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WILD TURKEY MANAGEMENT PLAN

Wild Turkey Committee Section of Wildlife Division of Fish and Wildlife Minnesota Department of Natural Resources

> September 1983 St. Paul, Minnesota

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PREFACE

The history of the wild turkey in Minnesota is brief, but with the introduction of a new species comes the unique opportunity to systematically plan its management.

This plan presents background on the wild turkey in Minnesota and a narrative statement of past and future management and research activities. The appendix includes a graphical form of the stepdown plan for Minnesota turkey management and research, and summarizes information on pen-raised turkeys, a special problem in the State.



INTRODUCTION

It is questionable whether wild turkeys (<u>Meleagris gallopavo</u>) were ever native to Minnesota. They were once widespread throughout the eastern twothirds of the United States, and common in southwestern Wisconsin and eastern lowa. This suggests that the birds probably occurred in limited numbers in the extreme southeastern corner of Minnesota.

As the United States was settled, agricultural practices reduced the quality and quantity of available turkey habitat. This, coupled with the use of the turkey first as a food staple and later as a source of income, decimated many flocks.

The recent nationwide comeback of the wild turkey involves three factors: (1) Land found unsuitable for agriculture returned through successional stages to mature woodlands; (2) Techniques were developed for live-trapping and transplanting wild turkeys into suitable areas; (3) Early management techniques were refined by carefully planned research.

GOAL

The goal is to create and maintain huntable wild turkey populations in suitable habitats within the State and provide for the corresponding public enjoyment and involvement by:

- 1. Integrating wild turkeys with present wildlife management programs.
- 2. Introducing turkeys to suitable habitat within Minnesota.
- Producing sufficient self-sustaining populations that will provide quality outdoor experiences through hunting and non-hunting activities.

Goal attainment will improve by the application of several realistic, fully integrated management strategies over the next ten years. The five priority strategies are:

- Increase efforts to transplant the best strain of disease-free turkeys to approved Priority Areas within Transplant Regions A1 and A2 (See Appendix I).
- 2. Expand the funding for food plots under the Wildlife Habitat Improvement Program.

- 3. Continue monitoring mortality and productivity of established populations and transplanted stock.
- 4. Expand the spring hunting season as transplanted stock increases.
- 5. Establish a fall hunting season as established populations stabilize.

Success of the wild turkey program depends upon balanced accomplishment of all these activities. Partial or non-attainment of an activity would have adverse effects on other activities as well.

HISTORY OF TURKEYS IN MINNESOTA

The first attempt to establish turkey populations in Minnesota occurred in 1926 when approximately 250 pen-reared birds were released in Hennepin, Ramsey, Carver, Scott, Wright, Meeker, McLeod, Morrison, Pine, Rice, and Washington counties. Later releases were made in Houston and Winona counties. The released turkeys were pen-raised birds obtained from Maryland, Pennsylvania, and Texas. In September of 1957, the Minnesota Conservation Department purchased 37 adult Eastern turkeys from the Allegheny Turkey Farm in Pennsylvania, and released them in the Whitewater Wildlife Management Area (WMA) in Winona County (Ledin 1959). All departmental attempts using penraised turkeys failed, as have dozens of similar releases by sportsmen's clubs, Future Farmers of America chapters, and other groups throughout the state.

During the period 1964–1968, the Minnesota Conservation Department obtained 39 wild-trapped Merriam's and Eastern wild turkeys from Nebraska, South Dakota and Arkansas in exchange for ruffed grouse, walleye fry and black bear, respectively. The turkeys were released in the Whitewater WMA. Later (1971–1973), 29 Eastern wild turkeys, obtained from Missouri in exchange for ruffed grouse, were released in the Crooked Creek watershed of eastern Houston County. Present wild populations of 5,600 birds (Fall 1981) are a direct result of these releases in which only wild-trapped (not pen-raised) birds were used.

Several years of research in southeastern Minnesota have provided valuable information about the wild turkey's requirements for life. Hilly, wooded regions,

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interspersed with agricultural land, are extensively used by turkeys. Timberlands provide roosting sites and year-round cover. Forest-field edges contain nesting and brood rearing cover, while products of interspersed agricultural land provide a reliable food source.

Wild turkeys were once thought to be environmental specialists capable of surviving only in mature forests. Although the bird has proven its adaptability by using almost any available food, it also needs corn to survive Minnesota's more severe winters. Therefore, the establishment of corn food plots as a reliable winter food source is an important management tool.

Habitat management and research, plus cooperation between public and private sectors, provide the wild turkey an excellent opportunity to flourish in Minnesota.

HABITAT AND ITS MANAGEMENT

Suitable turkey habitat will be managed for optimum population levels consistent with other wildlife management goals. This will be accomplished by first identifying the components of high quality environments for turkeys. Suitable habitats will be defined on the basis of two major considerations:

- 1. The ecological suitability of the area for supporting a successful flock.
- 2. The degree to which public and private activities in the area will contribute to the turkeys' success.

