



id no
new

Minnesota Plan —

for emergency
winter care of

DEER

and for deer yard improvement



QL
737
.U55
M56

Minnesota Department of Conservation
1965

LEGISLATIVE REFERENCE LIBRARY
STATE OF MINNESOTA

MINNESOTA GUIDE FOR EMERGENCY WINTER CARE
OF DEER AND FOR DEER YARD IMPROVEMENT

TABLE OF CONTENTS

Emergency winter care of deer.	1
Plan for deer habitat improvement and emergency cutting of natural browse.	5
General instructions for deer yard improvement projects10
Instructions for snow recording stations13

Minnesota Department of Conservation

December 20, 1965

EMERGENCY WINTER CARE OF DEER

Deer are browsers whose natural winter food is twigs and sprouts of trees and shrubs. Many kinds are eaten and some, such as mountain maple, red osier dogwood and white cedar, are preferred over others. There must be enough of such browse available to the deer throughout the winter if the deer are to come through in good condition. It should be noted, however, that some woody plants, especially balsam fir, alder, and hazel are of little value as deer food.

When the snow is deep, deer concentrate in areas where they are protected from the wind. These "deer yards" are often densely wooded swamps -- especially white cedar swamps -- but many also are on uplands where there is a fairly dense growth of fir or other evergreens. Usually the deer do not move any great distance (up to about 100 yards) from yarding areas as long as the snow is deep.

Usually much natural woody food is present in and around yards but is unavailable to the deer. Low shrubs may be buried in the deep snow and the upper branches and tops of taller shrubs and small trees may be out of reach. At such times the deer may suffer serious malnutrition or starve.

There is, however, usually enough suitable food in yards or in the surrounding area if it can be made available to the deer. This can be done by cutting or trimming branches from the preferred kinds of shrubs and trees that have grown out of the reach of deer. Cutting should be limited to non-commercial cull trees which are crooked, hollow, or rotted. The deer are then able to feed on the cut tops and upper branches. Such cutting sometimes can be done as part of timber stand improvement or it may be done specifically to feed the deer. This is a proven and practical approach. Before any cutting or trimming is done permission must be obtained from owners of the land.

Deer in yards can also be guided to areas where there is food by

providing well-packed trails through the snow with a snowmobile or even snowshoes. A circular route leading from the yard to the feeding area and return is best.

Artificial feeding of deer with hay, alfalfa and corn has considerable well-intentioned popular appeal but it is not the best approach and is not recommended by the Department. There are several reasons for this:

1. In the vicinity of hay piles where deer are concentrated, they also feed on any available natural browse and soon eliminate it causing a rapid deterioration of the area for future natural feeding. Deer should not be concentrated in a small feeding area. Because deer tend to return to the same yarding areas year after year, these areas should be kept in as good condition as possible.

2. When feeding from hay piles, the older deer benefit most and the fawns least. The fawns, which because of their smaller size, are least able to reach the natural browse are also pushed away from the hay piles by the older and stronger deer. Pregnant does may lose fetuses by being butted or kicked when competing for the hay.

3. Only a small number of deer can be reached by artificial feeding. The Minnesota deer herd numbers at least 500,000 animals. These, in severe winters, seek shelter in many yarding areas which are often inaccessible by road. Hay cannot be brought to most of these. Browse cutting crews can go to the yards where the deer are and cut trees and brush over a rather large area -- sometimes over several hundred acres. Food must be supplied where the deer are.

4. When deer are concentrated in small areas as a result of artificial feeding there is greater possibility for spreading of diseases and parasites, and for attracting predators and poachers. Feeding of deer close to highways may result in an increased number of car-deer accidents.

5. Feeding of deer with hay is not as efficient as might appear offhand. In forested areas hay is not a natural food of deer although they learn to eat it. Feeding with hay must start early and be continued throughout the winter if it is to be effective. There is considerable waste in feeding of hay. About 80 percent of timothy-brome hay is not eaten; 40 to 50 percent of clover; and even for Grade I alfalfa about 25 percent is wasted. Loss occurs through trampling and because much of the coarse hay and alfalfa stems are not eaten.

