South Carolina
Black Bear Management and Conservation Strategy
2011

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From input and comments by the:
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I. EXECUTIVE SUMMARY

Historically, South Carolina has had two distinct populations of black bears – one in the mountains and upper piedmont, and a second in the eastern upper coastal plain. During the last decade, black bear numbers have increased and become more widely distributed across the state. In addition, land use patterns and habitats are continually changing, some becoming more forested, while others are experiencing increased urbanization creating more frequent human-bear interactions. South Carolina's citizens have varying views and opinions regarding bears and their presence. Helping people better understand, appreciate and coexist with bears is a responsibility of the South Carolina Department of Natural Resources (SCDNR), in addition to defining "where" bears occur and "how many" bears there are. It is apparent that SCDNR faces great challenges in managing the black bear resource. What may represent a desirable density of bears in one area, may be too few or too many bears for other locations.

Traditionally, South Carolina's black bear population has been managed liberally. Prior to 1959, it was lawful for any citizen, anywhere in South Carolina, at any time to kill a black bear. In 1959 a structured season was created in Game Zone 1 (Mountains). The season limited the taking of bears between November 15 and December 1. In 1965, black bears were classified as game animals and it became unlawful to harvest any bear except during the open season. Again, the hunting season was limited to Game Zone 1only. The current bear season was instituted in 1976 for Game Zone 1 is the third and fourth weeks in October. Still hunting without the aid of bait is allowed during the first week and dog-party hunting is allowed the second week. Still hunters are limited to 1 bear, while dog-party hunting is limited to 5 bears per party. Hunting of bears continues to be prohibited in the rest of the state.

Human-bear conflict resolution has taken many forms over the years, from actively trapping and moving problem bears, to implementing aversive conditioning techniques. In 2007, a team of biologists, law enforcement staff, legal staff, and technicians developed the "Human-Bear Encounters Procedures and Protocol" to streamline decision making for the numerous SCDNR staff who deal directly with situations involving human interactions with bears. This protocol was adopted and implemented in June 2008.

A primary objective of SCDNR and this plan is to maintain South Carolina's bear population at a level compatible with land use goals and acceptable human social limits. This management and conservation plan reviews SCDNR's past bear management efforts, state and regional bear population trends and current management techniques. Additionally, the plan lists black bear conservation goals and objectives, along with offering strategies to attain the desired outcomes.

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II. INTRODUCTION

Black bears (*Ursus americanus*) thrived throughout all of South Carolina in pre-colonial times. They were over harvested by early settlers and populations suffered from detrimental habitat changes. By the early 1900's, bears were restricted to the most remote mountains and coastal swamps. Unlike other large predators that never recovered in South Carolina, bear populations and range have expanded over the last 30 years especially during the last decade (Appendix A).

The expansion in bear populations and range is due to changing human attitudes about bears, better laws and enforcement of laws, protection of critical habitats, better management by wildlife agencies, the adaptable nature of bears and the ability of bears to peacefully coexist with people in most circumstances.

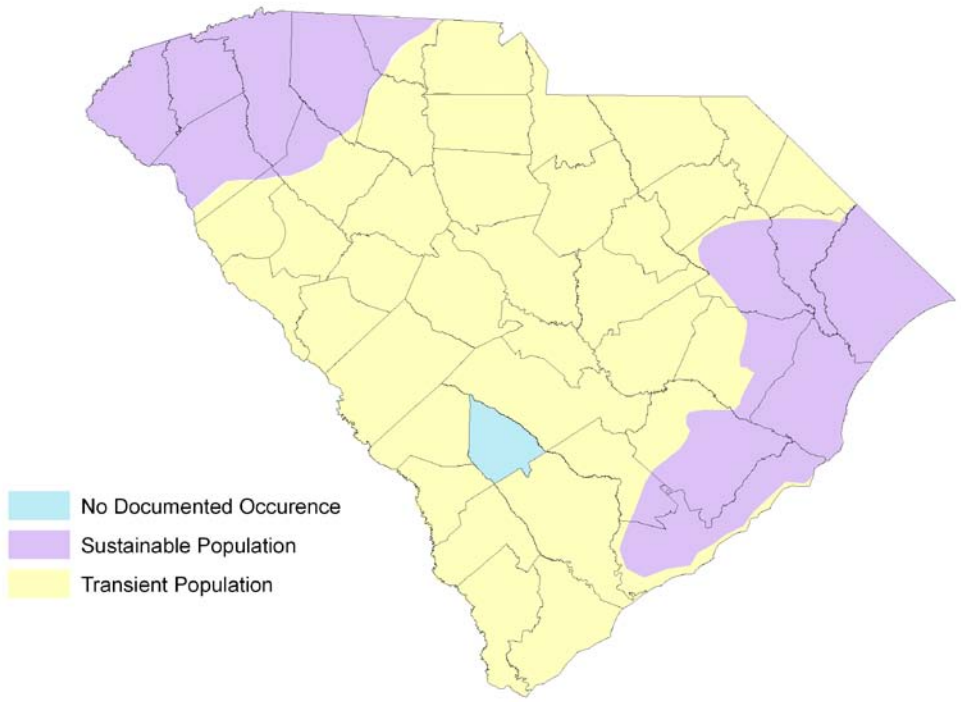

Figure 1. 2010 Black Bear Range.

Physical Description

The black bear is a large mammal with small, rounded ears, dark fur and a short tail. There are many color phases of black bears across their North American range, including black, cinnamon, blonde, brown, and occasionally blue or white. In South Carolina and across the eastern United States, black is the only documented color (Burch 1997). Black bears commonly have a brown or tan

muzzle and occasionally have a white or yellowish blaze on their chests, usually in the shape of a 'V'.

The size of bears varies greatly according to sex, age and the quality of available habitat. Male bears are typically larger than female bears. Adult bears usually weigh between 125 and 400 pounds, although bears weighing 600 pounds or more are not uncommon (Burch 1997). The state record bear in South Carolina is 594 pounds and was harvested in Oconee County; the national record is 880 pounds from eastern North Carolina (Skip Still, pers. comm.).

History of Black Bear Management in South Carolina

The black bear is a native species to South Carolina that was once distributed statewide. Bears were historically abundant because of the excellent habitats provided by South Carolina's native woodlands, meadows, swamps and coastal plain. The black bear population declined as European settlers colonized South Carolina.

