

NOVA SCOTIA

Ecological Landscape Analysis, by Ecodistrict

(2023 Update)



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Notes on the 2023 Update

Ecological Landscape Analysis, by Ecodistrict:

The 2023 ELA Update supplements previous ELA documents (produced in 2015 and 2019). It provides updates to figures and tables of the Key Indicator measures used to describe and assess landscapes in Nova Scotia.

The 2023 Update is made up of two parts:

- **an introductory document** that lists key indicators by ecodistrict, province-wide. And, it provides background information on key indicators
- **38 separate update reports**—one for each of the ecodistricts. Each report lists key indicators for that ecodistrict, by element and by potential natural vegetation

Indicators provide a science-based tool to measure, assess and report on the state of the forest landscape. They also help improve discussions and decision-making through science-based explanations of trends—showing where progress has been made and where improvement is needed.

This 2023 Update provides woodlot owners and licensees a current snapshot of the landscape features that occupy each ecodistrict. It allows for the coordination of planning among diverse ownerships, and improved direction and efficiency for operating plans.

The previous ELA reports used data from the 2007 edition of the Ecological Landscape Classification (ELC). The 2023 Update uses data from the 2015 ELC (See novascotia.ca/natr/forestry/ecological/ecolandclass.asp for more information).

In the years since the 2007 ELC was released, improved technology, and additional fieldwork, staff input and knowledge have been gained—resulting in changes to some of the ecodistrict boundaries shown in the 2015 ELC. Although improving accuracy of boundaries is positive, these changes also make it difficult to identify trends in ecodistricts 100, 210, 310, 320, and 810.

Information sources and statistics (benchmark dates) include:

- Ecological Landscape Classification database (2015)
- Crown Lands Forest Model landbase classification (2022 v.3)
- Old-Growth Forest Policy Layer (June 2022)
- Protected Areas and Pending Protected Areas (July 13, 2021)
- Eastern Habitat Joint Venture (January 2020)

I. Reserves

Protected Area Representation

Parks and protected areas play an important role in conserving and protecting biodiversity—this includes wildlife, natural features and processes. Our protected lands also lessen the effects of climate change by capturing and storing carbon dioxide and producing oxygen, while maintaining clean air and drinking water.

Through research and education, our parks and protected areas help us understand how to work with nature's processes. While resource extraction is not permitted in protected areas, they allow us to compare natural areas with areas we use and develop intensively, and provide a benchmark to determine how well we are managing our natural landscape. This means it is essential to have representation both from across various vegetation types and various enduring features.

Our natural landscape and cultural heritage are protected by both **legislation** and **policy** in areas that occur on both private and Crown land.

Provincial protected areas under legal protection fall under three different designations:

Wilderness areas protect nature and support wilderness recreation, hunting, sport fishing, trapping, and other uses.

Nature reserves offer the highest level of protection for unique or rare species or features. The reserves are mostly used for education and research.

Provincial parks and reserves protect nature and support a wide range of heritage values and opportunities for outdoor recreation, nature-based education, and tourism.

Outside of provincially controlled lands—there are other areas in the province that count as legally protected. These include national parks, national wildlife areas, lands owned by land trust organizations, and conservation easement lands.

Old-Growth Forest Policy

While protected areas cover all land types across the landscape with various owners through legislation, the Old-Growth Forest Policy is a tool used to protect through policy forested lands that fall within Crown land only.

However, “old-growth forest” and “old-growth forest restoration areas” are also within protected areas, as it is important to be able to understand the types of forest characteristics and vegetation types that are included and where there are gaps in old growth.

Old-growth forests are defined as conceptually late-successional forest ecosystems that evolve through long periods of forest development involving low to moderate disturbances that allow understory trees to develop and grow into mature trees, creating uneven-aged, multi-species and multi-layered forests.

The 2022 Old-Growth Forest Policy takes an ecological forestry approach. It prioritizes the protection of biodiversity and enhancement of old-growth forest ecosystems. This incorporates recent tools and scientific research and reconsiders definitions of old-growth forests by implementing a range of ages for specific forest groups and types.

Eastern Habitat Joint Venture Sites

Eastern Habitat Joint Venture (EHJV) formed in 1989 in Canada's eastern provinces (Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador) with the goal of conserving important habitat for birds and other wildlife. The EHJV is a cooperative, regional partnership of organizations under the North American Waterfowl Management Plan, whose aim is to conserve high-priority wetland and associated upland habitat birds using a science-based and partnership approach. The Eastern Habitat Joint Venture is one of 25 Joint Ventures in Canada and the United States, with dozens more Regional Partnerships in Mexico.

