Maine Department of Inland Fisheries & Wildlife

Deer Population Goals & 5-Year Benchmark Report

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ANNUAL REPORT OF THE DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

BEFORE THE JOINT STANDING COMMITTEE ON INLAND FISHERIES & WILDLIFE

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DEER POPULATION GOALS AND 5-YEAR BENCHMARK REPORT

February 24, 2014

The status of Maine's northern deer population is an ongoing concern for the Department. After two successive severe winters in 2007 and 2008, our deer herd saw a significant population decline. The Department quickly convened a working group to develop a plan of action that would rebuild the deer herd, that plan is entitled "Maine's Game Plan For Deer." This report provides an update on the efforts of the Department and its partners on implementing the details of that plan.

In 2012, the Department underwent a reorganization that enhances the focus on deer. There is now a wildlife biologist position dedicated to white-tailed deer. Prior to this, one biologist oversaw both deer and moose. Also, public outreach efforts are enhanced with the addition of an Information and Education position within IFW's Bureau of Resource Management. These positions allow more staff time and resources dedicated to deer population management and enhancement, as well as outreach and education.

We are also moving forward with the help of sportsmen, landowners, forest products companies, sporting groups and others to meet several objectives simultaneously. It is clear we can no longer target issues separately and rebuild our deer herd. We are working with our partners to tackle these issues holistically as they all contribute to deer mortality.

Here are some specific outcomes from this effort:

1. Updates meeting 5-year benchmark

- **Continue efforts to identify active Deer Wintering Areas (DWAs)** and obtain assurances from cooperating landowners that 100% 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 **by December 31, 2013.**

  Update on progress: In progress.
  During 2010/2011 the Department increased winter aerial deer yard surveys. Ideal winter conditions for flying allowed us 25 days in the air, nearly double what we fly in an average winter. Mild winter weather conditions in 2012 may not have been

suitable for flying deer yards, but the easy winter spurred deer population growth which is reflected in the same year's deer harvest. These aerial deer yard surveys are important to determine which deer yards continue to support deer. This is a critical first step since we must protect the existing deer yards and the remaining deer population in order to rebuild the deer population.

Using Outdoor Heritage Fund grant money, the Department digitized the survey data and is working to distribute it to landowners and regional biologists for management consideration. In addition to current use of deer yards, the Department digitized the historical data of deer use in northern, eastern and western Maine to provide a comprehensive planning tool to approach landowners in working collaboratively. This data will provide the opportunity to manage for the benefit of deer, including mature softwood cover and provision of hardwood browse. The Department is in the final stages of this data development and is planning to approach landowners early this year.

The Department remains concerned that outside factors can undermine these voluntary agreements. Changes in ownership or economic markets can impact the effectiveness of the agreements. However, these voluntary agreements can be effective tool that serve the landowner and the resource well.

- Continue collaborative efforts with MaineDOT to develop and install signage at high deer collision areas **by December 31, 2012.**

  Update on progress: Completed.
  The Department collaborated with MaineDOT to develop a protocol for sign deployment, design and maintenance. This was successfully implemented last year. In addition, MaineDOT fabricated three mobile, vehicle-activated, flashing signs to use in high priority sites. Initial deployment indicates a greatly improved response by motorists. The Department continues to review the effectiveness of this program and add or move signs as condition warrant.

- **By December 31, 2015,** update the Department's Deer Management Plan. IF&W uses public involvement to set management goals and objectives for deer. 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.

  Update on progress: On Schedule.
  The Department is in the preliminary planning stages to update the Deer Management Plan, having hired a new deer biologist last spring. This process includes a public working group comprised of interested stakeholders, public hearings, and public comment periods. Recommendations from this process will guide the department's deer population management over the next 15 years.

- Update bear population estimate **by July 2012.**

  Update on progress: Completed
  IFW reassesses the bear population each year and we currently estimate Maine's bear population at over 30,000 black bears. New data gathered through the use of GPS collars on black bears will provide an updated population estimate by December, 2013. The Department is also working with the University of Maine on a study of black bear population dynamics to be completed by 2015.

