

Idaho Mountain Lion Status Report

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ABSTRACT Lions were classified as big game animals in 1972. The 1990 Mountain Lion Management Plan, called for the reduction in harvest of female lions, and to maintain a harvest of approximately 250 lions statewide. However, lion harvest peaked statewide in 1998 when 798 lions were harvested. Consequently, a new lion plan was developed to address the increases in the populations and allow more hunting opportunity. Idaho completed the latest Mountain Lion Management Plan in 2002. The lion plan called for maintaining current lion distribution statewide as a goal and to not allow harvest and populations to drop below the 2002 levels. However, individual regions could adjust harvest to either increase or decrease populations depending upon the objectives for that area. Seasons were made more lenient, running from 30 August to 31 March in most units, and until 30 June in two desert canyon units. In some areas, two-lion bag limits were initiated. Hounds were allowed in most units, and non-resident hound hunting was expanded. Female quotas were used in most of the southern part of the state until recent population expansions, and by 2008, quotas remain in only 20 of 99 units.

History

The legal status and public perception of mountain lions in Idaho has changed over time. In the late 1800s and early 1900s, mountain lions and other predators such as wolves, coyotes, grizzly and black bears were perceived as significant threats to livestock and human interests and were systematically destroyed. Between 1915 and 1941, hunters employed cooperatively by the State, livestock associations, and the Federal Government killed 251 mountain lions in Idaho; the take by private individuals is not known. During the period 1945-1958, bounties were paid for mountain lions in Idaho with an annual average of 80 mountain lions turned in for payment (Fig. 1). The 1953-54 winter periods yielded the highest recorded bounty harvest of 144 mountain lions (Fig. 1). Bounty payments ranged from \$50 in the early 1950's to \$25 per lion during the last 4 years of payments.

Mountain Lion Bounty Mortality Records

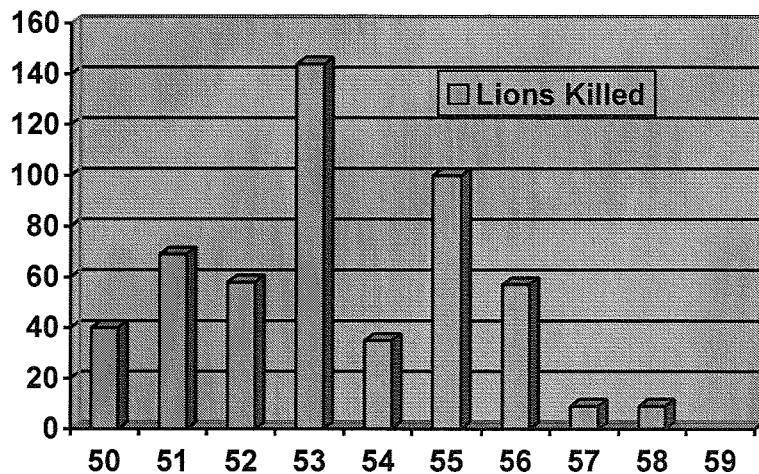


Figure 1. Mountain lion bounty records, 1950 – 1959. From 1950-1954, the bounty was \$50 per lion; from 1955-1959, the bounty was \$25 per lion.

Mountain lion sport harvest became increasingly popular after 1958. Average annual harvest was estimated at 142 lions from 1960 through 1971 (Fig. 2). During this period there were no restrictions or regulations on the harvest of mountain lions. An estimated 303 lions were harvested during the 1971-72 season.

Mountain Lion Sport Harvest

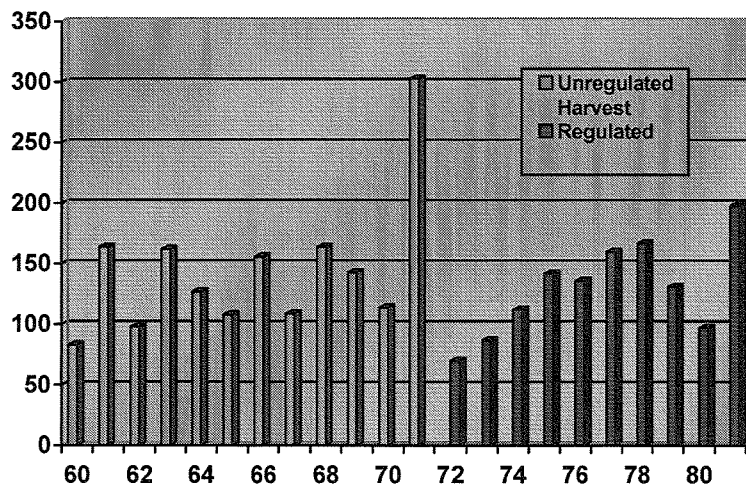


Figure 2. Unregulated mountain lion harvest from 1960-71, and regulated harvest from 1972 - 1981.

