

Washington Mountain Lion Status Report

Richard A. Beausoleil, Bear / Cougar Specialist, Washington Department of Fish and Wildlife, 3515 Chelan Highway, Wenatchee, WA 98801, USA. beausrab@dfw.wa.gov
Donald A. Martorello, Bear, Cougar, and Special Species Section Manager, Department of Fish and Wildlife, 600 Capitol Way North, Olympia, WA 98501, USA.

ABSTRACT This status report focuses on cougar management developments since the 8th Mountain Lion Workshop. Readers interested in regulations, seasons, harvest statistics, or status and trend reports can obtain that information online by visiting Washington Department of Fish and Wildlife's internet website at:

http://www.wdfw.wa.gov/hunting/game_species/bear_cougar/index.html

Cougar Legislation

Engrossed Substitute House Bill 2438 (HB 2438), was signed by the 60th Washington State Legislature in the 2008 Regular Session. The Bill passed 66 to 29 in the House of Representatives, 31 to 18 in the Senate, and the Governor signed it on 13 March, 2008. It will become effective on 12 June 2008. This Bill instructs Washington Department of Fish and Wildlife (WDFW) and commissioners from 5 northeast counties (Chelan, Okanogan, Ferry, Stevens, and Pend Oreille) to continue with a pilot program that authorized a cougar pursuit season and a cougar kill season with the aid of dogs for 3 additional years. Essentially, HB 2438 is a continuation of 2 previous bills, Substitute Senate Bill 6118 (SSB 6118), which created this cougar pilot program in 2004, and Engrossed Substitute House Bill 1756 (HB 1756), which extended it for 1 year in 2007. When first presented this year, HB 2438 was a modified version of SSB 6118, amended most notably to allow statewide participation in the program, and making the use of dogs permanent in Washington, thus overturning Initiative 655 (I655) approved by voters in 1996. When it appeared that HB 2438 was beginning to stall in the House, amendments were made that modified the language from a permanent program to a 3-year extension; at that point it moved forward. Along with the continuation of the pilot program in the 5 counties, HB 2438 allows the 34 remaining counties in Washington the ability to opt in to this program. To opt in, the language in HB 2438 states: *“A county legislative authority may request inclusion in the additional 3 years of the cougar control pilot project authorized by section 1 of this act after taking the following actions: (1) Adopting a resolution that requests inclusion in the pilot project; (2) Documenting the need to participate in the pilot project by identifying the number of cougar/human encounters and livestock and pet depredations; (3) Developing and agreeing to the implementation of an education program designed to disseminate to landowners and other citizens information about predator exclusion techniques and devices and other non-lethal methods of cougar management; and (4) Demonstrating that existing cougar depredation permits, public safety cougar hunts, or other existing wildlife management tools have not been sufficient to deal with cougar incidents in the county.”* Finally, it is stated that the pilot program's primary goals are *“to provide for public safety, to protect property, and to assess cougar populations.”* A second Bill, Senate Bill 6918 (SB 6918), was also introduced in 2008 that would have designated the cougar as the official state mammal but it died in committee after the first reading. Anyone interested in reading this Bill in its entirety, or

the approximately 15 other bills involving cougar since 1996, can visit the Washington State Legislature homepage at <http://www.apps.leg.wa.gov/billinfo/>

Cougar Management Plan

The Department is in the process of updating the Game Management Plan for all game species including cougar. As of May 2008, WDFW was soliciting input on the draft supplemental environmental impact statement (SEIS), which included updates to the current plan developed in 2003. Public comments on the draft will be used to prepare a final SEIS and the Washington Fish and Wildlife Commission will review that document in August 2008. Once finalized and approved, WDFW will incorporate changes into the 2009-2015 Game Management Plan. In the cougar section, along with public input, WDFW personnel are analyzing research and management findings in preparation for a busy wildlife commission cycle. The challenge is to use these findings to incorporate new strategies and priorities into cougar management and address all aspects of management including quotas, bag limits, season dates, season structure, permit draw hunts, pursuit seasons, public education, and hunter education requirements.

