

# BIG GAME MANAGEMENT



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and Wildlife protects and manages

Maine's fish and wildlife and their habitats,  
promotes Maine's outdoor heritage, and  
safely connects people with nature through  
responsible recreation, sport, and science.

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**MAINE DEPARTMENT OF INLAND  
FISHERIES & WILDLIFE**

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**RECOMMENDED CITATION**

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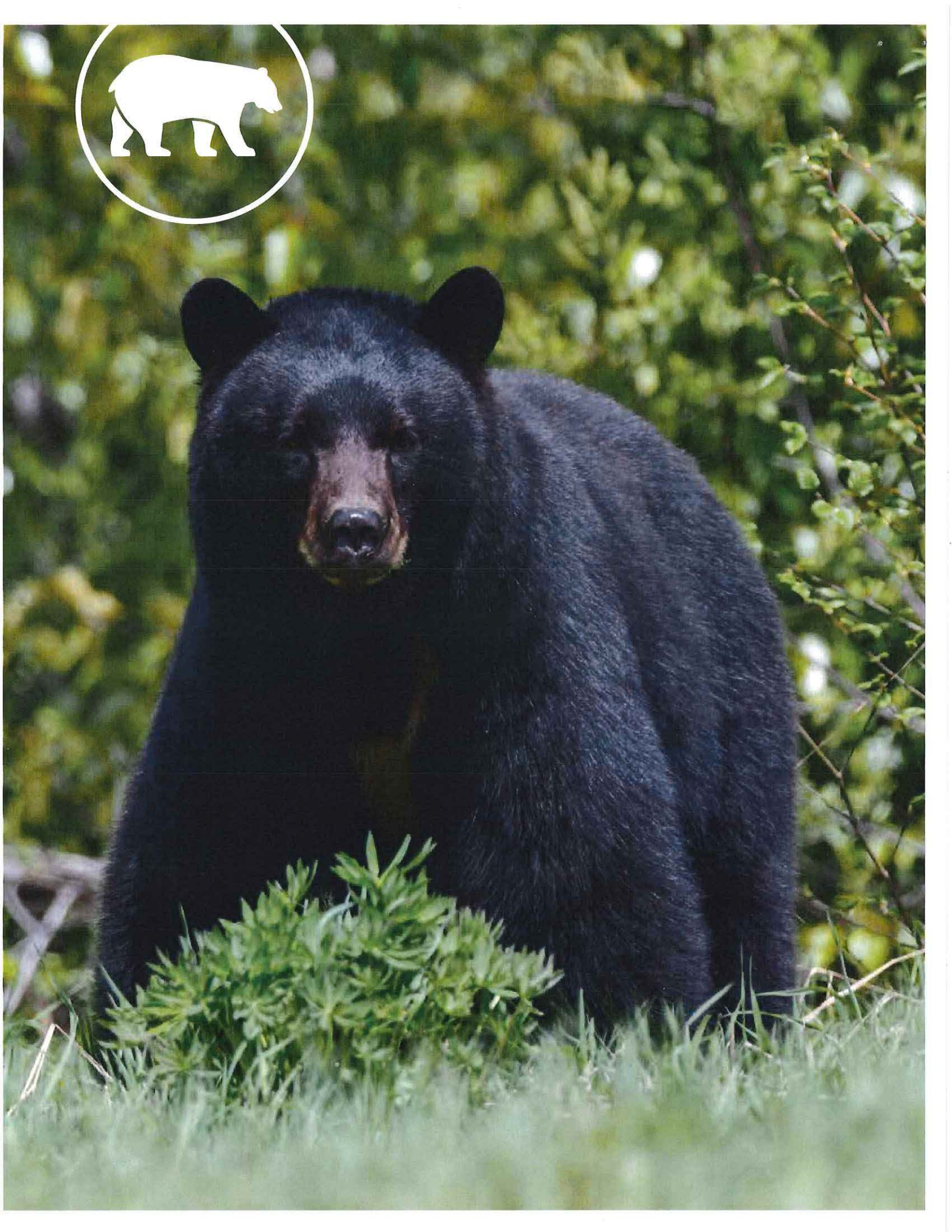


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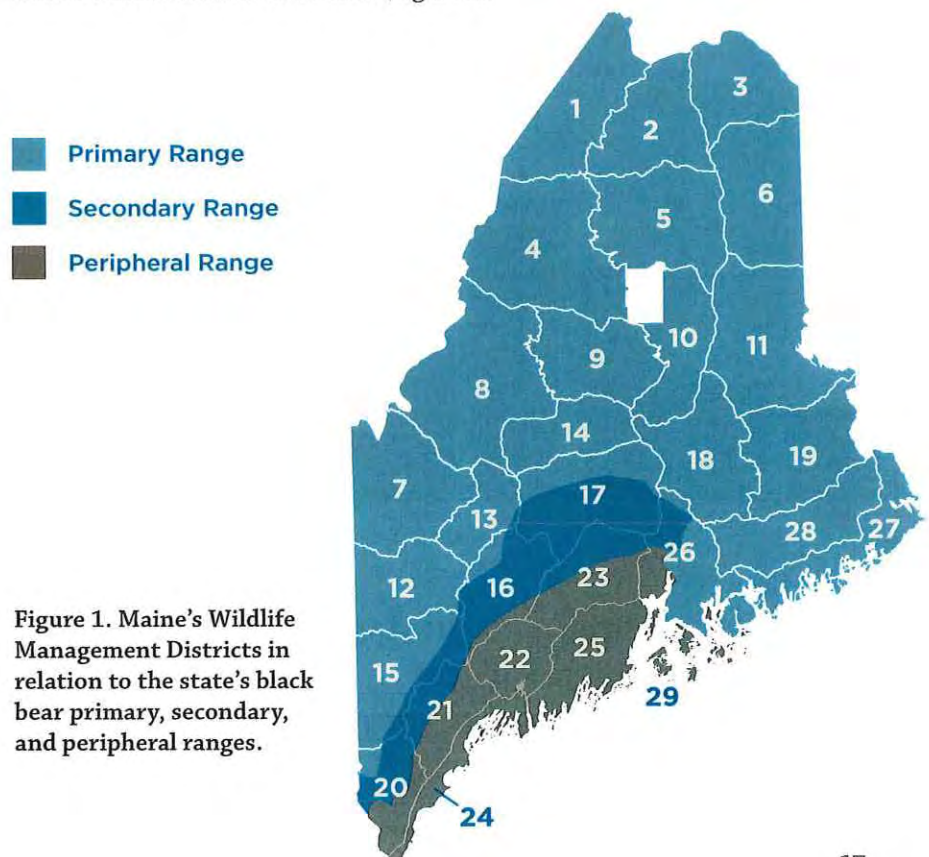


# 4.0 BLACK BEAR

## 4.1 History and Population Status

Although Maine is home to the largest black bear population in the eastern United States, bears are relatively uncommon in the more densely-settled southern and coastal areas. Bears used to be found statewide, before the conversion of forest to farm land by early settlers, and increasing conflicts with agricultural activities, led to a bounty on bears. The first bounty payment was paid in 1770, with nearly 13,000 bears presented for payment between 1903 and 1952. By 1900, bears had been eradicated from much of southern and coastal Maine, but remained common in the northern half of the state, where farming had less of an influence.

Starting around 1950, the bear range began to slowly expand as public attitudes toward bears improved and agricultural land use declined. By 1985, 86% of the state was occupied by bears. Although nuisance and harvest records demonstrate a slow expansion into southern and coastal Maine since early 2000, bear densities remain low in these areas (Figure 1).

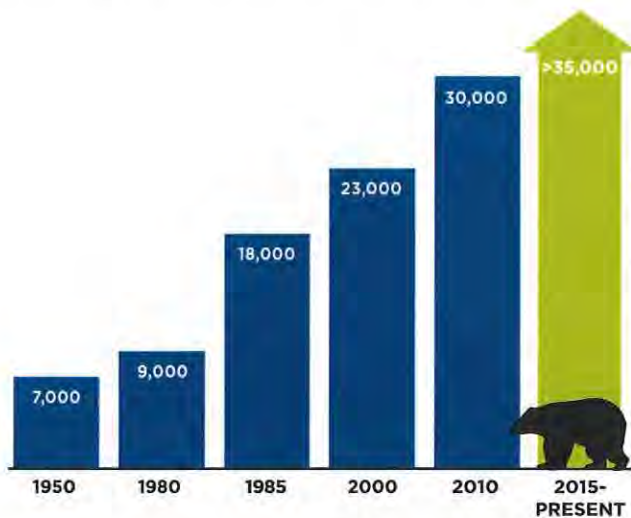




## 4.0 BLACK BEAR

### A GROWING POPULATION

Bear population estimates have been updated periodically since the 1950s, and have been refined as knowledge and tools have improved. Early estimates of between 5,000 and 7,000 black bears in the 1950s were based on the age of bears presented for bounty and incidence of tracks, scat, and bear feeding activity on established transects. After bears were established as a game species with regulated hunting seasons and mandatory registration (1969), population estimates were derived from harvest statistics. Population estimates incorporated data from radiocollared black bears after MDIFW initiated telemetry studies in 1975. However, the initial assumption that bears were territorial resulted in generating what is now considered a low estimate of 6,000 to 9,000 bears in 1979. After more extensive telemetry data demonstrated bears were not territorial, but shared areas with other bears (McLaughlin 1999), a population estimate of 21,000 was generated in 1985. Since then, data from harvest, telemetry studies, and habitat inventories have been used to update population estimates. Except for a brief period, Maine's bear population remained between 21,000 and 23,000 black bears through the start of the 21st century. Since 2005, Maine's bear population has steadily increased in response to declining hunter participation and harvest. Over the last decade, the bear population has increased by 2% to 4% annually, and currently exceeds 35,000 animals.



