SUMMARY OF PRONGHORN HARVEST ACTIVITIES IN KANSAS THROUGH 2012

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Prepared by Matt Peek, Research Biologist

Background – Pronghorn, often referred to as antelope, mostly exist in the westernmost two to three tiers of counties in Kansas, and mostly South of I-70. There's been a hunting season for pronghorn in western Kansas since 1974. The firearm pronghorn season has been four days long since 1990, starting on the first Friday in October. The archery pronghorn season was nine days long from 1985 to 2004, and encompassed the two weekends prior to the firearm season. Since 2005, the archery season has reopened on the Saturday following the firearms season and continued through the end of October. A muzzleloader season was initiated in 2001. It has begun immediately after the archery season and ran for eight days, the last four of which overlap with the firearm season.

Archery permits are unlimited due to traditionally low success rates. Firearm and muzzleloader permit holders are much more successful, requiring these permits to be limited draw. Permit allocations are based on a variety of factors including aerial winter population and summer production surveys, harvest success rates, hunter satisfaction, landowner issues, and local field staff input. Most hunters are interested in harvesting adult bucks. Permit allocations are an attempt to achieve a balance between demand for permits and demand for mature bucks. Of course, the more permits issued, the greater the toll on the buck population, and the lower the subsequent hunter satisfaction. We currently try to maintain buck rations at 35-40 per 100 does.

Harvest Reports - Pronghorn hunter success rates and harvest activities are compiled annually through harvest reports sent to all pronghorn hunters. This effort is primary conducted through the mail, with paper report cards and tooth envelopes initially sent to all hunters. A second mailing of the harvest report and phone follow up efforts are conducted in order to increase response rate, with the objective being a 100% response rate. In the past few years, a direct link to a SurveyMonkey® online harvest report has been e-mailed to nonrespondents of the initial survey effort as well, as an alternative to a second paper mailing to those for whom we have an active e-mail address.

We were able to obtain harvest reports from over 95% of hunters before 2007 and over 90% of hunters in 2007 and 2008. Response rates have fallen to an 87% average in the last 4 years. Changes in the archery season structure, archery hunter numbers, and phone ownership characteristics which have decreased our access to numbers have each played a role in this decline. Harvest estimates are obtained by extrapolating report card results to nonrespondents.

Permit Demand – Demand for pronghorn hunting in Kansas is currently at an all-time high (Figure 1). The number of firearm and muzzleloader permit applications and unlimited (over the counter) archery permit sales are both at all-time highs. Limited

draw applications for approximately 200 permits annually have increased from an average of about 1000 applications from 1995 to 2008 to nearly 1200 in the past 5 years. Archery permit sales increased from an average of 113 in 2000 to 2004, to 380 in 2012. And this was not a one year anomaly; record high archery permit sales were achieved each year between 2009 and 2012.

Firearm and muzzleloader permits are allocated by preference point system; applicants with the highest number of preference points are awarded permits. A $5 fee for preference points was established in 2005. By state law, half of all permits are awarded to landowner/tenants and half are awarded to general residents. Draw statistics from 2012 are found in Appendix 1. Applicants are allowed to buy a preference point without applying for the permit, so unnecessarily high preference points do show up in the draw stats, and there is slight variation by unit, but for the most part, landowners need 0 to 1 preference point to draw a muzzleloader permit and 0 to 2 points to draw a firearms permit. (Zero points means some could draw every year.) General residents need 2 to 4 points to draw a muzzleloader permit and 4 to 8 points to draw a firearms permit.