Cougar Mortality Data Collection

We recently revisited our data collection protocols as they relate to cougar mortalities in Washington. With the establishment of statewide DNA collection from all cougar mortalities several years ago, ongoing tooth collection for aging cougars via cementum annuli, and big game mortality forms that field personnel used to collect data (all via a mandatory sealing requirement), we decided to standardize our data collection methods. We created a cougar mortality envelope that incorporates all these techniques, eases the burden on field-staff time, and insures a timely transfer of information. On one side, the envelope is self-addressed, labeled with handling instructions, and pre-paid for postage; on the other side is a modified datasheet. When a cougar mortality occurs, field staff from around the state fill in the pertinent data, collect a premolar tooth and a tissue sample (depositing the tissue in a supplied vial that is pre-filled with ethanol and individually labeled inside and out), deposit the samples inside the envelope, then seal the envelope and mail it. The envelope is delivered to a central location where the data are recorded electronically and the samples are prepared for lab analysis.

Cougar Research Cougar DNA Project – Northeast Washington

For 5 consecutive years, WDFW has been conducting a cougar DNA project to estimate cougar abundance in northeast Washington. The objectives of this project were to: (1) Acquire a scientific population estimate of cougars in northeast Washington; (2) Test the efficacy and practicality of using DNA capture techniques to estimate cougar population size; and (3) Manage project costs to allow agencies interested in the technique to potentially conduct the research for decades. We used a capture-recovery methodology. Instead of using conventional markers (i.e., radiocollars, eartags, and tattoos), we used DNA from tissue samples collected from treed cougar as our “capture” and DNA samples collected from harvested cougar as our “recovery.” Tissue from both sample sessions was analyzed using microsatellite analysis. The DNA fingerprint analysis consisted of positively identifying 24-36 alleles (12-18 loci) for each tissue sample.

Samples that did not produce a minimum of 12 loci were censored. We extracted the specified number of loci from 128 of 163 cougar samples resulting in identification of 100 individual cougars in the “capture” sessions. Preliminary results of this project were presented at this workshop and will ultimately be submitted for publication.

Cougar Population and Survival Project – North Central Washington (NCW)

Since 2004, WDFW has been monitoring cougar populations in Okanogan County, the largest county in Washington State. Objectives of the project are to acquire demographic parameters from cougar populations in NCW (with an emphasis on female and cub survival and population size), provide a current scientific estimate of cougar density in NCW, use science to meet WDFW management goals and objectives for effective management to provide WDFW with population and survival estimates for NCW, the essential data necessary to modify existing regulations, guidelines, and quotas in NCW. To date, 36 cougars (21F, 15M) have been captured, 34 were collared (19F, 15M) and 14 mortalities (9F, 5M) have been documented. Of the 19 known cougar kittens, 12 have survived (63%). Results are currently being analyzed for publication.

Project C.A.T. – Central Washington

Project C.A.T. (Cougars and Teaching), the cooperative research and education program between WDFW and the Cle Elum-Roslyn School District, is nearing the end of an 8-year landmark cougar project. The scientific objectives were to investigate changes in cougar travel patterns, habitat use, and predation events as residential and recreational development increased in a rural community. The education objectives were to provide K-12 students with an experiential curriculum which focused on the local environment and the changes occurring, allowing middle and high school students to participate in captures of cougars and marking them with GPS collars. Project personnel captured and marked 46 cougars (31 male and 15 female) from kittens to adults. More than 28,000 GPS locations were obtained from 26 adult and sub-adult cougars (10 females, 16 males). All collars deployed in winter 2007-08 have been up fitted with timed breakaway functions to drop off the animals in winter 2009. The project will continue through community outreach and experiential education; however, personnel will focus efforts on data analysis rather than field research on cougars.

WDFW / Washington State University – Northeast Washington

In 2006, Catherine Lambert published her M.S. research findings, "Cougar population dynamics and viability in the Pacific Northwest," in the *Journal of Wildlife Management*. Hugh Robinson completed his dissertation titled "Cougar Demographics and Resource Use in Response to Mule Deer and White-tailed Deer Densities," in May 2007. The first publication from his research will be published in an upcoming issue of *Ecological Applications*. A second manuscript on cougar habitat use and prey abundance will be submitted for publication in summer 2008. Hilary Cooley published results from her M.S. research in *Journal of Wildlife Management* in January 2008. She is currently a Ph.D. candidate studying the effects of hunting on cougar population dynamics and demography. Her expected completion date is August 2008. Benjamin Maletzke, a Ph.D. candidate, began his cougar research in winter 2006. He is part of the ongoing research

for Project CAT; his primary focus is cougar age structure and social organization in relation to human development. His expected completion date is Fall 2009. Jon Keehner is a M.S. candidate studying prey selection of cougars and how it differs demographically; his expected date of completion is December 2008. He plans to continue the project for a Ph.D. examining the role of sexual segregation of cougars by elevation and its role in prey selection. Kevin White, a M.S. candidate involved in ongoing research for Project CAT, is studying cougar prey use and habitat characteristics associated with predation sites within a mule deer/elk prey system. His expected completion date is December 2008.