### MAINE'S BEAR POPULATION HAS INCREASED IN RESPONSE TO DECLINING HUNTER PARTICIPATION

### THE FOOD FACTOR

A variety of natural foods are important to bears, and availability of those foods has a strong influence on population growth rates (McLaughlin 1999). Although black bears are omnivores, primarily eating berries, nuts, grasses, and other forbs, they also eat animal protein (e.g., insects, insect larvae, carrion). Bears, particularly adult males, can be significant predators of deer fawns and moose calves.

The abundance of natural foods is affected by many factors, and often fluctuates from year to year. Historically, beech nuts were a very important food source for bears living in the northern forest of Maine (Jakubas et al. 2005). However, the number of mast producing beech trees has declined due to beech bark disease and subsequent timber harvest. This, coupled with an increase in the variety and availability of many alternative and important bear foods (e.g., beaked hazelnut, raspberries, mountain ash, pin and choke cherry, etc.), has reduced the importance of beechnuts for bears in Maine. In northern Maine, yearling bears have been heavier and exhibited higher growth rates during the last 10 years compared with decades when beech mast was more abundant. Although the presence of bear hunters' bait sites has been offered as a possible explanation for this increase in body weight, natural food availability is more likely, given the fact that we see year-to-year variation in yearling weights in an environment that has stable bait but variable natural food levels.

### MANAGEMENT HISTORY

Since 1770, regulations governing the hunting of Maine's black bears have ranged from year-round bounties to hunting only during the fall (Table 1). Legal methods have included hunting with trained dogs, hunting over bait, trapping, and group hunting through organized drives. After 1969, a bag limit was established and registration of harvested bears became mandatory. Since 1971, the season has ended in November because most bears are hibernating in winter dens by the end of November. The spring season was ended in 1982, largely due to public concerns about protecting females with dependent cubs in the spring. However, the timing of a spring season and target identification requirements have been very effective in protecting females with cubs from harvest. Currently, two tribal nations in Maine allow a spring hunt on tribal lands with a harvest of about 100 bears annually. A variety of factors have influenced management decisions, including monitoring bear numbers, availability of new tools or technology, and political influences. These additional management actions are provided in Table 1.



Table 1. Summary of management actions from 1770 to 2014.

YEAR	MANAGEMENT ACTION
1770	First bounty payment
1931	Classified as game animal – bountied in some portions of the state
1931-1941	Season same as deer season
1942-1965	Year-round open season
1957	Bounty repealed
1963	Mandatory reporting of harvested bears
1966	Hunting season set: June 1-December 31
1967	Trapping season restricted to June 1-December 31
1969	Bag limit of 1 bear/hunter/yr. Hunters required to register their bear Cable traps legalized for bears (tool used by bear managers) Cubs protected from harvest
1971	Cubs legal to harvest Season May-November
1975	Telemetry study initiated on 2 study areas in northern Maine
1980	Emergency closure — harvest projected to exceed goal
1981	Two separate seasons established by legislature (Spring and Fall)
1982	Fall-only season with bait, dogs, and traps permitted during the entire period, a 3 <sup>rd</sup> Telemetry study area added
1981-1986	Mandatory tooth submission from harvested bears
1987	Restriction on timing and placement of bait (limited to first 9 weeks)
1990	Restriction on time and areas open to training dogs (limited to first 9 weeks) Bear hunting permit established (prior to deer firearm season) Bait and trapping seasons reduced from 9 weeks to 4 Hound season reduced (from 9 weeks to 6-7) Still-hunting season reduced (from 14 weeks to 4)
1994	Still-hunting season expanded to entire 3-month season Trapping season expanded to 5 weeks
1997	Trapping season expanded to 2 months (September and October)
2004	A new telemetry study area added in eastern Maine
2006	Passamaquoddy spring bear hunt initiated on tribal lands
2007	Legal trapping methods (cage style or cable foot trap) and number of traps limited
2008	Hunters asked to voluntarily submit a tooth from each harvested bear Require licensed trappers to purchase a bear trapping permit to take a bear Require non-resident deer hunters purchase a permit to take a bear while deer hunting
2009	Penobscot spring bear hunt initiated on tribal lands
2011	Bag limit increased to 2 bears/hunter/yr. (1 by trapping and 1 by hunting) Hunters required to submit a tooth from harvested bears

## 4.0 BLACK BEAR

### 4.2 Regulatory Framework

#### CURRENT MANAGEMENT

The Maine Legislature holds the authority to set opening and closing dates for bear hunting, legal methods of harvest, bag limits, and license fees. The Department and its Advisory Council have the authority to set the time when baiting is permitted within the current season structure, legal hunting hours and hunting implements, and can also shorten or terminate open seasons.

Since 1997, the general hunting season for black bear has opened the last Monday in August and closed the last Saturday in November. Throughout this 3-month period, hunters are allowed to hunt bears near natural food sources or by still-hunting. Hunting bears over bait is permitted for the first 4 weeks. The use of dogs is permitted for a 6-week period and overlaps the last 2 weeks of the bait season. Trappers can harvest a bear in September or October. Licensed trappers are limited to a cable foot restraint or cage-style trap, and are required to purchase a separate permit to trap a bear (Table 1). Although the Department has adopted a generic bear season framework to maintain consistent hunting, regulations can be modified as necessary based on population changes or other management concerns.

Beginning in 1990, in addition to a big game hunting license, hunters wanting to hunt a black bear prior to the deer firearm season have been required to purchase a bear permit (\$5.00 for residents and \$25.00 for non-residents). This permit allows bear managers to identify hunter participation and make better-informed management decisions (Figure 2).

Non-resident permit sales increased significantly after 1999, likely in response to the closure of the spring bear season in Ontario. In 2003, permit levels began to decline, likely in response to a significant increase in permit fees (\$27.00 for residents and \$67.00 for non-residents).

Although permit levels declined, this did not necessarily affect participation rates proportionately. When permit fees are low, some hunters may purchase a permit for the potential opportunity to bear hunt. When fees are higher, hunters are more likely to purchase a permit if they seriously plan to hunt. Currently, participation among permit holders is very high, making permits sales a more accurate measure of hunting effort, which is valuable information for wildlife managers.

Other factors likely influence the continued decline in permit sales, most notably the cost to hunt black bears in a poor economy (e.g., in fall 2006 when gas prices spiked). Most hunters need to travel away from home to participate in the activity, since bears are uncommon in more human populated portions of the State. More recently, increased opportunity to hunt bears in neighboring states has likely influenced non-resident participation.

HUNTING OVER BAIT													
	HUNTING WITH DOGS												
	TRAPPING												
STILL HUNTING													
WEEK 4	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 1	WEEK 2	WEEK 3	WEEK 4	
AUG	SEP			OCT				NOV					



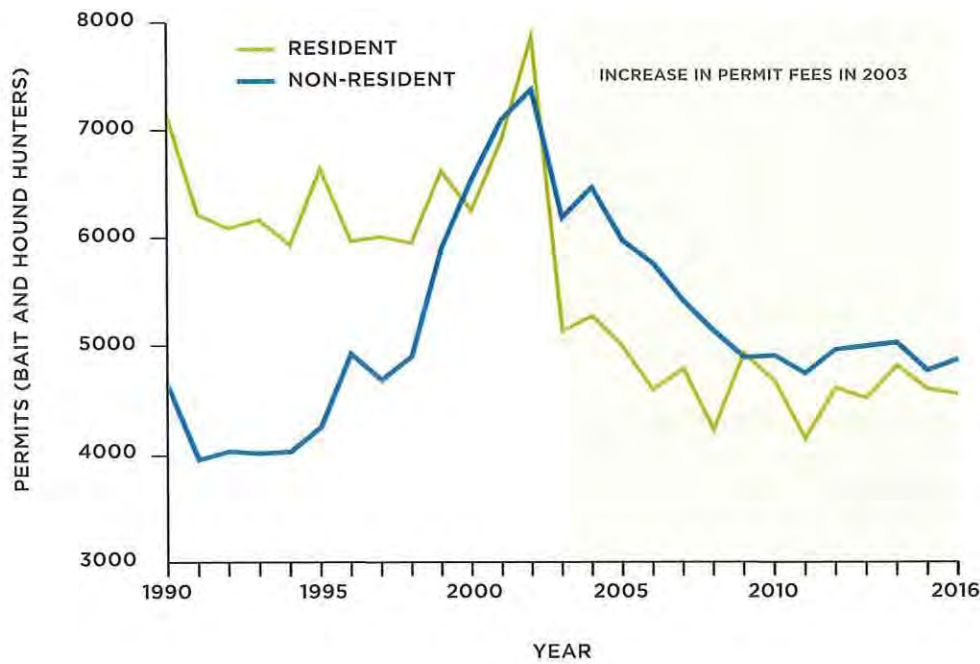


Figure 2. Trends in bear permit sales prior to the firearms season on deer (not including trapping permits) have changed due to a variety of factors, the most notable being the increase in permit fees in 2003.

