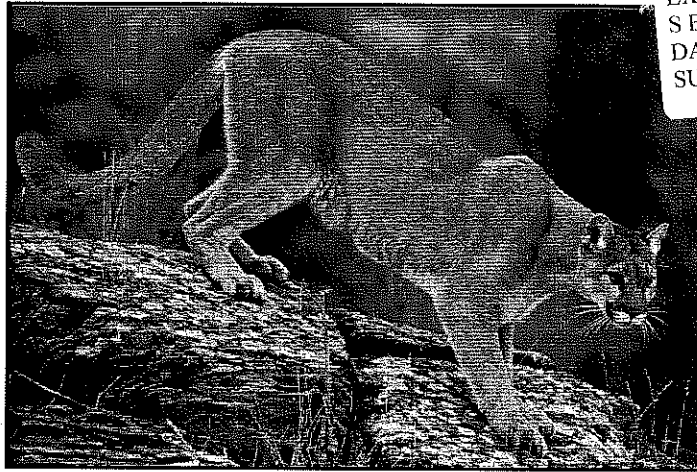


Cougar Management and Research in Oregon

MEASURE: HB 2624 A
EXHIBIT: 3
S ENVIRONMENT & NAT RESOURCES
DATE: 05/22/2013 PAGES: 17
SUBMITTED BY: Curt Melcher



Oregon Department of Fish and Wildlife

22 May 2013

History of Cougar Management in Oregon

- 1800s-1967 – Unprotected predator
 - Bounties as early as 1843
 - No restrictions on cougars
 - Cougar population declined



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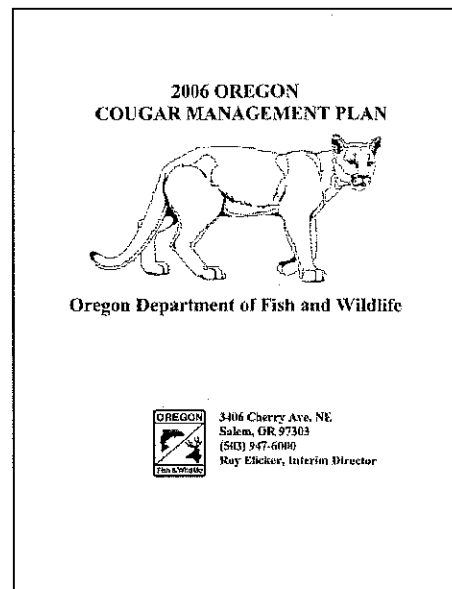
- 1967-1994 – Game animal classification
 - Reclassified for protection by State Legislature at urging of hunters
 - Also gave Oregon State Game Commission management responsibility
 - Controlled hunts implemented in 1970
 - 1987 & 1993 Cougar Management Plans
 - Cougar population recovery
 - Measure 18 (1994) prohibited use of dogs to hunt cougars (certain exceptions for ODFW mgt and research)

History of Cougar Management in Oregon

- Post-1994 Management
 - Transition to general season with unlimited number of tags
 - Zone-based quota system (1995)
 - Doubling of cougar population since 1994
 - 2006 Cougar Management Plan

2006 Oregon Cougar Management Plan

- Updated 1993 Plan
- Invited 30 organizations and representatives to participate in focus group
- Focus group meetings
- External peer review
- Public meetings