Although turkeys use a wide variety of sites, Porter (1978) found the birds prefer the edge zones of hardwood-covered slopes and ravines as nesting sites. Hardwood habitats were heavily used in all seasons, but there was increased use of agricultural lands in summer and during other seasons if residual corn was present.

Cover and topography are critical to the turkeys' survival through harsh northern winters. Steep, south-facing slopes are important in southeastern Minnesota as they provide sumac seed and other emergency food items, receive a greater degree of radiant energy, and are heavily used during severe winters

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when other available food sources are depleted early in the season or buried under deep snow.

Since turkeys require various habitats within the forest for loafing, feeding, nesting, and roosting, woodlands must be properly managed. Therefore, guidelines detailing the necessary habitat components and proper management techniques will be prepared in cooperation with the Division of Forestry. These will include one set of guidelines which can be used to manage large tracts of public lands, and another set for owners of small acreages. Provision will be made for field visits to illustrate application of the guidelines.

The turkey has been described as having "food habits so broad that a complete description of the species' diet is not available" (Porter 1978). However, during severe winters supplemental feeding may be necessary to relieve stress and provide a healthier breeding population the following spring. To determine nutritional needs and whether they are being met, certain physical and physiological indicators such as weight, general condition, blood tests and metabolism will be checked whenever possible (capturing operations, etc.).

As with most species of wildlife, winter is a bottleneck of population growth for turkeys. The main limiting factor during winter is persistent deep snow cover that buries acorns and waste grain in picked cornfields. More importantly, deep snow generally immobilizes the birds. The value of standing corn food plots was demonstrated during the severe winters of 1977–78 and 1978–79 when turkey populations in areas without corn food plots were reduced (starvation and related problems) 35 to 50% more than in areas with food plots (Porter 1978). Consequently, providing a reliable winter food source is an important factor in maintaining a wild turkey population. A food plot of standing corn adjacent to the hardwood forest is the most efficient technique known at present to decrease winter mortality caused by starvation. Therefore, food plots should be established in all wildlife management areas where turkeys exist, and the assistance of private landowners should be solicited to establish food plots through the Wildlife Habitat Improvement Program (WHIP) and/or Deer Habitat Improvement Program (DHIP).

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Ultimately, the WHIP and DHIP may be the most important tools available to manage and expand the range of wild turkeys in Minnesota. Through these private land programs, landowners may provide standing agricultural crops which are particularly important to wild turkeys. When snow depth exceeds 10 inches for 20 days, turkeys depend heavily on these crops for winter food. Therefore, the cooperation of private landowners will continue to be solicited in areas where turkey populations exist, and before turkeys are transplanted to new locations, the degree of landowner cooperation will be assessed.

Because there are indications that the stress of a harsh winter has a direct influence upon summer breeding success (Porter 1978), and the maintenance of a huntable population, development of a "winter severity index" will be explored. A good general indicator of a difficult winter is a prolonged period of snow deeper than 10 inches without a significant crust. Provision will be made for keeping records of snow cover, temperature and other factors that appear significant. This data will be correlated with mortality and reproductive success and used to project necessary supplemental winter feeding.

Supplemental winter feeding other than standing crops may be also be necessary in areas where large flocks of turkeys exist, but where a reliable food source is absent. However, given the controversial nature of such programs, evaluation is necessary. The decision on supplemental winter feeding will be left to the discretion of the local wildlife manager. Spreading shelled corn on a bed of straw which is located near a roost is a technique that has worked well in the past and will be utilized again if necessary. But it must be remembered that such activities are labor-intensive and expensive.

When supplemental feeding is undertaken, it will be carefully evaluated. The level of feeding site use will be documented by the initiating manager and comparison of flocks (those with supplemental feeding vs those without) will be made. Records of the costs, both in money and in time diverted from other programs, will be maintained by the local wildlife manager for evaluation. Dependency on feed will also be noted. Where possible, assistance from the public or local sportsmen's groups will be used.

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TRANSPLANT PROGRAM

Research conducted in Minnesota (Porter 1978, Hecklau 1982, McMahon 1982), combined with experience of other states, provides guidelines for evaluating potential successful release sites. The release area should contain at least 1,000 acres of woodlands with some mature oak, and interspersed with croplands. Dispersal tends to follow wooded ridges and stream valleys but is discouraged by ridgetops or valley floors dominated by agriculture; therefore blocks of timber should preferably not be more than one-half mile apart. Release areas should provide an interspersion of various habitat types to provide nesting sites and brood cover. As the components of a suitable environment for successful turkey flocks are further identified, and limiting factors defined, additional release area criteria will be developed.

