

BIG GAME PLAN - INTRODUCTION

Managing Wildlife — A Public Trust

Under federal and state law the management of wildlife falls under the concept of public trust, which means that it is considered a resource that must be preserved and protected for public use. Unlike Europe's feudal system during the Middle Ages, wildlife does not belong to a royal family or a government. Nor can individuals possess wild animals as a commodity as pets or farm animals. The Public Trust Doctrine, based on English Common Law and upheld by the United States Supreme Court, is the principle upon which natural resources, such as wildlife, are conserved in the public interests and for reasonable use by current and future generations. The Vermont Fish & Wildlife Department (the Department) is obligated to conserve and manage Vermont's wildlife resources on behalf of the public. Vermont law entrusts the stewardship and management of wildlife resources to the Department in accordance with the Public Trust Doctrine to ensure this principle is carried out.

The principle of wildlife as a resource that is managed in public trust by state and federal governments is the foundation of what is known as the North American Wildlife Conservation Model. The Model holds that by placing wildlife in the public trust the value that is derived is not merely personal profit. The motive for harvesting wildlife is not one of simple profit as it was in the nineteenth century when market hunting was rampant, but instead, one of broad public benefit and sound and sustainable wildlife and habitat management. This Model has served wildlife and the public well for more than 100 years. As a result, game species such as the four big game species featured in this plan have flourished. Under this Model, the public is involved in the decision-making process, and for this reason, it has been embraced across North America. In keeping with these basic principles of wildlife management and conservation in North America, the mission of the Department is "...the conservation of fish, wildlife, plants, and their habitats for the people of Vermont."

About This Plan

To carry out this mission the Department's long-range management plan identifies issues, goals, and strategies that insure that a balance between the conservation needs of the species and the interests of

the public is effectively addressed. The plan has three major objectives:

- Conserve, enhance and restore Vermont's natural communities, habitats, and plant and wildlife species along with the ecological processes that sustain them.
- Provide a diversity of safe and ethical fish- and wildlife-based activities and opportunities that allow hunting, fishing, trapping, viewing, and the utilization of fish, plants, and wildlife resources consistent with the North American Wildlife Conservation Model.
- Maintain safe fish- and wildlife-based activities while limiting harmful human encounters with fish and wildlife species, and provide general public safety service incidental to our primary fish and wildlife duties.

Management of Vermont's four big game species has been combined into a single, comprehensive big game plan. This will provide the public with easy access to all information related to big game management. It will also help ensure that a more comprehensive assessment of the overlapping and divergent management needs of each big game species are holistically considered and coordinated to improve overall management. In addition, the process of developing a single, comprehensive big game management plan is more cost effective and efficient than four separate planning efforts.

The Process for Developing The "Ten-Year Big Game Management Plan"

This plan is based on currently available and relevant biological and ecological data associated with each of the four big game species and their habitats. A survey of 1,000 randomly selected Vermont residents was also conducted to gather public opinion related to deer, moose, bear and wild turkey management. Respondents were asked their views on many topics such as habitat protection, game species population size preferences, and property damage from wildlife (results of the survey can be found on the Department's website: www.vtfishandwildlife.com/library/)

A series of open house style public meetings were held in five locations around the state during the

summer of 2008 and a web page was developed to allow people to discuss issues and offer opinions to Department staff. This was followed by two public meetings and a month-long public comment period to allow Vermonters to submit opinions regarding draft management plans. Approximately 200 people attended the meetings, wrote letters and e-mails, used the on-line comment option, or made phone calls to express their views. The majority of comments pertained to deer management, with comments varying widely across the topics of season lengths, bag limits, and appropriate antler point restrictions. All of the comments were reviewed and considered by the Department and, as much as possible, assimilated into commonly voiced themes. While biologically responsible wildlife management must come before public opinions, there will always be aspects of wildlife management that can be decided by public sentiment. From the beginning, public feedback steered many aspects of the Department's ten-year planning efforts, and public feedback will continue to help shape our goals and objectives. Provided below are summaries of the issues raised by the public in response to the draft plans for each of the big game species.