Special Management Practices

Natural Resources and Renewables' Ecosystem and Habitats program works with forestry and agricultural communities to protect and enhance wildlife habitat. The program monitors trends in provincial wildlife habitats, maintains an inventory of the province's significant wildlife habitats, recommends management actions to the appropriate agencies, and supports enforcement and development of guidelines and regulations. Special management practices (SMPs) are put into place to encourage a species recovery path, self-sustaining population, or procure future habitats. Some of these special management practices require either no harvesting or restricted harvesting in an identified zone. To show the amount of land in Nova Scotia that is set aside for biodiversity conservation, the ELA 2023 Update includes all the "no harvest" SMPs. These consist of lynx buffers, special sites buffers, coastal plains flora, and moose buffers. For more information on SMPs, please visit novascotia.ca/natr/wildlife/habitats/terrestrial/

Table 1 - Reserve Themes by Ecodistrict

Ecodistrict	Total Area (ha)	Legally Protected Areas (ha)		Policy Reserved Areas *** (ha)			Total Reserved Area	
		Designated	Pending	Old-Growth Forest Policy*	Eastern Habitat Joint Venture Sites	Special Management Practices **	(ha)	(% of Total Area)
100 Northern Plateau	41,571	33,552	848	0	0	605	35,005	84.2%
210 Cape Breton Highlands	186,810	81,552	6,523	1,150	0	13,102	102,327	54.8%
220 Victoria Lowlands	18,410	5,162	67	153	0	116	5,498	29.9%
310 Cape Breton Hills	370,107	70,498	8,597	3,760	131	6,341	89,327	24.1%
320 Inverness Lowlands	48,647	717	247	20	0	31	1,015	2.1%
330 Pictou Antigonish Highlands	133,245	7,805	693	2,092	0	1,934	12,524	6.7%
340 Cobequid Hills	186,606	13,172	6,073	108	0	2,402	21,755	11.7%
350 Cobequid Slopes	37,084	1,067	2,103	992	0	554	4,716	12.7%
360 Mulgrave Plateau	102,825	7,879	4,138	588	0	1,427	14,032	13.6%
370 St Mary's River	85,180	2,621	1,109	3,092	0	3,112	9,934	11.7%
380 Central Uplands	129,097	1,533	8,588	1,262	0	47	11,430	8.9%
410 Rawdon Wittenburg Hills	61,534	5	1,508	320	0	0	1,833	3.0%
430 Eastern Granite Uplands	60,165	29,742	759	50	0	957	31,508	52.4%
440 Eastern Interior	457,516	50,178	8,381	4,383	5	10,093	73,040	16.0%
450 Governor Lake	63,300	950	0	374	0	646	1,970	3.1%
510 Bras d'Or Lowlands	280,046	8,636	1,161	1,925	324	369	12,415	4.4%
520 St Georges Bay	89,341	424	453	425	10	351	1,663	2.0%
530 Northumberland Lowlands	285,079	5,563	913	927	10	1,154	8,567	3.0%
540 Cumberland Hills	90,977	3,865	119	127	10	641	4,762	5.2%
550 Cumberland Marshes	18,254	2,328	0	25	160	80	2,593	14.2%
560 Chignecto Ridges	74,306	22,956	0	74	0	2,404	25,434	43.2%
610 Annapolis Valley	92,829	149	0	51	97	0	297	0.3%
620 Minas Lowlands	43,480	279	56	167	1	123	626	1.4%
630 Central Lowlands	270,037	3,833	5,311	2,439	9	20	11,612	4.3%
710 Valley Slope	88,465	505	0	435	0	4	944	1.1%
720 South Mountain	455,154	110,891	1,507	682	8	3,228	116,316	25.6%
730 Clare	191,592	12,867	4	191	13	643	13,718	7.2%

(Table 1, cont'd)

Ecodistrict	Total Area (ha)	Legally Protected Areas (ha)		Policy Reserved Areas (ha)			Total Reserve Area	
		Designated	Pending	Old-Growth Forest Policy*	Eastern Habitat Joint Venture Sites	Special Management Practices **	(ha)	(% of Total Area)
740 LaHave Drumlins	275,031	22,364	371	329	0	478	23,542	8.6%
750 Rossignol	117,953	14,738	2,876	284	0	685	18,583	15.8%
760 Sable	294,478	38,191	1,913	4,799	99	4,205	49,207	16.7%
770 Western Barrens	79,552	64,046	0	20	0	2,791	66,857	84.0%
780 St Margaret's Bay	184,674	21,937	4,768	645	2	3,340	30,692	16.6%
810 Cape Breton Coastal	117,600	14,913	1,591	209	96	560	17,369	14.8%
820 Eastern Shore	171,371	30,440	5,934	27	20	2,940	39,361	23.0%
830 South Shore	135,021	11,504	797	147	91	481	13,020	9.6%
840 Tusket Islands	41,791	1,744	16	0	469	55	2,284	5.5%
910 Parrsboro	44,271	8,487	148	0	1	705	9,341	21.1%
920 North Mountain	98,945	2,681	212	80	0	4	2,977	3.0%
Total	5,522,345	709,774	77,784	32,350	1,556	66,628	888,092	16.1%

Numbers are rounded to the nearest hectare.

* Forests outside of legally protected and legally pending protected areas

** No harvest SMPs (Lynx Buffers, Special Sites Buffers, Coastal Plains Flora, and Moose Buffers)

*** Note that policy reserved areas are net numbers and programs contain larger areas than what appears in the table

II. Land Use Pressure

Biodiversity Managed Areas in Ecological Management

This section provides woodlot owners and licensees with information about the kind of measures in place to protect biodiversity outside protected areas, and that may relate to their property. This section lists several areas managed to prioritize biodiversity in addition to reserved lands.

The ELA updates do not identify all the zones of the triad model, but they do identify areas that are part of the conservation zone, such as reserved areas (“no forest harvesting”) as well as areas that are part of the ecological matrix where “restricted harvesting” occurs.

