New York State
Department of Environmental Conservation

Management Plan
for Bobcat in New York State
2012-2017

Division of Fish, Wildlife and Marine Resources
Bureau of Wildlife

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Gordon R. Batcheller	Patricia Riexinger
Chief, Bureau of Wildlife	Director, Division of Fish, Wildlife & Marine Resources

Date

NYS Bobcat Management Plan

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 tell 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.

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Acknowledgments

This plan was prepared by:

Furbearer Management Team
Bureau of Wildlife
Division of Fish, Wildlife & Marine Resources
New York State Department of Environmental Conservation

Ken Baginski	Andy MacDuff
Lance Clark	Anne Rothrock
Mike Clark	Bill Schara
Kevin Clarke	Mike Schiavone
Lance Durfey	Bill Sharick (retired)
Gary Golja	Scott Smith
Bill Hoffman	Tom Sutter
Paul Jensen	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

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Background

The bobcat (*Lynx rufus*) is a North American member of the cat family Felidae, ranging from southern Canada to northern Mexico, including most of the continental United States. The species is found throughout most of New York State, except for Long Island. They are defined as a protected, small game species per Environmental Conservation Law (ECL) 11-0103(2)(c).

With a gray to brown coat, whiskered face, and black-tufted ears, the bobcat resembles other species of the Lynx genus. It is smaller than the Canada lynx (*Lynx canadensis*), but is about twice as large as the domestic cat. It has distinctive black bars on its forelegs and a black-tipped, stubby tail, from which it derives its name. Males are one-third larger than females and both sexes can be greater than 30 pounds; however, averages for males and females are 21 and 14 pounds, respectively. Body length for males is 34 inches and 30 inches for females. Tail length is usually between 5 and 6 inches for both sexes.

Bobcats are solitary animals and may be active at any time, day or night. Breeding occurs between January and March with females reaching maturity in their first year, while males do not mature until their second year. Most litters are born in April or May and range from one to five kittens. Kittens disperse prior to the birth of the following year's litter.

Bobcats are habitat generalists, but are not usually found in areas of high development or intensive agriculture. Bobcats are opportunistic feeders and usually consume medium-sized mammalian prey. Bobcat food habits change seasonally and they will prey on white-tailed deer (*Odocoileus virginianus*), birds, reptiles and amphibians.

Diseases and parasites that are known to occur in bobcat include feline panleukopenia (feline distemper), rabies, toxoplasmosis (an intracellular parasite), cytauxzoonosis (a blood parasite), and infections of the tapeworm *Spirometra* (Davidson, 2006). None of these agents appears to affect bobcat populations in New York but rabies is often of concern to the public because of its potential transmission to humans and domestic animals and always-fatal consequences. However, the occurrence of rabies in bobcats in New York is rare with only three animals testing positive from 2001 to 2010 (NYSDOH, 2012).

Observations by hunters and trappers, and reports from the general public suggest that bobcat populations are increasing and expanding throughout New York State outside of their historic core range in the Taconic, Catskill, and Adirondack mountains and into central and western New York. In addition, emigration of bobcats from Pennsylvania has likely fostered growth of the bobcat population in the southern tier of the state (Matt Lovallo, Pennsylvania Game Commission, personal communication). Bobcat population trends in New York also reflect general trends across the United States. Roberts and Crimmins (2010) noted that most states reported increasing bobcat populations in their jurisdictions.

The Department is responsible for managing bobcat populations and accomplishes this task through season timing, season length, and defining legal methods of take. Bobcats were unprotected in New York until the Legislature granted the Department authority to establish open hunting and trapping seasons in 1976. In 1977, the Department closed a large portion of the state to bobcat harvest while allowing harvest opportunities in the remaining areas of the state. At that time, a pelt tagging system was instituted to estimate the total bobcat harvest. Since the first season in 1977, there has been a steady increase in bobcat harvest (Figure 1). Many bobcats are utilized for taxidermy and are often considered a "trophy" species. However, the majority of bobcat are pelted and enter the fur trade via both domestic and international outlets. In recent years, eastern or northern U.S. bobcat pelts prices have ranged from around $50.00 to over $200.00, although prices fluctuate from year to year (FHA 2011).

