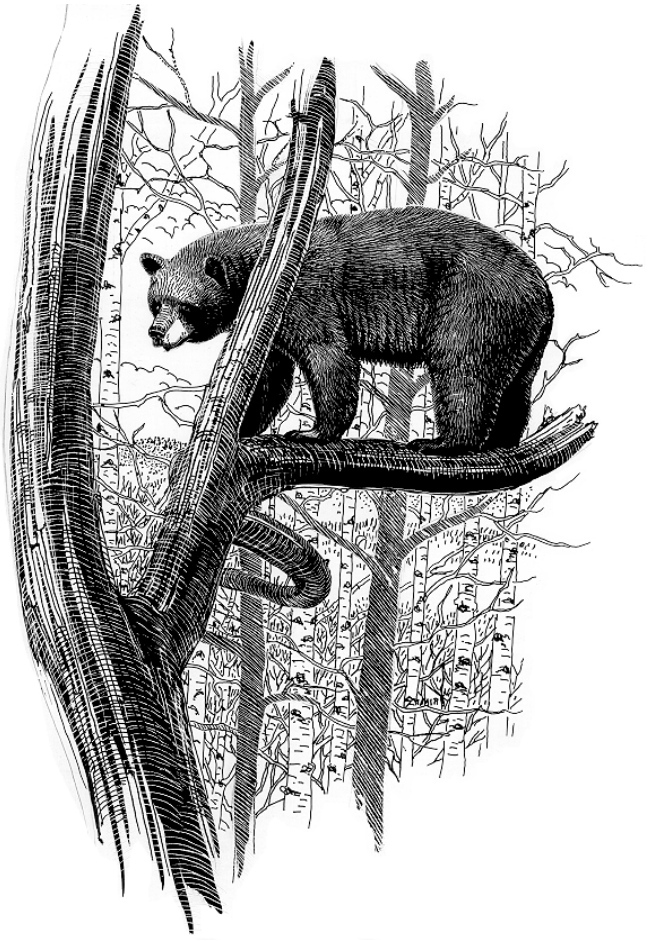
New York State
Department of Environmental Conservation

Black Bear Management Plan for New York State 2014-2024



Division of Fish, Wildlife and Marine Resources

Bureau of Wildlife

May 2014

This page intentionally left blank.

Black Bear Management Plan
for New York State
2014-2024

Patricia Riexinger
Director, Division of Fish, Wildlife & Marine Resources

Gordon R. Batcheller
Chief, Bureau of Wildlife

21 May 2014
Date

Mission of the Bureau of Wildlife

To provide the people of New York the opportunity to enjoy all the benefits of the wildlife of the State, now and in the future. This shall be accomplished through scientifically sound management of wildlife species in a manner that is efficient, clearly described, consistent with law, and in harmony with public need.

Goals of the Bureau of Wildlife

Goal 1. Ensure that populations of all wildlife in New York are of the appropriate size to meet all the demands placed on them.

Goal 2. Ensure that we meet the public desire for: information about wildlife and its conservation, use, and enjoyment; understanding the relationships among wildlife, humans, and the environment; and clearly listening to what the public tells us.

Goal 3. Ensure that we provide sustainable uses of New York's wildlife for an informed public.

Goal 4. Minimize the damage and nuisance caused by wildlife and wildlife uses.

Goal 5. Foster and maintain an organization that efficiently achieves our goals.

Table of Contents

Signature Page 3

Mission of the Bureau of Wildlife 4

Goals of the Bureau of Wildlife 4

Acknowledgments 6

Introduction 7

Legal Authorities 8

Planning Process 8

History / Background 11

Climate Change 12

Goal 1: Population Management 13

Goal 2: Regulated Hunting of Black Bears. 19

Goal 3: Conflict and Damage Management 22

Goal 4: Technical Guidance and Outreach 26

Goal 5: Management Capacity and Resources 28

Literature Cited 29

Informational Resources 33

Appendix 1. Timeline of Major Events in NYS Black Bear Management 34

Appendix 2. Proposed Bear Hunting Open Areas and Seasons 37

Appendix 3. Legal Matters 40

Acknowledgments

This document was prepared by:

Big Game Management Team
Bureau of Wildlife
Division of Fish, Wildlife & Marine Resources

Larry Bifaro
Jim Farquhar
Steve Heerkens
Jeremy Hurst
Ed Kautz
Art Kirsch
Courtney LaMere
Matthew Merchant
Adam Perry
Ed Reed
Tim Spierto
Bryan Swift

New York State Department of Environmental Conservation

Joe Martens, Commissioner
Kathy Moser, Assistant Commissioner for Natural Resources
Patricia Riexinger, Director, Division of Fish, Wildlife & Marine Resources
Doug Stang, Assistant Director, Division of Fish, Wildlife & Marine Resources
Gordon Batcheller, Chief, Bureau of Wildlife

The authors of this management plan owe a great debt to former black bear biologists and managers who grounded New York's bear management program in both science and public involvement. Through the 1950s and 1960s, biologists Stu Free, Peggy Sauer, Eugene McCaffery, C. W. Severinghaus, Hugh Black and Oliver Hewitt conducted pioneering work in understanding bear population dynamics, methods for handling bears, and issues related to bear health and physiology. Throughout the 1970s and early 1980s Robert Miller, Gary Will, William Hessleton, John O'Pezio and Stephen Clarke furthered our knowledge through extensive bear monitoring, particularly in the Catskills. In the 1990s and early 2000s, Lou Berchielli, Richard Henry, Chuck Dente, and Greg Fuerst ushered the Department into a greater level of human-bear conflict management and public education about living in bear country. We must also acknowledge the considerable contribution of Drs. Daniel Decker, Tom Brown, William Siemer and their colleagues in the Human Dimensions Research Unit at Cornell University, who, over 30 years, have provided valuable insight to public attitudes and perspectives about bear populations and their impacts.

A contribution of Federal Aid in Wildlife Restoration, New York Grant WE-173-G

Introduction

Photo courtesy of Dan Marizita

Though rarely seen by most New Yorkers, black bears (*Ursus americanus*) are valued by hunters, photographers, and wildlife watchers, and many people enjoy just knowing that bears are present in New York. For many, black bears symbolize wilderness and wildness, but increasingly, bears can be found in semi-rural environments, agricultural areas and occasionally, in urban centers.

Once limited to small, isolated populations in only the most inaccessible mountain regions of the state, conservative bear management has allowed black bear populations to increase dramatically in number and distribution in recent decades. However, as bear populations increase and more people choose to live and recreate in areas occupied by bears, human-bear conflicts also increase. Thus, managing bear populations, while being responsive to site-specific issues, is critically important, and managers are challenged to balance diverse public interests related to bears.

The New York State Department of Environmental Conservation (DEC), Bureau of Wildlife is charged with the management of bears in the state. Accordingly, this management plan outlines the principles and methods used to monitor and manage black bear populations in New York, and it provides strategic guidance for the DEC's activities for the next 10 years. This plan describes five primary goals identified by DEC staff that encompass the current priorities of bear managers and values and issues expressed by the public: 1) maintain bear populations at levels acceptable to the public; 2) promote and enhance bear hunting as an important management tool; 3) minimize the frequency and severity of human-bear conflicts; 4) foster understanding and communication about bear ecology, management, and conflict avoidance; 5) and ensure that the necessary resources are available to support effective management of black bears in New York. Importantly, this plan also describes the current and desired future status of bear populations in various geographic regions of New York.

Many of the strategies identified in this plan are descriptions of activities that are already occurring, while other strategies reflect new work to be more fully developed during the 10-year period (2014-2024) of this plan. DEC seeks to achieve the goals, objectives and strategies of this plan through implementation of sound scientific management principles in a manner that is responsive to the complex ecological, cultural, recreational, and economic dynamics associated with bears in New York. Successful implementation of many aspects of this plan will require significant cooperation and partnership between the DEC Bureau of Wildlife and other organizations, agencies and DEC divisions and the continued commitment of administrators, policymakers, and the public to support bear management efforts in New York.

Legal Authorities

The basis for New York's bear management program, like other game animal programs, is established in the New York State Environmental Conservation Law (ECL) Article 11, which spells out specific the authority, responsibility, and policy related to management of the black bear resource. Briefly paraphrased, the predominant statutes include:

ECL § 11-0105

The State of New York owns all fish, game, wildlife, shellfish, crustacean and protected insects in the state, except those legally acquired and held in private ownership.

ECL § 11-0303

DEC is directed to restore, maintain and improve the State's fish and wildlife resources, and make these resources accessible for recreational purposes to the people of the State. DEC is directed to carry out programs which, (a) promote natural propagation and maintenance of desirable species in ecological balance, and (b) lead to the observance of sound management practices, having regard to (1) ecological factors, including the importance of ecological balance in maintaining natural resources; (2) the compatibility of production and harvesting of fish and wildlife crops with other necessary or desirable land uses; (3) the importance of fish and wildlife resources for recreational purposes; (4) requirements for public safety; and (5) the need for adequate protection of private premises and of the persons and property of occupants thereof against abuse of privileges of access to such premises for hunting, fishing or trapping.

ECL § 11-0521

DEC is authorized to issue permits to take bears that are destructive to public or private property or are a threat to public health or safety.

ECL § 11-0903

DEC is authorized to establish regulations for the open seasons, open areas, bag limits, manner of taking, possession and disposition of bears, and the intentional and incidental feeding of bears.

Additionally, DEC's wildlife management activities and their impacts are described in the *Programmatic Impact Statement on Wildlife Game Species Management Program of the Department of Environmental Conservation Division of Fish and Wildlife* (NYSDEC 1980) and reiterated in the *Supplemental SEQR Findings and Decisions* (NYSDEC 1994). DEC's black bear management program, as outlined in this plan, is consistent with the accepted principles, practices, and actions specified in these documents and in accord with the authorities established in the State's Fish and Wildlife Law, ECL Article 11.

Planning Process

This plan was developed based on a series of planning events over the past decade that included substantial involvement of affected stakeholder groups, as well as internal review of existing black bear management procedures in New York and consideration of bear management activities in other jurisdictions. The process included the following components:

1. **Stakeholder Information Groups (SIGs)**
   Between 2003 and 2009, DEC conducted six SIGs in various regions of New York to gather local input on the impacts stakeholders were experiencing from bears. Positive impacts identified by participants generally related to the intrinsic value of black bears as part of New York's natural landscape and recreational benefits through opportunistic viewing and regulated hunting. Negative impacts frequently reflected concern for residential and commercial damage and loss of agricultural crops. All SIGs emphasized the need for public education to reduce bear attractants and minimize human-bear conflicts. More information about SIGs is provided on page 11 of this plan and at www.dec.ny.gov/animals/7213.html.

2. **Public Meetings on Bear Management**
   In 2007, DEC convened 21 public meetings throughout upstate New York in an effort to better understand the public's interest in black bear management. DEC provided an overview of the natural history and status of black bear populations, including an assessment of bear population growth and range expansion. DEC provided opportunity for the public to suggest potential changes to bear hunting and bear management. Though comments varied in nature across the state, attendees consistently identified the need for increased hunting opportunity and increased public education about bears.

3. **Incremental Changes to Black Bear Regulations**
   In response to growing bear populations and public input, between 2004 and 2011, DEC adopted several amendments to bear hunting regulations. These are outlined in Appendix 1 but included progressive expansions of the area open to bear hunting, slightly longer hunting seasons, and a prohibition of feeding black bears. Each of these regulation changes involved a comment period during which the public was able to offer feedback on desired management outcomes and suggestions for alternative management approaches.

4. **Black Bear Management Plan Scoping - preliminary solicitation of input from New York organizations affected by black bear**
   Recognizing the need to address bear management issues comprehensively and to avoid continued piecemeal changes, DEC began identifying key management priorities, internally and externally. During the summer of 2012, DEC contacted more than two dozen organizations whose members are affected by black bears or black bear management and requested input on the key bear management issues that were most important to their members.

5. **Plan writing**
   DEC reviewed the various forms of public input collected since 2004, together with current bear management priorities, to establish the goals, objectives and strategies set forth in this plan. DEC also reviewed and considered bear management activities of other jurisdictions to ensure strategies in this plan reflect sound management practices used consistently across black bear ranges.

6. **Public review and comment**
   DEC provided a draft black bear management plan for public review and comment from January 16 – February 21, 2014. The draft was published on the DEC website and announced via a

statewide press release and e-mail newsletter. We received roughly 150 comments from individuals and organizations. We also received several thousand e-mail form letters associated with campaigns of the Humane Society of New York and In Defense of Animals. Subsequently, DEC reviewed, summarized, and responded to the most substantive comments. An *Assessment of Public Comment on the draft Black Bear Management Plan for New York State, 2014-2024* is available at www.dec.ny.gov/docs/wildlife_pdf/bearplanapc2014.pdf.

7. **Modification and adoption of the plan.**

Through the public comment received, we identified a key deficiency in the draft plan; the draft failed to adequately describe the public input and engagement processes that informed development of the plan. We addressed that deficiency by adding the preceding paragraphs.

