

# Maryland DNR, Wildlife & Heritage Service

## Black Bear Project Status Report

September 2009

### INTRODUCTION

Historically, black bears were found in all of Maryland's counties. However, as settlers cleared the landscape for agriculture, industry, and timber production throughout the 18<sup>th</sup>, 19<sup>th</sup>, and early 20<sup>th</sup> centuries, most of Maryland's suitable black bear habitat was lost. By the mid-20<sup>th</sup> century, black bears could only be found in the rugged mountainous areas in western Maryland. By the mid 1950s, only a few bears were estimated to remain in the state. In 1953, the black bear hunting season was closed due to concerns of a dwindling bear population. In 1972, the status of black bears was changed from 'forest game animal' to 'endangered species' in Maryland.

As habitat conditions improved with the maturation of second-growth forests, DNR began to receive increased reports of bear sightings and damage. As a result, in 1980, the black bear was moved from the 'endangered' species classification to that of 'nongame species of special concern'. In 1985, the black bear's status was once again changed to that of a 'forest game animal' with a closed hunting season.

Currently, Maryland has a breeding population of black bears in the 4 westernmost counties (Garrett, Allegany, Washington, and Frederick) (Fig. 1), with the highest bear densities found in Garrett and western Allegany counties (approximately 880 mi<sup>2</sup>). Although evidence of a breeding population is confined to the western 4 counties, DNR receives several bear sightings and complaints in central and southern Maryland counties each year.

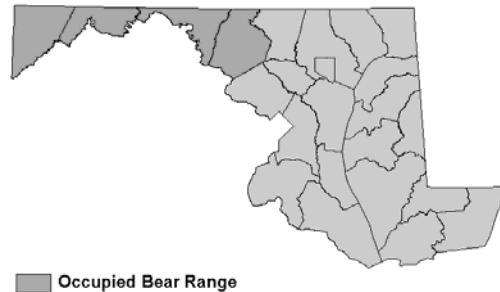


Fig.1. Occupied black bear range in Maryland.

### HARVEST DATA

In October 2004, DNR implemented Maryland's first bear-hunting season in 51 years. Subsequent hunts have been held each year since. A conservative hunt has been designed. Each year, a select number of permits have been awarded via a random selection process. 200 permits were issued in 2004 and 2005. These permits were valid in Garrett and the western portion of Allegany County. In 2006, the hunt area was expanded to include all of Garrett and Allegany counties. In 2006, 2007, and 2008, 220 permits were awarded. In 2009, 240 permits will be awarded to successful applicants. To be entered in the drawings, applicants must submit a \$15 nonrefundable fee. The number of applications received has ranged from 2,192 to 3,608.

DNR established a harvest quota targeting an approximate 8% harvest mortality. This was based on the objective of achieving 20% to 25% overall mortality (seasonal +nonseasonal mortality). Harvest quotas have ranged from 30 to 75 bears between 2004 and 2008. The harvest range for the 2009 season has been set at 60 – 85 bears. In 2004, hunters harvested 20 bears on the opening day of the six-day season. DNR effectively closed the hunt at the end of the first day to avoid exceeding the harvest quota. In 2005, 40 bears were harvested in 4 days; in 2006, 41 bears were harvested in 2 days of hunting, 51 bears were harvested in 4 days in 2007, and 56 bears were harvested in 4 days in 2008.

## POPULATION MANAGEMENT

Population Estimate - In May and June 2005, DNR conducted western Maryland's most recent black bear population survey. A DNA-based mark-recapture study was conducted across Garrett and Allegany counties. A similar study had been conducted in 2000. 240 grids sized (12.0 km<sup>2</sup>) were established across the study area. Each grid contained one bait station (a stump baited with molasses and surrounded by barbed wire). The bait stations were checked and rebaited weekly for 5 weeks. 725 hair samples were submitted to the USGS lab in Kearneysville, WV for DNA analysis. From these samples, 167 individual bears were identified. Of these, 72 were recaptured a total of 207 times.

The results of the DNA analysis were entered into Program MARK which yielded a population estimate of 362 adult and subadult bears across the study area. The 95% CI ranged between 242 and 482 animals. It is important to note that this study was conducted across two counties of the four-county occupied bear range.

A similar research project is scheduled to be conducted in 2010 and 2011.

Scent Station Survey - Scent station survey routes are established across known portions of the black bear range in the 4 western counties annually. This survey has been conducted in western Maryland since 1993. Each route consists of 4 or more bait stations located 0.5 miles apart. The survey routes are established in mid to late July and checked 8 days after establishment for black bear activity. Visitation rates are then calculated and used to compare results between years.

A total of 134 bait stations were established on 17 routes across Garrett County in 2008. Of these, 76 were visited by black bears, a 56.7% visitation rate. Four routes were established in Allegany County in 2008.