The triad model, recommended by William Lahey (An Independent Review of Forest Practices in Nova Scotia, 2018) implements ecological forestry by requiring different zones:

The first zone of the triad model is **conservation** and includes areas that are legally protected and policy reserved areas that require no forest management activities or resource extraction to occur. This is the part of the conservation zone where no forest harvesting special management practices would occur. This zone of the triad is to serve as a sanctuary for wildlife and to increase biodiversity. This serves as a benchmark for ecological integrity, biodiversity and natural processes.

The second zone is **high production**. This zone is intensively managed for timber production to provide high yields from a relatively small portion of the land base.

The third zone is the **ecological matrix**. This is the largest zone and has the goal of sustaining and/or enhancing natural forest ecosystem conditions and function through a focus on biodiversity management, but where some timber harvesting can occur. This is the part of the ecological matrix where “restrictive harvesting” would occur (e.g. only commercial thinning allowed in marten habitats). Restricted harvesting consists of these areas: Regulation Watercourse Buffers, Open Bog Buffers, Sensitive Forest Groups, Marten Patches, Deer Wintering Areas, Rare Ecosystems, Valley Corridors, Protected Area Buffers, Main River Buffers, and Wood Turtle Buffers. The Silviculture Guide for the Ecological Matrix is solely used in Acadian forest types and not in Maritime Boreal forest types.

Table 2 – Areas in the Ecological Matrix with Forest Harvest Restrictions

Ecodistrict	Reserved Areas in the Conservation Zone (See Table 1) (ha)	Active Conservation Measures in the Ecological Matrix * (ha)	Percent of Total Land (%)
100 Northern Plateau	35,005	471	85.3
210 Cape Breton Highlands	102,327	20,087	65.5
220 Victoria Lowlands	5,498	1,142	36.1
310 Cape Breton Hills	89,327	25,555	31.0
320 Inverness Lowlands	1,015	3,423	9.1
330 Pictou Antigonish Highlands	12,524	10,164	17.0
340 Cobequid Hills	21,755	11,048	17.6
350 Cobequid Slopes	4,716	6,313	29.7
360 Mulgrave Plateau	14,032	10,135	23.5
370 St Mary's River	9,934	12,997	26.9
380 Central Uplands	11,430	8,542	15.5
410 Rawdon Wittenburg Hills	1,833	2,693	7.4
430 Eastern Granite Uplands	31,508	3,197	57.7
440 Eastern Interior	73,040	40,722	24.9
450 Governor Lake	1,970	4,998	11.0
510 Bras d'Or Lowlands	12,415	22,264	12.4
520 St Georges Bay	1,663	5,934	8.5
530 Northumberland Lowlands	8,567	18,586	9.5
540 Cumberland Hills	4,762	6,664	12.6
550 Cumberland Marshes	2,593	595	17.5
560 Chignecto Ridges	25,434	4,867	40.8
610 Annapolis Valley	297	4,365	5.0
620 Minas Lowlands	626	2,593	7.4
630 Central Lowlands	11,612	22,713	12.7
710 Valley Slope	944	4,421	6.1
720 South Mountain	116,316	35,888	33.4
730 Clare	13,718	9,824	12.3
740 LaHave Drumlins	23,542	17,760	15.0
750 Rossignol	18,583	7,912	22.5
760 Sable	49,207	36,383	29.1
770 Western Barrens	66,857	609	84.8

(Table 2, cont'd)

Ecodistrict	Reserved Areas in the Conservation Zone (See Table 1) (ha)	Active Conservation Measures in the Ecological Matrix * (ha)	Percent of Total Land (%)
780 St Margarets Bay	30,692	12,176	23.2
810 Cape Breton Coastal	17,369	9,361	22.7
820 Eastern Shore	39,361	9,212	28.3
830 Eastern South Shore	13,020	7,603	15.3
840 Tusket Islands	2,284	2,244	10.8
910 Parrsboro	9,341	2,802	27.4
920 North Mountain	2,977	4,336	7.4
Total	888,092	410,597	

* Regulation Watercourse Buffers, Open Bog Buffers, Sensitive Forest Groups, Marten Patches, Deer Wintering Areas, Rare Ecosystems, Valley Corridors, Protected Area Buffers, Main River Buffers, Wood Turtle Buffers

Ecological Emphasis Index

Four levels of ecological integrity are defined based on the degree that the conservation of natural conditions is emphasized in the management practices and the policies applied to the land. A variety of land management practices occur across landscapes, and conserving biodiversity requires a balancing of land use practices to sustain ecological integrity.

This classification includes all upland conditions, both forested and non-forested, under all types of administration and land use practices. It does not include water or non-terrestrial conditions.

The **Reserve Ecological Emphasis Class** meets its biodiversity goals through preservation of natural conditions and processes—meaning resource management activities are not usually permitted. The Reserve class is assigned based on the types of laws and policies governing management. This excludes policies surrounding special management practices.

Ecological Emphasis Class	Conservation Factor
Reserve	1
Extensive	0.75
Intensive	0.25
Converted	0

The **Extensive Class** are lands managed for multiple values using ecosystem-based techniques that conserve biodiversity and natural ecosystem conditions and processes. Such techniques include forestry practices that employ ecosystem-based prescriptions that consider natural disturbance regimes, successional trends, structure, and composition. The use of herbicides, exotic tree species, genetically modified organisms and stand conversion are not permitted.

The **Intensive Class** are lands managed intensively to optimize resource production from sites maintained in a native state, but are still an important component of landscape structure and composition. Practices may produce unnatural conditions, such as exotic species, old field spruce, monoculture plantations, or they may reduce structure and composition below ecologically desirable levels.