WHITE-TAILED DEER

The Department received input on several potential strategies to address the need to harvest more female deer in select parts of the state. First, where female deer are locally overabundant, it may be desirable to encourage bow hunters to fill a second, or even third, archery tag by taking an antlerless deer. This could be achieved by liberalizing the archery bag limit to three deer, with one of these possibly being a buck. All hunters would still be subjected to the annual bag limit that is currently three deer. The option to "tag-out" with three deer during archery season and forfeiting further deer hunting in Vermont in that calendar year would be the choice of the hunter if he or she were successful during this season. It is also noteworthy that additional archery tags may help manage localized deer populations where firearm ordinances restrict the ability to harvest antlerless deer during the Youth Weekend and muzzleloader seasons.

Second, there was considerable interest voiced for an early antlerless-only muzzleloader season that would occur sometime before the regular rifle season. Such a season would only be open to those individuals holding an antlerless-deer permit for muzzleloader hunting. Although the Department is sensitive to the various concerns expressed by hunters, landowners,

and other nature enthusiasts regarding this policy, the Department needs to explore ways to harvest more antlerless deer in some areas when and where consecutive mild winters allow the deer herd to grow beyond our ability to control it with existing antlerless deer hunting seasons. A brief antlerless-only early muzzleloader season is a method to consider with other potential benefits from removing more antlerless deer earlier in the season.

Because of increased interest in an early muzzleloader season and antler-point restrictions, a survey on these topics was circulated at the July public hearings. As recommended by some of the attendees, the survey was also posted on the Department's website. The survey response was substantial, numbering nearly 600 submissions. Additional public surveys that solicit opinions on the use of early muzzleloader season and/or the archery season to achieve female deer harvest objectives will guide the Department's management approaches in the future.

The public provided mixed reviews of a special crossbow season or allowing crossbows during the archery season. Given the consideration of other, more popular antlerless harvest enhancements, such as the early muzzleloader season and a lengthened archery season, the use of crossbows as an additional hunting implement does not appear to be supported by the public at this time.

In preparing the final plan, there were two areas in particular that appeared to require further scientific documentation. Participants requested more information about chronic wasting disease (CWD), how it is transmitted, and what it means for CWD-free and CWD-infected deer populations. Of particular interest was how this might apply to deer-urine-based scent lures. Although widespread live-testing for CWD still remains unfeasible with high probabilities of false-negative results (indications of a disease-free animal when it is actually infected), methods to detect the infectious protein (prion) in animal fluids is advancing. As a result of these advancements, recent studies have found the CWD-causing prion in urine and other excretions and body parts of infected deer. In this final plan we provide additional and current references to pertinent scientific literature and results on this subject.

The other topic needing more supporting documentation was the issue of antler-point restrictions. Again, we provide additional sources of information cited in the text. Many of the studies

cited are available as complete documents on the Internet. Copyrighted studies on the Internet appear as abstracts that may be purchased through the journal in which they are published.

MOOSE

Among the persons commenting on the Department's website, seven made comments related to the draft moose plan. The only issue that drew much attention was the proposed special archery season for moose; six people expressed support for this season, and none were opposed.

The other major issue where public input was specifically solicited in the plan was the proposed management for slow growth of the moose population in the central and southern "mountain" wildlife management units (WMU) of I, L, P, and Q. Only one web comment addressed this issue, and it was in favor of the proposed direction.

Six written moose comment forms were collected from open houses held in July, 2009. Five of these were in support of the special bow season and one was opposed. Similar levels of support (seven in favor, one opposed) were voiced at the May, 2008 open houses. None of the comments addressed population desires for the southern mountains, except for one respondent who desired fewer moose in WMUs H1, H2, D1, D2.