2006 Oregon Cougar Management Plan: Objectives

1. ODFW will manage for a cougar population *at or above* the 1994 level of approximately 3,000 cougars statewide

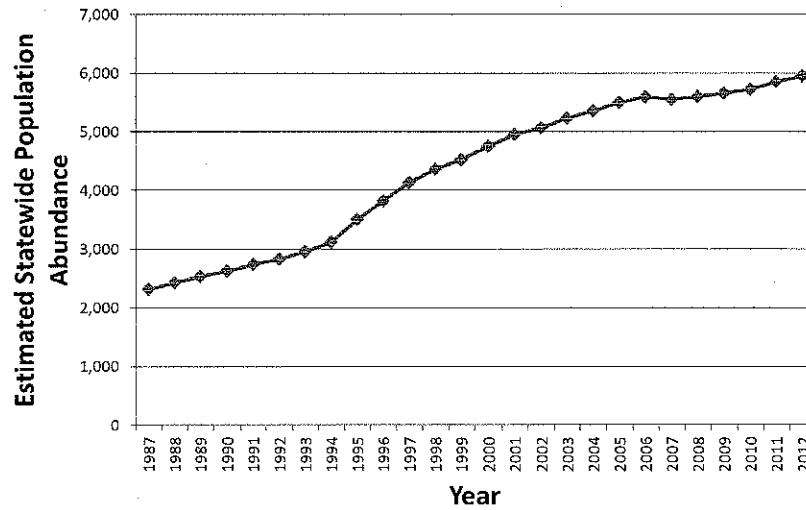
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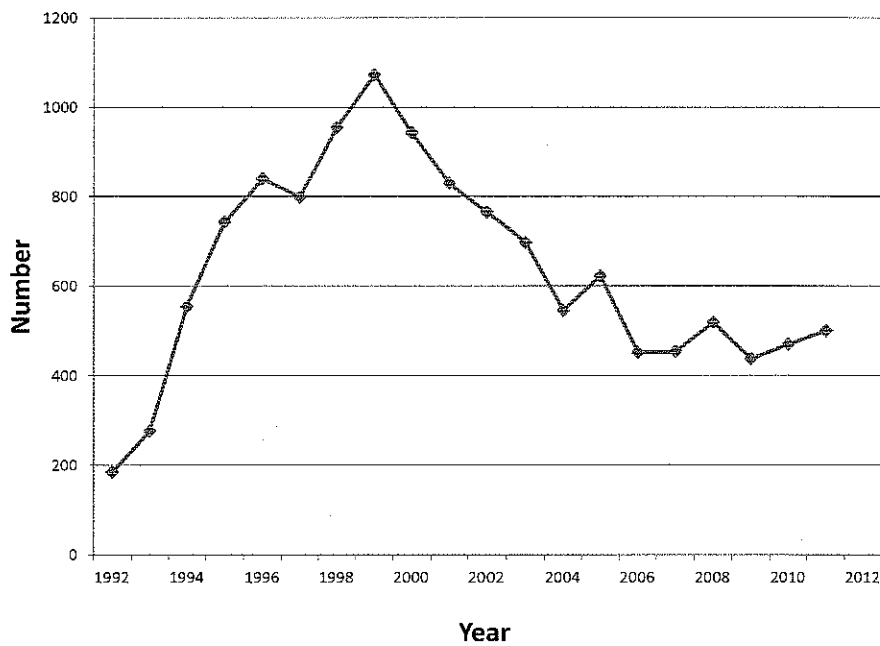
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5. ODFW will proactively manage cougar populations in a manner that is compatible with management objectives for other game mammals outlined in ODFW management plans

Cougar Population Abundance Estimation



- Current deterministic model (Keister and Van Dyke 2002)
- Development of contemporary stochastic population model
- Statewide population models for cougars typically rely on harvest data

Number of Complaints



2006 Oregon Cougar Management Plan: Implementation

- **Target Areas**
 - Administrative (lethal) removals in selected areas
 - Triggers: livestock conflicts, human safety, big game mgt. objectives
 - Evaluation of results used for management

Implementation

2006 Oregon Cougar Management Plan:

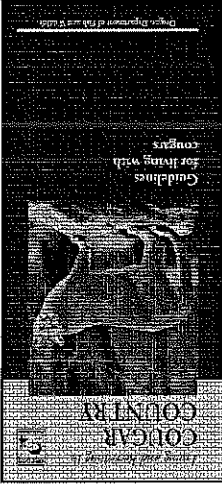
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- **Research**

- Applied research projects
- Cougar demographics and space use
- Cougar-ungulate relationships

- **Continue Outreach/Education**

- Efforts by Information & Education Division
- Local district offices



Volunteer Agents

- Authority for ODFW to utilize volunteer agents (ORS 498.164)
- Used to address cougar/bear damage, human safety, and for target area and research purposes; may use dogs
- Extensive approval process, incl. background check
- Appointments for multiple consecutive years
- 21 agents currently approved, at least 1 available for any given county

Volunteer Agents

Table 1. Expenditures (\$) directly related to use of volunteer agents for cougar and bear research and management activities, 2008–2012.

