



# MINNESOTA FORESTRY NOTES

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## EFFECTS OF DEER AND RABBITS ON HAZEL BRUSH AT ITASCA STATE PARK

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Hazel (Corylus cornuta and C. americana) is the most common kind of brush on much of the upland area of Minnesota. At Itasca Park it has been found to constitute over 75 per cent of the brush population associated with several of the common upland forest cover types. The authors were interested in determining whether the feeding activities of deer and rabbits have any effect in controlling the population of this brush. This information was felt to be of value to those concerned with the administration of forest lands and of special significance for the multiple use management of parks and other recreational areas.

The data presented were collected in September, 1952, from two pairs of deer and rabbit exclosures established at Itasca Park in 1937 in connection with Civilian Conservation Corps projects.

The first pair of exclosures is situated in an even-aged stand of red pine (Pinus resinosa) approximately 150 years old. The proximity of a small swamp meadow and fringe of hardwoods to the south, Mary Lake to the west, and scattered spruce and balsam fir thickets to the east make the general area attractive to deer. The other pair of exclosures is in a stand of mixed northern hardwoods with a scattering of old growth white pine (Pinus strobus). The two areas are quite different as far as the dominant tree species and the species composition of the brush are concerned.

An extremely heavy deer population was present in the Park until 1945 when hunting was permitted. The area outside the exclosure has thus been subjected to eight years of very concentrated deer use followed by seven years of moderate use.

Paired mil-acre quadrats were studied with one of the pair located inside the exclosure and the other directly opposite outside the fence. Eighty such pairs of quadrats were carefully examined.

Although data were collected on all species of trees and brush present, only the information dealing with hazel brush are included in the following table. Other species constituted only a very minor part of the brush population.

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Total Number and Average Height of Hazel Brush Stems Found on Equal Numbers of

Quadrats Inside and Outside of Exclosure:

Ht. Classes (feet)	Deer Exclosures				Deer and Rabbit Exclosures			
	#1		#2		#1		#2	
	In	Out	In	Out	In	Out	In	Out
0 - 2.9	52	86	34	19	142	152	88	58
3.0 - 5.9	36	76	8	16	187	235	28	17
6.0 +	14	--	--	--	12	12	--	3
Total no. stems	102	162	42	35	341	399	116	78
Av. stem ht. (ft.)	3.4	2.9	2.1	2.9	3.4	3.4	2.2	2.4

The following observations are made on the basis of the above data:

1. The average height of hazel brush stems outside of the exclosures is not appreciably or consistently less than the average height of stems inside the exclosures.

2. The total number of hazel brush stems found on quadrats outside the exclosures is not appreciably less than the number of stems on quadrats inside the exclosures.

3. Neither deer nor rabbits seem to have been effective in reducing the population or the size of the hazel brush at Itasca Park during the 15 years of existence of these exclosures.