The **Converted Class** are lands converted to an unnatural state for human use, or areas where practices have significantly degraded site productivity (such as for agriculture, urban development roads, Christmas tree farms, seed orchards) or where forest soil compaction has occurred.

Although these terms are similar to those of the triad model used in the Independent Review of Forest Practices in Nova Scotia, they differ slightly in meaning. To avoid confusion with the zoning of land that will take place in the near future, in this ELA 2023 Update we will continue using the Ecological Emphasis Class Terms as defined above to report on the state of the landscape.

Table 3 – Ecological Emphasis Index by Ecodistrict

Ecodistrict	Reserve **	Reserve Weighted *	Extensive	Extensive Weighted *	Intensive	Intensive Weighted *	Converted	Converted Weighted *	Total Area *** (ha)	Total Weighted Ecological Emphasis	
										Area * (ha)	Area Index
100 Northern Plateau	33,683	33,683	6,297	4,723	0	0	170	0	40,150	38,406	95.7
210 Cape Breton Highlands	88,013	88,013	80,990	60,742	14,097	3,524	702	0	183,802	152,279	82.8
220 Victoria Lowlands	5,223	5,223	10,775	8,081	192	48	1,712	0	17,092	13,352	75.4
310 Cape Breton Hills	81,484	81,484	255,668	191,751	18,750	4,687	12,761	0	368,663	277,922	75.4
320 Inverness Lowlands	1,022	1,022	29,692	22,269	1,791	448	9,378	0	41,883	23,739	56.7
330 Pictou Antigonish Highlands	10,129	10,129	93,783	70,337	20,337	5,084	8,252	0	132,501	85,550	64.6
340 Cobequid Hills	19,242	19,242	136,639	102,479	17,882	4,471	11,897	0	185,660	126,192	68.0
350 Cobequid Slopes	3,149	3,149	26,836	20,127	3,393	848	3,564	0	36,942	24,124	65.3
360 Mulgrave Plateau	12,152	12,152	71,159	53,369	9,605	2,401	6,848	0	99,764	67,922	68.1
370 St Mary's River	6,145	6,145	53,573	40,180	19,488	4,872	2,472	0	81,678	51,197	62.1
380 Central Uplands	10,289	10,289	85,371	64,028	23,960	5,990	8,480	0	128,100	80,307	62.3
410 Rawdon Wittenburg Hills	1,729	1,729	46,134	34,600	6,413	1,603	6,949	0	61,225	37,932	62.0
430 Eastern Granite Uplands	27,448	27,448	25,685	19,264	145	36	158	0	53,436	46,748	87.5
440 Eastern Interior	59,155	59,155	317,870	238,402	18,394	4,598	29,160	0	424,579	302,155	71.2
450 Governor Lake	59,155	1,262	49,748	37,311	7,789	1,947	825	0	59,624	40,520	68.0
510 Bras d'Or Lowlands	11,845	11,845	206,537	154,903	12,848	3,212	36,468	0	267,698	169,960	63.5
520 St Georges Bay	1,533	1,533	57,560	43,170	8,472	2,118	20,941	0	88,506	46,821	52.9

(Table 3, cont'd)

Ecodistrict	Reserve **	Reserve Weighted *	Extensive	Extensive Weighted *	Intensive	Intensive Weighted *	Converted	Converted Weighted *	Total Area *** (ha)	Total Weighted Ecological Emphasis	
										Area * (ha)	Area Index
530 Northumberland Lowlands	7,198	7,198	192,201	143,186	26,258	6,565	55,071	0	280,728	156,949	55.9
540 Cumberland Hills	4,198	4,198	64,220	48,165	12,793	3,198	9,411	0	90,622	55,561	61.3
550 Cumberland Marshes	3,607	3,607	7,070	5,302	420	105	6,362	0	17,459	9,014	51.6
560 Chignecto Ridges	23,333	23,333	40,083	30,062	8,489	2,122	2,057	0	73,962	55,517	75.1
610 Annapolis Valley	650	650	40,486	30,364	969	242	48,931	0	91,036	31,256	34.3
620 Minas Lowlands	851	851	21,996	16,497	1,601	400	18,601	0	43,049	17,748	41.2
630 Central Lowlands	11,229	11,229	190,915	143,186	15,982	3,995	47,880	0	266,006	158,410	59.6
710 Valley Slope	978	978	69,423	52,067	2,767	692	14,865	0	88,033	53,737	61.0
720 South Mountain	106,619	106,619	292,138	219,103	18,173	4,543	3,414	0	420,344	330,265	78.6
730 Clare	12,791	12,791	140,702	105,527	6,344	1,589	13,669	0	173,506	119,907	69.1
740 LaHave Drumlins	19,315	19,315	201,657	151,243	4,442	1,110	22,219	0	247,633	171,668	69.3
750 Rossignol	16,376	16,376	72,845	54,634	2,781	695	2,098	0	94,100	71,618	76.2
760 Sable	46,218	46,218	223,221	167,416	3,990	998	3,324	0	276,753	214,632	77.6
770 Western Barrens	60,742	60,742	14,482	10,862	58	14	149	0	75,431	71,618	94.9
780 St Margarets Bay	26,392	26,392	125,868	94,401	7,152	1,788	11,607	0	171,019	122,581	71.7
810 Cape Breton Coastal	19,995	19,995	78,637	58,978	4,601	1,150	6,710	0	109,943	80,123	72.9
820 Eastern Shore	35,233	35,233	117,379	88,035	677	169	8,518	0	161,807	123,437	76.3
830 Eastern South Shore	12,944	12,944	106,930	80,198	453	113	9,980	0	130,307	93,255	71.6
840 Tusket Islands	2,082	2,082	30,883	23,163	574	143	6,292	0	39,831	25,388	63.7
910 Parrsboro	8,690	8,690	27,982	20,987	1,902	475	5,553	0	44,127	30,152	68.3
920 North Mountain	3,010	3,010	79,893	59,920	4,936	1,234	10,693	0	98,532	64,164	65.1
Total	795,954	795,954	3,693,328	2,769,032	308,918	77,227	468,141	0	5,266,341	3,642,213	69.2