- Stabilize the bear population at no less than 1999 levels, through annual hunting and trapping harvests **by July 2017.**

  Update on progress: Ongoing
  Maine's black bear population is growing, from 23,000 black bears in 1999 to over 30,000 in 2012. The yearly bear kill has been too low to maintain Maine's bear population at 1999 levels. However, Maine's bear population is centered in rural sections of the state, and human tolerance for a growing black bear population has remained stable (measured in the number of complaints) despite an increasing bear population.

  The Department is carefully considering increasing hunting opportunity to stabilize population growth. However, our ability to increase harvest may be limited due to an already liberal fall hunting season (16 weeks with a variety of methods (bait, hounds, traps, and still-hunting/stalking) and declining hunter participation. Recent legislation allowing 2 bears to be harvested (one by hunting and one by trap) will help determine future adjustments. The fall 2012 season was the first full hunting season with this increased bag limit, and 3,207 bear were harvested (vs. and average of the previous 5 years of 2,907).

- IFW's received two years of funding to manage predation in priority DWAs utilizing trapping of coyotes, shooting coyotes over bait and hunting coyotes with dogs. The results of this effort are discussed in detail in Section 4.

2. Annual goals for wildlife management districts and the progress toward meeting the goals

State of Maine's Deer Population Overview:
Each year department biologists meet to assess Wildlife Management District (WMD) performance by analyzing deer harvest data and population parameters. Each WMD is evaluated in the context of the deer management system and is guided by annual management strategies, district deer density objectives and management system inputs. The final result of the meeting is the recommendations for permit allocations among the 29 Wildlife Management Districts, or in a portion of the state maintenance of a "bucks only" hunting framework. This will be the 28th year of the any deer permit system that regulates antlerless harvest during the firearm and muzzleloader season.

Population Management and Assessment Tools

Double count/Potvin Aerial Surveys (Population estimate by WMD)
Department biologists conducted aerial (helicopter) surveys for deer in 2011-12. Surveys are predicated on having snow cover less than 10" in December before deer have yarded. No flights were conducted for 2012-13 (post hunt) due to lack of snow at first, and then too much snow which moved deer to coniferous cover. Biologists planned to continue survey efforts starting in December 2013, but the narrow set of conditions needed to conduct this survey has proved restrictive. Currently the Department is reviewing the program to determine its effectiveness and the ability of the Department to continue data collection. Initial survey flights in south-central Maine (WMDs 16, 17, 22, 23, 25, and 26) have been important in determining relative deer abundance. The flights demonstrated that in some WMDs deer were at lower densities than what was previously believed. Consideration of deer to be above, below, or at target is an initial and critical step in annual permit allocations.

Hunter Effort Survey
For deer season 2011 and 2012, the department implemented a hunter effort survey covering south-central Maine (current WMDs that are allocated Any Deer Permits). This survey was administered to randomly selected deer hunters (5,300). Response and results from the 2012 survey have been input into a database, and data from the 2013 survey will be input early this year. This survey effort will continue during the 2014 hunt. It was hoped that the information from 2012 would be analyzed during the past year. Now that the deer biologist position has been filled, this process will begin. Data collected includes:

1. Hunter effort based on an annual estimate of buck harvest per 1,000 hunter-days in south-central Wildlife Management Districts (WMD) for use in the development of a population model and for use in the Deer Management System. A hunter day is equivalent to at least 1 hour of hunting per day and will be calculated as hunter days per square mile of deer habitat for each WMD.

2. Percent of deer licensees who hunt (actual) and percent of licensees who do not hunt.

3. Deer population trends by WMD based on deer sighting rates.

4. Any-Deer permit antlerless deer harvest rates.

Deer Tooth Analysis/Aging
Each year, department biologists collected incisors (teeth) from all yearling and older deer they checked. Typically, department biologists examine 15-20% of the annual deer harvest to verify biological data included age of deer by tooth wear and replacement. The last three years we have collected 1,832 and 2,231 and approximately 4,000 (this number includes yearling deer that were aged by tooth replacement without having to extract them) deer teeth respectively and had them aged by a Montana lab. Aging deer teeth is akin to looking at growth rings in a section of a tree. This method provides the most accurate aging of deer by year. The finer level of data that comes from sectioning teeth in the lab provides deer age by year and provides reliable information on adult sex ratios, adult male and female age distribution and information on annual mortality rates that can be derived from the data.

