MAINE'S GAME PLAN *for deer*

A PLAN TO INCREASE MAINE'S NORTHERN, EASTERN AND WESTERN DEER HERD

Photo by Paul Vitucci

The Maine Department of Inland Fisheries and Wildlife
in collaboration with its outdoor partners

March 2011

www.mefishwildlife.com

Table of Contents

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Maine Department of Inland Fisheries and Wildlife
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EXECUTIVE SUMMARY

USF&WS Photo

Public concern over low deer numbers in northern, eastern, and western Maine [NEWME] has been intensifying for nearly 20 years. These deer populations are below the Department's publicly-derived, goals and objectives and are also below the desires and expectations of resident and non-resident deer hunters, guides and outfitters, business owners located in rural Maine, and those who enjoy watching deer. Low deer numbers are also having a negative impact on Maine businesses and its rural economy.

There are several inter-related factors that are suppressing deer numbers in NEWME. These include:

- winter severity;
- diminished number and quality of deer wintering areas;
- predation; and
- other mortality factors [illegal hunting, improper winter feeding, vehicle collisions, etc.].

The Maine Department of Inland Fisheries and Wildlife [MDIF&W or Department] has identified 5 elements that are necessary to rebuild the northern, eastern, and western deer herd. The

elements are based upon MDIFW's *White-Tailed Deer Management System and Database,* the recommendations from the Northern and Eastern Maine Deer Task Force [2007] and the Deer Predation Working Group [2008]. Each **element** is critical, and there is no single **strategy** that will increase deer numbers. Achieving an increase will require successful implementation of the strategies that span each of the five elements below.

Element 1: Deer Wintering Areas and Winter Severity

Maine's severe winters influence deer survival and deer numbers. To survive our harsh winter conditions, deer move to dense conifer forests, most of which occur on private land.

Strategies:

- continue efforts to identify active deer wintering areas
- continue to work with landowners to manage deer wintering areas
- promote "current-use" tax programs as an incentive to manage deer habitat
- identify additional incentives to encourage greater landowner participation in DWA management
- involve landowners, stakeholders, and the legislature in the effort to identify incentives

Element 2: Deer Population Management

The Department's *White-Tailed Deer Management System and Database* and the recommendations of the Northern and Eastern Maine Deer Task Force guide its deer management program.

Strategies:

- conduct research to
    - refine our current deer population model
    - better understand interactions between deer, habitat, and predation
    - understand how moose management may affect our ability to increase the deer population
- work with landowners to eliminate deer mortality where winter feeding makes deer susceptible to vehicle collisions
- increase law enforcement efforts to target illegal killing of deer
- work with the legislature to increase penalties for illegal killing of deer

Element 3: Predation

White-tailed deer comprise a significant portion of coyote diets in Maine, particularly during winter and the spring pupping period. Coyote and bear predation are considered an important component of newborn fawn deaths in summer.

Strategies:

- increase efforts to achieve focused coyote control
- increase success in deploying coyote hunters to predation sites
- seek general funds to achieve sustained coyote control

- consider ways that annual hunting and trapping harvests could be used to stabilize the bear population
- continue to lobby the U.S. Fish and Wildlife Service for an Incidental Take Permit for Maine's regulated trapping program

Element 4: Deer Planning and Public Involvement

MDIF&W has employed public participation to develop management goals and objectives for many species of Maine's wildlife, including deer. The Department has conducted species planning since the early 1970s and has refined and expanded the process with each planning update. Most recently, the 1999 Big Game Working Group set the Department's deer population management objectives for 2000-2015.

Deer are a public resource, but live on private lands. For any wildlife management effort to be successful, especially those occurring on private property [including deer wintering area management] society must determine: 1] the wildlife management result it desires, 2] the effort that it will undertake or require to achieve the result, and 3] to achieve the result, how much of the effort / cost will be borne by the private landowner and what, if any, society will bear.

Strategies:

- convene a public working group in 2015 to update Maine's deer population goals
- ensure that all stakeholder groups interested in deer participate in the process
- ensure that the goals and objectives developed by the working group are fully vetted to the broader society
- determine applicability and feasibility of integrating the marten and lynx models with forest yield models to inform landscape management in NEWME [Super Species Planning effort]

Element 5: Information and Outreach

Public understanding of the Department's deer management plan and public support for the plan is essential for it to be successful.

Strategies:

- the Department will enhance it's public outreach on two fronts:
    - better informing the public about the many aspects of deer management and updating the public on progress in deer rebuilding efforts, and
    - better providing information on ways concerned individuals and groups can improve deer habitat
- the Department will increase public understanding and support for it efforts to increase the deer population

If we are to succeed in increasing the NEWME deer population, the Department, legislature, landowners, sportsmen's groups, and interested citizens must all work together to implement ***A Plan to Increase Maine's Northern and Eastern Deer Herd***.

BACKGROUND

Many people, residents and non-residents alike, are passionate about Maine's white-tailed deer [*Odocoileus virginianus borealis*]. Some are hunters who enjoy deer hunting; others enjoy watching deer browse in a chopping, or are simply surprised by the doe and fawn that venture across the family's backyard. Maine deer are widely loved and appreciated by the public and are important contributors to the state's economy; in the late 1990s, deer hunting generated more than $200 million within Maine.

Maine's white-tails occupy the northeastern part of the species' range in North America; the northernmost extent of the white-tail's range is less than 100 miles north of Maine, along the south shore of the St. Lawrence seaway in Quebec.

Little is known of deer population size in Maine prior to the 1950s. It is unlikely that deer were very abundant during early colonial times in Maine. Restricted to coastal and riparian habitats at a time when winter climate was severe, deer populations may have been limited by predation from aboriginal man, wolves, bobcats, black bears, and mountain lions [Stanton 1963; Banasiak 1964; as cited in Lavigne 1997]. During the 1800s, logging and land clearing opened Maine's forests at a time when winter climate began to moderate. Pioneering and settlement continued to advance northward, modifying summer habitat that was beneficial to deer and allowed deer to expand northward as well. Wolves and mountain lions were extirpated from Maine, leaving man as the only important predator of adult deer. This reduction in non-human predators persisted from the late 1800s to the 1960s and set the stage for periodic boom and bust cycles of deer abundance.

During the past 40 to 50 years, many changes have occurred which have had dramatic effects on deer populations in the state. Between 1975 and 1988, northern, eastern, and western Maine [NEWME] experienced a severe outbreak of spruce budworm that defoliated, weakened, and killed entire stands of balsam fir and spruce. By the end of the infestation cycle, nearly 8 million acres of spruce-fir forest had been affected to some degree [Irland et. al. 1988 as cited in Lavigne 1997]. The spruce budworm outbreak and intensified softwood timber harvests resulted in improved habitat for bear and moose and improved summer range for deer, BUT it also changed predominately mature pole-stage conifer forests to increasingly younger stands; this reduced the quantity and quality of wintering habitat for deer in large areas of the state.

At the same time, global demand for wood products and subsequent improvements in timber harvesting technology increased during the 1970s and beyond, placing even greater pressure on the supply of mature softwoods. Landownership patterns have also changed in northern, eastern, and western Maine since the 1970s, and particularly during the last 20 years. Recent trends indicate an annual increase in harvested acres, increased frequency of land sales, smaller land ownerships, and reductions in the size of clear cuts resulting form the Forest Practices Act that are having a negative, cumulative impact on summer and winter habitat for deer. We have moved away from relatively large tracts of land owned by a few individuals or

corporations to a situation where landowner objectives, ownership patterns, and market demands have become more complex and difficult to manage and predict.

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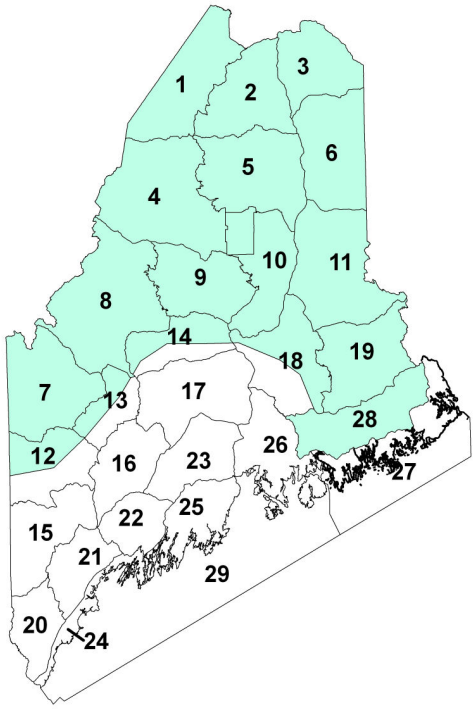
This complex interaction from a variety of factors has reduced the quantity and quality of deer wintering areas [DWAs] and exposed deer to increased winter mortality during moderate and severe winters. The combination of severe winters and diminished winter cover is the primary cause of our steep deer population decline.

In addition, intensified timber harvesting, following the 1975 ban on river-driving of wood products, prompted industrial landowners to develop thousands of miles of logging roads reaching into virtually all of Maine's formerly remote woodlands, considerably expanding road access for hunting and increased hunting pressure.

At the same time that forests were changing, the eastern coyote emerged as a new predator in Maine. Superb opportunists, coyotes are able to successfully prey upon healthy deer of all ages, particularly in winter. During early summer, coyotes join a long list of predators which compete for newborn fawns. This list also includes black bears, red fox, bobcats, fisher, and free-roaming dogs.

The effects of increasing development and human population [road-kill, illegal-kill, etc.] have also influenced Maine's deer population over the years.

WHAT ARE THE FACTORS SUPRESSING THE DEER POPULATION IN NORTHERN, EASTERN, AND WESTERN MAINE?



Deer populations in northern, eastern, and western Maine [denoted in color on the adjacent map] are very low. Populations are below the Department's publicly-derived, goals and objectives for deer and are also below the desires and expectations of resident and non-resident deer hunters, guides and outfitters, business owners located in rural Maine, and those who enjoy watching deer, and is having a negative impact on Maine businesses.

There are several inter-related factors that are suppressing deer numbers in this area. These include:

- winter severity;
- diminished number and quality of deer wintering areas;
- predation; and
- other mortality factors [illegal hunting, improper winter feeding, vehicle collisions, etc.].