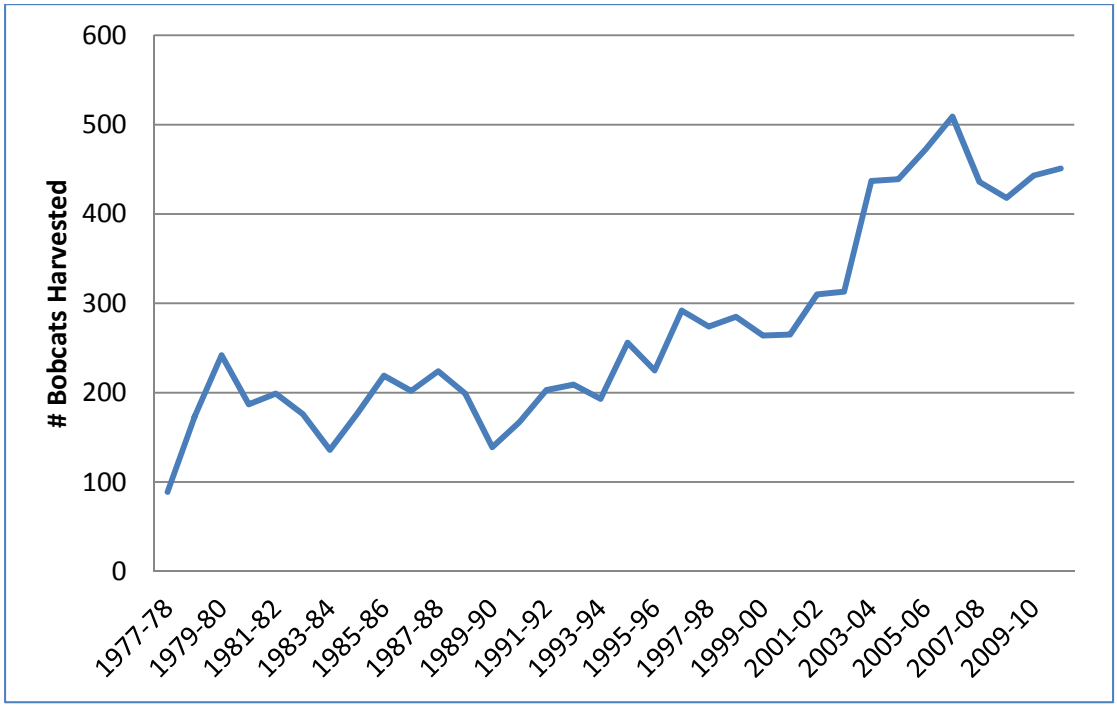

Figure 1. Total New York bobcat harvest (hunting and trapping), 1977-2011.

While hunters and trappers are the most common users of the bobcat resource, wildlife enthusiasts, nature photographers, and others also benefit from a healthy bobcat population. As is the case with hunters and trappers, many wildlife photographers also view the elusive bobcat as being a "trophy" species and a rewarding challenge to capture on film. As evidenced by the number of observation reports fielded by Department staff, the public is very interested in bobcats and can play a role in their management by facilitating the collection of data on the species.

Currently, bobcats are listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).The U.S. Fish and Wildlife Service (USFWS) is responsible for implementing certain treaty obligations, and they do so via their Office of Scientific Authority, and their Office of Management Authority.

Bobcats are not usually found near areas of high human development and negative interactions with humans are uncommon. Livestock depredations, while rare, do occur in some areas of the state. Environmental Conservation Law section 11-0521 provides the Department with the latitude and discretion to issue nuisance permits to address these situations.

Historically, furbearer species in New York have been managed at the Wildlife Management Unit (WMU) Aggregate level (Figure 2). These aggregates are composed of one or more WMUs grouped based on ecological similarity. Occasionally, managing by individual WMUs within a WMU Aggregate may be appropriate such as when new harvest opportunities are established.

Figure 2. New York's Wildlife Management Unit Aggregates and Wildlife Management Units, 2011.

GOAL

Maintain secure, viable populations of bobcat throughout New York State where suitable habitat exists to provide sustainable benefits for the public.

OBJECTIVES

To achieve this goal, three primary objectives are identified:

1. Maintain viable population levels and monitor trends in bobcat distribution and relative abundance;
2. Provide for sustainable use and enjoyment of bobcat by the public; and
3. Minimize negative bobcat-human interactions.

MANAGEMENT STRATEGIES

For each objective, we have defined management strategies that are specific to WMU Aggregates or individual WMUs in New York.

Objective 1: Maintain viable population levels and monitor trends in bobcat distribution and relative abundance.

To aid in achieving this objective, we divided the state into four management zones (Figure 3) defined as follows:

1) Current Harvest Area – areas where bobcat hunting and trapping have historically occurred,

2) Population Growth Area – areas where we desire increased bobcat populations,

3) Harvest Expansion Area – areas where we plan to establish new hunting and trapping opportunities for bobcat, and

4) No Bobcat Area – areas where bobcat are not known to occur currently and where we have no desire to establish a population.

Each of these areas is further described by specific WMU or WMU aggregates in the four strategies that follow.

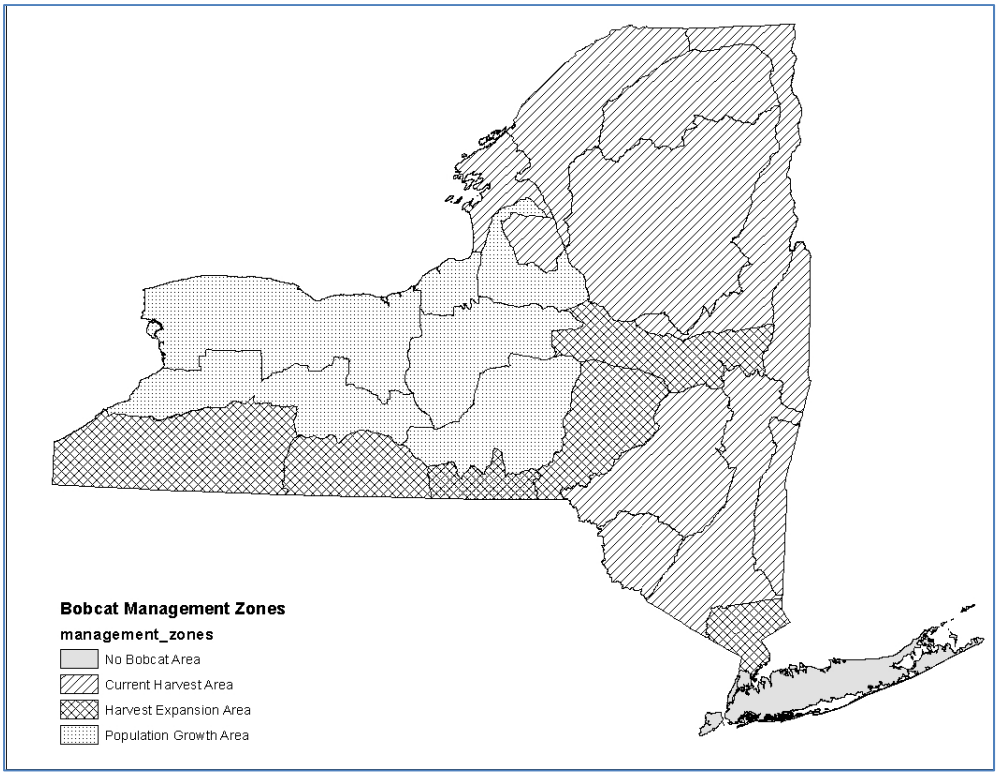

Figure 3. Bobcat Management Zones

Strategy 1.1: Monitor bobcat populations in the Current Harvest Area through the collection of take-per-unit- effort data.