Since the practice of transplanting wild turkeys has increased in popularity, it has become necessary to inventory suitable release areas and set priorities. Area wildlife managers will submit a list of potential release areas within priority Transplant Regions A1 or A2 (see Appendix I and Figure 1) to the Section of Wildlife's Wild Turkey Committee. The committee will review each list and send a team of at least two members to each area to make a field evaluation. Natural habitat, potential food plots, absence of pen-raised birds, and compatibility with existing private and public activities, will be examined.

Protection from poaching must be adequate if newly transplanted birds are to flourish. If poaching is a strong concern of the conservation officer, the wildlife manager in cooperation with the officer shall develop and implement necessary steps to lessen poaching's anticipated impact. However, if poaching is felt to be endemic, persistent, and for the time being, insurmountable, the problem will be addressed in the prioritizing process.

After field evaluations are completed, the full committee will analyze and prioritize potential release areas. A schedule for transplants will then be developed and submitted to the Director of Fish and Wildlife for approval. The schedule will be reviewed and revised annually based on the previous transplanting progress.

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Requests to obtain transplant stock need to be submitted at least one and a half years in advance of the proposed release date(s) to allow the local wildlife manager time to secure landowners' cooperation and food plots.

Each release will consist of eight to ten females (preferably four or more adults) and four adult males. Based on 1979–80 levels of manpower and support, no more than six new sites can be stocked annually. Through 1979–83, all but four releases have been made in the 1,700 square miles of turkey range in southeastern Minnesota (Figure 2). Future release sites will be scattered more broadly in the state, including more northern and western areas, but it will still be many years before transplants are completed unless more manpower can be provided for trapping. To move birds to approved release sites without delay, two full-time winter trapping crews must be provided, either by hiring seasonal help or by assigning field personnel to trapping duties.

Usually one release per site is sufficient; however, circumstances such as initial heavy mortality due to weather, predation or poaching may warrant additional releases. If snow depth at the approved release site exceeds 10 inches of powder by January first, turkeys may not be released because such depths normally restrict movements and result in high mortality. Exceptions to this may be made depending upon the date of trapping, food availability, and other factors.

The existence of pen-raised turkeys in the release area is very undesirable. Descendants of pen-reared birds have little ability to survive a Minnesota winter without hand or barnyard feeding and are not wary enough to make satisfactory game birds. Because they possess little wariness, they frequent areas of human habitation and become pests. At building sites, they may contract diseases of domestic fowl and transmit such diseases to newly transplanted birds which have no natural immunity. Though it could be difficult to diagnose and treat a flock of penned birds, it is impossible to do so with free-ranging stock.

Potential release sites having free-roaming pen-raised turkeys will receive careful scrutiny and probably a low priority until that population is severely

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reduced or eliminated. Thus it is necessary to determine where pen-raised turkeys have been released so that wild birds are not inadvertently transplanted to those localities. Wildlife managers and conservation officers have listed and located on county maps the locations where pen-reared birds have been released and still persist in numbers that would threaten a release of wild birds. This list will be periodically updated, reviewed and correlated with the transplant schedule.

As turkeys from southeastern Minnesota are transplanted to other areas of the state, their success or failure needs to be monitored and documented. Therefore, some releases under new conditions will include birds equipped with radio transmitters. A graduate student or seasonal employee will obtain data pertaining to mortality, productivity, and dispersal of the released birds. Additional data concerning random observations, dead birds, nests, and production will be gathered through the use of surveys and landowner questionnaires. Dispersal data will be gathered by spring gobbling surveys. Radio-marked birds will provide documentation concerning habitat preferences and limiting factors in various parts of the state. This will lead to improved release-site selection.

POPULATION MANAGEMENT

As suitable habitats are occupied, monitoring and managing the populations becomes necessary. Dispersal depends on population density and the available travel corridors. Gobbling counts are useful for determining dispersal from occupied range. Future research will determine better methods for monitoring mortality and reproductive success.

Regulations must delineate areas with huntable turkey populations and provide for optimum harvest. Turkeys are proving highly adaptable and may eventually establish themselves in areas where harvest is difficult, such as parks, heavily used recreation areas, or population centers.

The success of a turkey release is related to a series of mild winters. The success of each release will be reviewed annually. When newly established turkey populations build to levels which allow hunting, a spring gobbler season will be recommended by the turkey committee. Hunting seasons will be timed so

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that the majority of breeding is complete and gobblers are biologically expendable and responsive to calling. To enhance hunter distribution, quota seasons will be conducted until such time as all desiring to hunt can be accommodated. Annual quota seasons were successful in southeastern Minnesota in 1978 through 1983.

During each season, check stations will be maintained to register the harvest. Data will be collected on the time and zone, weight, sex, age, general condition, and abnormalities. This data, as well as those collected by mail questionnaires, will be evaluated to determine population distribution, hunting methods, harvest statistics, and a general impression of the season and the regulations. If possible, landowners will be surveyed to determine attitudes toward the season, regulations, and turkey management policies.