CONCERN OVER LOW AND DECLINING DEER POPULATIONS

Public concern over low and declining deer numbers has been intensifying for nearly 20 years. In 1993 the Department convened a committee to review options that would result in an increase in the Downeast deer population. Low deer numbers were also topics considered for more than 12 months in 1999 by the Department's Big Game Public Working Group. Two more recent efforts [Northern and Eastern Maine Deer Task Force and Deer Predation Working Group] involved considerable time and effort and provided recommendations that guide the Department's current deer management program.

In 2007 the **Northern and Eastern Maine Deer Task Force** [NEMDTF] met eight times over the course of the spring, summer, and fall, investing more than 30 hours in discussions and countless hours researching the many factors likely contributing to low deer numbers and developed a series of recommended strategies to rebuild deer populations. The first several of these meetings were dedicated to "fact-finding." The working group reviewed and considered information and data presented by the Department, forest landowners and managers, Maine Forest Service, Land Use Regulation Commission, University of Maine, Cooperative Fish and Wildlife Research Unit, U.S. Fish & Wildlife Service, New Brunswick Department of Natural Resources, and others. Much of this information concerned four broad areas:

- the Department's deer population estimate and its deer population goals and objectives;
- the impacts of coyote and bear predation on deer, the role of predator control to protect deer, and the effectiveness of predator control in rebuilding a deer population;
- the influence of the diminished quality of many deer wintering areas, cooperative deer wintering area management versus land-use zoning, the role of deer wintering areas in rebuilding a deer population, and the observation that many deer wintering areas are currently not used by over-wintering deer; and
- the impact of illegal hunting and of legal doe harvest during the regular archery deer season and the youth deer hunting day in contributing to low deer numbers.

Paul Cyr Photo

The Department presented the deer management recommendations of the Northern and Eastern Maine Deer Task Force to the Joint Standing Committee on Inland Fisheries & Wildlife in 2008. **These recommendations guide the Department's current deer management program.** The NEMDTF meets annually to review progress toward achieving its recommendations. A copy of the findings and recommendations of the NEMDTF is available on our website at http://www.maine.gov/ifw/wildlife/surveys_reports/index.htm.

The **Deer Predation Working Group** met five times over the course of the summer and fall of 2008, investing more than 20 hours in discussions and countless hours researching predation of deer by coyotes and black bear and developed a series of recommended strategies to address predation and reduce predation impacts on deer survival and recruitment. The group considered the following in developing its management recommendations:

- *Eastern Coyote Assessment – 1999* prepared by Walter Jakubas, June 1999
- *Eastern Coyote Management Issues and Concerns* raised by the 1999 Big Game Working Group
- *Eastern Coyote Management Goals and Objectives 2000-2015* developed by the1999 Big Game Working Group and adopted by the MDIFW Commissioner and Fish and Wildlife Advisory Council in February 2001
- *Feasibility Statements for the Eastern Coyote Goals and Objectives* prepared by Walter Jakubas, July 2001
- *Problems and Strategies for Eastern Coyote Management in Maine* prepared by Walter Jakubas, July 2001
- Report to the 117th Maine Legislature Pursuant to LD 793 *A Study of Eastern Coyotes and Their Impact on White-tailed Deer in Maine* prepared by Gerald Lavigne, December 1995
- *Black Bear Management Goals and Objectives 2000-2015* developed by the 1999 Big Game Working Group and adopted by the MDIFW Commissioner and Fish and Wildlife Advisory Council in February 2001
- *1993 Downeast Deer Committee Report*
- MDIFW's *Administrative Policy Regarding Nuisance Wildlife*

Deb Plengey Photo

- MDIFW's *Administrative Policy Regarding Coyote Snaring*

- Summary of Northern and Eastern Maine Deer Task Force Meeting #2 at which coyote predation on deer was discussed.

- Final recommendations from the Northern and Eastern Maine Deer Task Force.

The Department presented the predator management recommendations of the Deer Predation Working Group to the Joint Standing Committee on Inland Fisheries & wildlife in 2009. **These recommendations guide the Department's current predator management program.** A copy of the findings and recommendations of the Deer Predation Working Group is available on our website at http://www.maine.gov/ifw/wildlife/surveys_reports/index.htm.

In December, 2010, Senator David Trahan and George Smith sponsored a one-day deer workshop that was well attended by sportsmen, guides, and outfitters. Senator Trahan and Smith used the suggestions developed at the workshop to prepare a deer management strategy, which they reviewed with the Department and also presented to Governor LePage for his endorsement. The majority of its suggestions reflect recommendations previously developed by the Northern and Eastern Maine Deer Task Force and the Deer Predation Working Group.

SETTING REALISTIC EXPECTATIONS

Deer populations in NEWME have been declining in response to loss of winter habitat, winter severity, predation, and the Department's inability to further minimize annual doe mortality in many wildlife management districts [WMDs] beyond that which it can achieve by eliminating the allocation of any-deer permits. Increasing Maine's deer herd will be challenging; the deer decline has been developing gradually over many years; it will take decades to improve.

Significant progress toward increasing the deer population will depend on increasing the amount and quality of wintering habitat for deer. Whether we succeed in increasing the NEWME deer population **will depend on the collaborative efforts and resources of many** – the Department, legislature, landowners, sportsmen's groups, and interested citizens.

Deer are a public resource, but live on private lands. For any wildlife management effort to be successful, especially those occurring on private property, including deer wintering area management, society must determine:

1. the wildlife management result it desires,

2. the effort that it will undertake or require to achieve the result, and

3. in achieving that result, how much of the effort will be borne by the private landowner and what, if any, it will bear.

It can be argued quite reasonably that 1] the existing deer population in NEWME is the deer population that society desires, 2] society expects no further responsibility of private landowners to maintain this deer population other than the status quo, and 3] society will bear no responsibility or cost itself to maintain the current population. This is a reasonable argument, because it is the actual situation that has existed in Maine for several decades and therefore

reflects long-standing societal desires; and it is this reality that has lead to the dramatic decline in NEWME deer numbers. This is the root cause of the sporting public's dissatisfaction and frustration with the NEWME deer population decline.

A PLAN TO INCREASE THE NORTHERN, EASTERN, AND WESTERN DEER POPULATION

The Maine Department of Inland Fisheries and Wildlife has the responsibility of managing Maine's deer population to ensure a healthy, secure population for both viewing and hunting, but at a balance that is mindful of other biological, social, and economic considerations.

Rebuilding Maine's deer herd will be challenging; the deer decline has been developing gradually over many years; it will take decades to improve. The Department has identified 5 elements that are necessary to rebuild the northern, eastern and western deer herd:

1. Deer Wintering Areas and Winter Severity,
2. Deer Population Management,
3. Predation,
4. Deer Planning and Public Involvement, and
5. Information and Outreach.

The remainder of this document describes each element in greater detail and identifies specific strategies, including additional funding, staffing, and operational needs to accomplish objectives. Whether we succeed in increasing the NEWME deer population will depend on the collaborative efforts and resources of many – the Department, legislature, sportsmen's groups, landowners, and interested citizens. With this challenge comes a great opportunity to expand and forge new partnerships and collectively work to restore deer for future generations of outdoor enthusiasts.

ELEMENT 1: DEER WINTERING AREAS AND WINTER SEVERITY

BACKGROUND

Winter Severity

White-tails are near the northern limit of their range in Maine; they do not occur in viable numbers north of the St. Lawrence River. The effects of winter severity greatly influence annual deer survival. Deer are not well adapted to eluding predators in deep snow, on crusted snow that they break through, or on glare ice. Also, deer are not well adapted to foraging in deep snow. Thus, their numbers rise and fall as a result of winter severity. Annual winter losses can range from10% in a moderate winter to 30% or more in a severe winter. Three of the most severe winters of the past 60 years occurred in 2001, 2008, and 2009.

The severity of winters also affects the abundance and survival of fawns born the following spring. Winter-weakened does produce smaller, weaker fawns that often fail to survive. Summer fawn losses tend to be higher following severe winters. This in turn, diminishes the number of young deer available to replace annual losses.

Generally, winter severity for deer progressively increases northwesterly, from the coast to northwestern Maine. Northernmost WMDs experience harsh winter conditions nearly every year. Hence, overall carrying capacity in these districts is highly dependent on the amount and quality of wintering habitat.

In Maine, winter severity is often the greatest factor causing deer mortality; and winter severity directly determines the number of deer that will survive until spring.

Deer Wintering Areas

Deer move to wintering areas – dense conifer stands that shelter deer from cold, wind, and deep snow -- to survive the rigors of winter. Most DWAs are located along wetlands, lakes, ponds, rivers and streams. Deer use of DWAs is historic and traditional; specific wintering areas often receive annual use by successive generations of deer. In some instances, the Department has documented continuous use of specific DWAs by deer [in wintering conditions] for 50 years or more. During a winter of average severity, a deer living in far northern Maine will seek shelter in a DWA for a period of 90 to 125 days.

Wintering areas, along with stored fat and protein reserves, are essential for their survival when deer occur at the northern limit of their range. Deer seek out high quality wintering habitat to reduce their energy expenditures and their weight loss, which in turn reduces direct losses to malnutrition and predation and minimizes fawn losses due to poor condition of does in late spring. Lower snow depths in DWAs allow deer to share the energetic cost of creating and maintaining trails to access food and winter shelter and to avoid predation.

Deer wintering habitat comprised 10 to 15% of total deer habitat [about 900,000 acres] in northern, western, eastern, and parts of central Maine from the 1950s to the early 1970s [Banasiak 1964, Lavigne 1991, as reported in Lavigne 1997].

Winter severity AND the quantity and quality of available deer wintering areas work in conjunction to influence deer survival. Because an understanding of the interaction between winter severity and the availability of winter shelter is crucial to managing deer numbers, Department biologists and wardens monitor winter severity and work to provide deer with high quality winter areas.

WHAT WE ARE DOING

DWA Aerial and Ground Surveys – MDIF&W has long recognized the importance of deer wintering habitat to deer survival in Maine and, depending on aircraft availability and favorable conditions, regards winter DWA aerial and ground surveys as a high priority of Wildlife Division biologists. Biologists and game wardens have been documenting the location of deer wintering areas since the 1950's. Prior to 1990, most of this effort was focused in the unorganized towns of Maine. During the past 2 decades, deer wintering area inventories have been conducted, statewide, when wintering conditions were appropriate. During the 2008, 2009, and 2010 winters, biologists spent 150 staff days surveying more than 1.5 million and 12,000 acres by air and ground respectively in Regions C-G to determine presence / absence of wintering deer.

