

Saguaro National Park East

Helicopter Survey Summary

January 4, 2004

Below average precipitation and warm temperatures continue to be the norm. 2003 was the 42nd driest year on record in Tucson, and was the with year since 1994 with below average rainfall recorded at the airport. Monsoon rains finally arrived July 11th, the fifth latest start on record. 2002 was the fourteenth driest year on record, 2001 was the 13th, and 2000 proved to be the driest winter on record. 2003 was the 3rd warmest year on record in Tucson, in fact, 15 of the top 20 warmest years in Tucson have occurred since 1980.

The warm dry year took it's toll on wildlife. Livestock waters were maintained by local ranchers throughout most of Game Management Unit 33, but competition with livestock for the little forage production that did occur continued throughout the year on much of the year in the GMU.

Because of the absence of livestock grazing, considerably more ground cover and available forage is consistently observed on the Saguaro National Park than in Unit 33 as a whole. Ground cover is expected to reduce mortality rates for deer fawns and juvenile javelina by effectively hiding them from predators. Winter precipitation has been positively correlated with deer fawn crops, but cold wet winters have been negatively correlated with javelina reproduction. The winter of 2002-2003 was the 12th warmest on record with below normal rainfall.

Mule Deer

All surveys since 2000 have resulted in small sample sizes for mule deer and do not allow for reliable inferences concerning the population as a whole. The 2004 survey yielded 3 bucks, 3 does, and one fawn. Throughout GMU 33, 108 mule deer were observed during all surveys, but of these only 9 were observed during the helicopter flight. Low observation rates are to be expected in the GMU 33 helicopter surveys because these are geared toward areas dominated by whitetail deer. Sixty-seven mule deer were observed during a 3.8-hour fixed-wing flight of the lower, flatter terrain. A fawn crop of 23 fawns:100 does was observed in GMU 33, and 11 bucks were observed for every 100 does. Buck:doe and fawn:doe ratios continue to be higher on SNP than in GMU 33 as a whole, but remain below guidelines for what the Arizona Game and Fish Department considers to be desirable.

White-tailed Deer

As with mule deer, small sample sizes prevail. Forty white-tailed deer were observed consisting of 15 bucks, 24 does, and 1 fawns resulting in a buck:doe:fawn ratios of 63:100:4. Wide variations in buck:doe ratios have been observed over the 4 surveys, ranging from 35 bucks:100 does in 2002 to 167 bucks:100 does in 2000. This great deal

of variation is expected in a small sample size. Throughout GMU 33, 361 white-tailed deer were observed, well above the five-year mean of 207. Buck:doe ratios were 21:100, and fawn:doe ratios were 25:100, resulting in two consecutive years of below guideline fawn ratios. As expected, buck:doe ratios in the unhunted population of the Saguaro National Park are consistently higher than the ratios found in the hunted portions of Unit 33. Fawn:doe ratios have varied widely, with the park having higher ratios than the hunted portions of Unit 33 in half of the surveys.

Javelina

Two hours of helicopter surveys yielded 80 total javelina on Saguaro National Park in comparison to the 151 total javelina located in GMU 33 as a whole throughout some 42.7 total hours of surveys by various methods. Total javelina surveyed on SNP varies widely, ranging from 63 javelina in 2001, to 212 javelina in 2003, with a six-survey mean of 122. Average herd sizes have been consistently higher on the Park than in the hunted portions of GMU 33. Juvenile ratios have been consistently lower than the 20-30% considered necessary to maintain a stable population through all but 2 of the sample years, with 2004 ratios being 30 juveniles/100 adults.

Mountain Lion

Two mountain lions, an adult and a $\frac{3}{4}$ grown juvenile, were observed on the Park near the northeast corner of the X9 Ranch in 2003. None were observed in 2004.