The quality of South Carolina's forests was degraded as early settlers cleared the forests to harvest timber and expand agricultural land during the 1600s and 1700s, greatly reducing black bear habitat. In addition, settlers considered bears to be a threat to their own existence and treated them as vermin. Bears were indiscriminately killed throughout the 1800s and as late as the 1950s. This indiscriminate killing, combined with large-scale habitat loss through widespread timber cutting and a lack of conservation laws, eliminated black bears and other forest wildlife species from many parts of the state.

By the 1950's, bears were restricted to the western mountains of South Carolina. In the mid-1960s, bears were classified as a game species and became protected except during open hunting season. With this protection, bear populations in South Carolina began to rebound. Harvesting of bears became unlawful except in the mountains.

Beginning in 2004 and continuing today, the SCDNR has noted annual increases in bear sightings and bear damage complaints throughout the state. As a result, in 2010, a bill was passed by the state legislature giving SCDNR regulatory authority to set black bear seasons, except for the existing seasons in the mountains which are set in statute.

III. STATUS OF SOUTH CAROLINA'S BLACK BEAR POPULATION

Wildlife biologists use surveys to monitor temporal trends in black bear populations. SCDNR uses a variety of these surveys to track the state's black bear population, such as a scent station survey, black bear observations, mortalities, annual reproduction and the number of human-bear encounter complaints received per year. In addition to these annual surveys, SCDNR has conducted two population estimates since 2000.

Population Estimate

Estimating the size of wildlife populations is among the most challenging tasks that wildlife managers undertake. Populations of animals with large home ranges, like bears, are extremely difficult to estimate using mark-recapture techniques (Garshelis 1992). Harter (1999) estimated the mean annual black bear home range size in coastal South Carolina to be 12.3 mi^2 for females and 32.5 mi^2 for males. Butfiloski (1996) estimated the mountain home range for female black bears to be 6.4 mi^2.

Estimates in the late 1990's projected the coastal population at 250 animals and approximately 500 animals in the mountains. During 2007 the black bear population was estimated to be 1,150 animals statewide (19th Proc. Eastern Black Bear Workshop, 2008). Biologists representing the US Forest Service and SCDNR believed this to be a very conservative estimate (Skip Still, pers. comm.). All indicators suggested a rapidly expanding population both geographically and numerically. During 2007, 51 animals were reported killed by vehicles and over 553 calls were logged in the SCDNR radio room reporting encounters with bears statewide. This increasing pattern of bear incidents has continued in subsequent years and it is clear the statewide population is on the increase.

In 2008 using the same methods used in a 2003 tri-state (South Carolina, Tennessee, North Carolina) mountain population census (Settlage et al. 2005), SCDNR undertook the large task of estimating the size of the Coastal black bear population. Advances in DNA analysis technology gave SCDNR's wildlife managers a more efficient means of sampling the bear population and providing reliable results. Hair snares, consisting of a baited area surrounded by barbed wire, were distributed on study areas in Georgetown and Horry counties on both public and private lands during the summer of 2008, 2009 and 2010. Two strands of barbed wire were used to ensure adequate sampling of cubs, sub adults and adult bears. Hair samples were collected by the barbed wire as bears approached the bait. Follicles from the collected bear hairs were then subjected to DNA analysis and subsequently used to identify individual bears. Capture-recapture data analysis was applied and used to estimate South Carolina's coastal black bear population. Based on model averaging, black bear abundance was 30 (SE = 9.3) on Carvers Bay, a private tract in Georgetown County, and 42 (SE = 5.4) on Lewis Ocean Bay Heritage Preserve in Horry County. Model-averaged density was 0.04 bears/km^2 for Carvers Bay. On Lewis Ocean Bay Heritage Preserve, population densities were much higher at 0.31 bears/km^2 likely because habitat quality was greater (Drewry 2010).

Scent Station Survey

The bear scent station survey is used to document population trends in bears. While it cannot be used to accurately estimate the size of a bear population, it can be used to track temporal trends in the bear population. The black bear scent station survey has been conducted in South Carolina's mountains since 1993. Scent station survey lines were attempted in the Coastal Plain using

similar methods as the mountains but no bears visited the sites, even in known bear-occupied areas.

Scent station survey routes are established in the mountains and foothills of Oconee, Pickens and Greenville counties, and are conducted by SCDNR and cooperating partners, including SC Department of Parks Recreation and Tourism, Upper SC Bear Hunters and Hounds men Association, Duke Power Company, US Forest Service and Oconee County Bear Hunters. Bait station transects consist of 10 stations placed at 0.5 mile intervals. At each station partially opened cans of sardines are suspended 7 to 9 feet above ground level in a tree 5 to 10 inches in diameter. The bait is left out for 5 nights and inspected for visitation. Bear visitation is determined by the presence of bear sign: claw marks on trees, tracks, bent or broken trees and/or tooth punctures in sardine cans. The number of visits per each line is recorded and compiled. The survey is conducted between July 15 and August 10 of each year. These surveys are also conducted in North Carolina, Georgia and Tennessee.

The results of this survey indicate that the bear population has increased substantially in the mountains of South Carolina since 1993.

