

*The United Counties of Stormont, Dundas and  
Glengarry*

*SDG County Forest  
Forest Management Plan  
2007-2026*



*Section D: Amendments to the Twenty Year  
Management Plan (2007 to 2026)*

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## **SDG County Forest: Forest Management Plan**

### **Documents**

<b><u>SECTION A:</u></b>	<b>FOREST POLICY PLAN</b>
<b><u>SECTION B:</u></b>	<b>TWENTY YEAR MANAGEMENT PLAN (2007 to 2026)</b>
<b><u>SECTION C:</u></b>	<b>FIVE YEAR OPERATING PLAN (2007 to 2011)</b>
<b><u>SECTION D:</u></b>	<b>AMENDMENTS TO THE TWENTY YEAR MANAGEMENT PLAN (2007 to 2026)</b>

### **Commonly Used Terms and Acronyms**

United Counties of Stormont, Dundas and Glengarry	“SDG” or “County”
SDG County Forest	“County Forest” or “Forest”
Eastern Ontario Model Forest	EOMF
Forest Resource Inventory	FRI
Geographic Information System	GIS
Ontario Ministry of Natural Resources	OMNR
Raisin Region Conservation Authority	RRCA
Registered Professional Forester	R.P.F.
South Nation Conservation	SNC

# **SDG COUNTY FOREST: FOREST MANAGEMENT PLAN**

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## **SDG COUNTY FOREST: FOREST MANAGEMENT PLAN**

### ***SECTION D) AMENDMENT TO THE TWENTY YEAR MANAGEMENT PLAN (2007-26)***

#### **D-1.0 AMENDMENT - ACQUISITION OF ADDITIONAL SDG COUNTY FOREST PROPERTY**

##### **D-1.1 SDG COUNTY FOREST PROPERTIES**

In 2005, the Domtar mill in Cornwall closed its doors permanently. As a result of the mill closure, Domtar elected to dispose of the properties they had purchased over their many years of operations in Eastern Ontario. Domtar staff evaluated the properties and identified 17 parcels with significant conservation values which were offered for sale directly to public agencies with existing managed forest holdings. The remainder of the properties were sold to members of the public, many of whom were adjacent landowners or former lease holders. The United Counties of SD&G recognized the social, ecological and economic importance of the Domtar lands to SD&G and Eastern Ontario. On May 31<sup>st</sup>, 2009 the United Counties of SD&G successfully completed the purchase of 5 parcels comprising 415.6 (1,026.5 acres) from Domtar. Resource Stewardship SD&G and Domtar Cornwall's former Manager of Forestry Service were instrumental in facilitating the process, including obtaining grant funding that made the purchase possible.

Funding for the purchase came from two sources. The United Counties of SD&G provided approximately 50% and a grant from the Ontario Greenlands Program provided the remainder. The Ontario Greenlands Program is funded by the Ontario Ministry of Natural Resources (OMNR) and jointly administered by the OMNR and the Nature Conservancy of Canada (NCC) to conserve Ontario's biological diversity. This differs from the majority of the SDG County Forest properties that were acquired, in part, through grants from the Province of Ontario under the Agreement Forest Program. The purchase of 415.6 ha (1026.5 acres) from Domtar brings the

total area of the County Forest up to 3816.4 ha (9,426.5 acres). It also makes the SDG County Forest one of the few community forests that has added to their landbase since the days of the Agreement Forest Program. The acquired lands are located in two townships: South Dundas and South Stormont. Table 1 describes the area of forest in each of the townships of SDG prior to and following the purchase of the Domtar properties. Please note that Table 1 updates a similar table provided in Section B 1.1 SDG County Forest History of the 20 Year Management Plan.

**Table 1: SDG County Forest Area by Township.**

Township	Area in hectares prior to purchase	Area in acres prior to purchase	Percentage prior to purchase	Total area in hectares after purchase	Total area in acres after purchase	Percentage after purchase
North Dundas	163.4	403.6	4.8%	163.4	403.6	4.3%
South Dundas	529.4	1,307.5	15.6%	740.3	1,828.5	19.4%
North Stormont	821.0	2,027.9	24.1%	821.0	2,027.9	21.5%
South Stormont	491.9	1,215.0	14.5%	696.5	1,720.4	18.3%
North Glengarry	783.3	1,934.8	23.0%	783.3	1,934.8	20.5%
South Glengarry	611.9	1,511.3	18.0%	611.9	1,511.3	16.0%
Total	3,400.8	8,400.0	100.0%	3,816.4	9,426.5	100.0%

## **D-1.2 PHYSICAL PROPERTIES**

Most of the soils on the properties acquired from Domtar have low agricultural capability due to poor drainage. Fifty-three percent (53%) of the soils are classified as having either imperfect or poor drainage. The soil attributes are summarized in Tables 3 and 4 (NB. *Detailed soils and drainage information is not complete for all of the properties and proportions provided represent available data*):

**Table 3: Soil Texture**

Texture	Percentage
Organic-Muck Soils	0%
Soils developed from loamy, moderately-calcareous till (loams)	17%
Soils developed from fine-textured highly-calcareous till (clay loams)	57%
Sand and sandy loams	26%

**Table 4: Soil Drainage**

Drainage Class	Percentage
Poor / Very Poor	19%
Imperfect	44%
Moderate	18%
Good / Very Good	19%

### **D-1.3 RECREATION**

The purchase of 415.6 ha from Domtar significantly boosts the recreation potential on public lands within SD&G. Similar to the rest of the properties of the SDG County Forest, the acquired properties are open to the public and are well-used for both organized and unorganized recreation activities such as snowmobiling, hunting, hiking, cross-country skiing and wildlife viewing. Members of the public do not require the written permission from SDG to use the Forest, unless specifically required by Ontario legislation. Organizations, such as the Ontario Federation of Snowmobile Clubs (OFSC), require permission prior to creating trails on SD&G properties. The County may restrict certain uses from individual or all forest properties if these activities are deemed to be in conflict with the designated use of the property(s).

