

BLACK BEAR – STATUS REPORT

May 2016



Brian Wakeling
Game Division Administrator
775-688-1520



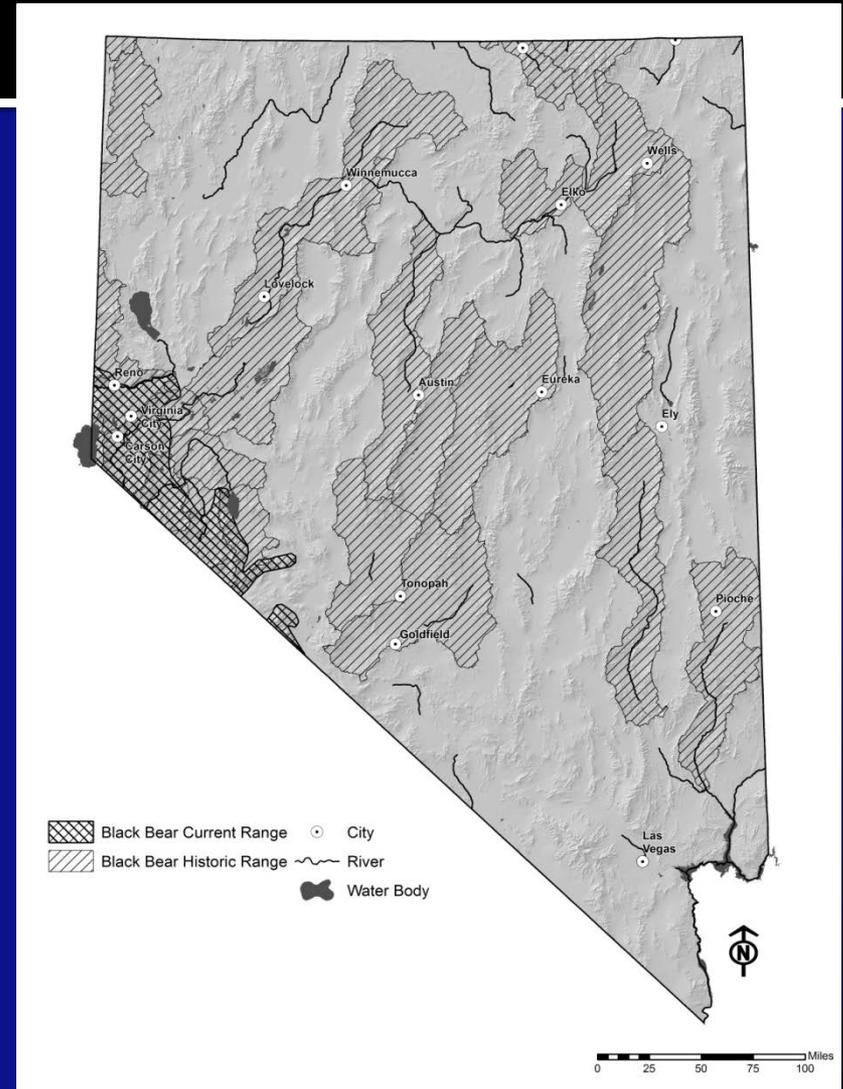
Commission update in January

- Public safety – 9
- Hit by vehicle – 21

HISTORICAL AND CURRENT RANGE



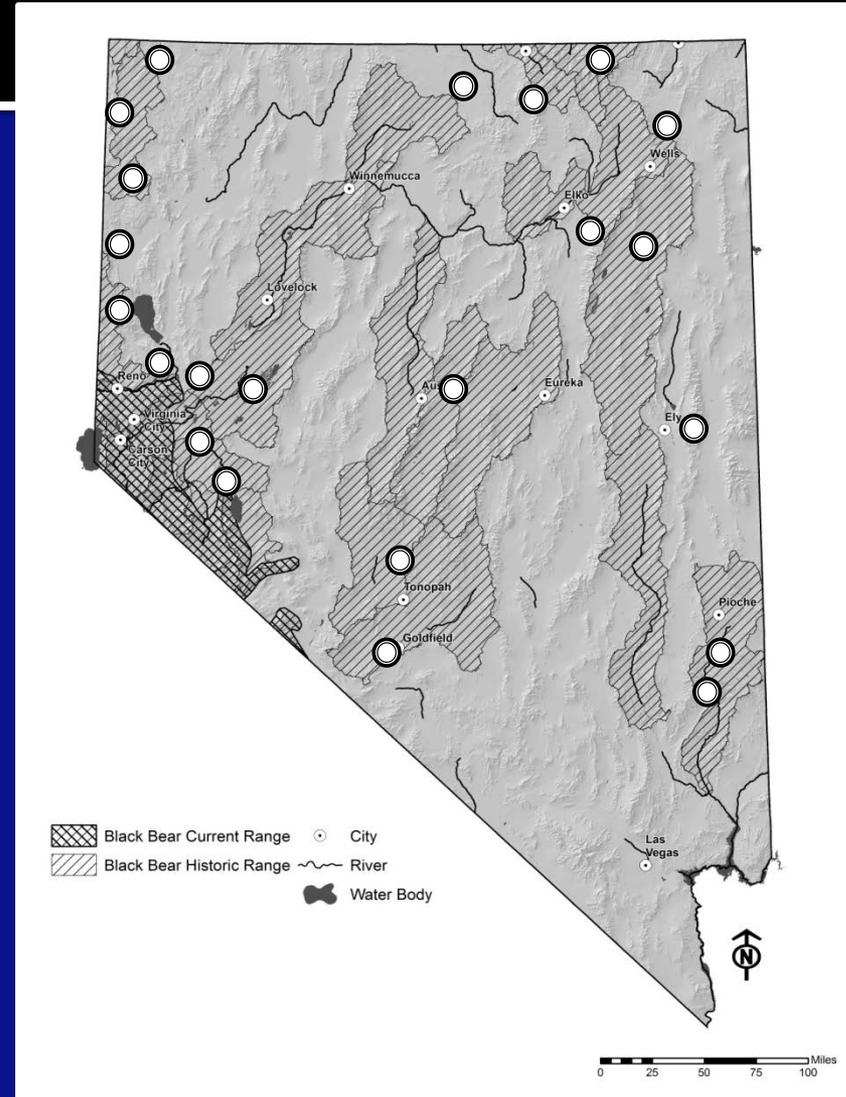
- ❖ Original distribution derived from historical articles and pioneer journals
- ❖ Extirpated from states' interior by early 1900s
- ❖ Recolonization occurring since probably early 1980s
- ❖ Current distribution - those areas containing known viable populations



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- ❖ Current distribution - those areas containing known viable populations
- ❖ Expansion into historic habitat noted



Long-Term Black Bear Research

– *Twentieth Year*



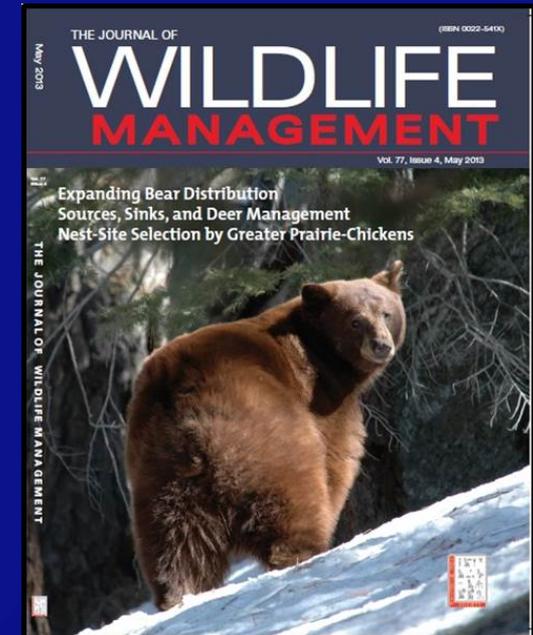
- **Data collection since 1997**
- **Management Plan 2012**
- **Two approaches to population assessment**
 - **Population monitoring**
 - **Harvest monitoring**
- **Sample size of 825 individual bears to date**
- **Individually marked 499 bears**
- **Deployed >100 radiotelemetry collars**
- **Among the most intensively studied populations in the US**
- **Cooperative Research with University of Nevada, Reno and Wildlife Conservation Society**

PUBLICATIONS AND PRODUCTS



- Eight peer refereed manuscripts in professional journals plus three more in draft.
- Four population estimates generated
 - 2002 - 180 \pm 117 4 years n = 99 bears
 - 2008 - 253 \pm 27 12 years n = 420
 - 2011 - 456 \pm 39 15 years n = 532
 - 2014 - 445 \pm 14 18 years n = 601

500-700 bears in state – current estimate
Study area plus surrounding ranges



➤ Three internationally recognized experts associated with this work over the 20 year period
Jon Beckmann, Joel Berger, and Jim Sedinger

POPULATION ESTIMATES ARE CONSERVATIVE



Results in population models are inherently conservative

- ✓ **Heterogeneity in capture probabilities**

Uncertainty is a given, but it decreases with higher sample sizes

Further conservatism built into analysis

- ✓ **337 bears removed from model**
 - *dead on first encounter*
 - *dependent cubs with no further encounters*
- ✓ **Current levels of mortality accounted for**
- ✓ **Estimates based on results from study area which excludes surrounding ranges due to very low sample sizes in those areas**

SPECIES MANAGEMENT PLAN



- Bear population will be monitored and adaptive management will be applied.
- Involves analyzing available information and applying a management action followed by a thorough evaluation and adjustment of management programs as needed.

