

Forest Inventory - Current Forest Data

(Web Version- 2016)

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 fresh water 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).

In 2007, 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.

Updates to this layer have been completed by re-interpretation of new photography, digital satellite images, field silvicultural activities, other field data and data from the wetland interpretation project.

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.

Inventory Types:

The method of updating the forest inventory is currently in a transitional state, with some areas of the province moving towards a new format, others being partially updated as a result of additional information being made available and still other areas 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). This version of the inventory was based on 1:10,000 mapsheets units and hardcopy aerial photography.

Counties currently in this format: **Colchester, Cumberland, Halifax East**

Western Inventory (WI)

An update of the forest inventory with harvest areas has been completed for crown lands in the western end of the province. The area starts at highway 101, running west through to Yarmouth County and includes the 2012 Bowater purchase.

The harvest areas were determined using 2010-2012 orthophotographs, field data, Bowater Forest Resource Inventory and silvicultural data, satellite images and 2006 B&W orthophotographs. The harvest polygons were graphically created based on the latest photography where available. Harvested stands that were identified with the later satellite imagery will not have precise boundaries, as mentioned above.

The stands were embedded into the most recent forest inventory with minimal correction of sliver polygons. The existing forest inventory was not spatially updated to match the latest photography.

The forest stands for these harvest areas have had the photo year updated with the best estimate of the cut year. The county forest inventory shapefiles are in the standard forest format. For this project harvests were considered to be clear cuts, seed tree or variable retention (i.e. FOR_NON 9960). Stands that were harvested and had a change of use i.e. forested to urban have been labeled as Miscellaneous – non forested (FOR_NON 9892).

The base forest inventory to which these updates have been added is as follows:

County	14m+	Current Photography	
	stands	<14m stands	Last Year of Satellite Updates
Annapolis	1992	2001-2002	2003-2005
Kings	1992	2002	2003-2005
Queens	1992	2000-2001	2003-2005
Lunenburg	1992	2001-2002	2003-2005
Digby	1988	2000-2001	2003-2005
Yarmouth	1988	2000-2001	2003-2005
Shelburne	1988	2000-2001	2003-2005
Hants	1992	2003-2004	2003-2005
Hfxwest	1992	2002-2003-2004	2003-2005
14m+ stands	Year of photography for stands 14+ meters that were not re-interpreted with the latest photography		

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.

Counties currently available in this format: **Antigonish, Guysborough, Pictou, St. Marys, Cape Breton, Inverness, Richmond, Victoria.**

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 will be identical for **MI** and **WI**, however there are some variations in the **EI** format. Those differences are noted in red below.

Historical Notes:

Prior to 1999 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 (MI, 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 load capability m ³ /ha/year	2	I	I
SITE_HW	Hardwood metric load capability m ³ /ha/year	2	I	I
AVDI_SW	Average total diameter hardwood cm	2	I	I
AVDI_HW	Average total diameter softwood 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 m ³ /ha	4	F	I
MAPSHEET	Mapsheets / 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 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 completely surrounded 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. The stand must contain trees that are capable of reaching at least 3 m in height at maturity.
1	Treated - treatment not classified, not Christmas trees. An area where silviculture activity has been identified from photos, but field data is not yet available.
2	Burn - any stand that has been completely 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.
4	Sugar bush - any stand being used to produce maple sugar products. The stand may or may not have been silviculturally treated.
5	Old field - any field that has an indication of merchantable tree species growing in with less than 25% crown closure and less than 1.0 meters in height.
6	Wind throw - any stand where trees have been pushed over to more than 45 degrees from the vertical by wind action.
7	Dead - any stand that contains dead trees due to any cause and which contains less than 25% crown closure of live residual material and also contains evidence of dead material either standing or laying on the ground with little or no evidence of regeneration.
8	Dead - 1 - any stand that contains dead trees due to any cause and has a 26-50% crown closure of live residual material and also contains evidence of dead material either standing or laying on the ground with little or no evidence of regeneration.

9	Dead - 2 - any stand that contains dead trees due to any cause and has a 51-100% crown closure of live residual material and which contains evidence of dead material either standing or laying on the ground with little or no evidence of regeneration.
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, not including plantations, harvests, Christmas trees or sugarbush.
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 alive.
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 section. Equivalent crown closure being an estimate of what the crown closure would be if the dead material was alive. The live portion of the stand is to be classified as any forest stand as per the specifications.
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. 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. 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. 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.
61	Partial depletion verified - any stand that has been cut and Hardwood residuals make up 25% or more of the crown closure on the site, identified by photo Interpreters or field data.
62	Partial depletion not verified - a temporary code given to a stand identified from satellite imagery as a partial cut. Further verification from photo interpretation or field data required for residuals.
	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 forestry data, wetland complexes may include open and treed bogs)
71	Beaver flowage - an area that is or has been occupied by beavers
72	Open bogs - any area consisting primarily of ericaceous plants, sphagnum or other mosses with less than 25% live tree cover and poor drainage, (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 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	Coastal habitat areas - any area that has been defined as a wetland that lies in the ocean
75	Lake wetland - any area that has been defined as a wetland that lies within freshwater (lake or river)
76	Cliffs, dunes, coastal rocks – the area of land between the high tide mark and the forest or non-forest stand which consists of cliffs (a high steep face of a rocky or soil mass), dunes (a ridge or hill created by wind blown sand), or coastal rock (a toque shaped or lobate area of bedrock, may or may not extend into the water).
77	Inland water - inland water bodies which may include lakes, rivers, reservoirs, canals and ponds (STAND_ value: 9003)
78	Ocean (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 species.
87	Urban - any area used primarily as residential or 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. In cases of ribbon development along some roads, a strip may be delineated along the road and classed as urban. Obvious urban area within agricultural land will be delineated and coded accordingly. 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.
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 blueberry production.
92	Miscellaneous - any area of non-forest not covered by any of the other non-forest categories, i.e. old mill site, rifle range, tower site, observation site, lake shore bottom (where unable to give forest/non-forest code), quarry, mining activity, wharf, pier, causeway, dams, unidentified objects, airstrips, etc.
93	Sanitary land fill - areas used by municipalities for disposal of garbage by means of burying the material.
94	Beach - that area of land between normal water line and the forest or non-forest category (i.e. bog, etc.). Areas exposed due to abnormally low water levels are 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 25 meter buffer around a defined linear feature of a gas or oil pipeline route defining limited or restricted use lands.
97	Powerline corridor – A corridor of land with limited use due to powerlines, as defined from photography (STAND_ value 9002)
98	Road corridor - Generated polygons of varying widths for paved roads, based on road classes. (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.

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
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- 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 actually 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