Although deer eat hay and can survive on it, especially on alfalfa, it is not their normal and natural food. Those who have deer around their premises can feed hay as long as the deer are free to come and go. However, feeding the great bulk of the northern forest herd is quite another matter. These animals are not semi-domestic and must depend upon natural browse for food. For them the cutting of browse for food in and around yarding areas is the only practical solution to a food shortage. The deer and their habitat can be helped better by aiding such cutting than by hauling in hay.

Before any attempt to improve the food supply for deer is made by volunteers, the local Game Manager or Game Warden should be consulted since he will know where help is most needed. Artificial feeding of unnatural foods such as alfalfa is particularly undesirable if it is not tied in with browse cutting so that the yard will be improved rather than damaged for future use. Efforts of Department personnel will be directed towards supplying natural foods through browse cutting and deer yard improvement.

Concentrating hay in one spot is particularly harmful and must be avoided. Hay scattered around the perimeter of yards or throughout the yard avoids unnecessarily concentrating the animals and is less harmful. The worst thing to do is to place food along roads where deer may be killed

by cars or poachers. When snowmobiles or other heavy equipment are used, either for browse cutting or hauling food, well packed trails should be made between the food and the area where the deer are finding shelter. Deer will not travel through deep snow to get to ^food, either natural or artificial.

Artificial feeding of deer with hay on a large scale has been tried in many states, including Minnesota, and has generally been unsuccessful. To cite some past experiences of the Wisconsin Conservation Department, "During a 12-year period, an excess of one-half million dollars was spent in a vain attempt to feed our winter herd -- neither the deer nor the range benefited."

- 5 -
PLAN FOR DEER HABITAT IMPROVEMENT AND
EMERGENCY CUTTING OF NATURAL BROWSE

The white-tailed deer is the most important big game animal in Minnesota. More than 100,000 deer have been taken annually by hunters in recent years and there are more than 500,000 of these animals in the state -- mostly in the northern forested area. Field work over the past 30 years in Minnesota and other northern states shows that the amount, quality, and availability of winter foods is the most important factor determining the size and condition of deer herds. Losses from the wintering population, the size of the fawn crop, and the size of the subsequent fall population are all influenced by winter food and feeding conditions.

Although winter losses of deer have been light in recent years because of mild winters, winter conditions have been severe enough in seven of the past 30 years to cause greater than normal winter losses. Such losses can be expected in any year when there is deep snow but do not occur with any forecastable regularity.

To predict what may happen in late winter of any year it is necessary to gather and evaluate information on snow conditions throughout the winter at several strategically spaced stations throughout the deer range. Gathering of this information and supplying of food by cutting, when this is necessary, requires the cooperative and coordinated effort of the Division of Game and Fish and the Division of Forestry on state owned or controlled lands and cooperation with other agencies and individuals on other lands.

In severe winters when food and feeding conditions deteriorate, personnel of the Section of Law Enforcement, Division of Forestry, Division of Parks, and possibly other department personnel will be assigned, through proper administrative channels, to the hiring and direction of emergency crews for aiding deer, thereby expanding the program.

Coordination and Supervision

Since the Division of Game and Fish is primarily responsible for wildlife, the over-all coordination and supervision of this plan is assigned to the Section of Game of this Division. The Regional Game Manager at Grand Rapids will be the general coordinator and he will make weekly reports during the winter to the Commissioner, Director of Game and Fish, and the Director of Forestry.

Whenever possible, joint inspections of critical areas will be made by personnel of Game, Law Enforcement, and Forestry personnel, before and during the progress of the work.

A coordinated public relations program will be carried out in the field and in the central office: (1) to acquaint the public with the facts of deer management; (2) to encourage cutting of natural browse where food is needed; and (3) to emphasize the inadequacies of feeding with artificial foods such as hay.