Where bobcat harvest is currently allowed *(WMU Aggregates: Neversink-Mongaup Hills, Catskills, Hudson Valley, South Taconic Highlands, North Taconic Highlands, Champlain Valley and Transition, Central Adirondacks, Northern Adirondacks, St. Lawrence Valley, East Ontario Plain, and Tug Hill)*, we will continue to estimate and monitor trends in the harvest through mandatory pelt sealing. However, annual variation in harvest data can often be misleading due to numerous factors that can influence the total harvest, including pelt prices and trapper effort. One method to improve these data is to express harvest as a function of trapper effort (i.e., take-per-unit-effort or TPUE), with effort expressed in trap-nights (calculated as the product of the number of traps set and the number of days the traps are set). Take-per-unit-effort has been used as an index of relative abundance for a variety of furbearers and improves our ability to interpret harvest fluctuations. Roberts (2010) specifically noted the utility and relative cost-effectiveness of effort data for monitoring bobcat populations in New York.

DEC will measure the effort of both bobcat hunters and trappers. The following methods will be used: (1) the use of diary logbooks to collect TPUE data. This method is best suited to use with trappers who can more easily calculate and record their effort. (2) Similar methods may be used with bobcat hunters, with the modification that effort will be based on a unit of time (e.g., hours or number of days hunted). While not immediately planned, post-season surveys of both

hunters and trappers merit further investigation. By collecting TPUE data, we will be better able to use bobcat harvest information for monitoring relative abundance in all areas where trapping or hunting occurs.

Strategy 1.2: Monitor bobcat populations in the Population Growth Area through collection of observation and encounter data.

We will continue to solicit and collect bobcat observation reports from the public and user groups (e.g., bowhunters, trappers) in the area where no bobcat harvest is planned for the next 5 years (*WMU Aggregates and WMUs: Tug Hill Transition, Oswego Lowlands, Oneida Lake Plain, North Appalachian Hills, and Great Lakes Plain WMU Aggregates and WMUs 7M, 7R, and 7P).* We will also request observation reports from the public via the annual hunting and trapping regulations guide, Department website, and Field Notes, the Division's list-serve. Information, including sex and age when possible, will be collected on road kills, unintentional captures, and photographically documented observations. In addition, we will document the location and nature of nuisance complaints.

These data have proven useful in monitoring changes in bobcat distribution at little cost to the Department. Soliciting observations from the public has been another relatively low cost method of obtaining data on bobcats. We will continue to solicit and collect this information with particular emphasis on those observations confirmed with photographic evidence or a carcass. Lastly, most Regional offices record nuisance complaint data as standard practices and we propose that this should continue, especially in areas where bobcat range is expanding and populations are increasing. Observational data will be stored in a centralized database or spreadsheet that is compatible with a Geographic Information System (GIS).

The annual trapper mail survey provides an excellent source of observation data. Questions on the survey regarding bobcat observations should continue. In addition, the bowhunter sighting log was established primarily for the management of white-tailed deer but has also been useful as an index to monitor relative abundance of a variety of wildlife species, and should continue as a tool to also document selected furbearers, such as bobcat.

Strategy 1.3: Monitor bobcat populations in the Harvest Expansion Area through a combination of harvest and observation data.

We are proposing to open some new areas of New York with a limited opportunity for trappers and hunters to take bobcat *(WMU Aggregates and WMUs: West Appalachian Plateau, Central Appalachian Plateau, Otsego Delaware Hills, Mohawk Valley, and New York City Transition WMU Aggregates and WMU 7S).* In this harvest expansion area, we will monitor trends in harvest and relative abundance using pelt seal and TPUE data in the same manner as described in strategy 1.1. In addition, we will continue to collect observation data as described in strategy 1.2. Based on current observation data, bobcats are well distributed in these WMU Aggregates. This is discussed in more detail under Objective 2.

Strategy 1.4: No monitoring planned for the No Bobcat Area.

Bobcats are not currently known to exist on Long Island *(WMU Aggregate: Coastal Lowland)*, and due to its relative isolation from adjacent populations, it is unlikely that bobcats will occur there naturally. DEC has no plans to establish a bobcat population in this area, so a closed season will be maintained and no monitoring is planned.

Objective 2: Provide for the sustainable use and enjoyment of bobcat by the public.

Strategy 2.1: Expand harvest opportunity in portions of the Current Harvest Area (Figure 3), as described below, beginning in 2012.

Action 2.1.1: Extend the bobcat trapping season until February 15 concurrent with current bobcat hunting seasons for the following WMU Aggregates: Northern Adirondacks, Central Adirondacks, Champlain Valley and Transition, St. Lawrence Valley, and East Ontario Plain.

Northern Zone WMU Aggregates have had a history of much shorter bobcat trapping seasons nested within a more liberal hunting season. These shorter trapping seasons provided protection to a growing fisher (*Martes pennanti*) population. Fisher populations have expanded throughout the Northern Zone and have been harvested in a sustainable manner for several decades.

Recently, the Department extended trapping seasons for fox, coyote, opossum, skunk, raccoon, and weasel in eight Northern Zone WMU's from December 10 until February 15. Results of the 2010-2011 Trapper Mail Survey show that only 3% of trappers took advantage of this new opportunity. We expect a similar level of participation by trappers despite an extension in the bobcat trapping season.

We propose to extend the bobcat trapping season from December 10 to February 15 in these aggregates to be concurrent with the bobcat hunting season. The season change will result in a uniform bobcat hunting and trapping season throughout the current harvest area. Due to the limited trapping effort evidenced in the recent Trapper Mail Survey, we do not anticipate a significant increase in overall bobcat harvests from the addition of two months of trapping effort.

Action 2.1.2: Extend bobcat trapping and hunting season until February 15 in the Central Tug Hill WMU Aggregate.