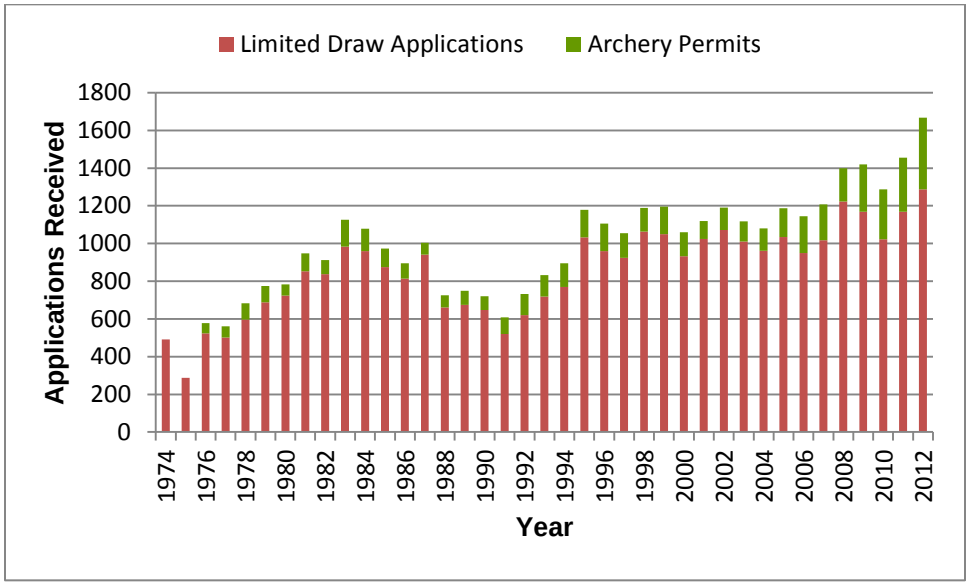

Figure 1. Pronghorn permit demand as indicated by limited draw (firearms and muzzleloader) permit applications and unlimited archery permit sales in Kansas since 1974..

Statewide Harvest – Total pronghorn harvest since hunting seasons were initiated in 1974 is provided in Figure 2. Current harvest levels (183 average over the past three seasons) are the highest since 1997.

Since 1986, all permits have been valid for any antelope. The sex and age composition of the harvest since 1995 is provided in Figure 3. In recent years, nearly 90% of the harvest has consisted of yearling or older bucks. Few does are harvested, and adequate buck:doe ratios are retained for breeding, so hunting is not considered a

limiting factor for pronghorn at the population level. Consequently, age structure of bucks is a more meaningful measure of the impact of hunting pressure on the population than the population level itself. The Department monitors the age structure with teeth provided by hunters, and data on age structure has been provided in a separate Pronghorn Age Report (http://www.kdwpt.state.ks.us/news/Services/Research-Publications/Wildlife-Research-Surveys).

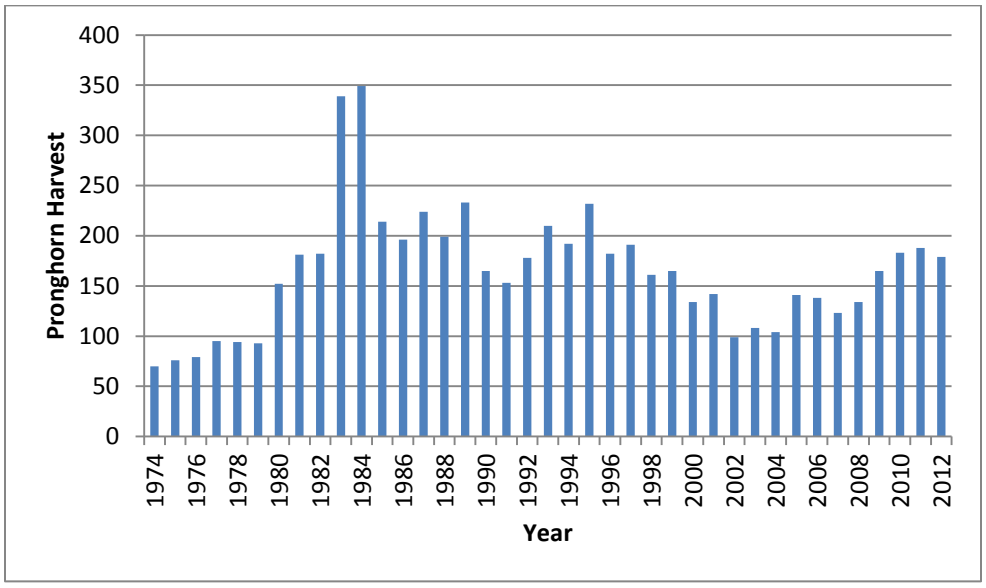

Figure 2. Total pronghorn harvest in Kansas since hunting seasons were initiated in 1974.

