Evaluating Sustainable Harvest and Nonharvest Mortalities of Female Black Bears in Northwest Montana

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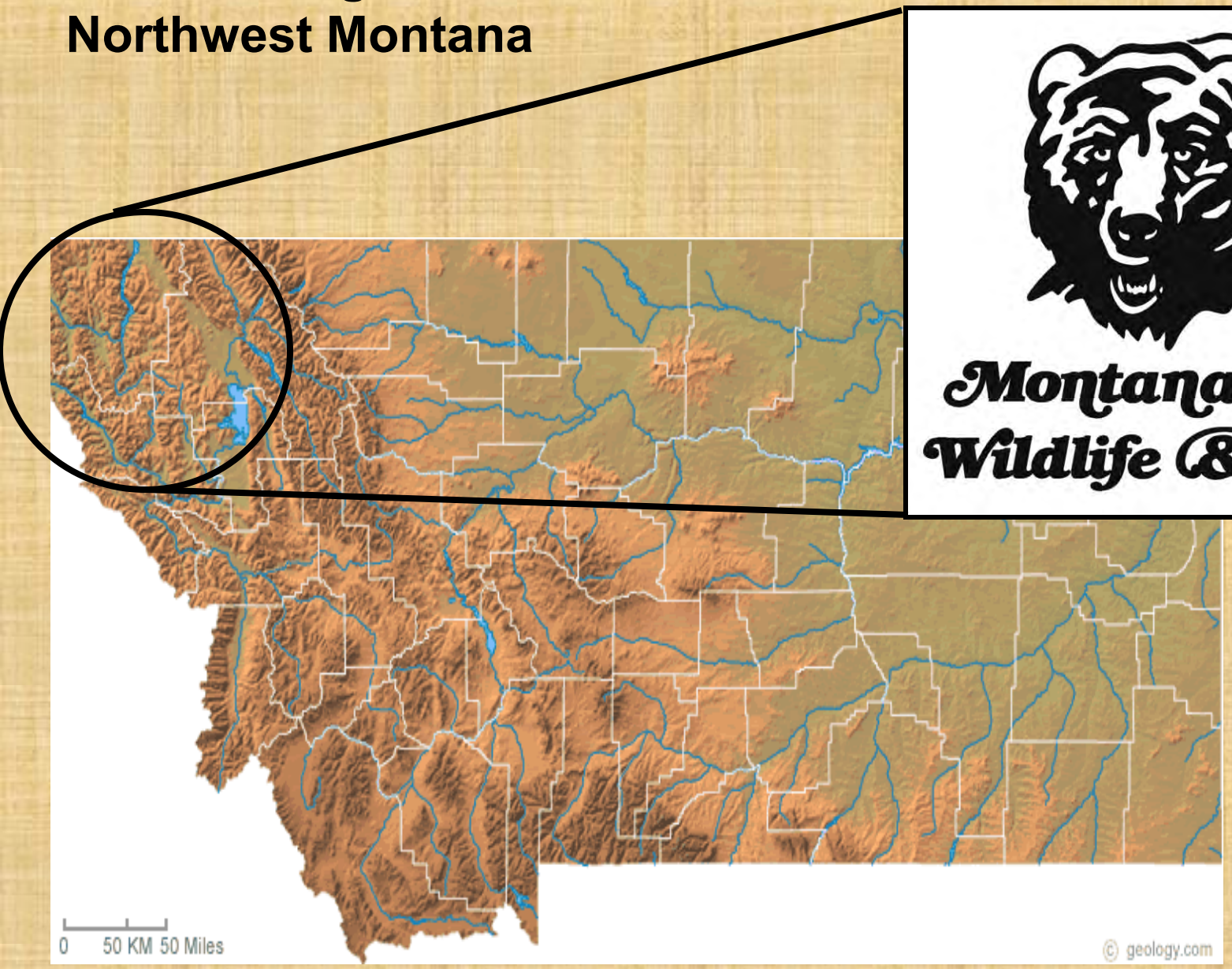
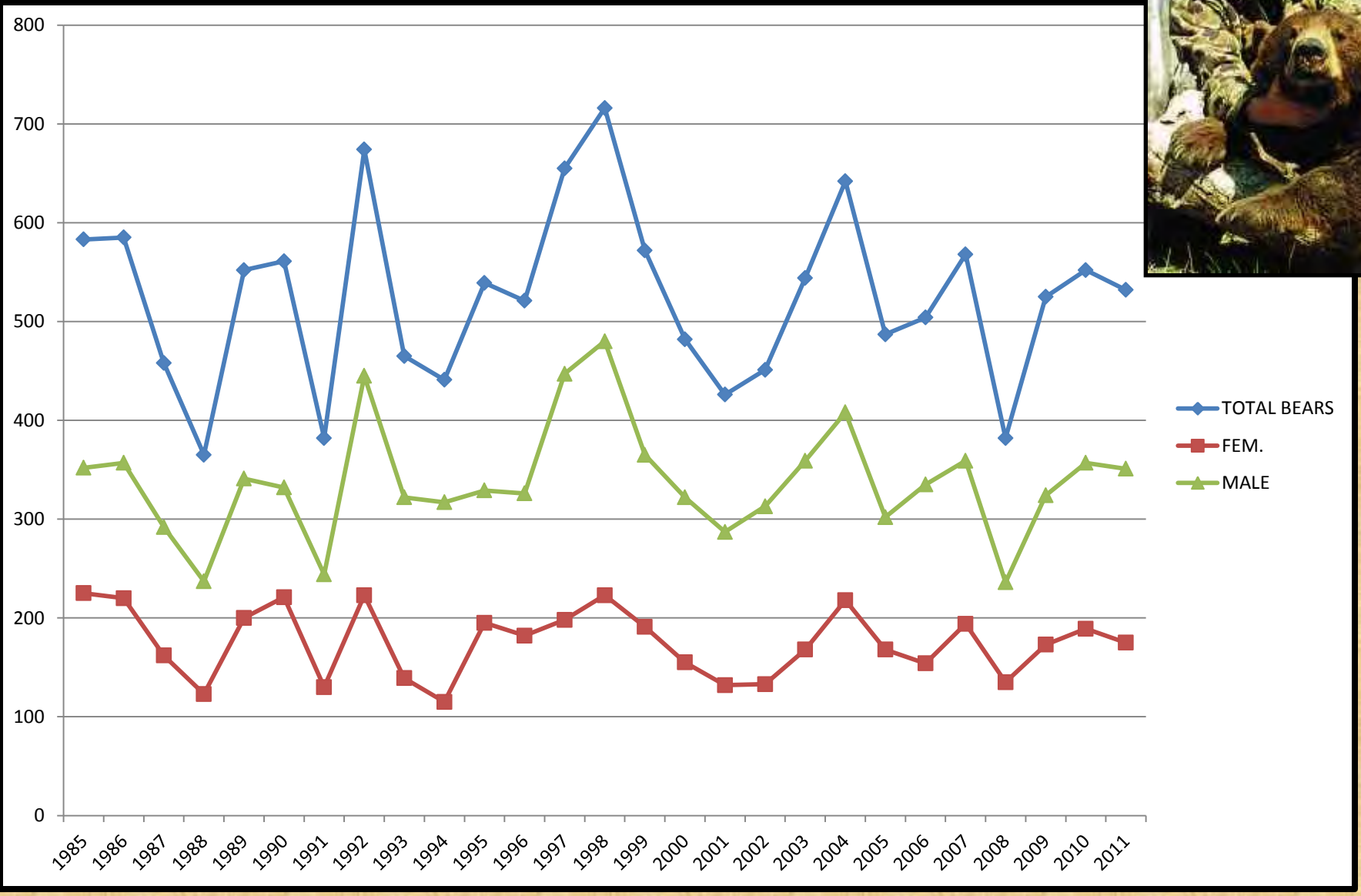
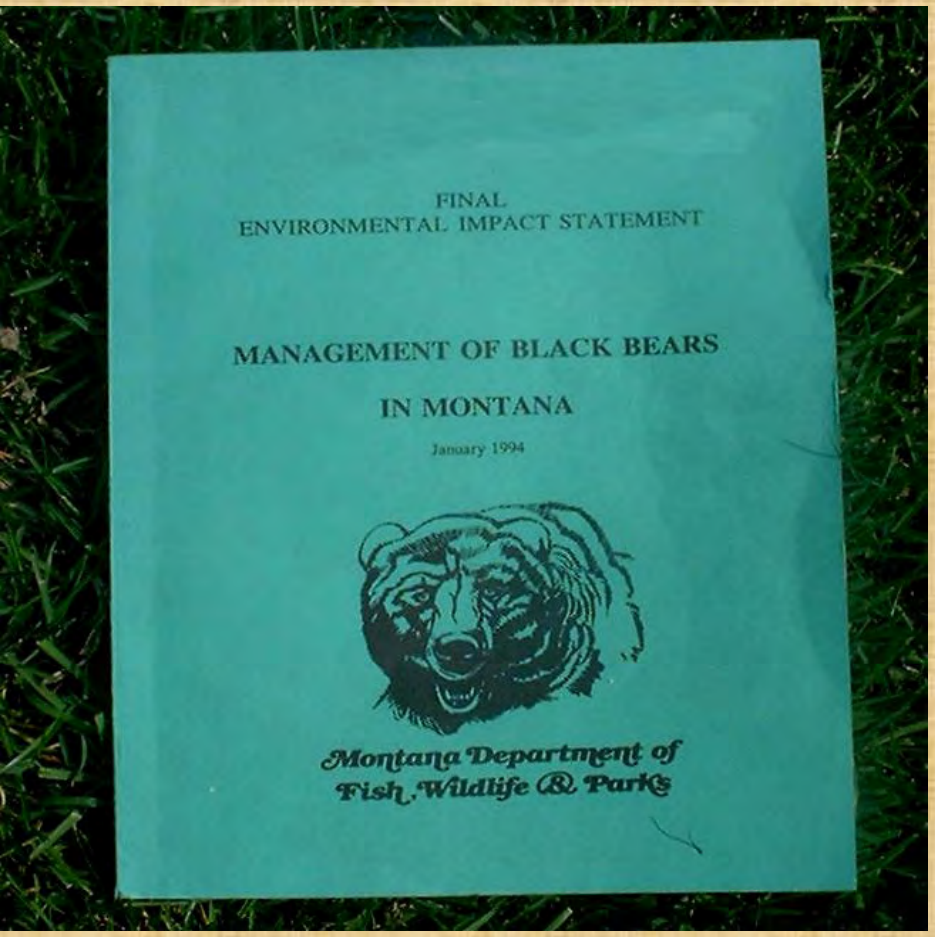
MFWP's Region 1, Northwest Montana



Montana Fish, Wildlife & Parks

MFWP Region 1 Black Bear Harvest, 1985 - 2011





Management Plan Criteria (based on Idaho F&G):

a. No more than 40% female in annual harvest
b. Median age at least:
   male: 6.5 years
   female: 4.5 years
c. If harvest does not comply with a and b for 3 years then *all* data analyzed to determine management course of action.