#### **D-1.3.1 Recreational Leases**

On many of their properties, Domtar issued recreational leases for various recreational activities. For a fee, members of the public could purchase an annual lease which would provide them permission, and in some cases, exclusive rights to use the property for certain activities (e.g. hunting) in accordance with the conditions of a lease agreement. With the exception of Domtar 75 – a.k.a. SDG 99 (see below), the leasees were not permitted to erect permanent structures on the properties. With the transfer of ownership to SD&G existing recreational lease agreements were terminated and any structures on the properties will be removed either by the former lease holder or by SD&G or their designate. Similar to the rest of the County Forest, the recently acquired properties will remain open to the public for recreation activities provided they do not compromise the objectives for the Forest and that they are mutually compatible.

#### **D-1.3.2 Recreation Trails**

Domtar 75 (a.k.a. SDG 99), located at Riverside Heights, has numerous trails that are used for recreational activities. ATV's, snowmobiles, hikers, among others use the property regularly. This will continue and SD&G will explore the possibility of further recreational development on this property.

With Domtar's permission, the Ontario Federation of Snowmobile Clubs (OFSC) erected and maintains a permanent structure on the property (Figure 1). Annually, the clubhouse serves thousands of local residents and the many visitors to the region. SD&G does not normally permit permanent structures on the County Forest, but the clubhouse has been on the site for many years and enhances the recreation potential of the Forest and SD&G as a whole.

**Figure 1. The Ontario Federation of Snowmobile Clubs' clubhouse on the property known as Domtar 75 (a.k.a. SDG 99). The red line indicates the approximate location of the property boundary; the SD&G property being to the north.**





## **D-1.4 PROPERTY ADMINISTRATION**

As the owner of over 3,800 hectares in SDG, property administration issues arise on a regular but limited basis. SNC has the primary responsibility for property administration and SDG is regularly consulted and updated on issues of concern. The costs to the County are not high, but regular surveillance and handling of small issues can prevent the development into larger scale problems. Potential property administration activities on the newly acquired properties are described in the following section.

### **D-1.4.1 Boundary Marking**

Consistent with SDG's objective to be a responsible landowner and good neighbour, where sufficient evidence of survey exists, SDG will retrace the survey to maintain property boundaries. Red paint will be used to identify these boundaries. Forest management boundaries adjacent to private land will also be marked using red paint. In the event that a forest operation is planned immediately adjacent to private land, neighboring landowners will be consulted prior to the commencement of operations.

### **D-1.4.2 Garbage**

Similar to other SDG forest properties, it is anticipated that garbage will be an issue on the newly acquired properties. SNC will include these properties in their regular monitoring activities to locate and remove garbage that is dumped. Signage will be erected in identified problem areas in an effort to discourage dumping. Illegal dumping will be reported to the O.P.P. for further investigation.

### **D-1.4.3 Site Damage**

Where recreational use is high, there is the possibility of damage to the site (e.g. rutting). In many cases, minor adjustments to trail locations or the construction of small structures (e.g. bridges, corduroy crossings, etc.) can mitigate the impacts of these activities to allow them to continue. On behalf of SDG, SNC will examine the new properties to determine whether

modifications to existing recreation will be required to prevent site damage. Partnerships will be sought with local recreation clubs where opportunities exist for shared responsibility.

## **D-1.5 FORESTS OF THE SDG COUNTY FOREST**

### **D-1.5.1 Forest Resource Inventory**

The forest resource inventory (FRI) for the SDG County Forest has been updated to reflect the addition of the new properties to the landbase. The information that has been included in the update is based upon forest inventory information provided by Domtar that has been enhanced by field sampling performed by SNC. The acquired properties have been renumbered as follows: Domtar 4 = SDG 95, Domtar 7 = SDG 96, Domtar 9 = SDG 97, Domtar 10 = SDG 98, Domtar 75 = SDG 99.

SDG GIS staff has produced an Excel spreadsheet of the FRI data for everyday use by the forest manager. Forestry staff will continue to identify changes and make updates to the forest data on this spreadsheet and return them to the County for updating on the GIS system.

New information related to the new properties has prompted the need to develop additional silvicultural treatment options due to new forest types that did not already exist on the County Forest (e.g. hybrid poplar). See Section D-1.6 for more details.

The updated FRI will be used in the development of the 2011-2015 Operations Plan for the SD&G County Forest. It will be used to calculate an adjusted allowable harvest area and to determine which areas are eligible for treatment during the period of the plan.

### **MAP PRODUCTS**

The following map products have been produced by SDG for this amendment. The acquired properties have been added to the SDG County Forest mapping.

- 1) Appendix 1. SDG County Forest Overview Map.
- 2) Appendix 2. SDG County Forest Compartment Maps and Aerial Photos.
- 3) Appendix 3. SDG County Forest Values Map.

### **D-1.5.2 Forest Description**

The properties that have been acquired from Domtar contain mostly second growth forest on old agricultural lands or forests that were heavily cut in the past. Some are the result of plantations (72.3 hectares / 178.6 acres) established by Domtar. Hybrid poplar dominates the plantations (55 ha), but white pine, jack pine, tamarack and white spruce were also planted (Table 5). In some cases, white pine was planted under the cover of a hybrid poplar plantation. The remainder of the forest consists of natural growth deciduous and conifer forests in various stages of development. Streams and wetlands make up the majority of the non-forested portions of the landbase.

Table 5. Area of plantations by dominant species.