Monitoring Winter Severity – The effects of winter severity can have a substantial impact on annual deer survival. Since the 1950s Department biologists have been monitoring winter conditions throughout the state. Currently, biologists visit 26 individual winter severity stations weekly from early December through late April and collect snow depths, deer sinking depths, and snow profile characteristics within the shelter portion of deer wintering areas and adjacent open areas. Temperature data is retrieved from data loggers that are placed at various locations statewide from December to April.

By measuring the severity of the winter, the Department can predict the percentage of the deer population that did not live through the winter. The Department uses this information to monitor the status of the deer population and most importantly in the allocation of any-deer permits.

DWA Management Guidelines – In 2009 MDIF&W, Maine Forest Products Council [MFPC] and the Small Woodland Owners Association of Maine [SWOAM] jointly developed a set of deer wintering area management guidelines to be shared with all forest landowners. *Guidelines for Wildlife: Managing Deer Wintering Areas in Northern, Western and Eastern Maine* is the result of an extraordinary collaboration between private landowners and the Department to develop biologically sound management guidelines for DWAs. These guidelines promote 1] improved landowner knowledge of the ecological value of DWAs and enhanced DWA management and 2] improved communications among landowners, loggers, foresters, and Department biologists. They seek to increase the number of managed DWAs. A copy of the guidelines is available on the Department's website at http://www.maine.gov/ifw/wildlife/species/pdfs/DWA_Guidelines_2.4.10.pdf.

LURC Zoning of DWAs – Since 1970, our agency has worked with the Land Use Regulation Commission [LURC] to place 200 deer wintering areas comprising 200,000 acres [1.9% of the land base in unorganized towns] into protective land-use zones. This effort has been supplanted in recent years by cooperative management and agreements. Still, during the 2008, 2009, and 2010 winters, Department biologists spent 735 staff days developing and reviewing 54 plan agreements for land management activities on 7,500 acres of zoned DWAs on private land.

Cooperative DWA Management / Agreements – Deer are a public resource, but live on private lands; MDIF&W initiated its earliest cooperative management agreements with landowners in the mid-1950s. Cooperative working relationships between landowners and MDIF&W are improving identification, monitoring, and information sharing on areas used by deer and helping to guide timber harvesting activity. The Department works with many landowners on some level of cooperative deer habitat management impacting more than 300,000 acres of deer wintering habitat. We hope to see further growth in this number as landowners embrace implementation of the cooperative DWA management guidelines.

DWA Management on State Lands – MDIF&W manages 8,700 acres of DWAs on Department-owned lands and assists the Bureau of Parks and Lands with management on an additional 29,000 acres.

State Acquisition of Important Winter Habitat for Deer – Funding opportunities are limited, but when available the State has pursued fee acquisition of important DWAs. Recent acquisitions

by the Bureau of Parks and Lands have included 4.5 square miles of DWA acreage, most notably the Seboomook Lake parcel comprising 2,359 acres. The Amherst Community Forest contained 240 acres of DWA, the Seboeis Lake addition 367 acres, and the Machias River purchases comprised 300 acres of deer wintering habitat. In other cases, conservation easements purchased by the State have included provisions for managing winter habitat.

DWA Management Programs and Workshops – MDIF&W is coordinating with the Small Woodland Owners Association of Maine, Maine Sustainable Forestry Initiative Implementation Committee, Maine Forest Products Council, Certified Logging Professional Program, and landowner initiatives to offer DWA management programs. To date, programs have reached more than 200 landowners, loggers, and foresters throughout Maine.

CONSTRAINTS

In Maine, severe winters AND the diminished quantity and quality of available deer wintering areas [DWAs] work in conjunction to diminish deer numbers over the last several decades. Deer wintering habitat comprised 10 to 15% of total deer habitat in northern, western, eastern, and parts of central Maine from the 1950s to the early 1970s [Banasiak 1964, Lavigne 1991, as cited in Lavigne 1997]. Since that time, the quantity and quality of DWA habitat in Maine has declined; many projections indicate the availability of mature softwood timber is at a low point. Maine has lost 2/3 of its wintering habitat, statewide [12% vs. 4% of total habitat] [Lavigne 1997]. This decline in both the acreage and quality of spruce-fir wintering habitat is greatest within northern, eastern, and western wildlife management districts; the same region that has experienced a steep decline in deer numbers.

The spruce-fir forests of the northeastern U.S. and Canada are often called a “disaster” climax forest, in that mature spruce-fir forest is regularly “set back” by fire or insect invasion or both. In the1970s and ‘80s, Maine experienced a severe infestation of the spruce budworm; it was widespread and lasted many years. An outbreak of the spruce bark beetle followed in the wake of the budworm. These two forests pests killed or degraded vast acreages of Maine’s mature spruce-fir forest. Forest landowners combed the landscape with salvage logging operations to harvest dead or dying trees. Insects and salvage logging transformed a large portion of Maine’s mature spruce-fir forests to clearcuts. Nevertheless, the demands for mature softwood for fiber and lumber remained, putting pressure on those stands that had not succumbed to budworm, and landowners continued to harvest these mature stands.

In its 1983 Spruce-Fir Wood Supply-Demand Analysis, J.W. Sewell Company estimated that due to insect mortality, salvage logging, and meeting the commercial demands for spruce-fir products, the supply of mature softwood would continue to decline until 2010 – that estimation has become fact. All of these factors have diminished the quantity and quality of deer wintering areas, leaving deer more likely to die during harsh winters. The dramatic reduction in mature spruce-fir forest acres, along with several severe winters, has directly resulted in the dramatic decline in deer numbers, particularly in northern Maine. Deer simply do not have adequate winter shelter and they have died during harsh winters, resulting in greatly reduced deer numbers. Today, in 2011, much of the spruce-fir forest is 25-35 years old; still too young to provide winter shelter for deer. And so, Maine’s deer are not “out of the woods” yet.

The Department has considered the protection and enhancement of deer wintering areas to be an important role. These efforts began in the mid-1950s with the identification and mapping of DWAs. Practically all of the DWAs that the Department has identified occur on private property. There is a tension that develops when society asks a private landowner to manage his or her

forest lands for the benefit of a publicly-owned resource – deer. This tension first became obvious as the Department implemented its initial efforts to develop cooperative DWA management agreements with a number of industrial timberland owners during the mid-1950s though 1973. These agreements, generally, were not successful, because the landowner's economic considerations of markets and supply-and-demand often trumped the deer wintering area management considerations.

In 1973 the State established the Land Use Regulation Commission to act as the land-use planning entity for the unorganized townships. LURC created a P-FW zone [Protection – Fish & Wildlife] and allowed the Department to petition LURC to zone deer wintering areas and to influence their management. LURC required a landowner desiring to conduct forest management activities in a P-FW to enter into a "plan agreement" with the Department and LURC for the activities. This plan became a binding contract. Deer wintering area zoning inflamed the tension between landowners and the State [representing society in the management of a public-trust resource]. This tension – the regulation of important habitat on private property – expressed itself as anger, frustration, and mistrust by both landowners and the Department, resulting in two suits before the Maine Supreme Court, tense P-FW zoning hearings before the LURC Commissioners, and several landowner-State DWA study committees. After 25 years, we only managed to zone at most 200,000 acres of deer wintering area – an amount far too little to adequately manage deer populations in the spruce-fir forest.

The Department concluded that regulation of DWAs under LURC had proven inadequate to maintain the wintering habitat that deer need to survive in northern, eastern, and western Maine because:

1. Landowners considered zoning as an infringement of their rights and were reluctant to accept state regulation of wildlife habitat that affected their timber supply, and they actively resisted P-FW zoning;

2. LURC's stringent P-FW zoning standards and criteria often resulted in only a portion of the larger deer wintering area being zoned; as a result, "unzoned," adjacent winter shelter was often subjected to harvests that diminished its shelter value AND that isolated the smaller zoned P-FW deer wintering area in a conifer forest matrix that no longer provided winter shelter. This effectively rendered many P-FWs of little value to deer survival;

3. As an outcome of a State-landowner DWA study committee, LURC placed a 3.5% cap on the amount of DWA acres that could be zoned in a particular wildlife management district [far too little to adequately management the deer population in the unorganized towns]; and

4. With the dramatic reduction in the amount of mature spruce-fir forest and the resulting decline in the deer population, MDIF&W found it increasingly difficult to meet LURC's P-FW zoning requirements because few deer were now occupying much smaller conifer stands in remnants of fragmented deer wintering areas.

In 2007 the Wildlife Division drafted a revision to the Land Use Regulation Commission's zoning standards and requirements for deer wintering areas. The redraft sought to provide the Department greater flexibility in identifying, mapping, and documenting deer wintering areas for P-FW zoning; provide P-FW zoning safeguards for cooperative management agreements terminated by land sale; and increase the "cap" on the amount of P-FW that could be zoned in

any wildlife management district. The Division felt these modifications were necessary to enhance its ability to better protect and manage the winter shelter required to achieve NEWME deer population goals. The Baldacci administration decided it would not pursue any modifications to the P-FW zoning standards.

And so, given the above, in the 1990s the Department once again turned to working with forest landowners to develop cooperative DWA management agreements. The Department hoped that a spirit of cooperative give-and-take would lower the tensions and provide both landowners and the Department with greater management flexibility and options, as well as better long-term economic and forest management. Over the past 20 years the Department has worked with several landowners – at various levels of cooperative management. During this time, the acres of cooperatively managed DWAs have waxed and waned with new participation and land sales that render the status of previous cooperation unknown. In 2009 the Maine Forest Products Council, the Small Woodland Owners' Association of Maine, and the Department developed deer wintering area management guidelines for use by landowners owning either large or small woodlands. The Department seeks to have landowners apply the deer wintering area management guidelines across their ownerships and thereby increase the acreage of cooperatively managed DWAs. Currently more than 300,000 acres of winter habitat are under cooperative management [~175,000 acres of zoned DWAs and ~115,000 acres of DWAs that are not zoned].

For the past 35 years, the Department has made numerous efforts to inform sportsmen and those who appreciate deer regarding the importance of deer wintering areas to Maine's deer population and to garner their support for its efforts to conserve and manage winter habitat. On numerous occasions, during the two decades of LURC zoning, the LURC Commissioners asked the Department why there was no representation from sportsmen or other members of the public speaking in support of DWA zoning. On two occasions the Department directly sought the support of the Sportsmen's Alliance of Maine for its DWA management efforts. Unfortunately, little or no public support for DWAs developed. It was not until 2006 that public support for DWAs materialized in any substantive form – in reaction to greatly reduced deer numbers caused by several severe winters and the loss of winter habitat that had occurred since the late 1970s.