The importance of educating the public on their role in reducing human-bear conflicts was a common theme in many comments, particularly from those who oppose any killing of bears or expanding hunting opportunities to reduce bear population growth. The theme is also a common thread woven throughout this plan and is fundamental to Goals 3 and 4.

Overall, we found that many of the issues raised during public review of the draft necessitated relatively little modification to the final plan. Rather, addressing most comments entailed providing additional clarifying detail or description of intent for various strategies. This was largely done in the Assessment of Public Comment, noted previously, but minor clarifications and emphasis were added in various portions of the final plan. The most significant modifications to the final version of the bear plan include:

- Planning Process – added this section to detail the extensive public interaction and input used in developing the bear management plan;
- Strategy 1.1.3 – clarified that we will continue to provide opportunity for the public to weigh in on bear management impacts and objectives throughout the life of this plan;
- Strategy 4.2.3 – added a new strategy related to training local law enforcement and others on the appropriate response for various situations involving black bears;
- Multi-state collaboration – in Goal 5, we emphasized DEC's collaboration with professional bear managers and researchers from other jurisdictions;
- Alternative funding and assistance – in Goal 5, we identified opportunity for groups interested in bear management and public education to prevent human-bear conflicts to partner with DEC in these efforts;
- Appendix 2 – clarified the impact of changing the season structure in WMU 6K related to opening the whole unit to bear hunting; and provided additional rationale for the timing of the supplemental early bear season in southeastern New York.

While this plan indicates DEC's intended direction for black bear management and hunting, implementation of some strategies will require new or amended state regulations. As such, all regulation proposals will be subject to an additional 45-day public comment period during the rule making process. DEC intends to begin rulemaking to implement a number of hunting-related aspects of this plan (e.g., Strategies 2.1.1 – 2.1.3) immediately in 2014.

History / Background

Prior to settlement by European immigrants, black bears were likely widespread and abundant throughout New York. By the late 1800s, however, due to extensive forest clearing for agriculture and unregulated killing of bears, populations were driven to low levels and restricted to the most inaccessible mountain areas of the state. Then, in 1903, sportsmen successfully led an effort to secure legal status for black bears as a game mammal, protecting bears during the summer months and requiring harvest reporting by hunters. Additional laws followed that further defined hunting seasons, manner of take, and bag limits (Appendix 1).

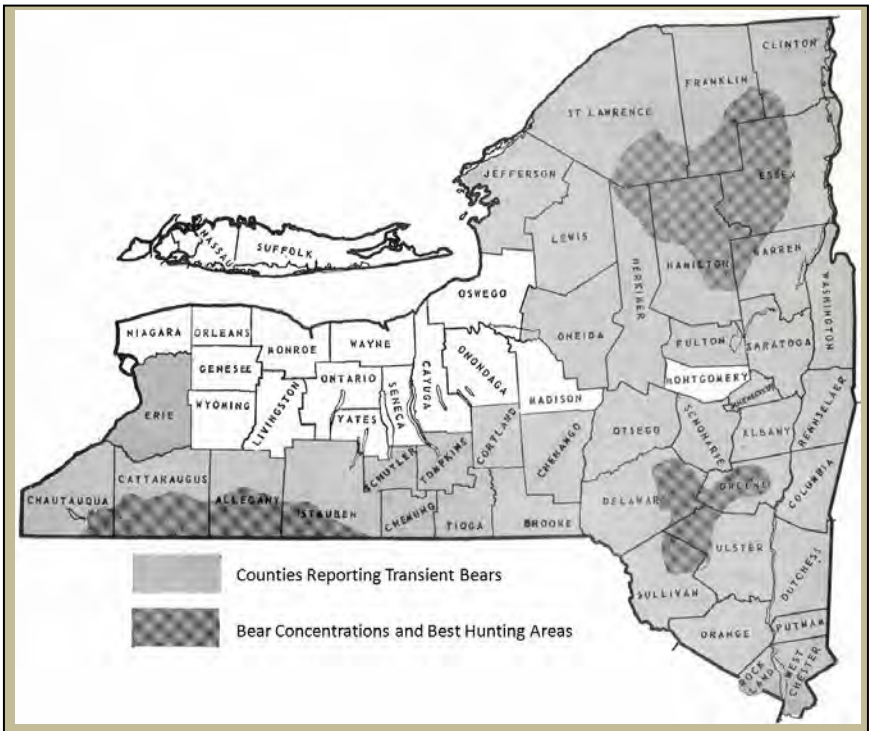


Figure 1. Illustration of black bear distribution circa 1950 (Drahos 1952). Dark crosshatched areas reflect the primary occupied bear range. Shaded counties had reports of transient bears but were generally unoccupied by bears.

Concurrently, during the first half of the 20th century, as many people resettled from the country into the cities, large tracts of abandoned farm land reverted to forests. Bear populations responded and began a process of recovery and growth, reestablishing from three primary areas: the Adirondack and Catskill regions of northern and southeastern New York, and the Allegany region of southwestern New York (Figure 1). Subsequently, bear populations have continued to thrive, expanding substantially from these historical core populations. Black bears today are well-established

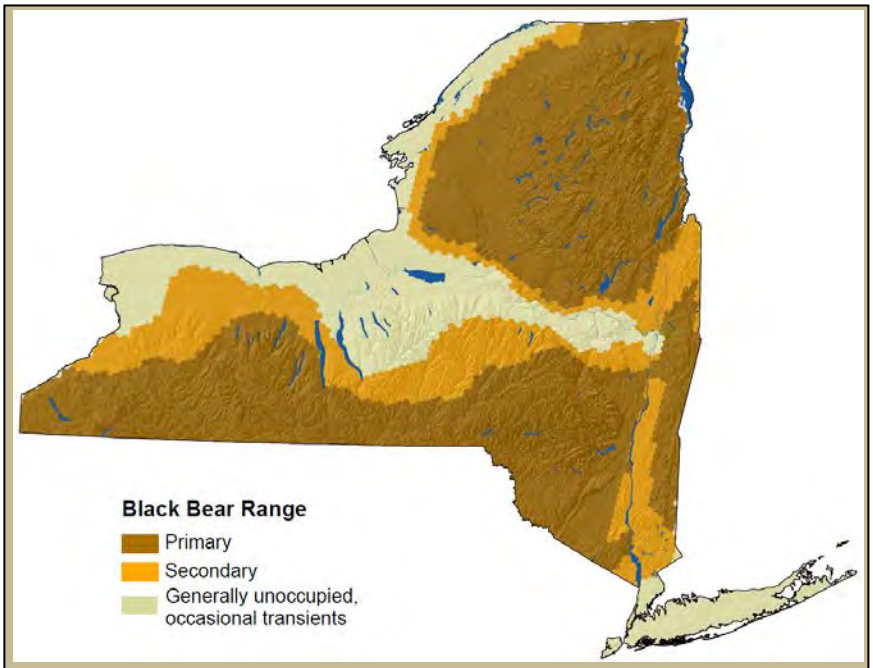


Figure 2. Illustration of black bear distribution in New York in 2011 based on Scheick et al. (2012). Primary range refers to areas where breeding bears were known to occur, whereas secondary range includes areas with routine bear sightings. Transient and dispersing bears may be found in all of upstate New York, including areas generally considered not occupied.

throughout much of northern and southern New York, excepting the highly urban areas of New York City and Long Island and the highly agricultural areas extending along the I-90 corridor, around the Finger Lakes, and along Lake Ontario (Figure 2). Still, transient black bears are routinely reported in all upstate counties.

By the late 1990s, with increasing bear harvests in southern New York, reported human-bear conflicts becoming common and widespread, and awareness that bear range was expanding, DEC began to reevaluate bear management practices and policies. In the spring of 2000, DEC established a team of technicians, biologists, managers, and human dimensions specialists to synthesize information about the ecological aspects of New York's bear management system with stakeholder input and interests. This effort resulted in several key documents to inform the public about bears and guide bear management in New York:

> *Black Bears in New York – Natural History, Range and Interactions with People* (NYSDEC 2007b, 2nd edition) provides an overview of black bear biology and distribution.
>
> *New York State Black Bear Response Manual* (NYSDEC 2011, 3rd edition) outlines standard operating procedures for handling over 50 situations involving black bears and human-black bear interactions.
>
> *A Framework for Black Bear Management in New York* (NYSDEC 2007a, 2nd edition) describes the basic structure used to gather information and identify program management needs. The heart of this planning framework involved use of Stakeholder Input Groups (SIGs) to identify public perceptions of positive and negative bear-related impacts and to provide recommendations for management.

To assess information needs associated with the planning framework, DEC worked with the Human Dimensions Research Unit of Cornell University (HDRU) to broadly characterize public experiences with and tolerances for black bears, to identify factors affecting public perceptions of bears, and to assess public attitudes about black bear management actions (Siemer and Decker 2003). Subsequently, from 2003 to 2009, DEC convened six Stakeholder Input Groups (SIGs) in various regions of New York. Although SIGs were comprised of stakeholder representatives from a variety of backgrounds, often with conflicting interests in black bears, and were held in areas with varying bear and human densities, varying levels of agricultural production and varying length of occupancy by bears, each SIG yielded a hierarchy of important impacts similar to those identified by Siemer and Decker (2003). The priority management outcomes sought by SIGs generally included: (1) that a viable population of bears be maintained and bears continue to be present in New York; (2) that public education about bears be continued and expanded; and (3) that negative impacts (e.g., agricultural damage) be reduced (Schusler and Siemer 2004).

These priorities have guided bear management in New York over the past decade, and this management plan builds on the foundation established through the former planning framework and SIG process.

Climate Change

DEC recognizes that climate change will alter the future of wildlife management in New York. The potential impacts of climate change on bears are likely to be small during the span of this management

plan, but efforts to understand and predict the impacts to bear populations and bear management are necessary for long-term management planning. This plan includes systematic monitoring of basic population parameters (e.g., from harvest data and den visits) to document any long-term changes in productivity or survival that may be associated with warmer temperatures or more variable precipitation patterns.

The Northeast Black Bear Technical Committee recently prepared a *White Paper on Effects of Climate Change on the American Black Bear in the Northeastern United States and Eastern Canada* (NEBBTC 2012). Major shifts in black bear distribution are not expected. Depending on how forage species respond to climate warming, there may be shifts in local distributions or abundance as bears seek available foods.

If climate changes progress as predicted over the coming century (Hayhoe et al. 2006, Rosenzweig et al. 2011), northeastern states may see increased summer temperatures, increased frequency of short term droughts, and earlier spring onset. The growing season for many plant species will likely become longer, possibly resulting in summer berry crops becoming available earlier in the season. Yet, occasional late frosts may also have a negative impact on plants that flower early. The combination of these factors could lead to greater variation in annual mast crops available for bears. However, considerable uncertainty exists regarding the precise climatic changes that may occur within New York based on elevation and terrain differences. By extension, different scenarios of natural food abundance and annual variation could occur across New York's bear range. Nonetheless, if abundance of summer and fall forage species begins to vary more and food failures become more common, human-bear conflict levels will increase. DEC will likely have to enhance bear awareness and education outreach programs in an attempt to minimize human-bear conflicts. Establishing a strong and lasting program now to increase public awareness about reducing bear attractants and that provides effective response when human-bear conflicts do occur, should provide benefits in the future.

It should be noted that changes in winter weather severity or snowfall duration are not likely to substantially affect bear denning behavior. Bears enter a period of winter dormancy primarily as an adaptation to the seasonal shortage of food more than as a response to low environmental temperatures or snow cover on the ground. Therefore, we do not expect the timing or duration of bear conflicts to be affected significantly by climate change.