Assignments to the Division of Game and Fish

A. Section of Game

1. Game managers will be responsible for initiation of projects for improvement of wintering habitat of deer each year and the carrying out of these projects to the extent that manpower and funds are available. The projects will consist primarily of winter cutting of natural browse within or along the perimeters of winter yarding areas. Such cutting can be expected both to alleviate shortage of deer food in critical areas and to increase sprouting whereby future browse production is augmented and food production rejuvenated.
2. Managers will report to the Regional Game Manager at Grand Rapids any deer losses which appear abnormal and location of wintering areas where deer appear to be short of food or in distress, using postcard form supplied (Figure 1).
3. Prepare information for distribution to the public on the progress of the program.

4. Direct browse cutting activities or other attempts to feed deer by sportsmen's groups and where conditions warrant.
5. Make aerial and ground checks of yarding areas.
6. Request assistance from other agencies when necessary.

B. Section of Law Enforcement:

1. Maintain snow station records as requested and report regularly on forms supplied by the Section of Game.
2. Individual Wardens will report without delay to their Supervisor and to the Section of Game any deer losses observed that are greater than normal and the location of wintering areas in which deer appear to be short of food or are in distress, using postcard form supplied (Figure 1).
(Occasional deer which die each winter from predation, disease, starvation or combinations of causes should be reported on regular "Deer Mortality" forms.)
3. Wardens will hire and supervise deer habitat improvement crews if so directed by their Supervisor.
4. Wardens will carry out public relations to inform the public of existing conditions, the status of the program in progress, and best approaches.
5. Direct browse cutting or other attempts to feed deer by sportsmen's groups when assistance is requested and where inspection indicates that emergency feeding is needed. All such activities will be reported in advance, if possible, to the nearest Game Managers and to the Regional Game Manager at Grand Rapids.
6. Make periodic aerial and ground checks of condition of wintering deer and deer yards as conditions warrant and report results on forms supplied.

Assignments to the Division of Forestry

1. Forestry field personnel will report to their immediate supervisor and to the Section of Game or to local Game Wardens any deer losses that are suspected to be greater than normal or any indications of wintering areas in which trouble for deer appears to be developing. For notifying the Section of Game the postcard form supplied (Figure 1) should be used.
2. Encourage cutting of white cedar during severe winters.
3. In any year delay cutting of white cedar to as late in the winter as is economically feasible.
4. Put timber-stand improvement crews on deer habitat improvement when so requested by the Director of the Division of Forestry and recommended by the Section of Game.
5. Hire, equip and supervise deer habitat improvement crews when so requested by the Director of the Division of Forestry following recommendations from the Section of Game.
6. Upon request, maintain snow depth records on forms supplied.
7. Provide equipment such as snow vehicles, trucks, and heavy equipment for deer yard improvement when and where its use is approved by the Director.
8. Direct browse cutting by sportsmen's groups when assistance is requested and where inspection indicates cutting is needed. All such activities will be reported in advance, if possible, to the nearest Game Manager and to the Regional Game Manager at Grand Rapids.

Assignments to the Division of Parks

1. Parks personnel will report any abnormal deer losses to the nearest game manager.
2. When critical conditions occur in State Parks, Parks personnel will assist in undertaking corrective measures as requested by their Division Director.
3. In emergency situations in areas outside State Parks, Parks personnel will assist in undertaking corrective measures as requested by their Division Director.

REPORT OF ABNORMAL DEER CONDITION OF LOSS	
NAME OF REPORTER	<u>John Doe</u>
LOCATION OF LOSS: County	<u>Itasca</u>
Township	<u>53</u> Range <u>25</u> Section <u>35</u> <u>40</u> <u>NE$\frac{1}{4}$</u> <u>NE$\frac{1}{4}$</u>
NAME OF DEER YARD, IF ANY	<u>Splithand Lake</u>
CONDITION OF LIVE DEER OBSERVED	<u>Fawns seem weak</u>
NUMBER OF DEAD DEER REPORTED	<u>2 fawns</u>
WERE THEY SEEN BY YOU? - Yes	<u>X</u> No <u> </u>
IF NOT, WHO REPORTED THEM?	<u> </u>
REMARKS: The several fawns observed were weak and staggering - adults seem o.k. There are approximately 75 deer using this area. It is located $\frac{1}{2}$ mile from a good county road and is easily accessible by foot. Browse cutting should be started immediately.	

