INTERIM REPORT OF FINDINGS BY,

WISCONSIN WHITE-TAILED DEER TRUSTEE AND REVIEW COMMITTEE

MARCH, 2012

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Presented to,

Wisconsin Department of Administration

Madison, Wisconsin

PREAMBLE

In the history of North American wildlife management few issues have been more contentious and challenging than the management of white-tailed deer. The root of this problem has been in defining a clear answer from society for the basic question "How many deer should there be?" The answer, of course, depends on who you ask and what their relationships have been with deer. Predictably, one portion of society will demand more deer to hunt, photograph, or just view, while another portion of society will demand fewer deer to reduce conflicts such as damage to crops, gardens, or forest ecosystems, or to reduce deer-vehicle collisions out of concern for public safety.

Managing deer is fundamentally different than managing most other species of game animals, leading to greater consequences both economically and ecologically. Aside from enormous economic impacts, both positive and negative, deer management has cascading long-term effects on forest ecosystems. Unlike managing bears, turkeys, rabbits, squirrels, upland wildlife or waterfowl, white-tailed deer, if allowed to become overly abundant for extended periods of time, can and will destroy their own habitat, as well as that of other species. This is why they often are referred to as a “Keystone Species.” When this happens it is not in the best interest of the health and long-term sustainability of the forest, and most of the other plants and animals that live there—it is also not in the long-term best interest of the deer, the hunters or the future of hunting.

The reestablishment and recovery of the whitetail to its historic range has been celebrated as one of the great success stories of wildlife management in the 20th century; but attempting to balance those recovered populations with their habitat, and simultaneously maintaining numbers acceptable to sport hunters, is proving to be one of the greatest challenges for wildlife management in the 21st century. We strongly believe the decisions and associated impacts of deer management in Wisconsin should not be made in isolation as a single species, but rather need to be congruent with and guided by the states' (DNR's) greater responsibility for the management of all their natural resources, and for all the people of Wisconsin in current and future generations.

BACKGROUND

For some time, there has been growing public dissatisfaction with various issues related to white-tailed deer management and hunting in Wisconsin. During his campaign, Governor Scott Walker made a promise to appoint a “Deer Trustee” to review programs, activities and efforts by

the Wisconsin Department of Natural Resources (WDNR) related to deer management, to help resolve these issues. In October, the Department of Administration (DOA) selected Dr. James C. Kroll (Appendix 1) to be the *Deer Trustee*. A contract for services (October, 2011) was developed between Dr. Kroll (Dr. Deer, Inc.) and the State of Wisconsin, through the DOA. This contract specified the following responsibilities:

> *Contractor, in consultation with two other recognized deer management experts ("Contractor's Associates") shall undertake an assessment of Wisconsin's deer management plans and policies, hereinafter, "Services", including, but not limited to: (i) The methodology and accuracy of population estimates for Wisconsin's white-tailed deer herd; (ii) The necessity and effectiveness of Wisconsin's policies in response to an infectious disease known as Chronic Wasting Disease (CWD); (iii) The significance of the impact of Wisconsin's timber wolf population upon the white-tailed deer herd, and its impact upon white-tailed deer management policies and plans, if any; and (iv) The structure of Wisconsin's deer hunting periods, including, but not limited to, the necessity and efficacy of hunting polices such as "Earn-A-Buck" and other policies and plans designed to control the size of Wisconsin's white-tailed deer herd.*

Prior to initiation of the above charges, the Wisconsin Legislature subsequently eliminated "Earn-A-Buck" from consideration by legislative action.

THE PROCESS

Step One.— As indicated in the contract, Dr. Kroll's first responsibility was to designate two additional individuals to serve with him as the review committee. Drs. David Guynn and Gary Alt (Appendix 1) were asked to participate and agreed to commit to this project. The committee members were selected for their unique experiences in academic, agency and research aspects of whitetail science and management. Dr. Guynn has extensive experience in both biological and human dimensions research; is credited with co-developing the Mississippi Deer Management Assistance Program (DMAP), which has been a model for many states; and, his talents in public/landowner education and technical guidance. Dr. Alt is a well-known wildlife biologist who, although originally recognized as an accomplished predator (black bear) researcher, was appointed by Governor Tom Ridge to head the white-tailed deer program at the Pennsylvania Game Commission. The purpose of the appointment was to evaluate Pennsylvania's deer management program and to coordinate necessary changes for improvement. Governor Ridge selected Dr. Alt because of his extensive experience with public relations and mass media to communicate with the public about wildlife management issues and his demonstrated success to solicit public support for necessary changes. The positive impacts of Dr. Alt's work in Pennsylvania are widely acknowledged as significant and long-lasting. Together the three members of the review committee represent more than 100 years of professional experience.

