FACTS BEHIND
THE
DEER SEASON RECOMMENDATIONS

By

CHESTER F. BANASIAK
Leader, White-tailed Deer Research

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INTRODUCTION

In Maine, as in other northern states, winter is a "bottle neck" through which deer must pass from one hunting season to the next. As colder weather arrives and snow piles up, deer gather in evergreen shelter offering the most comfort. These areas, usually called "yards", generally are used year after year. In them, deer receive protection from chilling winds, and the lesser snow depths make for easier traveling. Deer remain in these areas and depend upon the food (twigs of trees and shrubs) in and nearby the yards to carry them through the winter. How they make out depends upon the food supply, the number of deer in the yard, and the severity of the winter. We find that, so long as they find protection from the winter winds and deeper snow, deer will not move to another yard, even when food is scarce or non-existent and plentiful supplies of browse are available elsewhere. Therefore, the number of deer that any part of the State can support year around depends upon the amount of food available in the winter yards.

WINTER YARD SURVEYS*

Since winter yards are so important to the deer herd, surveys of a sample of them have been carried out throughout the State. In the past three winters, biologists have cruised 423 yards (Figure 1). All were given one of three ratings depending upon the amount of food found and how fast it was being used. Twenty-five percent of the yards had more deer than could be supported without causing damage to the range. Deer and food were in balance in 54 percent and more deer could be carried in 18 percent of the yards. When all yards were plotted on a State map,

* Conducted as a Federal Aid to Wildlife study.
lines were drawn enclosing practically all overbrowsed yards into one large area (Figure 2). This problem area fits into the continuous forest region of the State, (Figure 3), a region which has been set-off from the Aroostook farm land and the southern farm-woodlands by the Soil Conservation Service in its land-use maps. Of the 260 yards surveyed in the forest problem area, 38 percent showed greater deer use than the food could stand on a sustained basis; while only 5 percent of the 163 yards in the farm and farm-woodland regions were in that condition.

Our best winter deer range, then, occurs in the farm and farm-woodland sections of the State. There, frequent cuttings in small timber holdings result in a continuous supply of deer food in and near the yards from the new growth of trees and shrubs. Since human population is higher in those sections, hunting pressure is relatively heavy which also works toward keeping the deer in balance with their winter food supply. On the other hand, in the forest problem area timber cuttings are necessarily on a larger scale, mainly for pulpwood. While deer will have an abundance of food for a time following the cutting, much of the natural regrowth soon gets out of reach of deer, and seedling reproduction is shaded out. When this stage is reached, deer wintering in these areas are faced with less food each year, unless the herd is brought into balance with the food supply. If this is not done by hunting, deer will further reduce the food supply by overbrowsing, gradually killing off the little browse left.

Under these conditions, deer which should come out of the yards in spring in good condition, capable of producing and raising a large fawn crop, gradually show the effects of the food shortage. Fewer fawns are produced, therefore, the herd eventually stops increasing since replacements are less than the
deaths. As food shortages become more critical the younger deer fail to pull through the winter adding to the loss from lower productivity. Eventually a balance between deer numbers and the food supply is reached in one manner or another. Ideally the balance should be met before deer, by over-browsing, start reducing the food supply. A larger, healthier herd can then be carried.

DEER CHARACTERISTICS FROM THE PROBLEM AND NON-PROBLEM AREAS

Lowered productivity has been mentioned as one of the evidences of range deterioration. Other evidence can be obtained from examination of deer killed during the hunting season. Average antler development among yearling deer reflects range conditions, with larger diameters and greater number of points showing up in the better range. Likewise, body size of deer varies with range conditions, being especially evident among fawns.

These measurements were compared for deer from the non-problem farm-woodland and two parts of the problem area; forest and wilderness. All of the comparisons show that farm-woodland area deer are more productive, yearlings have better antler development and fawns are bigger than those of the problem area. (A small sample of hind foot lengths of female fawns did not conform with the other rankings.) Any one type of measurement by itself would not be conclusive evidence, but with all indicating the same condition there can be little doubt that the deer themselves substantiate the information obtained from our yard surveys.

DEER KILL INFORMATION FOR THE RANGE AREA

Although the size of problem and non-problem regions are about equal, 62 percent of the total
TABLE 1.

Comparison of deer measurements from the non-problem and problem areas, 1955

<table>
<thead>
<tr>
<th></th>
<th>Non-Problem</th>
<th>Problem Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farm-Woodland</td>
<td>Forest</td>
</tr>
<tr>
<td>Percent poor yards</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>Fawns: 100 does</td>
<td>105</td>
<td>87</td>
</tr>
<tr>
<td>Antler diameter (Yearlings)</td>
<td>17.4 mm</td>
<td>14.9 mm</td>
</tr>
<tr>
<td>Number of points (Yearlings)</td>
<td>3.2</td>
<td>2.5</td>
</tr>
<tr>
<td>Percent spikes (Yearlings)</td>
<td>54</td>
<td>75</td>
</tr>
<tr>
<td>Hind foot length*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male fawn</td>
<td>16.80&quot;</td>
<td>16.50&quot;</td>
</tr>
<tr>
<td>Female fawn</td>
<td>16.26&quot;</td>
<td>16.03&quot;</td>
</tr>
</tbody>
</table>

* Measure of skeletal (body) size.

TABLE 2.