Research conducted by Maurice Hornocker in the Frank Church River of No-Return Wilderness from 1964-1973 added significantly to our knowledge. As a result of this research, the mountain lion was reclassified as a big game animal in 1972. Harvest was then able to be regulated and resulted in some closed units, bag limits, and shortened seasons. Mandatory reporting was started in 1973, and a tag has been required since 1975.

Populations of elk and deer continued to increase across the state during the 1980s and early 1990s, and the resulting mountain lion population increased as well. The apparent increase in lion populations allowed the department to increase opportunity for harvest. Harvest continued to increase as a result of liberalized seasons and increased populations and peaked in 1997 (Fig. 3). However, harvest has declined since the peak and has recently stabilized at about 450 lions per year since 2003. Harvest declined despite liberalized seasons, suggesting a lower population level than during the peak.

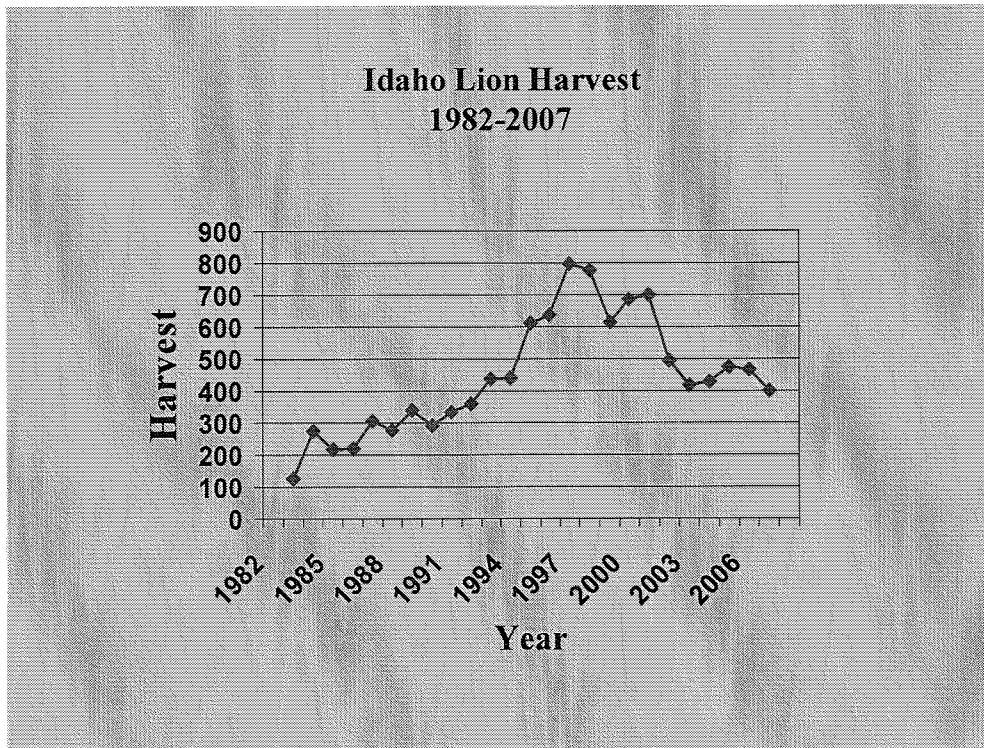


Figure 3. Statewide mountain lion harvest from 1982-2007.

Distribution and Abundance

Lions were distributed across most of the suitable habitat in the state. Management tended to keep lion populations at a low density in developed areas or areas with high road density. However, most of the areas that received high harvest lay adjacent to lightly roaded reservoir areas that seemed to continue to provide dispersing animals. Distribution appeared to be

somewhat stable, though overall abundance apparently declined. Mountain lion harvest was reported in most counties across Idaho. As deer and elk winter range get developed, residential areas now interface with wildlife habitat. Some conflicts with lions result.