WDFW / University of Washington – Western Washington

University of Washington M.S. student Brian Kertson completed his research in fall of 2006. His research, titled “Cougars and Citizen Science,” evaluated the ability of over two hundred 3rd, 5th, and 8th grade student volunteers to collect scientifically credible data on wildlife and their habitats within the context of Project CAT. Results of the evaluation were mixed, but this research suggests with adequate training and study design students working as citizen scientists can make valuable contributions to cougar research and management projects. A manuscript of this research is nearing completion and should be submitted for publication in the coming months. Phase Two of Project CAT research, examining the role of landscape features and population demographics on cougar-human interaction in western Washington, was initiated in the winter of 2006 and is being conducted by Brian as part of his Ph.D. program with the Washington Cooperative Fish and Wildlife Research Unit. Currently, research activity is focused on data collection with 32 cougars (adult and subadult) that have been captured to date. The anticipated completion of fieldwork and dissemination of research findings is Fall 2010.

Cougar Education

In Spring 2008, WDFW and Insight Wildlife Management conducted a public opinion survey. The objective of the survey was to better understand the public’s perceptions of cougar management, identify information gaps, and define effective outreach methodologies. The survey included questions about the ecological role of cougars, cougar behavior, human-cougar conflict, availability of educational materials, and preferred themes for education programs. Using a random sampling telephone survey method, we obtained results from over 800 individuals and conducted a stratified sub-sample in areas with a higher than average frequency of human-cougar conflicts. Survey results will be compared to data from similar surveys in other states. Ultimately, the survey will be used to develop a public outreach and education plan about cougar ecology, behavior, safety, and management in Washington. Results of this survey were presented at this workshop.

Along with cougar education WDFW provides to the public via the Department website, the use of brochures, periodic press releases, and public presentations, another effective way to reach the public is cooperative partnership with local land trust organizations. The Chelan-Douglas Land Trust in central Washington recently released *The Chelan County Good Neighbor Handbook: Tools for Living in Chelan County Washington*. Department personnel provided input on this document and the focus is on educating people about land stewardship. The handbook is a guide for current and new residents that may not be aware of the responsibilities/challenges that come

with moving to a semi-rural mountainous area. Too often, real estate agencies advertise the scenic beauty of these places, touting the mountains, rivers, rolling meadows, wildflowers, and sometimes even deer and elk, without also mentioning that predators make their home in these places. Educating existing and incoming homeowners to be stewards and work to prevent conflict will be a monumental challenge.

THIS ENVELOPE FOR BEAR & COUGAR ONLY

Officer / Biologist: _____ Date of Seal: _____

Hunter Name (Last, First): _____ Wild ID #: _____

Species: Bear ___ Cougar ___ Date of Kill (month/day/year): ___/___/___ Seal # _____

Dogs used? Yes No Weapon Type: Modern Firearm ___ Archery ___ Muzzleloader ___ Sex of Kill: Male ___ Female ___

If female, was she lactating? Yes No GMU of Kill: _____ County of Kill _____

Age Class of Kill (see age guide): Cub / kitten ___ Sub-Adult ___ Adult ___

Location of Kill: (please be specific) _____

Kill Type: General Hunt ___ Special Permit Hunt ___ Depredation ___
 Landowner Kill ___ Poached ___ Roadkill ___

Body Condition Score (See guide): _____ Gun Recession measurements (only for cougar) (L&R): _____

Premolar tooth collected? Yes No Tissue Sample Collected? Yes No Vial Number: _____

Did the animal have an ear tag (or a hole in the ear)? Yes No Tag number: _____ Tag Color: _____

Did the animal have a radiocollar (or "wear" marks)? Yes No Frequency: _____

Graphic shows the location of the first premolar tooth to collect for bear & cougar reporting



Figure 1. Mortality envelope currently being used in Washington to collect data on bear and cougar mortalities state-wide. Along with pertinent data, tissue (in pre-labelled vials) and tooth samples are also collected and deposited into the envelope.