* The area multiplied by the conservation factor

** Reserve numbers account for legally and pending protected areas, old-growth forest policy and EHJV areas

*** All areas do not include non-terrestrial land

Recent Forest Treatments over a 10-Year Period

Forest treatments are important to support Nova Scotia’s forestry industry (which includes pulp and paper materials sector, wood-fabricated materials, and primary wood products) on both Crown land and private land.

It is important to report on both Crown land and private land forest treatments because the impacts on each are not mutually exclusive. Each can influence and have cumulative effects on the other, and on the surrounding landscape.

Knowing the conditions of the landscape helps the department, licensees, and landowners to adequately support implementing ecological forestry. Ecological forestry emphasizes the conservation of native biodiversity and ecological integrity. Natural forest patterns and processes, including both biodiversity and forest productivity, are more likely to persist or be best approximated by designing and applying forest management strategies and silviculture systems that emulate natural disturbance patterns.

Investments in silviculture activities such as tree planting and pre-commercial thinning are intended to improve productivity, quality, and value of timber resources. Most silviculture treatments are conducted during the establishment phase of young forests. Consequently this means the amount of silviculture performed should closely follow harvesting trends. High harvesting levels for one year should be followed by an increased amount of silviculture treatment.

Table 4 – Recent Forest Treatments (2011–2021)

Ecodistrict	Percent Crown Land (%)	Treatment Type	Prescription	Crown Land Area (ha)	Crown Land Rate (ha/yr)	Private Land Area (ha)	Private Land Rate (ha/yr)	Total Treated Area (ha)	Total Treated Land Rate (ha/yr)
100 Northern Plateau	96.2	Merchant-able	Partial Cut	0	0	0	0	0	0
			Clear Cut	1	0	0	0	1	0
		Silviculture	Pre-Commercial Thin	0	0	0	0	0	0
			Planted	0	0	0	0	0	0
210 Cape Breton Highlands	94.9	Merchant-able	Partial Cut	3,781	378	40	4	3,821	382
			Clear Cut	5,163	516	95	10	5,528	553
		Silviculture	Pre-Commercial Thin	1,220	122	15	2	1,235	124
			Planted	4,247	425	91	9	4,338	434
220 Victoria Lowlands	39.8	Merchant-able	Partial Cut	0	0	2	0	2	0
			Clear Cut	101	10	122	12	223	22
		Silviculture	Pre-Commercial Thin	0	0	0	0	0	0
			Planted	110	11	1	0	111	11

(Table 4, cont'd)

Ecodistrict	Percent Crown Land (%)	Treatment Type	Prescription	Crown Land Area (ha)	Crown Land Rate (ha/yr)	Private Land Area (ha)	Private Land Rate (ha/yr)	Total Treated Area (ha)	Total Treated Land Rate (ha/yr)
310 Cape Breton Hills	44.7	Merchant-able	Partial Cut	2,020	202	378	38	2,398	240
			39.8	3,821	382	4,478	448	8,299	830
		Silviculture	Pre-Commercial Thin	48	5	798	80	846	85
				1,630	163	1,745	175	3,375	338
320 Inverness Lowlands	6.0	Merchant-able	Partial Cut	2	0	43	4	45	5
			Clear Cut	2	0	561	56	563	56
		Silviculture	Pre-Commercial Thin	5	0	56	6	61	6
			Planted	11	1	353	35	364	36
330 Pictou Antigonish Highlands	26.8	Merchant-able	Partial Cut	1,131	113	1,487	149	2,618	262
				1,724	172	5,648	565	7,372	737
		Silviculture	Pre-Commercial Thin	252	25	508	51	760	76
			Planted	1,054	105	1,390	139	2,444	244
340 Cobequid Hills	20.9	Merchant-able	Partial Cut	2,753	275	1,846	185	4,599	460
			Clear Cut	936	94	8,663	866	9,599	960
		Silviculture	Pre-Commercial Thin	468	47	1,812	181	2,280	8228
			Planted	26	3	2,823	282	2,849	285
350 Cobequid Slopes	24.8	Merchant-able	Partial Cut	108	11	167	17	275	28
			Clear Cut	322	32	1,463	146	1,785	179
		Silviculture	Pre-Commercial Thin	181	18	359	36	540	54
			Planted	1	0	1,006	101	1,007	101
360 Mulgrave Plateau	42.0	Merchant-able	Partial Cut	682	68	413	41	1,095	102
			Clear Cut	2,201	220	3,992	399	6,193	619
		Silviculture	Pre-Commercial Thin	1,236	124	836	84	2,072	207
			Planted	1,100	110	1,091	109	2,191	219
370 St Mary's River	62.3	Merchant-able	Partial Cut	770	77	259	26	1,029	103
			Clear Cut	3,233	323	1,748	175	4,981	498
		Silviculture	Pre-Commercial Thin	1,655	166	390	39	2,045	205
			Planted	3,601	360	1,013	101	4,614	461
380 Central Uplands	21.1	Merchant-able	Partial Cut	541	54	1,158	116	1,699	170
			Clear Cut	757	76	1,410	141	2,167	217
		Silviculture	Pre-Commercial Thin	313	31	1,943	194	2,256	226
			Planted	188	19	2,883	288	3,071	307
410 Rawdon Wittenburg Hills	5.4	Merchant-able	Partial Cut	11	1	395	40	406	41
			Clear Cut	97	10	2,377	238	2,474	247
		Silviculture	Pre-Commercial Thin	91	10	1,301	130	1,392	139
			Planted	3	0	1,349	135	1,352	135