Bears visited 17 of the 66 bait stations for a 25.8% visitation rate. Bears visited 4 of 15 stations in Washington County, a 26.7% visitation rate. In Frederick County, 3 of the 21 stations were visited black bears for a 14.3% visitation rate. The visitation rate was 42.4% across the whole survey area (Garrett, Allegany, Washington, and Frederick counties). This survey has revealed the greatest increase in visitation in Garrett County (Fig 2).

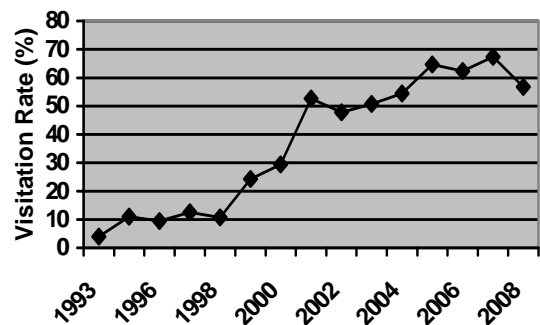


Fig. 2. Garrett County scent station survey results (1993-2008).

Since this long-term survey has been implemented, routes have been added to monitor range expansion across all 4 western counties. Despite the addition of routes into Maryland's peripheral bear range, visitation rates continue to increase.

Reproductive & Mortality Surveys - DNR has been monitoring black bear reproduction since 1986. In 2009, 19 cubs were born to 7 sows for an average of 2.7 cubs per sow. Since 1986, 252 cubs have been born to 85 sows for a long-term average of 3.0 cubs per sow. Currently, 16 sows are being monitored in Garrett, Allegany, Washington, and Frederick counties. The average annual litter size has ranged between 2.5 and 3.5 cubs per sow.

Black bear mortalities have been monitored since 1981. County and State Road Departments and other public service agencies (local and state police, etc.) have worked cooperatively with DNR to report road-killed bears and other bear mortalities in Maryland. In 1981, there were two known bear mortalities in Maryland. Nonseasonal bear mortalities are now common in western Maryland. In 2008, 66 nonseasonal bear mortalities were reported to DNR. While the long-term trend continues to increase (Fig. 3), nonseasonal mortalities appear to be stabilizing in Maryland’s core bear area (Garrett and western Allegany counties) while they are increasing in other areas.

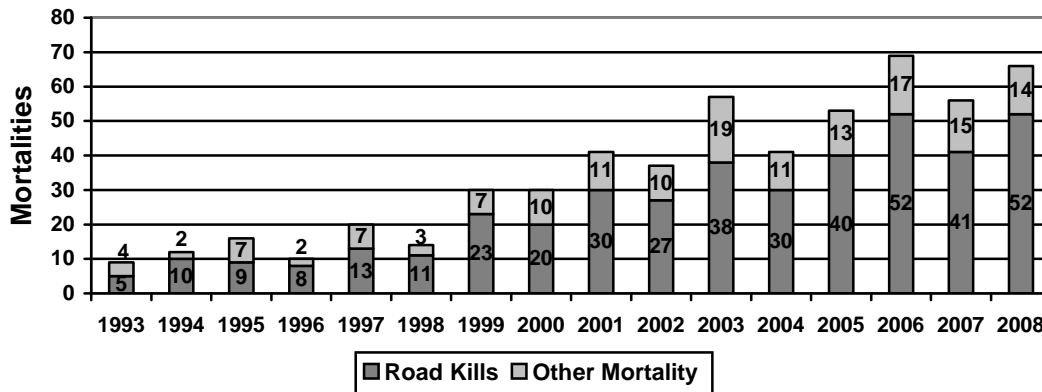


Figure 3. Non-seasonal black bear mortality in Maryland (1993 – 2008).

### CONFLICT MANAGEMENT

In 1996, a formal nuisance response plan was implemented and has been periodically revised as we continue to increase efficiency in handling human-bear conflicts. In 1997 a bear response team, consisting of DNR employees, was created to address after hours human-bear conflicts in Garrett County. Response team personnel are on call 24 hours a day, 7 days a week from April through November. The team can be contacted by DNR Communications Center personnel and local emergency management staff (911 center).

DNR holds a series of annual workshops for local public safety agencies (police & fire departments, 911 emergency management centers, animal control, USDA, etc.). At these workshops, the agencies are given guidance on how to handle nuisance bear calls in accordance with the nuisance response plan.

In 1995, the Maryland Legislature passed legislation requiring DNR to implement a bear damage compensation fund. Money for the fund is raised through the sale of a black bear stamp and other related merchandise. The fund is then used to reimburse farmers for agricultural damage caused by black bears. Since 1996, damage claims have ranged from \$10,000 to \$50,300 each year. Dependent on the value of the claims and the money available in the fund, DNR has reimbursed between 12% and 85% of the claims each year. Stamp sales have been poor, never providing enough money to provide 100% compensation.

### RESEARCH

DNR and West Virginia University are in the final stages of a 3-year collaborative study examining spatial and habitat requirements for female black bears in Garrett County through the use of GPS collars. Additionally, armband GPS units have been deployed on bear hunters to examine any correlations between bear movements to hunter pressure, which should allow us to assess black bear vulnerability to hunting.