At the present time, a good survey method for estimating fall turkey populations does not exist. Therefore, population modeling will be used to estimate fall populations. Combined with data from other states having fall seasons, this information will be used to implement fall turkey seasons in Minnesota. Evidence gathered to date indicates that in several southeastern zones, a fall turkey hunt would be feasible.

RESEARCH

The following questions or problems are those of the highest priority requiring investigation. Research and survey projects will be detailed in appropriate project proposals, and will be undertaken as time and manpower are available. Priorities may change as additional research needs are identified, and as more information on wild turkeys in Minnesota is gathered.

- 1. Investigate methods of estimating pre-breeding season turkey populations, to develop a reliable spring population index.
- 2. Develop methods of obtaining reliable brood counts and determining reproductive success.
- 3. Monitor physical condition of established and newly transplanted turkeys.
- 4. Evaluate success of transplants moved to other parts of Minnesota.

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- Identify limiting factor(s) to turkey releases in other parts of Minnesota.
- 6. Determine habitat preferences of wild turkeys in Minnesota.
- 7. Detail necessary habitat components and proper management techniques for forest tracts.
- 8. Investigate potential disease problems in wild turkeys.
- 9. Evaluate winter feeding of wild turkeys.
- 10. Expand the winter severity index to wild turkey range in Minnesota.
- 11. Determine the adequacy of nesting cover for wild turkeys in Minnesota.
- 12. Evaluate effects of hunting on nesting behavior and success.

A brief outline of each project is contained in Appendix II.

INFORMATION AND EDUCATION

The establishment of wild turkeys in Minnesota provides recreation for the hunting and non-hunting public. The quality of this recreation depends upon optimal population levels.

Hunters obtaining their first Minnesota turkey license are required to attend a three-hour orientation session before they hunt. Hunting and calling techniques, regulations, safety, and ethics are taught so the hunter will have a more rewarding experience and practice good sportsmanship.

An objective for 1983 and beyond is to conduct efficient orientation sessions tailored to the needs of the hunters. There were twice as many sessions in 1980 as in 1979, and if the turkey management program meets expectations, the number of hunters and associated manpower requirements will escalate. Therefore, additional instructors, both professionals and laymen, will have to be trained. Beginning in 1980, information has been provided in the form of "A Turkey Hunter's Handbook". Contents include hunting regulations, turkey ecology, hunting techniques and ethics, and suggestions for hunter/landowner cooperation.

Developing a large number of repeat hunters depends upon the expansion

of the turkey population, opening of new hunting areas, and license quota increases. Also the 1982 law change which permits annual application for the computer drawing of licenses should improve the Minnesota turkey hunting clientele.

The public should be kept informed of the status of wild turkeys, especially with respect to population levels and successful transplants. This can be accomplished through news releases, brochures, and contacts with sports columnists and sportsmen's clubs, particularly the state chapter of the Wild Turkey Federation.

Although much of the management effort regarding turkeys is currently directed toward providing huntable populations, other uses are important. Outdoor recreationists and residents in turkey range enjoy seeing and hearing turkeys. Others affected by turkeys are landowners who are annoyed by problems of pen-raised turkeys or unsportsman-like hunters. Most problems with nuisance turkeys will be solved by eliminating pen-raised birds and their descendants. Landowner problems will be reduced by hunter education programs designed to promote landowner-sportsman understanding.

The history, ecology, and management of wild turkeys in Minnesota will be conveyed through popular articles, lectures, and educational programs to enhance the general public's appreciation for the wild turkey.

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Submitted b sanl

date 9-7-83

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APPENDIX I

TURKEY TRANSPLANT REGIONS AND CONTROLS ON PEN-REARED TURKEYS

Numerous references are made throughout the plan to pen-raised turkeys and their descendants, the problems they cause, and distinctions from truly wild stock.

A wild turkey could be defined as one whose ancestry has never been captive, and which was reared by a wild parent and lives entirely in a true natural state. But this definition is too restrictive because it is impossible to trace the complete ancestry of all wild turkeys, they inhabit lands altered by man and, to some extent, they depend upon cultivated crops. Pen-raised turkeys also inhabit some of the same areas and use crops, but there the similarity ends. Turkeys that have been raised and released by man exhibit considerably less wariness toward humans. The progeny of pen-raised birds may be similarly classed because even though they are raised in the wild they display many of the undesirable behavioral traits of their parents.

One of the behavioral differences between pen-raised and wild turkeys is apparent in their use of agricultural crops. Wild birds will use standing or waste grain and occasionally come near human habitation for food, but will flee at the slightest disturbance. In contrast, pen-raised birds are tolerant of human disturbance and spend much of their time foraging and loafing in close proximity to humans. When approached, they maintain their distance but do not flee. Wild turkeys may exhibit this latter trait <u>only</u> when suffering from starvation.