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But Idaho management criteria only met 17% of time, statewide (1987 – 2006)

BLACK BEAR RESEARCH IN MONTANA

PROGRESS REPORT FOR YEARS 2000-2002

DECEMBER 2002

Prepared By:
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Montana Fish, Wildlife & Parks

2000 – Statewide Bear Research Program

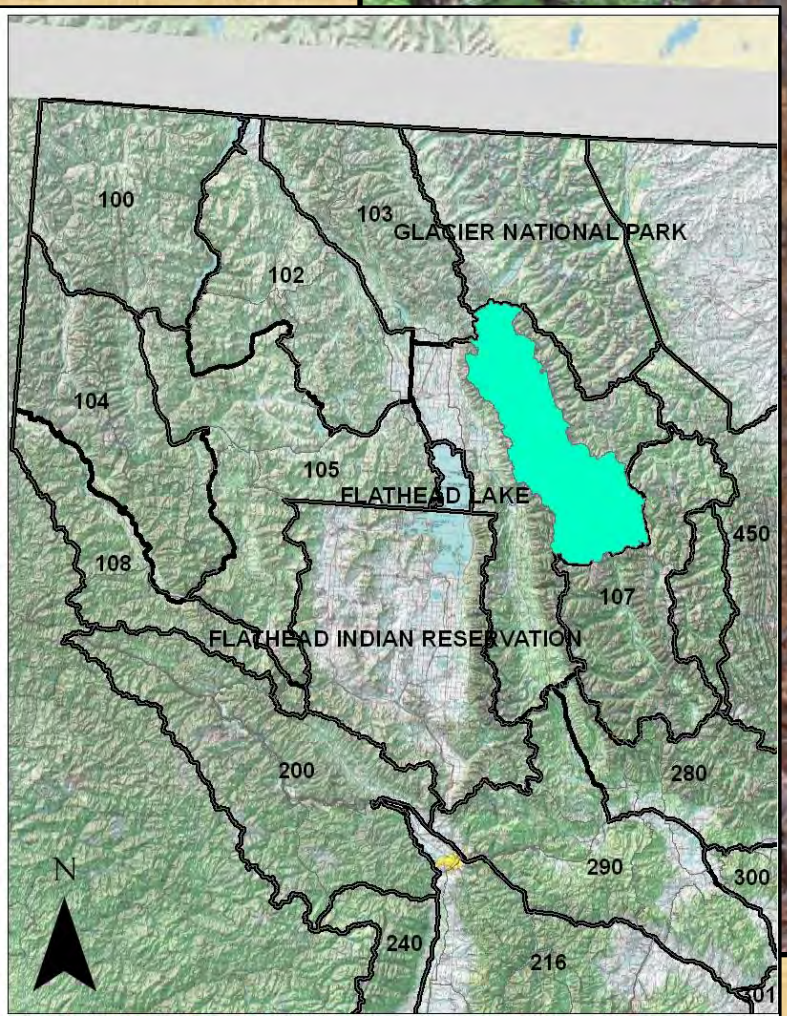
Statewide Black Bear Research Program

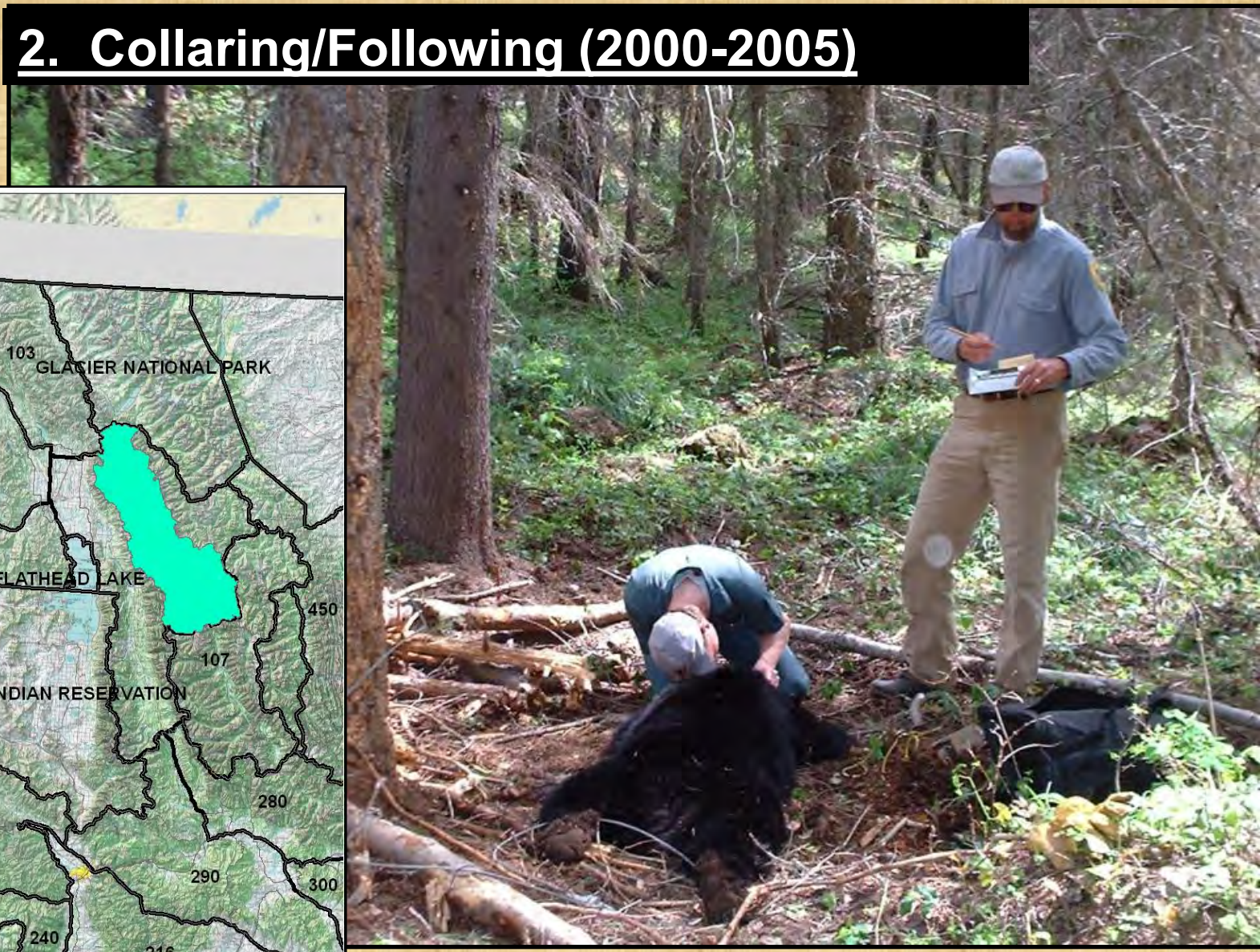
3 Components/Methods:

Statewide Black Bear Research Program

3 Components:

2. Collaring/Following (2000-2005)

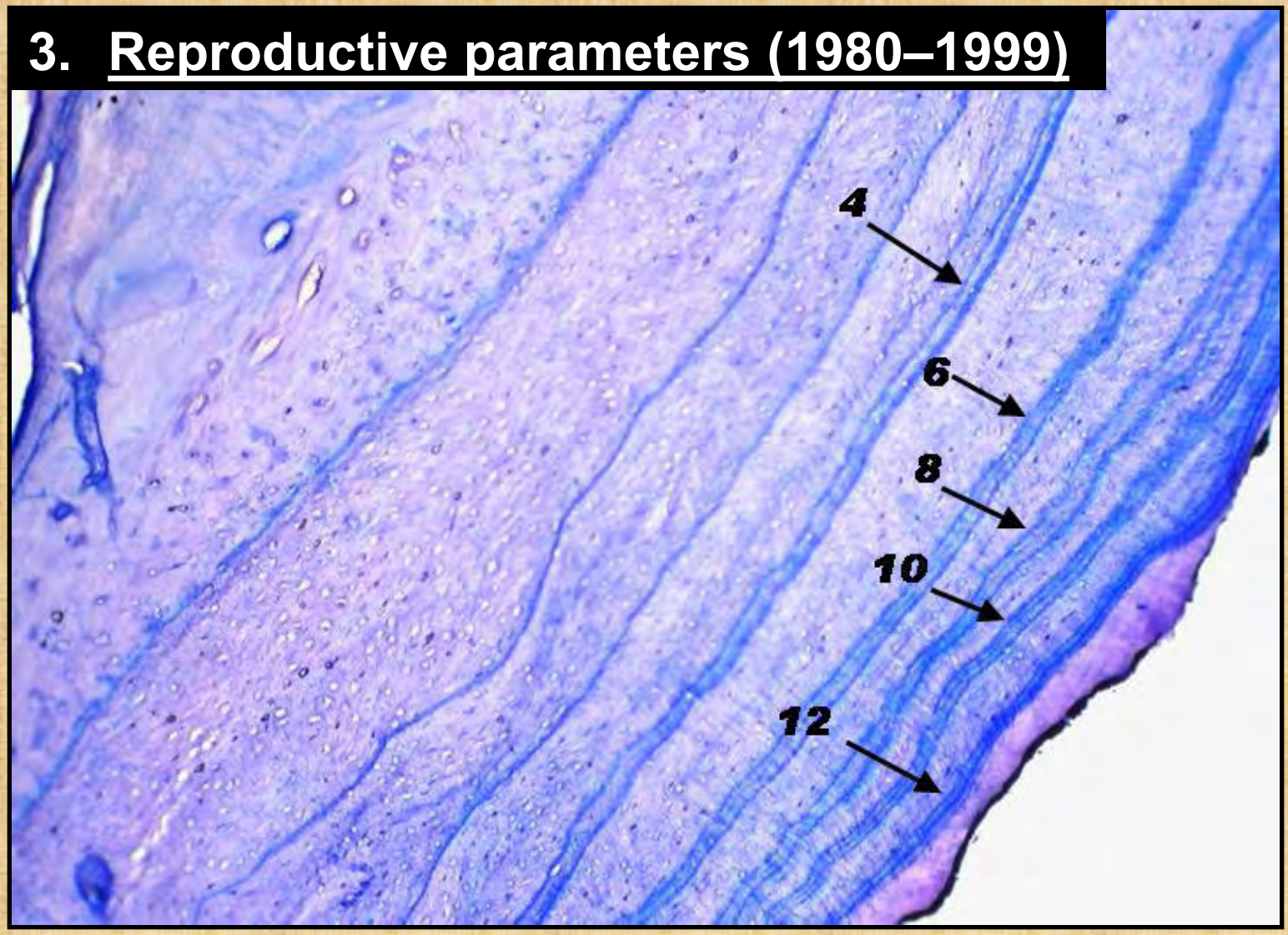




Statewide Black Bear Research Program

3 Components:

3. Reproductive parameters (1980–1999)