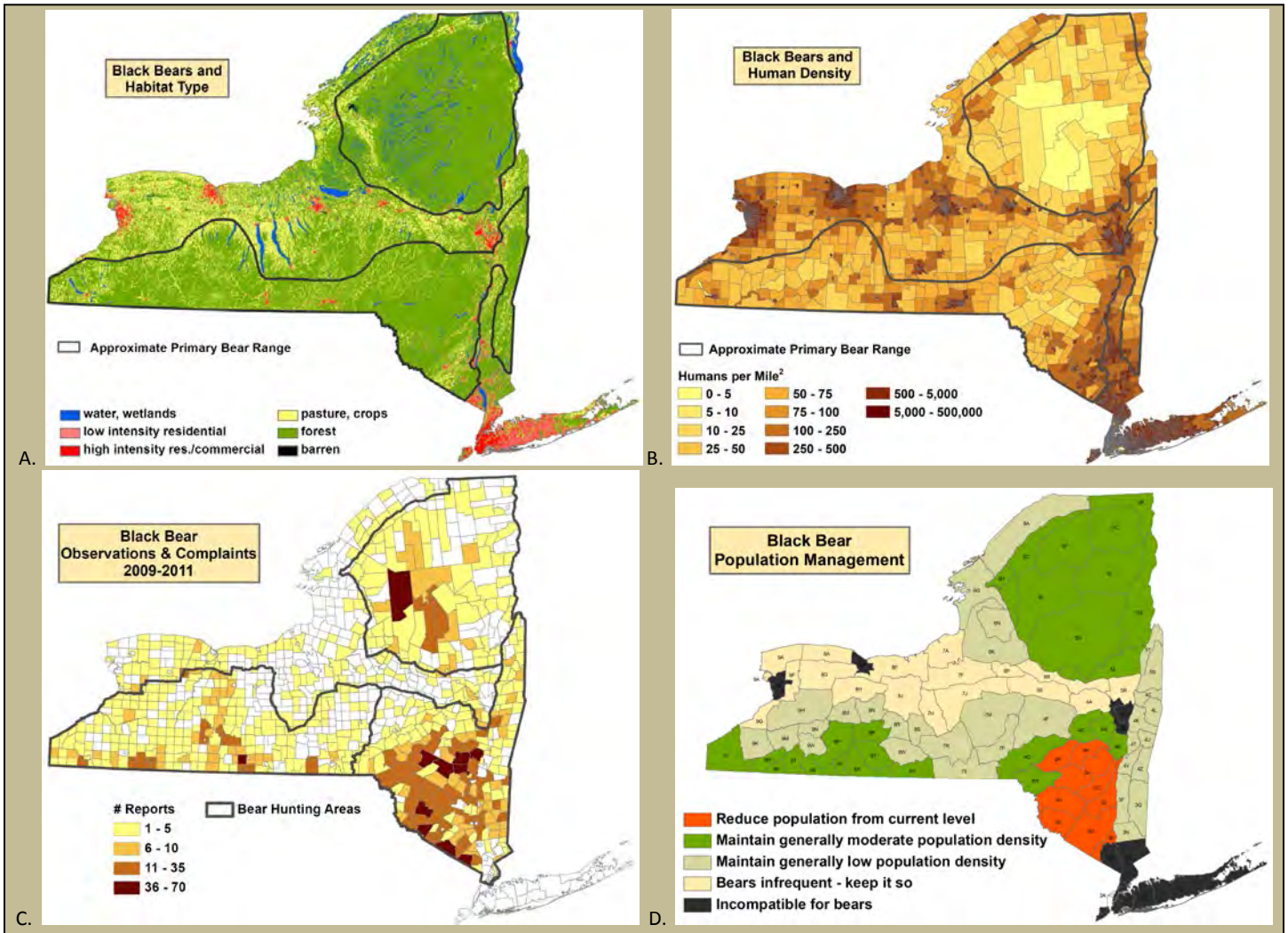
Goal 1: Population Management

Maintain bear populations at levels acceptable to the public.

Black bears are a public trust resource, managed by DEC for the benefit of all citizens. As such, bear management in New York is an expression of the public will, informed by science. Key to the management process is maintaining an understanding of bear population dynamics in various regions of the state and the public's desires for those populations. Additionally, DEC must address public concern for the health and welfare of bears as well as their numerical abundance and distribution.

Current Bear Populations

New York's black bear population in areas open to hunting is currently estimated at a minimum of 6,000-8,000 bears, with roughly 50-60% of the bears inhabiting the Adirondack region, about 30-35% in the Catskill region and about 10-15% in the central-western region. In addition, bears are now well established in many other areas, including the Tug Hill, Hudson Valley and across the Southern Tier, and transient bears are routinely encountered throughout the Lake Ontario Plains, Mohawk Valley, and St. Lawrence Valley. With the exception of Tug Hill, these other areas include a greater proportion of agriculture or have higher human densities, making them less suitable for bears due to the higher likelihood of human-bear conflicts (Figures 3A-C). Populations are relatively stable in the Adirondack region, and population growth appears to be slowing in the Catskill region. However, bear populations are clearly increasing in other areas. In short, there is little doubt that black bear populations are secure in New York for the foreseeable future. Thus, in keeping with recommendations from previous Stakeholder Input Groups (www.dec.ny.gov/animals/7213.html), public meetings, and general public feedback, the challenge for the next 10 years will be to stabilize black bear populations in most areas, reduce populations in a few areas, and prevent bear establishment in others to achieve the desired balance of positive and negative impacts that bears can have for the public (Figure 3D).



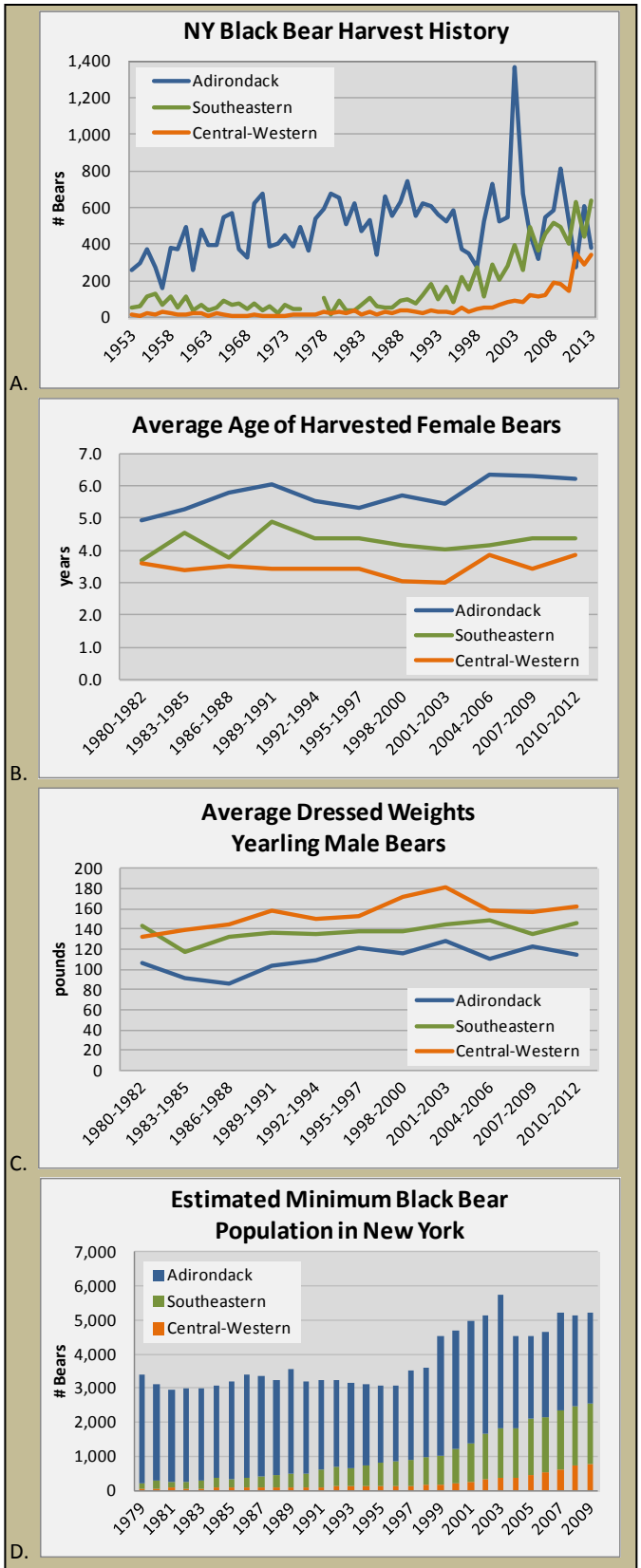
Figures 3 A-D. Approximate black bear distribution in New York relative to (A) habitat and (B) human density; (C) distribution of recent black bear observations and complaints; and (D) generalized depiction of relative bear abundance and management objectives in New York.

The successful achievement of this goal will be determined through long-term monitoring programs that provide sufficient information to confirm the secure status of bear populations and to identify changes in relative abundance of bears as indicated by trends in harvests or other population parameters. Heretofore, public input has been essential to identify critical impacts of bears and public desires for bear populations, and public input will also be used near the end of this plan cycle to evaluate the success of this goal and establish population management objectives for the subsequent 10 year period.

Population Monitoring

Population monitoring is a major challenge for management of black bears. Because bears are generally reclusive in nature and occur in relatively low densities on the landscape, monitoring techniques that involve direct observation or counting of bears are not feasible. An exception would be where ancillary data such as public sightings of bears provide anecdotal evidence of bear distribution and range expansion. Likewise, monitoring of human-bear conflicts (Figure 3C) provides some evidence of changing bear populations and their distribution, but the relationship between population size and frequency of conflicts is influenced by availability of natural foods, accessibility of human-related foods (e.g., garbage, birdseed), and by public reporting rates, which can be highly variable. However, there are a number of techniques that can be used to more rigorously estimate bear population size, track or predict population trends, or monitor changes in reproduction or survival rates (Sawaya et al. 2013).

In areas where bears are hunted, DEC has traditionally tracked total harvest, sex ratios,



Figures 4 A-D. (A) Legal black bear harvest from 1953-2012; 3-year averages of (B) age of harvested females bears and (C) weights of yearling male bears from 1980-2012; and (D) estimated minimum bear populations from age-at-harvest population reconstruction. Ages of bears harvested in 2013 were not available at the time of this report.

average age and weights of harvested bears (Figures 4 A-C). Hunters are required to report their harvest of a bear within 7 days, and through voluntary submission by hunters or physical check by DEC staff and cooperating taxidermists, DEC collects a premolar tooth from approximately 60% of harvested bears. Age of each harvested bear is determined through laboratory analysis of cementum annuli (like annual growth rings of trees) in each tooth. Simple harvest trends (Figure 4A) generally reflect bear population trends if hunter harvest rates are relatively constant. However, this is not always true, especially when regulation changes affect hunter effort or as fluctuations in mast crops affect bear movements and bear vulnerability to hunters. In spite of this, total bear harvests are a reasonably good indicator of population trends over the long-term. However, in the short-term, year-to-year changes in harvest may not reflect similar changes in the overall population and could be misleading.

Combining harvest estimates with data on sex and ages of harvested bears can be used to back-calculate a minimum estimate of the number of bears present in the recent past (i.e., 3-5 years prior; Downing 1980, Davis et al. 2007). This method, referred to as "age-at-harvest population reconstruction", uses data that are easily and routinely collected by DEC from harvested bears. This technique has provided the best available estimate of bear populations in New York (Figure 4D), but it has several limitations: (1) it provides a minimum estimate because it does not reflect bears that inhabit portions of New York without hunting, and it does not account for bears that die from mortality sources other than hunting; (2) the resulting population estimate is at least three years out of date, depending how quickly the age determinations are completed; and (3) it assumes that harvest and survival rates are relatively uniform among age classes and constant over time, but this may be violated by changes in hunting regulations, as occurred in southern New York over the past decade. To address these shortcomings, this plan proposes additional data collection activities to complement these analyses and provide more robust and reliable estimates of current bear populations and projected trends.

A variety of techniques have been considered to improve the reliability of bear population and growth rate estimates. A trial mark-recapture project conducted in the Catskills in 2007 using the antibiotic tetracycline as a biomarker yielded a population estimate with unsatisfactorily wide confidence intervals due to difficulty securing bait sites on private land and low bait consumption rates by bears (Hurst 2012). DEC is currently working with the New York Cooperative Fish and Wildlife Research Unit at Cornell University to explore use of spatially-explicit mark-recapture models using DNA samples obtained through hair snares (Sun et al. 2013). Preliminary results suggest that DNA mark-recapture models can provide reliable estimates of abundance or population growth, but may be cost prohibitive at the large scale at which bears are managed in New York. Future research will focus on potential sampling strategies to overcome this hurdle.

In the near term, DEC will initiate several new data collection activities efforts to determine if they can provide more reliable information on bear population status and trends in major regions of the state. For example, DEC has initiated a hunting diary for big game hunters during the regular firearms season that, in combination with the longstanding bowhunter sighting log, will provide data on bear encounter rates (e.g., bears seen per 1,000 hours afield, or hours expended per bear harvest) and to document areas occupied and unoccupied by bears.

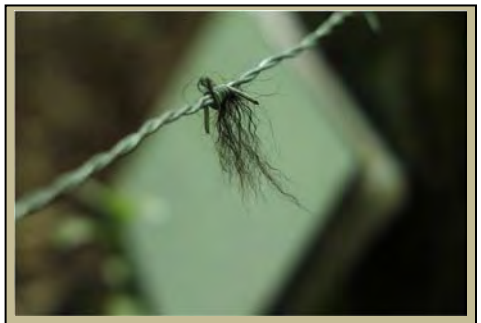


Image of bear hair caught on barbed wire for DNA mark-recapture research in New York. Photo courtesy of Catherine Sun.