Population estimates have not been made for Idaho in recent years, though some radio collaring mortality information in Idaho indicated a high rate of sustainable harvest in some areas. Given an estimated harvest rate statewide of approximately 15-20% (estimated to stabilize the population), we would back calculate and estimate a state population of about 2,000-3,000 lions. Research was attempted to develop a population index; however, nothing was finalized (Zager et al. 2002). All lions legally harvested must be reported. Pelts were tagged and a premolar was removed for aging. Prior to 2000, lion ages were estimated using tooth drop measurements. Based on various tests, tooth sectioning replaced tooth drop as a more reliable estimate of age and has been used statewide since 2002. For data analysis purposes, units were grouped by similar characteristics into Data Analysis Units (DAUs). Age data and harvest rates were used to attempt to identify population trends for a lion population by DAU. Population models using these harvest data were used to estimate population demographics and relative abundance.

Harvest Information

Lion harvest increased steadily through the 1980s and 1990s and peaked at 798 mountain lions harvested in 1997. Lion harvest declined in most areas of the state following the 1997 season, despite a liberalized lion hunting season in most of the state, but has recently stabilized (Fig. 3).

There were 99 big game management units in Idaho, which were grouped into 18 mountain lion management DAUs. Until 2003, the southern part of the state was predominantly managed under a female quota system, and the northern part of the state was mostly general hunts with most seasons running from 30 August to 31 March. Quotas and seasons were set by unit or DAU, usually based on historical harvest rates, big game objectives, depredations, perceived lion population condition, lion hunter success rates and perceptions, public input, and commission desires. Over the last few years, general seasons replaced quotas in 33 units, so that since 2005, only 22 units still had female quotas. Many of the quotas were removed in areas where the quotas were seldom reached, or in areas where deer or elk population objectives were not being met. Quotas are popular among most hound hunters.

Incidental harvest may be another indicator of population changes through time if tag types, hunters, and seasons are held steady. Incidental harvest by hunters in search of other big game would typically be considered a product of a random encounter. Random encounters increase as populations of lions or hunters increase. Incidental harvest in north Idaho general hunts peaked during the mid to late 1990's. The incidental harvest in southern Idaho quota hunts peaked a few years later. Overall incidental harvest peaked during 1998, the same period that total harvest peaked (Fig. 3, 4).

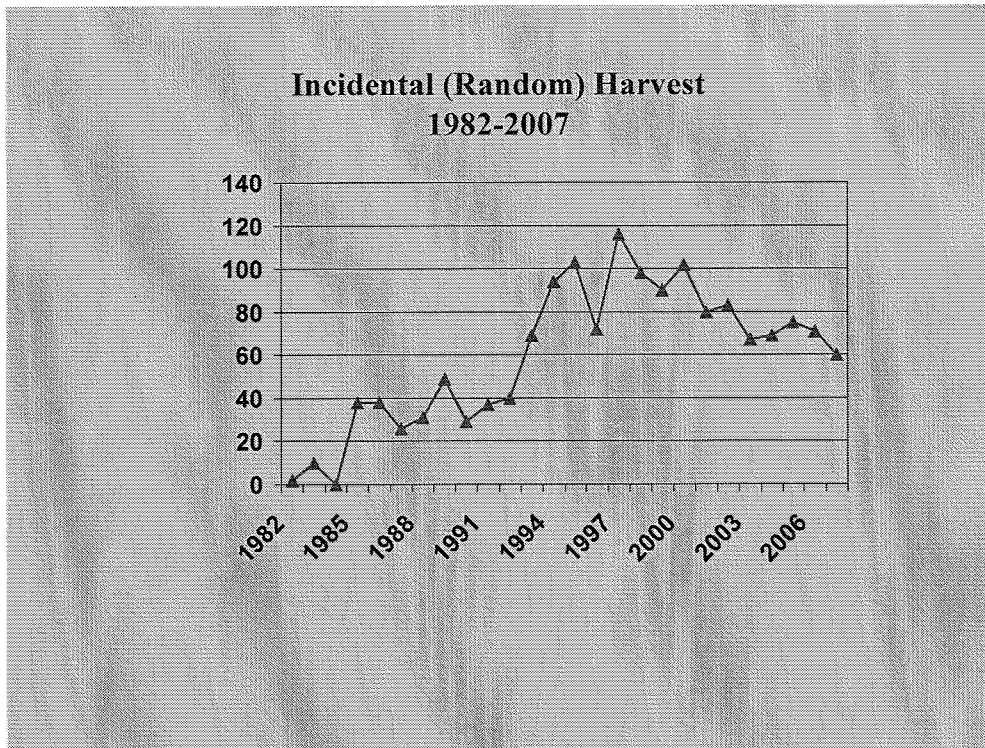


Figure 4. Incidental mountain lion harvest in Idaho from 1982 – 2007 more closely represents random encounters with lions and thus is a more representative depiction of mountain lion populations.