Six respondents commented on the moose lottery. One liked the present system; two thought it was unfair because some families have won multiple times while others have never won. One individual thought bonus points should be earned during the three-year waiting period, one wanted a two-year wait instead of three-years, and one person felt applicants should possess a Vermont hunting license before they could enter the lottery.

BLACK BEAR

Two bear management issues received the most comment from 15-20 respondents. The first was opposition to a regulation requiring minimum registration standards for bear hunting guides or hunting guides in general as a means to address concerns for fee-for-bear hunting. Some felt it would diminish a person's opportunity to earn money or offer a potential mentoring experience for an inexperienced hunter. Others felt a guide registration system did not address the fee-for-bear hunt guiding concerns.

The second most frequent comment concerned nuisance bear situations, especially those involving birdfeeders. Most felt the Department had a good message regarding the removal of feeders but needed to be more aggressive with its advertisement and insistence with compliance. Beehive owners expressed some concern about higher bear populations in the Champlain Valley where apiaries are numerous. The consideration of regional management zones for bear seasons may be an appropriate tool for addressing this concern.

Several respondents wrote to say the bear population was "about the right size," or that it appeared to be growing, and the population goal was appropriate. Others felt the population was too high in parts of the state and suggested managing bear populations by regions to address these differences, while still others felt the bear population was too low.

Comments were received regarding opposition to bear hunting, especially with the aid of dogs. The Department believes it cannot achieve and maintain the proposed bear population objectives without the use of regulated hunting of these animals.

WILD TURKEY

A number of substantive comments were received during the public comment period for the draft wild turkey management plan. These comments ranged from suggestions for a variety of spring and fall hunting season expansion proposals to "maintaining the status quo" to comments on the availability of check stations for reporting harvest. The general focus of comments pertained to the opportunity to expand fall hunting opportunity. One comment of interest suggested a separate fall bird tag to enable hunters to harvest a fall bird who might not otherwise participate in the spring season. A second comment of interest suggested opening the fall season concurrently with archery deer season to permit greater opportunity to hunt turkeys.

Historical Perspective

The following is a brief overview of the historical influences on wildlife in Vermont. It traces some of the most important elements of early land use activity and cultural trends that have affected the state's wildlife and its habitat.

Prior to European colonization in North America in the early 1600s, human activity affected the landscape very little. Native Americans did not

have the technology, other than fire, with which to create landscape-level changes in their environment. Thus, sporadic, naturally occurring events such as hurricanes, earthquakes, and wild fires were the primary forces affecting large geographical areas. Even these major events merely served to set back forest communities to earlier stages of ecological succession. With seed stock and soil still in place the forest communities were always capable of replacing themselves.

Indigenous tribes hunted, fished, trapped, and tended corn fields and small gardens on the banks of major rivers throughout Vermont and New England. Some species of fish and wildlife were very abundant. The passenger pigeon, for example, was so plentiful that it was reported the birds “blacken the sky” with their numbers and broke tree branches when they set down to roost. This single species accounted for 25 to 40% of all birds living in the United States. According to some records, there were 3 billion to 5 billion passenger pigeons at the time Europeans began arriving on the continent. Ducks, geese, deer, moose, and many other species were also plentiful. For native communities wildlife was a primary source of sustenance and socially and culturally important. But just as today, wildlife populations fluctuated through the years and varied with the seasons, and there were times of wildlife scarcity.

The balance between wildlife and human activity, however, changed dramatically in the 1800s with the influx of European settlers. Following establishment of the colonies, the human population increased steadily in Vermont. Just prior to Vermont becoming the fourteenth state, its population was estimated at 85,425. Over the course of the following ten years, the population doubled to 154,465. Just 50 years later, it doubled again (Table 1.1). European settlers changed the wildlife equation in several important ways.