2010

1. Black Bear Density,

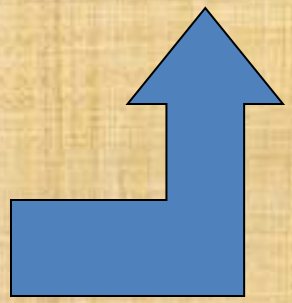
2. Population Size,

3. Harvest Rates

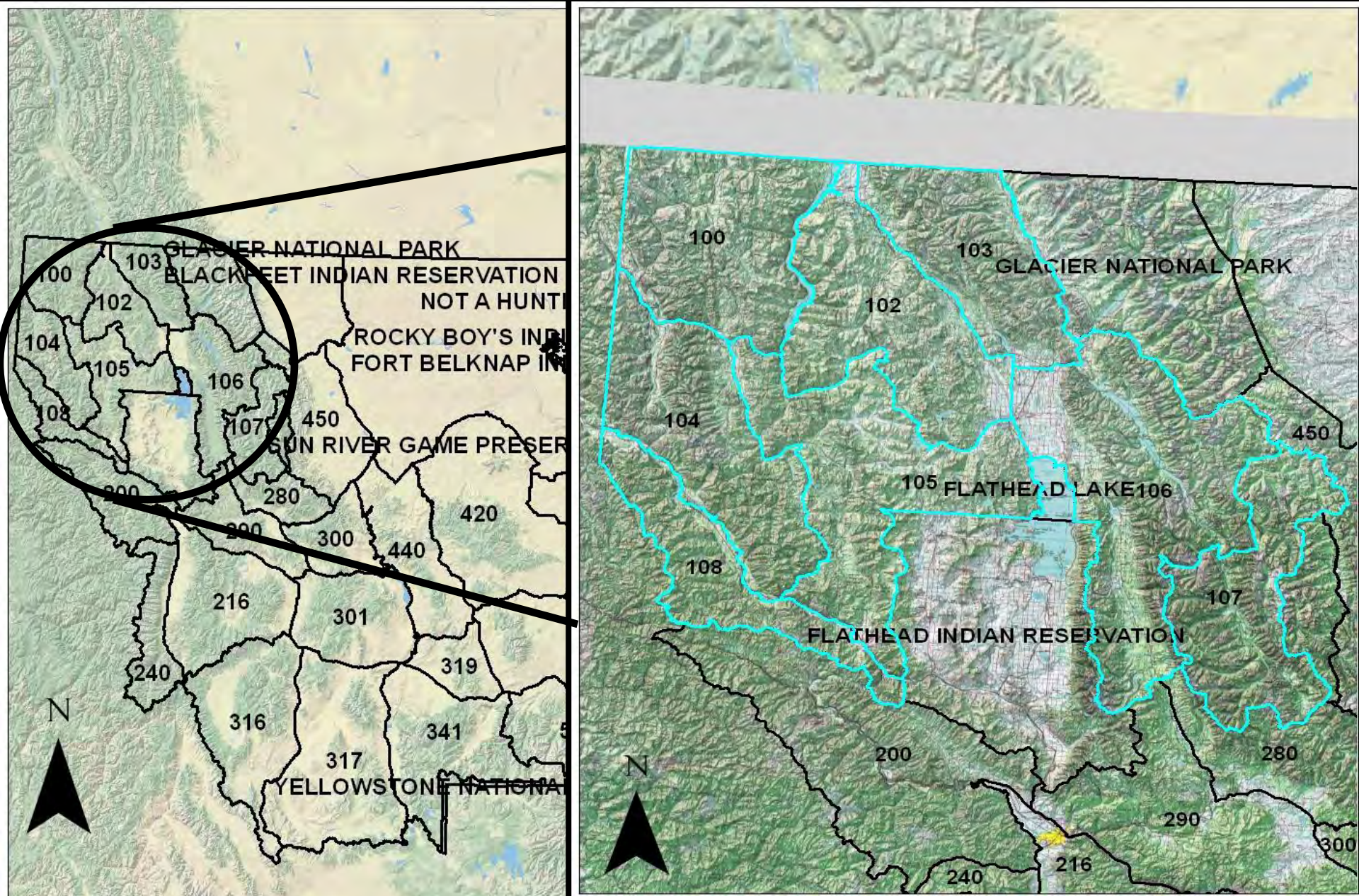
BUT…
WHAT MORTALITY LEVEL IS *SUSTAINABLE*???