Figure 1. - Post card form for reporting abnormal deer loss and condition of wintering areas, filled in as a sample. These are supplied to Game Managers, Game Wardens and Foresters in the deer area.

STATION	<u>Brainerd</u>	DATE: Firday <u>10</u> Dec. 19 <u>65</u>
		Date Mon.
AVERAGE DEPTH OF SNOW ON LEVEL	<u>8</u>	INCHES
SNOW CRUST RATING: CHECK ONE		
NONE	LIGHT <u>X</u>	MODERATE <u> </u> HEAVY <u> </u>
REMARKS:		
Thawing in the past week. Temperature has been in the 20's and 30's during the day and has not dropped below zero at night.		

Figure 2. - Post card form for reporting snow conditions, filled out as a sample. This card is to be filled out and mailed each Friday. These are supplied to Game Managers, Game Wardens, Foresters and others assigned snow reporting.

GENERAL INSTRUCTIONS FOR DEER YARD
IMPROVEMENT PROJECTS

The cutting of natural browse for emergency winter deer feeding has proven to be the most efficient and economical method for supplying nutritious foods for deer in the shortest period of time. Cutting of natural browse provides food for immediate use by deer and also stimulates sproutings from the stumps, thus improving food conditions in future years.

The recommended approaches and procedures are:

1. Locate and map areas where deer concentrate during severe winters.

These areas can be upland or lowland sites, but will usually contain both hardwoods and coniferous trees. Many of the deer yards in Minnesota are listed on Page 58 of Conservation Department Technical Bulletin No. 5, "The White-tailed Deer of Minnesota". Yarding areas are of three general types:

A. White cedar swamps. These are the best known and traditional "deer yards". Some have been so heavily browsed in the past that they now provide little in the way of available preferred foods.

In these areas cutting of cull cedar and some cutting of brush can be done but stress should be placed on cutting along the upland edge of the yard where hardwoods can provide food near the cover. Cuttings can be made in and around the perimeter of this type of yard outward for a distance of 100 yards. Cull trees are those which are deformed, crooked, or rotted and which will not provide commercial timber.

B. Upland yarding areas. These consist of rather dense stands of balsam or other conifers which provide cover and also have enough hardwoods mixed in or along the edges to provide food. The classic example of this type yard is the Jonvik Deer Yard near Lutsen on the North Shore. In this type of yard cuttings of hardwoods should be made in and along the edge of the conifer cover. Balsam is of

greater value for cover than for food.

C. Lowland yarding areas other than cedar. Balsam lowlands provide cover and some food for deer. Cull hardwoods and birch can be cut and brush cut within and around the perimeter of such areas for a distance of 100 yards.

2. Determine land ownership on areas where cutting is to be done. Secure permission in writing from public agency or private land owner to cut on specified tracts. Include in the agreement the species size, and amount and description of unmerchantable material to cut.

3. Cut deer browse species as follows:

A. White cedar. Prune some branches from commercial quality trees and cut occasional cull trees which are crooked, hollow, or rotted. It must be kept in mind that white cedar, once cut, seldom regenerates itself.

B. Brushy plants. For the brushy species listed below cut all stems on which there is no usable deer browse from ground level up to a height of five feet. These stems are usually one inch or more in diameter at ground level. Stems should be cut as near the ground as possible or at snow level. The tops should be completely felled so that they are available to feeding deer. It may also be necessary to cut off some branches from the felled tops to bring them within the reach of deer. Species to be cut in this manner are:

Mountain maple

Red osier dogwood and other dogwoods

Willow

Elderberry

Sumac

C. Browse Trees. For the species listed below thin out heavy stands or multiple stems by cutting unmerchantable cull trees first. Species to be so cut are:

White birch	Oak
Red Maple	Basswood
Sugar maple	Ash
Aspen	Balsam

Do not cut cull conifers other than white cedar or balsam and do not cut tag alder or hazel. Alder and hazel are the most common brush species but alder is a starvation food and hazel is rated only as a low second class food.