Unregulated market hunting and hunting wildlife for profit rather than for subsistence contributed to a rapid decrease in many species. Another factor was the settlers’ demand for lumber and firewood, as well as land to convert to agricultural use. Throughout Vermont’s early history the landscape has shifted with changes in farming – from sheep to dairy farming, from grass crops to a corn crop. But on a larger scale, farming transformed the land from forests to open pastures. At

one point in our history, the land went from 95% forested to 63% nonforested, eliminating most or nearly all suitable habitat for some species. This, along with the unregulated harvest of wildlife, took a significant toll on many wildlife populations that depended on forestland habitat. By the mid-1800s, many of the species that had been very abundant began to decline or disappear from the landscape. The passenger pigeon, mountain lion, wild turkey, moose, and wolf became extinct, while deer and bear populations were limited to forested remnants of the state.

As early as 1847, famed conservationist and resident of Woodstock, Vermont, George Perkins Marsh remarked on the speed with which this transition to a nonforested landscape occurred. The ecological damage sustained by farming and logging, noted Marsh, was “too striking to have escaped the attention of any observing person.” Governor Urban M. Woodbury angrily proclaimed before the State Legislature in 1894, “Owners of timber lands in our state are pursuing a ruinous policy in the method used in harvesting timber.” The Governor recognized that the deterioration of forestland in Vermont also meant an insecure future for the state’s major industry: lumber and wood products. “There is no more valuable crop produced from the land than timber,” Woodbury commented in the same speech. “Every decade will see timber more valuable and it is of great importance to the state as a whole... that some measure should be adopted to lessen the wanton destruction of our forests.” Although Marsh and Woodbury were early observers of the fact that Vermont’s economy was tied to the resources and aesthetic qualities of its forests, public awareness and concern regarding the effect of certain land practices on the natural environment did not fully emerge until the turn of the twentieth century.

As concern for the loss of species took root among citizens in Vermont and across North America, actions began to be taken to restore the wildlife species that had been lost. Deer were one of the first species to be protected by state laws. In 1865, the hunting of deer in Vermont became illegal and remained so for the next 32 years. During this period,

Table 1.1 Vermont population from US Census Bureau statistics 1790 - 2005.

| Year | 1790 | 1800 | 1850 | 1900 | 1950 | 2005 |
|------------|--------|---------|---------|---------|---------|---------|
| Population | 85,425 | 154,465 | 314,120 | 343,641 | 377,747 | 623,050 |

seventeen white-tailed deer were transplanted from New York into the state, which provided breeding stock that rebuilt the deer herd. The most important change, however, that led ultimately to successful restoration of white-tailed deer and other species was the abandonment of farms that allowed the land to revert back to forests. The combination of improving habitat conditions, legal protection, and lack of significant mortality factors other than winter conditions resulted in a rapid recovery of the deer population. The rapid success of this restoration effort led to the opening of a limited, regulated deer hunting season in October of 1897.

As Vermont entered the era of active wildlife management, the deer population continued to grow as habitat expanded and improved. Throughout the first half of the twentieth century, deer numbers increased and their range expanded. During this time of restoration, a bucks-only harvest regulation was used to maximize the growth rate of the deer population. Because only bucks were harvested for a period of more than fifty years, the buck-only harvest restriction moved from being a population management tool to becoming a Vermont deer hunting tradition.

The white-tailed deer population responded well to the bucks-only regulation and expanded so quickly that in less than 50 years the buck harvest grew from 103 deer in 1897 to more than 4,000 deer in 1940. So rapid was the population growth that by 1946 wildlife biologists had already begun to observe negative impacts on habitat quality caused by large numbers of deer. In this same year, the Department released the publication "The Time is Now" as an attempt to inform the people of the new situation and the problems that the future would hold if growth of the deer population was not limited. Biologists recognized that the harvest of female deer was the only way to control total deer numbers. Unfortunately, Vermont's bucks-only harvest tradition had become well established by this time and the hunting public would not accept harvests of female deer as the solution.