Biological objectives for lions were not well established by DAU. Tooth removal for age data was attempted on all lions harvested. Harvest levels reflected in proportions of sex and age were described in Anderson (2003.) This technique was used to monitor and adaptively manage populations by attempting to grow or reduce populations through harvest management, and monitor resultant age/sex structure shifts in the harvest. Regional wildlife managers in the state were given a great deal of flexibility to be able to set objectives for a given DAU.

Age data were analyzed to compare population demographics between and among years since 2002 (Fig. 5). Even at the statewide level, age proportions did not seem to represent significant changes between years that would represent significant trends.

Idaho Cougar Ages

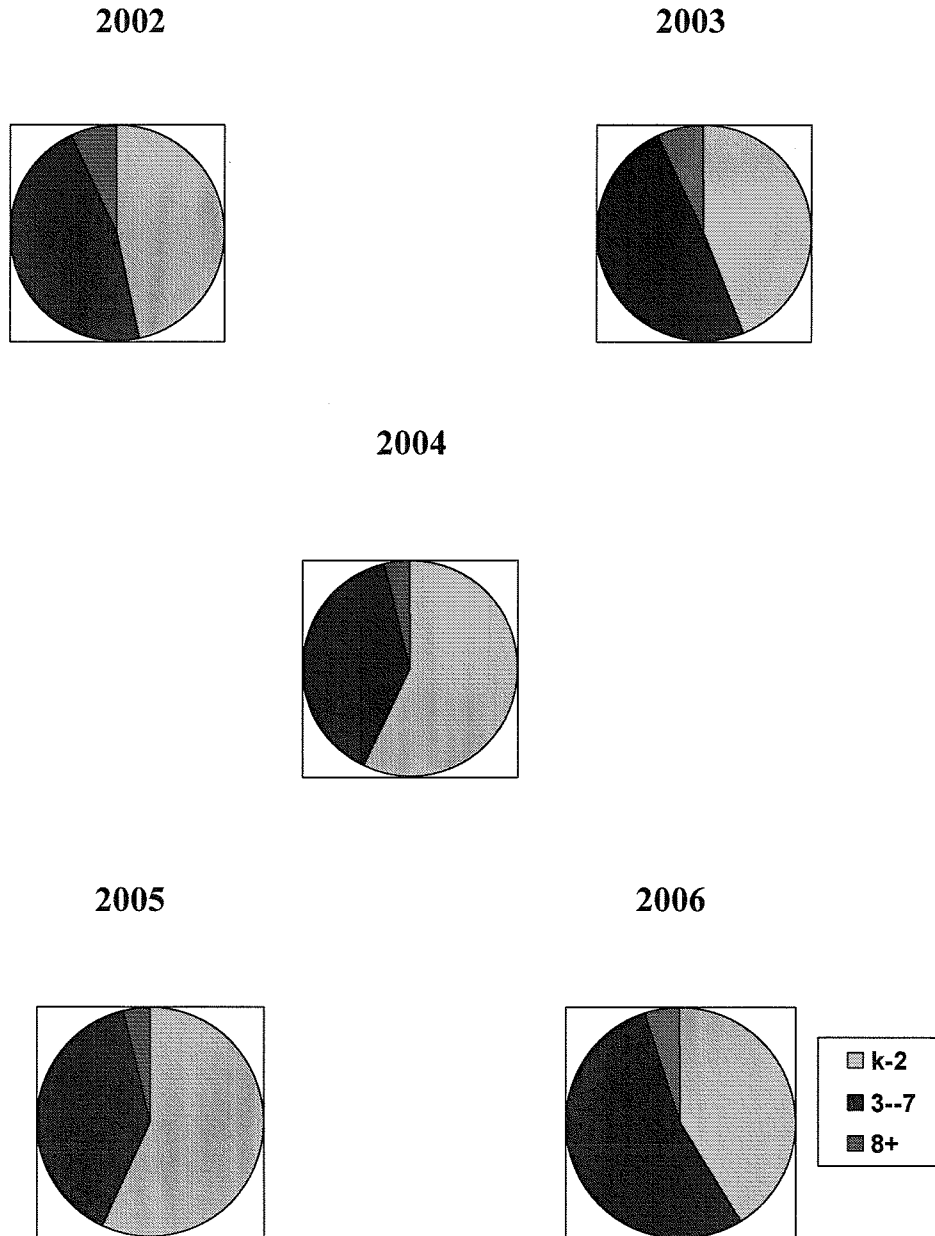


Figure 5. Statewide age structure comparisons of lion harvest in Idaho from 2002-2007. Ages were grouped as kitten through 2 years, 3-7 years, and ≥ 8 years.

Hunting with hounds accounted for about 80% of the annual lion harvest in Idaho. The rest of the harvest occurred incidentally to other big game hunting (13%), spot and stalk (5%), or predator calling (1%). The use of electronic calls was allowed in two management units where predation was a concern and access was limited. Dogs were prohibited through much of the general deer and elk rifle seasons. Pursuit with dogs was allowed in units with female quotas once the quota was reached. In a few of these units, hunting for males was allowed once the female quota was reached.

Mountain lion tag sales increased 8% from 2004 – 2007, and in 2007 were at an all-time high of 23,357 total tags sold (Table 1). Reduced prices, increased nonresident sales of special tags, and liberalized seasons and nonresident hound hunter regulations all added to increased sales. Additionally, in some parts of the state, outfitters were engaged to increase harvest of lions to help reduce predation problems on elk and bighorn sheep. Also, nonresidents can use their deer tag to kill a black bear or mountain lion. Nearly 3,000 hound permits were issued to residents and >100 to nonresident hound hunters each of the last several years.

Table 1. Mountain lion tag sales in Idaho from 1998 through 2006.

Year	Resident Tags	Nonresident Tags	Total Tags Sold
1998	16,196	351	16,547
1999	17,072	813	17,885
2000	18,369	961	19,330
2001	18,561	888	19,449
2002	19,757	883	20,640