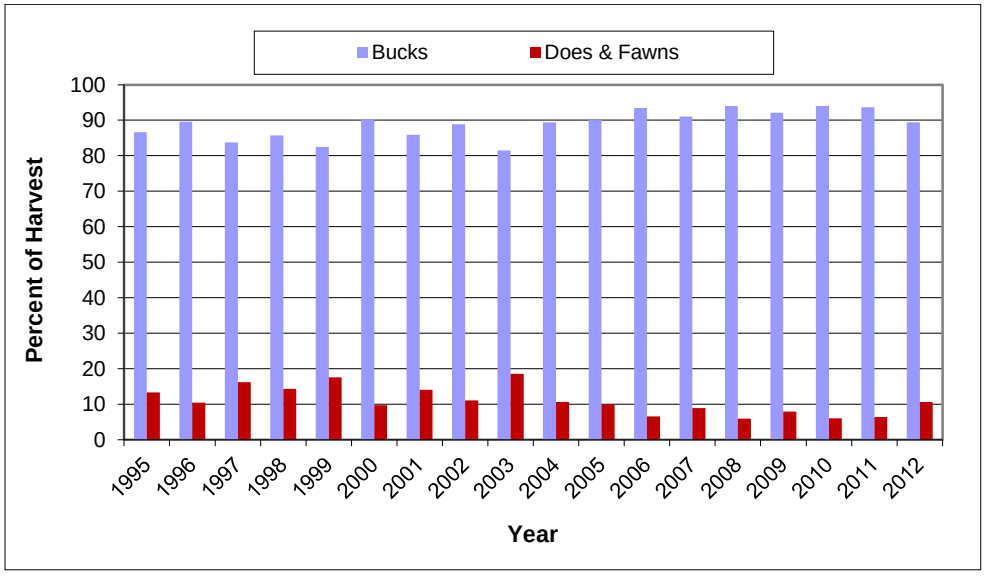

Figure 3. Sex and age composition of annual pronghorn harvest in Kansas from 1995-2012.

Permit Allocations and Harvest – The number of pronghorn permits sold by weapon type since 1995 is provided in Figure 4. Muzzleloader permits have only been available since 2001. At that time, firearm quotas were reduced to accommodate the muzzleloader harvest. As previously stated, interest in archery hunting has increased substantially in recent years. Archery permits are unlimited, and a record number has been sold in six of the last eight seasons. This includes each of the last four, with the most substantial increase occurring between 2011 and 2012, indicating demand is still growing.

Firearms permits account for most of the pronghorn harvest, but their role in terms of total harvest has decreased in recent years, first with the addition of muzzleloader permits, and more recently as the result of increased archery harvest (Figure 5). From 2000 to 2004, archery hunters averaged fewer than 10 pronghorn a year. From 2005 through 2009, average harvest increased to 22. In the last three years, archery harvest averaged over 50 pronghorn a year.

In addition to increased permit sales, archery hunters have experienced improved harvest success in recent years (Figure 6). Typically in the 10 to 15% range, archery success was as high as 23% and not less than 16% over the last three years. Firearms permit success decreased from 77% in the last half of the 1990's to 70% in the past 10 years. Muzzleloader permits averaged 63% success during that time.

One consideration in archery hunter success is since 2005, archery season has reopened the weekend after firearms season until the end of October. This increased the season from 9 days in length to 29 days on average. However, this late season opportunity has not had a major influence on harvest. Most of the archery hunting still occurs during the nine early days. In 2012, just 20% of archery hunters hunted the late season, including 7% who hunted exclusively in the late season. Since 2005, an average of just 2.25 pronghorn per year were reportedly harvested during the late season (range 0-6).

Pronghorn hunters were asked to rank their hunt satisfaction on a 5–point Likert-type scale from extremely satisfied to extremely dissatisfied. This serves as a general indicator of hunt quality likely reflecting pronghorn numbers, buck quality, access, crowding, and various other factors of the hunt. Satisfaction differed little between the different permit types. In general, archery hunter satisfaction was slightly lower, likely reflecting the lower harvest success of that permit type. Of note in this figure is how dissatisfied hunters were in 2002. That year had the lowest firearm harvest success on record and the lowest total harvest from 1980 to 2012. In the harvest reports, multiple hunters complained of a lack of pronghorn numbers and mature bucks in the places where they had typically found them in the past. The winter aerial population surveys which are an important factor in setting permit allocations failed to detect a decline in pronghorn populations, but very poor buck:doe and fawn:doe ratios were detected during the summer production survey. For the 2003 season, limited draw permits were reduced and satisfaction, harvest success and total harvest improved to more typical levels.