(Table 4, cont'd)

Ecodistrict	Percent Crown Land (%)	Treatment Type	Prescription	Crown Land Area (ha)	Crown Land Rate (ha/yr)	Private Land Area (ha)	Private Land Rate (ha/yr)	Total Treated Area (ha)	Total Treated Land Rate (ha/yr)
430 Eastern Granite Uplands	67.7	Merchant-able	Partial Cut	27	3	16	2	43	4
			Clear Cut	278	28	351	35	629	63
		Silviculture	Pre-Commercial Thin	0	0	25	3	25	3
			Planted	21	2	11	1	32	3
440 Eastern Interior	47.3	Merchant-able	Partial Cut	2,683	268	1,047	105	3,730	373
			Clear Cut	11,286	1,129	9,709	971	20,995	2,100
		Silviculture	Pre-Commercial Thin	3,967	397	1,714	171	5,681	568
			Planted	2,183	218	2,643	264	4,826	483
450 Governor Lake	20.7	Merchant-able	Partial Cut	372	37	285	29	657	66
			Clear Cut	327	33	4,536	454	4,863	486
		Silviculture	Pre-Commercial Thin	158	16	436	44	594	59
			Planted	262	26	1,614	161	1,876	188
510 Bras d'Or Lowlands	20.5	Merchant-able	Partial Cut	356	26	341	34	697	70
			Clear Cut	1,919	192	4,374	434	6,293	629
		Silviculture	Pre-Commercial Thin	305	31	429	43	734	73
			Planted	1,647	165	1,294	129	2,941	294
520 St Georges Bay	8.6	Merchant-able	Partial Cut	18	2	255	26	273	27
			Clear Cut	209	21	3,359	336	3,568	357
		Silviculture	Pre-Commercial Thin	49	5	342	34	391	39
			Planted	197	20	552	55	749	75
530 Northumberland Lowlands	7.1	Merchant-able	Partial Cut	159	16	2,138	214	2,297	230
			Clear Cut	736	74	9,552	955	10,288	1,029
		Silviculture	Pre-Commercial Thin	199	20	2,113	211	2,312	231
			Planted	233	23	3,279	328	3,512	351
540 Cumberland Hills	14.8	Merchant-able	Partial Cut	128	13	1,466	147	1,594	159
			Clear Cut	1,027	103	6,925	693	7,952	795
		Silviculture	Pre-Commercial Thin	97	10	587	59	684	68
			Planted	210	21	1,190	119	1,400	140
550 Cumberland Marshes	23.4	Merchant-able	Partial Cut	0	0	37	4	37	4
			Clear Cut	0	0	246	25	246	25
		Silviculture	Pre-Commercial Thin	0	0	101	10	101	10
			Planted	0	0	41	4	41	4
560 Chignecto Ridges	49.0	Merchant-able	Partial Cut	120	12	316	32	436	44
			Clear Cut	311	31	3,709	371	4,020	402
		Silviculture	Pre-Commercial Thin	3	0	136	14	139	14
			Planted	1	0	873	87	874	87

(Table 4, cont'd)