Collection of female reproductive data
For the past two winters department biologists and volunteers collected information on deer reproduction by examining female deer killed in vehicle collisions. Female deer are examined for presence/absence of fetuses and fetuses are weighed, measured and sexed. This data provides direct information on % females bred, conception dates, timing of the deer rut, fetal sex ratios and productivity. Collection of deer begins February 1st each winter through late spring.

3. Deer Mortality - Data on deer mortality including, but not limited to, predation on deer

Illegal Deer Kill
Illegal deer kills are a long-standing drain on the deer. The magnitude of the illegal deer kill directly reduces the allowable harvest to law-abiding hunters. 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. We continue to be deeply concerned about this issue. The Department has worked to increase enforcement of all hunting and fishing rules and laws by offering citizens to report suspected violations through the Operation Game Thief program. This is an anonymous reporting system, via telephone or online and has been successful in prosecuting violators of fish and game laws.

Deer Vehicle Collisions (DVC)
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. The 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, however. Hence, the figures for deer losses to motor vehicles cited above under-estimate the true magnitude of these losses to the deer population.

Fawn Mortality
During early summer, coyotes join a long list of predators which compete for newborn fawns: black bears, red fox, bobcats, fisher, and domestic dogs all contribute to fawn mortality. The degree of predation varies across the landscape with bears accounting for 20% - 60% of fawn mortality.

Winter Severity Index and Winter Mortality Rates
From December to April, department biologists visit winter severity monitoring stations across the state from York to the Little Black River to measure snow depth and deer sinking depths. In addition, temperature data loggers are deployed at these 26 sites throughout the winter to measure daily ambient temperatures. This data provides us with an annual measure of winter severity which in turn is used to estimate annual winter mortality rates. Information for the 2013-2014 winter is currently being collected.

Chronic Wasting Disease Monitoring
Monitoring and surveillance of diseases that affect wild cervids (deer and moose) is critical to the health and conservation of Maine's deer and moose. Disease can impact deer locally as well as have the potential to affect deer on larger land scales. Department biologists annually examine deer and extract tissue samples to test for Chronic Wasting Disease to monitor for its presence. To date Maine remains free of this lethal brain disease and continues to take steps in prevention. For 2013, biologist collected 510 samples mostly from deer and some moose as part of a statewide monitoring and surveillance program. These tissues are sent to Colorado State Veterinary Diagnostic Lab for analysis.

4. Efforts - An assessment of the efforts of animal depredation control agents

During the winter of 2009/2010, the Department began assessing coyote predation on wintering deer with the goal of directing hunter effort to those areas. As predation events were observed, staff successfully directed volunteer effort to some areas. In some cases the areas were too remote and we could not find a volunteer. In these cases we reached out to other organizations who share our concerns for assistance in covering these areas.

During the winter of 2010/2011, the Department continued the same effort. In March, the Department identified funding that could be used to compensate hunters accessing the more remote deer wintering areas. There were two factors limiting the success of the spring effort: 1, after announcing the effort, there was short lead-time to identify and deploy hunters, and 2, because the effort was reactive, coyotes were removed after predation had occurred. Below are the results:

- 118 hours hunting/calling
- 29 hours monitoring
- 1,151 miles driven
- 11 coyotes killed
- Expense of $1,609

Section 10 of LD 1569 directed IFW to organize an advisory group of professional guides and trappers to help develop and implement a program for managing predation on deer. **In October of 2011,** the Department implemented the program. The objective is to annually reduce coyote density in high-priority areas between early-autumn and early-winter, and then monitor coyote presence and manage predation events as needed through winter.