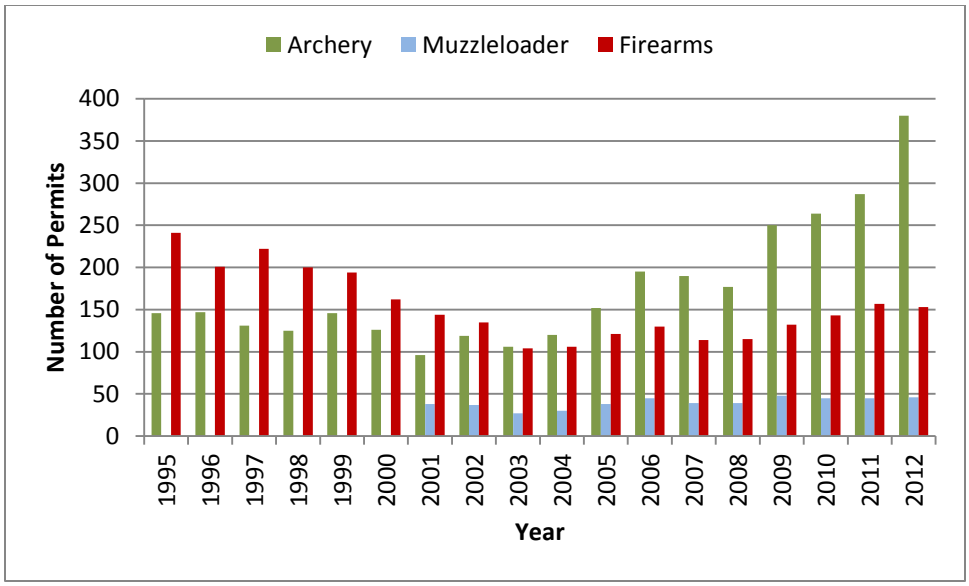

Figure 4. Permits sold by weapon type for pronghorn in Kansas from 1995-2012.

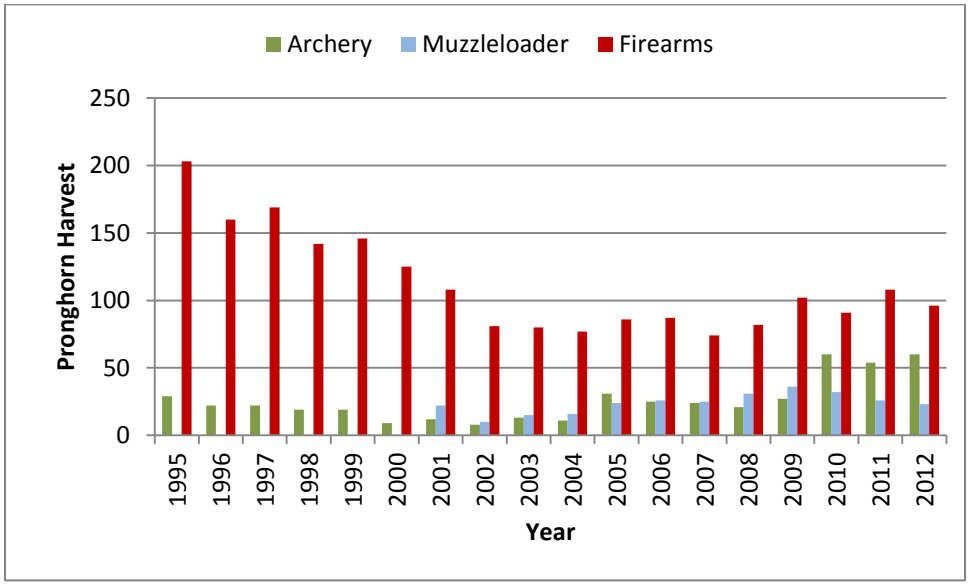

Figure 5. Pronghorn harvest in Kansas by permit type from 1995-2012.