Species	Area in Hectares	Area in Acres
Hybrid Poplar	55.0	135.9
White Pine	10.9	26.9
Jack Pine	4.0	9.9
Tamarack	1.8	4.4
White Spruce	0.6	1.5
Total	72.3	178.6

Tables 6 and 7 summarize the forests types and the age class distribution for the SDG County Forest including the newly acquired properties. Prior to the acquisition, the forest was grouped into 8 forest units (Section B-8.3); lowland hardwoods, upland hardwoods, early successional (intolerant) hardwoods, other conifers, white spruce, white pine, red pine and other conifer plantations. The forest management prescriptions for each forest unit as described in Section B-8.3 of the Forest Management Plan apply to most of the forests that occur on the properties acquired from Domtar. However, a new forest unit and associated forest management prescriptions have been developed to address hybrid poplar plantations (Section D-1.6), which was not a component of the original SDG County Forest.

Table 6. SDG County Forest description with details for the properties acquired from Domtar.

Forest Unit	2009 Acquisition		SDG County Forest		Total	Percentage
	Productive	Barren and Scattered	Productive	Barren and Scattered		
Hardwoods						
Lowland Hardwoods	122.29	17.23	920.31	65.79	1,125.62	29.5%
Tolerant Hardwoods	83.99	22.34	522.77	5.33	634.43	16.6%
Intolerant Hardwoods	28.96	0.00	394.57	41.88	465.41	12.2%
Hybrid Poplar Plantations	55.00	0.00	0.00	0.00	55.00	1.4%
<b>Sub-total Hardwoods</b>	<b>290.24</b>	<b>39.57</b>	<b>1,837.65</b>	<b>113.00</b>	<b>2,280.46</b>	<b>59.8%</b>
Conifers						
Other Conifers	33.12	3.33	324.00	51.46	411.91	10.8%
White Spruce	0.62	0.00	337.81	27.22	365.65	9.6%
White Pine	10.95	0.00	104.83	8.23	124.01	3.2%
Red Pine	0.00	0.00	108.60	4.12	112.72	3.0%
Other Conifer Plantations	5.82	0.00	77.77	12.91	96.50	2.5%
<b>Sub-total Conifers</b>	<b>50.51</b>	<b>3.33</b>	<b>953.01</b>	<b>103.94</b>	<b>1,110.79</b>	<b>29.1%</b>
<b>Sub-total All Forests</b>	<b>340.75</b>	<b>42.90</b>	<b>2,790.66</b>	<b>216.94</b>	<b>3,396.43</b>	<b>88.9%</b>
	<b>383.65</b>		<b>3,007.60</b>			
Non-Forest						
Lake		1.01		0.00	1.01	0.02%
Brush and Alder		10.93		160.87	172.10	4.5%
DAL		0.00		24.56	24.56	0.6%
Grass and Meadow		8.33		47.89	56.22	1.5%
Open Muskeg		3.43		0.00	3.43	0.1%
Treed Muskeg		1.95		125.55	127.50	3.3%
Un-classified		6.26		34.34	40.60	1.1%
<b>Sub-total Non-forest</b>		<b>31.91</b>		<b>393.21</b>	<b>425.12</b>	<b>11.1%</b>
<b>Total</b>		<b>415.56</b>		<b>3,400.81</b>	<b>3816.37</b>	<b>100%</b>

Table 7. Forest Unit Age Class Summary for the properties acquired from Domtar in 2009.

Forest Unit	B-S	1-20	21-40	41-60	61-80	81-100	101+	Total
<b>Hardwoods</b>								
Lowland Hardwoods	17.23	0.00	12.34	34.71	64.56	10.68	0.00	139.52
Tolerant Hardwoods	22.34	0.00	22.56	16.13	45.3	0.00	0.00	106.33
Intolerant Hardwoods	0.00	0.00	13.27	14.45	1.25	0.00	0.00	28.96
Hybrid Poplar	0.00	29.13	25.86	0.00	0.00	0.00	0.00	55.00
<b>Sub-total Hardwoods</b>	<b>39.57</b>	<b>29.13</b>	<b>74.03</b>	<b>65.29</b>	<b>111.11</b>	<b>10.68</b>	<b>0.00</b>	<b>329.81</b>
<b>Conifers</b>								
Other Conifers	3.33	0.00	1.68	0.00	6.08	25.36	0.00	36.45
White Spruce	0.00	0.00	0.62	0.00	0.00	0.00	0.00	0.62
White Pine	0.00	6.05	4.89	0.00	0.00	0.00	0.00	10.95
Red Pine	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
O. Conifer Plantations	0.00	0.00	5.82	0.00	0.00	0.00	0.00	5.82
<b>Sub-total Conifers</b>	<b>3.33</b>	<b>6.05</b>	<b>13.01</b>	<b>0.00</b>	<b>6.08</b>	<b>25.36</b>	<b>0.00</b>	<b>53.84</b>
<b>Total</b>	<b>42.90</b>	<b>35.18</b>	<b>87.04</b>	<b>65.29</b>	<b>117.19</b>	<b>36.04</b>	<b>0.00</b>	<b>383.65</b>
<b>Percentage</b>	<b>11.2%</b>	<b>9.2%</b>	<b>22.7%</b>	<b>17.0%</b>	<b>30.5%</b>	<b>9.4%</b>	<b>0.0%</b>	<b>100%</b>

Almost 89% of the lands added to the SDG County Forest are forested and 11% are open lands, most of which are associated with wetlands (Table 7). This is very similar to the rest of the SDG County Forest (88% forest / 12% open lands). The acquired properties share a similar mix of over 30 tree species with the existing County Forest, resulting only minor shifts in species composition. The hardwood component of the forested area has increased slightly from 65% to 67% and the conifer dominated areas dropped from 35% to 33%. The proportion of conifer plantations, consisting primarily of white spruce, white pine and red pine, remains unchanged at approximately 20% of the forested portion of the SDG County Forest.

As was the case with the rest of the SDG County Forest, the properties acquired from Domtar have been heavily influenced by the region's history. Forests are typically young second growth, which have their recent origin in the abandonment of poor quality agricultural lands. Over 90% of the forests on the newly acquired properties are younger than 80 years of age, while almost all of the plantations are less than 40 years of age (Table 7). There are not any forests of over 100 years of age, but some stands some contain remnants of the previous forest. For example, SDG 95 (Domtar 4) contains several remnant white pines that are well over 100 years old.