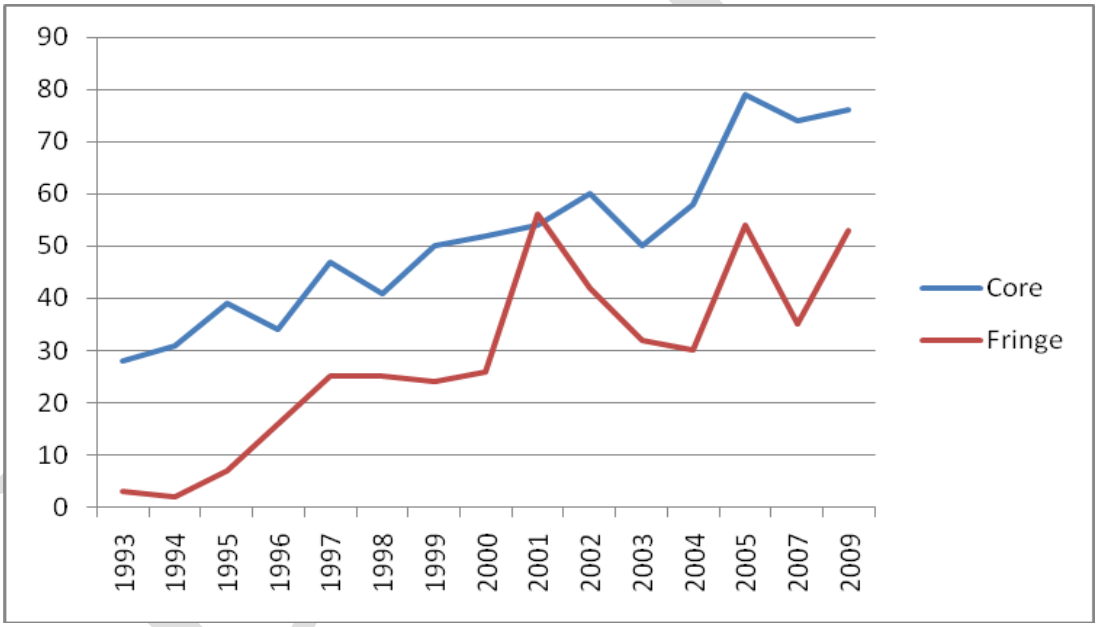

Figure 2. South Carolina mountain scent station survey results of all routes (1993-2009).

Mortality Survey

SCDNR has been monitoring bear mortality in both bear regions of South Carolina since 2003. These data provide another means of monitoring temporal population trends. During 1995-1997, there were no known bear road kill mortalities in South Carolina while in 2007 there were 51 known bear road kill mortalities (Fig. 3).

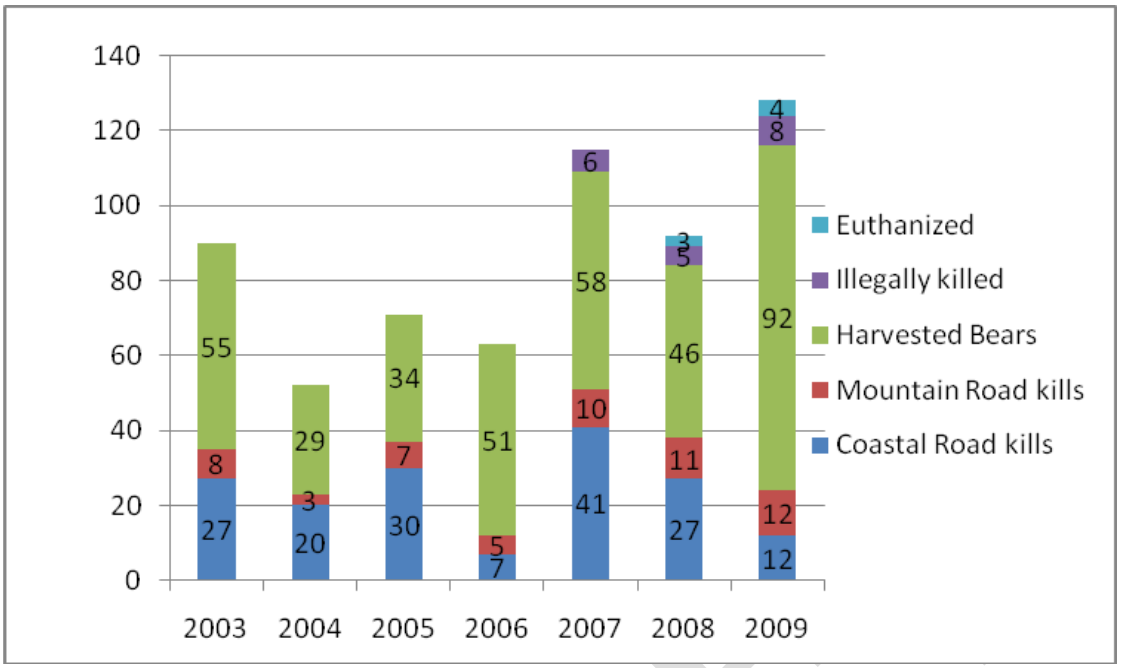

Figure 3. Black bear mortality in South Carolina (2003-2009).

Black Bear Sightings and Human-Bear Encounters

Since the early 1970s, SCDNR has been recording bear sightings across the state. Bear sightings can increase due to many factors including an increase in the number of bears, multiple sightings of an individual bear in populated or nontraditional areas and increased seasonal movements due to factors such as limited natural food supplies, breeding activities, etc.

Black bears are opportunistic feeders that have large home ranges. They occupy habitats that are also inhabited by humans. As bear and human populations have increased, so have human-bear encounters and complaints. The most recent data reflects 358 encounters on average, but encounters peaked in 2007 with 553 statewide (Fig. 4).

SCDNR categorizes encounters according to their nature. Bears foraging in trash containers, birdfeeders and agricultural crops are the most common reports received by SCDNR. In 2009, 31% of the encounters received were trash-related, 21% involved bears raiding birdfeeders and 15% concerned bears on roadways causing accidents (Fig. 5).

Recording encounters helps SCDNR manage the growing and expanding bear population by providing important information and trends. For example, trash and birdfeeder encounters have remained relatively stable in Horry County since 2004. The fact that these common complaints have stabilized while other population monitoring tools reveal an increasing bear population trend suggests that Horry County residents are becoming more “bear aware”. They have taken

measures to prevent these common human-bear encounters by implementing techniques to minimize bear interactions. However, a 34% increase in human-bear encounters was recorded statewide between 2005 and 2009.