2003	19,832	725	20,557
2004	20,875	768	21,643
2005	21,784	699	22,483
2006	22,416	786	23,202
2007	22,596	761	23,357

Depredations and Human Conflicts

Currently, Idaho law allows for killing lions or black bears that are in the act of “molesting” or attacking livestock. Lions killed in this fashion need to be reported to the Department. Idaho law also allows lions that are perceived as threats to human safety to be killed. Department policy provides that lions that have caused problems or have depredated should be captured and euthanized. Most depredations are reported to U.S. Wildlife Services and they handle the removal. Policy also provides that lions that present a threat due to proximity to residential housing or other area of human habituation or activity should be moved or chased in a preemptive fashion. Depending on the circumstance, if the animal has become habituated or caused problems, the lion can be destroyed. Orphaned kittens are not rehabilitated for release back into the wild.

Idaho averaged 3-4 safety-related complaints annually from 1998-2004 and about 50% required capture or removal of a lion. There has been 1 recorded human injury in Idaho caused by lions,

and that occurred in 1999 to a 13-year-old boy. However, close encounters and even stalking behavior are regularly recorded but seldom tolerated. Some lions live in or near populous areas, and will kill domestic animals as well as urban wildlife. Once problems arise, lions are usually destroyed. Transplanting of habituated or food-conditioned lions is not conducted.

Lion-related depredations that required compensation averaged about 1-2 per year. Average annual compensation from 1998-2002 was \$4,717 for lion depredations on livestock. During that same time, 46 lions were removed due to depredation situations.

Research

The Department researched techniques for population monitoring in north-central Idaho by conducting aerial track surveys (Gratson and Zager 2000), and a mark-recapture technique using rub stations and biopsy darts (Zager et al. 2004). These efforts have not yet been finalized.

Literature Cited

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- Gratson, M. W., and P. Zager. 2000. Elk ecology. Study IV. Factors influencing elk calf recruitment. Job No. 2. Calf mortality causes and rates. Federal Aid in Wildlife Restoration, Job Progress Report, W-160-R-26. Idaho Department of Fish and Game, Boise, USA.
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