The behavioral traits of pen-raised birds cause many complaints. The birds' lack of wariness makes them prone to consume or damage unharvested and harvested crops, and they are difficult to deter once started. Raiding of gardens is also a common problem in some areas. Again unlike the truly wild birds, game-farm pen-reared stock may roost near man, soiling or damaging buildings, television antennas, fences, machinery, and trees. They may even nest in buildings. Their unwariness is also evident along highways where they often become traffic hazards.

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Most turkey stocking is conducted with the hope of ultimately providing quality hunting. However, the behavioral traits of pen-raised birds countermands this goal since they are extremely vulnerable and therefore unsatisfactory as a game bird.

The behavior of free-roaming pen-raised birds is the essence of concern regarding transmission of avian diseases. While agriculturalists can monitor diseases of captive pen-raised birds, control is lost when birds become free-roaming. These free-roaming feral turkeys may transmit diseases to both wild and domestic turkeys, because they often frequent farm as well as forest.

Minnesota's turkey growers are concerned about the potential for disease transmission and resulting economic loss. Minnesota was the first <u>Mycoplasma</u> <u>gallisepticum</u> (MG)-clean state. The Minnesota turkey industry plans to embark upon an official control program for <u>M. meleagridis</u> (MM) and <u>M. synoviae</u> (MS) in turkeys, as well as control programs for Salmonellosis and Arizonosis.

There are various restrictions on the disposition of birds infested with these diseases. Under regulations of the Minnesota Livestock Sanitary Board, any MG-infected flock loses its clean classification, and poults and hatching eggs cannot be sold. The grower then has to dispose of his breeding flock with considerable financial loss.

Blood and tissue samples collected from wild birds in southeastern Minnesota have proven negative to MG, MM, and MS infections. Pen-reared turkeys on the other hand are occasionally found to be infected with MG or MM, and have introduced MM into disease-free flocks of domestic turkeys and wild birds.

If these diseases are transmitted to wild birds, the effect would depend upon the degree to which the diseases spread and reduce the wild populations. The results would be the loss of recreational opportunity and associated local economic benefits.

The effects of pen-reared turkeys on wild birds are also of concern.

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because the birds interbreed and thus may reduce survivorship of the wild strain. The concern is based on the inability of pen-raised birds to establish and maintain a viable population.

The undesirable effects of pen-raised turkeys on DNR management programs are two-fold. First, there is a waste of limited time and money in dealing with the problems caused by these birds. Second, the presence of penraised turkeys reduces the desirability of many otherwise high priority release areas.

Some solutions to these problems have been referenced earlier in the text. The option of live-trapping and transplanting the pen-raised turkeys <u>will not</u> be done because it would only perpetuate and expand the basic problem. The option to leave the pen-raised birds alone and let natural factors remove them cannot be considered unless no conflict exists with turkey growers or management programs for wild birds.

Another alternative is to destroy the pen-reared birds or issue permits to allow their removal. This must be done judiciously to prevent the unwanted removal of wild birds. A fourth option, the one currently in effect, is to adjust the transplant schedule so wild-trapped birds are not released in areas inhabitated by pen-reared turkeys. As the transplanting program proceeds and suitable areas become occupied, this policy must be modified to include the removal of penreared turkeys from quality areas. A fifth alternative is to expand the restrictions on raising and releasing of turkeys in priority transplant and management areas. Currently, it is illegal to release turkeys in southeastern Minnesota (east of Interstate Highway 35 and south of State Trunk Highway 55). In addition, releasing turkeys elsewhere in Minnesota is by permit only (see the accompanying Commissioner's Order 1920 in Appendix IV). A desirable, but not easily implemented, option would be the addition of "possess" to the list of prohibitions in Order 1920 and to delete the provision for release permits. This would allow effective enforcement on both the intentional and accidental release of pen-raised turkeys.

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After careful review of the available options, which included discussions with affected private concerns, it is the recommendation of the Wild Turkey Committee that:

- 1. Commissioner's Order 1920 be actively enforced and more widely communicated to licensed game farm turkey breeders and penreared turkey purchasers.
- 2. Permits to release pen-reared stock within established wild turkey range and proposed transplants areas be denied. (See Directive on Releases of Pen-reared Turkeys, Roger Holmes, 12/20/82 starting on the next page.)
- 3. Pen-reared turkey releases within priority transplant Regions A1 and A2 (see description and Figure 1), but outside those zones and areas described by the Turkey Release Directive, be discouraged.