The utility of these hunter surveys to monitor bear populations will be evaluated during the next several years. Additionally, DEC will establish and maintain a small sample of marked bears in each region of the state that, over time, will provide field-based information to monitor long-term trends in reproduction, survival and harvest rates. All of these data will be used to develop statistical population reconstruction models or integrated population models (Gove et al. 2002, Skalski et al. 2007, Fieberg et al. 2010) that should provide more reliable and timely estimates of population growth rates than simple population reconstruction from harvested bears. Field monitoring of reproduction and survival for a fixed sample of bears will facilitate early detection of changing conditions and possible causal factors (e.g., emergence of a new disease). Documenting seasonal or annual movements of marked bears can also help refine the spatially-explicit mark-recapture modeling as a monitoring tool.

Bear Health and Welfare

Legal harvest is the primary source of mortality for black bears in New York. Vehicle collisions are another source of mortality, especially during droughts or other periods of unusual food availability or shortages. Known mortality due to collisions with vehicles has varied from 14 to 61 annually during the past 20 years, though actual numbers are likely higher. Droughts reduce the abundance of natural foods which results in increased movement of bears, often outside of their normal home range where the bear is less familiar with the landscape and thus more vulnerable to road hazards. Various other types of accidents (e.g., struck by trains, electrocutions) and predation or aggression by other black bears are additional sources of mortality, but such incidents are difficult to quantify. Black bears are relatively free of parasites and diseases with infestations and outbreaks having minimal impact on overall populations. In New York's bear, round worms and ticks are common, trichinella are rare, and cases of sarcoptic mange appear to be increasing in recent years. Rabies can occur in black bears, but cases are very rare in New York.

Poaching or illegal take of bears for use or sale of parts is uncommon in New York State, perhaps at least partially because the sale of parts other than flesh is legal from legally harvested bears. The legal supply of parts such as gall bladders seems to equal or exceed demand in New York, which results in low prices being paid for such parts. Lower prices provide less incentive for poaching. However, there is some concern that the legal trade of bear parts in New York may facilitate the illegal taking of bears in other states to be sold here. This concern was addressed in part by a law enacted in 2012 (ECL 11-0917) which prohibits possession or sale of bear gall bladders or bile unless they are tagged with a valid harvest tag or other authorization from DEC.

Rehabilitated cubs demonstrating appropriate, wild escape behavior indicating they are not habituated to humans. Photo courtesy of Jean Soprano, Kindred Kingdoms Wildlife Rehabilitation Center

DEC monitors bear health incidents through routine non-harvest mortality reporting and investigation by the Wildlife Health Unit to determine causes of death or illness in bears that are found dead due to unknown causes. Normally, these events are uncommon and do

not have any significant effect on bear populations. Nonetheless, it is important to monitor for potential new diseases that could arise, and the public is always very interested in knowing what may be affecting bears in their local area.

The public is also concerned when bears may be injured or orphaned by the death of an adult female. Such cases often generate publicity and public interest in fate of the bears involved. DEC issues Wildlife Rehabilitator Licenses (www.dec.ny.gov/permits/25027.html) to individuals seeking to aid in the care and recuperation of sick or injured wildlife. For bears, this generally involves the care of orphaned bear cubs or malnourished yearlings. Currently, only a few licensed rehabilitators in New York have adequate training, expertise, and facilities for effective rehabilitation of black bears. In untrained hands, young bears can be habituated to humans very quickly and become poor candidates for release. DEC works closely with one or two rehabilitators that have proven to be very capable of effectively caring for young bears so they can be successfully released back to the wild. However, additional rehabilitators have expressed interest in handling bears, and DEC recognizes the importance of establishing appropriate standards and guidelines for the rehabilitation and release of black bears to ensure safety of the bears and handlers and to prevent bears from becoming habituated to humans or conditioned to human-related foods.

Objective 1.1: Evaluate bear population trends and reestablish population trend objectives at least every 10 years.

Strategy 1.1.1: Adopt the following bear population trend objectives in New York for the next 10 years (Figure 3D):

Northern Zone – maintain at current levels;
Catskills and western Hudson Valley – reduce from current levels;
Southern Tier and Eastern New York – maintain at low or moderate levels;
Lake Plains, Mohawk Valley and urban/suburban areas – prevent establishment of resident bear populations.

Strategy 1.1.2: Assess bear population trends relative to objectives by evaluating trends in available population indices (see Objective 1.2).

Strategy 1.1.3: Collect public input, through scientific surveys, public meetings and/or stakeholder meetings, on bear population status and impacts by 2019, and adjust bear population objectives as needed prior to updating this plan in 2024.

Objective 1.2: Assess and monitor bear population status using best available techniques.

Strategy 1.2.1: Annually estimate the legal bear harvest based on hunter harvest reports and sufficient field check of harvested bears by DEC staff and cooperating taxidermists and meat processors to estimate reporting rates.

Strategy 1.2.2: Annually collect sex, age and other biological data from a sample of harvested bears to monitor trends in bear harvests and maintain population reconstruction models for black bears. Determine sample sizes of bears that need to be checked in the field, or only teeth collected, to obtain the biological data needed within constraints of staff time and resources.

Strategy 1.2.3: Annually visit approximately 3-5 winter bear dens in each DEC region (Regions 3-9) to collect data for long-term monitoring of reproductive parameters (e.g., age of first reproduction, natality, litter size and interval) and survival for black bears. Maintain telemetry collars on 3-5 female bears in each region to help locate dens for this purpose, and to provide movement data for evaluation of DNA mark-recapture population estimates.

Strategy 1.2.4: Evaluate additional data sources (e.g., bowhunter sighting log, big game hunter effort survey and observation log, bear dog training logs) and additional population modeling techniques (e.g., statistical population reconstruction, integrated population models, DNA mark-recapture models) to enhance bear population monitoring.

Strategy 1.2.5: Document known incidents of non-harvest related bear mortality (e.g., road kills, nuisance kills, and illegal take) to supplement other information (i.e., complaints and sightings) on bear distribution and abundance and to detect emerging mortality factors.

Strategy 1.2.6: Conduct or support scientific research projects as needed related to black bear ecology, population dynamics and monitoring.

Objective 1.3: Maintain programs that monitor health and welfare of wild bears and evaluate the practice of black bear rehabilitation.

Strategy 1.3.1: Conduct necropsies of bears exhibiting clinical disease symptoms or found dead, to assess non-harvest factors affecting bear survival and document disease incidence.

Strategy 1.3.2: Assess current policies and practices associated with the rehabilitation of black bears relative to management objectives and establish guidelines for when rehabilitation of injured or orphaned black bear cubs may or may not be justified.

Strategy 1.3.3: Pending Strategy 1.3.2, develop license conditions for the rehabilitation and release of injured or orphaned black bears such that the practice does not result in increased bear habituation and subsequently exacerbate human-bear conflicts.

Strategy 1.3.4: Pending Strategy 1.3.2, require all rehabilitated bears to be permanently marked to monitor their fate after release back to the wild.

Goal 2: Regulated Hunting of Black Bears.

Promote and enhance bear hunting as an important tradition and management tool in New York State.

Though once persecuted as a "varmint" species with harvests subsidized by state and county bounties, black bear populations in New York have benefited from over a century of wise conservation spurred by the action of concerned hunters and wildlife managers. Currently, regulated hunting is the most cost-effective and equitable tool for managing bear populations across the state and provides New Yorkers with a sustainable source of meat, hides and recreation. Regulated bear hunting is supported by a majority of New Yorkers (Siemer and Decker 2003) and is consistent with the tenets of the North

American Model of Wildlife Conservation (Geist et al. 2001). At the heart of the North American model is the concept of wildlife as a public resource, owned by no one but held in trust by the government for the benefit of the people. Further, access to wildlife by hunters is provided equally to all, regulated by law or rule-making with public involvement rather than market pressures, wealth, social status or landownership. Management policy and decisions are rooted in science and support an ethic of fair-chase and legitimate use (e.g., fur and food) of harvested wildlife. Adherence to these tenets has allowed bear management in New York to function successfully while retaining strong support among the generally non-hunting public. Though some segments of the public routinely suggest bear management be conducted strictly by non-lethal methods, no non-lethal strategies exist that will meet all of DEC's bear management objectives. Prior research using chemical fertility control on captive bears concluded that fertility control is not a feasible means for managing black bear populations (Fraker et al. 2006).

Photo courtesy of Jeff Doyle

In New York, black bear hunting has traditionally been tied to whitetail deer hunting because resident hunters receive both a deer and bear tag with their purchase of a Big Game Hunting License, and because bear seasons typically coincide with deer seasons. As a result, the majority of bear harvest occurs incidentally as deer hunters happen to encounter a bear. Also because of this, DEC cannot now efficiently identify the population of avid bear hunters. Those hunters that do actively pursue bears either capitalize on the portion of the early bear season in northern New York that occurs before deer season opens or they specifically target bears in preferred habitats in the Catskill and Adirondack mountains. Others may focus on bear trails leading into agricultural fields, particularly in years of poor natural food production. Overall, though, less than 25% of New York's roughly 550,000 big game hunters consider themselves to be bear hunters, and less than 10% report having actively hunted for bear in New York (Enck and Brown 2008). Thus, despite a long history of regulated bear hunting, DEC does not have a strong contingent of avid bear hunters to engage when seeking specific input for modifying bear hunting opportunities or when enhanced management actions are needed.

Given the opportunistic and incidental manner in which most bears are harvested in New York, DEC uses a fairly long bear hunting season with opportunities for bear harvest with bowhunting equipment, modern firearms and muzzleloading firearms. As bear populations increased in number and distribution, DEC expanded the areas open for bear hunting to include large portions of eastern, central and western New York (Figure 5) and modified the start date of the regular firearms hunting seasons. In the past, when bear population growth was desired, DEC used a lag between the opening day of the regular firearms deer and bear seasons. The lag reduced overall harvest pressure on bears as hunting activity typically is strongest during the first few days of the firearms deer season. Also, because female bears tend to den earlier than males (O'Pezio et al. 1983), the lag likely protected some female bears from harvest.

Now, as additional bear harvest is necessary to achieve the modest population reduction desired in the central and southern Catskills and to prevent population growth throughout currently unhunted portions of upstate New York, DEC must incorporate new mechanisms to increase participation in bear hunting and increase bear harvest rates. Accordingly, this plan calls for expansion of bear hunting into all areas of upstate New York, a supplemental hunting season in the Catskill region, and assessment of existing regulations and statutes that limit bear management capacity. For example, regulations that prohibit the taking of a bear from a group of bears and statutory prohibitions on taking bears less than one year old in the Southern Zone afford protection to female and young bears. These prohibitions were effective strategies when population growth was desired, though they are no longer necessary and may be impeding management in some areas. Additionally, alternative harvest techniques, such as use of bait, pursuit with hounds, trapping with cable restraints, or spring hunts, could provide additional management tools and would likely generate substantial interest in New York bear hunting among resident and non-resident hunters. Though not currently lawful in New York, as per ECL §§ 11-0505(3) and 11-0901(4), these techniques are used successfully in many areas throughout North America (Hristienko and McDonald 2007) and should be assessed for management value in New York. Opposition to such techniques among some of the public has been based in part on uniformed beliefs or misconceptions of how those techniques might actually affect bear hunting and harvests.

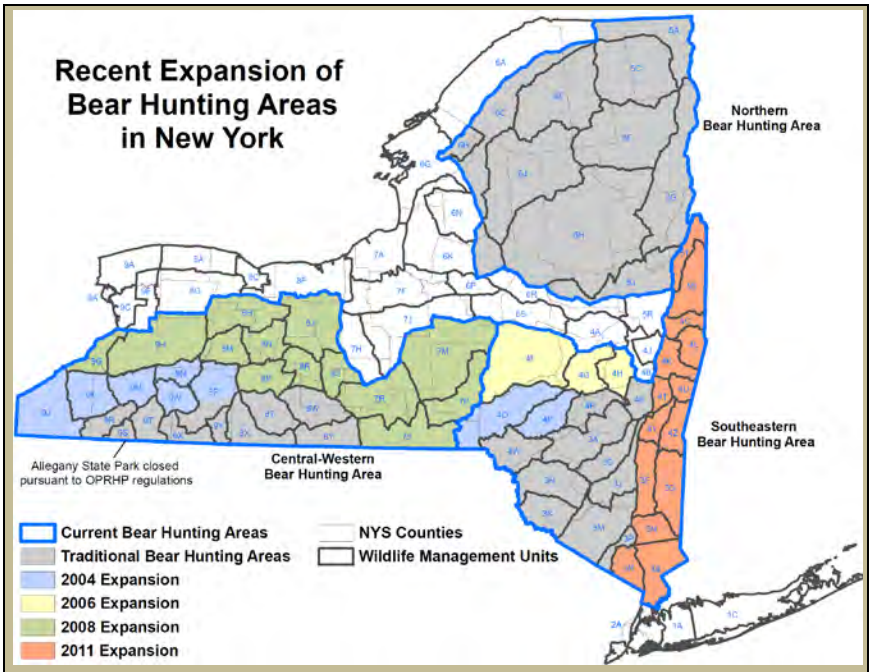


Figure 5. Expansion of black bear hunting areas in New York, 2004-2011.