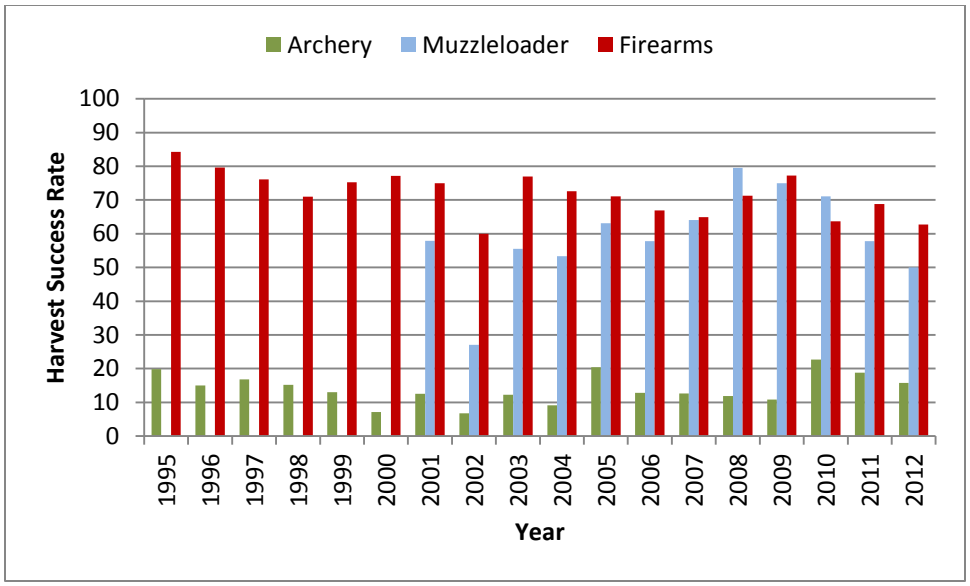

Figure 6. Harvest success rate by permit type for pronghorn in Kansas from 1995-2012.

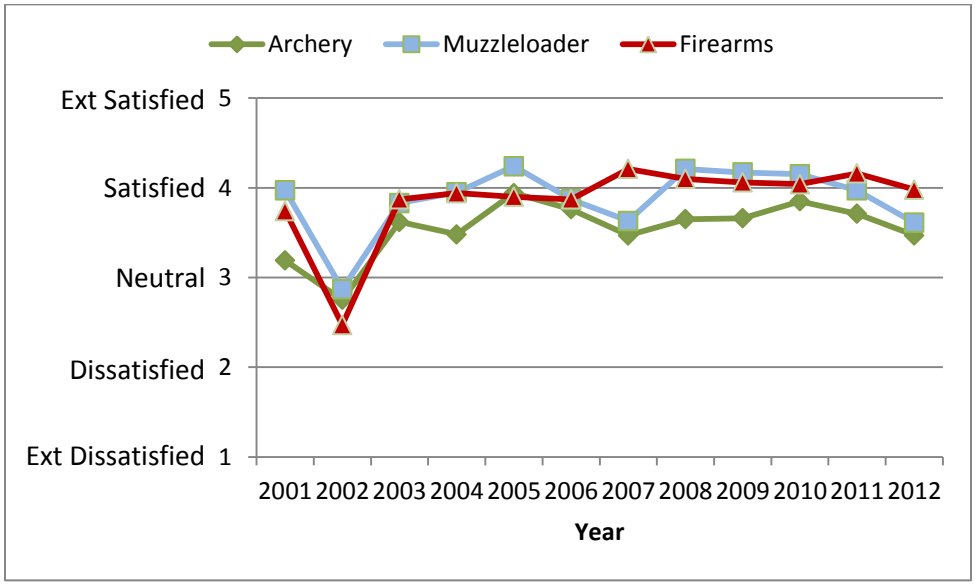

Figure 7. Mean pronghorn hunter satisfaction by permit type in Kansas from 2001-2012.

Management Units – There are currently three management units open to pronghorn hunting in Kansas (Figure 8). These units, which are also deer management units, were adopted in 2001 in order to reduce confusion over big game unit boundaries. Pronghorn are generally very uncommon in the easternmost parts of all units. Firearm and muzzleloader permits are restricted to one of the three units, and archery permits are valid in all three, so unit analyses below are limited to firearms and muzzleloader permits.

Unit 2 has the most pronghorn therefore the greatest number of designated permits (Figure 9). Prior to 2001 when muzzleloader permits were first allocated, Unit 18 was open only to archery hunting. Firearm permits were not issued in Unit 18 until 2010, when population surveys detected over 250 pronghorn in a limited portion of the unit.

Harvest levels are fairly indicative of where permits were issued (Figure 10), but success rates have been the highest in Unit 18, where the trend between 2001 and 2012 is towards increasing harvest success (Figure 11). Success rates were stable in Units 2 and 17during that time period, but were higher in Unit 2 than 17.

Hunt satisfaction by unit is provided in Figure 12. We would consider average hunt satisfaction of 4 (satisfied) to be very good. Most recent years in Units 2 and 18, we've been in that vicinity. Unit 17 has fallen below objectives a bit, indicating a need for additional consideration of permit allocations and other factors affecting satisfaction in that unit. Hunt satisfaction decreased in 2012 in the two southern units. That area was under extreme drought in 2011 and 2012, resulting in poor production and likely fewer pronghorn observed. Permit allocations were slightly reduced in 2013, and in conjunction with better weather conditions and production, we anticipate improved satisfaction in 2013.