Transplant Region A-1: Beginning on County Road (CR) 70, Lac qui Parle County, at the western boundary of the state, thence along CR 70 to County State Aid Highway (CSAH) 30, Lac qui Parle County, thence along CSAH 30 to U.S. Highway (US Hwy.) 75, thence along US Hwy. 75 to CSAH 28, Lac gui Parle County, thence along CSAH 28 to State Trunk Highway (STH) 119, thence along STH 119 to STH 40, thence along STH 40 to CSAH 25, Lac qui Parle County, thence along CSAH 25 to US Hwy. 212, thence along US Hwy. 212 to US Hwy. 59, thence along US Hwy. 59 to CSAH 2, Yellow Medicine County, thence along CSAH 2 to STH 67, thence along STH 67 to US Hwy. 71, thence along US Hwy. 71 to STH 30, thence along STH 30 to STH 15, thence along STH 15 to the southern boundary of the state, thence along the southern boundary of the state to the eastern boundary of the state, thence along the eastern boundary of the state to CSAH 32, Pine County, thence along CSAH 32 to STH 23, thence along STH 23 to STH 18, thence along STH 18 to STH 210, thence along STH 210 to US Hwy. 10, thence along US Hwy. 10 to STH 32, thence along STH 32 to STH 34, thence along STH 34 to Interstate Hwy. 94 (I-94), thence along I-94 to US Hwy. 59, thence along US Hwy. 59 to STH 55, thence along STH 55 to STH 114, thence along STH 114 to STH 29, thence along STH 29 to US Hwy. 12, thence along US Hwy. 12 to the western boundary of the state, thence along the western boundary of the state to the point of beginning.

Transplant Region A-2: Beginning at the intersection of U.S. Highway (US

Hwy.) 71 and Interstate Highway 90 (I-90), thence along I-90 to US Hwy. 86, thence along US Hwy. 86 to County State Aid Highway (CSAH) 20, Jackson County, thence along CSAH 20 to CSAH 9, Jackson County, thence along CSAH 9 to CSAH 5, Cottonwood County, thence along CSAH 5 to State Trunk Highway (STH) 62, thence along STH 62 to US Hwy. 59, thence along US Hwy. 59 to CSAH 12, Murray County, thence along CSAH 12 to CSAH 28, Murray County, thence along CSAH 12 to CSAH 28 to CSAH 10, Murray County, thence along CSAH 10 to STH 91, thence along STH 91 to US Hwy. 14, thence along US Hwy. 14 to CSAH 7, Lincoln County, thence along CSAH 7 to STH 19, thence along US Hwy. 19 to US Hwy. 59 to US Hwy. 59, thence along US Hwy. 14, thence along US Hwy. 14 to CSAH 11, Lyon County, thence along CSAH 11 to CSAH 38, Murray County, thence along CSAH 38 to STH 30, thence along STH 30 to CSAH 42, Murray County, thence along CSAH 42 to CSAH 6, Murray County, thence along CSAH 13, Cottonwood County, thence along CSAH 13 to US Hwy. 71, thence along US Hwy. 71 to the point of beginning.

DIRECTIVE ON RELEASES OF PEN-REARED TURKEYS

Commissioner's Order 1920 prohibits purchase, sale, transfer, importation, or release in Minnesota of wild turkeys or wild turkey/domestic turkey hybrids, except by permit. This order should be communicated to the public and actively enforced to protect our established flock and transplant sites from private introduction of non-thrifty pen-reared stock. The public now has 156 farms in Minnesota from which to purchase turkeys.

Because only a few game breeders provide certified disease-free stock to the public, we are concerned enough about disease transmission that we must exercise our legitimate prerogative and protect the established southeastern population as well as several transplant zones.

Under Commissioner's Order 1920, regular game farm operations may continue. Turkeys may be sold for consumption or for pets to be kept in enclosures, but they may not be released into the wild except under a permit.

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All applications for permits to release turkeys into the wild will be investigated by Wildlife Managers and permits will be issued by the Area Manager only when the quality of the turkeys and the area of release are compatible with the Turkey Management Plan. Permits to release are subject to the Regional Wildlife Supervisor's approval and St. Paul review. Persons purchasing turkeys for release purposes only are not required to obtain a game farm license. The game farm license will be considered as a permit to possess, buy, sell, transport, import, export, or propagate wild turkeys but not a permit to release these birds into the wild. Some local ordinances also require pet permits to keep live turkeys.

AS OF THIS DATE, NO RELEASES WILL BE PERMITTED IN THE ZONE SOUTH OF STATE TRUNK HIGHWAY 55 AND EAST OF INTERSTATE-35 IN THE SOUTHEASTERN PORTION OF THE STATE. PRIVATE RELEASES INTO TRANSPLANT AREAS WILL BE DISCOURAGED BY THE DNR AS WELL AS BY COOPERATING GAME BREEDERS.

When nuisance complaints concerning feral turkeys are received from the public, they will be promptly investigated, and if conditions warrant, control permits will be issued by the Director of Fish and Wildlife to the appropriate landowner or property owner.

s/Roger Holmes Acting Director – Division of Fish & Wildlife 12/20/82

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APPENDIX II

RESEARCH

Future research on wild turkeys in Minnesota has been mentioned throughout this management plan. It is summarized here to provide more information on methods. All research projects will be detailed in appropriate project proposals.