This difference of opinion engendered an infamous period of deer management in Vermont that became known as the "deer wars." Over the next nearly 50 years, public outcries occurred on and off as biologists attempted to implement deer management changes. Although most deer hunters today recognize the importance of harvesting female deer to limit growth of the deer herd and protect deer habitat, deer

management remains an area of great public concern and continued contention.

The other three big game species did not recover as quickly as the deer. Bear populations recovered slowly for several reasons. Livestock owners considered them a nuisance. Not only was bear hunting unregulated, but Vermont state law offered bounties for animals that were killed from 1831 until 1941. The first laws limiting the harvest of bears were not implemented until about 1950. Rapid recovery of forest habitat along with limited harvest of bears proved to be a boon to black bear recovery. Black bears are now distributed throughout most of Vermont.

Moose also may have completely vanished from Vermont at one point. When a young bull was shot in March 1899, at Wenlock (now Ferdinand) in Essex County, the local newspaper reported it as "a strange animal" and "the last moose in Vermont." The shooting was actually illegal because the 1896 Legislature had established a closed hunting season on moose. Moose recovery lagged behind deer and bear due to a lack of suitable forest and wetland habitat. But as the forestlands recovered and wetland habitat expanded with the return of beaver populations, moose habitat also expanded. The Department estimated that in the early 1960s about 25 moose existed in Essex County. The moose population grew steadily over the next 30 years. By the 1990s, moose were abundant enough to support a limited, controlled regulated hunt.

In 1993, the Department issued 30 moose permits in Essex County and conducted the first regulated moose hunt in the state's history. Today, the moose population has fully recovered and has reached a level where regulated hunting is a tool needed to keep the population in balance with its habitat and to protect private property and public safety. The Department's current management aims are to keep the moose population in balance with available habitat and to provide abundant hunter harvest and citizen viewing opportunities.

By the mid-1800s, wild turkey was another species that had disappeared from the Vermont landscape. Thirty-one wild turkeys from New York were stocked into Vermont in 1969 and 1970. From this point on, the turkey population grew so fast that the first modern turkey hunt was established only three years later in 1973. Less than 40 years later, the turkey population has expanded throughout the state and continues to grow in numbers with record

harvests occurring annually. Today these birds can be found in nearly every town of the state with a total population thought to number approximately 50,000 to 55,000 birds. This was an unexpected outcome. Early biologists believed that Vermont's long winters and deep snows would limit the distribution of wild turkeys to the Champlain and Connecticut River Valleys where winters are less severe, acorns are plentiful, and agriculture provides a source of winter food. Wild turkeys proved to be more adaptable than anticipated, however, and today they are found even along the Canadian border in Essex County. In fact, wild turkeys have expanded their range across the border into Quebec, Canada.

The twenty-first century begins with approximately 75% of Vermont's landscape being forestland. A half-century of science-based regulation has restored many wildlife species, including game species. Conservation and management issues, however, still confront our deer, moose, bear, and wild turkey populations. Although these issues more often relate to overabundance than to scarcity and recovery, they are no less daunting. The issues surrounding our wildlife in this century are now focused on maintaining wild and robust populations in balance with their habitats while providing abundant opportunity for the public to use and enjoy. Today the issues we face involve an ever expanding human population and the activities that accompany it (Table 1.1). Bears in backyards, moose in urban areas, turkeys damaging agricultural feed crops, and deer eating the next generation of forests have now replaced the old issues of wildlife scarcity. The loss and fragmentation of habitat associated with development presents new challenges to the conservation and management of deer and other species of Vermont's wildlife. If land ownership in Vermont continues to be divided into ever smaller parcels, available space to hunt and opportunity to access game will become an increasing challenge.