Objective 2.1: Establish bear hunting seasons, regulations, and programs that encourage hunter participation and satisfaction, are effective for managing bear populations, and provide the public with opportunity to harvest black bears for food and other utilitarian purposes.

Strategy 2.1.1: Establish bear hunting seasons for all of upstate New York (see Appendix 2).

Strategy 2.1.2: Establish a supplemental September firearms season for bears in the Catskills and lower Hudson Valley to increase harvest rates and reduce the bear population in that region (see Appendix 2).

Strategy 2.1.3: Provide a uniform start date for bowhunting and early bear season in the Northern Zone (see Appendix 2).

Strategy 2.1.4: Evaluate the above hunting seasons and regulations changes after five years and propose changes as needed to achieve the population management objectives.

Strategy 2.1.5: Review statutes that prohibit or restrict bear hunting in specific areas (see Appendix 3) and work with the NYS Office of Parks, Recreation and Historical Preservation to expand bear hunting opportunities and access in parks where bear hunting is currently not allowed, especially where human-bear conflicts are occurring. Assist with the implementation of bear management strategies in these areas.

Strategy 2.1.6: Assess the potential benefits and concerns associated with bear hunting practices currently prohibited by the Environmental Conservation Law (e.g., hunting with the aid of bait or dogs, trapping with cable restraints, taking bears <1 year of age), and consider other options (e.g., spring season) that may increase bear management capacity at some future date.

Objective 2.2: Promote a bear hunting culture among NY hunters.

Strategy 2.2.1: Promote public understanding of bear hunting as a safe, enjoyable and ethical activity, a good source of quality meat, and as the first and most cost-effective option for managing bear populations.

Strategy 2.2.2: Conduct a survey of New York big game hunters to determine current levels of participation, satisfaction, attitudes, and desires with respect to bear hunting opportunities, and assess the potential to substantially increase participation.

Strategy 2.2.3: Provide material about hunting black bear in New York to new hunters in hunter safety education courses.

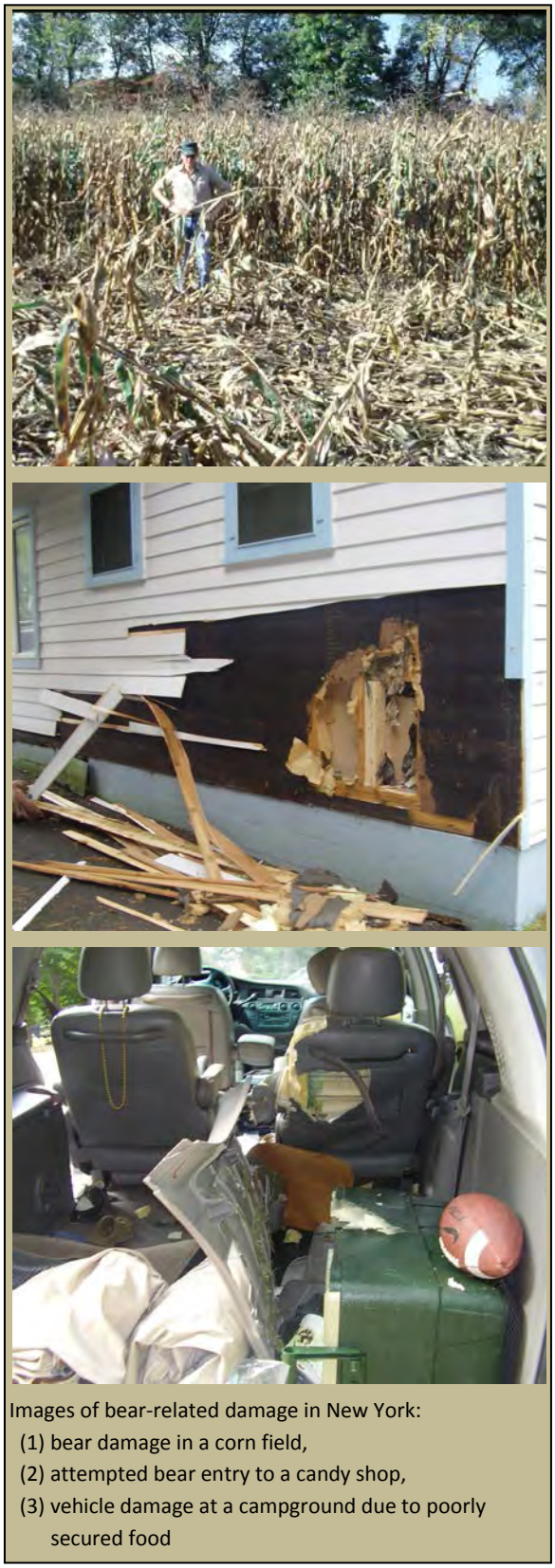
Goal 3: Conflict and Damage Management

Minimize the frequency and severity of human-bear conflicts.

Human-black bear conflicts tend to vary seasonally and annually, with increased frequency when natural foods are scarce (Garshelis 1989, Howe et al. 2010). Blackberry (*Rubus allegheniensis*), raspberry (*Rubus ideaus*) and pin cherry (*Prunus pennsylvanicus*) are important summer foods for black bears, and American beech (*Fagus grandifolia*) nuts, black cherry (*Prunus serotina*), and acorns (*Quercus spp.*) are a primary food source for black bears during abundant mast years (Bennett et al. 1943, Costello 1992, Costello and Sage 1994). In the Adirondack Region of New York, human-bear conflicts tend to increase in summers preceding a fall of poor beech nut production, though the relationship is not fully clear (LaMere 2012). DEC staff also note increased frequency of human-bear conflicts throughout New York during drought summers when berry crops are less productive.

Frequently, humans unknowingly create potential food sources for bears that may attract them into close proximity to residential areas and subsequently result in human-bear conflicts. These conflicts are often associated with activities not intended to attract bears, such as feeding birds, cooking food outdoors, and improperly storing garbage. Accordingly, most conflict scenarios in New York can be

resolved or minimized by removing or adequately securing whatever served to attract the bear. However, intentional feeding of bears or repeated access to human foods without negative consequence can lead bears to become habituated to human environments (i.e., lose their fear of humans) and/or to become food conditioned (i.e., aggressively seek out human foods). Habituated and food-conditioned bears are often responsible for human-bear conflicts in New York, and these bears may become bolder in their efforts the longer they are successfully able to access human foods without negative consequences. In response to these problems, DEC adopted regulations (6 NYCRR Part 187.1) in 2010 that prohibit all deliberate feeding of wild bears and, after notification by DEC, any incidental or indirect feeding of bears in New York State.



Images of bear-related damage in New York:
(1) bear damage in a corn field,
(2) attempted bear entry to a candy shop,
(3) vehicle damage at a campground due to poorly secured food

Beginning in 2005, DEC standardized reports of public complaints and observations of black bears, establishing a classification system to rank the severity of bear behaviors reported. Class 4 represents normal bear behaviors (e.g., bear observed foraging on natural foods or using a travel corridor). Class 3 behaviors involve isolated incidents of bears seeking human foods (e.g., bear feeding at a bird feeder, raiding a dumpster or garbage can). Reports of Class 3 bears comprise the majority of public bear complaints each year. Class 2 refers to bears that demonstrate clear habituation or food conditioning. Class 2 bears show minimal fear in the presence of humans, are unresponsive to aversive conditioning, or demonstrate increasing boldness to access human foods. Class 1 behaviors are the most serious and involve behaviors that are clearly dangerous to humans, pets, or livestock (e.g., enter occupied or unoccupied homes, attack pets or livestock, display aggressive behavior toward humans). In recent years, DEC has fielded over 1,000 complaints annually, including 50-120 complaints involving Class 1 bears each year (Figure 6). Tracking complaint records allows managers to monitor the distribution and severity of human-bear conflicts and to identify hot spots for focusing management action and public education.

DEC's handling of individual human-bear conflicts is outlined in the *Black Bear Response Manual* (NYSDEC

2011, 3rd edition) which describes appropriate agency and public response to a wide variety of scenarios in which people might become involved with bears or their impacts. The majority of scenarios involve actions to remove or exclude bear access to human food attractants. In some instances, bear problems are addressed by aversively conditioning the offending bear(s), in conjunction with removal of the attractants. Aversive conditioning involves various negative reinforcements (e.g., rubber projectiles, pyrotechnics, and pursuit with dogs) that give the bear an unpleasant association with the presence of people or the attraction. Aversive conditioning rarely results in long-term behavioral modification of the offending bear, though aversive conditioning may yield temporary relief from bear related damage until natural food sources are available or attractants can be effectively secured or removed (Belant et al. 2011, Northeast Black Bear Technical Committee 2012). Occasionally a bear becomes so habituated to human environments and conditioned to human foods that its behavior creates a substantial threat to public safety and property. In these cases, DEC generally seeks to identify and kill the offending bear(s). Additionally, ECL Sections 11-0521 and 11-0523 allow the taking of bears by landowners experiencing specific types of damage in certain situations, though clearer interpretation of the requirements of these laws would allow for consistent use and avoid potential misuse by landowners.

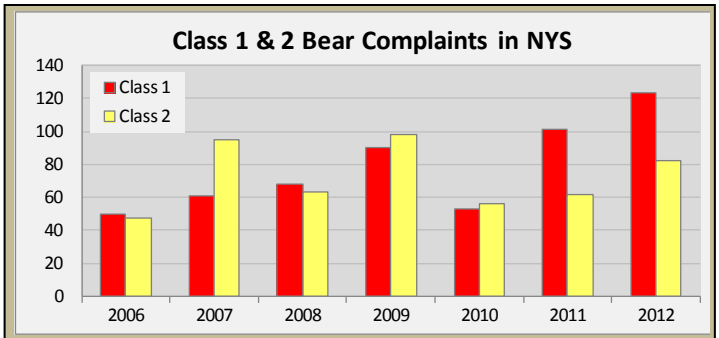


Figure 6. Number of complaints to the New York State Department of Environmental Conservation regarding severe black bear behavior in New York, 2006-2012.

ECL Section 11-0521 also authorizes the use of trained tracking dogs to respond to bears that are causing damage or threatening public safety, and DEC issues a Black Bear Tracking Dog License (www.dec.ny.gov/permits/25006.html) to individuals seeking to use black bear tracking dogs to track, trail, pursue and tree black bear for dog training purposes. Through this activity, DEC maintains a group of dedicated houndsmen with trained dogs who can then provide a useful, nonlethal alternative for chasing bears from agricultural areas or who can assist with locating and treeing specific bears for research or damage mitigation.

Reducing human-bear conflicts is rightly of great concern to the public and managers, and this plan iterates DEC's 3-pronged approach. DEC uses an integrated approach that seeks to modify human behavior (i.e., through education and outreach and regulation; see also Goal 4), to treat individual black bears responsible for repeated or severe conflicts (e.g., through aversive conditioning or trap and kill), and to manage bear populations (i.e., by hunting; Goals 1 and 2). Successful management of human-bear conflicts, particularly educating the public about their role in preventing human-bear conflicts, typically involves collaboration with other agencies, organizations and communities. For example, DEC has worked with the Wildlife Conservation Society in the Adirondacks since 2001 to educate backcountry users on safe food storage to avoid negative black bear encounters. This partnership yielded better messaging to backcountry users and successful implementation of a regulation (6 NYCRR Part 190.13) requiring use of bear resistant food canisters by backcountry campers in the Eastern High Peaks Wilderness. The end result was fewer human-bear conflicts in the backcountry (Beckmann et al. 2008). Similarly, DEC frequently works with community leaders, local law enforcement officers, and garbage companies in mountain towns of the Catskills to address the root causes of human food

attractants. Several communities are transitioning toward greater use of bear resistant dumpsters and garbage cans for commercial and residential trash management. As this transition becomes more widespread, many human-bear conflict scenarios will be avoided. DEC will continue to foster partnerships such as these and, through regulatory enforcement and possibly incentive programs, DEC will continue to cultivate community level action that reduces human-food attractants for bears and thereby creates a safer environment for bears and New Yorkers.

Common Residential Food Attractants for Black Bears

- Bird feeders
- Trash and trash containers
- Illegal intentional feeding
- Pet and livestock feed
- Food and food containers
- Compost piles
- Barbeque grills, meat smokers or fryers
- Beehives, poultry or livestock
- Berry patches, orchards and gardens

Finally, DEC recognizes that if climate changes progress as predicted over the coming century (Rosenzweig et al. 2011), the combination of increasing summer temperatures and increased frequency of short term droughts may create greater variability in mast abundance and quality of summer and fall food resources for bears in New York. Under these conditions human-bear conflicts are likely to increase. Establishing a strong and lasting program that increases public awareness about reducing bear attractants and that provides effective response when human-bear conflicts do occur, will be important to minimize potential human-bear conflicts.

Objective 3.1: Reduce negative black bear impacts by increasing public awareness of their role in preventing human-bear conflicts (see also Goal 4), addressing individual incidents of bear damage, and reducing bear populations where necessary (see also Goals 1 and 2).