Year	Activity			Total
	Damage/human safety	Cougar Target Areas ^a	Research	
2008	200	0	15,026	15,226
2009	338	0	16,475	16,813
2010	0	7,115	19,321	26,436
2011	700	13,185	16,393	30,278
2012	0	10,938	3,724	14,662
Total	1,238	31,238	70,939	103,415

^aJosephine County OHA covered \$5,098 of the 2010–2011 expenditures for Warner Target Area, which was not subtracted from this table.

Cougar Research in Oregon

- Examined cougar ecology since 1989
- Monitored an average of 27 radio-marked cougars each year since 1989
- Collected biological information on over 8,000 cougar mortalities since 1987.
- Data on cougar age structure, reproductive and survival rates, habitat use, and prey utilization.

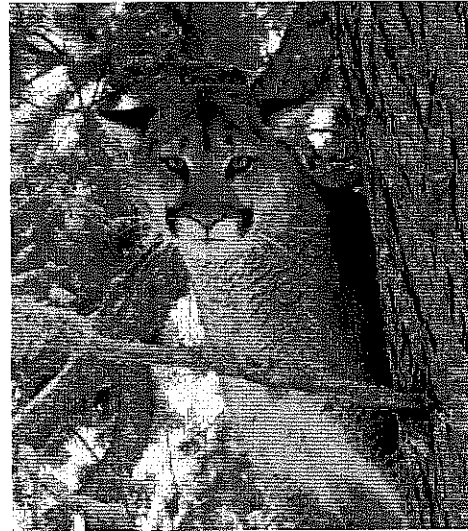
Cougar Research in Oregon

- Catherine Creek Study – 8 years of data
- Jackson Creek Study – 10 years of data
- Nutrition/Predation Study – 4 years of data
- Sled Springs Study – 8 years of data
- Wenaha Study – 8 years of data
- Mt. Emily Study – 3 years of data
- 22 Publications (most in scientific journals)
- 7 Professional presentations
- 8 Publications in progress



Cougar Biology

- Density
- Mortality
- Survival rates
- Dispersal
- Prey selection
- Impacts to ungulates
- Home Range
- Reproduction
- Weights – Ages
- Habitat Use



Cougar Density Estimates

- Density estimates made by mark/recapture and radio-telemetry monitoring – Jackson Creek study during 1993-2002 (southwest Oregon).
 - Annual estimates ranged from 2.7 to 4.3 cougars/100 km²
-

- Wildlife detection dogs to locate cougar scat (DNA) -2011 (northeast Oregon).
- 4.3 to 4.6 cougars/100 km²
Conf. int.= 2.8 – 5.9 and 2.6 – 6.6



Fates of radio-collared cougars

January 2002 – June 2008

Example of causes of mortality for cougars in Oregon

ODFW captured and radio-collared 68 individuals during 7 winters and of these 33 died.

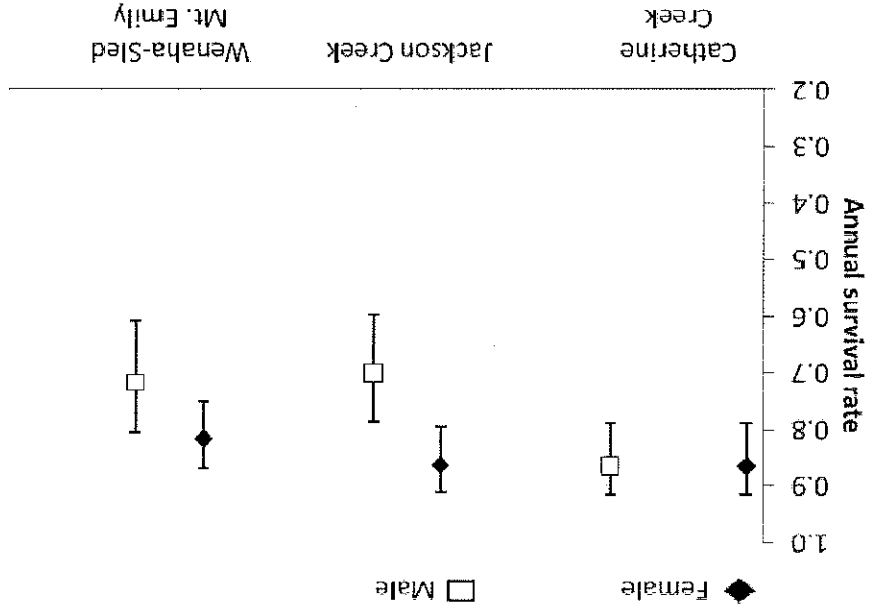
Cause of Mortality

- 18 hunter (54%)
- 8 natural (24%)
- 4 illegal (12%)
- 2 human safety (6%)
- 1 unknown (3%)