The Maine Legislature established two new bear permits in 2008: one for trappers, and the other for non-resident deer hunters who want to hunt bears while hunting deer during the November firearm season. Fees from these new permits are dedicated to fund bear research in Maine and provide additional information on participation and success rates of trappers and deer hunters. Prior to these permits, we could not identify those that participated or their success

rate. Since the establishment of a bear trapping permit, interest in trapping among both resident and non-residents has increased; doubling for residents from approximately 300 to 600 permits over the last 7 years and tripling from 25 to 75 permits for non-residents (Figure 3). In contrast, participation in bear hunting during the regular firearms season on deer by non-resident deer hunters has been variable, ranging from 700 to 1,000 permits.

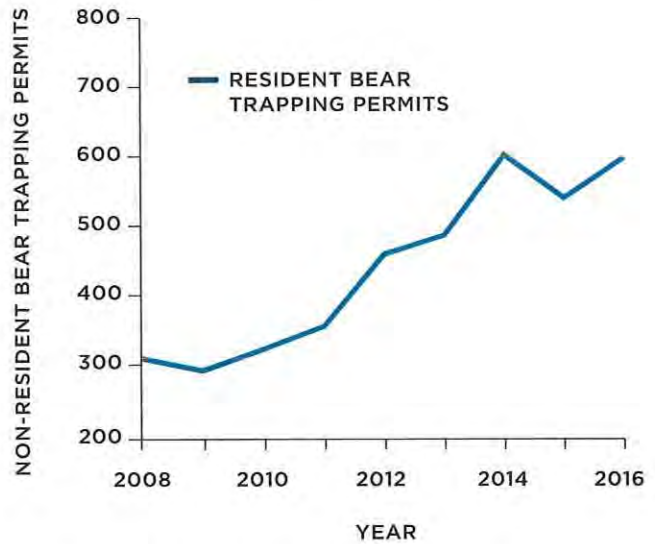
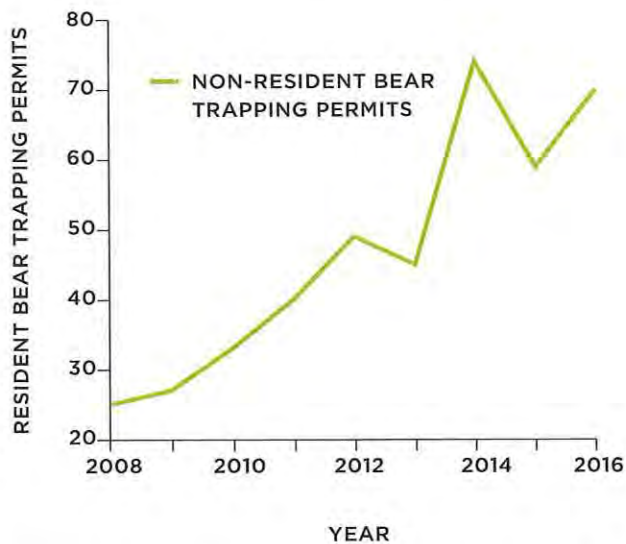


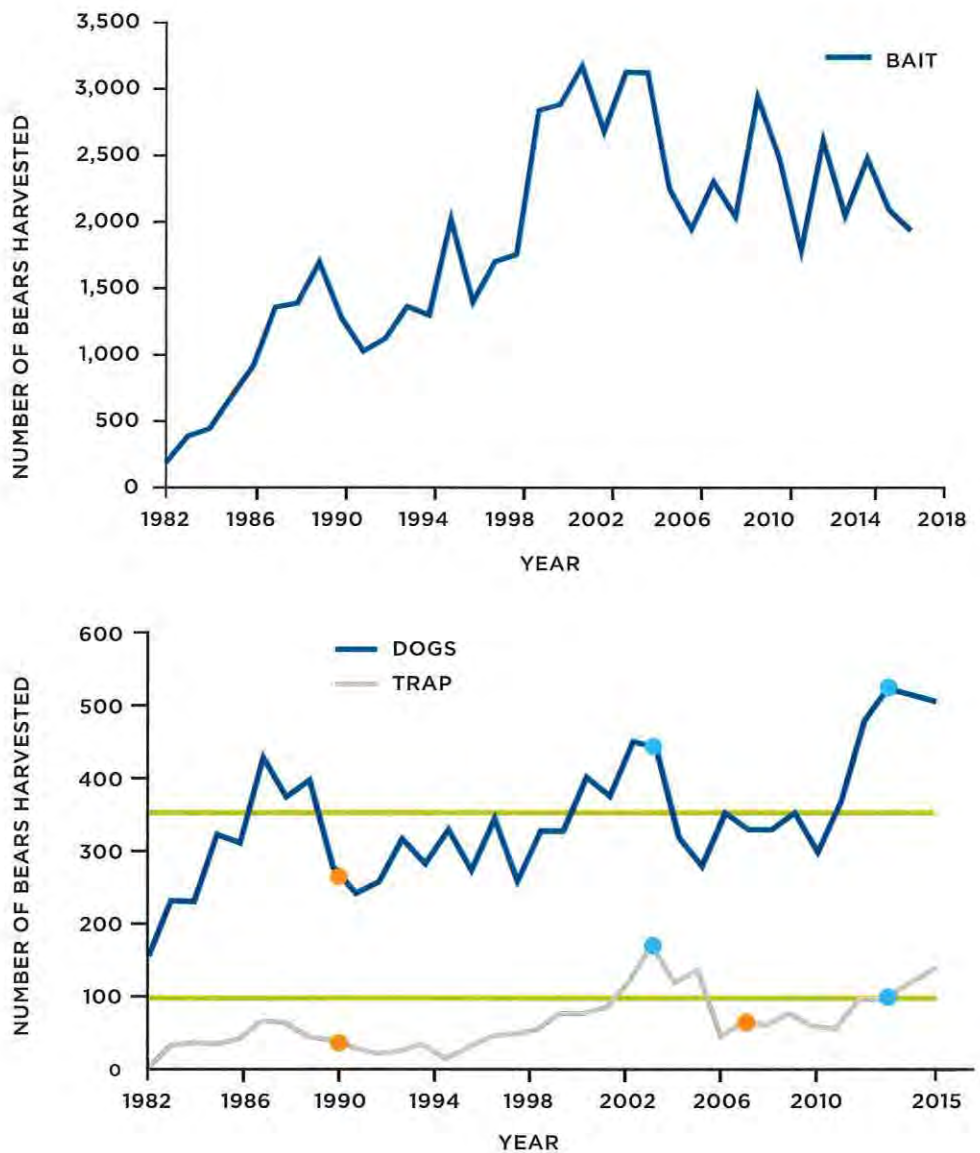
Figure 3. Bear trapping permits required since 2008 have shown a steady increase for both residents and nonresidents, with residents representing approximately 90% of participants.



## 4.0 BLACK BEAR

Since 2005, success rates for hunters that purchased bear permits during the bait and dog seasons ranged from 25 to 35% (averaged 29%). Under the current permit structure, we cannot distinguish between hunters that pursue bears using bait and those using dogs. Thus, periodically, we survey permit holders to estimate hunter participation and success rates by different methods. Success was the highest among both residents and non-residents in 2009 (a year of low natural food availability) leading to the highest harvest over bait since 2004. We also saw the greatest success among non-resident trappers in 2009 with more than half of non-resident trappers successful. Since 2013, we have seen a higher harvest by hunters using dogs that may be attributed to availability of natural foods later in the season, as well as increasing hunter participation — perhaps in response to ballot initiatives to limit bear hunting methods (Figure 4). Interestingly, during both the 2004 and 2014 bear referendums, we saw an increase in bear permit sales (Figure 2 and Figure 3).