Currently, both the bobcat hunting and trapping seasons in the Central Tug Hill aggregate (WMU 6N) end on December 10. Over the previous seven seasons, this aggregate has produced a low, but steady bobcat harvest of up to eight animals per year. The Tug Hill area is well known for its deep snows that limit hunter and trapper access. These deep snows also make trapping on land exceedingly difficult. Hunting is

limited to those areas that are easily accessed near roads or along snowmobile corridors.

We propose to extend both the hunting and trapping seasons in this aggregate from December 10 to February 15. The season change will result in a uniform bobcat hunting and trapping season throughout the current harvest area. Due to the weather-limited accessibility to the area noted above, participation in this new opportunity is expected to be limited and, as a result, harvest increases should be small.

Strategy 2.2: Adopt regulations allowing for a limited harvest of bobcats in the Harvest Expansion Area (Figure 3), as described below, beginning in 2012.

The presence of bobcat in New York's Southern Tier has increased dramatically over the past decade. What began as occasional sightings along the New York/Pennsylvania border has progressed to large numbers of observations, trail camera photos, and incidental captures and releases by trappers. Over the past five years there have been 332 bobcat observations documented in the harvest expansion area (Figure 4).

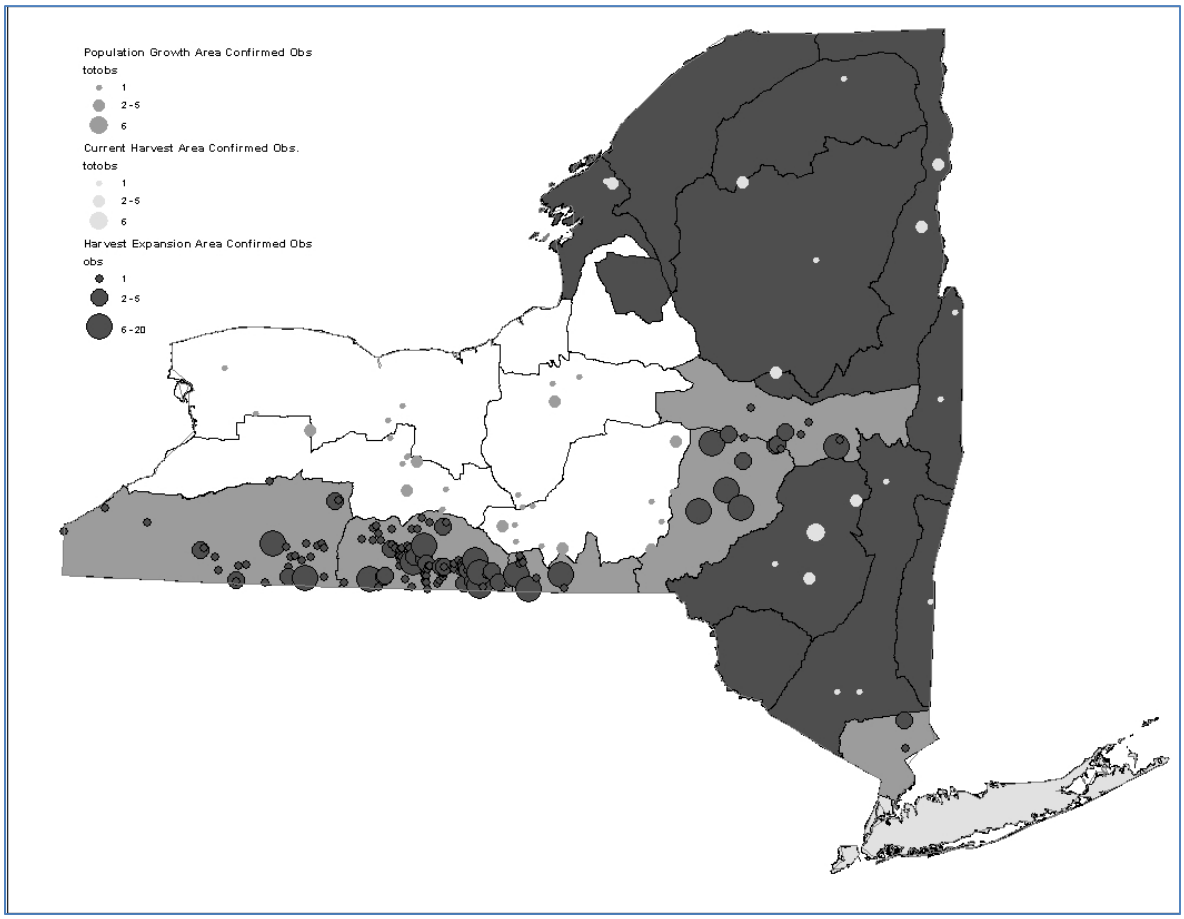

Figure 4. Total confirmed bobcat observations, 2006-2011.

Observations of bobcats when normalized by area (miles^2) indicate that bobcats have become well established in the harvest expansion area and observation rates in this area are similar to, or exceed, those in current harvest areas of eastern and northern New York (Figure 5 and 6). Figure 5 depicts the combined total number of bobcats observed per square mile for each WMU aggregate using data from the bowhunter sighting log and trapper mail survey from 2006-2011. Figure 6 depicts this same information but at the individual WMU level.