Step Two.— Once the committee was selected, the next step was to develop a process that would provide information needed by the committee in a logical manner. The next step was to conduct a day-long meeting with the WDNR in Madison, which was attended by a large number of senior and mid-level staff. Prior to the meeting, we developed a information/data needs document (Appendix 2), which included 37 requests. The meeting was held on 8 November, 2011. We came away from this meeting very impressed by the dedication and positive attitude of WDNR staff. Most of the original materials requested were delivered at this meeting (Appendix 3), either in hard copy or digital form. Initially, approximately 297 items were delivered. Dozens of additional copies also were presented. Oral presentations also were

delivered by various staff and university cooperators on a variety of topics, ranging from population modeling to human dimensions. Subsequently, we requested many additional documents and data, as questions or needs arose. Much of these requests were delivered.

[We must point out, from the very beginning of our work, WDNR staff have been enthusiastically supportive of the process. Many of our requests were complex and we know involved considerable time by the staff, and we appreciate the efforts made to provide us with requested materials and information. Speaking honestly, a process such as this cannot be comfortable for personnel of a state agency; yet, we detected no animosity from any individual within the Department. Our impression is WDNR staff are excited about helping forge a new, 21st Century model for managing deer. We look forward to working with them on the next phase of the project. We also wish to point out, to date there has not been a single attempt to influence or coerce us in any way by Governor Walker, members of the Wisconsin Legislature, Wisconsin Department of Natural Resources or Wisconsin Department of Administration. In these contentious political times, it is gratifying and a testament to the ethical integrity of these people and agencies, and we appreciate it very much.]

Step Three.— The next step was to organize and conduct meetings with two groups we deemed critical to the success of this project. Our first meeting was held at the DOA administrative building on 9 January, 2012, and included a wide spectrum of stakeholders. Stakeholder groups were identified with the help of the WDNR, DOA, the Conservation Congress and interested individuals. Our intent was that no organized group would be denied access to this meeting. To date, no additional group has requested a hearing. The meeting was extremely helpful in identifying the key issues and concerns by these interest groups.

A second meeting was held at the same venue on 11 January, 2012, in which representatives from agencies and organizations which we felt directly or indirectly impact or influence deer management in Wisconsin. Representatives from Wisconsin universities and colleges who have related research programs also were invited to this meeting. Again, we felt the meeting was very productive and we gained even more insights related to various components to Wisconsin deer management.

On 10 January, 2012 we attended a roundtable discussion conducted by Governor Walker with representatives of the Tribes and Bands of Wisconsin. The purpose of this meeting was to introduce ourselves to these representatives and to organize a follow-up meeting with Tribal biologists and managers. This meeting was very helpful to us in understanding the principal issues and needs of the Tribes. The meeting was followed by a conference call with Dr. Jon Gilbert, Ann McCammon Soltis and Dr. Jim Zorn to discuss the annual Deer Quota Process (Issue 98-2) and how the WDNR interacts with the Voight Intertribal Task Force (VITTF) to determine antlerless deer kill quotas and their apportionment between the Chippewa Tribes and State. Subsequently a meeting between Drs. Kroll, Guynn and Alt and the Tribal Council was scheduled during February, 2012 at Dayton, Wisconsin. Unfortunately, a blizzard caused cancellation of Dr. Kroll's flights and he was not able to attend. The meeting has been rescheduled for April 5.

Step Four.— We also examined the results and recommendations of the three previous reviews of various activities and programs of the WDNR, plus conclusions of the Staples Marketing Report Focus Group, commissioned to evaluate public response and opinions related to the CWD eradication program. The purpose of this review was to gain insights into findings by other

reviews, and to determine progress towards numerous recommendations resulting from them. A brief discussion of these follows, and the complete reports can be downloaded from the drdeer.com web site, beginning 27 March, 2012.

Dr. Deer Web Site

In addition to all of the above, we provided a means for interested individuals to submit their concerns and comments via the Dr. Deer web site (http://www.drdeer.com/Wisconsin.html). The graph below summarizes comments we received. Although certainly not scientific, concerns expressed by site visitors mirrored those identified in published studies (Holsman 2006, 2007). We received a total of 1,157 submissions to date. Of these, 486 identified themselves as landowners, 671 as hunters (Fig. 1).