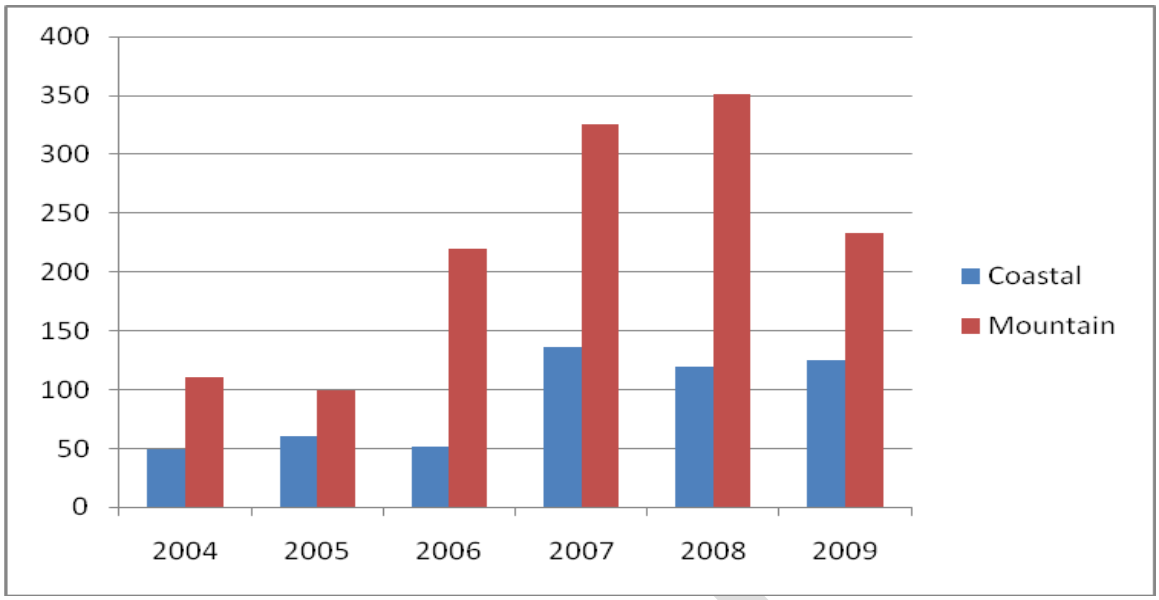

Figure 4. Number of human-bear encounters received by DNR (2004-2009).

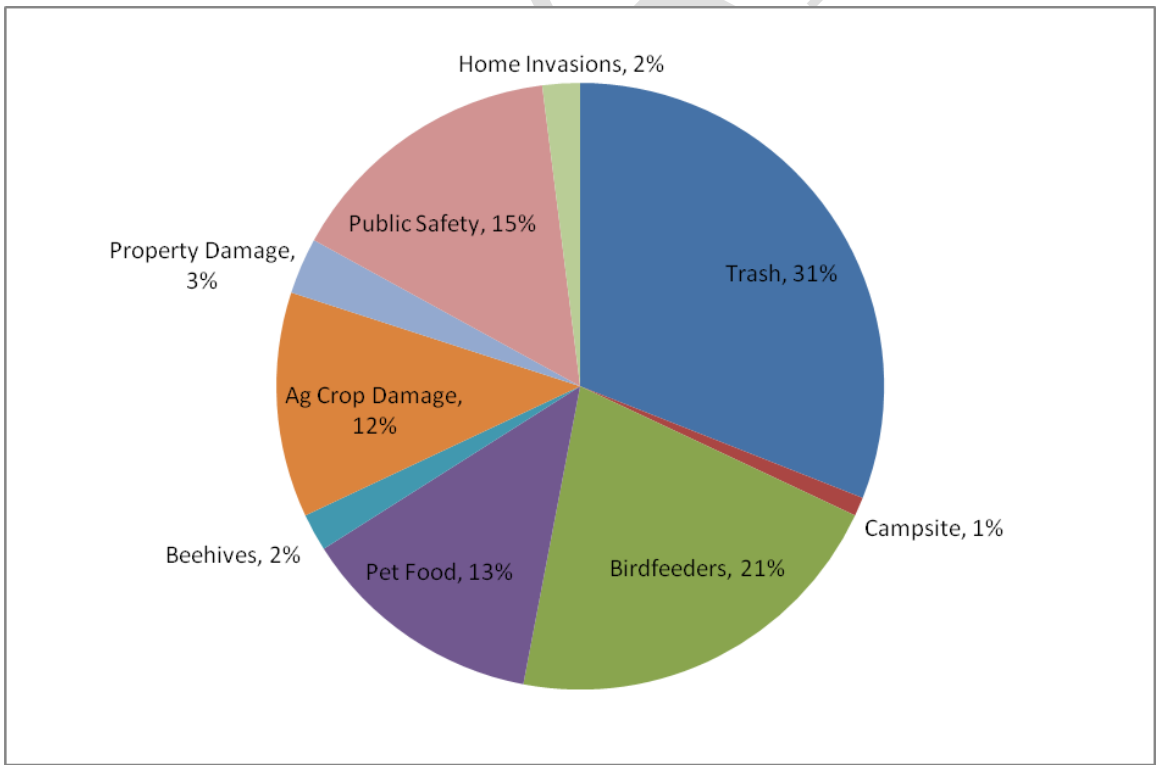

Figure 5. Human-bear encounters by category, 2009.

IV. BEARS AND HUMANS

Black bears have proven to be much more adaptable than previously believed. It was once thought that bears required large, contiguous tracts of forest, uninterrupted by human activity in order to survive. We have now learned that bears not only survive in a landscape filled with human activity, but can thrive in these conditions. This adaptability creates a new set of challenges for wildlife professionals who manage bear populations.

People have mixed opinions about bears. For example, those interested in recreationally viewing the animals are generally happy about the increased population. However, those who have suffered bear damage, like some farmers, may be disheartened over the increasing bear population.

Black Bears – A Valued Resource

Possibly no other eastern wildlife species can reflect the true feeling of wildness better than the black bear. Encounters with bears are remembered and retold to friends and family for years to come. Even though many South Carolinians have never seen a bear in the wild, there is an intrinsic value that people hold in knowing that they have the opportunity to see a bear in the wild.
Black bears are an important component of our natural ecosystem. They are considered an umbrella species, meaning that since black bears use such a diversity of habitats throughout their annual lifecycle, their presence or absence can be used as an indicator to identify a particular component of the habitat that may be missing or degraded.

Information and Education

As people become educated about bear biology and behavior, public acceptance and tolerance increases. Therefore, educating the public about bears may have a greater effect on bear management than any other effort SCDNR undertakes.

SCDNR prints and distributes several educational items designed to inform residents about bear behavior and avoidance techniques. The most popular of these items is a full-color, eight-page pamphlet entitled “A Homeowner’s Guide – Living with Bears”. Over 15,000 of the bear brochures have been disseminated since the first printing in 2007. Other pamphlets and posters designed to inform people on how to avoid human-bear encounters have also been distributed to residents living in bear habitat and to those experiencing bear damage.