1. Develop reliable methods of estimating turkey populations in both spring and fall.

Spring gobbler counts have been useful for measuring range expansion, and to some degree population levels, throughout southeastern Minnesota. However, this method is felt to be an unreliable index for proper population management. Gobbler counts in conjunction with prebreeding aerial surveys, landowner surveys, and rural mail carrier surveys will be investigated.

2. Investigate methods of making reliable brood counts to develop a reproductive index, for accurately setting spring seasons.

A reliable estimate of the previous year's production should be ascertained, so various techniques like rural mail carrier sightings, landowner surveys, and track counts will be investigated.

3. Monitor physical condition of established and newly transplanted turkeys and determine physiological well being.

Various physical measurements will be taken at turkey hunting check stations and during capture operations. Blood samples will provide various physiological measurements.

4. Document transplant success when possible, by use of a graduate student or seasonal employee who will monitor radio-equipped birds for data on mortality, productivity and dispersal of newly released birds.

If this is not possible, information will be gathered by periodic visits to release site areas by field staff, interviews and surveys of local landowners, and spring gobbling surveys.

5. Identify limiting factors for turkey releases in Minnesota.

This will be evaluated by moving birds farther and farther from their established range, monitoring survival, identifying limiting factors such as lack of hardwood habitat or farm crops, or too much snow, etc.

6. Determine habitat preferences of wild turkeys in Minnesota.

This can be pieced together only after data are gathered over a period of years on turkey releases in a variety of locations. The best data will be obtained from radio-equipped birds but some data should be available from all releases.

7. Describe necessary habitat components and proper management techniques of forest tracts.

This would be determined from radio-tracking and other studies.

8. Investigate potential disease problems in wild turkeys.

Diseases transmitted to wild turkeys are considered a critical limiting factor for both established and newly transplanted populations. Consequently, monitoring of disease through blood analysis of trapped birds will be continued indefinitely and expanded if unexplained losses or reproductive failure are observed.

9. Evaluate emergency winter feeding.

If and when such feeding is undertaken for turkeys, an evaluation will be made of the use, survival value and costs of such feeding by comparing mortality and ensuing productivity of fed and unfed flocks.

10. Develop a winter severity index for turkeys.

Various weather parameters will be measured and compared with mortality rates, productivity and population levels of turkeys. This will aid in evaluating the northern limits of the turkey range in Minnesota.

11. Investigate adequacy of nesting cover.

The present lack of nesting as a factor affecting changes in productivity will be studied. (The first phase of this has been investigated by Lazarus (1982)).

12. Evaluate effects of hunting on nesting behavior and success.

Radio-equipped hens will be monitored during hunting seasons, and hunters will be surveyed to determine the numbers of hens flushed and nests found. This will be in conjunction with monitoring productivity in the established southeastern turkey range and determining changes occurring as populations become saturated.

APPENDIX III

STEP-DOWN PLAN WILD TURKEY MANAGEMENT AND RESEARCH

Following is both an outline and graphic form of the step-down Minnesota Turkey Management Plan. The procedures which were followed are outlined in Phenicie and Lyons (1973).

This procedure was chosen because of its many advantages. Its precise identification of the objectives avoids efforts toward diverse or unrelated goals and assures efficient use of the ultimate product. Attention is also focused on one problem at a time which reduces the complexity of the overall effort. Omissions and errors should not occur if the plan is properly done and followed.

Use of the plan will also demonstrate other advantages. Although the plan is developed and reads from the goal down to the more specific levels, implementation is in the reverse order.

Objective: Create and maintain huntable wild turkey populations in suitable habitats within the state and provide for the corresponding public enjoyment and involvement.

1 Define, monitor and manage suitable wild turkey habitats.

- 11 Define factors of quality turkey habitats.
 - 111 Develop and evaluate criteria from southeastern Minnesota, other areas of Minnesota, and other states.
 - 112 Monitor releases under new conditions of topography, land use, weather, etc. in Minnesota/1
 - 111,112-1 Monitor habitat preferences of nesting and brooding hens, record and evaluate conditions which seem pertinent to the choice, and monitor success and causes of failure.
 - 111,112-2 Monitor and evaluate factors of success and failure of transplants related to habitat preferences, behavior, and dispersal.
 - 111,112-3 Record mortality, its causes, and related factors.

12 Provide quality cover as needed on a seasonal basis.

- 121 Develop and implement forest management plans for public and private lands.
- 122 Provide for interspersion of important forest types and other, nonforested habitat types.
 - 121,122-1 Ensure adequate roost sites, especially near winter food sources.
 - 121,122-2 Provide early successional stages of vegetation.
 - 121,122-3 Through private lands programs encourage crops and plantings which provide quality food and cover near forested areas.
 - 121,122-4 Consider land acquisition and management in areas where turkeys are wanted and private lands programs are insufficient.