**Figure 4. Summary of bear harvest by hunting/trapping method between 1982 and 2015 the influence of ballot initiatives (light blue) and regulatory changes (orange) are highlighted. The green lines are used as a visual reference to illustrate periods where harvest has changed.**





# 2000-2016 BEAR MANAGEMENT

In 2000, the Big Game Working Group established the goal to 'provide hunting, trapping, and viewing opportunity for bears'. This goal was supported by three objectives to guide bear management through 2015:

1. Stabilize the bear population by 2005 at no less than current (1999) levels, through annual hunting and trapping harvests.
2. Create information and education programs by 2002 that target specific audiences and promote traditional hunting and trapping methods as valid and preferred tools to manage black bear populations in Maine.
3. Create information and education programs by 2002 that target specific audiences and promote public tolerance of bears in Maine.

MDIFW made substantial progress in achieving these objectives. Between 1999 and 2005, Maine's bear population stabilized at around 23,000 bears (i.e., 1999 levels)<sup>2</sup>. Since then, Maine's annual bear harvest rate has remained below 15% (Figure 5), the rate that models indicate is needed to stabilize growth (McLaughlin 1998). Maine's bear population has been increasing by 2-4% annually and currently exceeds 35,000 animals. In 2008, responding to increasing bear numbers the Maine Legislature increased the bag limit (i.e., the number harvested per hunter) from 1 to 2 bears annually, one bear allowed by hunting and

another by trapping, but few people have taken advantage of the increased limit. Other considerations have been proposed (e.g., reinstating a spring hunting season), but for now, Maine's bear season remains fall-only with no real opportunity to increase the season length, so managers remain challenged to maintain a bear population at 1999 levels.

In 2004 and 2014, responding to increased public interest in how bears are hunted and managed, the Department provided a range of information to the public through a variety of media (Objectives 3 & 4, 2000 Black Bear Planning effort). Efforts included:

- Presentations to civic groups, towns, and other organizations about bears in Maine and the role of hunting and trapping in managing a robust bear population.
- Microsite on MDIFW web page about Maine's bear management program.
- Fact sheet on bear management and role of hunting.
- Frequently asked questions on bear hunting and trapping
- Interviews on local conservation television and radio stations.
- Press releases, including: upcoming hunting seasons, harvest results, IFW's bear monitoring project, etc.
- Social media posts describing Maine's bear management program and the role of hunting and trapping.

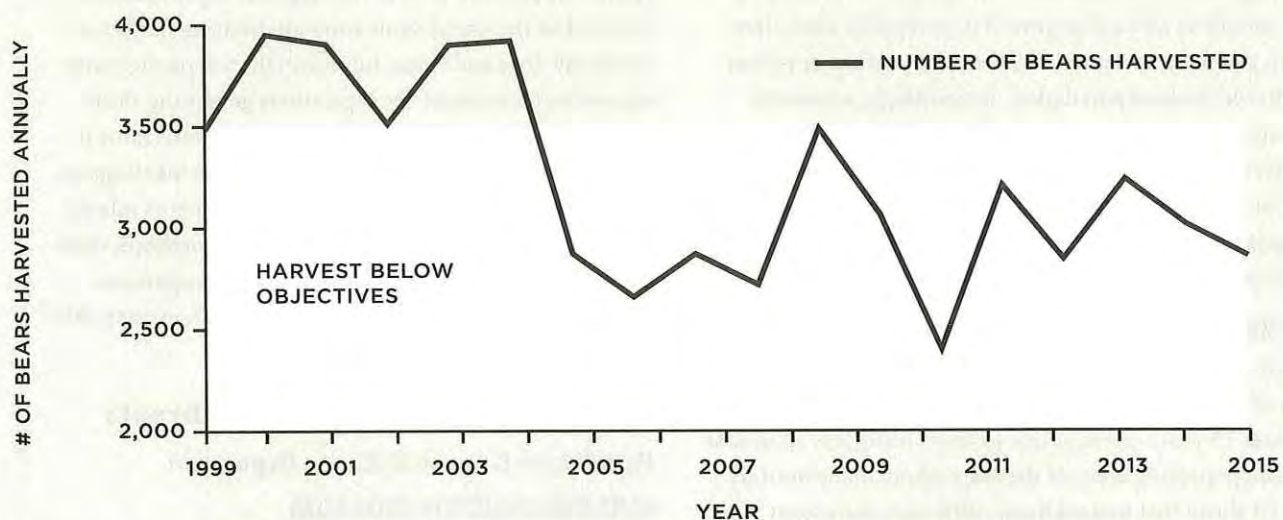


Figure 5. Harvest in Maine has been below objective since 2005; as a result, the population has been increasing.

<sup>2</sup>Methods used to monitor population are described in MDIFW's bear management system, available at [www.maine.gov/ifw](http://www.maine.gov/ifw).



## 4.0 BLACK BEAR

The Department has also created outreach programs to reduce potential conflicts between bears and people.

Efforts have included:

- Issuing a press release each spring detailing how the public can secure common backyard attractants (bird feeders, garbage) and prevent problems with bears.
- Producing a brochure on how to avoid attracting bears to backyards, and periodically revising it to maximize attractiveness and reader-friendliness.
- In 2015, producing a brochure titled: “What to do if you encounter a bear,” which included guidance on a variety of situations (e.g., while hiking, in your backyard, in a building).
- Revising our website, including the addition of a Living with Wildlife page.
- Meeting with local municipalities to identify ways to address conflicts in urban settings.
- Providing assistance and information to landowners experiencing problems with black bears.

### 4.3 Public Consultation – 2016 Key Findings

#### PUBLIC OPINION OF POPULATION MANAGEMENT

Of the four big game species, the general public, hunters, and landowners all indicated they knew the least about black bears. Nonetheless, when asked to rate bear management within the state, 57% of the general public, 57% of landowners, and 72% of hunters responded that management was ‘good’ or ‘excellent’. Survey respondents were generally satisfied with the number of bears in the area where they lived, with only 5% of the general public indicating the bear population should be increased, and 4% feeling that the population should be decreased. Of those desiring an increase, less than a third still felt the population should be allowed to grow if it resulted in more damage to property, increased risks to public safety, or poorer health for the bear population. Interestingly, a majority of respondents in the general public sample expressed support for continued growth of the bear population in central and southern Maine where bears are less common, suggesting that some respondents may not be aware of the implications of living in close proximity to bears.

#### WHY SOME HUNTERS DON'T HUNT BEARS

Despite the relative abundance of bears in the state, only 33% of hunters responded that they had hunted bears in the past 15 years, perhaps due to bears being less abundant in more populated areas of the state where many hunters live. Of those that hunted bears, 90% were somewhat satisfied or very satisfied with their hunting experience. Of the 10% that expressed dissatisfaction, the majority

indicated ‘lack of success’ or ‘too few bears’ as the primary reason. Of hunters that had not pursued bear during the preceding 15 years, most indicated they were not interested in bear hunting (41%), didn’t like or need the meat (19%), or didn’t have the time (18%). Only 1% indicated that permit fees or the regulatory framework prevented them from bear hunting. These patterns were generally consistent across the state, although more respondents in the southern region indicated they did not hunt bears because there were not enough bear (10%), bear hunting was too expensive (8%), or they had to travel too far to hunt (8%).

#### PUBLIC SUPPORT FOR BEAR HUNTING

Public support for legal, regulated bear hunting was high, with 84% of the general public expressing moderate or strong approval of bear hunting. Motivation of hunters was an important determinant of public support for bear hunting, with approval rates increasing when the primary reason for bear hunting was for meat or to manage the population. The greatest opposition was when hunting solely for recreation (51%), or for a trophy (30%). Forty nine percent of the general public sample strongly opposed bear trophy hunting, while only 6% strongly opposed hunting bears for meat, and 5% opposed hunting bears as a method to manage the population.

#### QUALITATIVE STUDY EXPLAINS QUANTITATIVE DATA

Findings from the qualitative public consultation efforts (focus groups, regional meetings, and online town hall) generally supported the survey results, although they did shed additional light on the reasons for opposition to specific bear hunting methods. Few participants expressed blanket opposition to bear hunting, but many Mainers objected to the use of some common hunting methods, especially dogs and traps. Interestingly, few participants seemed to be aware of the regulations governing these activities. Further study may be needed to determine if awareness would alter their opinions. Public meetings on bear management were dominated by comments related to the 2014 referendum and bear hunting methods, with little emphasis on other aspects of bear management. The timing of these meetings (shortly after a major public debate) was likely a factor.

## 4.4 Management Issues and Threats

### Population Growth & Range Expansion

#### POPULATION GROWING IN URBAN AREAS

Over the last 50 years, the Department, through a strategic planning process, has sought public input on black bear



population management goals and objectives. Although population estimates have varied during each of these planning periods, the public’s desire to maintain the population at current levels suggests a degree of tolerance for increasing bear numbers — if conflicts remain low. Today, Maine’s bear population remains highest in areas with low human densities. However, it is slowly becoming established in areas of higher human density, increasing the potential for more conflicts.