Values similar to statewide mandatory check-in data of >8,000 mortalities



Annual survival rates of cougar



Juvenile Cougar Dispersal

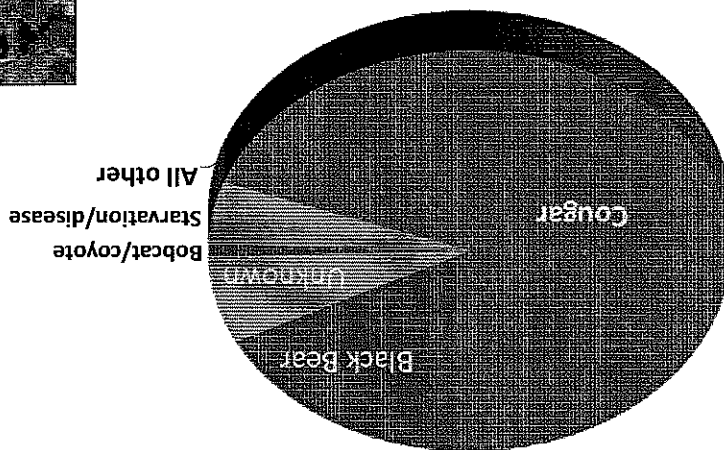
- Based on 29 juvenile radio-marked cougars (Jackson Creek study).
 - 10 Male = 51 miles average dispersal distance and 100% mortality (from 7 different sources of mortality)
 - 19 Female = 22 miles average dispersal distance and 22% mortality
 - Dispersal directions were random from the study area

Nutrition/Predation Study

3 major components:

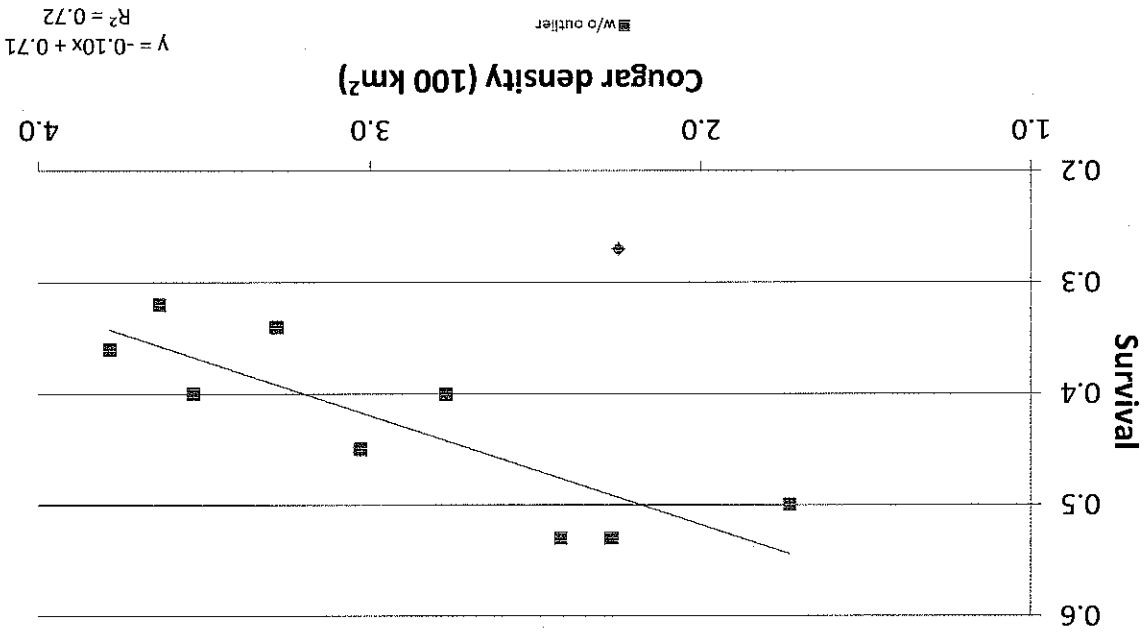
1. Nutritional and reproductive status of cow elk
 2. Calf elk survival and causes of mortality
 3. Cougar, bear, deer, elk populations
- Captured > 600 elk cows and > 600 elk calves
 - Radio-marked all captured elk
 - Documented cause of mortality