## **D-1.6 FOREST UNITS**

### **D-1.6.1 Hybrid Poplar**

There are 55.0 hectares of hybrid poplar plantation on the SDG County Forest which are a result of Domtar planting open lands that were well suited for growing short rotation species. All of these plantations are less than 40 years of age, with more than half less than 20 years of age (Table 7).

Domtar invested significant resources in the establishment of hybrid poplar on many of their properties in an effort to establish a fast growing species that would produce a high quality pulpwood on short rotations within a short distance of the Cornwall mill.

Fourteen (14) hybrids were planted on the SDG Forest. The quality of the plantations is highly variable. Some sites contain low stocked and/or poor quality trees, while others have resulted in well stocked plantations of moderate to high quality stems averaging 20 cm DBH in less than 20 years.

Hybrid poplar was planted on various site types, but the majority of the plantations are on medium to fine textured (e.g. loamy sand, very fine sand, etc.), well-drained soils where growth is maximized. Regeneration in hybrid poplar plantations is primarily green ash, however the associate species are dependent on the canopy closure and the seed source in neighboring stands. White elm, red maple, bur oak, cedar, spruce and white pine are the most common associates on the properties of the SDG County Forest. Some plantations have been under planted with white pine.

**SILVICS** (adapted from OMNR, 2000. Demeritt, Jr. 1990)

Hybrid Poplar

- hybrid poplars are very fast growing, short-lived trees.
- seedlings develop best on moist mineral soils



- seedlings are highly intolerant of competing vegetation and will not survive under shade for more than 1 or 2 years.
- hybrid poplar is a prolific sprouter and is able to produce timber from sprouts with proper management.
- vigorous polewood and small logs with healthy crowns have been shown to respond well to thinning.
- most common damaging agents in Eastern Ontario include Hypoxylon canker, trunk and butt rots, ice and snow damage, beaver and porcupine activity, as well as leaf and twig blight.

### **LONG-TERM MANAGEMENT OBJECTIVE**

The majority of the merchantable volume produced on hybrid poplar plantations is pulpwood, however sawlogs can be produced from larger diameter, high quality stems. The long-term management objective is to promote continued natural succession until the forests reach a point of commercial merchantability. The purpose of the hybrid poplar in Eastern Ontario was to provide furnish for a pulp mill on short rotations. As a result, many clones are very short-lived (e.g. 40-50 years) and are not suitable for longer term management. Careful selection of silvicultural treatment in these plantations is required.

### **MANAGEMENT**

Active forest management is generally a low priority for these forests at this time and no allowable harvest has been calculated. Due to the small size of the areas where hybrid poplar was planted (i.e. 1-5 ha), opportunities to manage plantations will generally be limited to those in the vicinity of other planned harvests.

Plantation thinning may be considered in stands with sufficient quality and stocking, where a desirable growth response can be anticipated. First thinning in hybrid poplar should be carried out when the stand is young, since their ability to respond to thinning declines with age. Clones that are candidates for thinning include; DN 74, DN 177 and NM 1 (Adam Zulinski, 2009

personal communication). Due to the advanced age of many of the other clones that have been planted on the SDG County Forest, there is likely little benefit to be realized from thinning.

Typically first thinning in plantations with an average diameter less of 18 cm or less will be row thinning removing every third row. Plantations with an average diameter of 20 cm or greater will be row thinning removing every fourth to fifth row to establish access, with selection thinning within the remaining rows. In both cases, full row removal is preferred. Jogs in the row to avoid areas of high quality timber are acceptable provided they are limited; repeated short jogs in rows create problems for machine operators and may reduce the ability to market the thinnings. Subsequent thinnings are selective, using the previously harvested rows for access.

Basal area stocking guides for thinning hybrid poplar plantations are provided in Table 8. For a particular stand, the prescription for residual basal area should typically fall between the SDI target and a 1/3 basal area removal.

**Table 8: Hybrid poplar plantation stocking table.**

DBH		SDI Fully Stocked		SDI Target Residual BA			Minimum Residual BA (33% Removal)	
Cm	Inches	M2/ Ha	Ft2/ Acre	M2/ Ha	Ft2/ Acre	% Removal	M2/ Ha	Ft2/ acre
15	6	31.8	106	24.7	83	22%	21.3	71
17.5	7	33.7	113	26.5	89	21%	22.6	75
20	8	34.6	116	26.7	89	23%	23.2	78
22.5	9	35.8	120	27.8	93	22%	24.0	80
25	10	36.8	123	29.5	99	20%	24.7	83
27.5	11	38.6	129	29.7	99	23%	25.9	87

Source: SDMD v 3.1, Martin Streit (2009 personal communication), Jim Hendry (2009 personal communication)

## **HARVEST CUTS**

Harvest cuts differ from thinning operations in that management is primarily focused on the biological needs of the regeneration, rather than the mature trees. Harvest cuts will be scheduled in mature hybrid poplar plantations, in stands with poor stocking and/or poor quality stems, or in stands with dense advanced regeneration of desirable species.

Harvest cuts in hybrid poplar plantations will typically be a three-cut uniform shelterwood system (seeding, release and final removal cuts) to promote the establishment or release advanced growth of hardwood or white pine regeneration. Deferral of the final removal cut may be considered to preserve aesthetic values.

Many plantations which have suffered damage from disease or that were damaged by the ice storm, have a dense understory dominated by green ash, often mixed with white elm and red maple. Natural regeneration of native tree species is preferred, but under-planting may be used to augment natural regeneration. Under-planting white pine has been quite effective under the cover of hybrid poplar and may be attempted where the lowest levels of hardwood competition exist.

## **D-1.7 NATURAL AND CULTURAL HERITAGE VALUES OF THE SDG COUNTY FOREST**

### **D-1.7.1 Introduction**

Although it is possible to develop the economic potential of the properties acquired from Domtar, the conservation value of these properties far outweighs the economic potential. The properties that have been added to the County Forest in 2009 have increased the representation in public ownership of high conservation value forest, Provincially Significant and Locally Significant Wetlands, riparian corridors, OP woodlands and deer yards.