**TO SLOW GROWTH, CHANGES NEED TO HAPPEN**

In order to maintain healthy bear populations in suitable habitats, and to minimize conflicts in more urban areas, the growth rate of Maine’s bear population needs to slow down. From 2005 to 2016, the number of hunters and subsequent harvest of black bears declined below 4,000 annually; and during that time, Maine’s bear population grew by 2-4% each year (Linden 2016). To slow population growth and range expansion, harvests need to increase to 15% of the population (McLaughlin 1998), which would require hunter participation, success, or opportunity to expand above current levels. Rates of hunter participation are currently too low to slow bear population growth within the existing season framework. Adjustments to season timing, bag limits, and other aspects of bear hunting regulations and efforts are needed in order to increase participation and ensure that bears do not increase more rapidly than the public will tolerate, or reach numbers that are unhealthy for the bears.

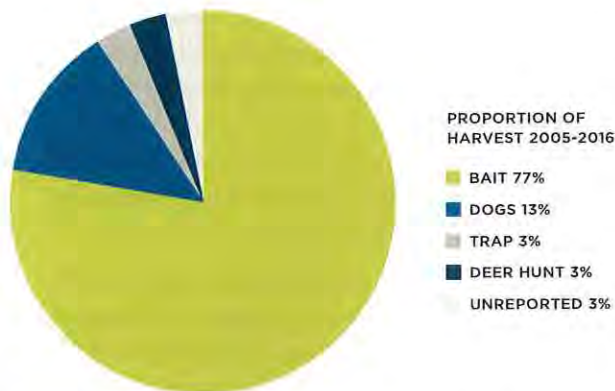


Figure 6. Hunters using bait and trained bear dogs account for 90% of Maine’s annual bear harvest.

**HUMAN-BEAR CONFLICTS: AMONG MAINERS, LOW AWARENESS OF HOW TO HANDLE**

Despite their relative infrequency as compared with other northeastern states, human-bear conflicts can be high in some parts of Maine (e.g., northeastern Aroostook county,

central Maine) where suitable bear habitat exists in closer proximity to developed areas. As the bear population continues to grow and expand into the highly-populated southern and coastal areas of the state, conflict rates could increase dramatically. Most Maine residents are unaccustomed to living near black bears, and are not aware of the precautionary actions to take to prevent conflicts. A variety of measures (e.g., outreach, directed harvest, etc.) may be necessary to address current and future problem areas.

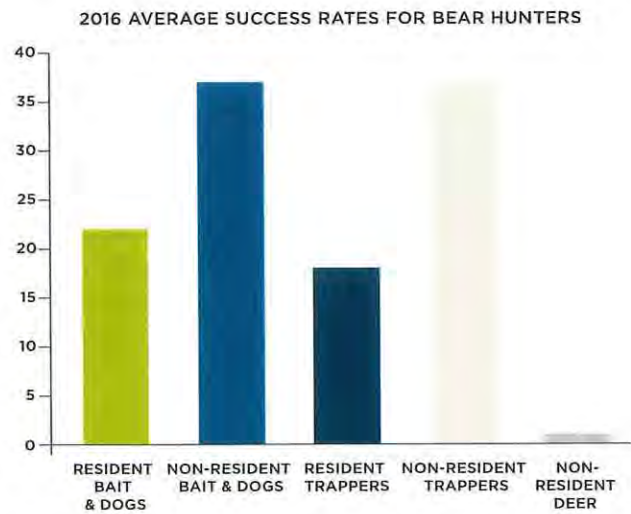


Figure 7. Success rates for bear hunters since 2008, when trappers and non-resident deer hunters were also required to purchase a separate permit to hunt black bears, are highest among non-resident hunters that use bait, dogs, or traps (most hire a professional hunting guide). Resident success rates are slightly lower, since most hunt without a professional hunting guide.

**SHOW OF SUPPORT FOR TRADITIONAL HUNTING SUGGESTS REGIONAL KNOWLEDGE GAP**

Twice in the past 10 years, Maine voters have been asked to eliminate certain bear hunting methods through the ballot process. Both proposals were defeated by similar margins, with the strongest support of hunting methods across northern Maine and the greatest opposition along the coast. Although both measures were defeated by Maine voters, they illuminated a knowledge gap among the general public about bear ecology, the role of hunting, and MDIFW’s role in conserving Maine’s wildlife while safeguarding against an overabundance of bears. As the state’s bear population continues to grow, all established hunting methods will be required to slow range expansion and minimize human-bear conflicts. Outreach and education is clearly important to increase public knowledge, understanding, and support of bears and bear hunting in Maine.





### Goal #1

## 4.5 Bear Management Goals, Objectives, and Strategies 2017-2027

### Bear Management Goal #1:

Maintain a healthy, sustainable bear population overall, while minimizing population growth in areas of higher human density

#### BACKGROUND

Maine's long history of intensive black bear monitoring indicates that the population is thriving and has experienced 10+ years of slow and steady growth.

Maine bears are healthy, with no evidence that habitat is currently limiting. Yearling weights have gradually increased over time, indicating improved habitat quality, likely due to changing forest practices that favor early successional bear foods.

As the population increases, bears are slowly colonizing new areas in southern and coastal Maine, and are appearing more frequently in some communities. Although public support for bear management is currently high, increased bear density in settled portions of the state may result in more frequent human-bear conflicts, and ultimately, reduced public support for bears.

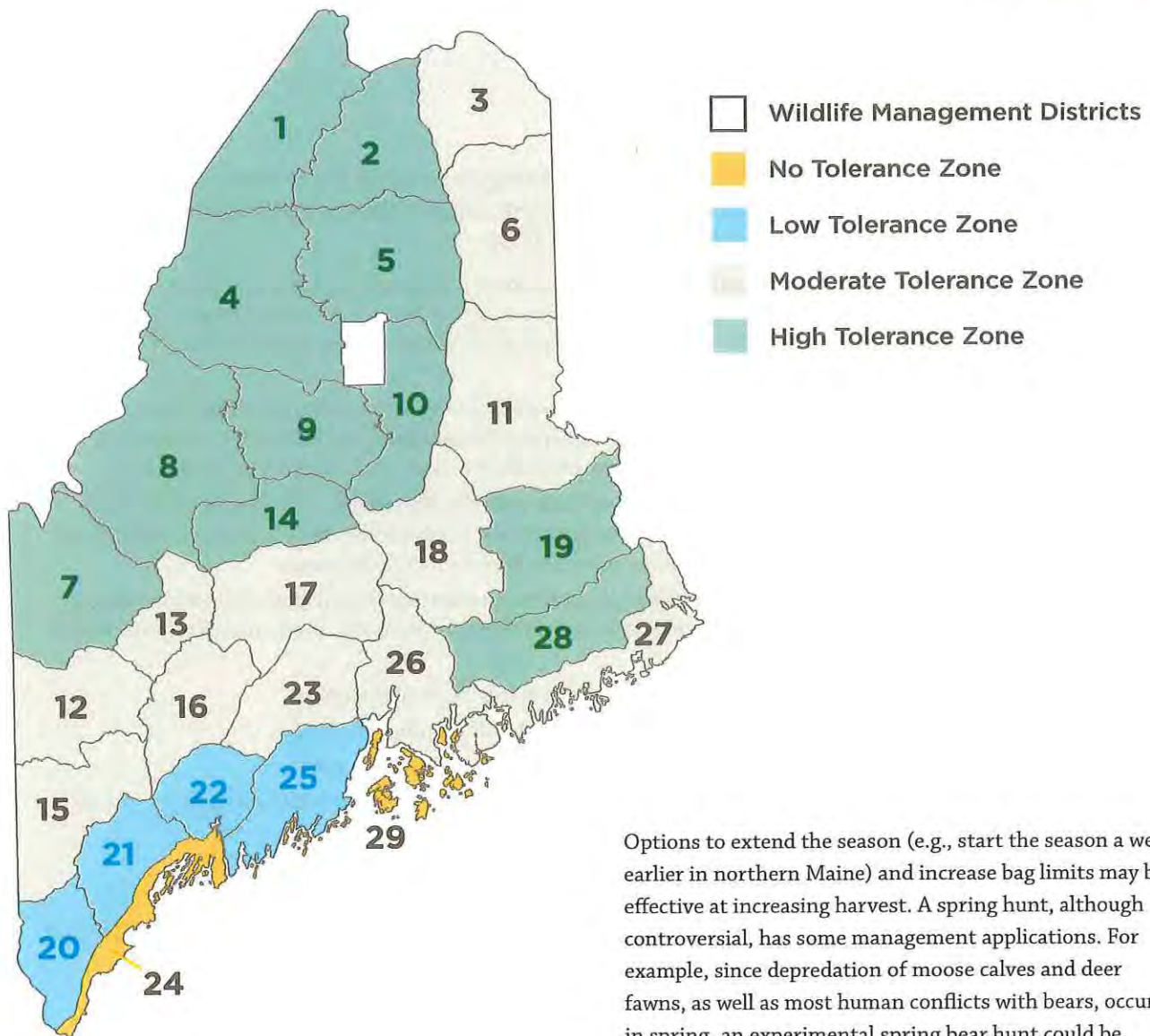
Research indicates that reproductive rates may be higher in central Maine, likely due to the availability of a wider diversity of foods, more productive soils, and a slightly longer growing season. However, bears in this area experience higher mortality from vehicle collisions than other parts of the state. Lack of a strong bear hunting culture in southern and central Maine, and hunting restrictions in more populated areas (e.g., firearm discharge laws and limited access to private land), will make it challenging to control the bear population with hunting. For various reasons, hunters that currently pursue bears may continue to do so in more traditional bear range.