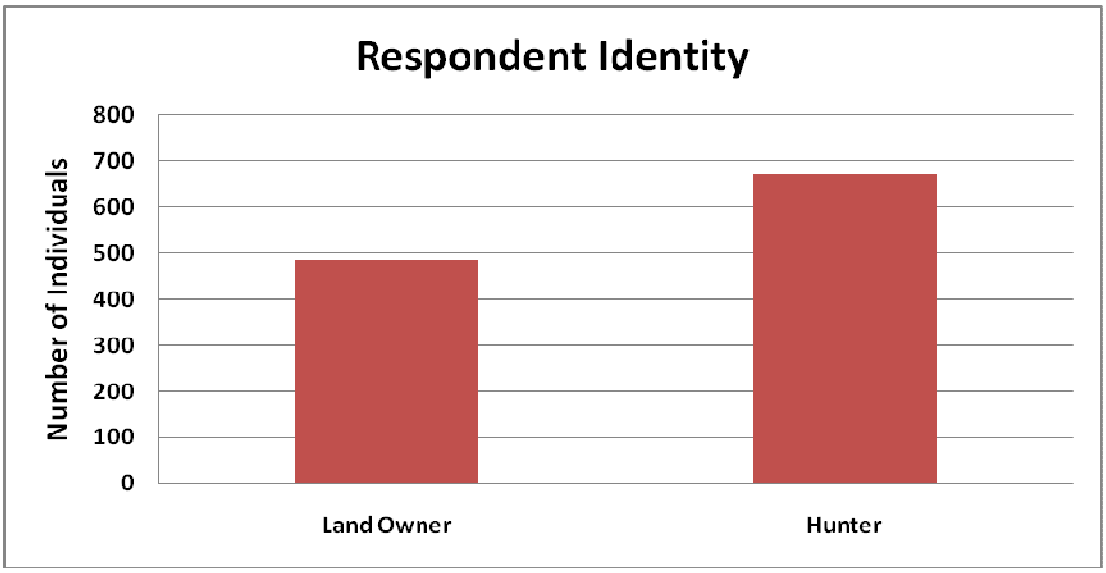

Figure 1. Respondents to the drdeer.com website portal were fairly balanced between individuals identifying themselves either as landowners or hunters.

The top five issues (Fig. 2), based on these responses were:

1. **Too many predators.**
2. **DNR does not listen.**
3. **Inaccurate population estimates.**
4. **Come to a decision on baiting.**
5. **Eliminate Earn-a-Buck.**

Interestingly enough, the only issue receiving less than 200 comments was “No change needed.” Several individuals were contacted for further discussions, leading to additional

insights into public opinion. Even though not a scientific study, responses mirrored published information. Shortly after initiating our study, “Earn-a-Buck” was eliminated legislatively.

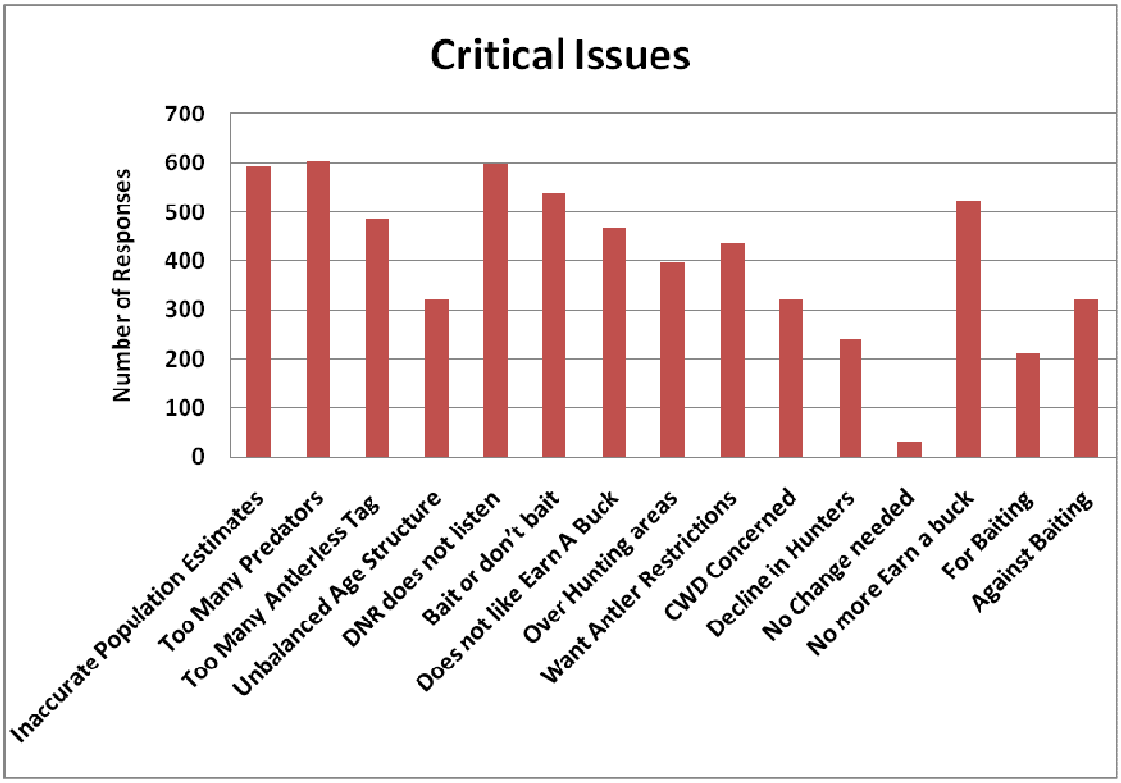

Figure 2. Number of responses to the question: What are the critical issues for deer management in Wisconsin?

DIRECTED OR SOLICITED STUDIES SINCE 2000

Since there were three previous studies identified, which were related directly to the scope of this review, and since each concluded with a series of recommendations, we also considered these in our analysis.