Causes of Mortality for 232 Elk Calves



Nutrition/Predation Study

Cougar density—calf survival 2003 - 2007



Cougar prey selection and population estimation in Mt Emily WMU

- Cougar Prey selection
- Cougar Population estimates
- Incorporate information into elk and deer population models



Prey Composition:

(there were 51 non-ungulate prey documented)

Male Cougars:	137 Elk (52%),	125 Deer (48%)
Female Cougars:	227 Elk (25%),	668 Deer (75%)
All Cougars:	364 Elk (31%),	793 Deer (69%)

Prey Biomass (Live weight estimates):

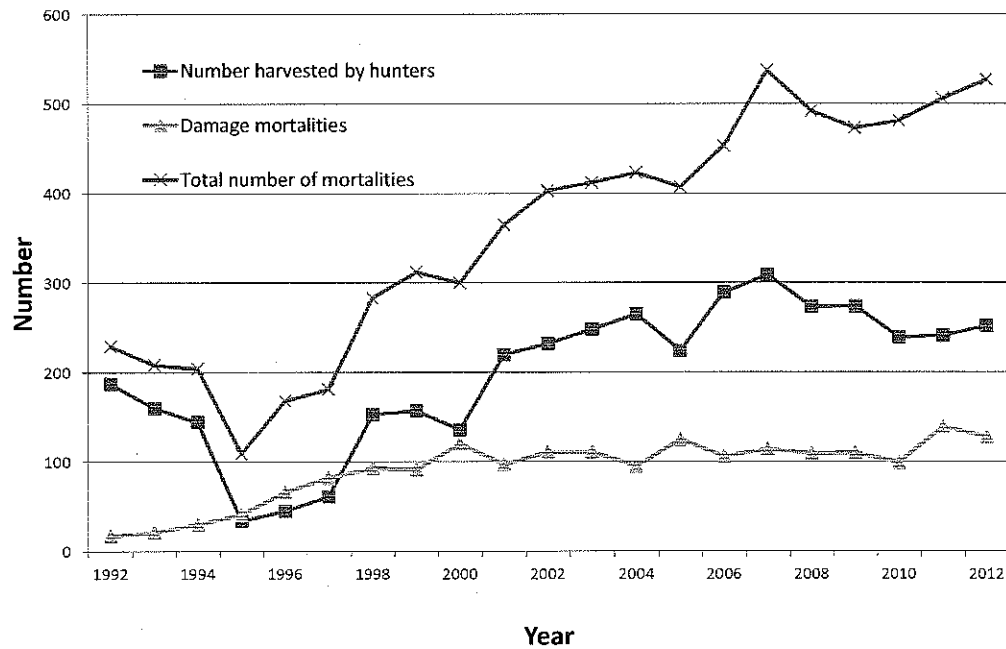
Male Cougars:	Elk – 77%,	Deer – 23%
Female Cougars:	Elk – 36%,	Deer – 64%