Steps to Sustainable Morts

1. Calculate BB Density
2. Estimate % Female
3. Determine % Legal to Harvest
4. Calculate Sustainable Mortality Levels

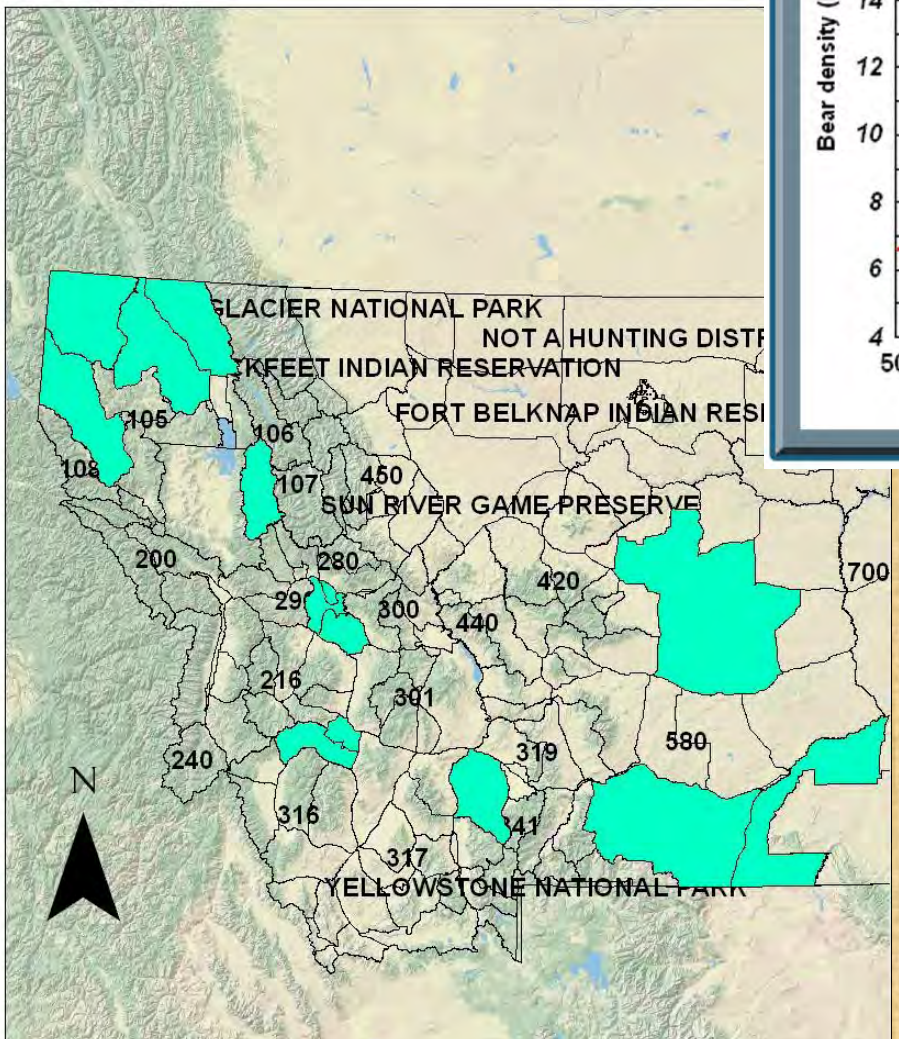


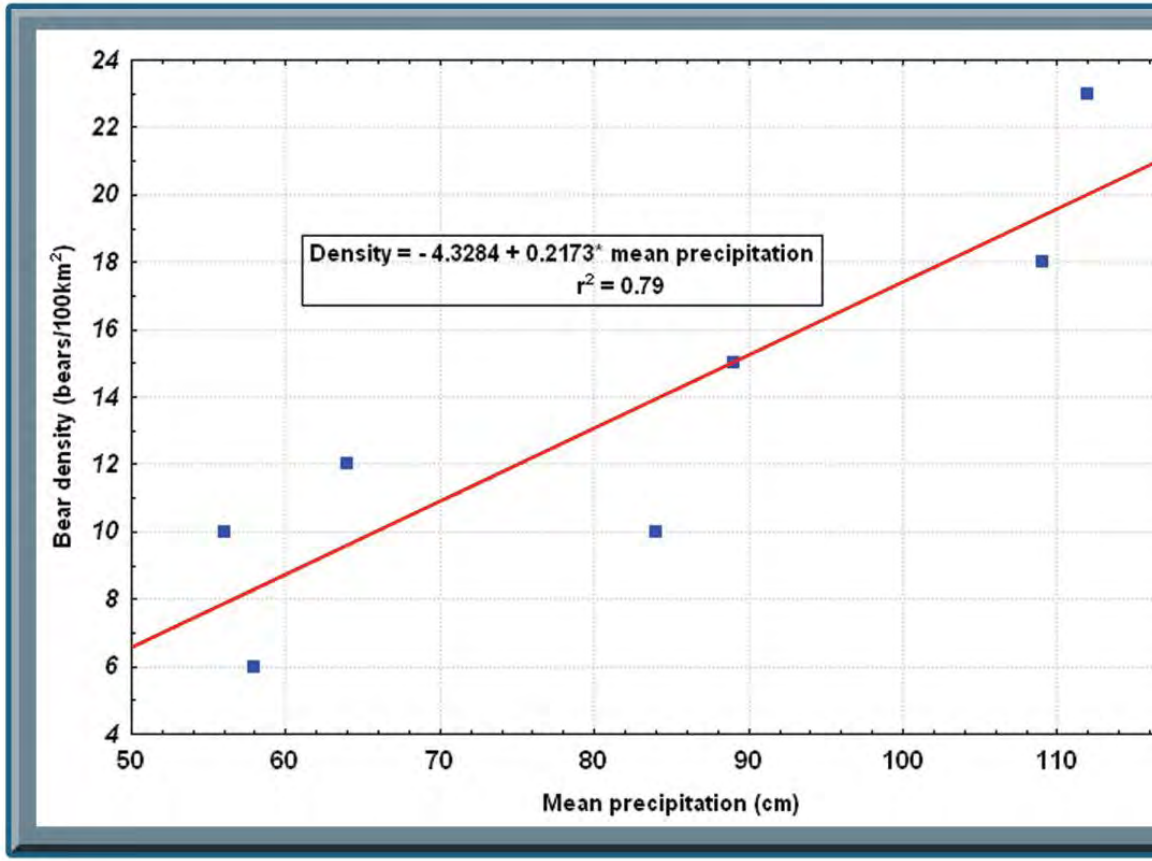
Bear Management Units (BMU)