The Benefits of Fish and Wildlife Based Outdoor Opportunities

Hunting, fishing, and trapping are important outdoor activities culturally, socially, economically, and ecologically. These activities conducted under regulated seasons provide for sustainable utilization of fish and wildlife resources statewide. Currently 30% of Vermonters fish or hunt (over 80,000 hunters and 121,000 anglers), a higher participation rate than skiing (19%). Recent surveys report that Vermont is third nationally (behind

Alaska and Maine) in per capita participation by the public in hunting, fishing, trapping, feeding and observing wildlife. Over 600,000 pounds of white-tailed deer, 192,000 pounds of moose, and 15,000 pounds of black bear meat are harvested annually from the forests and wetlands of Vermont. Wildlife related outdoor activities accounted for 5% of Vermont's gross state product in 2001, with nearly \$300 million spent on fishing and hunting alone. These expenditures particularly benefit rural areas of the state and occur when tourism is typically low in Vermont. Within the context of this ten-year plan, the Department examines four of Vermont's big game species with the goal of managing these as assets to perpetuate into the future for the various cultural, social, economic, and ecological values they bring to the state of Vermont.

Management Issues of General Concern

1. Habitat Loss. Loss of critical habitat, such as deer yards and bear feeding areas, can occur as a consequence of development that fragments habitat as well as results in mortality from increased animal movement and motor vehicle collisions. Maintaining an adequate supply of quality, inter-connected habitats in a variety of forms (for example, young forests or wetlands) that sustains viable wildlife populations is one of the most significant conservation challenges given today's issues of sprawl and parcelization of land. For example, it is estimated that a black bear in Vermont requires 10,000 acres of land to successfully meet its annual life needs. Therefore, it is essential that sufficient habitat be maintained, managed and connected through travel corridors in order to sustain a healthy, productive population of black bear.

2. Hunter Demographics. During the last 100 years, regulated hunting has served to effectively provide people with food in terms of a sustainable, renewable wildlife resource and a continuous opportunity to be afield pursuing game. It has also served as a highly effective tool to regulate population size to levels that are compatible with habitat limitations and human expectations. Nationwide, hunters have declined over the past decade while the general population has grown (U.S. Department of Interior 2006). While the national average for annual hunting participation declined to only 5% (U.S. Department of Interior 2006), it was

14% in Vermont (Duda et al., 2007). About 41% of Vermonters have hunted at some time (Duda et al., 2007), indicating that hunting remains an important tradition here. Concern remains that reduced numbers of hunters may make it difficult to harvest enough deer to control the population in the future.

Since 1997, various youth hunting seasons for big game have been established to promote opportunities for youth to participate in hunting under the mentorship of an adult hunter. Youth Weekend seasons now exist for deer and wild turkey. Interest and support among adult hunters for these programs remains high.

3. Public Access to Land. Private lands remain very important to most Vermont hunters. One study estimated 30% of Vermonters still travel less than five miles one-way to hunt deer (Duda et al., 2007). Public lands open to hunting are under various ownerships and are distributed widely across Vermont with a total of more than 800,000 acres under state or federal management. The Vermont Agency of Natural Resources manages more than 333,000 acres of this total as wildlife management areas, state forests, and state parks. The Agency also holds easements on over 123,000 acres of conserved commercial forestlands that guarantee public access. The Green Mountain National Forest and Silvio Conte National Wildlife Refuge comprise most of the federally owned public lands in the state.

The value of private lands for hunting and other public access is recognized by laws ranging from Vermont's strict landowner liability laws to statutes granting landowners who own at least 25 acres a preferred status for receiving antlerless deer muzzleloader permits. Because of the latter, the Department is opening up more private land for hunting by offering these landowners first choice in the kind of permits that are issued for hunting on their land. The Department encourages hunters to ask permission and be respectful of private lands even when lands are not posted to ensure that Vermont's heritage of free access to private lands for hunting may continue indefinitely.

