Note on the Deer Population at West Point.

The deer population at West Point has been a matter of concern since at least 2010, and in spite of efforts at recovery through the reduction of hunting pressure, there has not been the expected increase in deer numbers. In fact, if harvest numbers are indicative of overall numbers, it appears that the deer population has decreased even as hunting effort has also decreased. While the reason for this decline is likely related to a number of factors, it is apparent that if we are to expect to increase the deer population beyond what is current in our woods, additional efforts to curb hunting pressure are warranted.

Background:
In 2011, in response to hunter satisfaction survey, focus group meetings, and declining harvest numbers we instituted three programs designed to limit doe, fawn and to a lesser extent yearling buck take.

The first effort was to limit hunting pressure overall on the reservation. Where previously there had been no restriction on the number of public access hunting permits to the reservation during regular big game season, we decided to limit the number of available passes to 100, less than half the number of passes issued on average for the previous ten years. Public access hunters were also excluded from the Late Muzzleloader/Bow season, as well as hunting areas containing range facilities. These restrictions have served to reduce the take by public access hunters to just 13% of the total deer harvest in 2014 and 28% in 2013, down from 43% in 2008 and 36% in 2009.

The second effort was to limit the antlerless (doe and fawn) take to half the traditional antlerless harvest. Prior to 2011, the adult doe take target was a minimum of 70 animals during the regular big game season, with no set target on fawn take. At that time the effort was on maximum take in order to control the population. For the 2011 season and since, the antlerless take for all hunters has been time-limited during the regular season. In general, antlerless deer were allowed to be targeted for the first seven days of the three week season with allowances for additional time if hunting conditions were particularly poor opening week. This restriction on the antlerless take was largely effective in reaching its intended goal. The doe and antlerless deer take has been roughly halved since instituting this rule.

The antlerless deer time restriction had the secondary effect of limiting overall hunting pressure during second half of the regular season. Unsuccessful public access hunters, who were required to take an antlerless deer prior to taking a buck, were ineligible to pursue deer at all during the antlerless closure and could no longer sign out to go hunting. The combination of the two rules listed above had a third effect in that interest in public hunting at West Point declined so that in 2014 and 2013 we failed to sell out even the 100 allowable passes.

The third program instituted in 2011 was aimed at preserving yearling bucks by placing a rule where bucks are not harvestable until they have at least three antler points on one side of the head for approximately one third of the reservation. This somewhat controversial rule has been applied on a landscape level to some success elsewhere, notably for the entire state of Pennsylvania and several New York Deer Management Units. Where this rule has been most useful is where there has been no tradition of taking does resulting in over-population and a vastly skewed sex ratio favoring does and extreme harvest pressure on yearling bucks. Instituting a 'three-on-a-side rule' is generally coupled with a liberalization in the doe take in order to limit population and balance sex ratios. As there is no apparent issue with the West Point herd's sex ratio, we were attempting to use the rule to increase population. In 2014, after a three season trial I decided to do away with this restriction as it did not appear to significantly impact the take or improve the herd. Our herd with no harvest manipulation already trends older. In practice, the rule was confusing for hunters, making the regulatory climate here overly complex, and if expanded would disproportionally effect a specific class of hunter.

2014-2015 Hunting Season:

In 2014 we had the lowest harvest since we have been keeping track at just 91 total deer harvested. Why is this? One reason is the recent efforts at reducing hunting pressure. 2014 saw the smallest participation in the big game season in many years. A 2014 study by then Cadet Clompton looked at nine years of harvest data and determined that for every 2% decrease in hunter effort, one less deer is harvested. We sought to reduce hunting pressure, and the harvest was reduced. But, this is not the whole, and possibly not the main story.

Last year at the check station we made efforts to talk to incoming hunters about their day. Results were somewhat mixed, but illustrative. Many hunters returned from the field reporting that they had seen no deer all day, and postulated that there are very few deer left at West Point. However, first hand field reports are often difficult to interpret. Other hunters reported just the opposite, that there were many deer, but that they were hard to locate and pattern. Hunter perceptions of the herd, while valuable, are hard to quantify. Observations may be tinged with expectations. Perceptions of a lack of deer can influence hunters' behavior and success. If it's cold, and you do not expect to see a deer, do you go home early? However, even amongst highly skilled hunters who traditionally harvest deer with little trouble, the general consensus at the check station this year was "Fewer deer." Our harvest rate supports this perception.