1. Calculate Bear Density/Pop

DNA-based methods across state but *not* in all hunting districts





1. BLACK BEAR POPULATION DATA (by BMU)

DNA Area	Density Est	Pop Size
BMU 100	13-15-17	650-750-850
BMU102	7-10-12	329-450-554
BMU 103	16-19-23	442-534-635
BMU104	17-21-25	615-763-904
BMU105	5-8-12	225-373-541
BMU106	16-20-24	615-769-923
BMU107	18-23-27	550-691-825
BMU108	1-15-18	895-1064-1240

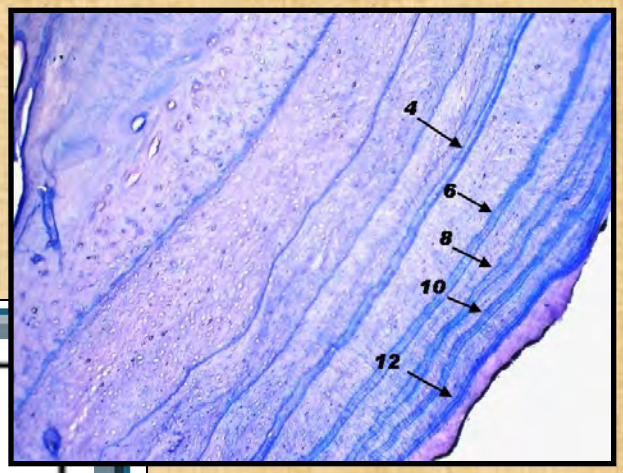
= Tot # BB in ea BMU

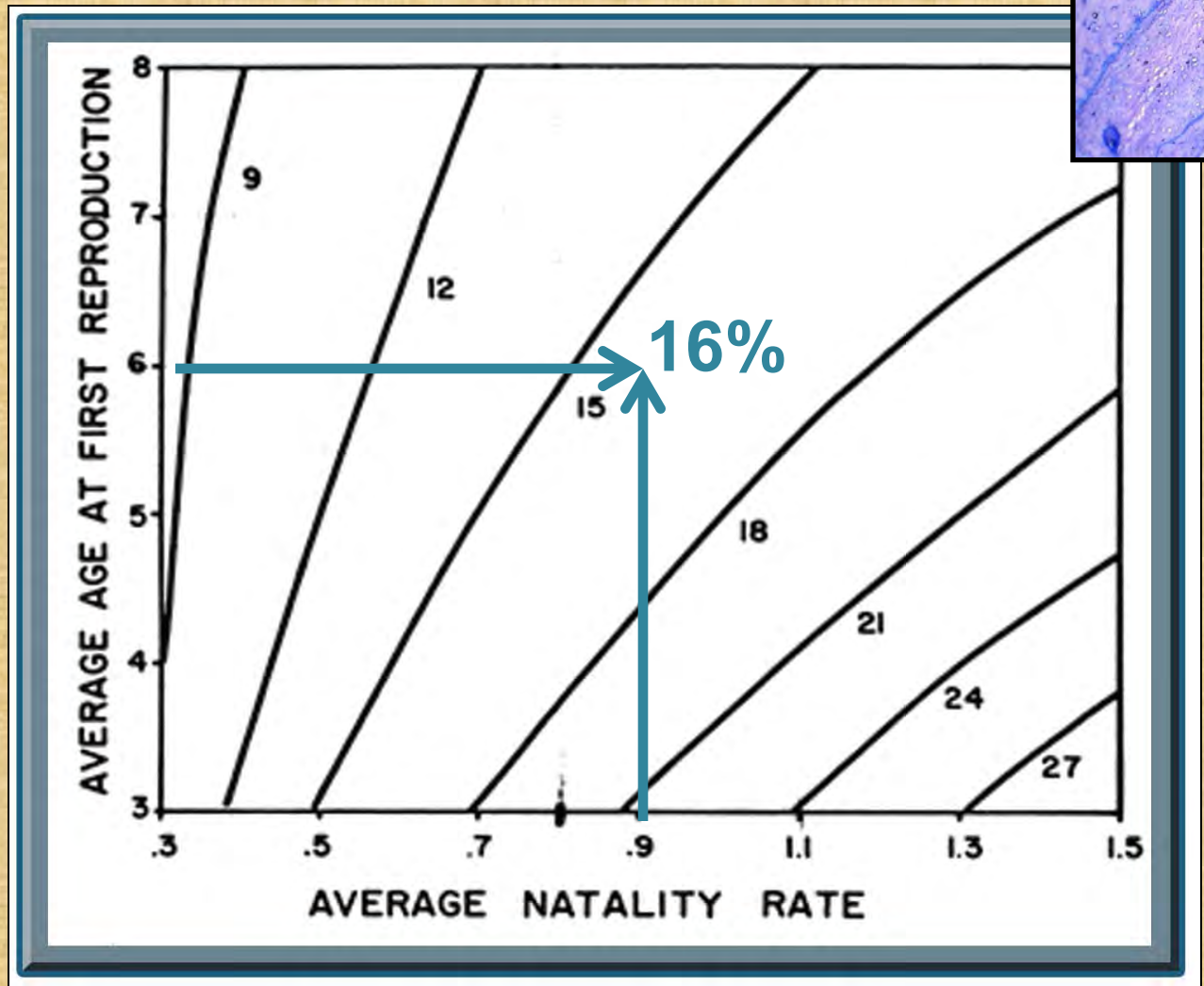
2. Calculate the Proportion of FEMALE Black Bears in Each BMU