In a large portion of northern, eastern, and western Maine, the lack of adequate wintering habitat severely limits our collective opportunities to achieve deer population levels desired by the public. Progress in achieving deer population increases will depend on our success in increasing the amount and quality of winter habitat for deer. Achieving adequate winter habitat will take decades as the regenerating spruce-fir forest continues to mature; and it will require a partnership among private landowners, the State, and the public. The tension that exists between private–property rights and the State's responsibility to conserve and manage a publicly-owned deer resource continues. Landowner response to cooperative DWA management is lukewarm, and many landowners have yet to participate. They express concern about its impact to their management and economic objectives; they question how much of the responsibility and cost they should bear to maintain the deer population at publicly-desired levels. For any wildlife habitat management that occurs on private land to be successful, including deer wintering area management, society must determine the 1] wildlife management effort it desires, and 2] how much of that effort is to be borne by the private landowner and what, if any, society will bear.

Comparison of a Zoned DWA [P-FW] and a DWA Managed under a Cooperative Agreement

PLAN / STRATEGIES

MDIF&W has identified a number of strategies to address the Deer Wintering Areas and Winter Severity element of increasing deer in northern, eastern, and western Maine. Many of these strategies have been ongoing in the agency for decades but are being re-focused or intensified as part of this longterm deer rebuilding effort.

MDIF&W has used public involvement to set management goals and objectives for deer since the early 1970s; Maine's current deer management plan is scheduled for an update in 2015 and will require revising the *Deer Assessment*, convening a public working group to develop goals and objectives for the period 2016-2031, and updating the *Deer Management System*. The objectives and strategies presented below will guide efforts to increase the deer population in NEWME through the current planning period and will be updated when a new management plan is developed in 2015.

Department Lead: Wildlife Management Section [WMS] Supervisor

Objective[s] / Desired Outcome[s]:

Goal: Ensure we have adequate deer wintering area habitat to support publicly-desired deer population levels.

Objectives:

1. By December 31, 2011, obtain assurances from cooperating landowners that 50% of the acreage currently supporting wintering deer in northern, eastern, and western Maine is being cooperatively managed with the Department by implementing the *Guidelines for Wildlife: Managing Deer Wintering Areas in Northern, Western, and Eastern Maine* or by developing cooperative management agreements or other methods.

2. By December 31, 2013, obtain assurances from cooperating landowners that the remaining 50% of the acreage currently supporting wintering deer in northern, eastern, and western Maine is being cooperatively managed with the Department by implementing the *Guidelines for Wildlife: Managing Deer Wintering Areas in Northern, Western, and Eastern Maine* or by developing cooperative management agreements or other methods.

3. Continue to ensure that all deer wintering areas [~8,000 acres] on MDIFW-owned lands are being managed using *Guidelines for Wildlife: Managing Deer Wintering Areas in Northern, Western, and Eastern Maine.*

4. Work with the Department of Conservation's [DOC] Bureau of Parks and Lands [BP&L] to ensure that all deer wintering areas [~29,000 acres] on BP&L-owned lands are being managed using *Guidelines for Wildlife: Managing Deer Wintering Areas in Northern, Western, and Eastern Maine* by December 31, 2011.

Element 1: Deer Wintering Areas and Winter Severity	
Strategies	**Person[s] Responsible**
Private Lands	
Active DWAs	
Depending on the availability of aircraft and favorable flight conditions, conduct aerial surveys in northern, eastern, and western Maine towns not flown within the last 3 years and where landowners have indicated a desire to cooperatively manage deer wintering habitat.	Maine Warden Service, Department of Conservation, Department of Marine Resources pilots; and MDIF&W Regional Biologists
Coordinate efforts among private pilots [bush pilots, guides, industrial landowners] to record and report observed deer concentrations to the Department. When providing observations include: 1] date of observation, 2] lat/long coordinates or circled on a topo map, 3] perception of deer density or amount of use, and 4] indicate if timber harvesting or deer feeding is occurring. Detailed mapping of deer use is not necessary.	WMS Supervisor / Private Pilots
Coordinate efforts among Warden Service to report known concentrations of wintering deer.	WMS Supervisor / Maine Warden Service
Identify landowners and DWAs for management / conservation, based DWA flight data of known concentrations of wintering deer. This would entail working directly with landowners and overlaying flight data with forest cover type maps or working with the Department's Habitat Group to digitize DWA polygons using flight data and aerial imagery.	WMS Supervisor coordinate with Regional Biologists, Habitat Group, and Landowners
Overlay conservation lands GIS layer with flight data to determine conservation status.	Habitat Group Leader
Work with landowners to cooperatively manage deer wintering habitat via: o Implementing DWA management guidelines, o Developing Cooperative Management Agreements, o Purchasing in title or by easement critically needed DWA habitat	WMS Supervisor coordinate with Regional Biologists and Landowners
Determine which deer concentration areas are the result of winter feeding programs and work with landowners to mitigate deer losses in areas where winter feeding is drawing deer near roads and deer are susceptible to vehicle collisions.	Regional Biologists & Landowners
Continue to move forward modifying the definition and rules for designating DWAs under the Natural Resources Protection Act [NRPA] in organized towns.	WMS Supervisor coordinate with Deer and Moose Biologist and Regional Biologists
Historic DWAs	
Compile historic deer use maps and records and share information with landowners to include in cooperative management efforts as appropriate.	WMS Supervisor coordinate with Regional Biologists and Landowners

Element 1: Deer Wintering Areas and Winter Severity [continued]	
DWAs on MDIFW-Managed Lands	
Track DWA status and condition on ~8,000 acres of MDIFW-managed lands; continue to implement DWA Management Guidelines.	WMS Supervisor coordinate with Regional Biologists
DWAs on BPL-Managed Lands	
Track DWA status and condition on ~29,000 acres of BPL-managed lands; implement DWA Management Guidelines.	WMS Supervisor coordinate with BPL Biologist
DWA Monitoring	
As weather and availability of aircraft permits, conduct aerial and ground surveys of DWAs to update and maintain records of deer activity.	WMS Supervisor coordinate with Regional Biologists and BPL Biologist
Wildlife Variance under Forest Practices Act	
Collaborate with landowners to explore the use of the wildlife variance under the Forest Practice Act to improve DWA management capability.	WMS Supervisor coordinate with Regional Biologists and Landowners
DWA Management Programs and Workshops	
Continue coordinating with landowner and forestry-related initiatives to offer DWA management programs and workshops	WMS Supervisor coordinate with Regional Biologists, Landowners/Groups, Forestry Groups, and others as identified
Food Plots and Habitat Management	
Coordinate with outdoor partners to compile information for landowners about food plots and habitat management.	WMS Supervisor coordinates with Regional Biologists, Landowners, and Outdoor Partners. Involve MDIF&W's I&E Division as appropriate.
Incentives	
Improve promotion and awareness of current-use tax programs that provide landowners with incentives to manage deer habitat.	WMS Supervisor coordinates with Regional Biologists and Landowners
Work with landowners, stakeholders, and the legislature to identify incentives to encourage greater landowner participation in DWA management efforts.	WMS Supervisor / Landowners / Legislature/ Stakeholders
Reviewing Progress	
Meet at least annually with the Northern and Eastern Maine Deer Task Force to review progress toward accomplishing objectives. Ensure representation is inclusive of interested stakeholders.	Wildlife Division Director coordinate with WMS Supervisor, Regional Biologists, and Stakeholders

ELEMENT 2: DEER POPULATION MANAGEMENT

BACKGROUND

Deer population management is all about doe population management, and MDIF&W manages the doe population by regulated hunting with any-deer permits.

Since 1975, deer population management has been guided by the Department's strategic planning process. A major output of this planning effort is publicly-derived population goals and measurable objectives for deer. MDIF&W regulates the doe and fawn harvest during the October archery, regular firearms, and muzzleloader seasons to accomplish deer population goals and objectives. We recognize the recreational value of deer hunting to many thousands of Maine people and visitors alike. Nevertheless, we also realize that regulation of the doe kill is our most reliable management tool for regulating deer populations.

Maine is a diverse state, encompassing a wide range in winter climate, land-use, topography, vegetation, and human settlement. Because of this, carrying capacity varies widely for deer. Moreover, there are regional differences in landowner tolerance for the negative impacts of deer. The Department believes that management of deer for the people of Maine is enhanced by dividing the state into 29 wildlife management districts which reflect management capability.

The Department has used the HARPOP model [Lavigne 1989] to estimate statewide deer populations from 1957 to the present. This model requires multiple inputs including the registered deer harvest, harvest population age structure [derived from the 4,000 to 5,000 deer, that biologists examine during the hunting season], as well as information on hunter effort, illegal kill, crippling loss, and reproductive data. The Department continually looks to refine inputs to the deer population model.

Since 1983, the Department has used any-deer permits to regulate the doe harvest in Maine; in many years with limited or no hunting allowed for antlerless deer in northern, eastern, and western Maine. In 2009 the Department's Fish and Wildlife Advisory Council approved a rule in which any wildlife management district designated bucks-only during the regular firearms deer season would also be bucks-only for all deer hunting seasons, including archery and youth. The Northern and Eastern Deer task Force recommended this rule.

Conservative doe harvests have likely slowed deer population decline in northern Maine, but have been insufficient to reverse the decline. In areas that have had no any-deer permits for many years and the deer herd has not increased, further adjustments to regulated hunting cannot be expected to increase deer numbers, as factors other than hunting continue to depress the deer population.

Continued application of regulated doe harvest strategies is essential to successfully increasing the deer herd, but it must be complimented by wintering habitat restoration and targeted, focused predator control.

Illegal deer kill is a long-standing drain on the deer population. Deer losses to illegal hunting are additive to most other losses, i.e. the magnitude of the illegal deer kill directly reduces the allowable harvest to law-abiding hunters. Though poorly quantified, the unreported illegal kill of deer may approximate 10,000 to 15,000 deer, or 1/2 the legal harvest of deer in Maine [Lavigne 1995; Vilkitis 1971 as cited in Lavigne 1997]. Locally, illegal kill may contribute to deer population declines, or it may impede population recovery. Sources of illegal kill include night hunting, out of season hunting, failure to register deer killed in season, and false registration of deer killed by another hunter. Some of these illegal kills are reported in the registered harvest. The illegal kill estimate presented above includes only those which remain unreported.