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Survey Results

2/6/1989
1/26/2000
1/6/2001
1/5/2002
1/4/2003
1/4/2004

Mule Deer					White-tailed Deer					Javelina				
Buck	Doe	Fawn	Unk	Total	Buck	Doe	Fawn	Unk	Total	Adult	Juv.	Red	Unk	Total
20	48	26		94	19	21	8		48	86	1	4		91
				0	5	3			8	108	10	7		125
1	2			3	7	11	1		19	55	5	3		63
2	5	5		12	6	17	3		26	145	11	4		160
	6			6	17	13	2		32	190	11	11		212
3	3	1		7	15	24	1		40	69	5	6		80
				0					0					0
				0					0					0
				0					0					0

Population Parameters

		Buck :Doe: Fawn			Buck :Doe: Fawn			Adults: Juv.		Avg. Herd Size	Adults Per Herd
1989	SNP E	42	:100:	54	90	:100:	38	100:	5.8	11.0	7.8
	GMU 33	9	:100:	26	27	:100:	29	100:	13	7.5	6.3
2000	SNP E		:100:		167	:100:		100:	16	15.6	13.5
	GMU 33	21	:100:	39	36	:100:	35	100:	14	9.0	7.9
2001	SNP E	50	:100:	0	64	:100:	9	100:	15	13.0	11.0
	GMU 33	11	:100:	36	22	:100:	38	100:	21	9.8	8.0
2002	SNP E	40	:100:	100	35	:100:	18	100:	10	12.0	11.2
	GMU 33	21	:100:	72	22	:100:	35	100:	16	10.3	8.9
2003	SNP E	0	:100:	0	131	:100:	15	100:	12	18.0	15.8
	GMU 33	11	:100:	44	17	:100:	13	100:	15	8.3	7.2
2004	SNP E	100	:100:	33	63	:100:	4	100:	16	16.0	13.8
	GMU 33	11	:100:	23	21	:100:	25	100:	30	10.8	8.3
2005	SNP E		:100:			:100:		100:			
	GMU 33		:100:			:100:		100:			
2006	SNP E		:100:			:100:		100:			
	GMU 33		:100:			:100:		100:			
2007	SNP E		:100:			:100:		100:			
	GMU 33		:100:			:100:		100:			
2008	SNP E		:100:			:100:		100:			
	GMU 33		:100:			:100:		100:			
2009	SNP E		:100:			:100:		100:			
	GMU 33		:100:			:100:		100:			

The Arizona Game and Fish Department generally follows the following guidelines for issuing hunt permits. While the Saguaro National Park is closed to hunting, game will migrate to some extent between the park and hunted portions of Game Management Unit 33.

Mule Deer

Fawns:100 Does
Bucks:100 Does
Hunt Success

Permits Dec.	Permits Static	Permits Inc.
< 40	40-50	> 50
< 15	15-25	> 25
< 20%	20-25%	> 25%

White-tail

Fawns:100 Does
Bucks:100 Does
Hunt Success

Permits Dec.	Permits Static	Permits Inc.
< 35	35-45	> 45
< 20	20-30	> 30
< 20%	20-25%	> 25%

Javelina

Herd Size
Juv:100 Adults
Pop. Trend

Permits Dec.	Permits Static	Permits Inc.
< 6 Adults or 8 Total	6-9 Adults, 8-12 Total	> 9 Adults or 12 Total
< 20	20-30	> 30
Declining	Stable	Increasing

Hunt

Survey Method	Helicopter
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Observer: Fink, McGehee, Natashaia Kline Pilot: Tom Roszko Weather: Clear, Calm, Cool

Time Start: 8:27 Odometer Start: 53.4

Time Stop: 10:20 Odometer Stop: 55.2

Break Duration: 0:10 Total Miles: 1.8

Total Time: 1:43

Herd Observ.

Note: A separate survey record is required for each survey method and each observer. An observation is a discrete here of 1 or more individuals. This is, in the observer's opinion, a group of animals comprising 1 unit--separated from other similar units.