Deer kill comparisons by range areas, 1955

<table>
<thead>
<tr>
<th></th>
<th>Non-Problem</th>
<th>Problem Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farm-Woodland</td>
<td>Forest</td>
</tr>
<tr>
<td>Land area (sq. miles)</td>
<td>14,375</td>
<td>10,394</td>
</tr>
<tr>
<td>Percent State area</td>
<td>47</td>
<td>34</td>
</tr>
<tr>
<td>Deer kill</td>
<td>22,037</td>
<td>12,149</td>
</tr>
<tr>
<td>Percent State kill</td>
<td>62</td>
<td>34</td>
</tr>
<tr>
<td>Kill/sq. mile</td>
<td>1.52</td>
<td>1.16</td>
</tr>
</tbody>
</table>
annual deer kill comes from the farm-woodland range in contrast to 38 percent from the forest and wilderness regions (Table 2). On a kill-per-square-mile basis, the harvest in the farm-woodland district (1.5 per square mile) is 25 percent greater than in the forest region (1.2 per square mile) and six times greater than in the wilderness (0.25 per square mile).

There is no questioning the fact that the lighter harvest in the problem area contributes to overcrowding of the winter range in that region.

CORRECTIVE MEASURES

With all evidence pointing to an unbalanced condition between the deer herd and its winter food supply in part of the State, some attempt at remedying the situation is necessary. We are faced with the alternative of either increasing the food supply in the vicinity of the yards now requiring it, or bringing the herd into a better balance with what now exists. Yard management to improve food and cover conditions will necessarily entail close cooperation with private landowners. More important, our recommendations will have to consider both deer and the highly important timber and pulp industry. This phase of management is still in the experimental stage and it may take another five years before sound recommendations can be made and put into practice. In the meantime, the problem which now exists, although not critical at the present time, is likely to become more serious as time passes. It is necessary, therefore, to work toward obtaining a heavier harvest in the broad area where our information shows it is needed.

RECOMMENDED CHANGES IN ZONES AND SEASONS

Every effort has been made to have the zones conform as closely as possible to the divisions between the problem and non-problem areas. However, the need for easily recognized boundaries necessitates some compromises (Figure 4).
Northern Zone

The primary consideration was to push the southern boundary of the early opening zone (now along county lines) north of the southern farm-woodland region. This should channel the early hunting pressure into the forest region where it is needed. A line following the Appalachian Trail from the Maine-New Hampshire line in Oxford County to a junction with the Canadian-Pacific tracks south of Greenville, and thence easterly along the tracks to Vanceboro, meets this requirement. The half of the State north of this boundary contains the bulk of the problem area. A small portion of this northern zone (eastern Aroostook County farm-woodlands) is trouble-free, but the light kill in that section would not warrant breaking-up the continuity of the zone.

A season of October 15 to November 30 is recommended for the northern zone which provides a five or six day longer season. Besides increasing the harvest over-all, the early opening should encourage travel into the wilderness and more inaccessible portions of the forest region without danger of snow or freeze-up.

Eastern Zone

The remainder of the problem area lies in Washington, Hancock and east-central Penobscot Counties. Although the region has shown a recent decline in kill following years of relatively heavy harvest, the decline is not due to past excessive kill. Evidence gathered during the yard surveys indicates that the unbalanced condition between deer and their winter food supply is due to both the gradual change toward more mature timber stands and over-browsing by a herd which built up faster than it could be harvested. Efforts toward bringing the herd into better balance with its winter food supply should have begun 10 to 15 years ago, but it is still necessary to reduce the wintering herd. The size of the herd which can be maintained in the future depends on how soon a
balance between deer and their food supply can be reached. If the herd continues to over-browse the yards, the carrying capacity will gradually decline until a balance is effected through starvation and lowered productivity.

For the portion of the problem area lying south of the Canadian - Pacific Railroad tracks and east of the Penobscot River a season of November 1 to December 5 is recommended. This provides for five more days of hunting at the end of the season now in effect. Extension of the season into December rather than an earlier opening was considered more desirable from the standpoint of expected normal weather conditions. Less interference with bird hunters is an incidental advantage of an extension into December. In addition, chances for hunting on snow will be increased thus lessening the crippling loss of deer.

Southern Zone

The southern, farm-woodland section lying south and west of the Appalachian Trail - C.P. tracks - Penobscot River boundaries does not require any extension of season at present. Changing the dates to a November 5 - December 5 season permits a uniform closing date for the southern half of the State open alone. The adjusted dates in this zone should also increase the chances of more favorable hunting weather.

SUMMARY

Our surveys of deer yarding areas have shown that a winter food shortage exists in about a third of the yards examined in the continuous forest portion of the State, whereas the farm-woodland sections are comparatively in good condition.
Productivity and physical characteristics of deer from the designated problem and non-problem areas support the evidence obtained in the field.

Of the two possible corrective measures available, habitat improvement to raise the level of the food supply or season manipulation to reduce the winter herd, only the latter can be recommended at this time. Recommendations for yard management, however, will be the important form of management in the future.

The zones and seasons recommended are designed to channel a portion of the hunting pressure from the southern farm-woodland section into the problem area. Likewise, the five or six day longer seasons will provide for a heavier harvest in broad problem areas where it is necessary to bring the winter herd into a closer balance with its food supply.

The changes proposed are corrective measures which appear necessary at this time to improve range and herd conditions. In this sense they are not designed to cure all problems for all times, but they are a step in the right direction. Future recommendations will be dependent on our continued appraisal of deer range and deer condition.
Figure 1. Yard Conditions
Deer Use vs Carrying Capacity

Above

Equal to

Below

Border of Problem Area
Figure 4. Recommended Zones and Seasons