Deer killed in collisions with motor vehicles also represent an additive loss to Maine's deer population, and hence they reduce allowable harvest. The number of road-kills varies seasonally (peaks in June and November), regionally, and annually. Winter feeding can draw deer near roads where they are susceptible to vehicle collisions. Maine Department of Transportation reports annual deer mortalities from collisions with motor vehicles have fluctuated between 2,500 and nearly 4,000 deer statewide during the past 10 years. Many deer mortalities to motor vehicle collisions are never reported. Hence, the figures for deer losses to motor vehicles cited above under-estimate the true magnitude of these losses to the deer population.

WHAT WE ARE DOING

The following describes the components to the Department's ongoing deer population management program.

Biological Data from Annual Deer Harvest – Each year Department biologists collect biological information from 15% [a target that is often surpassed] of the deer killed by hunters -- 4,000 - 5,000 deer -- to assess the health and condition of Maine's deer herd. Information is collected using a variety of methods including roadside check stations, visits to sporting camps, homes and meat lockers, and data collection at deer registration stations. The data gathered by biologists [yearling antler beam diameter, sex and age distributions of harvested deer, and incidence of lactation among harvested does] are important inputs to the Department's *Deer Management System* and the HARPOP model.

Productivity and Recruitment Surveys – Production and recruitment of fawns into the population is important to the growth of the deer herd. In 2011 we began collecting road-killed does and documenting the number of fetuses per female to derive an index to female productivity and to provide information on breeding chronology.

Annual Surveys of Deer and Moose Hunters – Annually, the Department conducts surveys of deer and moose hunters to derive an index of deer abundance and most importantly to acquire estimates of deer hunter effort. Unfortunately, hunter response rates in many WMDs are often low and provide an inadequate sample size.

Helicopter Surveys – The Maine Department of Inland Fisheries and Wildlife along with its partner, the Maine Forest Service [MFS], is conducting helicopter deer surveys to estimate deer abundance in several southern and central wildlife management districts. The aerial surveys are

low-level flights that incorporate a mark-resight estimate to gauge deer densities. Survey work is contingent on wintering conditions after the firearms hunt and must take place prior to deer moving to wintering areas.

Identifying Areas of High Road Mortality – Department biologists work with foresters, landowners, municipalities, and citizens to identify road locations with a high incidence of deer-vehicle collisions. MDIF&W then partnered with the Maine Department of Transportation to develop a highly visible deer crossing sign and is installing these signs as high collision areas are identified.

Winter Deer Feeding – Winter feeding is discouraged by the Department as it draws deer near roads where they are vulnerable to vehicle collisions, causes malnutrition, and/or increases exposure to coyote and free-roaming dog predation, and to disease. MDIF&W has increased its efforts to inform landowners of alternatives that improve deer habitat naturally, as in the publication *Winter Feeding of Deer: What You Should Know*. A copy of this publication is available at http://www.maine.gov/ifw/wildlife/species/deer/feeding_deer.htm.

Chronic Wasting Disease Monitoring – For more than 10 years, the Departments of Agriculture, USDA-Wildlife Services, and Inland Fisheries and Wildlife have monitored for Chronic Wasting Disease – a fatal disease of the nervous system of deer -- and worked to prevent its introduction.

CONSTRAINTS

Since 1983, the Department has used any-deer permits to regulate the doe harvest in Maine; in many years with limited or no hunting allowed for antlerless deer in northern, eastern, and western Maine. Conservative doe harvests have likely slowed deer population decline in northern Maine, but have been insufficient to reverse the decline. In areas that have had no any-deer permits for many years and the deer herd has not increased, further adjustments to regulated hunting cannot be expected to increase deer numbers, as factors other than hunting continue to depress the deer population. Increasing the deer population in northern, eastern, and western Maine will depend on increasing the amount and quality of wintering habitat, the relative severity of winters [which we have no control over], and the magnitude of doe losses [to all causes of mortality – predation, roadkills, illegal kills, etc.] in relation to recruitment.

In a large portion of northern, eastern, and western Maine wintering habitat and severity of winters limits opportunities for increasing the deer population. Real progress in achieving deer population increases will depend on our success in increasing the amount and quality of wintering habitat for deer. Achieving adequate winter habitat will take decades as the regenerating spruce-fir forest continues to mature; and it will require a partnership among private landowners, the State, and the public. The Department discusses deer wintering areas and winter severity, including constraints toward achieving desired wintering habitat objectives, in greater detail in Element 1: Deer Wintering Areas and Winter Severity.

White-tailed deer comprise a significant portion of coyote diets in Maine, particularly during winter and the spring pupping period. During early summer, coyotes join a long list of predators which compete for newborn fawns: black bears, red fox, bobcats, fisher, and free-roaming dogs. The Department discusses predation of deer by coyotes and bear, including constraints that affect achieving desired objectives, in greater detail in Element 3: Predation.

The Department's deer population model requires multiple inputs including the registered deer harvest, harvest population age structure, as well as information on hunter effort, illegal kill, crippling loss, and reproductive data. The Department continually looks to refine inputs to the deer population model but has lacked adequate funding and staffing to address research [data gathering] and management needs. A significant reallocation of existing staff and financial resources is not feasible, as it would prevent achieving management goals and objectives for other species.

Annually, the Department conducts surveys of deer and moose hunters to derive an index of deer abundance and most importantly to acquire estimates of deer hunter effort. Unfortunately, hunter response rates in many WMDs are often low and provide an inadequate sample size.

Finally, we do not completely understand how moose management in this region will affect our ability to increase the deer population, since moose and deer may compete for many of the same winter forages.

PLAN / STRATEGY

MDIF&W has identified a number of strategies to address the Deer Population Management element of increasing deer in northern, eastern, and western Maine. Many of these strategies have been ongoing in the agency for decades but are being re-focused or intensified as part of this longterm deer rebuilding effort.

MDIF&W has used public involvement to set management goals and objectives for deer since the early 1970s; Maine's current deer management plan is scheduled for an update in 2015 and will entail revising the *Deer Assessment*, convening a public working group to develop goals and objectives for the period 2016-2031, and updating the *Deer Management System*. The strategies presented below will guide efforts to increase the deer population in NEWME through the current planning period and will be updated when a new management plan is developed in 2015.

Department Lead: MDIF&W Deer and Moose Biologist with assistance from Mammal Group Leader and Wildlife Resource Assessment Section [WRAS] Supervisor as needed.

Objective[s] / Desired Outcome[s]:

1. Population objectives established in 1999 by the Big Game Working Group for the period 2000 – 2015 were set at 10 deer per sq. mi. in northern WMDs and 15 deer per sq. mi. in downeast WMDs. Achieving this level of deer abundance would require 8% and 9%-10% of the landscape be comprised of deer wintering habitat in northern and downeast Maine respectively.

2. The Northern and Eastern Maine Deer Task Force discussed at length the practicality, cost, and responsibility of achieving the 1999 deer population and habitat goals and objectives. For the sake of progress and to address the intent of the legislative resolve, the Task Force agreed that any incremental increase in deer numbers would be desirable and chose not to focus on what they believed were the unattainable objectives of the 1999 Big Game Working Group

Element 2: Deer Population Management	
Strategies	**Person[s] Responsible**
Estimates of Deer Abundance	
During December 2011 and January 2012, conduct helicopter surveys in central and southern Wildlife Management Districts using a mark-resight estimate. [Surveys for the winter 2010-11are complete]. Note: flights terminate when deer become restricted by snow conditions.	MDIF&W Deer Biologist with assistance from Regional Biologists and Maine Forest Service pilots
Investigate conducting long-term deer pellet group counts within permanent plots	MDIF&W Deer Biologist
Recalibrate the HARPOP deer population model.	MDIF&W Deer Biologist
Productivity and Recruitment Assessments	
Annually, conduct fetus counts from winter road-kill deer to assess productivity [validate lactation-embryo rate (LER) index; critical to HARPOP function and allocation of any-deer permits].	MDIF&W Deer and Moose Biologist coordinate with Regional Biologists C-G, Warden Service, other law enforcement, and outdoor partners
Annually, assess deer recruitment [validate LER index; allocation of any-deer permits].	MDIF&W Deer Biologist
Deer Mortality Assessments	
Investigate conducting spring dead deer surveys and browse surveys to add data points to Winter Severity Index [WSI] / Winter Mortality Rate [WMR] relationship [allocation of any-deer permits].	MDIF&W Deer Biologist
Test assumptions of all cause annual mortality of deer [allocation of any-deer permits].	MDIF&W Deer Biologist
Assess causes of fawn mortality.	MDIF&W Deer Biologist
Deer Population Relative to Ecological Carrying Capacity [K]	
Test assumptions that Yearling Antler Beam Diameter [YABD] is an adequate predictor of carrying capacity [K] [allocation of any-deer permits].	MDIF&W Deer Biologist
Deer Hunter Effort Surveys	
Annually, conduct deer hunter effort surveys to derive an index of deer abundance. Coordinate efforts with outdoor partners to improve deer hunter survey response rates. Investigate the potential for phone surveys.	MDIF&W Deer Biologist / MDIF&W Data Management Group Leader / Sportsman's Groups
Biological Data from Annual Deer Harvest	
Annually, collect biological data from hunter-killed deer to assess the health and condition of the deer herd [attempt to sample 15% of the registered harvest].	MDIF&W Deer Biologist / Regional Biologists / Contractors if Needed
Monitoring Winter Severity	
Continue monitoring winter conditions [temperature, snow depths, deer sinking depths, and snow profile characteristics] at individual monitoring stations throughout the state to estimate the impact of winter conditions on deer.	MDIF&W Deer Biologist / Regional Wildlife Biologists
Illegal Deer Kills	
Increase law enforcement efforts to target illegal killing of deer.	Colonel Maine Warden Service
Increase penalties for illegal killing of deer.	Colonel Maine Warden Service, Maine Legislature
Chronic Wasting Disease [CWD] Monitoring	
Continue efforts to monitor for and prevent introduction of CWD in Maine	MDIF&W Deer Biologist / Regional Biologists
Identifying Areas of High Road Mortality	

Element 2: Deer Population Management [continued]	
Continue collaborative efforts with DOT to develop and install signage as we identify high deer collision areas.	MDIF&W Deer Biologist coordinate with Regional Biologists and Maine DOT
Winter Feeding / Increased Deer Road Kills	
Consider legislative action to assess penalties for winter feeding programs that result in deer road mortality.	Wildlife Division Director / Colonel Maine Warden Service
Additional Funding for Deer Management	
Continue to explore additional funding opportunities for deer management.	Wildlife Division Director and Deer Project staff, Legislature, and Stakeholders
Reviewing Progress	
Meet at least annually with the Northern and Eastern Maine Deer Task Force to review progress toward accomplishing objectives. Ensure representation is inclusive of interested stakeholders.	Wildlife Division Director coordinate with WMS Supervisor, Regional Biologists, and Stakeholders

ELEMENT 3: PREDATION

BACKGROUND

White-tailed deer comprise a significant portion of coyote diets in Maine, particularly during winter and the spring pupping period. Under the right circumstances, coyotes hunting in groups are adept at killing deer, including individual deer which are in good physical condition. Coyote predation is also considered an important component of newborn fawn deaths in summer. Effects of coyote predation are most damaging where: 1] deer wintering habitat quantity or quality has been severely reduced; 2] winters tend to be severe; and 3] alternate prey for coyotes is less available.