Human- Bear Encounter Procedures and Protocol

In 2008, SCDNR developed and implemented its Human-Bear Encounter Procedures and Protocol. This plan streamlined SCDNR’s response to bear encounter situations by providing guidelines on how to handle specific situations. The plan continues to be distributed throughout SCDNR and other agencies that may receive human-bear encounter calls. Agency response to these situations

has been standardized since implementation of the plan, resulting in better abatement and customer service.

The response team provides emergency assistance 24 hours a day, 7 days a week. Response team members are equipped with pagers, cellular phones, firearms, vehicles, specialized training and other equipment needed to respond to black bear emergency situations. This specialized equipment provides the tools necessary to resolve most bear situations.

Avoidance/Exclusion

SCDNR offers technical assistance to those looking for ways to minimize human-bear encounters. The most effective means of preventing human-bear encounters is by avoiding bears. Most human-bear encounters can be prevented. People living in or visiting bear habitat can reduce their chances of experiencing bear encounters by simply eliminating the attractants that may draw bears close to human dwellings and taking a few precautionary measures. Good sanitation practices and trash management are key concepts to consider in avoiding certain bear activity. A few examples include scheduling frequent trash pick-up, eliminating any wildlife feeding activities (including birdfeeders), eliminating outside pet food storage, regularly cleaning barbecue grills and picnic/camping areas.

A proactive approach to handling potential problematic situations is to physically prevent bears from obtaining access to various attractants by the use of exclusion devices. Bear-proof trash containers and food storage containers may be used to deter bear activity at homes or campsites. Using bear proof dumpsters in subdivisions and at restaurants can help deter bear activity in populated areas. Trash-raiding bears have been the leading human-bear encounter complaint in South Carolina since SCDNR began recording encounters in the 1970s.

Electric fencing is an exclusion device that can be very effective in mitigating bear damage. While installing electric fencing around large agricultural fields can be cost prohibitive, electric fences are very effective when installed around small area attractants, such as apiaries, trash collection sites, buildings and smaller orchards.

Repellents and Aversive Conditioning

While bear repellents may be effective in abating annoying behavior in specific situations for the short-term, there is little hope for use of bear repellents as long-term control measures. Noise, lights, pyrotechnics, guard dogs and chemical compounds have all proven to be effective bear repellents in specific situations. Bears can often be frightened from an area by shouting, clapping, banging pots and pans or using noisemakers such as whistles or air-horns. The use of lights and dogs around human dwellings and livestock can be an effective way to keep bears away, as well. Bears learn quickly and may become accustomed to

certain repellents over time (e.g. lights), reducing the effectiveness of the repellent.

Capsaicin spray is a repellent that has been used effectively on black bears. The spray is for use at close range (up to 30 feet), and is effective in situations where bears and humans come in close contact (Hygnstrom 1994). Capsaicin sprays are often recommended to outdoor enthusiasts hiking and camping in bear habitat. Capsaicin sprays are available commercially and designed to be applied directly in the face of a bear. When purchasing capsaicin spray as a bear repellent, people should be careful to buy sprays intended for use on bears. Capsaicin used as an analgesic rub may also be used on trash can lids or other surfaces to discourage bears.

In certain situations, with consenting adjacent landowners, running bear with dogs is a viable solution for modifying undesirable bear behavior. SCDNR does issue a limited number of these permits each year.

Trap & Transfer

For years, trap and transfer (translocation) programs were used by many states to mitigate human-bear encounters. Trapping and transferring bears has been an effective means of abatement under certain circumstances (McArthur 1981, McLaughlin et al. 1981). Wildlife managers must take many factors into account when trapping and transferring bears. The age of the animal, the area of undesirable behavior and the area where the animal will be released may all have implications for the success of the translocation. The desired and likely outcomes of the translocation should be considered before using this as a conflict resolution tool.

Translocation may be an effective solution if the desired outcome is to remove an individual bear from a particular situation. However, if the desired outcome is to halt undesirable activity by an individual bear or to eliminate activity in a particular area, then translocation may not produce that outcome. Relocated bears may return to the trap site or continue to exhibit undesirable behavior at the release location. There are no locations in South Carolina so remote that a bear will not encounter human residents or visitors. Also, other resident bears may continue to perpetuate an undesirable situation at the capture site if proper precautions aren't taken.

Increased mortality of relocated bears has been documented due to various factors, such as bear/vehicle collisions and hunting mortality precipitated by the bears' increased movements after release at a new site (Massopust and Anderson 1984). Relocated bears may attempt to return to their original home range or may increase movements while trying to learn a new territory. Young, subadult bears are less likely than adult bears to return to their capture site after translocation, but may be susceptible to the aforementioned mortality factors as they explore new habitats.

To decrease the likelihood of the animal returning to the capture site, research has suggested that relocated bears should be moved at least 40 miles (Alt et al. 1977, Rogers 1986). Relocating the animal across a substantial geographic obstacle, such as a large river, mountain range, or swamp may also help to keep the animal from returning to the previous area (Hygnstrom 1994). To further increase the likelihood for a successful translocation, black bears should only be released in an area containing suitable black bear habitat. (Virginia Department of Game and Inland Fisheries 2002).

However, translocating bears is often not a feasible solution. Limited available habitat, the likelihood that bears will return to the capture site and the intolerance of humans to bears are all factors that affect the success of these efforts.

Depredation Permits

Bear depredation (kill) permits can be an effective means of eliminating specific bears, especially those causing agricultural damage. Many states make use of depredation permits, allowing citizens suffering bear damage to kill the offending bear (Conover and Decker 1991). In cases of severe damage, SCDNR has the authority to euthanize repeat offending bears. It can be cost prohibitive for SCDNR to conduct this activity, thus issuing depredation permits to citizens may become a more cost effective technique to resolve specific damage situations.

V. BLACK BEAR MANAGEMENT OPTIONS

Allowing nature to take its course is a management option that enables the bear population to increase at the maximum growth rate allowed by biological factors. This option may be favorable in areas where bear densities are low and a higher bear population and expanded range are desirable. Over time, this option would allow a population to reach the biological carrying capacity. It is likely, however, that the population would first reach the level of human acceptance or cultural carrying capacity (CCC) due to the increasing number of human-bear encounters associated with a denser bear population.