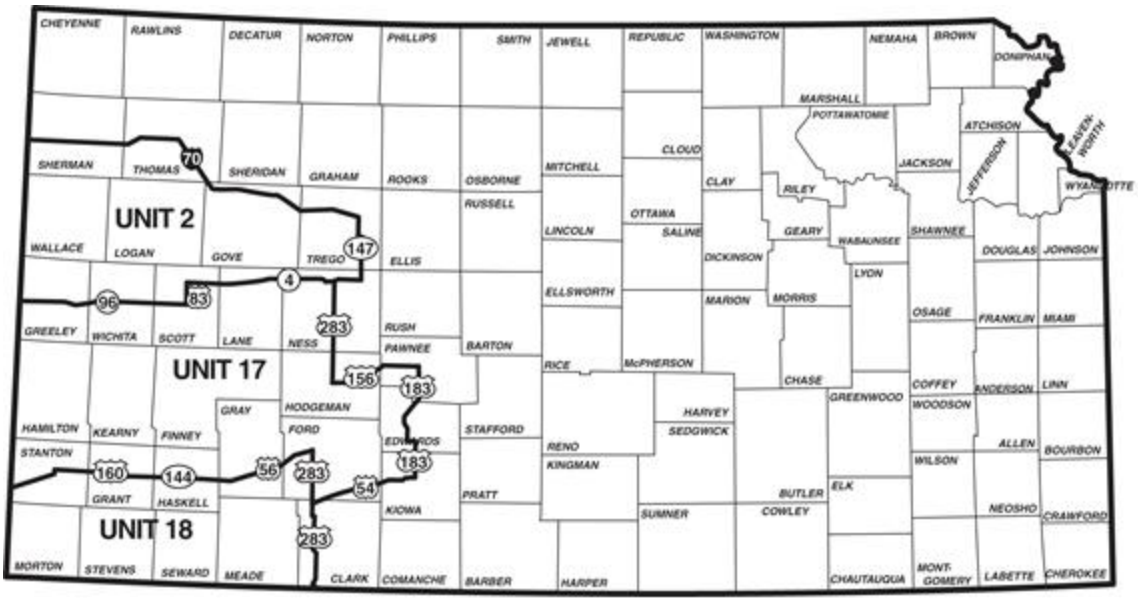

Figure 8. Kansas pronghorn management units.

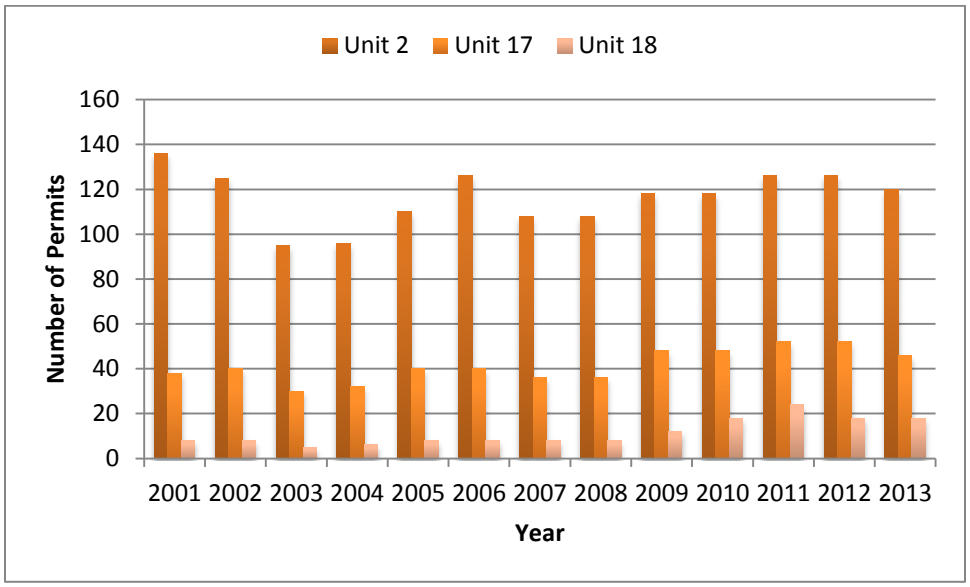

Figure 9. Total firearm and muzzleloader permits issued in each of the three Kansas pronghorn management units from 2001-2012.