The three attached plates illustrate recommended cutting methods.

INSTRUCTIONS FOR SNOW RECORDING STATIONS

Locations of stations for determining and recording snow depth have been chosen to give representative data over the northern deer range. Personnel have been chosen primarily from the Division of Game and Fish. Generally, those persons who are stationed at an established Conservation Department headquarters are chosen first so that continuity of the records are assured. Addressed post-card forms will be supplied to stations chosen (Figure 2). Measurements will be made every Friday beginning with the first measurable snowfall and continued until only 50 percent of the ground is covered by snow in the spring. Two measurements will be made; average snow depth and strength of crust.

A. Snow Depth. Choose a site in open pole-size hardwoods where the snow can fall to the ground but on which there is no drifting. Using a yardstick, measure depth of snow at five different places each at least 25 feet from the other. Take the average of the five readings. Use same site each week.

B. Crust Strength is measured in four categories:

None - no crust

Light - crust exists at surface or under surface of snow but does not impede progress

Moderate - crust at surface or under snow heavy enough so that it partially supports a man before breaking at each step.

Heavy - crust supports weight of man in some places but not necessarily everywhere

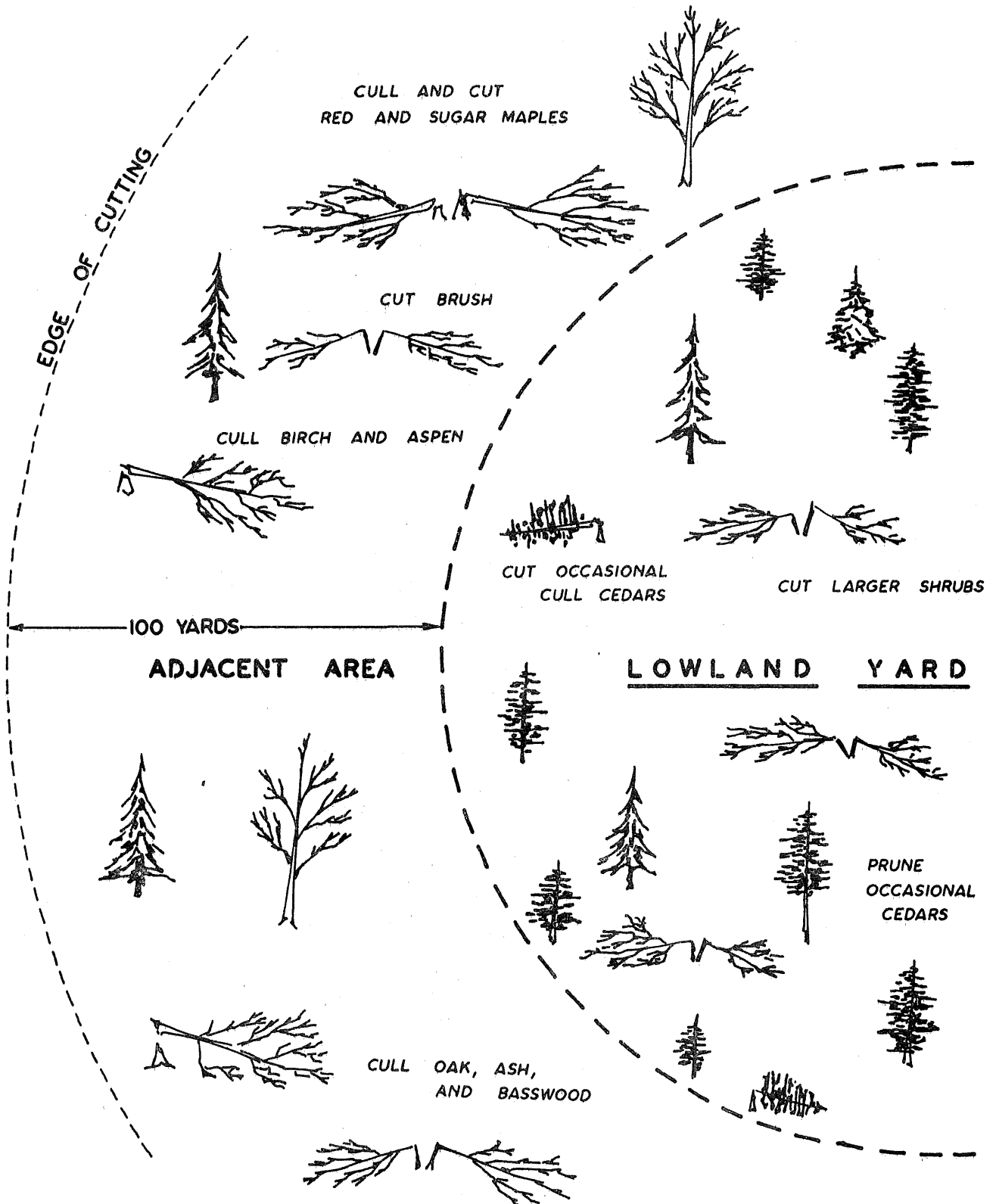
C. Snow recording stations will be located at the following sites and assigned to personnel as indicated.