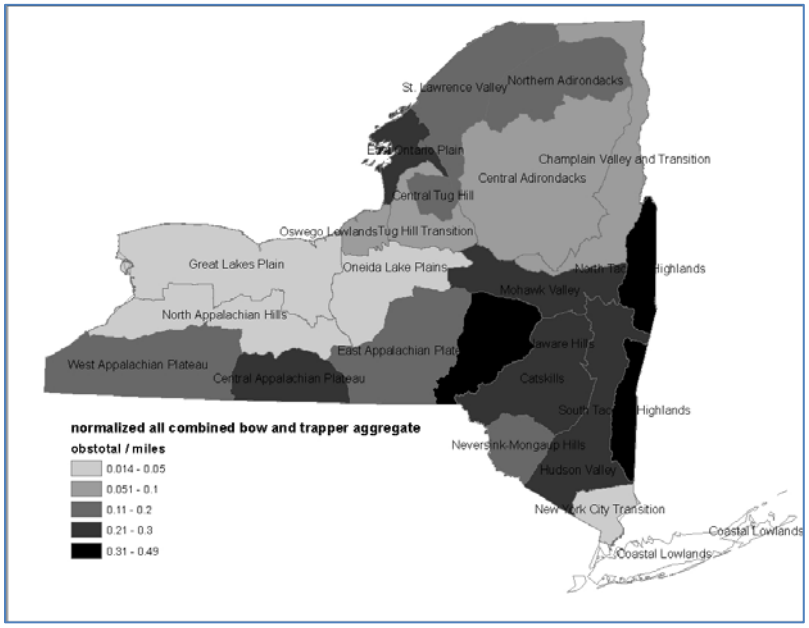

Figure 5. Combined bowhunter log and trapper observation data by WMU aggregate.

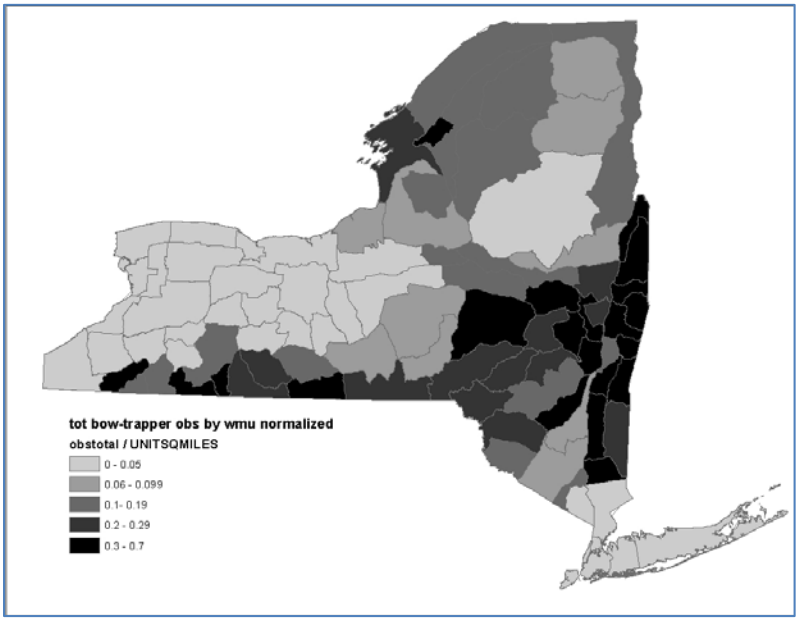

Figure 6. Combined bowhunter log and trapper observation data by WMU.

Action 2.2.1: Open the bobcat trapping and hunting season in the Harvest Expansion Area from October 25 until the Friday before the start of the Southern Zone regular big game season.

We recommend a conservative approach to establishing bobcat harvest opportunity in this area that includes restrictions on season length and timing. First, a short season length would limit the number of bobcats harvested, while still providing opportunity for small game hunters and trappers. Season length in the bobcat harvest expansion area will be considerably shorter than other areas of the state where bobcats have been harvested in a sustainable manner for several years. Secondly, the timing of the bobcat trapping and hunting season should limit the number of bobcats harvested because it will avoid the regular deer season when many bobcat are harvested incidental to deer hunting. We believe that these harvest control measures will allow for a limited and sustainable harvest of bobcats and continued expansion of bobcat populations in central and western New York.

Roberts and Crimmins (2010) reported an estimated bobcat population in New York of approximately 5,000 animals. Knick (1990) recommended harvest rates of less than 20% of the fall population. Following this recommendation, it is conceivable that New York's bobcat population could sustain a total harvest of approximately 1,000 animals per year.

Bobcat harvest rates (animals harvested/mi^2) vary temporally (e.g., relative to the deer hunting season) and spatially (northern versus southeastern New York; Table 1). Mean harvest rates for the entire bobcat trapping and hunting season (2005-06 through 2009-10 seasons) in northern and southeastern NY were 0.012 bobcats/mi^2 and 0.034 bobcats/mi^2, respectively. Using these mean harvest rates as lower and upper limits, we estimated that a full-length bobcat trapping and hunting season (October 25 to February 15) in the harvest expansion area would result in a total harvest of 120-350 animals (Table 1). Actual harvest in this area should be less than these estimates because the proposed season length is approximately 25 days. We estimate that the bobcat harvest during a short, early season in the harvest expansion area would result in an estimated harvest of 34-98 bobcats. Comparison with other indices (e.g., bowhunter sighting log and trapper observation data) suggests that the harvest rate in the harvest expansion area will likely fall between those of northern and southeastern NY.

Recent statewide harvest totals have fluctuated between 400-500 bobcats. Adding the upper limit estimate of harvest from the harvest expansion area to recent harvests (i.e., approximately 500-600 bobcats) results in an overall harvest estimate that is well below the 20% threshold of 1,000 animals.

Table 1. Mean number of bobcats harvested in northern and southeastern New York relative to deer hunting seasons, (2005-2010).

Season	Region	
	Northern	Southeastern
Oct. 25 to Deer Season Opener	34	98
First Week of Deer Season	13	39
Remainder of Deer Season	17	51
Remainder of Bobcat Season	55	162
Totals	120	350

Action 2.2.2 Open bobcat trapping and hunting season in the NYC Transition WMU Aggregate from October 25 to February 15.

Bobcat hunting and trapping seasons are currently closed in the New York City Transition Aggregate (WMUs 3R and 3S). Bobcats historically occur within this aggregate and we believe their populations are increasing. We propose to institute concurrent hunting and trapping seasons from October 25 to February 15 in this aggregate consistent with the adjacent aggregates within the current harvest area. Harvests from this aggregate are anticipated to be minimal due to limited trapping and hunting pressure. Most harvests will likely occur via hunting incidental to the pursuit of other species.