4. Privatization of Wildlife. Privatization of wildlife resources threatens fair chase hunting

wherever it occurs. When private landowners erect high fencing and charge a fee for the opportunity to hunt, the privatization of a public wildlife resource has occurred. Access for pay or lease hunting systems that restrict land access to those having the money to pay for it is a similar but less direct form of privatization. As demonstrated in much of Texas, lease hunting systems result in reduced hunting pressure and an inability for state wildlife agencies to manage overabundant deer populations (Haskell 2007). In accordance with the founding principles of this nation and the state of Vermont, it is the Department's responsibility to prevent privatization of Vermont's public wildlife resources and ensure the public's right to hunt.

5. Human-Wildlife Conflicts. The Department faces increasing conflicts between humans and wildlife. The four big game species present unique cases involving nuisance and other human conflicts. The Department addresses these issues in a consistent fashion for big game species in accordance with the following principles: Protection of human health and safety is first. Second, we must handle the animal involved responsibly when it must be confronted, displaced/removed from the scene, or euthanized. When these two guidelines are met, public acceptance is usually achieved.

6. Loss of Big Game Check Stations. These facilities perform a vital data collection service to the Department and provide a convenient means for hunters to legally register their game. The number of check stations has steadily decreased during the last ten years to a point where some hunters now have to drive 30 or more miles to legally report their game. There are a number of reasons for the decline including the time required to record a harvested animal, the small fee received for the effort, and change in ownership of stations. While hunters and others visit the check stations during hunting seasons and make purchases of materials, goods, and products, in some instances the agents believe this ancillary business is insufficient to cover the costs of participating as a reporting station. Big game registration and sale of licenses are a tremendous benefit to the Department and to the hunting public. The Department is examining a variety of strategies to correct this situation.

7. Access to Game. As Vermont's population approaches 650,000, land continues to be developed and subdivided into smaller parcels, resulting in less available habitat for wildlife and fewer opportunities for hunters to access private land. Houses and people now occupy areas that were once open to hunting, posing a safety risk that limits the area where hunters may use their firearms. Posting no trespassing signs on private property also limits the amount of lands available for hunting. To stem the loss of access to game, the Department remains committed to public land acquisition programs (for example, Forest Legacy) that contribute to the acreage available for public hunting. The Department also recognizes the increasing negative impacts of a third-party fee for hunting on private lands. In these cases, individuals or groups of individuals lease hunting privileges to a sought-after hunting location from a landowner and charge clients for the exclusive use of the land. Or the landowner charges a select few directly for use of the land. In either case, access to game is just as restricted as if the land were developed or posted. This reduces hunting opportunity for the hunter without the financial means to buy into the hunting privilege. Examples of this have been readily seen with waterfowl hunting and more recently with bear and deer hunting. As the willingness to pay to hunt increases more and more opportunity will be lost to the general hunting public. Furthermore, the redistribution of hunting pressure due to fee hunting will likely become inconsistent with game species management goals.

Enacting rules against fee for hunting may appear to be a simple solution, but private property rights require that this type of response be carefully weighed before moving in the direction of regulation. It is also important to distinguish the difference between a fee for hunting versus a fee for a guided hunt. The former involves restricting access to hunting land while the latter, as in the case of moose hunting guides, offers a service but does not prevent non-paying hunters access to hunting space. Efforts need to be increased during the next ten years to address the fee-for-exclusive-hunting tide. These efforts must include outreach towards landowners by the Department, organized sporting groups and individual hunters.

8. Wildlife Management Unit (WMU)

Realignment. Wildlife management unit boundaries were established in 1979 to regulate deer harvest on a geographical basis where deer densities mirrored the effects of habitat quality and winter severity. Since that time, WMUs have been applied to the management of moose and wild turkey populations on a regional basis. Bears range across such large areas of land that individual WMU boundaries have lesser value as a management tool. Groups of WMUs, however, can be established that may provide feasible opportunities to manage this species on a regional basis.