Trends in
population
demographics



Parameter	Light Harvest	Moderate Harvest	Heavy Harvest
% females in harvest	< 30%	30-40%	> 40%
% adult females in female harvest	> 55%	45-55%	< 45%
Mean age of harvested males	> 4 years	2-4 years	< 2 years

Mortality data evaluated on a running 3-year average per
NDOW Black Bear Management Plan

HARVEST DATA TO DATE 2011-2015



	2011	2012	2013	2014	2015	3 yr	Current Harvest	All Years
number males	9	10	10	12	8	30		49
number females	5	1	4	6	6	16		22
total killed	14	11	14	18	14	46		71
available tags	45	45	45	45	45			
harvest limit	20	20	20	20	20			
% females	36%	9%	29%	33%	43%	35%	Moderate	31%
% adult females ≥ 5 in female harvest	80%	100%	75%	100%	83%	75%	Light	77%
#females ≥ 5	4	1	1	6	5			
Mean age males	5.9	5.1	6.1	7	8.5	7.1	Light	6.6
Mean age females	6.9	9.0	7.8	10.5	6.5	8.3		7.8
Mean age - all	5.9	5.5	6.6	8.2	7.6	7.5		6.9
Male/Female	1.8	10.0	2.5	2.0	1.3	1.9		2.2
Success rate	31%	24%	31%	40%	31%	34%		32%

HARVEST DATA TO DATE 2011-2015

ADDITIONAL HUNT STATISTICS

69%	used dogs (49 of 71)
15	tagged bears taken
2	citations issued
56	bears pursued and treed but not killed
55%	killed in Unit 291 – Pinenuts

PINENUT RANGE - HARVEST DATA 2011-2015



	2011	2012	2013	2014	2015	3 yr	Current Harvest	All Years
number males	4	4	4	8	5	17		25
number females	3	0	1	3	6	10		13
total killed	7	4	5	11	11	27		38
available tags	45	45	45	45	45			
harvest limit	20	20	20	20	20			
% females	43%	0%	20%	0.3	55%	37%	Moderate	34%
% adult females ≥5 in female harvest	67%	0%	0%	100%	83%	80%	Light	77%
#females ≥5	2	0	0	3	5			
Mean age males	7.0	4.8	5.3	7.4		6.9	Light	6.6
Mean age females	5.7	0.0	2.0	7.0	7.0	6.5		6.3
Mean age - all	6.4	4.8	4.6	7.3	7.3	6.8		6.5
Male/Female	1.3	#DIV/o!	4.0	2.7	0.8	1.7		1.9
Success rate	16%	9%	11%	0.2	24%	20%		17%

APPLICATION STATISTICS 2011-2016



- **11,935 total applications (*not including bonus point only apps*)**
 - ✓ **Applicants representing 36 states and 1 foreign country**
 - - **> 11,300 Nevada resident applications**
 - **1,230 from Clark County (*10% of total apps*)**
 - **> 600 non-resident applications**