1. Grand Rapids - Game
2. Orr - Forestry
3. Virginia - Game
4. Two Harbors - Law Enforcement
5. Cloquet - Game

6. Brainerd - Game
7. Wadena - Game
8. Little Falls - Law Enforcement
9. Ely - Game
10. Fosston - Law Enforcement
11. Grand Marais - Law Enforcement
12. Walker - Law Enforcement
13. International Falls - Law Enforcement
14. Meadowlands - Law Enforcement
15. Aitkin - Forestry
16. Hinckley - Parks (St. Croix)
17. Effie - Forestry
18. Isabella - U. S. Forest Service
19. Carlos Avery Wildlife Management Area - Game
20. Mille Lacs Wildlife Management Area - Game
21. Roseau Wildlife Management Area - Game
22. Thief Lake Wildlife Management Area - Game
23. Bemidji - Game
24. Warroad - Game
25. Red Lake Wildlife Management Area - Game
26. Detroit Lakes - Game
27. Park Rapids - Forestry
28. Fergus Falls - Game
29. Waskish - Forestry

STATE OF MINNESOTA
DEPARTMENT OF CONSERVATION

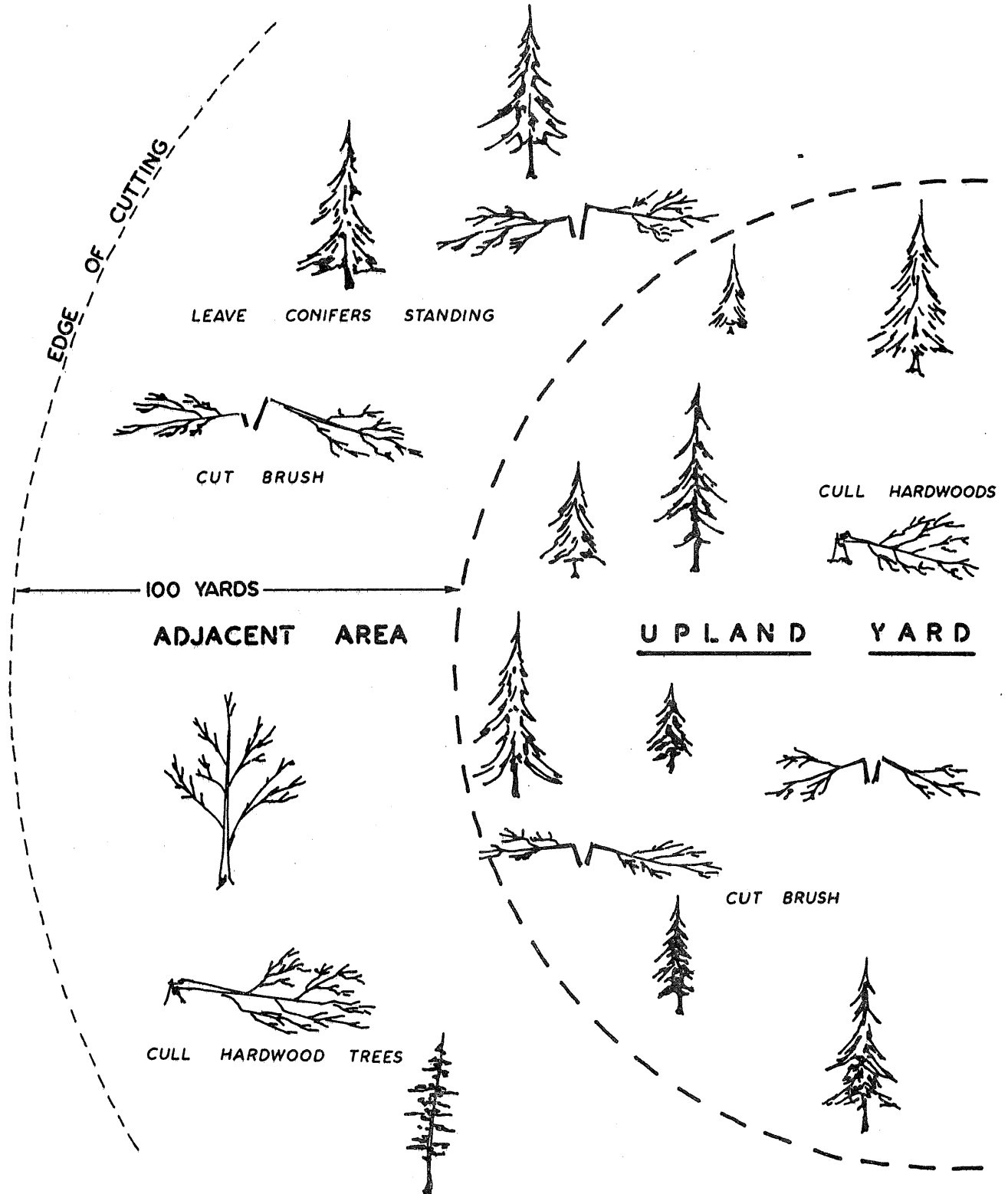
INSTRUCTIONS FOR IMPROVEMENT OF LOWLAND DEER YARDING
AREAS WITH WHITE CEDAR OR BALSAM COVER.



DO NOT CUT BALSAM, PINE, SPRUCE, ALDER, HAZEL,
OR COMMERCIAL TIMBER.