Regulated Hunting

Regulated hunting can be used to achieve a bear population level consistent with CCC. While the concept of hunting often generates emotional debate among members of the public, it remains a popular and cost-effective population management tool in jurisdictions with bear populations. In the mountainous region of South Carolina, hunting is the primary means of bear management. In addition, all of South Carolina's neighboring states with bear populations (North Carolina, Georgia, Tennessee) rely on hunting as their primary means of black bear population management.

Hunting seasons can be structured to meet conservative or liberal harvest objectives, allowing black bear populations to increase, decrease or be stabilized. This can be accomplished by adjusting hunting season parameters, such as season length and timing, bag limits, legal method of take and zoning of

hunting areas. A better understanding of the function and interaction of the parameters associated with a hunting program such as season length, bag limits, and tag issuance, and the resulting impact upon harvest is critically needed in order to attain desired harvests.

The examination of hunter-harvested bears offers important biological information that can be used to monitor the population. Sex and age data, general body condition and reproductive status are just some of the data routinely gathered from examining bear carcasses collected during a hunting season.

VI. GOALS, OBJECTIVES and STRATEGIES

This bear management and conservation plan identifies management goals and objectives regarding South Carolina's black bear resource. Specific strategies have been developed to aid in obtaining these long-term management goals and objectives. The following goals, objectives and strategies are based on input from SCDNR wildlife biologists.

Goal 1 – Population Viability:

Ensure the long-term viability of South Carolina's bear population through comprehensive research and monitoring.

Objective 1. To maintain South Carolina's bear population at a level compatible with land use goals and acceptable social limits (at cultural carrying capacity-CCC can fluctuate and is not static).

The goal of maintaining or achieving long-term population viability in South Carolina should be prioritized even when CCC is exceeded. "Minimum viable bear population levels may exceed CCC objectives, especially in areas with high human densities. In these situations, long-term viability of bears may depend on recognizing potential human-bear problems. Increased knowledge and better understanding of bears could lead to increased public tolerance of bears (i.e. raise CCC nearer to the minimum viable population level) (Virginia Department of Game and Inland Fisheries 2002).

Strategies

- Determine by periodic survey and other means the CCC for bears throughout South Carolina. CCC may vary locally within a given region of the state; therefore management consideration should be given to local and regional factors affecting CCC.
- Employ an integrated wildlife damage management approach in meeting CCC utilizing the full range of human-bear encounters and population management tools available to SCDNR. Methods of abatement should be implemented in consideration of the best interests of South Carolina's citizens and South Carolina's bears.

Objective 2. Use "Regulated Hunting" to achieve and maintain the bear population at a level compatible with land use goals and to minimize potential negative human-bear situations.

Strategies

- Use a regulated hunting approach to slow the growth of the bear population in South Carolina's core bear areas.
- Consider the effects of hunting on those directly involved in the hunt. For example, landowner and citizen conflicts with bear hunting activities should be minimized (e.g. restricted hunting opportunities at popular wildlife viewing areas; minimize private land trespass issues).
- Increase hunting opportunities over time as an integrated wildlife damage management approach if the bear population increases beyond CCC or if range expansion into urban areas of South Carolina is imminent.
- Determine the appropriate hunting techniques to be implemented in South Carolina.
- Continue implementation of the bear hunting tag to generate revenue that will be used to help finance the cost of black bear management and research in South Carolina.
- Ensure that bear hunting methods in South Carolina conform to the ethics of "fair chase."

Objective 3. To maintain a current understanding of the viability of South Carolina's bear population.

Strategies

- Continue to monitor bear population trends throughout occupied range through existing surveys and develop new surveys as they become available and appropriate.
- Conduct a bear population survey at least every 5 years using state of the art techniques.
- Determine juvenile bear survival and dispersal rates.
- Conduct research to refine home range estimates for female and male bears.
- Conduct research to monitor bear/human interactions that may positively or negatively impact CCC.

Goal 2 – Human-Bear Encounters:

Promote human safety, protect agricultural income, protect personal property and address conflicts between humans and bears.

Objective 1. Prioritize bear education and information programs within SCDNR.

Strategies

- Continue an aggressive education campaign to inform the public on bear life history, habitat and behavior.
- Continue to educate residents and tourists on what can be done to minimize conflicts with bears.
- Develop creative information dissemination venues, utilizing a variety of different media (including print, radio, television, social media and websites).
- Reinforce the message that bears are large, wild animals and can be dangerous in certain situations
- Publish guidelines that will advise the public to treat bear encounters with caution.

Objective 2. Work with local communities, homeowner's associations, and civic groups, to minimize human-bear conflicts.

Strategies

- Increase educational programs regarding bear avoidance with an emphasis on proper sanitation and waste management techniques, including the use of bear-proof trash receptacles.
- Explore the feasibility of implementing statutory and/or regulatory actions that would require the use of bear-proof trash receptacles and limiting wildlife-feeding activities (e.g. birdfeeders, squirrel feeders, etc.).

Objective 3. Continue to respond in a timely manner to human-bear encounters.

Strategies

- Maintain a thorough database of encounter activity so that any developing trends regarding bear activity may be identified.
- Implement new abatement technology as it becomes available and incorporate these techniques into the Action Plan of the Human-Bear Encounter Procedures and Protocol.

Objective 4. Provide training programs for public agencies that are first responders to situations involving people and bears.

Strategies

- Conduct training sessions on handling human-bear encounters for all first respondent agencies in the mountains and coast of South Carolina.
- Partner with Division of Public Safety to create a video to be seen by all commissioned officers in South Carolina on "Human-Bear Encounter Procedures and Protocol"

- Expand training opportunities in areas where bears are not yet established, but where bears are expected to become present within the next 10 years.

Objective 5. Develop a conservative, dynamic approach to hunting bears in an effort to ensure conservation of the bear resource while offering relief to human-bear conflicts.