### **D-1.7.2 Values Inventory and Mapping**

Values information for the SDG County Forest is documented on the Values Map that has been updated to address the acquired properties (Appendix 2). This map has been produced and is maintained by the GIS department of SDG. The values map provides an initial inventory for assessing the natural and cultural heritage values on a particular property. The information currently shown on the map includes provincially and locally significant wetlands, areas of natural and scientific interest (ANSIs), documented species at risk observations, OP woodlands, deer wintering yards, spawning areas, high conservation value forests, active stick nests, recreation trails and research plots.

Natural and cultural heritage values are assessed throughout the planning and operational phases of forest management. An initial assessment of values was performed for the original plan and again for the amendment. The map included with this plan provides a snapshot of the natural and cultural heritage values at the time of writing. New values are added to the database as they are discovered (e.g. harvest planning, tree marking, during operations, etc.) and/or as information is updated (e.g. new recreation trails) and these values are provided the appropriate consideration during forest operations (see Section B-9.5 Areas of Concern). SNC, in cooperation with the Mohawks of Akwesasne and Algonquins of Golden Lake First Nations, will perform additional assessments of the natural and cultural heritage features on SDG County Forest properties prior

to forest operations. Natural and cultural heritage values which are highly sensitive or subject to exploitation are not mapped.

### **D-1.7.3 Natural Heritage Values**

Table 9 provides an update of the natural heritage values of the SDG County Forest that includes the acquired properties. SDG County Forest comprises 1.15% of the total land base of SDG, but a much higher percentage of many of the natural heritage values. In particular, SDG County Forest contains substantial representation of wetlands and forest cover and the acquisition of the properties augments this representation.

Tables 9 through 14 provide additional detail on natural heritage values. A complete description of individual wetland and Area of Natural and Scientific Interest sites, including vegetation communities is available on the OMNR's website, under Natural Heritage Information Centre, Natural Areas.

### **Wetlands**

The significance of wetlands is determined by evaluating biological, social, hydrological and special features attributes. Wetlands are typically composed of varying percentages of swamp, bog and marsh as described in tables 10 and 11.

### **PROVINCIALY SIGNIFICANT WETLANDS**

There are portions of eight provincially significant wetlands on the SDG County Forest (Table 10). The acquired properties add 55.58 hectares to the SDG County Forest bringing the total area up 1,117.97 hectares from 1,062.39 hectares, which represents 6.17% of the total area of provincially significant wetlands in SDG. Five of the wetlands contain < 10% ownership by the County. However, the SDG County Forest includes 11.80% of the Hoasic Creek Wetland, 13.8% of the Summerstown Swamp and 21.5% of the Morewood Bog.

## **LOCALLY SIGNIFICANT WETLANDS**

There are portions of ten locally significant wetlands on the SDG County Forest (Table 11). The total area is up from 187 hectares to 279.23 hectares after the acquisition, which represents 4.73% of the total area of locally significant wetlands in SDG. Only four of the wetlands contain < 10% ownership by the County. The SDG County Forest includes 13.72% of the Dominionville Swamp, 15.94% of Munroe's Mills Swamp, 20.14% of the Lunenburg Swamp, 28.78% of the Palen Creek Swamp, 34.77% of the Monkland Swamp, 45.43% of the CP Swamp and 96.91% of the Highway 17 Marsh.

## **Areas of Natural and Scientific Interest (ANSI)**

ANSI's are areas of land and water containing natural landscapes or features which have been identified as having values related to protection, natural heritage appreciation, scientific study or education (OMNR, 1988). The total area designated as ANSI's remains unchanged after the acquisition (Table 12).

## **Species At Risk**

The Endangered Species Act, 2007 regulates the protection of species at risk (SAR). Under the Act, SAR are listed based on the best scientific information that is available and measures are developed to protect SAR and their habitat, as well as promoting their recovery. Information regarding SAR has been obtained from Natural Heritage Information Centre and there are two sites identified on SDG County Forest where historical observations of species at risk have been made (Table 9). However, other SAR are known to exist within the County Forest (e.g. butternut). Operational prescriptions for areas of concern will be developed for SAR in consultation with OMNR with the intent of protecting the SAR and its habitat. If available and applicable, SAR recovery plans will be implemented.

## **Streams**

Mapped streams on the SDG County Forest represent 0.9% of the streams in SDG. Streams are classified by the OMNR and Conservation Authorities according to their permanency, water temperature and fish populations. Of the streams on the SDG County Forest, 28% are classified as permanent, warm, baitfish; 12% are intermittent; 15% are permanent, warm, top predators; 5% are permanent, cold/cool, no trout or salmon; 41% of the streams have yet to be classified (Table 9).

## **Woodlands**

The SDG Official Plan identifies 84,737 hectares of forest. With the acquisition of the properties from Domtar, the SDG County Forest now contains 3,816.37 hectares; resulting in an increase from 3.5% to 4.5% of the forested area in SDG.

## **Winter Deer Yards**

Deer Yards are conifer-dominated forest areas where deer find shelter and food in the winter. Deer yard representation on the SDG County Forest has risen from 273.35 hectares to 352.08 hectares of deer yards, representing 3.6% of the SDG total (Table 13).

## **High Conservation Value Forests (HCVF)**

High conservation value forests are defined by local forest managers and represent uncommon, highly significant forest ecosystems. Typically, HCVFs which have been identified are either old growth forest ecosystems or forests with substantial populations of uncommon or rare tree species (Table 14).