During early summer, coyotes join a long list of predators which compete for newborn fawns: black bears, red fox, bobcats, fisher, and domestic dogs. Throughout North America, bear is an important predator of deer fawns. The degree of predation varies across the landscape with bears accounting for 20% - 60% of fawn mortality.

As a result of recommendations of the Northern and Eastern Maine Deer Task Force, in 2008 the 123rd Legislature developed LD 2288, 'Resolve, To Create a Deer Predation Working Group' to recommend strategies to address predation [by coyotes, bears, etc] and reduce predation impacts on deer survival and recruitment. The final recommendations of the Deer Predation Working Group were presented to the Joint Standing Committee on Inland Fisheries and Wildlife in February 2009. A copy of the findings and recommendations is available on the Department's website at http://www.maine.gov/ifw/wildlife/surveys_reports/index.htm.

The Deer Predation Working Group met 5 times over the course of the summer and fall of 2008, investing more than 20 hours in discussing predation of deer by coyotes and black bear. The group considered many options to minimize or eliminate coyote predation including: poisoning, introduction of wolves, aerial gunning, pit traps, bounties, foothold traps, cable restraints, neck snares, use of urine, denning, award programs, various hunting seasons and methods, sterilization of coyote pairs, maintaining the alpha coyote pair, removing the alpha coyote pair, etc. Some methods were immediately eliminated from further discussion because they were considered non-selective and/or would likely not have broad public support. Others were eliminated because the disadvantages outweighed the advantages. The Working Group developed the following recommendations to address deer predation by coyotes and bears:

1. An Animal Damage Control Program [ADC] that relies on shooting coyotes over bait and hunting coyotes with dogs to reduce coyote predation on deer.[1] Such a program would be focused, controlled, and selective; it will not result in any incidental take of nontarget species; and it will not require an Incidental Take Permit [ITP] in areas with lynx. Though there was consensus in making this recommendation, there was not consensus that these methods would be effective in achieving the necessary reduction in coyotes to promote an increase in the deer population, or that funds to implement a program would be well spent. The Working Group was unanimous that funds to implement an ADC program be new funds and not come from the Department's existing revenues.

2. Promote coyote hunting and trapping – the Maine Department of Inland Fisheries and Wildlife will work with sportsmen's groups, registered Maine Guides, and others to better promote coyote hunting and trapping.

3. There is a body of research and experience indicating that cable restraints are the most appropriate tool to use in areas with lynx; therefore, the Working Group recommends that MDIFW implement an Animal Damage Control Program using cable restraints with a 24-hour tend requirement. This activity will require an Incidental Take Permit in lynx areas.

    - An ITP for Department-directed Animal Damage Control activities using cable restraints would not be pursued until and unless the pending ITP for Maine's trapping program is favorably resolved.

    - It would take a minimum of 18 months to write an ITP and undergo review/approval by the USFWS.

    - An ITP is costly to prepare [estimated at $13,000 for staff time alone] and if approved would be costly to implement, though there was not consensus among Working Group members as to how costly. Costs could be lowered from private donations in support of coyote control efforts or with volunteer help provided by willing ADC agents, but it is uncertain whether there would be enough volunteers to maintain coyote control pressure in remote locations for 3 months in the winter.

    The Working Group was unanimous that funds to implement an ADC program be new funds and not come from the Department's existing revenues.

The consensus of the Deer Predation Working Group was to take no action to control bears because:

1. Bears are important to Maine's economy and a significant increase in the bear harvest and a greatly reduced bear population may undermine the economic contribution that bears provide to Maine's rural economy.

2. Increasing the bear harvest by expanding current seasons, adding new seasons, and/or increasing bag limits may not be acceptable to the public, and debate could threaten

[1] The Working Group did not support controlling coyotes by denning (i.e., killing the adult coyotes and then dispatching the pups in the den or leaving them to die) because denning does not target specific concentrations of deer; it may also be unacceptable to the public.

Maine's current bear regulations, which could undermine the state's bear management program, hunting and trapping opportunity, and the economic contribution that bears provide to Maine's rural economy.

3. Determining the effectiveness of bear population control would require an intensive study that 1] would be expensive and impractical under current budget restrictions, and 2] we could not control enough variables to provide definitive cause and effect results. As such, the outcomes of a study would always be questioned.

The recommendations of the Deer Predation Working Group guide the Department's current predator management program.

WHAT WE ARE DOING

Targeted and Focused Coyote Hunting – As incidences are brought to our attention, Department biologists and wardens work with coyote hunters and have agreed to work with the Sportsman's Alliance of Maine Coyote Hunting Network to encourage hunters to hunt coyotes in DWAs experiencing predation.

Providing Bait to Coyote Hunters – As roadkills become available, Department biologists and wardens provide them to coyote hunters for use as bait.

Coyote Night-hunting Season Extended **–** To provide additional coyote night-hunting opportunities, the 124th Legislature extended the coyote night-hunting season to run from December 16 to August 31. Previously it ended on June 1st.

CONSTRAINTS

Lack of funds has limited animal damage control activities since 2002. The Department is prohibited from using federal funds [Pittman-Robertson, State Wildlife Grant, etc.] for predator control. Hence, our only means of funding predator control are from the State's general fund or through private donations, both of which have not been available. The Department relies on limited general fund monies it currently receives to match federal dollars in support of game management programs, many of which provide secondary benefits to nongame species as well. Additional general fund monies are needed to fund predator control to help increase the northern, eastern, and western Maine deer population.

Shooting coyotes over bait and hunting coyotes with dogs are not without challenges, including:

- Logistical impediments, especially in remote areas with deep snows.
- Potential for disturbance to deer in wintering areas.
- Any large scale coyote control effort would have to be maintained through time.
- It is uncertain that sufficient effort could be applied to reduce predation on deer.
- There are a limited number of people available to hunt coyotes with dogs.
- It will be costly to implement.[2] Costs could be lowered from private donations in support of coyote control efforts or with volunteer help animal damage control agents

[2] MDIFW estimated that to fully compensate ADC agents for their efforts, it would cost approximately $38,000 to implement coyote control in one deer wintering area for three months. [Standard USDA cost for ADC work (personnel time, equipment and gas) is $35/hr and likely would be more for this program (John Forbes, USDA, personal communication).]

may be willing to provide, but it is uncertain whether we could get enough volunteers to maintain coyote control efforts in remote locations for 3 months in the winter.

In October 2006, the Animal Protection Institute filed a lawsuit against the Maine Department of Inland Fisheries and Wildlife alleging Maine was in violation of the Endangered Species Act because trappers participating in Maine's trapping program might incidentally capture a Canada lynx in their traps. Canada lynx is a federally listed threatened species in Maine.

This litigation resulted in a court-ordered consent decree which provided significant protections to Canada lynx. Under the consent decree Maine restricted foothold and killer-type traps by type, size, and location in Wildlife Management Districts 1, 2, 3, 4, 5, 6, 8, 9, 10, and11. Because of recent evidence suggesting that Canada lynx may be present in WMDs 14, 18, and 19, the Department's Advisory Council adopted emergency rulemaking in December 2010 adding WMDs 14, 18, and 19 to the area with foothold and killer trap restrictions.
Also in response to litigation from the Animal Protection Institute, MDIF&W submitted an Incidental Take Plan in conjunction with an application from the Department to the U. S. Fish and Wildlife Service [USFWS] for a Section 10 permit under the Endangered Species Act to absolve the Department and its agents from liability in the event of incidental take of Canada lynx or bald eagles in Maine that may occur as a result of Maine's trapping program. A timetable for a resolution of Maine's trapping ITP is not known; an ITP for Maine's snaring program, previously in development, has been put on hold pending a decision with the trapping ITP.


Jennifer Vashon Photo

The Consent Decree and its restrictions on types, size, and location of foothold and killer-type traps in WMDs 1-6, 8-11, 14, 18, and 19 remain in effect unless and until the USFWS acts favorably on Maine's application for an ITP. As such, the use of snares and cable restraints to control coyote predation in lynx areas is prohibited by the Consent Decree.

PLAN / STRATEGIES

MDIF&W has identified a number of strategies to address the Predation element of increasing deer in northern, eastern, and western Maine. Funding an animal damage control program will be integral to addressing deer predation by coyotes.

Department Lead: Wildlife Division Director and Wildlife Management Section [WMS] Supervisor

Objective[s] / Desired Outcome[s]:

1. Implement local coyote control where coyote predation is suspected to be limiting long-term goals for deer.

2. Stabilize the bear population at no less than 1999 levels, through annual hunting and trapping harvests.

3. Continue working with the U.S. Fish and Wildlife Service to obtain an Incidental Take Permit for Maine's regulated trapping program.