Deer Management for 2000 and Beyond: A Wisconsin Conservation Congress Initiative (September 2000)

In 1997, the Wisconsin Natural Resources Board requested the Wisconsin Conservation Congress and WDNR to review the Wisconsin white-tailed deer management program, a process leading to publication of ***Deer Management for 2000 and Beyond: A Wisconsin Conservation Congress Initiative***. The formal process was begun in February, 1999. The process was overseen by a private consulting firm.

The study was organized as a facilitated process, with 7 study groups established:

Agricultural Deer Damage

Baiting and Feeding Deer

Believability of DNR Population Estimates

Forest and Ecological Damage Caused by Deer

Deer Herd Size

Private Land Access

Sex Ratio and Age Structure of the Deer Herd

The goals for the study were established as:

Manage for healthy deer herd.

Optimize opportunities for diverse group of users.

Minimize conflicts.

Keep deer herds at goal.

Maximize safety.

Provide consistency and simplicity.

The final report (***Deer Management for 2000 and Beyond: A Wisconsin Conservation Congress Initiative***) was completed on September 29, 2000, at a cost of $1,001,593.37, with a total of 74 recommendations presented (Appendix 4).

Since the 2000 report, 35 (47.3%) of these recommendations had been completed, 22 (29.8%) had been partially completed, and 17 (23.0%) were not completed. Appendix 4 is color-coded to reflect these results. The recommendations which were reported as not complete include:

- Short-term studies on ecological impacts of high deer densities.
- Inclusion of forest vegetation damage in Wisconsin's Wildlife Damage Programs.
- Educational programs in hunter ethics and sportsmanship.
- Research on effects of baiting and feeding and application to management of results.
- Antler point restrictions statewide, by DNR region or by DMU.
- Elimination of group bagging for bucks statewide, by DNR region or by DMU.
- Bag limit of one buck per hunter per year, regardless of weapon statewide, by DNR region or by DMU.
- Restricting feed to be spread over and restricted to a 10 feet area.
- Spin cast feeders or hand spread only, with rotation of feeding sites.
- If disease is found, an isotope strontium test be conducted to determine origin of infected animal.

- Creation of a-tags-to-landowners program.
- Creation of a Master Hunter Program to improve relations between hunters and landowners.
- Develop guidelines to spend a specific portion of WDACP funds for research related to occurrence of wildlife damage in the state.
- Develop guidelines to spend a specific portion of WDACP funds for education.
- Allow trained sharpshooters to use infrared illuminators or other projected light to remove deer at night, where damage exceeds $5,000 on an individual's land.
- Creation of an "X" tag program, in which the DNR issues special agricultural damage permits for use by hunters.
- Neighbor liability- Any person who owns, leases or occupies land within ½mile of a property for which a permit to remove deer causing damage has been issued and where the previous year crop damage appraisal exceeded $5,000 and who fails or refuses to give consent to deer damage shooting permit participants within ½ mile of the property is liable for any damage caused by the deer to the property of others. Landowners could relieve themselves of this liability by 1) granting hunting access to a person holding a permit to remove deer causing damage, 2) harvesting a prescribed quota of antlerless deer themselves, or 3) allowing people, without guns, to drive deer from their land toward hunters on adjacent land.
- Allowing farmers enrolled in the WDACP an option to restrict hunting access to Master Hunter Program graduates.

CWD Zone Eradication Program, Legislative Audit

Concerns about the effectiveness of the CWD eradication program prompted the Wisconsin Legislature to conduct an audit on this program. The audit was conducted by the 2005-2006 Joint Legislative Audit Committee, with the following memberships:

Senate Members:	**Assembly Members:**
Carol A. Roessler, Co-chairperson	Suzanne Jeskewitz, Co-chairperson
Robert Cowles	Samantha Kerkman
Scott Fitzgerald	Dean Kaufert
Mark Miller	David Travis
Julie Lassa	David Cullen

The report was issued on 16 November, 2006, certified by Janice Mueller, State Auditor. The findings of the audit committee included the following:

- The DNR accounted for $26.8 million of the $32.3 million spent on CWD through FY 2005-06.
- To date (2006), DNR's efforts to eradicate CWD have not been effective.
- DATCP has taken steps to limit the spread of CWD in farm-raised deer.
- Hunters must wait longer to receive CWD testing results for their deer.
- DHFS reviews potential effects of CWD on human health.
- Wisconsin's approach to CWD should be re-evaluated.

There are no estimates as to the cost of this study.

An Evaluation of the SAK Model as Applied in Wisconsin

In 2006, the Wisconsin DNR requested an independent review of the SAK population model being used to estimate deer population densities for the state. The committee was composed of the following individuals:

Joshua J. Millspaugh (Chair)

Mark S. Boyce

Duane R. Diefenbach

Lonnie P. Hansen

Kent Kammermeyer

John R. Skalski

A draft report was submitted on 29 November, 2006, followed by a peer-reviewed publication by Millspaugh et al. (2009) in the Journal of Wildlife Management. The 2006 report presented the following points and conclusions:

1. *"Wisconsin has the most comprehensive and transparent deer management program for comparable states that harvest white-tailed deer. Wisconsin collects more demographic information, on an annual basis, to monitor the deer population than any of the 21 states we surveyed. The WDNR should be commended for its efforts to track deer population dynamics and make those efforts transparent.*
2. *There are several positive aspects of the SAK model as it is applied in Wisconsin. First, the model does reasonably well at estimating (estimate of deer abundance immediately before the ith hunting season) at the state-wide level. Second, the model appears relatively robust to changes in female harvest. Third, when the population is nonstationary (i.e., population increasing or decreasing in size) with a stable age distribution, there is only minor bias in population estimates. Last, the model allows for an extensive population assessment in contrast to more expensive and intensive procedures.*
3. *The SAK model appears to be very sensitive to sudden changes in the male harvest rate. We noted wide changes in SAK estimates compared with simulated known populations as a result of changing male harvest rates. Perhaps most troubling is that the SAK estimates are opposite the true population trend when changes in the male harvest rate are introduced. Given these findings, any change in regulations that alters the male harvest rate (e.g., earn-a-buck) could bias population estimates. Changes in hunter attitude and hunting styles, such as quality deer management, could further adversely affect SAK estimates given its sensitivity to male harvest rate.*

4. *The scale of estimation is important and must be considered when evaluating SAK performance. SAK estimates may be precise at the state level, but less so at the DMU level. When both demographic stochasticity and sampling error are considered at DMU levels, the resultant abundance estimates were within 121.9%± of the true population level, 95% of the time. The SAK model is particularly vulnerable to model violations because of the focus on one age class (1.5 year olds).*
5. *The methods previously used to evaluate the ability of the SAK model to predict future harvests (WDNR 2001) are inappropriate because they do not directly relate to the same scale at which management decisions are made. For 16 DMUs examined, the SAK model explained up to 62% of the variability in the relationship between predicted versus actual harvests among years. However, for some DMUs, the SAK model does a poor job of predicting future harvests. In light of these findings, we recommend that any evaluation of the predictive capabilities of the SAK model be applied to individual DMUs over time rather than across DMUs. Special attention should be paid to understanding deer harvests and populations in those DMUs where the SAK model predicts poorly over time because it might provide insight for improving deer population modeling in Wisconsin.*
6. *In northern Wisconsin, precision of the population's finite rate of increase (ˆλ) is not adequate for precise projections from to iN1iN+(a projection of to the next hunting season). The precision of is inherently low because of variability in iN1iN+ˆλ. The rest of Wisconsin does not have a formal model to estimate ˆλ. Hence, we were unable to determine the precision or bias due to ˆλ for the rest of the state. There is a great need to better understand the factors that influence the abundance of deer for the upcoming hunting season.*
7. *Occasionally WDNR pools data spatially and temporally for input into the SAK model. Spatial pooling is valid if demographic processes across pooled units are homogenous (meaning that sex and age composition, [the probability of natural survival], NSHS[the probability of surviving harvest], and ˆλ are all the same). Pooling and substituting data is a matter of convenience, providing cost savings and improvements to precision because of increased sample sizes; however, there are risks of additional bias if the population is not stable and stationary.*
8. *Precision expressions for SAK estimates are currently unattainable given the data input used in the model. Without empirical estimates of all inputs, it is not possible to calculate confidence intervals. Currently, we only have empirical estimates for the following parameters: ˆYMp (the proportion of 1.5 year old males in the adult buck segment of the population), ˆYFp (proportion of 1.5 year old females in the adult female segment of the population), /ˆJFR (estimated ratio of juveniles to adult females in the population), and ˆλ for the northern forested region, but not elsewhere. We do not have empirical estimators or the ability to estimate the variance of the following inputs: θ (the sex ratio of fetal males:juveniles from McCaffery et al. [1998]), (proportion of total annual mortality of adult males associated with sport harvest, termed the buck recovery rate), and (estimated adult buck harvest in year i). If statistically rigorous measures of precision are desired for population estimates by*

DMU, the following data are required: harvest reporting rate, buck reporting rate, and wounding loss rate. Even if the average number of deer from the antlered and antlerless harvests that were aged each year (in each DMU) did not change, more consistency in the number of deer aged from year to year could potentially reduce the variability in the precision of population estimates.