With limited funding the Department then chose 9 DWAs where we could sustain a continued effort through the winter. Conditions that winter were great for deer survival but very poor for hunting coyotes. With little to no snow cover much of the winter, food availability for coyotes remains high and deer were not heavily concentrated resulting in low coyote response to calling and bait piles. Last year's effort was winter hunting only with the following results:

- 9 Priority DWAs
- 12 paid hunters and houndsmen plus volunteers
- 119 Coyotes killed
- Expense: $15,156

In 2012-13 the objective of this program was to proactively reduce coyote density in these Designated Areas between early-autumn and early-winter that may be present during winter periods of vulnerability. Subsequent to that, the Department followed this up with reactive winter efforts to monitor coyote presence and manage predation events as needed through winter. This year's effort to date has the following results:

- 37 Priority DWAs
- 27 paid trappers
- 44 paid hunters and houndsmen
- 21 volunteers
- 541 Coyotes killed
- Expense: $63,668

The program was continued during the end of 2013, and is currently underway through the first part of this year until deer yarding condition subside. The Department increased the number of priority DWA's in which paid and volunteer participants were placed. As of February 24th, 2014 the effort has had the following results:

- 52 Priority DWA's
- 25 paid trappers
- 42 paid hunters and houndsmen
- 20 volunteers
- 175 coyotes harvested
- Expense: $34,696

It is important to remember that this effort was designed to bring about predator control efforts in more remote areas of the state that have valuable active deer wintering areas but lacked the attention from trappers and hunters that more easily reached areas received. In addition the amount of money that is budgeted up front is designed to put a program in place in these specific wintering areas that would last an entire winter. Snow conditions can vary causing the deer and the need for the program to vary.

5. Annual Flights - The number of flights made annually by agents of the department to assess the deer population

Currently, the Department employs two aerial survey techniques for assessing deer. Winter DWA aerial and ground surveys are a high priority of Wildlife Division biologists. Biologists and game wardens have been documenting the location of deer wintering areas since the 1950's. In *Maine's Game Plan for Deer,* the Department stated it would intensify efforts and resources to document areas of active winter deer use.

A number of variables impact the amount of aerial surveys staff can complete in any given winter including: funding, aircraft availability, staff availability, snow depth, time since last snowfall, light conditions, wind, and equipment failure among others.

Flying Efforts over the last decade averaged about 47 towns per year surveying DWAs. In 2010/11, we achieved a combined 24.5 "flight days" allowing us to survey DWAs in 90 towns - a 91% increase over an "average" winter.

Snow conditions during the 2011/2012 winter were very favorable for deer with a lack of restrictive winter conditions for deer. As a result, very few aerial surveys occurred. In 2012-13 and continuing this year, conditions for deer have been favorable with restrictive conditions having not persisted. The yarding conditions restricted the number of flight days in 2012-13 to 4.5 days. During the last week of February 2014, deer yarding conditions have developed and the Department has begun scheduling survey flights.

The second aerial survey technique is the double count/potvin aerial survey discussed in section 1.

6. Work with Others - The department's efforts to work with interest groups regarding predator control

During the winters of 2009/2010 and 2010/2011 IFW monitored DWAs for and responded to predation events. In most cases, referrals to sportsmen organizations were unsuccessful due to the remote nature of many DWAs. We have learned that in the more remote DWAs we are most successful when funding is available to pay hunters and trappers to remove coyotes from specific areas.

For the past three years, the Department has a well-structured and organized predation management program. As a result we find that when hunters wish to participate in a coordinated effort or be directed to a DWA where they can have a positive impact they are often referred to IFW. We do our best to direct those recreational efforts when possible and in some cases have utilized their effort in our predation management program.

The Department's effort is very strategic and focused on designated priority areas where we can reduce deer mortality during our stressful winters. Conversely, The Sportsman Alliance of Maine has been working to promote coyote hunting in Maine to increase the overall annual take of coyotes. There are also numerous clubs and organizations promoting coyote hunting contests across the state. We are also seeing an increase in guided coyote hunts in northern Maine.