Element 3: Predation	
Strategies	**Person[s] Responsible**
Coyote Predation	
Annually advise Wildlife Management Section and Warden Service that Wildlife Administration needs to be kept appraised of any predation issues.	Wildlife Division Director coordinate with WMS Section Supervisor
Annually and as incidences are brought to our attention, MDIF&W will continue to work with coyote hunters to direct coyote hunting into DWAs experiencing predation.	WMS Supervisor coordinate with Regional Biologists, Warden Service, and trappers
Annually and as incidences are brought to our attention, MDIF&W will continue to work with the Sportsman's Alliance of Maine's Coyote Hunting Network to direct coyote hunting into DWAs experiencing predation.	Wildlife Division Director and WMS Supervisor coordinate with Regional Biologists and SAM's Coyote Hunting Network
If funds become available, MDIFW will implement an Animal Damage Control Program that utilizes shooting coyotes over bait and hunting coyotes with dogs. This activity would be focused, controlled, and selective; it will not result in any incidental take of nontarget species; and it will not require an Incidental Take Permit [ITP] in areas with Canada lynx.	WMS Supervisor coordinate with Regional Biologists and ADC agents
If the Department is successful in obtaining an ITP for its regulated trapping program, pursue obtaining an ITP for the use of cable restraints with a 24-hour tend requirement as a tool to target coyotes in DWAs experiencing predation.	Bureau of Resource Management Director, Wildlife Division Director, USFWS
Work with sportsmen's groups, Registered Maine Guides, and others to better promote coyote hunting and trapping in Maine.	MDIF&W's Public Information and Education Division, sportsmen's groups, guides, others as identified
Incidental Take Permit [ITP] for Trapping Program	
Continue to press the USFWS to commit their highest priority in Maine towards the process, publication for comment, and issuance of an Incidental Take Permit for Maine's Trapping Program.	Commissioner MDIF&W coordinate with Governor and Congressional Delegation
Continue to work with USFWS to obtain an ITP for Maine's trapping program.	Bureau of Resource Management Director, Wildlife Division Director, USFWS
Update Bear Population Estimate	
During the winter 2010-11, equip a sample of female bears with GPS collars in the Bradford Study Area [northern and eastern study areas are complete]	Bear Study Leader and Field Crew
Recover GPS collars from Bradford Study bears during Winter 2011-12 den work.	Bear Study Leader and Field Crew
Complete analyzing GPS data by July 2012.	Bear Study Leader, Mammal Group Leader, WRAS Supervisor
Update bear population estimate by July 2012.	Bear Study Leader, Mammal Group Leader, WRAS Supervisor
Based on updated population estimate and legislative directives, revise Bear Management System by November 2012.	Bear Study Leader, Mammal Group Leader, WRAS Supervisor

ELEMENT 4: DEER PLANNING AND PUBLIC INVOLVEMENT

BACKGROUND

Public Sets Management Direction - MDIF&W has used public involvement to set management direction since the early 1970s and has refined and expanded the process with each planning update. Deer population objectives were established in 1975, 1985, and 1999 by the Big Game Working Group.

In its most recent update, the Department convened a Big Game Public Working Group in 1999 to develop goals and objectives that would guide deer management [as well as the management of moose, bear, and coyote] for the period 2000 – 2015. The Big Game Working Group was a stakeholder group having diverse interests in deer [sportsmen's groups, environmental groups, landowners, guides and outfitters, persons concerned about Lyme disease and deer depredation impacts, chambers of commerce, etc.]. The working group considered deer management issues for several months and recommended a series of deer management goals and objectives that covered the entire state, including northern, eastern, and western Maine. The working group also established deer wintering area acreage that would be needed to maintain 1999 population objectives.

Population objectives established in 1999 were set at 10 deer per sq. mi. in northern WMDs and 15 deer per sq. mi. in downeast WMDs. Achieving this level of deer abundance would require 8% and 9%-10% of the landscape be comprised of deer wintering habitat in northern and downeast Maine respectively.

Prior to convening the working group, the Department prepared the *White-tailed Deer Assessment and Strategic Plan*, an exhaustive review and analysis of all that is known about Maine deer; this assessment outlined the history of deer management in Maine and the current status of the population, habitat, and biological knowledge. Once convened, the working group used the *Deer Assessment* as the biological foundation to guide its development of deer management goals and objectives. Based on the deer management goals and objectives established by the working group, the Department prepared the *Deer Management System*, which outlines how it will determine if it is meeting management objectives and what management actions it will take if the objectives are not being met.

Maine's deer management plan is scheduled for an update in 2015.

Downeast Deer Committee - In 1993 MDIF&W convened a committee to review options that would result in an increase in the Downeast deer population.

Northern and Eastern Maine Deer Task Force - The Joint Standing Committee on Inland Fisheries & Wildlife in the 123rd Legislature passed Resolve, LD 823, directing the Commissioner of MDIF&W "to review existing programs and efforts related to creating, enhancing and maintaining critical deer habitats in the state…". The Northern and Eastern Maine Deer Task Force [NEMDTF] met 8 times over the course of the spring, summer, and fall 2007, investing more than 30 hours in discussing the many factors likely contributing to low deer numbers and developed a series of recommended strategies to rebuild deer populations. The Northern and Eastern Maine Deer Task Force discussed at length the practicality, cost, and responsibility of achieving the 1999 deer population and habitat goals and objectives. For the sake of progress and to address the intent of the legislative resolve, the Task Force agreed that

any incremental increase in deer numbers would be desirable and chose not to focus on what they believed were the unattainable objectives of the 1999 Big Game Working Group. The Task Force's findings and recommendations were presented to the Joint Standing Committee on Inland Fisheries and Wildlife in January 2007. A copy of the report is available on the Department's website at http://www.maine.gov/ifw/wildlife/surveys_reports/pdfs/ne_deerreport.pdf.

The NEMDTF meets annually to review progress toward achieving its recommendations.

Deer Predation Working Group - As a result of recommendations of the Northern and Eastern Maine Deer Task Force, in 2008 the 123rd Legislature developed LD 2288, 'Resolve, To Create a Deer Predation Working Group' to recommend strategies to address predation [by coyotes, bears, etc] and reduce predation impacts on deer survival and recruitment. The Deer Predation Working Group met 5 times over the course of the summer and fall of 2008, investing more than 20 hours in discussing predation of deer by coyotes and black bear. The group considered many options to minimize or eliminate coyote predation; some methods were immediately eliminated from further discussion because they were considered non-selective and/or would likely not have broad public support, and others were eliminated because the disadvantages outweighed the advantages. The final recommendations of the Deer Predation Working Group were presented to the Joint Standing Committee on Inland Fisheries and Wildlife in February 2009. A copy of the report is on our website at http://www.maine.gov/ifw/wildlife/surveys_reports/pdfs/deerpredationreport.pdf.

WHAT WE ARE DOING

The recommendations of several deer management planning efforts - Big Game Working Group, Northern and Eastern Maine Deer Task Force, and Deer Predation Working Group - guide the Department's deer management program as we work to increase northern, eastern, and western Maine deer populations. The many components that comprise that program are discussed in Elements 1, 2, and 3.

CONSTRAINTS

The recommendations of several deer management planning efforts - Big Game Working Group, Northern and Eastern Maine Deer Task Force, and Deer Predation Working Group - guide the Department's deer management program as we work to increase northern, eastern, and western deer populations. Constraints to that program are described in Elements 1, 2, and 3.

PLAN / STRATEGIES

MDIF&W has identified strategies to address the Deer Planning and Public Involvement element of increasing deer in northern, eastern, and western Maine. MDIF&W has used public involvement to set management goals and objectives for deer since the early 1970s; Maine's current deer management plan is scheduled for an update in 2015 and will entail revising the *Deer Assessment*, convening a public working group to develop goals and objectives for the period 2016-2031, and updating the *Deer Management System*. The strategies presented below will guide efforts to increase the deer population in NEWME through the current planning period and will be updated when a new management plan is developed in 2015.

Department Lead: Wildlife Planner

Objective[s] / Desired Outcome[s]:

1. By December 31, 2015 update the Department's Deer Management Plan.

2. Update the Department's Plan to Increase the Deer Population in Northern, Eastern, and Western Maine no later than two months after the Deer Management Plan is revised.

3. By July 1, 2012, work with the Nature Conservancy and Huber Resources to review, evaluate, and determine applicability and feasibility of integrating the marten and lynx models with forest yield models to inform landscape management in NEWME [Super Species Planning effort].

Element 4: Deer Planning and Public Involvement	
Strategies	**Person[s] Responsible**
2016 Deer Management Plan Update	
By December 31, 2015, revise the Department's Deer Management Plan to include: a. Updating the *Deer Assessment*; b. Convening a Public Working Group to develop management goals and objectives for the period 2016-2031, including building a focus group element into the planning process that better represents society's expectations; c. Evaluating goals and objectives based on their feasibility, desirability, capability of the habitat, and possible; consequences and report back to the Public Working Group. d. Identifying problems and strategies of working toward the deer goals and objectives and report back to the working group; e. Modifying goals and objectives if necessary by the Public Working Group based on c. and d. above; f. Presenting goals and objectives to MDIF&W's Fish and Wildlife Advisory Council; g. Updating the *Deer Management System*; and h. Revising the *Deer Habitat Management System*.	MDIF&W Deer and Moose Biologist and Wildlife Planner with assistance and review from Wildlife Division / Deer Stakeholders
Plan to Increase the Deer Herd in Northern and Eastern Maine	
Within 2 months of updating the Department's Deer Management Plan, revise the Plan to Increase the Deer Herd in Northern, Eastern, and Western Maine.	Wildlife Division Director or designee
Super Species Planning Effort	
By July 1, 2012, work with The Nature Conservancy [TNC] and Huber Resources to review, evaluate, and determine applicability and feasibility of integrating the marten and lynx models with forest yield models to inform landscape management in NEWME.	Wildlife Division Director, TNC, Huber Resources

ELEMENT 5: INFORMATION AND OUTREACH

BACKGROUND

The mission of the Department's Public Information and Education Division is to increase awareness, understanding, and support for agency objectives and programs. The major components of the Public Information and Education Division include the information center, media relations, public relations and marketing, the Safety Division, educational outreach, law book publications, youth activities, and the Maine Wildlife Park.

Outlets available in-house to disseminate information include:

- Website
- Blogs
- Events Calendar
- On-line Magazine
- IF&W TV – just added on Home Page
- Quicklinks
- Press Releases / Press Conference Coordination with Media Packets
- IF&W Facebook – 8,000 plus fans and growing – to also include a new deer-specific Facebook page
- Twitter – to also include a new deer-specific Twitter
- YouTube Account
- Gov Delivery [coming soon]
- Video production – PSAs, Infomercials, mini-documentaries

Department biologists and wardens dedicate many hours to deer management in Maine, but the Department can and must do a better job informing and updating everyone on our deer management program, efforts to rebuild the deer herd, and to garner continued support and assistance from sportsmen's groups, landowners, legislature, outdoor partners, and others interested in deer rebuilding efforts.