/1 The intensity of these activities will vary depending upon the area of Minnesota and who might be involved. Research and intensive monitoring by DNR personnel will only occur in the intensive study area of southeastern Minnesota for the foreseeable future. In-depth research and monitoring by DNR personnel in other areas will only be done to the extent necessary to determine whether there is appreciable difference in conditions and the birds' response to those other areas. There will also be range-wide, non-intensive monitoring of population expansion, productivity and mortality. At the same time, DNR will encourage and support short- or long-term studies by other organizations and individuals of these same parameters whenever they are consistent with this plan. This policy will stand for the foreseeable future but will be reevaluated whenever there is an apparent need for change. The management aspects of this plan will basically be the DNR's responsibility, but positive actions by others (such as in providing food, cover, and support for law enforcement, or insuring the absence of game-farm turkeys) will be encouraged whenever possible.

- 13 Provide adequate seasonal nutrition.
 - 131 Determine the general needs of turkeys and the degree to which they are met.
 - 131-1 Monitor the physiologic parameters which indicate, the health and probable survival and productivity of the birds.
 - 131-2 Whenever turkeys are handled, record weights, diseases and parasites present, general condition, and indicators of age.
 - 131-3 Develop a winter severity index if possible and relate to condition, mortality and productivity.
 - 132 Insure adequate winter diet near winter cover.

132-1 Provide feed or plantings as needed.

132-2 Evaluate the program of feed or plantings.

132-2-1 Determine costs.

- 132-2-2 Determine benefits (including physiologic) from, and dependence on, feed or plantings.
- Monitor and manage populations.

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- 21 Monitor range expansion of wild turkey populations and obtain indices to turkey abundance throughout their range.
 - 211 Monitor brood size and success throughout the turkey range and relate to other population statistics.
- 22 Determine allowable harvests.
 - 221 Determine what areas having turkeys can be open to hunting.
 - 222 Determine what level of turkey population density can support hunting.
- 23 Annually establish hunting zones and quotas and revise other hunting regulations as necessary.
 - 231 Spring gobbler hunt.
 - 232 Autumn hunt.
- 24 Monitor the hunt.
 - 241 Monitor the harvest.

241-1 Harvest statistics.

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241-2 Biological data.

241-1,2-1 Mail survey, registration stations, and other surveys as needed.

- 242 Monitor the hunters.
 - 242-1 Monitor hunting methods through personal contacts, surveys, and field observations.
 - 242-2 Monitor hunter distribution and pressure through the same.
- 243 Monitor attitudes toward the hunt and the regulations.

243-1 Hunters' opinions.

- 243-2 Landowners' opinions.
- 25 Insure effective enforcement of laws and regulations regarding wild turkeys.

Transplant wild-trapped turkeys to suitable habitats.

- 31 Inventory and evaluate potential release sites and the surrounding areas.
- Insure that populations of game-farm turkeys are absent from 32 release sites and nearby areas so they do not affect a release.
 - 321 Annually update lists from wildlife managers and conservation officers of releases and populations of game-farm turkeys.
 - 322 Prevent releases of game-farm turkeys and/or provide for removal of problem birds (Appendix I).
- 33 Develop a transplant schedule and update annually. Implement as conditions allow.
- 34 Monitor the circumstances of trapping and transplanting (handling methods, snow conditions, etc.) and relate to the behavior and immediate (prior to items under 112) success or failure of the transplants.
- 4 Recognition of, and appreciation for, quality outdoor experiences by the public.
 - 41 Prepare turkey hunters' handbook.
 - 42 Annual turkey hunter orientations.
 - 421 Evaluate need annually.
 - 422 Evaluate content and timeliness and improve annually.

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- 423 Evaluate response from hunters.
- 43 Environmental education.
 - 431 Prepare school curriculum materials on turkey ecology and management.
 - 432 Prepare materials on same for use in continuing education.
- 44 Prepare other items (news releases, magazine articles, etc.) for public consumption.

5 Provide for public involvement in management decisions.





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APPENDIX IV

STATE OF MINNESOTA DEPARTMENT OF NATURAL RESOURCES

COMMISSIONER'S ORDER NO. 1920

REGULATIONS PROHIBITING THE IMPORTATION, SALE, OR RELEASE OF LIVE WILD TURKEYS IN THIS STATE.

Pursuant to authority vested in me by law, I, Robert L. Herbst, Commissioner of Natural Resources, having found that the provisions hereinafter prescribed are necessary for the protection of wild turkeys within the state, hereby promulgate the following regulation:

Section 1. No persons shall buy, sell, transfer, assign, give, import into or release in this state any strain of the wild turkey (<u>Meleagris gallopavo</u>) or any hybrid thereof with the domestic turkey, except by permit issued by the Commissioner of Natural Resources.

Dated at Saint Paul, Minnesota, this _____ day of February, 1975.

> s/_____ ROBERT L. HERBST Department of Natural Resources

APPROVED AS TO FORM AND EXECUTION WARREN SPANNAUS Attorney General

s/__

C. PAUL FARACI Deputy Attorney General Department of Natural Resources











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