Unit boundaries, however, do not in every case align with natural boundaries of population abundance of big game species, particularly deer. To more effectively manage deer populations, it is necessary to periodically reassess and realign unit boundaries. A detailed description of the proposed changes in WMU boundaries is provided in Chapter 2, "Deer Management Plan," Issue 2 Population Goals. It is important to note any realignment of WMU boundaries will apply to all big game species.

Habitat loss and an aging hunter population are significant barriers to meeting the goals of this plan and to wildlife conservation in general. The economic and social forces affecting these changes are diverse and will be part of the Department's focus in addressing these new conservation challenges. The Department will consider a variety of opportunities to address these issues including but not limited to the following:

- ▶ Increase hunter recruitment and participation through a variety of strategies, such as introducing families to safe shooting through workshops sponsored by 4-H.
- ▶ Develop outreach materials for private landowners to introduce them to the wildlife management services offered by the Department, the rules and regulations concerning hunting on private property, and acquaint them with the traditions of Vermont's rural culture associated with hunting.
- ▶ Improve hunter access to land through a variety of strategies including creating

incentives to reduce parcelization of private property.

- ▶ Ensure that Project WILD, Project WET, and Project Learning Tree materials are in the hands of all elementary school teachers.
- ▶ Improve and expand hunter education opportunities through a variety of strategies including creation of a mentored hunting program.
- ▶ Help adjacent landowners form a community-based land access program to expand hunter access to land.
- ▶ Expand habitat management and conservation programs on public and private land to benefit big game and other wildlife species.
- ▶ Continue to raise public awareness of and appreciation for the benefits of sustainable harvest of wildlife for food as a renewable natural resource that is good for people and the environment.

| Time line of important dates in Vermont Wildlife Management | |
|--|--|
| 1609 | Samuel de Champlain is the first European to see Lake Champlain. |
| 1640-1760 | French Canadians slowly begin early European colonization in Champlain Valley. |
| 1761-1791 | English colonization of Vermont rapidly expands. |
| 1791 | Vermont becomes the 14th state, there are 85,425 people living in the state (1790 Census), landscape is 80% forested. State Constitution gives inhabitants the right to hunt, fish and trap. |
| 1800 | US Census reports there are 154,465 people living in Vermont. |
| 1831 | First bounties for bear are enacted by State Legislature. |
| 1865 | US Civil War ends, over 300,000 people live in Vermont, state is 37% forested, it is illegal to hunt deer. |
| 1887 | The last known native catamount is killed in Barnard. |
| 1897 | The first modern deer season is held, 103 deer are harvested in a 30-day season. |
| 1904 | The forebear of the Vermont Fish & Wildlife Department is created. |
| 1941 | Bear bounties repealed. |
| 1946 | "The Time is Now" written by Department biologists in response to rapidly growing deer herd. |
| 1950 | In 100 years Vermont population has grown very little, 377,747 people reside in the state. |
| 1951 | First regulation of bear harvest. |
| 1953 | First archery season is held. |
| 1962 | First sections of Interstate Highway System completed (Montpelier to Burlington). |
| 1963 | Limited antlerless permits issued. |
| 1969 | First wild turkeys (17) are reintroduced in Pawlet. |
| 1970 | Statewide land-use and development law (Act 250) passed. |
| 1973 | First wild turkey hunt held in parts of Addison and Rutland Counties. 579 permitted hunters harvest 23 birds. |
| 1979 | Modern deer management era begins, antlerless permits are issued by Wildlife Management Units (WMUs). |
| 1986 | First muzzleloader deer season is held in December. |
| 1990 | First Deer Management Plan is written. |
| 1993 | First regulated moose hunt in Vermont history held in October, 30 permits are issued. |
| 2003 | First Youth Day deer season is held the Saturday before regular deer season. |
| 2005 | Legal buck definition changes after 108 years from 1, 3-inch antler to 2 points on one side. |
| 2008 | Vermont is 75% forested, 625,000 people live in the state, ten-year planning cycle begins for deer, moose, bear, and wild turkey populations. |