WHAT WE ARE DOING

Print Media - MDIF&W has developed many news items and articles on deer and deer management appearing in a variety of print media: deer progress reports, press releases, *Insider* newsletter, online magazine and several landowner newsletters. *Living on the Edge* is a series of articles highlighting deer and deer management in the state - *How Deer Survive Winter, Deer Management in Maine*, and *Winter Feeding of Deer: What You Should Know*. More installments are planned.

Website - The Wildlife Division website is currently being redesigned and will prominently feature a variety of informational materials on deer and deer management.

Department Blogs – Deer-related subject matter is frequently featured in Department blogs.

Winter Feeding of Deer Video – The Department is revising its video on winter feeding of deer. Winter feeding is discouraged by the Department as it draws deer near roads where they are vulnerable to vehicle collisions, causes malnutrition, and/or increases exposure to coyote and free-roaming dog predation, and to disease. MDIF&W has increased its efforts to inform

landowners of alternatives that improve deer habitat naturally, as in the publication *Winter Feeding of White-Tailed Deer: What You Should Know*. [A copy of this publication is available at http://www.maine.gov/ifw/wildlife/species/deer/feeding_deer.htm].

CONSTRAINTS

Lack of Department staff has limited in-house development and dissemination of deer-related information and outreach. Reduced staffing levels at traditional media outlets [newspaper and television] have further constrained outreach efforts. [The Department has increased its emphasis on social networking - Facebook, Twitter, blogs, YouTube, etc – which will improve information and outreach efforts.]

Purchasing advertising in state, regional, and national publications as well as television air time is enormously expensive and out of the Department's financial reach.

PLAN / STRATEGIES

MDIF&W has identified a number of strategies that use all available outlets to address the Information and Outreach element of increasing deer in northern, eastern, and western Maine.

Department Lead: Director, Division of Public Information or designee

Objective[s] / Desired Outcome[s]:

1. Use all available outlets to increase the awareness and understanding of the factors suppressing the deer population in northern and eastern Maine, Department efforts and that of outdoor partners to increase the population, and set reasonable expectations on progress.

2. Promote continued support of efforts to increase the northern and eastern deer population.

   Increasing Maine's deer herd will be challenging; the deer decline has been developing gradually over many years; it will take decades to improve and will depend on the collaborative efforts and resources of many – the Department, landowners, sportsmen's groups, and other outdoor partners.

Element 5: Information and Outreach	
Strategies	**Person[s] Responsible**
Prominently feature a variety of informational deer-related materials on the Department's website; devote a section of the website to increasing the deer population in NEWME.	Wildlife Division Website Lead / I&E / contractor rebuilding the website
Provide regular progress reports to deer stakeholders and others interested in deer summarizing deer-related accomplishments [more frequently during fall and winter, less frequently in spring and summer].	Coordinate with WMS Supervisor, Regional Biologists, and Deer and Moose Biologist.
Develop monthly deer messages in the Northwoods Sporting Journal and Maine Sportsman.	I&E Public Relation Representative will coordinate with appropriate Wildlife Division staff

Element 5: Information and Outreach	
Strategies	**Person[s] Responsible**
Publish an Executive Summary of the Department's Plan to Increase Deer in Northern, Eastern, and Western Maine and distribute as appropriate.	I&E Public Relation Representative will coordinate with the Wildlife Division
Produce in-house deer public service announcements [PSAs]. Will require additional funds to purchase air time.	I&E Public Relation Representative will coordinate with the Wildlife Division
Develop powerpoint presentation describing efforts to increase the deer population; distribute it to staff and prominently feature it on our website.	I&E will coordinate with the Wildlife Division
Create a new Facebook page dedicated to deer.	I&E Public Relation Representative
Create a new Twitter account dedicated to deer.	I&E Public Relation Representative
Approach Maine Public Broadcasting about co-sponsoring an IF&W television show on deer rebuilding efforts.	I&E Director
Host a "Deer Day" at the Maine Wildlife Park on September 24, 2011 featuring a variety of exhibits and informational materials on deer and deer management.	Natural Science Educator will coordinate with appropriate Wildlife Division staff and outdoor partners.
Coordinate with Hunter Safety to disseminate information and messages.	I&E Director and Hunter Safety Coordinator and Instructors
Coordinate information dissemination and messaging with the Department of Conservation [DOC], Bureau of Parks and Lands, Maine Forest Service, Land Use Regulation Commission, etc.	I&E Director and similar position within DOC

ANTICIPATED NEEDS AND COSTS

The Department has identified a number of additional needs and estimated costs to support efforts to increase the deer population in northern, eastern, and western Maine. A significant reallocation of existing staff and financial resources is not feasible, as it would prevent achieving management goals and objectives for other species. These needs below are not prioritized in any way; the Department would like the opportunity to work with the Joint Standing Committee on Inland Fisheries and Wildlife to review and prioritize needs based on available funding.

Anticipate Needs and Estimated Costs	
Needs	**Estimated Cost**
Element 1: Deer Wintering Areas and Winter Severity	
Additional flight time for DWA surveys	$15,000 annually
Additional costs associated with aircraft: fuel, maintenance, operational costs	45,000 annually [~430 hours at $105/hour]
2 additional Biologist I positions to work with private landowners on deer habitat initiatives, landscape planning, grant opportunities, and analysis of habitat models, and assist regions with DWA surveys.	$140,000 annually [Fully Burdened]
Element 2: Deer Population Management	
1 additional Biologist I position within MDIF&W's Mammal Group to oversee deer biological data collections, review procedures and protocols, review and edit data, and conduct field surveys.	$70,000 annually [Fully Burdened]
Additional Biologist I position within MDIF&W's Mammal Group with abilities to statistically analyze large data sets and harvest information, model wildlife populations, and provide expertise in survey design and analysis.	$70,000 annually [Fully Burdened]
Survey and research needs to refine inputs to HARPOP and to recalibrate the deer population model [estimates of deer abundance, productivity and recruitment assessments, deer mortality assessments, role of predation in suppressing deer numbers, etc.].	$125,000 annually
Increased costs for the Deer Hunter Effort Survey if we were to use phone surveys to increase hunter response.	$10,000 annually
Element 3: Predation	
Funds to implement an Animal Damage Control Program that utilizes shooting coyotes over bait and hunting coyotes with dogs.	$100,000 annually
Funds to prepare an Incidental Take Permit application for use of cable restraints in lynx areas IF we are successful in obtaining an ITP for Maine's trapping program.	$15,000
Element 4: Deer Planning and Public Involvement	
Contractual services for modeling associated with the Super Species Planning effort.	$70,000 [$35,000 each year for 2 years]
Element 5: Information and Outreach	
1 additional position within the Bureau of Resource Management to provide information and outreach efforts pertinent to deer as well as other Bureau issues.	$70,000 annually [Fully Burdened]
Purchase of air time for public service announcements.	Varies annually [~ $35,000 / seasonal PSA]
Advertising costs in state, regional, and national print media	Minimum $1,000 per full page ad

HOW OUR OUTDOOR PARTNERS CAN HELP?

There are several areas where the MDIF&W could benefit greatly from public support and that of our outdoor partners:

1. Coordinate efforts with outdoor partners to improve deer hunter survey response rates;

2. Implement SAM's Coyote Hunting Network to direct coyote hunting into DWAs experiencing predation;

3. Coordinate with outdoor partners to compile information for landowners about food plots and habitat management and to promote these activities;

4. Improve promotion and awareness of current-use tax programs that provide landowners with incentives to manage deer habitat; and

5. Explore additional funding opportunities for the Department to help achieve these goals and others more swiftly.

WHERE TO GO FOR MORE INFORMATION?

For more information on deer and deer management go to www.mefishwildlife.com or contact the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, ME 04333.

Additional Reading:

A Report to the Joint Standing Committee on Inland Fisheries and Wildlife, L.D.2288 – Resolve, to Create a Deer Predation Working Group, MDIFW, January 2009 http://www.maine.gov/ifw/wildlife/surveys_reports/pdfs/deerpredationreport.pdf

A Report to the Joint Standing Committee on Inland Fisheries and Wildlife, L.D. 823 – Resolve, to Create an Effective Deer Habitat Enhancement and Coyote Control Program, MDIFW, December 2007 http://www.maine.gov/ifw/wildlife/surveys_reports/pdfs/ne_deerreport.pdf

White-tailed Deer Assessment and Strategic Plan – 1997 prepared by Gerald R. Lavigne, May 1999 http://www.maine.gov/ifw/wildlife/species/plans/mammals/index.htm#whitetaileddeer

White-tailed Deer Management Issues and Concerns raised by the 1999 Big Game Working Group http://www.maine.gov/ifw/wildlife/species/plans/mammals/index.htm#whitetaileddeer

White-tailed Deer Management Goals and Objectives 2000-2015 developed by the 1999 Big Game Working Group and adopted by the MDIFW Commissioner and Fish and Wildlife Advisory Council in February 2001 http://www.maine.gov/ifw/wildlife/species/plans/mammals/index.htm#whitetaileddeer

Feasibility Statements for the White-tailed Deer Goals and Objectives prepared by Gerald R. Lavigne, January 2000 http://www.maine.gov/ifw/wildlife/species/plans/mammals/index.htm#whitetaileddeer

Problems and Strategies for White-tailed Deer Management in Maine prepared by Gerald R. Lavigne, January 2000
http://www.maine.gov/ifw/wildlife/species/plans/mammals/index.htm#whitetaileddeer

Deer Habitat Management System and Database prepared by Maine Department of Inland Fisheries & Wildlife, Wildlife Resource Assessment Section - Cervid Project and Regional Wildlife Management Section, January 1990
http://www.maine.gov/ifw/wildlife/species/plans/mammals/index.htm#whitetaileddeer

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Lavigne, G. R. 1989. Appendix III - Harvest-derived deer population model 44pp. In: Dept. of Inland Fisheries and Wildl., Deer population management system and database. Maine Dept. of Inland Fisheries and Wildl., Augusta, ME. 351pp.

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_____. 1997. White-tailed deer assessment and strategic plan Maine Dept. of Inland Fisheries and Wildl., Augusta, ME. 104 pp plus tables and figures

Stanton, D. C. 1963. A history of the white-tailed deer in Maine. Game Div. Bull. No. 6. Dept. of Inland Fisheries and Game, Augusta, ME. 163pp.

Vilkitis, J. 1971. The violation simulation formula proves as reliable as field research in estimating closed-season illegal big game kill in Maine. Trans. N. E. Fish and Wildl. Conf., Portland, ME. 28:141-144.