Assessment of potential old growth forest sites within SDG has been carried out by Resource Stewardship SD&G. Category 1 and 2 old growth forest ecosystems contain at least 7 of 9 old

growth characteristics. At this time, SDG County Forests are known to contain 16.7 hectares of category 1 and 2 old growth forest ecosystems, representing 11.8 % of the known sites in SDG. There are old trees on the acquired properties, but there have not been any old growth ecosystems located on these properties. Also, substantial populations of uncommon or rare tree species have not been located on the new properties.

### **UNCOMMON FOREST COMMUNITY**

During the development of the amendment to the 20 Year Management Plan, the former Manager of Forestry Service highlighted a forest community that warranted further investigation as a potential High Conservation Value Forest. Field investigation confirmed that Domtar 9 (a.k.a. SDG 97) contains a white pine mineral coniferous swamp, which is listed as imperiled in Ontario (i.e. less than 6-20 occurrences). This forest community was quite common in the pre-European settlement forests of SD&G, but over 250 years of exploitation in the region has depleted this type of forest significantly.

Although this stand is only a shadow of the towering white pines that likely inhabited this site prior to European settlement, it is showing signs of recovery. The stand is made up of approximately 20% mature white pine (e.g. >100 years old) and there is well stocked white pine regeneration growing under the cover of red maple. Should management occur on this site, it will focus on promoting the white pine component and will encourage tree species that are typical associates in this forest community.



**Table 9**  
**Natural Heritage Features of the SDG County Forest**

<b>Provincially Significant Wetlands</b>		
Total Area of Provincially Significant Wetlands in SDG (ha)		18,118.78
Total Area of Provincially Significant Wetlands in SDG County Forest (ha)		1,117.97
Percentage of Provincially Significant Wetlands in SDG County Forest		6.17%
Number of Provincially Significant Wetlands represented on SDG County Forest		8
<b>Locally Significant Wetlands</b>		
Total Area of Locally Significant Wetlands in SDG (ha)		5,907.21
Total Area of Locally Significant Wetlands in SDG County Forest (ha)		279.23
Percentage of Locally Significant Wetlands in SDG County Forest		4.73%
Number of Locally Significant Wetlands represented on SDG County Forest		10
<b>Areas of Natural and Scientific Interest (ANSI)</b>		
Total Area of ANSI in SDG (ha)		13,901.34
Total Area of ANSI in SDG County Forest (ha)		877.77
Percentage of ANSI in SDG County Forest		6.3%
Number of ANSI represented on SDG County Forest		3
<b>Species at Risk Sites</b>		
Number of Species at Risk Sites in SDG		53
Number of Species at Risk Sites on SDG County Forest		2
<b>Streams</b>		
Total Length of Streams in SDG (excluding the Rideau Valley CA Streams) (m)		5,464,645
Total Length of Streams in SDG County Forest (m)		48,146
Percentage of Streams in SDG County Forest		0.9%
Stream Classification (% of Total)	Permanent, Warm, Baitfish	27.65%
	Intermittent	11.98%
	Permanent, Warm, Top Predators	14.85%
	Permanent, Cold/Cool, No Trout or Salmon	5.1%
	Unknown	40.55%
<b>Official Plan Woodlands</b>		
Total Area of Woodlands in SDG (ha)		84,737.07
Total Area of Woodlands in SDG County Forest (ha)		3,071.93
Percentage of Woodlands in SDG County Forest		3.6%
<b>Deer Yards</b>		
Total Area of Deer Yards in SDG (ha)		9,391.71
Total Area of Deer Yards in SDG County Forest (ha)		352.08
Percentage of Deer Yards in SDG County Forest		3.75%

**Table 10**  
**Provincially Significant Wetlands**

Total Area of Provincially Significant Wetlands in SDG (ha)	18,118.78
Total Area of Provincially Significant Wetlands in Forest Compartments (ha)	1,117.97
Percentage (%) of Provincially Significant Wetland in Forest Compartments	6.17

Breakdown by Individual Wetland

<b>Apple Hill Swamp</b>			
Total area of wetland (ha)			88.74
Total area of wetland in Forest Compartment(s) (ha)			4.05
Percentage of wetland in Forest Compartment(s)			4.56
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
73	Wetland, Swamp	4.05	4.56

<b>Black Lake Swamp</b>			
Total area of wetland (ha)			488.04
Total area of wetland in Forest Compartment(s) (ha)			37.99
Percentage of wetland in Forest Compartment(s)			7.78
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
27	Wetland, Swamp	16.84	3.45
29	Wetland, Swamp	15.79	3.24

<b>Froatburn Swamp</b>			
Total area of wetland (ha)			946.56
Total area of wetland in Forest Compartment(s) (ha)			66.92
Percentage of wetland in Forest Compartment(s)			7.07
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
60	Wetland, Swamp	11.67	1.23
99	Wetland, Marsh	8.17	0.86
99	Wetland, Marsh	47.07	4.97

**Table 10 (Continued)**  
**Provincially Significant Wetlands**

<b>Hoasic Creek Wetland</b>				
Total area of wetland (ha)				4,992.28
Total area of wetland in Forest Compartment(s) (ha)				588.98
Percentage of wetland in Forest Compartment(s)				11.80
Breakdown of Wetland by Forest Compartment				
Forest Compartment	Category	Area (ha)	Percentage of Wetland	
28	Wetland, Swamp	36.79	0.74	
35	Wetland, Swamp	32.77	0.66	
36	Wetland, Swamp	31.09	0.62	
37	Wetland, Swamp	52.17	1.04	
45	Wetland, Bog	1.57	0.03	
45	Wetland, Swamp	39.63	0.79	
48	Wetland, Swamp	19.34	0.39	
49	Wetland, Swamp	11.60	0.23	
50	Wetland, Swamp	14.45	0.29	
51	Wetland, Swamp	45.57	0.91	
59	Wetland, Swamp	15.72	0.31	
63	Wetland, Swamp	22.31	0.45	
64	Wetland, Swamp	19.21	0.38	
70	Wetland, Bog	23.45	0.47	
70	Wetland, Swamp	24.80	0.50	
71	Wetland, Bog	17.22	0.34	
71	Wetland, Swamp	27.87	0.56	
72	Wetland, Swamp	15.95	0.32	
75	Wetland, Marsh	0.41	0.01	
75	Wetland, Swamp	35.97	0.72	
76	Wetland, Marsh	0.14	0.00	
76	Wetland, Swamp	32.11	0.64	
86	Wetland, Swamp	15.69	0.31	
89	Wetland, Swamp	19.48	0.39	
94	Wetland, Swamp	33.62	0.67	