Ecodistrict	Percent Crown Land (%)	Treatment Type	Prescription	Crown Land Area (ha)	Crown Land Rate (ha/yr)	Private Land Area (ha)	Private Land Rate (ha/yr)	Total Treated Area (ha)	Total Treated Land Rate (ha/yr)
610 Annapolis Valley	3.9	Merchantable	Partial Cut	16	2	81	8	97	10
			Clear Cut	61	6	1,601	160	1,662	166
		Silviculture	Pre-Commercial Thin	0	0	24	2	24	2
				0	0	95	10	95	10
620 Minas Lowlands	5.7	Merchantable	Partial Cut	34	3	121	12	155	16
			Clear Cut	29	3	733	73	762	76
		Silviculture	Pre-Commercial Thin	36	4	262	26	298	30
			Planted	33	3	183	18	216	22
630 Central Lowlands	19.0	Merchantable	Partial Cut	164	16	817	82	981	98
			Clear Cut	1,215	122	7,056	706	8,271	827
		Silviculture	Pre-Commercial Thin	992	99	2,600	260	3,592	359
			Planted	155	16	2,656	266	2,811	281
710 Valley Slope	8.8	Merchantable	Partial Cut	101	10	312	31	413	41
			Clear Cut	685	69	3,105	311	3,790	379
		Silviculture	Pre-Commercial Thin	5	0	207	21	212	21
			Planted	89	9	309	31	398	40
720 South Mountain	56.8	Merchantable	Partial Cut	1,450	145	1,829	183	3,279	328
			Clear Cut	7,797	780	14,033	1,403	21,830	2,183
		Silviculture	Pre-Commercial Thin	1,032	103	1,110	111	2,142	214
			Planted	2,272	227	1,098	110	3,370	337
730 Clare	14.7	Merchantable	Partial Cut	151	15	1,929	193	2,080	208
			Clear Cut	527	53	7,294	729	7,821	782
		Silviculture	Pre-Commercial Thin	18	2	405	41	423	42
			Planted	66	7	168	17	234	23
740 LaHave Drumlins	15.5	Merchantable	Partial Cut	133	13	1,536	154	1,669	170
			Clear Cut	1,207	121	10,160	1,016	11,367	1,137
		Silviculture	Pre-Commercial Thin	120	12	1,637	164	1,757	176
			Planted	194	19	830	83	1,024	102
750 Rossignol	48.9	Merchantable	Partial Cut	659	66	185	19	844	84
			Clear Cut	2,829	283	2,302	230	5,131	513
		Silviculture	Pre-Commercial Thin	321	32	722	72	1,043	104
			Planted	420	42	256	26	676	68
760 Sable	72.7	Merchantable	Partial Cut	357	36	171	17	528	53
			Clear Cut	3,512	351	1,343	134	4,855	486
		Silviculture	Pre-Commercial Thin	689	69	21	2	710	71
			Planted	272	27	34	3	306	31

(Table 4, cont'd)

Ecodistrict	Percent Crown Land (%)	Treatment Type	Prescription	Crown Land Area (ha)	Crown Land Rate (ha/yr)	Private Land Area (ha)	Private Land Rate (ha/yr)	Total Treated Area (ha)	Total Treated Land Rate (ha/yr)
770 Western Barrens	92.9	Merchant-able	Partial Cut	103	10	0	0	103	10
			Clear Cut	34	3	3	0	37	4
		Silviculture	Pre-Commercial Thin	29	3	0	0	29	3
				11	1	0	0	11	1
780 St Margarets Bay	47.6	Merchant-able	Partial Cut	414	41	288	29	702	70
			Clear Cut	1,622	162	2,759	276	4,381	438
		Silviculture	Pre-Commercial Thin	611	61	477	48	1,088	109
			Planted	307	31	465	47	772	77
810 Cape Breton Coastal	36.5	Merchant-able	Partial Cut	130	13	44	4	144	14
			Clear Cut	1,372	137	1,330	133	2,702	270
		Silviculture	Pre-Commercial Thin	970	97	336	34	1,306	131
			Planted	554	55	621	62	1,175	118
820 Eastern Shore	41.0	Merchant-able	Partial Cut	177	18	65	7	242	24
			Clear Cut	1,483	148	685	69	2,168	217
		Silviculture	Pre-Commercial Thin	850	85	123	12	973	97
			Planted	67	7	77	8	144	14
830 Eastern South Shore	17.8	Merchant-able	Partial Cut	5	0	64	6	69	7
			Clear Cut	107	11	644	64	751	75
		Silviculture	Pre-Commercial Thin	0	0	72	7	72	7
			Planted	0	0	146	15	146	15
840 Tusket Islands	9.7	Merchant-able	Partial Cut	0	0	44	4	44	4
			Clear Cut	3	0	259	26	259	26
		Silviculture	Pre-Commercial Thin	0	0	0	0	0	0
			Planted	0	0	0	0	0	0
910 Parrsboro	20.5	Merchant-able	Partial Cut	0	0	193	19	193	19
			Clear Cut	99	10	1,823	182	1,922	192
		Silviculture	Pre-Commercial Thin	5	0	131	13	136	14
			Planted	30	3	207	21	237	24
920 North Mountain	5.0	Merchant-able	Partial Cut	8	0	210	21	218	22
			Clear Cut	17	2	3,074	307	3,091	309
		Silviculture	Pre-Commercial Thin	0	0	140	14	140	14
				1	0	725	73	726	73

III. Ecosystem Health

Forest Composition

Sustaining forest composition diversity by reflecting natural patterns of disturbance and succession is one approach the Department of Natural Resources and Renewables is employing to realize this objective. Human activities, such as forest harvesting, can shape the structure and composition of the forested landscape, and should be planned to help support landscape composition goals.

Development class indicators describe changes in structure and process as forests age and trees grow larger. Previous Ecological Landscape Analysis reported development class by height. Moving forward, the ELA updates will report on **development class by age**.

For landscape management purposes, these **development classes** are recognized:

- **Forest establishment** development class (0–25 yrs) is the establishment of new growth following a stand-initiating disturbance. It consists of high diversity of mostly short-lived shade intolerant “pioneer” species.
- **Young forest** development class (26–40 yrs) consists of developing tree canopies characterized by vigorous self-thinning, crown differentiation and no understory development.
- **Mature forest** development class (41–120 yrs) consists of stands dominated by upper canopy with full differentiation into dominance classes. Individual tree mortality creates canopy gaps that are soon closed by neighbouring tree growth, and increased light initiates regeneration and early understory development. Mature forests are broken up into two developmental age classes: early and late. Early mature are forests between the ages of 41 and 80 years old. Late mature are between the ages of 81 and 120 years old.
- **Multi-aged** development class (> 3 height layers = multi-aged, classified as > 120 years old) is dominated by an overstory exhibiting a variety of crown sizes and canopy densities. It contains canopy gaps that promote development of multi-layered understory and recruitment to the overstory, and are typically old forests.

