

29 UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF BIOLOGICAL SURVEY

IN REPLY REFER TO

NORTHEASTERN FOREST EXPERIMENT STATION
335 PROSPECT ST.
NEW HAVEN, CONNECTICUT

July 19, 1938

Superintendent
Acadia National Park
Bar Harbor, Maine

Dear Mr. Hadley:

The accompanying report summarizes the findings
on the inspection which Mr. Aldous and I made of deer
browsing conditions in the Park recently.

I trust the suggestions will prove helpful and
that you will not hesitate to bring up any questions
that may occur to you.

Sincerely yours,

John Pearce

John Pearce
Assistant Biologist
Section of Wildlife Surveys

Inclosure

Dictated by Mr. Pearce.
Signed in his absence
to avoid delay.

Aug 22 1938

Cooperative Wildlife Research Unit
Orono, Maine
June 28, 1938

MEMORANDUM FOR SUPERINTENDENT HADLEY

Reference is made to our inspection of deer browsing in and about Acadia National Park June 23-25, at the suggestion of Ranger Karl Jacobson.

The areas visited are shown by the attached sketch of our routes. Warden Lyle Smith and Ranger Jacobson were with us on all trips through the woods. Ranger Thompson accompanied us on the 23rd and 25th. All three men spared no effort to show us typical browsed areas and aid us in other ways. The long experience of both Mr. Smith and Mr. Thompson with deer on the Island proved particularly helpful.

Our inspection was based on the understanding that you wish to know if the present deer herd is endangering the forest growth in or adjacent to the Park area, or whether there is any such danger pending. Consequently our observations were made chiefly on winter feeding areas since it is this portion of the herd's range which first reflects over-browsing. This is due to their sustaining diet being reduced almost entirely to woody shoots and twigs at this season.

While it was obviously impractical to attempt a thorough survey of the situation on so short an inspection, the trip served very well for preliminary observations. We are able, therefore, to make only certain conclusions at this time which should prove useful. A further check of the area should be made during the coming winter, following which more definite recommendations could be made.

It can be stated, however, that there is no immediate danger of harmful over-browsing for Mt. Desert Island as a whole. There are numerous places

where deer browsing is checking the natural plant succession to some extent. Deer influence is undoubtedly more noticeable where the soil is lacking or shallow. On such sites the tree growth is less rapid and consequently takes longer to escape beyond deer reach. However, there is no definite "deer line" as yet on the areas visited by us. The dead lower branches on the cedar at Lake Wood, for instance, are due only in part to deer feeding. These cedars are similar to those about many ponds in the Northeast where a rather regular line of dead branches exists. Although this line is within reach of deer even in the winter time, many of the dead branches upon close examination are seen to be entirely unbrowsed. In parts of the Young's Mountain and Western Mountain sections, particularly near the summits, scattered patches of cedar show the first rudiments of a deer line. This is to be expected with a normal deer population as the plant is a choice species of browse.

The higher slopes of the mountains are used a great deal in winter, particularly the south slope according to Smith and Thompson. The condition of the browse for Little Brown's (Sargent) Mountain supports this statement.

No evidence of winter mortality among the deer was found by us. Remains of one immature deer which probably died last year were the only skeletal findings. It is believed, therefore, that very few deer have died as a result of severe winter conditions on the Island in recent years. This may be due in part to relatively mild weather but at least indicates deer are not starving.

Just when the deer will become too abundant for the feed available can not be stated without further study. There seems to be a concealed factor which tends to keep the deer numbers down. It does not, however, appear to be that of predation, disease or starvation. The remaining alternates are emigration from the Island or a subnormal birth rate. Fewer fawn tracks were seen by us than were to be expected from the evident abundance of adult animals.

However, emigration, especially in the light of Mr. Smith's observations, seems to be the more logical answer. Both of these possibilities might well be further investigated.