9. *Expressing SAK estimates as density based on "available deer range" adds another source of variability, which is important when conveying modeling results to the public. When expressing SAK estimates as density, it requires that available deer range be defined and precisely estimated. There is an inherent patchiness in deer range, which likely confuses the public. In addition, variable harvest pressure can affect density distribution. Reporting deer abundance as total numbers (e.g., there are 10,131 deer in a DMU) rather than deer density (e.g., there are 30 deer per square mile) minimizes problems with public concern when local abundance appears to deviate from reported densities. It would be advisable to provide SAK abundance estimates rather than density.*
10. *The running averages of p_{YM} and p_{YF} produced marginal improvement of SAK performance. Despite only modest improvements to SAK performance, we recommend continued use of running averages, which is necessary because of the highly variable number of deer that are aged each year. Furthermore, we recommend the use of a weighted average*
11. *Given currently available data, it is not possible to make objective adjustments to $\hat{}B$. Given $\hat{}B$ is based on history and intuition without any empirical basis, it is not possible to set criteria or objective rule statements. We recommend $\hat{}B$ be estimated through field studies involving radiotelemetry studies under diverse deer densities, hunter density, number of days hunted, percentage of land accessible to hunters, and weather conditions prior to and during the hunting season.*
12. *Including July data in the fawn:doe ratio estimates will negatively bias results because does are still hiding fawns by early July. Therefore only August and September data should be used to estimate$\hat{}$JFR. Also, the sampling scheme for obtaining these data has potential for bias, for example, it is easiest to obtain a sample in localities with highest density. We recommend that a systematic scheme producing reasonable coverage be considered. We also recommend WDNR initiate an analysis of the extent of variation in fawn:doe ratios and an evaluation of alternative sampling schemes.*
13. *We reviewed seven alternative methods to the SAK model as potential methods for estimating deer abundance in Wisconsin. Six of those methods are unlikely to provide more accurate and precise estimates than the SAK model because it is unlikely that critical assumptions of the techniques can be met. Unrealistic assumptions required in the SAK model might be eliminated if auxiliary data were collected to estimate age- and sex-specific harvest rates. However, these data also could also be used in alternative estimation methods, such as the statistical age-at-harvest approach (e.g., Gove et al. 2002), which might hold promise for deer estimation in Wisconsin.*

14. *The combination of multiple data sources, both extensive and intensive might allow for a more rigorous demographic assessment. The relative trade-off between these broad and fine scale methods should be investigated in light of WDNR monitoring objectives. The costs of collecting sufficient data to obtain a statistical measure of precision for all DMUs using Wisconsin's SAK model are likely prohibitively expensive or even logistically impossible. Cost comparisons between the SAK and other population estimation techniques would be beneficial and should be performed. Reconstruction methods such as the SAK provide a cost effective method for broad-scale demographic assessments.*"

The reviewers further noted (Table 9), of 21 eastern and Midwestern states, 4 (19%) used some variation of SAK to estimate populations at the management unit level, and 8 (38%) used SAK at the statewide level.

This study cost approximately $44,000 to complete.

In their 2009 JWM publication, Millspaugh et al. (2009) further concluded:

1. Despite a long history of use, few formal evaluations of SAK performance exist.
2. If a simulated population had a stable age distribution and $\lambda > 1$, the SAK model underestimated abundance; and, conversely, a $\lambda < 1$ overestimated abundance.
3. If male harvest changed, SAK population estimates were inverse to the true population trend.
4. Yet, SAK estimates were more robust for changes in female harvest rate.
5. Stochastic (see later discussion) effects caused SAK estimates to fluctuate about the equilibrium abundance, but improved with sample size.
6. When both stochastic effects and sampling error were considered at the management unit level, the accuracy was ±121.9%, 95% of the time.
7. Combined results "…demonstrate extreme sensitivity to model violations and scale of analysis."
8. The bias arise when $\lambda \neq 1$.
9. If the male harvest rate changes, due either to harvest bias or regulations, population estimates will be biased.
10. SAK population estimates might be precise at the state level, but probably not at the management unit level.
11. ***"Alternative models, such as statistical age-at-harvest models, which require similar data types, might allow for more robust, broad-scale demographic assessments."***

The Staples (staplesmarketing.com) Marketing Study

Staples Marketing, LLC was contracted to conduct a study on the CWD eradication program and its various aspects related to public perceptions and relations. Staples used focus groups, phone surveys and message testing to evaluate WDNR efforts. According to Staples, the objectives of this research were to understand:

"**1**. The level of awareness of the chronic wasting disease (CWD) situation among deer hunters and landowners in the CWD Management Zone.
2. The situation, what CWD is about, the key issues, risks, concerns, etc. to hunters and landowners.
3. Beliefs about how CWD impacts them personally.
4. Opinions about possible ways to control or eradicate the disease.
5. Most effective ways for the DNR to communicate about CWD with hunters and landowners."

A total of 600 hunters and landowners were surveyed by phone (June/July, 2010) and focus group meetings were held during May 12-13, 2010. In addition, they conducted CWD messaging tests on the *Hunt.Harvest.Help* marketing effort. Staples issued a report dated August 8, 2011. The study cost approximately $250,000. In general, Staples reported Non-landowner hunters appeared to be less anti-DNR than hunting landowners; however, both groups considered the WDNR as not a credible source of information concerning CWD. Non-landowner hunters were unconvinced CWD was a significant problem, unaware of efforts in other states, were unaware of the Conservation Congress, and were less informed about CWD than landowning hunters. Much of the unhappiness with the WDNR approach to CWD was major changes to what is considered to be "traditional" hunting seasons. These individuals were resistant to harvesting additional animals.

Landowner-hunters were characterized as:

1. Not considering WDNR a credible source of information.
2. Very anti-DNR.
3. Believed CWD was not a significant problem.
4. Unaware of what is being done in other states.
5. Relatively well-informed about CWD.
6. Thinking WDNR policies were reducing land values.
7. Feeling alterations in the "traditional" hunting season.
8. Unwilling to take additional animals.