Strategy 3.1.1: Respond to all bear incidents in accordance with the *Black Bear Response Manual*, and update the manual as needed, to provide lasting resolution of the problems.

Strategy 3.1.2: Adopt and enforce regulations to discourage human activities that contribute to human-bear conflicts (i.e., existing prohibition on feeding bears statewide and bear-resistant food canister requirements in backcountry areas) and consider new regulations as needed.

Strategy 3.1.3: Maintain a standardized database to monitor and analyze trends in bear-related complaints reported by the public, especially Class 1 and Class 2 incidents.

Strategy 3.1.4: Work with communities and community leaders, especially those experiencing high levels of human-bear conflicts, to develop community wide programs to help prevent and alleviate human-bear conflicts.

Strategy 3.1.5: Train appropriate DEC staff with the expertise needed to assist property owners and communities with frequent human-bear conflicts and establish objectives to expand response capacity through potential training of other wildlife or law enforcement professionals (e.g., USDA, Nuisance Wildlife Control Operators, and/or municipal police).

Strategy 3.1.6: Assess the feasibility of establishing a bear dog program for routine use of bear tracking dogs by DEC staff and/or other licensed individuals to enhance aversive conditioning or locate and destroy offending bears (e.g., Class 1 bears) according to the Black Bear Response Manual.

Strategy 3.1.7: Work with houndsmen to identify potential changes to training seasons (e.g., start training season in June) or regulations to maintain effective opportunities for training black bear tracking dogs, and use tracking dogs to mitigate black bear damage as described in the black bear response manual.

Strategy 3.1.8: Conduct or support scientific research to evaluate effectiveness of bear damage management techniques, including hunter harvest, lethal removal or relocation of individual bears and aversive conditioning.

Goal 4: Technical Guidance and Outreach

Foster understanding and appreciation of black bears through communication about bear ecology, management, and conflict avoidance.

Though seldom seen, black bears are a very popular wildlife species of great interest to New Yorkers. People tend to view bears as intelligent, culturally significant, highly appealing and similar to humans (Kellert 1994). This attitude likely drives public curiosity about bears and may also contribute to human-bear conflicts if people intentionally encourage bear viewing opportunities around their homes. Further, as both the distribution of bears and rural development has increased in New York, many people with relatively little previous experience or knowledge about bears and methods to prevent human-bear conflicts are now living in bear country.

Accordingly, public education about black bears is an essential component of New York's bear management program and is focused on providing an understanding of bear natural history, population management, and techniques for reducing human-bear conflicts. Over the past decade, DEC has specifically increased educational outreach as a proactive measure to prevent human-bear conflicts from developing or progressing. Many educational outreach materials (e.g., brochures, magnets, lawn signs, fact sheets and posters) were produced in conjunction with research evaluating public attitude and behavior change associated with educational outreach (Gore and Knuth 2006). DEC created a *Living with Bears* brochure and updated website material about black bear management and bear conflict avoidance. DEC also developed the DVD, "*Living with New York Black Bears*" (Bertalan 2007), and distributed nearly 3,500 copes to public libraries, secondary schools, colleges and universities throughout New York in 2008.

Living with New York Black Bears, available at school and public libraries throughout New York.

More recently, DEC partnered with Untamed Science and state fish and wildlife agencies in New Jersey, Florida and Arkansas to produce the *Understanding Black Bears* curriculum and the black bear education website: http://blackbearinfo.com. The website provides a vibrant assortment of free multimedia bear education resources

for students and educators that provide inquiry-based learning about black bear biology and natural history, bear behavior, population management, and living in bear country. New York educators can freely download the *Understanding Black Bears* curriculum which includes 29 lesson activities packed with quizzes, puzzles, computer games, special bear movies and loads of interactive learning appropriate for students in kindergarten to 8th grade.

Refrigerator magnet with a simple message to remove bear attractants and reduce human-bear conflicts.

Additionally, DEC staff routinely meet with school and university students, hunting and other outdoor groups, civic organizations, business owners, law enforcement and community leaders to discuss matters related to black bears. Such interactions provide opportunity for DEC staff to share experiences related to bear management and provide a platform for the public to share their questions and concerns. DEC's commitment to educate the public about wildlife interactions is also reflected in the *Conservationist for Kids* magazines distributed free to all public school 4th grade classes in New York State. The 2014 Winter issue (www.dec.ny.gov/education/95994.html) focuses on understanding wildlife, including bears, that live near people and how to avoid conflicts.

Educational efforts such as these are intended to not only increase public awareness of bears but also to stimulate behavioral and attitude changes in people that can reduce the potential for human-bear conflicts. Researchers caution, though, that for programs to be successful, educational efforts must be persistent, multi-faceted and address individuals, communities, institutions and organizations (Gore and Knuth 2006, Beckmann et al. 2008). Thus, DEC intends to continue ongoing educational efforts and seek new opportunities to provide New Yorkers with the necessary information and tools to successfully coexist with bears.

Objective 4.1: Promote public understanding of black bear conservation and management in New York.

Strategy 4.1.1: Provide educational materials suitable for conservation organizations, schools and community groups about bear conservation and management in New York.

Strategy 4.1.2: Provide current and useful information to the general public via the DEC website, seasonal press releases, submissions to e-mail list notifications covering subjects related to all aspects of bear conservation and management, including population status, hunting regulations, and prevention of human-bear conflicts.

Objective 4.2: Promote public tolerance of black bears in New York and provide technical guidance about techniques to prevent or alleviate human-bear conflicts.

Strategy 4.2.1: Provide technical guidance to communities and property owners experiencing or concerned about human-bear conflicts to promote coexistence.

Strategy 4.2.2: Explore use of billboards, public service announcements, and other media in chronic human-bear conflict areas to inform the public about effective techniques to prevent human-bear conflicts.

Strategy 4.2.3: Develop a training program, possibly internet-based, to inform local police, park police, and other first responders about techniques to reduce human-bear conflict and the appropriate and preferred responses for various types of human-bear conflict.

Goal 5: Management Capacity and Resources

Ensure that the necessary resources are available to support effective management of black bears in New York State.

Achieving the desired goals associated with this plan will require a sustained commitment of a variety of resources. Particularly in times of fiscal shortage and reduced staff levels, maintaining a group of trained staff able to dedicate time to bear management is critical. Routine interaction and cooperation with bear managers and researchers in other jurisdictions is also critically important. DEC staff should continue to participate in annual meetings of the Northeast Black Bear Technical Committee (NEBBTC) and biennial Eastern Black Bear Workshops (EBBWs), as well as increase involvement with the International Association for Bear Research and Management. Through the NEBBTC and EBBW, DEC has contributed to: regional data sharing; development of recommendations for aversive conditioning of black bears; publication of *An Evaluation of Black Bear Management Options* (NEBBTC 2012); and participated in collaborative discussions on population monitoring, harvest management, human-bear conflict mitigation, and stakeholder engagement. Maintaining strong connections to other management agencies and fluency with the current black bear research and management programs implemented throughout the Northeast and North America promotes application of best scientific practices for bear management in New York, preserves agency credibility and fosters public support for bear management activities.

Finally, bear management in New York is funded principally by sportspersons through the New York State Conservation Fund and the U.S Fish & Wildlife Service (USFWS) Federal Aid in Wildlife Restoration Act (also known as the Pittman-Robertson Act). The Conservation Fund consists of hunting, fishing and trapping license fees and miscellaneous other fees and fines collected by DEC. The Federal Aid in Wildlife Restoration Act derives funds through a federal excise tax on firearms, ammunition, and bowhunting equipment. Though sportspersons provide most of the funding for bear management in New York, they represent only a small fraction (<4%) of New York State residents and are just one of the many stakeholder groups that appreciate and are impacted by black bears. DEC welcomes other organizations and interested persons to also support DEC's bear management activities by contributing

financially to the New York State Conservation Fund (see www.dec.ny.gov/permits/329.html for ways to donate) or by partnering with DEC to increase public awareness of effective techniques to prevent human-bear conflicts through dedicated and sustained education programs as described in Goal 4.

Objective 5.1: Maintain a staff of well trained, properly equipped and adequately protected employees and cooperators to conduct bear-related work in New York.

Strategy 5.1.1: Conduct periodic training for staff and cooperators in the techniques used to collect biological data from harvested bear (e.g., tooth removal, standardized measurements) to ensure reliable data.

Strategy 5.1.2: Maintain clear policy and protocols to direct staff in the conduct of duties, particularly in regard to human health and safety and any actions that may generate high public interest or controversy (e.g., lethal removal of Class 1 bears, trap and relocation of nuisance bears, and cub rehabilitation standards).

Strategy 5.1.3: Maintain expertise in aversive conditioning and other techniques to prevent and mitigate human-bear conflicts.

Strategy 5.1.4: Maintain expertise, resources, and authorizations needed for bear capture and chemical immobilization activities.

Strategy 5.1.5: Establish plans for emergency after-hour bear response by DEC Bureau of Wildlife staff, DEC Division of Law Enforcement staff, or other designated authority.

Strategy 5.1.6: Participate in regional and national meetings of professional bear managers (e.g., Northeast Black Bear Technical Committee, Eastern Black Bear Workshop, IBA) to maintain expertise in current research, issues and bear management practices of other states and provinces and identify cross-border management concerns and opportunities for collaboration.

Objective 5.2: Identify alternative sources of technical assistance and public outreach for bear management activities in New York.

Strategy 5.2.1: Identify opportunities to cooperate with other agencies, organizations, and individuals (e.g., USDA Wildlife Services, Wildlife Conservation Society, bear tracking dog licensees, wildlife rehabilitators and nuisance wildlife control operators) to gain their support for and assistance with bear management and public education activities.

Literature Cited

Beckmann, J. P., L. Karasin, C. Costello, S. Matthews, and Z. Smith. 2008. Coexisting with Black Bears: Perspectives from Four Case Studies Across North America. WCS Working Paper No. 33. New York: Wildlife Conservation Society.

Belant, J. L., S. L. Simek, and B. C. West. 2011. Managing human-black bear conflicts. Human-wildlife Conflicts Monograph 1:1-77.

Bennett, L. J., P. F. English, and R. L. Watts. 1943. The food habits of the black bear in Pennsylvania. Journal of Mammalogy 24:25–31.

Bertalan, D. 2007. Living with New York black bears -DVD. Great Outdoors Mulitmedia. Oregon, WI.

Costello, C. M. 1992. Black bear habitat ecology in the central Adirondacks as related to food abundance and forest management. Thesis, State University of New York College of Environmental Science and Forestry, Syracuse, New York, USA.

Costello, C. M., and R. W. Sage, Jr. 1994. Predicting black bear habitat selection from food abundance under 3 forest management systems. International Conference on Bear Research and Management 9:375-387.

Davis, M. L., J. Berkson, D. Steffen, M. K. Tilton. 2007. Evaluation of accuracy and precision of downing population reconstruction. Journal of Wildlife Management 71:2297-2303.

Downing, R. L. 1980. Vital statistics of animal populations. Pages 247–267 in S. D. Schemnitz, editor. Wildlife techniques manual. The Wildlife Society, Washington, D.C., USA.

Drahos, N. 1952. Notes on bears. New York State Conservationist. October-November: 14-18.

Enck, J. W. and T. L. Brown. 2008. 2007 Statewide deer hunter survey: participation during the ’06 seasons, opinions about hot-button issues, and trends in characteristics of hunters. HDRU Publ. 08-5. Dept. of Nat. Resources, N.Y.S. Coll. of Ag. and Life Sci., Cornell Univ., Ithaca, NY.

Fieberg, J. R., K. W. Shertzer, P. B. Conn, K. V. Noyce, and D. L. Garshelis. 2010. Integrated population modeling of black bears in Minnesota: implications for monitoring and management. PLoS ONE 5(8):e12114. doi:10.1371/journal.pone.0012114

Fraker, M. A., P. D. Curtis, M. Mansour. 2006. An analysis of the feasibility of using fertility control to manage New Jersey black bear populations. New Jersey Department of Environmental Protection, Division of Science, Research and Technology. Trenton, New Jersey, USA.

Garshelis, D. L. 1989. Nuisance bear activity and management in Minnesota. Pages 169-180 in M. Bromley, editor. Bear-people conflicts: Proceedings of a symposium on management strategies. Northwest Territories Department of Renewable Resources, Yellowknife, Northwest Territories, Canada.

Geist, V., S.P. Mahoney, and J.F. Organ. 2001. Why hunting has defined the North American model of wildlife conservation. Transactions of the North American Wildlife and Natural Resources Conference 66: 175-185.

Gore, M. L. and B. A. Knuth. 2006. Attitude and behavior change associated with the New York NeighBEARhood Watch Program. HDRU Publ. 06-14. Dept. of Nat. Resources, N.Y.S. Coll. of Ag. and Life Sci., Cornell Univ., Ithaca, NY.