These proposed changes will result in a greatly simplified season structure (concurrent season dates for both bobcat hunting and trapping for all WMU's). This will make it easier for hunters and trappers to interpret the seasons and ease enforcement for Division of Law Enforcement personnel.

Action 2.2.3 Issue mandatory trapping/hunting permits for take of bobcat in the Harvest Expansion Area and require the submission of TPUE and biological data.

Effort and biological data from bobcat carcasses will be collected from trappers and small game hunters interested in pursuing bobcats. This will be accomplished via a mandatory harvest permit, which will require that trappers and hunters submit a logbook and the lower jaw or canine tooth from all harvested bobcat prior to the pelt being sealed. The logbook will collect information on hours hunted and/or trap-nights. A canine tooth will be used for age determination. Sex of harvested bobcats will be

determined via the current pelt sealing process. A report on the age and sex of harvested bobcat(s) will be returned to the hunter or trapper once available.

The collection of age data will allow us to model survivorship for bobcat. Roberts (2010) found utility in tracking survivorship to monitor a previously un-harvested population of bobcats in central New York. Assuming sufficient sample sizes, concurrently collecting sex of harvested bobcat would allow for survivorship modeling by sex to determine if there are gender specific differences in survivorship. Additionally, analysis of sex and TPUE data may allow us to determine if there are differences in capture vulnerability between the sexes. These data could inform future management decisions such as season timing shifts to afford protection to young or female bobcat if necessary or season length adjustments to decrease or increase overall harvest rates.

All of the changes proposed under Objective 2 are shown in Figure 7, and the resultant season map from these proposed changes is shown in Figure 8.

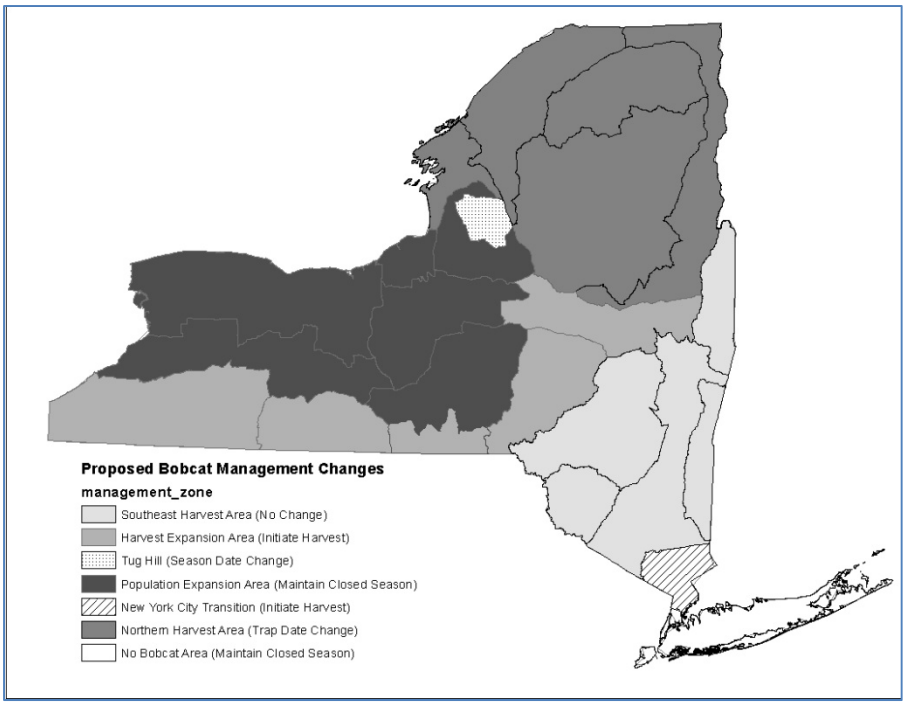

Figure 7. Summary of proposed bobcat management changes.

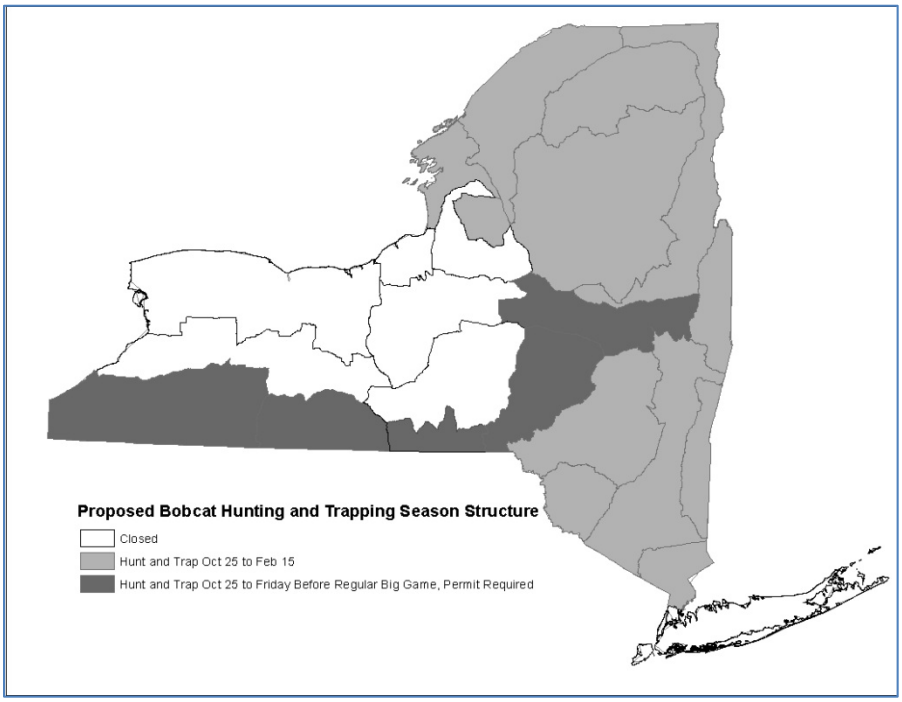

Figure 8. Proposed bobcat hunting and trapping season map for the 2012-13 season.