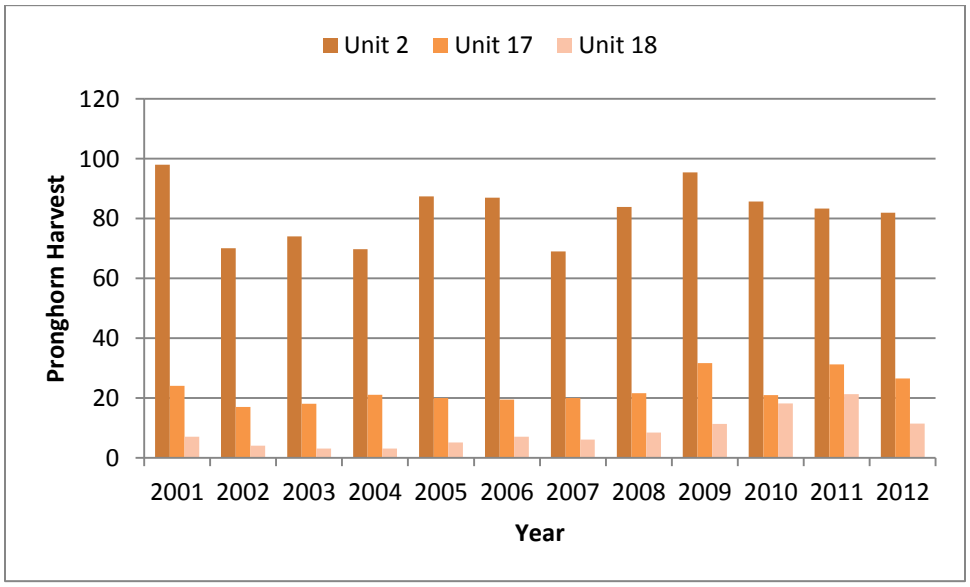

Figure 10. Pronghorn harvest in Kansas by management unit by firearm and muzzleloader permit holders from 2001-2012.

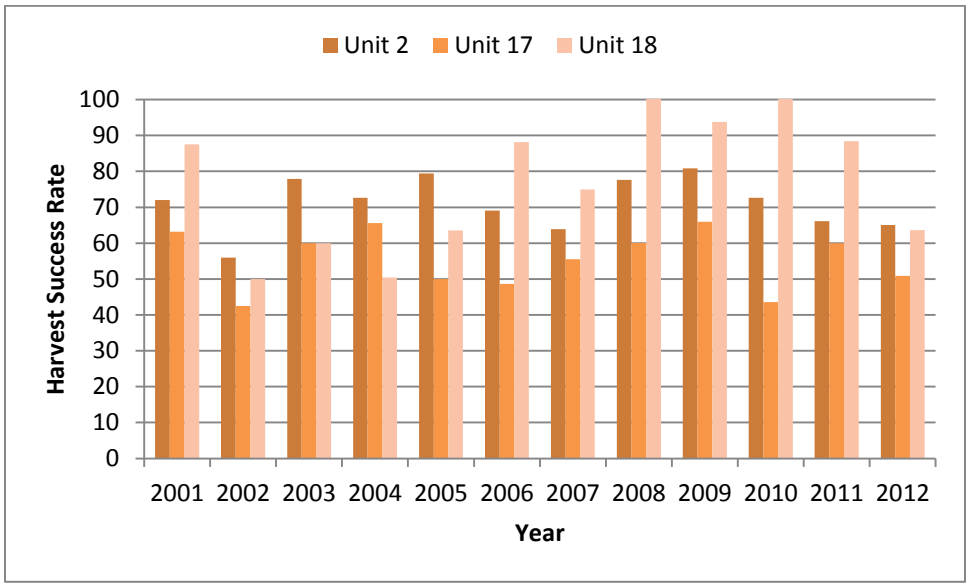

Figure 11. Harvest success rate by pronghorn management unit for firearm and muzzleloader permit holders in Kansas from 2001-2012.