Photograph by Norbert Rosing

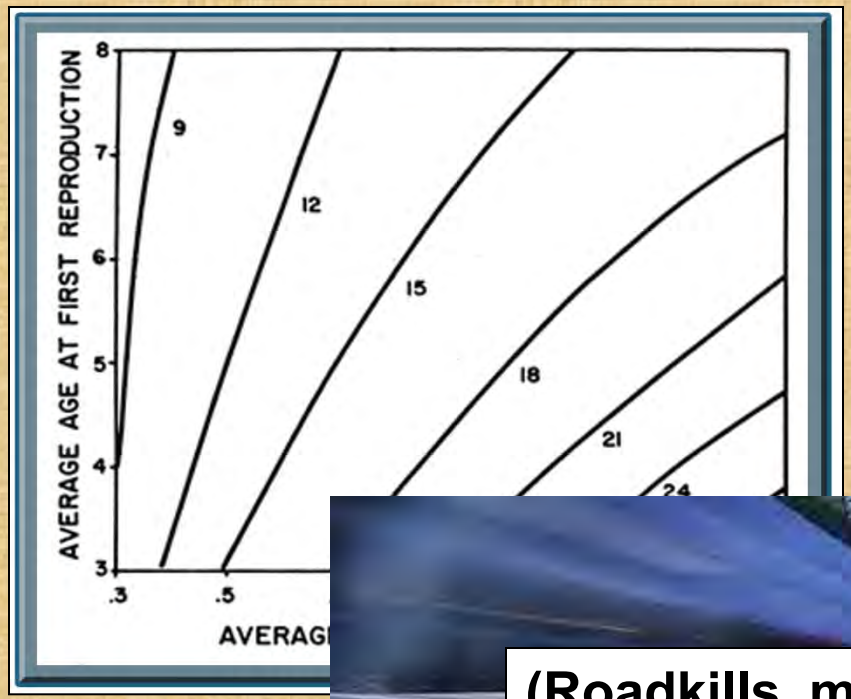
3. Calculate the Proportion LEGALLY Harvestable Female Black Bears (w/o cubs) in Each BMU

4. Used Bunnell and Tate (1980) Isoclines to Determine % Female Morts to keep Population Stable





5. Subtract # Harvests from Bunnell and Tate Morts to Find # Sustainable NONharvests



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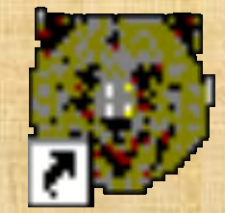
REGION ONE BLACK BEAR ANNUAL REPORT 2012

Montana Fish, Wildlife, & Parks

Area	Mean BB Dens per km2 p.36 (Table 21)	Mean BB Pop Size in sq km p.36, above	Number Female BB p.31, Table 13	Legally Harvestable FEMALE BB Num (females 1+ y.o.) p.29, last complete sentence	Mean Annual Num FEMALES Harvested Betw 87-06 p.23 (Table 4)	2011 Female BB Harv	Tot FEMALE (1=+) Morts Allowed to maintain stability in pop p.37 (2nd to last paragraph before "Using Harv Data" section)
BMU100avg	15	462	240	175	21	9	28
BMU102avg	10	273	175	128	19	23	20
BMU103avg	19	458	270	197	21	9	32
BMU104avg	21	686	343	250	28	19	40
BMU105avg	8	265	153	112	30	44	18
BMU106avg	20	882	512	374	35	31	60
BMU107avg	23	645	374	273	3	2	44
NewBMU108avg	15	291	169	123	25	39	20



Shortcut to Riskman (2).lnk

QUESTIONS?