Gove, N. E., J. R. Skalski, P. Zager, R. L. Townsend. 2002. Statistical models for population reconstruction using age-at-harvest data. Journal of Wildlife Management 66:310-320.

Hayhoe, K., C.P. Wake, T.G. Huntington, L. Luo, M.D. Schwartz, J. Sheffield, E. Wood, B. Anderson, J. Bradbury, A. DeGaetano, T.J. Troy, and D. Wolfe. 2006. Past and future changes in climate and hydrological indicators in the U.S. Northeast. Climate Dynamics. DOI 10.1007/s00382-006-0187-8

Howe, E. J., M. E. Obbard, R. Black, and L. L. Wall. 2010. Do public complaints reflect trends in human-bear conflict? Ursus 21:131-142.

Hristienko, H. and J. E. McDonald, Jr. 2007. Going into the 21st century: a perspective on trends and controversies in the management of the American black bear. Ursus 18:72–88.

Hurst, J. E. 2012. Estimating the black bear population of the Catskill Region of New York State using tetracycline as a biomarker. New York State Department of Environmental Conservation. Albany, New York.

Kellert, S. R. 1994. Public attitudes toward bears and their conservation. International Conference on Bear Research and Management. 9:43–50.

LaMere, C. R. 2012. Influence of variable mast production on American black bear reproduction and human-black bear conflicts in the Adirondack Mountains of New York State. Thesis, State University of New York College of Environmental Science and Forestry, Syracuse, New York, USA.

Northeast Black Bear Technical Committee. 2012. An Evaluation of Black Bear Management Options. www.dec.ny.gov/docs/wildlife_pdf/bearmgmtopt.pdf

NYSDEC. 1980. Final Programmatic Impact Statement on Wildlife Game Species Management Program of the Department of Environmental Conservation Division of Fish and Wildlife. New York State Department of Environmental Conservation. Albany, New York.

NYSDEC. 1994. Supplemental SEQR Findings and Decisions on the Wildlife Game Species Management Program of the Department of Environmental Conservation, Division of Fish and Wildlife. New York State Department of Environmental Conservation. Albany, New York.

NYSDEC. 2007a. A framework for black bear management in New York. 2nd edition. New York State Department of Environmental Conservation. Albany, New York.

NYSDEC. 2007b. Black bears in New York: natural history, range, and interactions with people. 2nd edition. New York State Department of Environmental Conservation. Albany, New York.

NYSDEC. 2011. New York State black bear response manual. 3rd edition. New York State Department of Environmental Conservation. Albany, New York.

O'Pezio, J., S. H. Clarke, C. Hackford. 1983. Chronology of black bear denning in the Catskill Region of New York. International Conference on Bear Research and Management. 5:87-94.

Rosenzweig, C., W. Solecki, A. DeGaetano, M. O'Grady, S. Hassol, P. Grabhorn (Eds.). 2011. Responding to Climate Change in New York State: The ClimAID Integrated Assessment for Effective Climate Change Adaptation. Technical Report. New York State Energy Research and Development Authority (NYSERDA), Albany, New York.

Sawaya, M. A., J. B. Stetz, F. T. van Manen, J. D. Clark. 2013. Population monitoring options for American Black Bears in the Northeastern United States and Eastern Canada – a technical publication for the Northeastern Black Bear Technical Committee.

Scheick, B., W. McCown, and M. Orlando. 2012. North America Bear Range Mapping Project. Proceedings of the 20th Eastern Black Bear Workshop, edited by C. Ollfenbuttel and G. Warburton. Hendersonville, North Carolina.

Schusler, T. M. and Siemer,W. F. 2004. Report on Stakeholder Input Groups for black bear management in the Lower Catskills, Upper Catskills and Western New York, October 2003-January 2004. Cornell Cooperative Extension and Human Dimensions Research Unit, Department of Natural Resources, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, NY.

Siemer, W. F. and D. J. Decker. 2003. 2002 New York State black bear management survey: study overview and findings highlights. HDRU Publ. 03-6. Dept. of Nat. Resources, N.Y.S. Coll. of Ag. and Life Sci., Cornell Univ., Ithaca, NY.

Skalski, J. R., R. L. Townsend, and B. A. Gilbert. 2007. Calibrating population reconstruction models using catch-effort and index data. Journal of Wildlife Management 71:1309-1316.

Sun, C., A. K. Fuller, M. Hare, and J. A. Royle. 2013. Estimating the Population Size of Black Bears in Southwestern New York Using a Spatially-explicit Capture-recapture Model. 69th Annual Northeast Fish & Wildlife Conference, 7-9 April 2013, Saratoga Springs, New York, USA.

Informational Resources

New York Specific Resources

NYSDEC Black Bear Management Program
www.dec.ny.gov/animals/7215.html

Reducing Human-Black Bear Conflicts
www.dec.ny.gov/animals/6995.html

Black Bear Educational Resources
www.dec.ny.gov/animals/94707.html

Living with Black Bears
www.dec.ny.gov/docs/wildlife_pdf/livingwithbears.pdf

NYSDEC Black Bear Hunting Seasons and Rules
www.dec.ny.gov/outdoor/7857.html

Hunting the Black Bear in New York
www.dec.ny.gov/docs/wildlife_pdf/bbhunting10.PDF

Annual and Historic Black Bear Harvests
www.dec.ny.gov/outdoor/42232.html

Black Bears in New York: Natural History, Range, and Interactions with People (2007)
www.dec.ny.gov/docs/wildlife_pdf/bbnathis.pdf

A Framework for Black Bear Management in New York (2007)
www.dec.ny.gov/docs/wildlife_pdf/bbplanframe.pdf

2002 NYS Black Bear Management Survey
www.dec.ny.gov/docs/wildlife_pdf/bearsurvey02.pdf

Stakeholder Input Groups
www.dec.ny.gov/animals/7213.html

NYSDEC Black Bear Response Manual
www.dec.ny.gov/docs/wildlife_pdf/bearsopm.pdf

General Resources for Black Bear Management and Human-Bear Conflict Management

An Evaluation of Black Bear Management Options
www.dec.ny.gov/docs/wildlife_pdf/bearmgmtopt.pdf

Managing Human-Black Bear Conflicts
www.humanwildlifeconflicts.msstate.edu/files/Black%20bear%20Final%2012-7-11.pdf

A Practitioners' Guide - Working Through Black Bear Management Issues
http://wildlifecontrol.info/pubs/Documents/Bears/blbearmanagementissues.pdf

Black Bear: Wildlife Damage Management Fact Sheet
http://wildlifecontrol.info/pubs/Documents/Bears/BlackBear.pdf

Black Bear Educational Portal and *Understanding Black Bears* Curriculum
http://blackbearinfo.com

Coexisting with Black Bears – Perspectives from Four Case Studies Across North America
www.wcsnorthamerica.org/AdminPlus/Docustore.aspx?Command=Core_Download&EntryId=5485

Baiting and Supplemental Feeding of Game Wildlife Species. Wildlife Society Technical Review 06-1.
http://wildlife.org/documents/technical-reviews/docs/Baiting06-1.pdf

International Association for Bear Research & Management
www.bearbiology.com

Black Bear Damage Management and Control
http://icwdm.org/handbook/carnivor/black_bears.asp

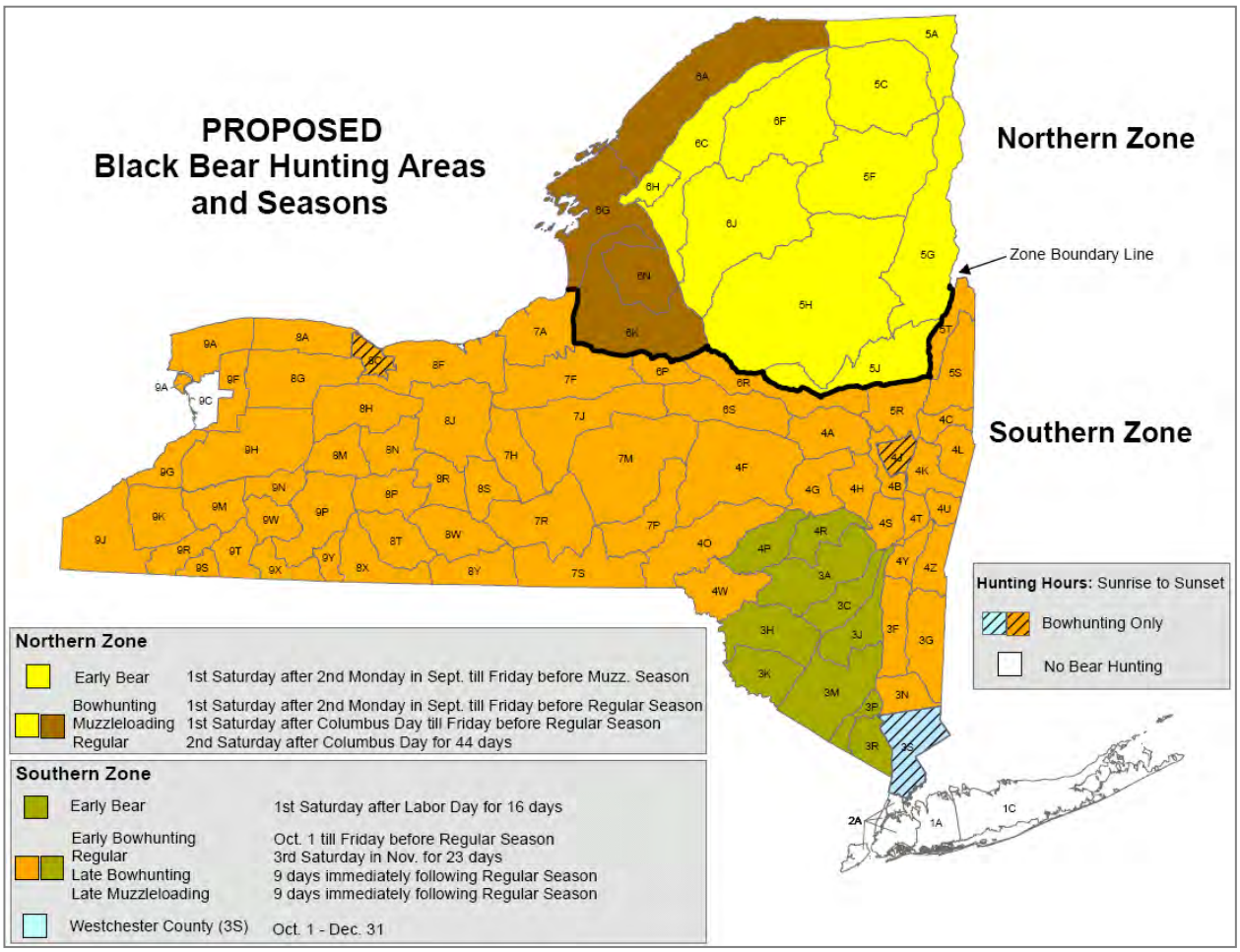
Appendix 1. Timeline of Major Events in NYS Black Bear Management

Year	Noteworthy events
1892	New York established a $10 bounty on black bears.
1894	New York State paid a bounty on 359 bears, all from the Adirondacks.
1895	The bounty on black bears was repealed.
1903	A new section of the Forest, Fish and Game Law gave bears limited protection as a game mammal; 100 bears were reported taken.
1923	The Conservation Law set bear hunting season dates and other restrictions such as bag limit and prohibition on the use of dogs to hunt bears.
1947	The Conservation Law in relation to Fish and Game changed to allow landowners to kill at any time, any bear worrying or menacing livestock or destroying an apiary.
1959	The Fish and Game Law continued to set bear hunting season dates and other restrictions, but a new section allowed the Department of Conservation to terminate the open season or declare a closed season in any county, by order, whenever the Department believed the resident bear population was not adequate. The Department used this authority to close much of the Southern Zone to bear hunting starting in 1959.
1972	A new subdivision to the Fish and Wildlife Law allowed the Department of Environmental Conservation (DEC), by order, to establish a special, additional bear hunting season if bears were too numerous and could cause substantial damage to property.
1973	A new subdivision of the Fish and Wildlife Law allowed DEC, by order, to set bear hunting open seasons, season dates, bag limits, manner of taking and disposition (except for any closed areas established by 11-0907 subdivision 5).
1975	DEC expanded the Catskill area open to bear hunting, shortened the Catskill archery bear hunting season, greatly shortened the regular bear hunting season, and mandated that all bears shot in the Southern Zone be checked by the Department.
1976-77	DEC closed all bear hunting seasons in the Catskills.
1978	DEC reopened the Catskill regular bear hunting season concurrent with the first 7 days of the regular deer hunting season.
1979	(1) DEC changed the Catskill regular bear hunting season to eleven days in December. (2) DEC started an experimental bear hunting season with dogs in a small portion of the Adirondacks.
1980	DEC changed the Catskill regular bear hunting season to begin five days after the opening day of the regular deer season and reduced the size of the Allegany bear hunting area.
1990	(1) The ASPCA took DEC to court over the use of dogs and the court enjoined any bear hunting with dogs in New York State. (2) Bear hunting in the Allegany region was expanded to include areas corresponding to WMUs 8T, 8W, 8X, and 8Y. (3) DEC delayed and shortened the Allegany regular bear hunting season by five days.