Outside of the southern and coastal areas, Maine's bear habitat is already densely occupied. If the bear population continues to grow, it will reach a level where the health of individual bears could decline. In this scenario, competition among bears could result in restricted food access, lower reproductive rates, higher cub predation levels, and increased adult bear mortality (e.g., vehicle collisions, protection of property). While the potential for human-bear conflict is low in much of the state due to lack of human settlement, controlling bear population growth in these areas should remain a Department priority for bear health.

Although Maine has traditionally managed bears using a statewide regulatory framework, bear population growth and new patterns of human settlement may now require a regional approach. Hunter participation rates are too low to slow the growth of the bear population within the existing season framework, requiring adjustments to season timing, bag limits, and other aspects of bear hunting regulations to ensure that bears do not increase more rapidly than the public will tolerate.

Ultimately, the Department and its partners must strive to increase interest and participation in bear hunting to keep the population at a level consistent with healthy, productive bears that experience few human conflicts. Failure to substantially increase bear harvests over the next 5-10 years, or to target harvests to meet regional population objectives, could result in significant, likely irreversible, consequences for Maine's people and bears.





Maintaining, and as necessary expanding, Maine's bear research and monitoring program will be critical for evaluating the success of management efforts over time. The Department uses bear survival and reproduction measurements to inform population models, determine appropriate harvest levels, and monitor health indices, all of which help ensure that the population stays below the level where food resources would become limiting.

By continuing to collect data from harvested bears statewide, the Department will have more opportunities to monitor harvest sustainability. Although the Department currently records information on human-bear conflicts, several enhancements could improve the efficiency with which conflict severity is reported and chronic problem areas are identified.

Options to extend the season (e.g., start the season a week earlier in northern Maine) and increase bag limits may be effective at increasing harvest. A spring hunt, although controversial, has some management applications. For example, since depredation of moose calves and deer fawns, as well as most human conflicts with bears, occurs in spring, an experimental spring bear hunt could be implemented to assess whether it reduces these problems. Alternatively, the use of contraceptives has been suggested as a substitute to hunting. However, the cost and logistics of delivering contraceptives is challenging, and there have been no studies to determine if contraception is an effective tool for reducing population growth.

A recent survey indicated hunter satisfaction is high among bear hunters (Responsive Management 2016), and the Department's programs should strive to maintain or expand current levels of hunter satisfaction and participation.

An abundant bear population, coupled with long hunting seasons, an active guiding industry, abundant access to private land, and a wide variety of allowable hunting methods all contribute to a positive bear hunting experience in most of Maine. Even at current levels, Maine's active bear hunting community contributes significantly to rural economies.





### Goal #1

#### OBJECTIVES

We'll know we achieved Bear Management Goal #1, to maintain a healthy, sustainable bear population overall, while minimizing population growth in areas of higher human density, if we:

1. Maintain a healthy bear population below biological carrying capacity (a level that natural food can support) in remote areas that are largely forested (high tolerance zone: e.g., WMDs 1, 2, 4, 5, 7-10, 14, 19, and 28), while reducing potential rates of dispersal to other WMDs.
2. Maintain the bear population below social carrying capacity (a level the public will support) in rural areas (i.e., moderate tolerance zone; e.g. WMDs 3, 6, 11-13, 15-18, 23, and 26-27) with suitable forested habitat interspersed with human development.
3. Maintain the bear population near current levels in urban and suburban areas with fragmented suitable forested habitat (low tolerance zone: e.g., WMD 20-22 and 25), to reduce the risk of further expansion into the no tolerance zone.
4. Discourage establishment of resident, breeding bear populations in highly developed and fragmented forests with low suitability for bears (i.e. the no tolerance zone: WMDs 24 and 29).
5. Increase interest and participation in legal harvest methods.
6. Maintain or increase current levels of bear hunting satisfaction.
7. Continue to use the best available science and data as a guide.
8. Minimize the number and severity of bear-human conflicts by managing bear populations at regional and local scales.

#### MANAGEMENT STRATEGIES

Our plan for achieving this goal involves the following research, monitoring, policy, and outreach activities:

##### Research & Monitoring

1. Periodically survey the public to determine human-bear conflict and bear population size acceptance levels. (New; High Priority).
2. Continue to monitor bear health (e.g., survival, recruitment, yearling weights, mortality factors, and other metrics) using current research and monitoring program (Ongoing; High Priority).
3. Continue to monitor the effectiveness of the legal harvest at minimizing growth by requiring mandatory registrations of harvested black bears at tagging stations. (Ongoing; High Priority).
4. Improve monitoring of the number, type and severity of human-bear conflicts to assess whether population is above social carrying capacity (Ongoing; High Priority).
5. Conduct a follow-up survey to better understand why some hunters are not interested in hunting bears. Use this info to develop more effective strategies for increasing participation. (New; High Priority).
6. Compile existing information to determine the effectiveness of spring harvest in reducing human-bear conflicts and predation on ungulate neonates. If necessary, conduct or support additional research. (New; Low Priority).



7. Continue periodically conducting bear-hunter surveys to determine levels of satisfaction, hunter effort, hunting techniques, and hunter distribution, using a 3rd party contractor if appropriate. (Ongoing; Moderate Priority).

### Policy & Regulations

1. Request an extension to the Commissioner's authority for setting hunting season frameworks and bag limits, including establishment of special hunts in areas of high human-bear conflict (New; High Priority).
2. Where appropriate to meet regional population objectives, adjust bear bag limits and hunting seasons to increase the bear harvest. (New; High Priority) Potential options include:
  - Extending the bait season (e.g., earlier in northern Maine or later in central or eastern Maine).
  - Expanding a multiple-bear bag limit (e.g., by any method of harvest).
  - Providing additional hunting opportunity (e.g., expanded archery) in areas experiencing high levels of human-bear conflict.
  - Establishing an experimental spring bear hunting season in areas with high levels of human-bear conflict to assess its effectiveness at reducing conflicts.
  - Adding a 'youth hound day' to increase hunting pressure in certain areas.
3. Promote semi-guided/apprenticeship hunting opportunities (New; Low Priority).
4. Reduce the cost of both resident bear permits, recognizing that permits are important for identifying participation and success rates, and reducing permit fees may increase participation (New; Moderate Priority).
5. Eliminate the permit requirement to harvest a bear while moose hunting or for non-resident deer hunters to increase interest and participation by other hunters (New; Low Priority).
6. Adjust harvest regulations to allow the use of regulated trapping in suburban areas experiencing high levels of human-bear conflict (New; Moderate Priority). Potential options include:
  - Reducing the bait set-back distance for traps.
  - Allowing use of culvert traps within 50 yards of a road.
  - Allowing bears captured in culvert traps to be moved off-site prior to dispatch.

7. Continue to provide diverse opportunities to sustainably harvest bears using established methods (e.g., bait, dogs, traps, spot and stalk/still hunting, while deer hunting) (Ongoing; High Priority).

### Outreach & Communication

1. Through the Department's landowner relations program, encourage landowners to allow bear hunting on their properties in order to help meet bear population objectives (Ongoing; High Priority).
2. Encourage bear harvest in areas of high human-bear conflict (e.g., when feasible connect hunters with landowners experiencing conflicts with bears) (Ongoing, Moderate Priority).
3. Encourage greater interest and participation in bear hunting and trapping (Ongoing; High Priority).