<b>Loch Garry Marsh</b>				
Total area of wetland (ha)				1,135.37
Total area of wetland in Forest Compartment(s) (ha)				18.62
Percentage of wetland in Forest Compartment(s)				1.64
Breakdown of Wetland by Forest Compartment				
Forest Compartment	Category	Area (ha)	Percentage of Wetland	
25	Wetland, Bog	3.31	0.29	
25	Wetland, Marsh	1.59	0.14	
25	Wetland, Swamp	13.71	1.21	

**Table 10 (Continued)**  
**Provincially Significant Wetlands**

<b>Morewood Bog</b>			
Total area of wetland (ha)			554.00
Total area of wetland in Forest Compartment(s) (ha)			119.19
Percentage of wetland in Forest Compartment(s)			21.51
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
14	Wetland, Bog	7.27	1.31
14	Wetland, Swamp	3.10	0.56
15	Wetland, Bog	0.26	0.05
15	Wetland, Swamp	25.10	4.53
16	Wetland, Swamp	19.34	3.49
17	Wetland, Bog	19.98	3.60
17	Wetland, Swamp	0.18	0.03
18	Wetland, Bog	12.49	2.25
18	Wetland, Swamp	7.40	1.34
19	Wetland, Bog	0.12	0.02
19	Wetland, Swamp	23.96	4.32

<b>Newington Bog</b>			
Total area of wetland (ha)			1,883.45
Total area of wetland in Forest Compartment(s) (ha)			130.76
Percentage of wetland in Forest Compartment(s)			6.94
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
52	Wetland, Bog	1.61	0.09
52	Wetland, Swamp	5.21	0.28
53	Wetland, Bog	4.56	0.24
53	Wetland, Swamp	35.48	1.88
54	Wetland, Bog	0.04	0.00
54	Wetland, Swamp	13.51	0.72
55	Wetland, Swamp	15.01	0.80
61	Wetland, Bog	8.82	0.47
61	Wetland, Swamp	18.73	0.99
66	Wetland, Bog	1.72	0.09
66	Wetland, Swamp	7.57	0.40
68	Wetland, Swamp	11.87	0.63
79	Wetland, Bog	2.16	0.11
79	Wetland, Swamp	4.45	0.24

**Table 10 (Continued)**  
**Provincially Significant Wetlands**

<b>Summerstown Swamp</b>			
Total area of wetland (ha)			1,095.27
Total area of wetland in Forest Compartment(s) (ha)			151.46
Percentage of wetland in Forest Compartment(s)			13.83
<b>Breakdown of Wetland by Forest Compartment</b>			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
5	Wetland, Swamp	6.83	0.62
6	Wetland, Swamp	19.67	1.80
30	Wetland, Bog	7.81	0.71
30	Wetland, Swamp	21.06	1.92
31	Wetland, Swamp	4.56	0.42
32	Wetland, Bog	4.14	0.38
32	Wetland, Swamp	10.88	0.99
39	Wetland, Swamp	24.18	2.21
40	Wetland, Swamp	15.04	1.37
41	Wetland, Swamp	10.23	0.93
42	Wetland, Swamp	27.04	2.47

**Table 11**  
**Locally Significant Wetlands**

Total Area of Locally Significant Wetlands in SDG (ha)	5,907.21
Total Area of Locally Significant Wetlands in Forest Compartments (ha)	279.23
Percentage (%) of Locally Significant Wetland in Forest Compartments	4.73

**Breakdown by Individual Wetland**

<b>Concession 1 Bog</b>			
Total area of wetland (ha)			84.36
Total area of wetland in Forest Compartment(s) (ha)			6.36
Percentage of wetland in Forest Compartment(s)			7.54
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
43	Wetland, Bog	1.33	1.58
43	Wetland, Swamp	0.44	0.52
62	Wetland, Bog	4.61	5.45

<b>Cp Swamp</b>			
Total area of wetland (ha)			21.46
Total area of wetland in Forest Compartment(s) (ha)			9.75
Percentage of wetland in Forest Compartment(s)			45.43
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
43	Wetland, Swamp	9.75	45.43

<b>Dominionville Swamp</b>			
Total area of wetland (ha)			156.06
Total area of wetland in Forest Compartment(s) (ha)			21.41
Percentage of wetland in Forest Compartment(s)			13.72
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
92	Wetland, Bog	0.48	0.31
92	Wetland, Swamp	20.93	97.76

**Table 11 (Continued)**  
**Locally Significant Wetlands**

<b>East Bonville Swamp</b>			
Total area of wetland (ha)			72.46
Total area of wetland in Forest Compartment(s) (ha)			3.39
Percentage of wetland in Forest Compartment(s)			4.68
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
96	Wetland, Bog	3.39	4.68

<b>Hwy 417 Marsh</b>			
Total area of wetland (ha)			95.90
Total area of wetland in Forest Compartment(s) (ha)			92.94
Percentage of wetland in Forest Compartment(s)			96.91
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
80	Wetland, Swamp	12.57	13.11
81	Wetland, Swamp	23.59	24.60
82	Wetland, Swamp	30.69	32.00
83	Wetland, Swamp	26.09	27.21

<b>Ingleside Swamp</b>			
Total area of wetland (ha)			318.78
Total area of wetland in Forest Compartment(s) (ha)			13.24
Percentage of wetland in Forest Compartment(s)			4.15
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
77	Wetland, Swamp	13.24	4.15