Strategies

- Develop better understanding of the function and interaction of hunt parameters and the impact on desired harvest.
- Establish and modify bear hunting techniques (such as methods of hunting, timing and length of hunting seasons, the number of hunting permits issued and geographic zoning) to achieve various population and behavior management goals.
- Employ systematic monitoring of the bear population for regional abundance and sex and age composition to evaluate the impacts of a hunting program on the desired population objective.
- Utilize biological data collected from harvested bears to aid in population monitoring and modeling efforts.

Objective 6. Develop a bear depredation permit system that would allow individuals experiencing ongoing and severe damage to kill individual offending animals in the most humane manner possible.

Strategies

- Develop regulations that will implement a depredation permit system as part of an integrated wildlife damage management approach to resolving bear situations.
- Coordinate the depredation permit system with consideration of law enforcement and community issues.

Goal 3 – Funding Black Bear Management and Conservation in South Carolina:

Provide funding mechanisms to support the attainment of black bear management goals and objectives.

Objective 1. To develop additional funding sources for South Carolina's bear management program.

Strategies

- Use revenue generated from the bear-hunting program as a funding source for the bear management program.
- Pursue grant funding for bear research.

VII. Future Needs

Habitat Conservation and Management:

Consistent with bear population objectives, conserve black bear habitat in South Carolina, maximizing the quantity and quality of habitat available to the bear population. Conservation emphasis should be given to areas of special significance, such as travel corridors, wetlands and other areas frequented by black bears.

Objective 1. Utilize the DNR's Habitat Protection efforts to conserve important bear habitat in partnership with government agencies and private landowners.

Strategies

- Partner with large, private landowners to conserve and protect critical bear habitat.
- Implement bear habitat management techniques on public lands in South Carolina.
- Monitor and assess changes in existing habitat across an evolving South Carolina landscape.
- Initiate progressive programs that identify and protect bear habitat.
- Work with local and state Department of Transportation offices on road construction projects and viability of using wildlife underpasses.

Public Values and Recreation:

Ensure that public values are considered in various bear management scenarios and that alternative forms of recreation are incorporated into South Carolina's bear management schemes.

Objective 1. To consider public values and recreational needs when implementing various bear management options.

Strategies

- Determine the perceptions, desires and attitudes of people in South Carolina concerning black bears by conducting public attitude surveys and monitoring local and regional forums for public comment (e.g. newspaper editorials and internet forums).

- Provide opportunities for the public to have input into the bear management program. Public understanding and support are imperative for an effective management plan.

Objective 2. Continue to provide non-consumptive recreational opportunities, allowing citizens to maintain the opportunity to view and experience wild black bears in South Carolina.

Strategies

- Maintain the black bear population at a level that will continue to provide black bear viewing opportunities in South Carolina.
- Implement conservative harvest goals throughout South Carolina's bear range, relying upon regulated hunting to allow local bear populations to grow in suitable habitat with low bear densities while stabilizing growth in areas of suitable habitat with higher bear densities.
- Inform the public regarding black bear life history, how to live with black bears and other pertinent topics that encourage the public to recreate in South Carolina's bear country safely and responsibly.

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Literature Cited:

Alt, G. L., G. J. Matula, Jr., F. W. Alt, and J. S. Lindzey. 1977. Movements of translocated nuisance black bears of northeastern Pennsylvania. Transactions of the Northeastern Fish and Wildlife Conference 34: 119-126.

Burch, R. A. editor. 1997. North American Black Bear Report. Columbia, South Carolina, USA. 107pp.

Butfiloski, J. W. 1996. Home Range, Movements, and Habitat Utilization of Female Bears in the Mountains of South Carolina. M.S. Thesis, Clemson University, Clemson, South Carolina, USA.

Conover, M. R., and D. J. Decker. 1991. Wildlife damage to crops: perceptions of agricultural and wildlife professionals in 1957 and 1987. Wildlife Society Bulletin 19:46-52.

Drewry, J.M. 2010. Population Abundance and Genetic Structure of Black Bears in Coastal South Carolina. M.S. Thesis, Univ. of Tenn., Knoxville, Tennessee, USA. 99 pp.

Garner, N. P. and T. P. Mathews. 1992b. Population study of black bears in Garrett County, Maryland, 1987-1991. Final Report. Maryland Department of Natural Resources Wildlife Division. 23pp.

Harter, H. W., III. 1999. Biology of the Black Bear in the Northern Coastal Plain of South Carolina. M.S. Thesis, Clemson University, Clemson, South Carolina, USA. 89 pp.

Hygnstrom, S. E. 1994. Black Bears. Pages C-5 – C-15 in S. E. Hygnstrom, R. M. Timm, and G. E. Larson, editors. Prevention and control of wildlife damage. University of Nebraska Press, Lincoln, Nebraska, USA.

Massopust, J. L. and R. K. Anderson. 1984. Homing tendencies of translocated nuisance black bears in northern Wisconsin. Proceedings of the Eastern Workshop on Black Bear Research and Management 7:66-73.

McArthur, K. L. 1981. Factors contributing to effectiveness of black bear transplants. Journal of Wildlife Management 45: 102-110.

McLaughlin, C. R., C. J. Baker, A. Sallade, and J. Tamblyn. 1981. Characteristics and movements of translocated nuisance black bears in north-central Pennsylvania. Pennsylvania Game Commission Report, Harrisburg, Pennsylvania, USA.

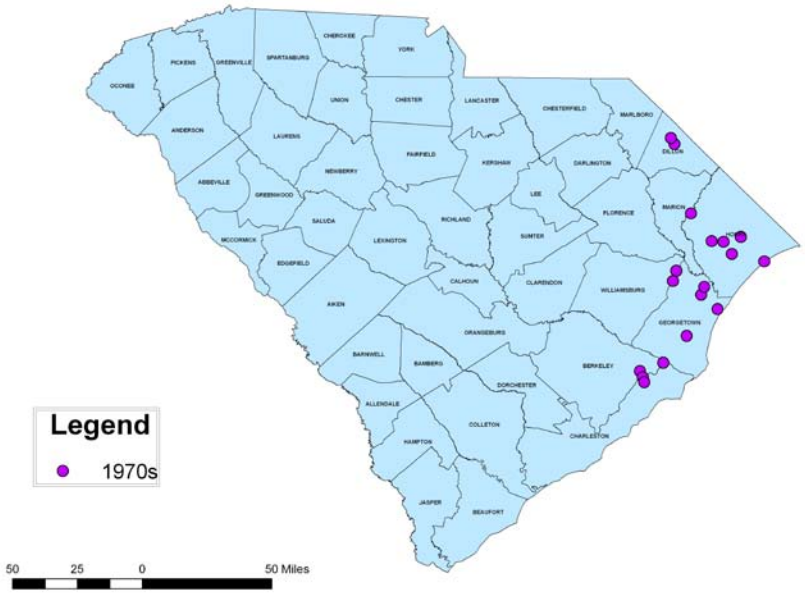
Proceedings of the 19th Eastern Black Bear Workshop. 2008. Human-Bear Conflict Management: Aversive Conditioning and Information Outreach. Compiled by: C. Ryan, H. Spiker, and M. Ternent. 140 pp.

