly. Obvious urban area within agricultural land will be delineated and coded accordingly. Ribbon development pertains to the unplanned rural housing that occurs along roads.</p> <p>Categories that will be classified as urban are bunkers, golf courses, picnic parks, campgrounds, drive in theaters, auto salvage yards, power stations, water treatment areas, lagoons sewer/water, cemeteries, light houses, ball parks, etc.</p>
88	Alders less than 75% cover - Any forested area containing alders that compose less than 75% crown closure. Dry land only. Being replaced with forested class, (FORNON 38), December 1998).
89	Alders 75% or greater cover - Any forested area containing alders that compose 75% or more crown closure. Dry land only. Being replaced with forested class, (FORNON 39), December 1998.
91	Blueberries - Areas that appear to have been or are being used for commercial blueberry production.
92	Miscellaneous - Any non-forest land not covered by the listed FORNON codes.
93	Sanitary land fill - Areas used by municipalities for disposal of garbage by means of burying the material not usually included in an Urban area.
94	Beach - That area of land between normal water line and the forest or non-forest category (i.e. bog, etc.). Area showing due to abnormally low water is not considered to be part of a beach.
95	Gravel pit - Any area either active or non-active used for the purpose of extracting gravel.
96	Pipeline corridor – A defined linear feature of a gas or oil pipeline route.
97	Powerline corridor – A powerline corridor identifiable on a 1:12,500 scale aerial photograph. (STAND_ value 9002)
98	Road corridor - Generated polygons of varying widths for paved and two-lane roads. (STAND_ value 9000)
99	Rail corridor - Generated 20 meter polygons around active and abandoned rail lines (STAND_ values 9001 & 9005)

Field Names: SPECIES, SP1, SP2, SP3, SP4

<i>Softwood Species</i>	
AP	Austrian Pine
JP	Jack Pine
RP	Red Pine
SP	Scots Pine
WP	White Pine
BF	Balsam Fir
DF	Douglas Fir
BS	Black Spruce
NS	Norway Spruce
RS	Red Spruce
SS	Sitka Spruce
WS	White Spruce
XS	Red & Black Spruce - mixed stand, not a hybrid ***
EC	Eastern Cedar (white)
EH	Eastern Hemlock
EL	European Larch
JL	Japanese Larch
TL	Eastern Larch
WL	Western Larch
XL	Hybrid Larch
OS	Other softwood***
US	Unclassified softwood
<i>Hardwood Species</i>	
TA	Aspen - Large Tooth and Trembling
AS	Ash (Black & White)
BC	Black Cherry
BE	Beech
BP	Balsam Poplar
WE	White Elm
GB	Gray Birch
YB	Yellow Birch
WB	White Birch
IW	Ironwood
RO	Oak
RM	Red Maple

SM	Sugar Maple
TH	Tolerant hardwood - combination of SM, YB, BE, RO ***
IH	Intolerant hardwood - combination of RM, WB ***
OH	Other hardwood ***
UH	Unclassified hardwood
UC	Unclassified species
WI	Willow

Note: *** On-going interpretation of stands will see species types IH, TH, OH, OS, and XS which represent more than one species, recoded to indicate the specific species and their percentages.

Field name: SS_SPECIES

S	80% + softwood by volume
SH	70-50% softwood by volume
HS	40-20% softwood by volume
H	less than 20% softwood by volume

Field Names: SITE_SW, SITE_HW

	Softwood: Values of 1 - 13 indicating cubic meters per hectare, per year.
0	Less than 0.5 cubic meters per hectare, per year.
1	0.6 to 1.5 cubic meters per hectare, per year.
2	1.6 to 2.5 cubic meters per hectare, per year.
3	2.6 to 3.5 cubic meters per hectare, per year.
4	3.6 to 4.5 cubic meters per hectare, per year.
5	4.6 to 5.5 cubic meters per hectare, per year.
6	5.6 to 6.5 cubic meters per hectare, per year.
7	6.6 to 7.5 cubic meters per hectare, per year.
8	7.6 to 8.5 cubic meters per hectare, per year.
9	8.6 to 9.5 cubic meters per hectare, per year.
10	9.6 to 10.5 cubic meters per hectare, per year.
11	10.6 to 11.5 cubic meters per hectare, per year.
12	11.6 to 12.5 cubic meters per hectare, per year.
13	12.6 to 13.5 cubic meters per hectare, per year.

	Hardwood: Values 1 - 5 indicating cubic meters per hectare, per year.
0	Less than 0.5 cubic meters per hectare, per year.
1	0.5 to 1.4 cubic meters per hectare, per year.
2	1.5 to 2.4 cubic meters per hectare, per year.
3	2.5 to 3.4 cubic meters per hectare, per year.
4	3.5 to 4.4 cubic meters per hectare, per year.
5	4.5 to 5.5 cubic meters per hectare, per year.

Field Name: MATURITY

This is a restricted attribute for internal use.

For Species: WS, JP, IH, RM, WB, BF, TA, TL, GB totaling 60% or greater

4	Pole	40 to 79 years of age or less than 40 years of age with a volume greater than 60 cubic meters per hectare.
5	Mature	60 to 70 years of age.
6	Overmature	Greater than 70 years of age.

For Species: WP, RP, YB, TH, AS, SM, BE, XS, EH, RO, BS, RS, NS, SP, WE totaling 50% or greater

4	Pole	40 to 79 years of age or less than 40 years of age with a volume greater than 60 cubic meters per hectare.
5	Mature	80 to 150 years of age.
6	Overmature	Greater than 150 years of age.

7	Uneven	Any stand coded as 'Allheight'
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Field Name: COVER_TYPE

0		For all forest stands with FORNON less than 70
2	Softwood	75% softwood species by basal area
5	Mixedwood	74-26% softwood species by basal area
8	Hardwood	less than 25% softwood species by basal area

- Note:
- 1) For stands to have a cover-type, they must have a first story species.
 - 2) Cover-type is based on total stand basal area.
 - 3) Plantations should use first story basal area only.

Field Name: FLDCHK

First Field	Group identification codes and have checked for species and average stand height of co-dominant tree.
Second Field	Group identification code and have checked for basal area.
Third Field	Group identification code and have checked for age and site.
Fourth Field	Field verification method: 0 for ocular estimate. Group for identification code for measured values. For this field to be filled in, at least one of the first three fields must have data.

1	Photo Interpretation Staff
2	Forest Inventory Field Staff
3	Mensuration Field Staff
4	Reforestation & Silviculture Division Field Staff
5	Operations Field Staff
6	Company Field Staff
7	Consultant
8	Formal field check according to Photo Interpretation Manual
9	Others

For Example: If Photo Interpretation staff ocularly estimated only the site and age of stand, the field check code would read 1010. If the site and age were measured, then the code would be 1011.

Field Name: WC_TYPE

B	Coastal Beach
C	Coastal Cliff Face
D	Coastal Dune
R	Coastal/Exposed Rock
RV	Coastal/Exposed Rock-Vegetated
P	Saline Pond
S	Salt Marsh
LW	Lake Wetland
WG	Wetlands General
U	Undetermined