Species	Browsing					Area No. / <u>1</u>
	Light	Moderate	Heavy	Summer	Winter	
<u>Trees</u>						
White cedar (<i>Thuja occidentalis</i>)		X	X		X	1-2-3 / <u>4</u>
White pine (<i>Pinus strobus</i>)	X				X	1
Balsam (<i>Abies balsamea</i>)	X				X	1
Pin cherry (<i>Prunus pennsylvanica</i>)		X			X	3
Grey birch (<i>Betula populifolia</i>)		X	X	X		1-2-3 / <u>5</u>
L.T. aspen (<i>Populus grandidentata</i>)	X			X	X	2-3
Striped maple (<i>Acer pennsylvanicum</i>)			X	X	X	1-2-3
Red maple (<i>Acer rubrum</i>)		X			X	1-2-3
Mountain maple (<i>Acer spicatum</i>)		X			X	1-2
Service berry (<i>Amelanchier</i> sp.)		X	X	X	X	1-2-3 / <u>6</u>
Blacklock (<i>Tsuga canadensis</i>)	X				X	1
Blackch (<i>Fagus americana</i>)			X	X		1-2
<u>Shrubs</u>						
Elderberry (<i>Sambucus</i> sp.)			X		X	2-3
Winterberry (<i>Ilex</i> sp.)		X			X	1-2
Wild raisin (<i>Viburnum cassinoides</i>)		X	X	X	X	1-2-3 / <u>2</u>
Honeysuckle (<i>Lonicera hirsuta</i>)			X	X	X	3
Sumac (<i>Rhus</i> sp.)		X			X	3
Low juniper (<i>Juniperus communis</i>)		X			X	3
Sweet fern (<i>Comptonia</i> sp.)	X				X	1-2-3
Blueberry (<i>Vaccinium</i> sp.)	X				X	1-2-3
Huckleberry (<i>Gaylussacia</i> sp.)	X				X	1-2-3
Meadow sweet (<i>Spiraea latifolia</i>)	X				X	3
Alder (<i>Alnus incana</i>)	X			X		1-2-3
Blackberry (<i>Rubus</i> sp.)		X		X		3
W. holly (<i>Nemopanthus mucronata</i>)		X	X		X	1-2 / <u>3</u>
Bel nut (<i>Corylus</i> sp.)	X				X	2
Witch hazel (<i>Hamamelis virginiana</i>)	X				X	2
Bayberry (<i>Myrica</i> sp.)	X				X	2
<u>Herbs</u>						
Aster (<i>Aster</i> sp.)			X	X		1-2
Goldenrod (<i>Solidago</i> sp.)		X		X		2

/1 Area No. 1 - Lake Wood section.

" " 2 - Young's Mt. "

" " 3 - Sargent, Parkman, Penobscot Mts. section.

/2 Moderate summer browsing only for areas 2 & 3, remainder all heavy for winter.

/3 Moderate summer browsing only for area No. 2, remainder all heavy.

/4 Browsed heavily only on area No. 3.

/5 Browsed heavily only on area No. 3.

/6 Heavy browsing and summer browsing only in area No. 3

Sargent Mountain Area:

This section was visited via the carriage roads from which several short inspections of the growth on the slopes of Penobscot, Parkman and Sargent Mountains were made.

Winter browsing - Extensive on all slopes visited and moderate to heavy on mountain ash, striped maple, cedar, willow, wild raisin and aspen. Light to moderate on blueberry, meadow sweet, sweet fern, honeysuckle, service berry, and sumac.

Summer browsing - Light to moderately heavy on grey birch, L.T. aspen, alder, service berry, willow, and blackberry.

Some thought probably should be given to increasing the browse through plantings on these mountains as there are not a great deal of suitable food plants present, and deer use the area in the summer and winter quite extensively.

Lake Wood Section:

Winter browsing - Generally light to moderate, principal species white cedar and striped maple. Neither of these reflect excessive use by deer. Aside from occasional small clumps and unthrifty growth under shade very little browsed growth had died and the young trees were "escaping", i.e., growing more than they were browsed back.

Summer browsing - Light and practically restricted to this year's sprouts; little or none on conifers. Principal species used striped maple, beech, red maple, and yellow birch.

Young's Mountain Section:

Winter browsing - In the swamps heavy on winterberry, cedar when present, mountain holly, wild raisin and striped maple. Most of the browsing was light to moderate. There was evidence of moderate browsing but no incipient deer line while the trees everywhere were escaping. In the upland types browsing on maples and aspen was generally light or moderate. Forest progressing as well as can be expected on the rocky sites.

Summer browsing - Aspen (large-toothed), grey birch, beech, striped maple sprouts were being browsed most among woody plants. Some of these fairly consistently. However, the most utilized plant was an herbaceous plant belonging to the aster group and not the browse as might be expected.

C.M. Aldous

C.M. Aldous, Associate Biologist

John Pearce

John Pearce, Assistant Biologist

Section of Wildlife Surveys
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