Year	Noteworthy events
1992	The legislature approved a bill (The Comprehensive Bear Management Bill 10231-A) which would have repealed the prohibition on the taking of bears less than one year old in the Southern Zone and the prohibition on the use of dogs for bear hunting. It would also have repealed ECL (section 11-0523 subdivision 2) which allowed the destruction of nuisance bears worrying or menacing livestock or destroying an apiary, thus uniformly requiring everyone to get a permit from DEC before destroying a nuisance bear. The bill would have re-authorized DEC's ability to set seasons and regulate bear hunting and given DEC new authority to regulate bear feeding and the sale of bear parts. Governor Mario Cuomo vetoed the bill.
1993	A new Bear Management bill was signed into law. It did not repeal any of the sections identified in the 1992 legislation but did re-authorize DEC's ability to set seasons and regulate bear hunting. The bill also authorized DEC to regulate bear feeding and the sale of bear parts.
1994	DEC expanded the Catskill bear hunting area, delayed and shortened the Allegany regular bear hunting season by an additional two days and allowed the taking of bears concurrently with the southern zone muzzleloader deer season.
2000	DEC completed a Standard Operating Procedures Manual (SOPM) that provides staff in all regions with uniform guidelines on agency response to over 50 situations involving bears or impacts created by bears.
2003	DEC presented a draft Adaptive Impact Management Plan for Black Bears in New York State for public review and input. Stakeholder Input Group (SIG) meetings were held in Upper and Lower Catskills, and Allegany Regions to obtain public input on local black bear impacts.
2004	WMUs 4O and 4P in the Catskills and WMUs 9J, 9K, 9M, 9N, 9W and the northern portion of 9P in the Allegany region were opened to black bear hunting.
2005	(1) SIG meetings were held in the Binghamton area. (2) DEC reduced the lag between the opening day of the regular firearms season for bear and deer from 5 days to 2 days in the Catskill range and from 9 days to 7 days in the Allegany bear range. (3) DEC began requiring overnight campers of the Eastern High Peaks Wilderness in the Adirondack Mountains to carry and use bear resistant food containers.
2006	(1) SIG meetings held in the East of the Hudson River area. (2) The first revision of the Black Bear SOPM, now referred to as the Black Bear Response Manual, was completed. (3) WMUs 4F, 4G, and 4H in the northern Catskill region were opened to bear hunting.
2007	(1) *Living With New York Black Bears* DVD produced. (2) DEC held a series of 21 public meetings across the state to discuss the status of bear populations and get public input about bear management.
2008	(1) WMUs 7M, 7R, 7S, 8H, 8J, 8M, 8N, 8P, 8R, 8S, 9G, and 9H in central and western NY were opened to bear hunting. (2) Opened regular firearms season for bear and deer in the Catskill range concurrently, removing the 2-day lag for the start of bear season.
2009	(1) NYSCCR Title 6 Part 187 was amended to prohibit the intentional feeding of black bears. (2) SIG was held in the lower Hudson Valley.

Year	Noteworthy events
2011	(1) Opened WMU 3R and 13 WMUs east of the Hudson River to bear hunting. (2) Set a single opening season date for the regular firearms season in all bear hunting areas in the Southern Zone, removing the 7-day lag in the Allegany bear range. (3) Second revision of the Black Bear Response Manual.

Appendix 2. Proposed Bear Hunting Open Areas and Seasons



Proposed changes include:

1. Establish bear hunting seasons in all portions of upstate New York.

    a. Portions of the Southern Zone not previously open to bear hunting include parts of the Mohawk Valley, Capital District, northern Finger Lakes region, and Lake Ontario Plains (WMUs 4A, 4B, 4J, 5R, 6P, 6R, 6S, 7A, 7F, 7H, 7J, 8A, 8C, 8F, 8G, 9A, and 9F). These areas are largely incompatible for bears and present great potential for human-bear conflicts because of widespread agriculture and human densities. Bears are relatively infrequent in these areas, and the management objective is to prevent bear populations from becoming established by allowing hunters to opportunistically remove adult bears that disperse into these areas. WMU 9C will remain closed due to a statutory prohibition on big game hunting.

    b. Portions of the Northern Zone not previously open to bear hunting include parts of the St. Lawrence Valley, eastern Lake Ontario Plains, and Tug Hill (WMUs 6A, 6G, 6K and 6N). Bear populations have expanded into these areas (Figure 2). Of these areas, the Tug Hill provides substantial forest cover and low human density capable of supporting bears with minimal human-bear conflicts, though reports of bear damage at camps and second homes do occur.

The remainder of this area includes a greater proportion of agriculture and is less suitable for bears due to the higher likelihood of human-bear conflicts. Management through hunting will prevent further population growth in this region and stabilize the bear population on the Tug Hill, allowing for sustainable use of the bear resource that is already established there.

Current regulations allow bear hunting in the small portion of WMU 6K east of State Route 26. This is an unusual carryover of past regulations, as in all other cases, bear hunting boundaries only encompass full WMUs. As part of the proposed expansion of bear hunting into all of WMU 6K, DEC will realign the season structure to be consistent with appropriate management for the entire unit. This will involve including WMU 6K in the early bowhunting season but excluding it from the early firearms season, both of which begin in mid-September. In past years, bear harvest during the early firearms season in this portion of 6K has been highly variable and generally resulted in fewer than 5 bears taken. While this change will reduce the firearms hunting opportunity slightly in 6K during the early part of the fall, the muzzleloader and regular firearms hunting opportunity will be unchanged.

2. Create a supplemental early firearms season for bears in the Catskill and Western Hudson Valley Region of the Southern Zone. The season will run for 16 days beginning the first Saturday after Labor Day.

   Consistent with public input of former SIGs (Schusler and Siemer 2004), public meetings, and other input in recent years, the management objective for this area is to reduce the bear population from the current level and reduce human-bear conflicts. Recent changes in season structure (i.e., shifting opening day of the regular firearms season earlier to coincide with regular deer season [2005 and 2008], and starting bow season October 1 [2012]) appear to have slowed population growth but not reduced the population. An early firearms season in September will increase bear harvest to achieve the desired population reduction. Additionally, by timing the additional harvest during a period when agricultural damage commonly occurs, the early season may yield increased take of nuisance bears. Once desired population reduction is achieved, the early firearms season may be modified or removed and population stability may be maintained with the traditional season structure.

   We considered a variety of options for season length and timing and concluded that a 16-day season beginning the weekend after Labor Day was preferred because it avoids the holiday weekend while still providing considerable opportunity for hunters to go afield. Opening the season at the same time as early bear season in the Northern Zone was also considered, but that structure would either result in a shorter season (less than 16 days) in some years, or it would overlap with the start of bowhunting season for deer and bear in some years.

   We do not anticipate any substantial impact on the activities of bowhunters because of the supplemental bear season. Little to no impact on bowhunting activities has been evident from the youth firearms deer hunt weekend that occurs in the midst of bowhunting season, and the proposed early bear season will not overlap with bowhunting season but will conclude 3-9 days before bowhunters will be afield.

Similarly, we do not anticipate any substantial impact on the safe use of New York's public and private forest lands by non-hunting recreationists. This has been substantiated by DEC's experience with bear hunting seasons in the Adirondack Region and elsewhere. DEC has conducted an early firearms hunting season for bears in the Adirondack Region since the 1960s. This season runs annually from mid-September through mid-October, a time when trail register data reveal that tens of thousands of non-hunting recreationists are also using the region for hiking, bird watching, leaf peeping, horse-back riding, and other activities (Dawson 2012). Likewise, firearms bear hunting seasons occur in high use wild lands throughout North America. Other states with very popular hiking destinations and bear hunting seasons in September, some beginning in early August, include: Colorado, Idaho, Massachusetts, Michigan, Minnesota, Montana, Nevada, New Hampshire, New Mexico, Oregon, Utah, Vermont, Washington, Wisconsin, and Wyoming.

Dawson, C. P. 2012. Adirondack Forest Preserve visitor study summary. Syracuse, NY: SUNY College of Environmental Science and Forestry. 9 p. www.esf.edu/nywild/publications/docs/Visitor-study-summary.pdf

Schusler, T. M. and Siemer,W. F. 2004. Report on Stakeholder Input Groups for black bear management in the Lower Catskills, Upper Catskills and Western New York, October 2003-January 2004. Cornell Cooperative Extension and Human Dimensions Research Unit, Department of Natural Resources, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, NY.

3. Provide a uniform start date for bowhunting and early bear season in the Northern Zone.

The bowhunting season for bear in the Northern Zone has typically begun on September 27, whereas early bear season, which also allows hunting with bowhunting equipment, has routinely begun on the 1st Saturday after the 2nd Monday in September (2nd Saturday after Labor Day). Starting bowhunting season for bear throughout the Northern Zone on the same date as the early season will simply season structures and provide additional opportunity for bowhunters to harvest bears in the proposed areas for bear hunting expansion (WMUs 6A, 6G, 6K and 6N).

Appendix 3. Legal Matters

Bear management and hunting opportunities in New York occur within the legal framework of the New York State Environmental Conservation Law (ECL). Through the ECL, DEC is granted authority to establish bear hunting seasons, bag limits and the means of take. Other aspects of bear hunting and management are controlled by the New York State Legislature and Governor through the ECL. The section below highlights an issue where changes to the ECL may improve DEC's ability to manage bears, provide greater equity for New York hunters and remove an unnecessary and burdensome prohibition.

Allow for the legal taking of bears less than one year old in the Southern Zone.

> *ECL § 11-0907(1)(b)*
> *Except in the Northern Zone as defined in subdivision 15 of section 11-0103, bear which the taker knows or should know to be less than one year old shall not be taken.*

DEC believes this statute is unnecessary, may impede effective population management, and represents an ambiguous rule that creates an undue burden on hunters and law enforcement.

Currently bears less than one year old are protected only in New York's Southern Zone (see map in Appendix 2 for the zone boundary). The prohibition against taking bears less than one year old was likely established to protect bear populations from overharvest in areas of the state where bears existed in low densities. Today, that concern no longer exists. Indeed, much of the bear population growth experienced in southern New York over the past three decades is likely a result of conservative hunting laws that reduced harvest of young bears and adult female bears.

Additionally, the existing law creates an unnecessary challenge to both hunters and law enforcement personnel. Hunters who view a bear in the field are unfairly expected to know the age of the bear before deciding whether or not to attempt its harvest. Yet, to make a definitive determination that a bear is less than one year old, the bear needs to be examined by trained wildlife biologists for the presence of deciduous canine teeth or the partial eruption of adult canines. This determination is impossible for the hunter to make prior to harvesting the animal. In the absence of tooth information, the hunter is forced to use size to estimate the age of the bear. There is considerable sexual dimorphism in bears, where the size and weight of some male bears that are less than one year old routinely exceeds that of some one year old females. Moreover, field judging the size of a bear is notoriously difficult, particularly if the bear is alone. Unfortunately, this ambiguity results in several cases every year where otherwise lawful Southern Zone hunters errantly take a bear that is less than one year old, either accidentally by misjudging the size of the bear or by taking a moderate-sized bear that is later determined by tooth eruption to be less than one year old. While such an error has negligible impact on the bear population, the legal consequences for the unlucky hunter could be substantial.

Further confounding the issue for hunters, the prohibition of taking a bear that is less than one year old does not apply in New York's Northern Zone. In that area, bears less than one year old comprise approximately 5% of the annual harvest, and there is no evidence suggesting the population is being negatively impacted. Likewise, in other northeastern states and provinces where the taking of bears less than one year old is allowed, bear populations continue to flourish.

DEC believes that bear management would be more effective by allowing the taking of bears of any age in the Southern Zone for the following reasons:

- Enhances population management, especially in areas of New York where bear range continues to expand;
- Eliminates ambiguity for hunters and Law Enforcement personnel;
- Provides consistent hunting rules in both the Northern and Southern Zone;
- Is consistent with DEC's intent to foster a bear hunting culture and hunter satisfaction.

Assess statutes that specify areas where bear hunting is closed or restricted

ECL § 11-0907(5) and (6)

Paragraph 5 of this statute prohibits bear hunting in a portion of the Town of Webb in Herkimer County and an area between the villages of Old Forge and Inlet in Herkimer and Hamilton counties. Paragraph 6 of this statute restricts bear hunting to landowners, lessees and their families in a portion of southern Albany County near the Alcove Reservoir. The historical purpose of these prohibitions and restrictions is unclear. Given bear population growth in recent decades and the frequency of human-bear conflicts, particularly in the vicinity of Old Forge and Inlet, the appropriateness of this statute should be reviewed and considered for potential revision.