For example:

- Develop a bear hunting & trapping guide (including hunting tips, field dressing procedures, processing facilities, recipes) and distribute to hunters using a variety of methods (e.g., website, Department hunting safety programs, sportsman show).
- Work with I&E Division and Hunter Safety Section to develop a promotional strategy for bear hunting:
  - » Promote the whole bear hunting experience (family time) and wise use of the resource (meat, hide, skull, fat, etc.).
  - » Promote bear meat as good table fare by developing YouTube videos for how to cook, dress, etc. for mass audience and promoting hunters for the hungry.
  - » Promote calling as a method to increase participation and success rate.
  - » Promote the use of still hunting/stalking as cost-effective bear hunting techniques, particularly for hunters with limited time to use other methods.
  - » Promote bear hunting as an opportunity to scout for other species.
- Promote awareness of bear hunting opportunities by:
  - » Incorporate bear hunting into Becoming an Outdoor Woman (BOW) and similar programs.
  - » Promote youth bear hunting day.
  - » Reach out to other hunters, particularly nonresidents, that may not be aware of opportunities to hunt bears in Maine.
  - » Encourage resident deer hunters to take advantage of opportunities to harvest bears incidental to deer.
  - » Promote mentored or apprenticeship hunting opportunities.





**Goal #2**

**Bear Management Goal #2:**

Provide opportunities for the public to safely enjoy bears

**BACKGROUND**

**Bear sightings are rare, but on the rise**

Of Maine's big game species, black bears are especially elusive and difficult to observe in the wild, due to their secretive nature and Maine's dense forest. Thus, black bears are not often considered when planning excursions to view wildlife. Opportunities to view bears increase during periods when they are foraging in open habitats. This typically occurs in the spring (April and early May) while feeding on forbs near road edges or fields, or in late summer when they are seeking berries (e.g., blueberries, raspberries, or blackberries). Even then, the opportunities to observe bears are often limited to long distances and in low light conditions early in the morning and late afternoon.

However brief and unexpected a bear sighting may be, it can be a thrill. The rarity of bear sightings increases their value as a special experience. For many visitors of the Maine woods, even a simple track in the mud is a notable discovery. As the bear population has increased and its range expanded, chance encounters have been on the rise, as have sightings in portions of the state where bears are rarely seen.

**Techniques and technologies provide windows into bear life**

Providing the public with opportunities to directly enjoy the bear resource is challenging, and it is unlikely that a significant bear viewing industry could ever be established in the state. Although most members of the public are satisfied simply with the knowledge that bears exist, bear sign (tracks, evidence of feeding, tree markings) is readily observable to someone with a trained eye and provides a way for people to indirectly appreciate the presence of bears. While increasing opportunities to directly view bears in the wild will be difficult, certain techniques do exist to increase the likelihood, and the Department should devote effort to promoting them.

Technological advances may also provide new opportunities for the public to interact with bears remotely. Trail cameras are becoming an increasingly common way to view wildlife. In the past, den cameras have been used to broadcast live video footage of female bears with cubs, with wide international viewership. Although logistical difficulties prevented the continuation of this program, improvements to battery life, camera systems integrated with radio collars, and other technology may allow the Department or partners to share information about bears to new audiences. Public sentiment towards bears virtually guarantees high levels of interest with any effort that provides a glimpse into the life of a bear.



## OBJECTIVES

We'll know we achieved Bear Management Goal #2, to provide opportunities for the public to safely enjoy bears, if we:

1. Increase public awareness of opportunities to view bears and bear sign.
2. Identify and create new opportunities for the public to safely enjoy bears.
3. Provide tools and information on safely viewing bears.

## MANAGEMENT STRATEGIES

Our plan for achieving this goal involves the following activities:

### Outreach & Communication

1. Develop wildlife viewing guides and a page on the MDIFW website to promote opportunities to safely view bears and bear sign, such as along roadsides during spring (New; High Priority).
2. Work with partners to develop signage, brochures, kiosks and/or other media to promote bear viewing, including bear sign (e.g., NPS, Refuge, NMW, BSP, MSCA) (New; Moderate Priority).
3. Consider establishing bear den cameras combined with educational messaging on bear biology and management (New; Low Priority).
4. Promote legal use of trail cameras as an opportunity to observe bears in the wild (New; Low Priority).
5. Continue to work with mainstream media, and expand the use of social media (e.g. guest blogs, facebook live, youtube, etc) to distribute information on bears and their management (Ongoing; High Priority).





**Goal #3**

**Bear Management Goal #3:**

Increase public understanding of bear ecology, public support for bear management, and public tolerance for coexisting with bears

**BACKGROUND**

**Public support for (and opposition to) bear hunting methods**

Support for Maine's bear management program by the general public, hunters, and landowners is generally high. However, two citizen initiatives on bear hunting methods in 2004 and 2014 revealed notable opposition to the hunting methods most commonly used in Maine, although 53% of voters rejected the initiative to ban these methods. Qualitative public consultation suggests that among participants that were opposed to bear hunting, there was more widespread opposition for hunting bears with dogs and traps, with somewhat less opposition for baiting (Responsive Management 2016). Even though both referendums included extensive political campaigns, with approximately \$8 million spent on advertising, it is apparent that many members of the public have a poor understanding of these hunting methods and the regulatory framework that governs them.

**To meet management goals, an increased harvest is a must**

Achieving the population goals and objectives outlined in this plan will require a significant increase in bear harvest over time. Therefore, the Department does not believe that eliminating or restricting current bear hunting methods is a reasonable course of action. During the development of this plan, a great deal of effort was directed towards understanding the root causes of public concern around the use of bait, dogs, and traps in bear hunting. It seems clear that among Maine residents, there is a segment that has concerns with some forms of bear hunting that cannot be resolved with outreach or adjustments to the methods. However, focus groups indicated that accurate information on the importance of the methods for Maine's bear management program, and the numerous regulations, along with hunters' self-imposed codes of practice that accompany each method, could result in improved public support.

**Bait myths have been debunked**

The Department's long-term bear monitoring program provides information on the population dynamics of Maine's bears over time. Data collected by this program shows that the presence of bait does not significantly impact the health or reproduction of bears at a population level or lead to increased human-bear conflicts. Formal analysis of existing information should help the Department evaluate if additional research is needed, as identified in previous goals in this plan. This may help alleviate concerns that bait used for hunting purposes is having negative consequences for bears.



### Trapping is on the rise

Although a relatively small percentage of bears are harvested by traps in Maine each year, the number of bear trappers is increasing. If this trend continues, trapping may become a more significant component of the overall harvest, particularly in suburban areas where the use of other hunting methods is more challenging. Bear trapping is already highly regulated; however, a suite of additional recommendations, such as requiring bear trappers to take a specialized training course, may improve public support for bear trapping. Similarly, if MDIFW considers opening a spring bear hunting season in the future, it should consider several requirements that would help alleviate impacts to private roads and protect female bears with young.

### Education and outreach are key

Ultimately, extensive public outreach on the importance of various harvest methods to Maine's bear management program, and the regulatory framework that ensures these methods are appropriately conducted, will likely be most successful for increasing support of bear hunting methods in Maine. MDIFW and its partners must embark on a long-term proactive education campaign, targeted at the general public, to ensure continued use of effective bear hunting methods.

Public knowledge of bears, and awareness of the Department's programs, will determine the success of bear management in Maine as much as bear population size and distribution. Improving the public's understanding of bears should be a top Department priority over the next 10 years.

### Frequency and nature of bear conflicts is light

Currently, conflicts with people remain relatively low. Between 1989 and 2003, MDIFW received an average of 300 calls each year regarding bear conflicts. Since 2008, the number has increased to an average of 500 annually (range= 311-827). This increase may be attributed to a new automated reporting mechanism for Maine wardens. The number of conflicts varies depending on natural food supplies, which often alternate from good to poor (Figure 8). The most common complaints are less serious and involve damage to bird feeders and bears getting into garbage. More severe conflicts, such as bears entering occupied homes or tents, and attacks on pets or livestock, are extremely rare in Maine. Damage to beehives established to pollinate blueberry fields is the most prevalent impact to agriculture in Maine. With an increased interest in backyard farming, damage to chicken coops and small livestock is becoming more common in some communities. As Maine's bear population expands, interactions with humans will likely increase. Public understanding of how to safely interact with bears and prevent conflicts will become increasingly important.



## 4.0 BLACK BEAR



### Goal #3

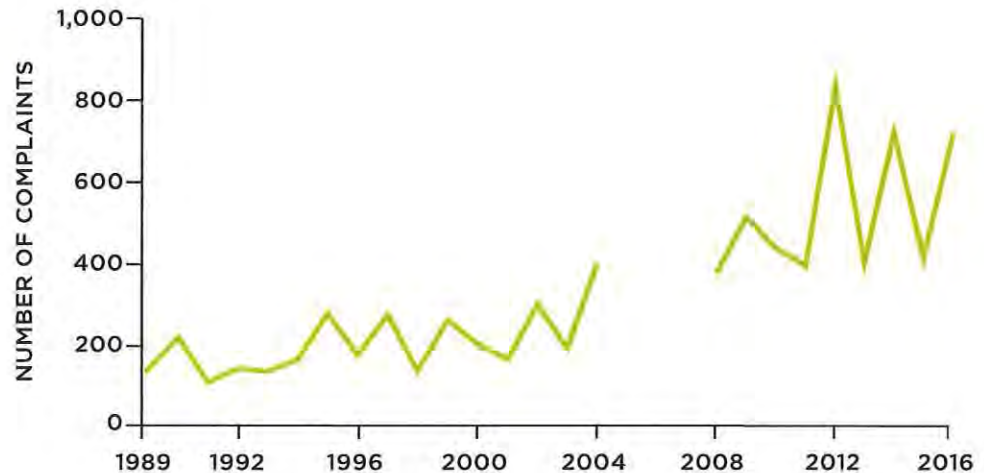


Figure 8. From 1989 to 2003, between 100 and 300 conflicts with bears and people were reported. Although it appears conflicts have increased in the last decade, a new automated reporting system introduced in 2008 may be a factor.