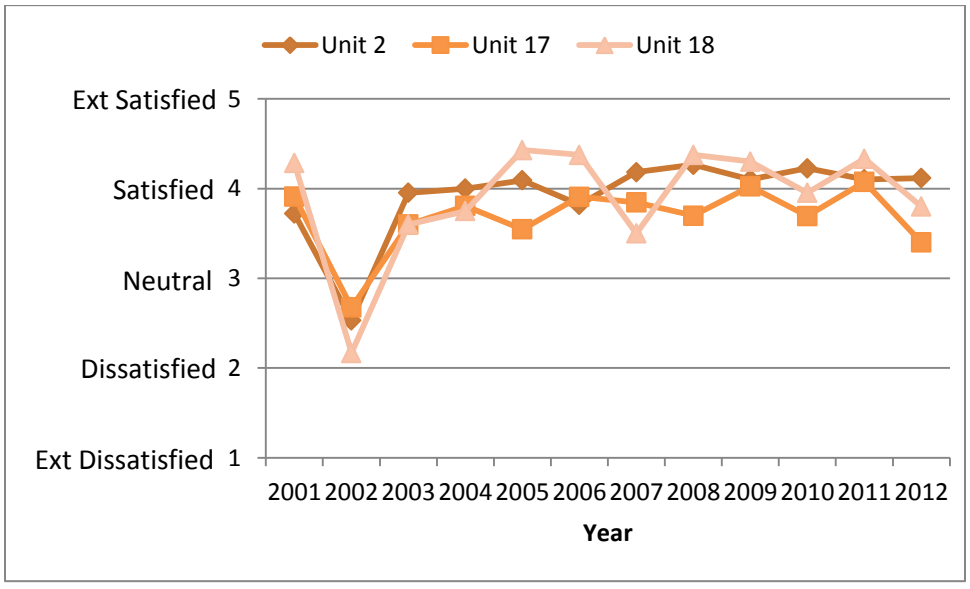

Figure 12. Mean pronghorn hunter satisfaction by unit for firearm and muzzleloader permit holders in Kansas from 2001-2012.

Nonresident Archery Permits – Prior to 2006, pronghorn hunting in Kansas was restricted to residents. At that time, in response to legislative interest in establishing transferrable landowner permits to provide for nonresident access, the Department adopted regulations establishing nonresident archery permits. At that time, some hunters expressed concern about the potential impact this could have on the dynamics of pronghorn hunting in Kansas.

In the seven years these permits have been available, 38 have been sold (range: 3-8, average: 5.1 per year). Of the 34 who turned in harvest reports, only one reported having harvested a pronghorn; an adult buck. In summary, this has been an effective way to allow nonresident opportunity without impacting pronghorn populations or apparently hunting dynamics in the state.

Crossbows – Prior to 2012, crossbows were only allowed during archery season by hunters possessing a disability permit. In 2012, regulations were adopted allowing crossbows to be used during big game archery seasons by any hunter age 16 and under (youth) or age 55 and older. In 2013, the opportunity to use crossbows during big game archery seasons has been expanded to all hunters.

In the 10 years prior to 2012, an average of just 1.6 pronghorn hunters per year indicated they used crossbows (range: 0-5). In 2012, 12 hunters indicated they used crossbows, including 9 age 55 and older (newly exempted from the disability permit requirement). Five of these 12 hunters harvested pronghorn. This is a single year and a small sample size, but this 42% success rate is 2.6 times greater than the 16% success reported by other archery permit holders who hunted during the 2012 season, and is basically twice the success rate reported by archery hunters during years when they've been most successful. Furthermore, approximately 20% of hunters age 55 or older used crossbows in this, the first year of their eligibility, reflecting apparently fair interest in crossbow use, at least among this segment of hunters. Conversely, none of the seven youths who held archery permits and responded to the survey indicated they used crossbows.

The potential for substantially increased harvest success rates combined with the current increase in archery permit sales is reason for concern about the sustainability of our current system. The harvest levels achieved by archery hunters the past several seasons (around 50 pronghorn) have been sufficient to impact limited draw permit allocations, which, for firearms permits, are already near the limit of what may be considered reasonable for a true preference point system (up to 8 points required to draw in some instances). As previously noted, applications for limited draw permits are already on the rise further stressing the system even if nothing else changes. We will be monitoring this situation closely in the coming seasons.

Wounding loss – Hunters are asked how many pronghorn they wounded and didn't recover. Between 2001 and 2012, 2.5% of hunters (n=83) reported wounding loss. Eighty-four total pronghorn were reported wounded (range: 3-11 per year, avg: 7). Extrapolated to nonrespondents, an estimated 9 pronghorn per year were wounded and

not recovered, which is 5.3% of the total harvest during that time span. Loss by weapon type were: archery – 1.7% (n=40), firearm – 1.7% (n=26), and muzzleloader – 3.6% (n=17).

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