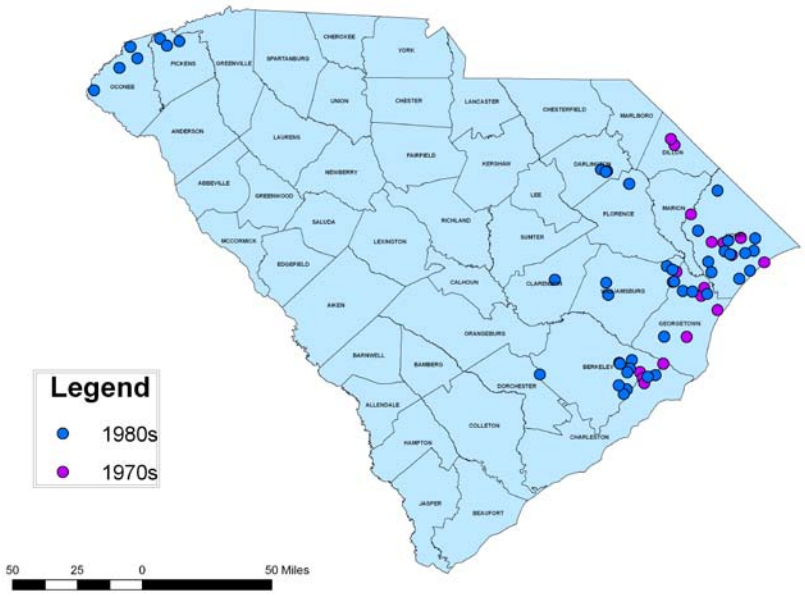
Rogers, L. L. 1986. Effects of translocation distance on frequency of return by adult black bears. Wildlife Society Bulletin 14:76-80.

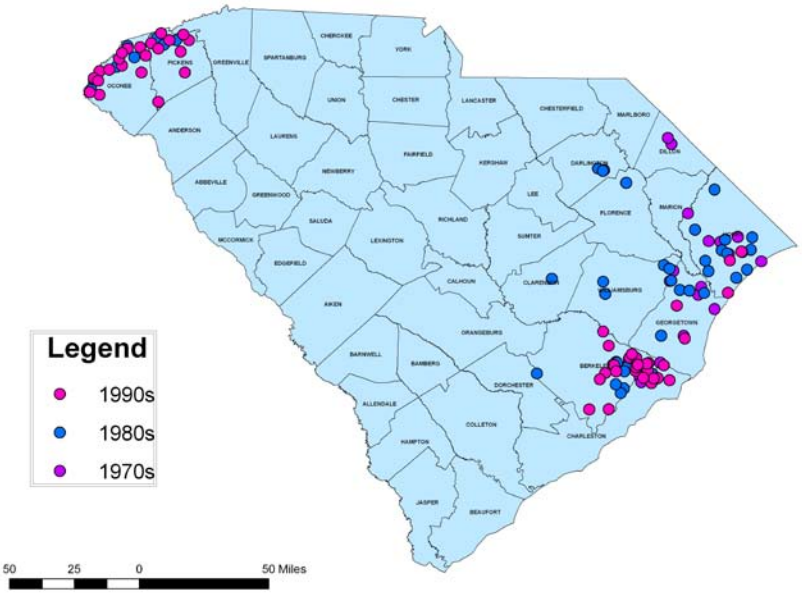
Settlage, K.E., Van Manen, F.T., Clark, J.D., King, T., Gregory, D., Jones, M., Still, S., Stiver, W.H., and Peters, G. 2005. Effectiveness of DNA Sampling to Monitor Black Bear Abundance in the Southern Appalachians. 18th Eastern Black Bear Workshop. Page 276-277.

Virginia Department of Game and Inland Fisheries. 2002. Virginia black bear management plan. Virginia Department of Game and Inland Fisheries. 86pp.

Appendix A. Black Bear Sightings 1970-2010



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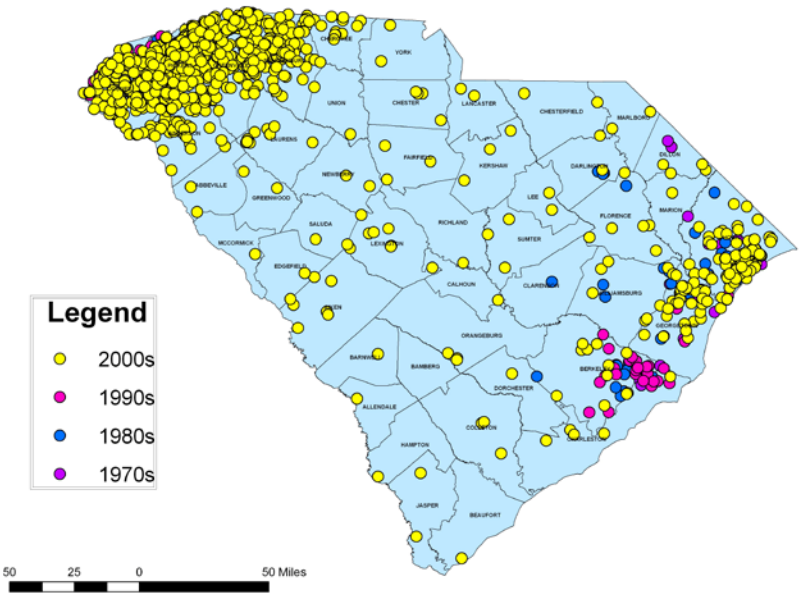
1980s
1970s
50 25 0 50 Miles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