Local bear densities play a significant role in determining levels of human-bear conflict, but human behavior is equally important. In the near-term, as the bear population continues to grow and expand, maintaining, and ideally reducing, levels of human-bear conflict will be impossible without efforts to assist the public in coexisting with bears. Ultimately, securing attractants such as garbage, bird seed, and pet food from bears is the most effective way to reduce conflicts that lead to property damage and public safety concerns.

### OBJECTIVES

We'll know we achieved Bear Management Goal #3, to increase public understanding of bear ecology, public support for bear management, and public tolerance for coexisting with bears, if we:

1. Increase current levels of satisfaction and support for Maine's bear management program by the general public.
2. Increase public understanding of appropriate agency responses to bear conflicts.
3. Increase public knowledge, awareness, and appreciation of black bears and their ecology.
4. Increase public awareness and use of effective methods to prevent and resolve conflicts with bears.
5. Provide tools and information to minimize the number and severity of bear-human conflicts.
6. Increase public understanding and acceptance of established bear hunting methods (bait, hounds, and traps).
7. If a spring bear hunting season is established in the future, assess, and if necessary increase, public acceptance.



## MANAGEMENT STRATEGIES

Our plan for achieving this goal involves the following research, monitoring, policy, and outreach activities:

### Research & Monitoring

1. Periodically survey the public to determine levels of support for Maine's bear management program (New; High Priority).
2. Periodically survey bear trappers to determine their use of different trap types (e.g., culvert and cable restraint) and methods (Ongoing; Moderate Priority).
3. Publish existing data — and if necessary, conduct additional research — on the impacts of bait on bear health, behavior, and population dynamics (New; High Priority).
4. Compile existing information — and if necessary, conduct research — on the impacts of bait on non-target species (New; Low Priority).
5. Continue to track and improve the monitoring of bear conflicts (Ongoing; Moderate priority).

### Policy & Regulations

1. Implement the following adjustments to bear trapping regulations (New; High Priority):
  - Bear traps to be checked at least once every 24 hours, rather than once each calendar day.
  - Add additional training, for example: a specific (online or classroom) bear trapping course.
  - Improve design & deployment standards for cable foot restraints (e.g. require swivels, a clear catch circle, fixed anchor points, minimum cable diameter/working load, and a minimum number of clamps).
  - Improve design standards and set locations for culvert traps that reduce the potential for injury to bears and people, and reduce risk of hypothermia.
2. Continue to enforce existing laws relating to animal trespass by hunters using dogs to pursue bears (Ongoing; High Priority).
3. Evaluate the duration of baiting and the amount and type of bait that is being used (New; Moderate Priority).
4. If a spring bear hunting season is established in order to meet bear population objectives (New; Moderate Priority):
  - Consider limiting road access in cooperation with landowners (e.g., temporary road closure, foot traffic or ATVs only) in areas or time periods of concern.
  - Consider allowing the use of culvert traps in spring because there is low risk of separating family groups.
  - Consider requiring hunters to identify sex of bear before harvest (e.g., use of elevated baits).
  - Prohibit the harvest of cubs and females accompanied by cubs.
  - Time the season in early spring when lactating females are less active.
  - Survey the hunting and non-hunting public periodically to assess support/concerns.





### Goal #3

#### Outreach & Communication

1. Develop a strategic outreach plan for black bears and use the MDIFW Communication Program to disseminate key messages to the public (New; High Priority).
2. Create an interactive phone and/or web-based system to provide information to the public on methods to prevent and resolve human-bear conflicts (New; Moderate Priority).
3. Provide information to the public on the positive aspects of hunting bears with traps, dogs, and bait (e.g., allows selectivity, shot placement, management need), and the current regulations that are in place for each method. (Ongoing; High Priority).
4. Provide information to the public on the rationale for the use of GPS collars on dogs (New; Low Priority).
5. Provide information to the public on the rate of injury to hunting dogs, treatment of dogs by their owners, and risk of contact between bears and dogs (New; Low Priority).
6. Conduct public education and outreach to increase awareness of laws that prevent public from interfering with lawful hunting and trapping activities (New; Moderate Priority).
7. Increase focus on landowner relations during hunter education courses and through other Department programs to reduce the likelihood of trespass by hunters or their trained bear dogs (Ongoing; Moderate Priority).
8. Continue working with landowners and hunters to reduce conflicts among hunters using bait or trained bear dogs (Ongoing; Moderate Priority).
9. Work with partners to increase public outreach on bear hunting methods (New; High Priority).

#### 4.6 Expected Outcomes for Bear Management

The Maine Department of Inland Fisheries & Wildlife is responsible for protecting, conserving, and enhancing our wildlife resources. As such, the Department is primarily obligated to monitor and ensure the health of our bear population.

Past planning efforts have demonstrated public acceptance of a growing bear population (18,000 bears in the late 1980s to more than 35,000 bears today). This suggests that Maine's bear population has not yet reached a level where there are significant negative consequences to bears, the environment, or people. It also demonstrates that Maine's bear population can fluctuate (increase or decrease) and still remain healthy and in balance with the human and natural world. This public tolerance is largely explained by bears being more abundant where there are fewer people (northern, western and eastern Maine's forest).



Inevitably, if Maine's bear population continues to grow, bear health and public tolerance of bear conflicts will eventually diminish. Strategies in this plan to increase hunter participation (especially among residents) and success should curb population growth and expansion. Hunter satisfaction will remain high, bear population will remain healthy, and impacts to other populations of wildlife (e.g., deer or moose) will be minimized.

However, it will take a number of years and a direct effort to increase hunter participation and harvest, which in the short term will likely lead to a continued increase of the bear population. Eventually, bears may become more common in areas with higher human density. Outreach and education efforts will target these communities, as well as communities that have historically been living with black bears. This should facilitate greater understanding of how to prevent bear problems, greater desire and ability to implement preventative measures, and increase tolerance of black bears. In addition, requests to move black bears should decrease as the public becomes aware of alternative strategies to solve problems, and more importantly, prevent them in the first place.

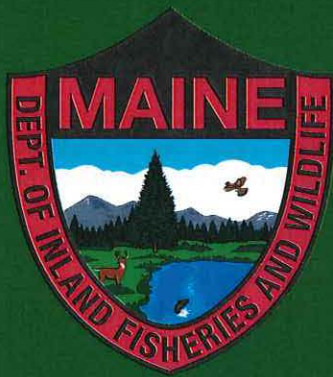
Implementing strategies identified in this plan to increase outreach and education should allow people in Maine to become more knowledgeable and tolerant of black bears and the agency's role in insuring healthy populations of wildlife for future generations to enjoy. Additionally, the public's understanding of the role of hunters in preserving the health of wildlife populations and the Department's ability to gauge the public's attitudes about bears, how they are hunted, and how conflicts are prevented and resolved will improve. Increased outreach and education will insure that relevant facts are shared and that management decisions are based on informed opinions and the best available science.

Ensuring that black bears remain highly valued by the people of Maine requires that the bear population does not exceed the land's capacity to provide sufficient resources and the public's tolerance of living with bears.

Listed below are some metrics that will allow us to assess if we have met the plan goals.

- The percentage of the public rating the management of bear as 'excellent' or 'good' increases to 65% by 2022.
- Public support for legal bear hunting remains above 80%.
- Statewide bear hunter satisfaction remains above 90%.
- The percentage of public indicating that they knew a great deal or moderate amount about bears increases above 60% especially among residents in southern and central Maine.
- The majority of public (>56%), landowners (>71%), and hunters (>67%) feel the population of bears should remain the same where they live.
- The 4-year running average of yearling weights is maintained above 35 pounds, and 4-year running average of cub survival remains above 50%.
- The number of hunters pursuing bears increases by at least 25% by 2022, with success rates remaining stable or increasing.
- Opportunities to harvest bears increase, through extensions of season lengths, bag limits, allowable methods, or a combination.
- By accomplishing the above, the annual harvest approaches 15% of the bear population, discouraging range expansion into more densely (human) populated areas.





[mefishwildlife.com](http://mefishwildlife.com)