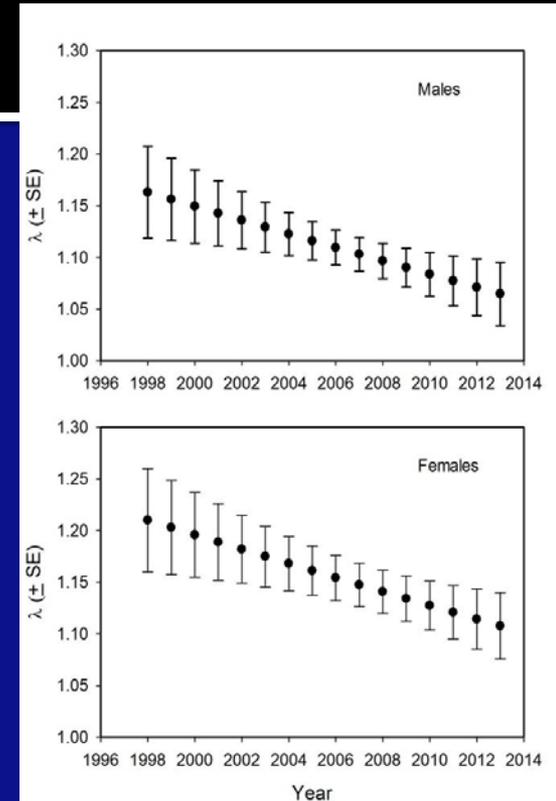
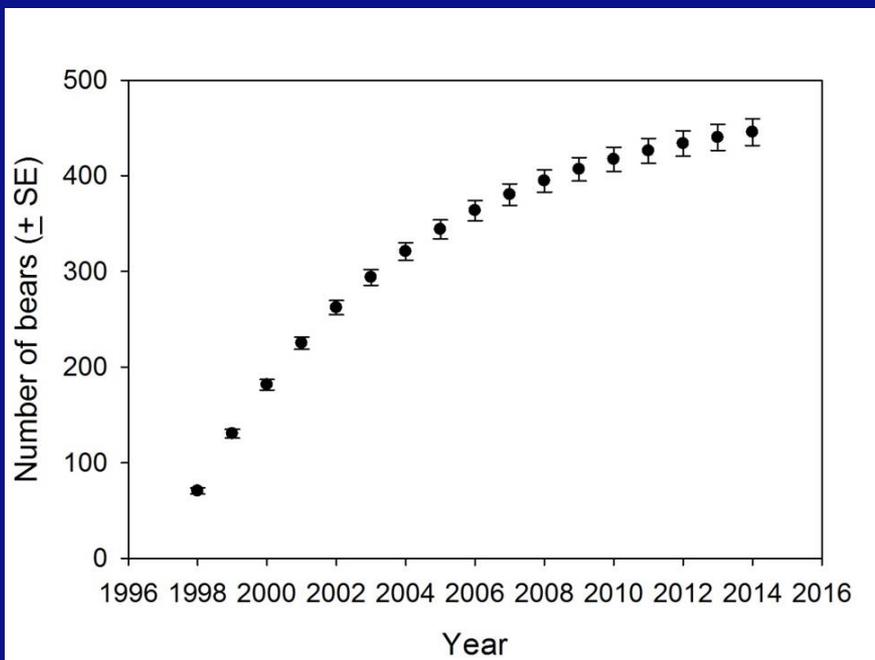
POPULATION STATISTICS

SEDINGER 2014



$$\lambda > 1$$

Population continues to grow but at a slower rate compared to earlier period.
Reaching K?

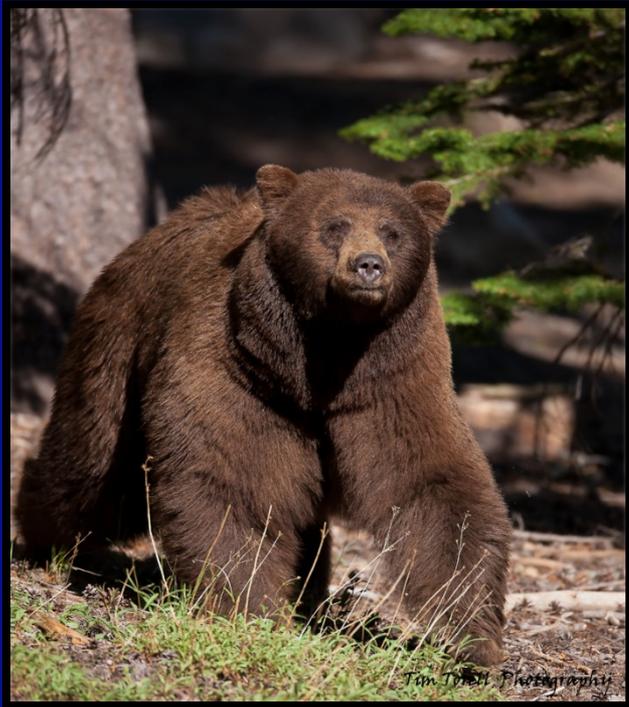


Growth in population is representative of both sexes.

"I checked for a change in survival following implementation of the hunting season in 2011 and could find no effect."

Dr. James Sedinger – population ecologist, UNR

CONTINUED MONITORING AND RESEARCH



Tim Torell

Heritage Fund projects

- ❖ Habitat modeling - RSFs
Columbia University
- ❖ DNA mapping – immigration & population connectivity
University Nevada, Reno
- ❖ Isotope analysis
University of Tennessee

2015 Bear Hunt - Recap

- 41 resident tags, 4 nonresident tags issued
- Harvest limit set at 20
- 2,209 resident applications
- 129 nonresident applications
- 2 resident tags turned in (no alternatives)

2015 Bear Hunt - Recap

- 14 bears harvested (6 female, 8 male)

Parameter	Light Harvest	Moderate Harvest	Heavy Harvest
% Females in Harvest	< 30%	30-40%	> 40%
% Adult Females in Harvest	> 55%	45-55%	<45%
Mean Age of Harvested Males	> 4 years	2-4 years	<2 years

Parameter	2015	3 Year Average
% Females in Harvest	43%	35%
% Adult Females in Harvest	83%	88%
Mean Age of Harvested Males	8.5	7.1



QUESTIONS?