Strategy 2.3: Develop and implement monitoring criteria to evaluate and adjust harvest regulations.

Action 2.3.1 Evaluate observation data to open new areas for harvest.

In order to implement new harvest opportunities for bobcat in other WMU Aggregates or individual WMUs, trapper mail survey and bowhunter log indices must fall within the range of indices from existing harvest areas. We propose using observation rate criteria for opening new areas to bobcat harvest based on the previous five-year sum of bobcat observations from the combined trapper mail survey and bowhunter sighting log. This criterion would require that WMU Aggregates have a minimum of 0.1 bobcat observations/mi^2 **and** 50% of the individual WMUs that comprise the aggregate have a minimum observation rate of 0.1 bobcat observations/mi^2. If the WMU Aggregate does not meet this criterion, then individual WMUs may be opened if the observation rate in that WMU is ≥0.2 bobcat observations/mi^2. Supplemental data, including methods described by Roberts (2010), or confirmed observations from the area of interest with densities similar to existing harvest zones, may also be used.

Action 2.3.2 Evaluate multi-year trends in harvest and effort data for areas open for harvest.

Bobcat harvests will be monitored through two primary methods: mandatory tagging of pelts or unskinned carcasses with pelt seals and estimates of harvest and trapper effort

from user surveys. Methods for tagging bobcat pelts/carcasses will be consistent with existing procedures within our pelt sealing program, including the collection of Furbearer Possession Tags from trappers and hunters. Data collected from these tags include method of take, date of harvest, sex, and harvest location (town, county, and WMU) and enable us to determine harvest chronology, sex ratios, and harvest density, respectively. A current database of licensed hunters and trappers is maintained through the Department of Environmental Conservation Automated Licensing System (DECALS). This database will facilitate the collection of information from licensed hunters and trappers through the annual small game hunter and trapper mail surveys.

We will evaluate existing practices of our pelt sealing program and implement reforms that will increase efficiency for DEC and reduce burdens to the public but without compromising the integrity of bobcat management. These reforms could include, but are not limited to, mailing pelt seals to hunters or trappers who harvest a bobcat, appointing agents to seal bobcat on behalf of DEC, or removing the need for hunters and trappers to record the sex of harvested bobcats (external determination of sex for bobcat is difficult even for trained observers). Reforms of this nature, if adopted, may also have applicability to the other furbearer species in New York that require a pelt seal.

Additionally, we will calculate TPUE and use these estimates to monitor trends in relative abundance of bobcats. Effort is influenced by factors such as weather, pelt prices, and gas prices and can have large impacts on annual variation in harvests. Therefore, calculation of TPUE reduces the effect of these sources of variation on harvest trends. Assuming equal harvest vulnerability among years, these estimates would better reflect changes in relative bobcat abundance than harvest totals.

In the Current Harvest Area, we will collect lower jaws for cementum age analysis by voluntary submission from hunters and trappers. We will also collect bobcat TPUE data using a voluntary questionnaire completed by bobcat hunters and trappers.

In the Harvest Expansion Area, we will collect bobcat TPUE data with a mandatory questionnaire that bobcat hunters and trappers will receive as part of their permit package. The questionnaire will require that trappers document the number of traps set and the number of bobcats caught on a seasonal basis within individual Wildlife Management Units. Small game hunters will record the numbers of hours spent pursuing bobcats. In addition to the trapping questionnaire, we will require that permit holders submit the lower jaw from harvested bobcats for a minimum of a 3-year period. Using estimates of age-at-harvest from cementum analysis, we will evaluate the age structure of the bobcat harvest and compare age distributions with other areas of New York and with adjacent cooperating states (e.g., Pennsylvania, Vermont). These data may be used to model survivorship as described by Roberts (2010). After the 3-year

period, we will determine if, and at what sampling intensity, we should continue collecting teeth from harvested animals.

Despite our best efforts, incidental harvests by hunters or trappers pursuing other species may occur. Because the information that could be collected from these instances is valuable, we will issue permits retroactively to address these situations. The trapper or hunter will need to meet all of the requirements noted above including TPUE data and lower jaw submission.

Similarly, if conditions suggest that harvest opportunity should be restricted to meet the management objectives, harvest quotas, permits, season structure, season closure, bag limits, or other management techniques will be considered.

Strategy 2.4: Conduct outreach to increase public understanding and support of bobcat as a sustainable wildlife resource in New York State.

Action 2.4.1 Ensure bobcat trapping and hunting regulations are available to and easily understood by the affected and interested public.

Regulations must be communicated to the regulated public in an effective and efficient manner. Proposed regulatory changes will be disseminated to the public through news releases, targeted mailings and publications, trapper meetings, and the use of the Department's web site. Whenever the Department is considering significant regulatory changes, staff will undertake outreach efforts to gauge public acceptance and desires prior to these changes becoming an official proposal. Regulations will be made as simple as possible and they will be clearly described in the regulations guide and on the Department's web site. In addition, the Sportsmen Education program, specifically the Trapper Education program, will also address many of the regulations relevant to bobcat management. Critical to the success of any regulatory actions is the presence of effective law enforcement. We will maintain a liaison with Division of Law Enforcement (DLE) to ensure Environmental Conservation Officers (ECOs) are knowledgeable of relevant regulations.

Action 2.4.2 Enhance the public's knowledge and awareness of bobcat resources in New York.

A bobcat profile will be maintained on the public web site (www.dec.ny.gov/animals/9360.html) that provides information on the status, natural history, and management of bobcat in New York. Department personnel will engage the public, when appropriate and feasible, and provide information concerning bobcat populations and management. These events may include fairs, schools, trapper meetings, and other public events as requested as well as informal contacts via phone, e-mail, and in-person office visits.