Finally, non-hunting landowners were characterized as:

1. Supportive of the WDNR's efforts.
2. Unsure of the extent of the CWD problem.
3. Unaware of actions by other states regarding CWD.
4. Only used the WDNR for information about CWD.
5. Knew the least about CWD.

6. Wanted more information.
7. Willing to allow additional animals to be harvested.
8. Felt their outdoor activities were being negatively affected by gun seasons.

SYNOPSIS OF FINDINGS TO DATE

Before presenting our preliminary findings, we wish to present our basic philosophy of deer management. Although there are many issues involved in evaluating the WDNR white-tailed deer management program, there are three basic areas to consider. Deer management has been likened to a three-legged stool (Kroll 1991); one leg representing population management, another habitat, and the third human dimensions (people "management"). The reason for choosing this analogy is each of the three legs is equally important; and, without one the stool is rendered useless. Giles (1978) defined wildlife management as "the science and art of making decisions and taking actions to manipulate the structure, dynamics, and relations of populations, habitats, and people to achieve specific human objectives by means of the wildlife resource." This long and cumbersome definition has many implications, but provides a meaningful context in which to frame a review of the deer management practices of the Wisconsin Department of Natural Resources.

Thus, our review of Wisconsin's deer management practices focused on the density and structure of white-tailed deer populations and how they are managed by recreational hunting and other means, white-tailed deer habitats and how they are described and quantified, and the human dimensions of deer management as it relates to cultural, economic, political and management concerns of the public. We also considered how various aspects of the three components (populations, habitat and people) are monitored and how this information is used in formulation of deer management policies and regulations similar to the 4-cornerstone approach of Quality Deer Management (QDMA 2012).

The conclusions and comments presented below represent a synopsis of a more comprehensive report, including our recommendations for development of a 21st Century model for white-tailed deer management in Wisconsin, due on or before 30 June, 2012. These findings will be presented as part of the next phase of this project—solicitation of public inputs regarding solutions and remedies.

CONCLUSIONS:

- It quickly became obvious there has existed for some time an intense dissatisfaction with and distrust of WDNR activities and methods used to carry out their mandate to conserve the white-tailed deer resources of Wisconsin. This was evidenced not only by the numerous inputs received by citizens, professionals, interest groups and NGOs, but also by scientific investigations and publications by professional human dimensions scientists, even within WDNR.

- These problems have arisen over many years; stemming initially from use of the S-A-K Excel Population Model (SAK) to establish population goals for Deer Management Units, and actions beginning ten years ago to eradicate chronic wasting disease (CWD) in the southern portion of the state.
- As we discussed earlier, our review has not been the only one conducted over the last dozen years. Among these were:
    - The ***Deer Management for 2000 and Beyond*** review, costing well over $1,000,000.
    - The **SAK Review** in 2006, costing over $40,000.
    - The **Staples Marketing Study** on CWD in 2011, costing about $250,000.
    - Each of these studies produced criticisms and recommendations for remedies.
- The Whitetails 2000 report listed 74 recommendations for changes in procedures and regulations. **At the time of preparation of our report, 35 (47.3%) of these recommendations had been completed, 22 (29.8%) had been partially completed, and 17 (23.0%) were not completed**. Some of those partially completed or not completed involve key issues.
- The SAK audit (2006) was conducted by a six person committee, representing a broad range of scientific disciplines. The committee arrived at 14 conclusions and recommendations. Subsequently, we have heard oral statements and read written claims that:

    > *"A recent audit (2006) by an international panel of experts found the department's deer population modeling system to be a sound program, as good as or better than that of any state. Yet, no system is perfect and challenges remain, including hunter concerns with deer population model accuracy."* **Wisconsin Department of Natural Resources. 2010. Investing in Wisconsin's Whitetails. WM-528-2010. 14pp**.

    Yet, we were unable to substantiate these claims. To the contrary, the audit committee concluded: "*When both demographic stochasticity and sampling error are considered at DMU levels, the resultant abundance estimates were within ±121.9% of the true population level, 95% of the time.*" [As an example, if the deer population estimate for a DMU was 10,000 deer, then we are 95% confident that the actual deer population is somewhere between 22,190 and zero!] The committee went on to opine,

    "*Unrealistic assumptions required in the SAK model might be eliminated if auxiliary data were collected to estimate age- and sex-specific harvest rates. However, these data also could be used in alternative estimation methods, such as the statistical age-at-harvest approach (e.g., Gove et al. 2002), which might hold promise for deer estimation in Wisconsin."*

    In a subsequent, peer-reviewed 2009 publication by the audit committee in the Journal of Wildlife Management, the authors further concluded:

    "*Alternative models, such as statistical age-at-harvest models, which require similar data types, might allow for more robust, broad-scale demographic assessments."*

- The SAK Audit Report resulted in a companion study to determine deer hunter perceptions of the SAK Model process and deer populations in general (Holsman 2007). Holsman reported most respondents of the survey rated WDNR credibility relatively low with the majority of hunters believing that WDNR managers distort deer numbers to justify larger harvests, that WDNR managers were not experts in the science of estimating deer numbers, and that WDNR managers do not respond to hunter concerns when setting population goals and establishing regulations. Only one-in-four respondents thought WDNR managers were trustworthy for obtaining reliable information about deer numbers.