STATE OF MINNESOTA
DEPARTMENT OF CONSERVATION

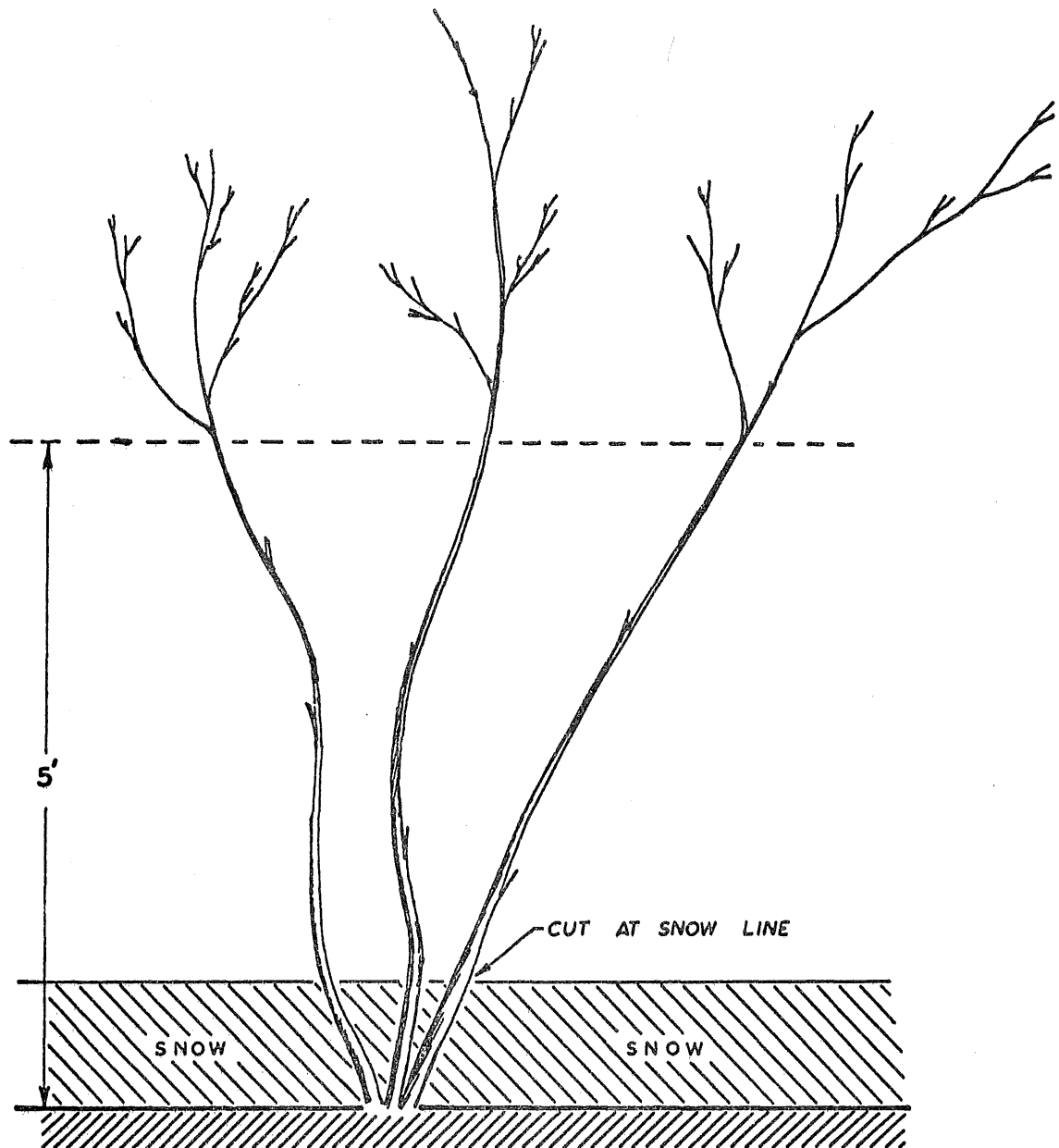
INSTRUCTIONS FOR IMPROVEMENT OF UPLAND DEER YARD AREAS
ON WHICH COVER IS OF BALSAM, SPRUCE OR PINE.



DO NOT CUT EVERGREENS, HAZEL, OR COMMERCIAL TIMBER.

STATE OF MINNESOTA
DEPARTMENT OF CONSERVATION

INSTRUCTIONS FOR CUTTING MOUNTAIN MAPLE, ELDERBERRY,
DOGWOODS, SUMAC AND WILLOWS.



FOR SHRUBS WITH FEW, IF ANY, BRANCHES UTILIZABLE
AS BROWSE UP TO FIVE FEET, CUT AT SNOW LINE. THE
STUMPS WILL PROVIDE A NEW GROWTH OF BROWSE NEXT
YEAR.

STATE OF MINNESOTA
DEPARTMENT OF CONSERVATION

LOCATION OF SNOW RECORDING STATIONS
WINTER 1965-66