Table 5 – Development Class Age by Ecodistrict

Ecodistrict	Total Forested Area (ha)	Forest Establishment 0–25 years (ha)	Young Forest 26–40 years (ha)	Early Mature 41–80 years (ha)	Late Mature 81–120 years (ha)	Multi-Aged > 120 years * (ha)	Percentage of > 40 years (%)	Percentage of > 80 years (%)
100 Northern Plateau	12,881	20	856	10,115	362	1,528	93.2%	14.7%
210 Cape Breton Highlands	138,855	19,658	17,211	80,539	7,609	13,838	73.5%	15.5%
220 Victoria Lowlands	14,350	573	519	8,417	1,244	3,597	92.4%	33.7%
310 Cape Breton Hills	342,718	30,045	30,446	184,858	43,010	54,359	82.4%	28.4%
320 Inverness Lowlands	28,337	2,452	4,661	14,023	1,557	5,644	74.9%	25.4%
330 Pictou Antigonish Highlands	118,580	24,298	31,030	44,012	5,306	13,933	53.3%	16.2%
340 Cobequid Hills	169,103	38,668	29,350	69,928	13,716	17,440	59.8%	18.4%
350 Cobequid Slopes	32,358	8,600	6,374	10,435	2,360	4,589	53.7%	21.5%
360 Mulgrave Plateau	84,254	17,967	14,767	33,304	11,686	6,530	61.2%	21.6%
370 St Mary's River	71,747	17,787	23,939	21,311	3,833	4,876	41.8%	12.1%
380 Central Uplands	112,184	37,410	33,143	27,141	5,966	8,523	78.2%	12.9%
410 Rawdon Wittenburg Hills	53,237	16,147	12,939	14,439	3,960	5,752	45.4%	18.2%
430 Eastern Granite Uplands	47,821	3,419	5,102	21,455	5,675	12,171	82.2%	37.3%
440 Eastern Interior	342,569	73,922	69,021	116,826	27,506	55,295	58.3%	24.2%
450 Governor Lake	53,527	21,127	13,283	12,342	1,576	5,198	35.7%	12.7%
510 Bras d'Or Lowlands	201,504	22,229	30,490	80,468	28,897	39,419	73.8%	33.9%
520 St Georges Bay	60,086	11,010	15,679	22,006	4,495	6,896	55.6%	19.0%
530 Northumberland Lowlands	202,364	47,748	41,780	63,261	24,030	25,544	55.8%	24.5%
540 Cumberland Hills	77,395	21,084	12,830	24,054	9,220	10,206	56.2%	25.1%
550 Cumberland Marshes	5,549	1,257	1,030	2,014	428	820	58.8%	22.5%

(Table 5, cont'd)

Ecodistrict	Total Forested Area (ha)	Forest Establishment 0–25 years (ha)	Young Forest 26–40 years (ha)	Early Mature 41–80 years (ha)	Late Mature 81–120 years (ha)	Multi-Aged > 120 years * (ha)	Percentage of > 40 years (%)	Percentage of > 80 years (%)
560 Chignecto Ridges	65,071	12,526	8,226	23,480	9,754	11,084	68.1%	32.0%
610 Annapolis Valley	33,693	3,044	3,890	13,320	4,705	8,734	79.4%	39.9%
620 Minas Lowlands	20,013	5,267	4,813	5,238	1,943	2,752	49.6%	23.5%
630 Central Lowlands	197,124	47,859	43,526	60,768	19,190	25,781	53.6%	22.8%
710 Valley Slope	70,659	8,962	10,717	30,734	7,115	13,132	72.2%	28.7%
720 South Mountain	389,376	64,625	49,770	123,426	70,439	81,115	70.6%	38.9%
730 Clare	144,841	15,636	19,583	61,014	16,830	31,778	75.7%	33.6%
740 LaHave Drumlins	211,673	24,162	28,271	63,810	37,174	58,256	75.2%	45.1%
750 Rossignol	84,072	12,426	7,080	25,592	16,242	22,731	76.8%	46.4%
760 Sable	222,762	13,814	8,777	101,042	42,267	56,861	89.9%	44.5%
770 Western Barrens	58,238	155	397	19,433	14,567	23,687	99.1%	65.7%
780 St Margarets Bay	147,382	20,419	20,260	59,696	15,614	31,393	72.4%	31.9%
810 Cape Breton Coastal	81,262	11,767	14,414	35,531	8,079	11,471	67.8%	24.1%
820 Eastern Shore	101,427	11,021	17,560	45,776	11,003	16,068	71.8%	26.7%
830 Eastern South Shore	85,986	2,679	5,187	40,593	10,525	27,002	90.9%	43.6%
840 Tusket Islands	21,913	931	2,337	12,348	1,838	4,458	85.1%	28.7%
910 Parrsboro	35,702	6,416	4,746	16,615	4,379	3,546	68.7%	22.2%
920 North Mountain	82,424	8,082	12,364	38,252	5,546	18,181	75.2%	28.8%
Total	4,223,038	685,214	656,372	1,637,619	499,646	744,187	68.2%	29.5%

* Multi-aged development class is classified as >120 years but is best considered with the Late Mature development class (i.e. last column > 80 years) because of limitations of predicting an absolute age from the forest inventory for older forests.