Research Summary

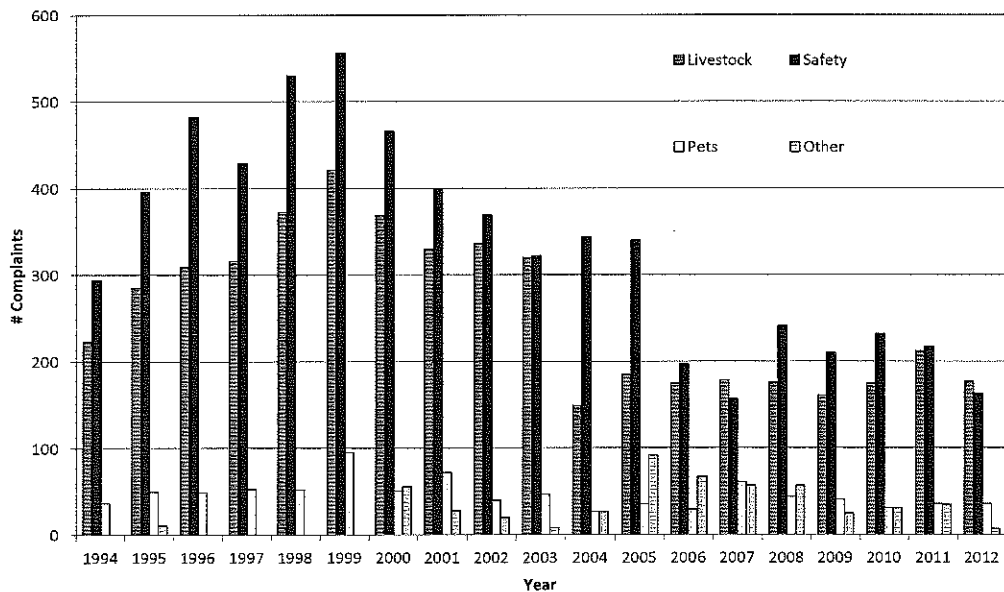
- ODFW has 23 years of data on cougars in Oregon and continue to evaluate cougar ecology.
- Oregon cougar density (based on our study area estimates) is greater than many other published data.
- There are varied causes of mortality for cougars in Oregon
- Cougars survive well in Oregon – each year, 150 of every 200 survive to the next year.
- Cougars in Oregon typically choose elk and deer for prey.
- Cougars are having significant impacts on Oregon's elk populations primarily by predation on elk calves.
- The greater the density of cougars on the landscape the greater the impact on elk calf survival.

Questions

Number of Cougar Mortalities



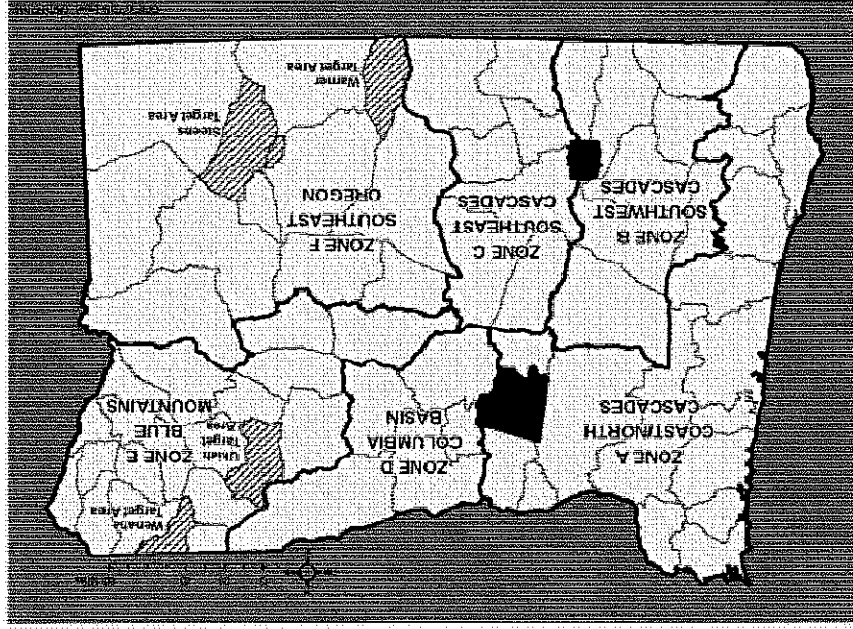
Number of Complaints



2006 Oregon Cougar Management Plan: Target Areas

- Proposed implementation submitted for approval by respective Region and Wildlife Division
- Open for public comment during development phase
- Linked to Plan Objectives and triggers:
 - Number of cougar mortalities
 - Number of complaints related to cougars
 - Deer/Elk population data
- Each target area is compared to an adjacent control WMU
- Upon completion of target area activities, a monitoring report is completed to evaluate effectiveness of administrative removals
- Adjustments are made based on Adaptive Management process

Current Cougar Target Areas



Relative Density

