

**Final Report: Rationale and Methodology for  
Determining Significant Woodlands in the  
Regional Municipality of Halton**

*Prepared For:*

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*Distribution*

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### 3.2 Guidelines for Regional Woodland Cover

Environment Canada, the Ontario Ministry of Natural Resources and the Ontario Ministry of the Environment (1998) provided guidelines for rehabilitation of habitat in Ontario which indicate that the percent woodland cover in a watershed should exceed 30% in order to support most forest breeding bird species expected within that range. This finding was echoed by the investigations of Griffiths into the relationships between watershed condition and water quality (pers. comm. 2001). OMNR (2000) similarly recommends that woodland cover be retained above a 30% threshold to maintain area-sensitive woodland breeding species. (See glossary for explanation of area sensitivity).

American Forests (2001) recommend that 40% woodland cover should be maintained to benefit air quality due to the function of leaf surfaces as ozone reaction sites. Urban forests play a significant role in reducing air pollution in an urban environment (McPherson et al., 1997, Scott et al., 1998). The most recent report on air quality in Ontario (Ministry of the Environment, 1999) shows that Oakville and Burlington (along with most of southern Ontario) have periodic episodes of poor air quality, usually associated with high ozone episodes during the summer months. Retention of forest covers can play a significant role in mitigating those episodes. This function is even more significant on shorelines receiving pollution across the Great Lakes, because the ozone is not depleted over water, and therefore the ozone concentrations are higher along the shoreline (e.g., Oakville, Burlington) than would be expected if the pollution had passed over land. Further justification for retention of small woodlands with respect to atmospheric effects is provided by Weathers *et al.* (2001), who found "*that forest edges ... function both as significant traps for air-borne nutrients and pollutants from adjoining agricultural or urban landscapes and effective concentrators of below-canopy chemical fluxes.*"

In the case of Halton, Table 2 shows that woodland cover below the Niagara Escarpment is less than half of values discussed above, particularly with respect to maintenance of air quality. In addition, woodland cover ideally should be maintained on all representative terrain and soil types.

Table 2. Halton Woodland Cover

Halton Region	Forested Area (ha)	Percent Forested
Below Escarpment	7388.1	12.17
Above Escarpment	14962.3	40.80
<b>Halton Region Total</b>	<b>22350.4</b>	<b>22.30</b>

Recommendations in the literature indicate that woodland cover should achieve a minimum of 30 to 40% of the planning area in order to maintain minimum viable ecosystems in terms of function and attributes. The question becomes: What constitutes the planning area? Within Halton Region, three Conservation Authorities have jurisdiction in parts of the Region, representing seven major watershed systems (quaternary watersheds according to the classification of Cox *et al.*). The Region can be further partitioned politically into nine planning areas that represent the urban cores of the four municipalities and their associated rural areas. (Table 3). When viewed in this holistic manner, it is apparent that even if all of the woodlands in the Region were designated as being significant, the minimum threshold of 30% is achieved only above the escarpment, where these woodlands compensate for the extremely poor coverage below the escarpment.

Table 3. Woodland Cover by Municipality

Municipality	Area (ha)	Wooded Area (ha)	Percent Wooded	Percent of Regional Woodlands
<b>Burlington</b>	<b>18649.0</b>	<b>3188.4</b>	<b>17.1</b>	<b>14.3</b>
Rural	10017.6	2616.5	26.1	11.7
Urban	8631.4	572.0	6.6	2.6
<b>Halton Hills</b>	<b>28199.1</b>	<b>7200.6</b>	<b>25.5</b>	<b>32.2</b>
Rural	25001.6	6766.2	27.1	30.3
Total Urban	3197.5	434.4	13.6	1.9
Acton	655.1	70.1	10.7	0.3
Georgetown	1901.4	349.9	18.4	1.6
Corridor	641.0	14.4	2.2	0.1
<b>Milton</b>	<b>36734.7</b>	<b>10270.2</b>	<b>28.0</b>	<b>46.0</b>
Rural	31069.5	10074.9	32.4	45.1
Urban	5665.3	195.4	3.4	0.9
<b>Municipality</b>	<b>Area (ha)</b>	<b>Wooded Area (ha)</b>	<b>Percent Wooded</b>	<b>Percent of Regional Woodlands</b>
<b>Oakville</b>	<b>13854.7</b>	<b>1691.0</b>	<b>12.2</b>	<b>7.6</b>
Rural	885.9	266.7	30.1	1.2
Urban	12968.8	1424.3	11.0	6.4
<b>Halton Region Total</b>	<b>97437.5</b>	<b>22350.3</b>	<b>22.9</b>	<b>100.0</b>

1. For these area calculations, urban areas were obtained from Regional GIS mapping. Lower tier municipal boundaries were obtained from Statistics Canada. Contiguous woodland patches intersected by a political boundary were subdivided by urban or rural areas.

2. Where forests crossed municipal boundaries the woodland was partitioned.