Talking to our neighbors to the north, Black Rock Forest, we see that last year they too experienced a light year, taking half the deer in 2014 as in 2011. Like West Point, the Forest, in terms of effort, was light with hunters pursuing deer only half as much in 2014 as in 2011, which may

account for some of the decline in take. But, last winter, as they have annually for decades, the Forest conducted annual deer density surveys. This spring, Dr. William Schuster the Forest manager, notes that the deer density for the Forest is lower than traditionally observed (9-13 deer per square mile vs. a high of 30 in 1985 per square mile), and that the population has been "uncharacteristically stable" for three years now. He goes on to write:

"Complete failure of the oak acorn crop in fall of 2011 and 2012 is likely a factor in lowering deer density. But acorn crops were good in 2013 and 2014 and there has not been a corresponding increase in deer population size. Annual mortality appears to be roughly equivalent to the new fawns born each spring. New tree reproduction has been evident across the Forest for the past few years, probably responding to reduced deer browsing. But indicators of deer health such as weight and antler size have shown only slight improvement. Deer health may continue to improve and we will keep monitoring the indicators."

Likely, the severe winter of 2014-2015 contributed to the lack of growth in the population this spring.

In speaking with the NYSDEC Region III deer manager, his thought is that the NYSDEC had over-sold deer management permits for DMU 3p (West Point to Sterling Forest) since at least 2008, but that with the controls we had placed on the harvest locally, that the number of doe permits available did not result in over-harvest. Harvest numbers for the region for 2014 were not available at the time.

Population Today:

How many deer are here? This is a fundamental, but complex question. Deer resist counting. Populations grow and shrink temporally. One must account for hunting mortality, other mortality, emigration and immigration, and reproduction. The arrival at hard number, with good confidence, becomes difficult. In this situation indicators are sought. For us, hunting data, in particular catch per unit effort (number of deer harvested per man/day) is our most reliable indicator of trend. But, we have manipulated this ruler by artificially controlling effort, and it does not provide population. Other methods of counting have been tried; many are fraught with bias. All census methods, spotlighting, aerial counting, drives, etc. can yield a number, but the number is only reliable if a good protocol is followed, with efforts made toward repeatability, and duration.

This year West Point worked with a team from Army Corps engineers who were here with a heat sensitive drone to sample 585 acres in various habitats across the reservation. In two days, the team counted a total of 25 deer, or approximately 24 deer per square mile, if one averages effort. Is this significant? Probably not. The data set is not large enough, the data was highly variable (one sampling effort yielded 11 deer, whereas many yielded

none) we did not sample multiple times, and the conditions at sampling were far from ideal, meaning that it is highly likely we missed deer. A better method sampling a larger area in a more controlled manner, would yield more reliable numbers. If we try this again, the effort must be in winter, with light snow cover, and from a plane flying a set pattern.

As mentioned previously, Black Rock forest annually censuses deer. They use two methods, track counts after snow and pellet counts after thaw. Both are not without problems, but the Forest researchers have decades of data to compare and if not completely accurate for census, the Black Rock data should be a good yardstick.

If the Black Rock data is comparable to West Point, and we choose from the more conservative side of the reported range, West Point likely has 9 deer per square mile, or 225 across the reservation at spring melt. Assuming a 50/50 sex ratio, 113 of these deer will be female. Assuming that harvest data is a good indicator of demographics, 13 females will be last year's fawns, 35 will be yearlings, 65 will be mature adults. Using an extremely conservative yearling buck antler diameter (an index of available forage) for 2014 as an indicator of herd heath and doe fecundity, we estimate that no fawns will be delivered by last year's fawns, 23 fawns will be delivered by yearling does, and 91 fawns will be delivered to mature does. This places approximately 339 deer on the reservation in June at birthing, the high point of the population. In reality this number is likely to be higher. Calculated another way, using a population growth rate of 80%, a published population growth rate of deer in good habitat, our original 9 deer per square mile, already a conservative number, yields 405 deer in June. Deer managers in this region typically aim for an annual average density of 12-15 deer per square mile for sustainability.

With this calculation, if 1/3 were taken, a sustainable harvest rate, we'd hit the ~135 deer we were taking on average every year, but this is not the case. Our numbers have been declining. While hunting mortality is likely the largest draw on the deer population at West Point, other mortality is likely playing an important factor. One likely population pressure is early fawn mortality due to predation. In the Eighties, Nineties, and early 2000's predator populations were lower than today. Observations would suggest strongly that coyotes, bears, and bobcats, all important fawn predators, have all increased over time. Certainly, this has some effect on reproductive success. The fact that deer ages have steadily increased over time may support this contention. Two year old deer and older now represent the largest class of harvested deer whereas previously yearlings would have made the largest portion of the take. Hunter selection probably plays a factor in his fact as well if hunters are selecting for older deer.

Where population growth is most desirable, protection must be afforded on the production side. We have made efforts to protect does through limiting take, but previous efforts have not yielded the hoped for results. This

being the case, the next step, in order to grow the herd toward a sustainable population calls for an even more restrictive approach to doe management.

To sum up, in spite of management efforts to increase the herd by limited antlerless deer protection, there has been an overall population decline at West Point. To counter this, increased protection measures are warranted until recovery of the herd is noted.