We will provide trappers/hunters with information regarding bobcat management and harvest via the Department website, regulations guide, and Sportsmen Education program. Voluntary use of recommendations presented in "Best Management Practices for Trapping Bobcat in the United States" (AFWA 2011) will be encouraged and this document will be provided to trappers when available via a link on the Department website.

Objective 3: Minimize negative bobcat-human interactions.

***Strategy 3.1: Identify and document negative bobcat-human interactions*.**

The presence of bobcat creates the potential for bobcat-human conflicts, but reports of such interactions are uncommon. Most complaints relate to bobcats killing poultry and domestic cats. Other potential prey includes goats, sheep, lambs, and young pigs, but reports of such depredations are rare. As the population continues to expand, we will document reported conflicts as they occur.

Action 3.1.1 Develop standard staff responses and guidelines for resolving negative bobcat-human interactions.

A standard form will be developed to document reports or incidents of bobcat-human conflicts. Although negative bobcat-human interactions are uncommon, Department personnel may issue a nuisance permit authorizing the removal of problem bobcat(s), if warranted. Between 2007 and 2010, the Department issued only 13 such nuisance permits. However, as the population expands, conflicts may occur more often, so staff will need standard responses and guidelines to help resolve negative bobcat-human interactions as they occur. Guidelines developed by other states or wildlife damage experts will be used to the extent possible.

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Appendix 1. Legal Matters

Furbearer management occurs within the authority provided by the ECL. The ECL further authorizes DEC to establish rules and regulations for some, but not all, aspects of furbearer management. Despite our outreach efforts, hunters and trappers remain confused by the distinction and mistakenly believe DEC has full control of all aspects of furbearer management. This section outlines several items where amendment of the ECL is desirable to improve DECs ability to manage bobcat.

1. Pursue revisions to the statutory authority in ECL 11-0905(3) governing the harvest of bobcats that requires concurrent hunting seasons during open trapping seasons. Alternatively, pursue regulation changes restricting method of take for hunting seasons.

ECL 11-0905(3) requires the Department to provide a concurrent hunting season anywhere there is an open trapping season for bobcat. At times, the separation of these two activities is desirable, such as allowing trapping while restricting hunting during an open firearms deer season. Bobcat shot incidental to deer hunting often are harvested with firearms that may not allow for full utilization of bobcat pelts.

The Department does not have the authority to amend laws and must rely on the legislature to do so. However, regulations governing methods of take (caliber or shot size restrictions) may be considered to help promote responsible use of bobcats taken by hunters.

2. Develop methods to increase reporting of road-killed bobcat in areas closed to harvest to enable more timely updates of bobcat status assessments.

We will pursue the development of legal avenues or criteria to allow for the lawful salvage of bobcat in areas closed to bobcat harvest (e.g., road-killed animals) and during periods when seasons are closed. Currently, salvage of bobcat in closed areas and outside of an open season is not legal and the finder often does not report these observations to the Department. We believe that by facilitating a means of legal salvage, the Department can obtain valuable information on bobcats at little cost. Efforts on this front would also have tremendous value in the management of fisher, marten, and otter as the same situations occur for these species.

3. Legalize the use of modern cable restraints.

Finally, in recognition of the many positive attributes of modern cable restraint devices for the live capture of wildlife, the Department will continue to seek legislative authority to allow and regulate their use. Cable restraints are another selective, Best Management Practices (BMP) approved device that would allow trappers to target bobcat and canines while avoiding other species that may have more restrictive trapping seasons like fisher and marten.

Appendix 2. Climate Change

The impacts to bobcat populations in New York due to climate change forces, especially over the five-year span of this management plan, are not conclusive. Current information available suggests that average temperatures will increase, long-term snowfall will decrease, and overall length of winter conditions will decrease (Karl et al 2009). In the short term, storm intensity is predicted to increase which may result in more significant snowfall events in areas to the east of Lake Ontario and Lake Erie where lake-effect precipitation occurs. There are several potential impacts to bobcat populations and management, which are discussed further below.

Parker et al (1983) suggested that bobcat range may be limited by deep snow. It is plausible that deep snow may also limit population densities. With decreases in long-term snowfall, bobcat numbers may increase in some areas of the state and there may be some minor shifts in occupied range. Our mechanisms for collecting bobcat observations noted elsewhere in the plan should be sufficient to monitor changes in range and potentially density.

Rosenzweig et al (2011) noted that predatory species such as bobcat might experience some level of vulnerability due to possible population declines of snow-dependent prey species such as snowshoe hare, voles, and other rodents. This would suggest the potential for bobcat population declines in some areas such as the Adirondacks, Tug Hill, and the Catskills. However, bobcats are a generalist species and we believe a shift in prey is more likely.

Finally, trappers may find it difficult to capture bobcat using foothold traps if the short-term increasing storm intensity prediction is realized and deeper snows result. Trapping in deep snow and winter conditions with foothold traps is challenging and has a low rate of success. To continue to provide reasonable opportunity for trappers to target bobcat, new tools that are easier to use in deep snows such as modern cable restraints, may become necessary.

Appendix 3. Wildlife Health Program

The Department's Wildlife Health Unit has written a comprehensive Wildlife Health Program Strategic Plan (NYSDEC, 2011). This will allow the Department to respond effectively to health issues involving free-ranging wildlife, as well as minimizing the negative impacts of wildlife health issues affecting domestic animals and humans. The Department collaborates with the Departments of Health and Agriculture and Markets under the umbrella of the "One Health" concept to address issues affecting people and animals in their environment. The Wildlife Health Program integrates statewide wildlife health activities into a single unified program to address all wildlife health issues including the providing diagnostic services, disease response and prevention, and providing a suite of wildlife veterinary services.

The Wildlife Health Program will assist bobcat management efforts by performing necropsies, identifying the cause of death, disease diagnosis, conducting wildlife health-related investigations, assisting in research design and supporting regional and national bobcat research and/or classroom/laboratory exercises. As needed, sick or abnormal acting bobcats reported to the Department should be submitted for necropsy.