<b>Lunenburg Swamp</b>			
Total area of wetland (ha)			336.07
Total area of wetland in Forest Compartment(s) (ha)			67.69
Percentage of wetland in Forest Compartment(s)			20.14
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
95	Wetland, Swamp	48.27	14.36
98	Wetland, Swamp	19.42	5.78

<b>Monkland Swamp</b>			
Total area of wetland (ha)			58.98
Total area of wetland in Forest Compartment(s) (ha)			20.51
Percentage of wetland in Forest Compartment(s)			34.77
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
23	Wetland, Swamp	11.19	18.97
69	Wetland, Marsh	2.02	3.42
69	Wetland, Swamp	7.30	12.38

<b>Munroes Mills Swamp</b>			
Total area of wetland (ha)			144.63
Total area of wetland in Forest Compartment(s) (ha)			23.05
Percentage of wetland in Forest Compartment(s)			15.94
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
34	Wetland, Bog	7.27	5.03
34	Wetland, Swamp	15.78	10.91

<b>Palen Creek Swamp</b>			
Total area of wetland (ha)			601.17
Total area of wetland in Forest Compartment(s) (ha)			20.89
Percentage of wetland in Forest Compartment(s)			28.78
Breakdown of Wetland by Forest Compartment			
Forest Compartment	Category	Area (ha)	Percentage of Wetland
97	Wetland, Bog	20.89	28.78



**Table 12**  
**ANSI**

Total Area of ANSI in SDG (ha)	13,901.34
Total Area of ANSI in Forest Compartments (ha)	877.77
Percentage (%) of ANSI in Forest Compartments	6.31

Breakdown by Individual ANSI

<b>Hoasic Creek Wetland</b>			
Total area of ANSI (ha)			5,144.54
Total area of ANSI in Forest Compartment(s) (ha)			657.41
Percentage of ANSI in Forest Compartment(s)			12.78
Breakdown of ANSI by Forest Compartment			
Forest Compartment	Category	Hectares	Percentage of ANSI
28	ANSI, Life Science	36.75	0.71
35	ANSI, Life Science	49.62	0.96
36	ANSI, Life Science	30.95	0.60
37	ANSI, Life Science	52.07	1.01
45	ANSI, Life Science	41.17	0.80
48	ANSI, Life Science	19.37	0.38
49	ANSI, Life Science	11.53	0.22
50	ANSI, Life Science	14.47	0.28
51	ANSI, Life Science	46.97	0.91
59	ANSI, Life Science	15.86	0.31
63	ANSI, Life Science	43.50	0.85
64	ANSI, Life Science	19.28	0.37
70	ANSI, Life Science	48.15	0.94
71	ANSI, Life Science	45.03	0.88
72	ANSI, Life Science	15.95	0.31
75	ANSI, Life Science	59.16	1.15
76	ANSI, Life Science	40.13	0.78
86	ANSI, Life Science	14.10	0.27
89	ANSI, Life Science	19.51	0.38
94	ANSI, Life Science	33.84	0.66

**Table 12 (Continued)**  
**ANSI**

<b>Newington Bog</b>			
Total area of ANSI (ha)			1,560.34
Total area of ANSI in Forest Compartment(s) (ha)			150.23
Percentage of ANSI in Forest Compartment(s)			9.63
Breakdown of ANSI by Forest Compartment			
Forest Compartment	Category	Hectares	Percentage of ANSI
68	ANSI, Life Science	20.39	1.31
52	ANSI, Life Science	8.32	0.53
79	ANSI, Life Science	10.24	0.66
66	ANSI, Life Science	10.87	0.70
53	ANSI, Life Science	40.04	2.57
61	ANSI, Life Science	41.13	2.64
54	ANSI, Life Science	13.55	0.87
55	ANSI, Life Science	5.69	0.36

  

<b>Rigaud River Headwaters Forest</b>			
Total area of ANSI (ha)			1,508.86
Total area of ANSI in Forest Compartment(s) (ha)			70.13
Percentage of ANSI in Forest Compartment(s)			4.65
Breakdown of ANSI by Forest Compartment			
Forest Compartment	Category	Hectares	Percentage of ANSI
27	ANSI, Life Science	48.62	3.22
29	ANSI, Life Science	21.51	1.43

**Table 13**  
**Deer Yards**

Total Area of Deer Yards in SDG (ha)	9,391.71
Total Area of Deer Yards in Forest Compartments (ha)	352.08
Percentage (%) of Deer Yards in Forest Compartments	3.75

**Breakdown by Individual Forest Compartment**

Forest Compartment	Area of Deer Yard (ha)
6	4.59
11	34.36
12	16.75
13	5.23
14	0.74
29	10.06
30	5.54
39	10.31
40	11.37
41	7.96
45	28.83
50	14.27
51	31.55
52	9.78
53	28.79
66	8.97
68	35.16
79	9.09
95	30.45
98	10.25
99	37.90

**Table 14**  
**High Conservation Value Forests**

Old Growth Forest Ecosystems

Total Area of Category 1,2 Old Growth Forest in SDG (ha)	141.43
Total Area of Category 1,2 Old Growth Forest Compartments (ha)	16.7
Percentage of Category 1,2 Old Growth Forests in Forest Compartments	11.8

Breakdown by Individual Forest Compartment

a) Old Growth Forest Ecosystems		
Forest Compartment	Tree Species	Area (ha)
32	White Pine	4.4
92	Hemlock, Cedar	12.3
b) Uncommon or Rare Tree Species		
Forest Compartment	Tree Species	Area (ha)
56	Eastern Cottonwood	10.14
c) Uncommon Forest Community		
Forest Compartment	Forest Community Type	Area (ha)
97	White Pine Mineral Swamp	3.4

# APPENDIX 1

## SDG County Forest Overview

### Map

APPENDIX 2  
SDG COUNTY FOREST  
COMPARTMENT MAPS  
AND AERIAL PHOTOS

APPENDIX 3  
SDG COUNTY FOREST  
VALUES MAP

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