- WDNR has credibility problems with deer hunters regarding their estimates of deer abundance and antlerless harvest goals at the DMU level. Holsman (2007) states that current WDNR SAK Model estimates are a blend of science and value judgments that are impossible to defend.

- The entire issue distills to one important point: using an indefensible number to set management goals. We agree with Holsman (2006) that, to escape the trap of trying to defend numeric estimates by moving to a system where deer management goals are expressed as a range of acceptable conditions across a set of criteria (harvest success or harvest levels, crop damage claims, deer vehicle collisions, forest regeneration success, etc.) within each DMU would be a sound approach.

- We also concluded data being used in a deterministic population model (SAK) by WDNR often arise either from questionable sources or from studies conducted as much as 40-50 years ago (crippling loss). We were particularly concerned by the use of 1993 satellite imagery at 30 meter resolution to determine acres of deer range. Since deer populations are being reported as deer per square mile of deer range, this is a serious flaw in procedures. We will discuss this issue later.

- The SAK audit panel (2006) recommended conducting research on buck mortality and recruitment, two additionally important factors in the SAK model. These projects were not begun until 2010, and the first year's results create significant questions. Since there is no precision component to the SAK model, the reliability of each of the values used in the model are critical.

- In addition to these findings regarding SAK, we also came to these conclusions regarding deer herd management:

    - For the most part in their history of using SAK, WDNR has failed to approach population goals for the deer herd in DMUs. This includes the CWD Zone (discussed later). Another approach obviously is warranted.
    - There are no stated goals for population age structure, sex ratio, buck harvest, physical condition or methods to align expectations of all sides of the situation.

- The SAK model at best could be applied at the State level, but other models similar to those used in other states (Virginia for example) would better serve deer management in Wisconsin.
- We were impressed greatly by the methodologies being used for Tribal lands, which establish thresholds for management decisions. A similar approach could be useful for the remainder of the State.

- The CWD Eradication program was audited by the Wisconsin Legislature in 2006. Findings and recommendations were:

    - The DNR accounted for $26.8 million of the $32.3 million spent on CWD through FY 2005-06.
    - To date (2006), DNR's efforts to eradicate CWD have not been effective.
    - DATCP has taken steps to limit the spread of CWD in farm-raised deer.
    - Hunters must wait longer to receive CWD testing results for their deer.
    - DHFS reviews potential effects of CWD on human health.
    - Wisconsin's approach to CWD should be re-evaluated.

- Our review has led to the conclusion the CWD eradication effort was indeed a failure, as evidenced by population estimates within the CWD Zone and current infection rates. In addition, we found:

    - There has been a serious erosion of public confidence and WDNR credibility as a result (Staples Marketing Report 2011).
    - There are no data available on the actual amount of mortality caused by CWD within the Zone. When asked for data, we received a single necropsy report on a deer dying from another disease (epizootic hemorrhagic disease, EHD).
    - The deer herd actually has increased in many areas, and population goals have not been met.
    - There is considerable confusion by landowning hunters, non-landowning hunters, and non-hunting landowners within the Zone, in spite of education efforts, about many aspects of the disease. This is particularly obvious for issues dealing with human health.
    - Responses by other states such as Illinois to appearance of CWD have been strikingly different.
    - Public concerns about CWD have diminished during the last 10 years.
    - Related to the above, the Legislature mandated improvement in reporting times for CWD tests, so hunters would feel comfortable consuming venison. We found time between sample submission and reporting actually has increased.

- The three tenets of deer management again are populations, habitat and people. We have concluded the WDNR has placed an inordinate emphasis on estimating population size and establishing population density goals (which commonly are not met), while giving much less emphasis to habitat and people (human dimension) factors.

- Being a Keystone Species (the one having the greatest impact on the ecosystem), deer have a tremendous impact on habitat. On the other side of the coin, however, habitat quality limits deer population health. We have concluded the following regarding habitat issues:

    - Deer range estimates are, for the most part 11 years old, and based on antiquated satellite imagery and other data. There was a claim early on that periodic reconnaissance was being employed to update deer range estimates by DMU, but we found no evidence these updates were being used. This conclusion was based on the acreages of deer range reported in historic SAK outputs that have remained the same over the past 11 years.
    - Deer management is site-specific, meaning each property on which deer reside is unique, requiring unique management strategies. This requires "boots on the ground" to assess both deer and ecosystem health. We found little evidence that local biologists are spending significant amounts of time in deer range and herd health assessments.
    - The Forestry Division of WDNR is fully capable and more than willing to aid in habitat assessments, but have not been adequately involved in aiding forest and range management. [Later, we will discuss inadequacies in statewide geospatial databases and access.]
    - Since there is no recent, high resolution imagery or annual field-based habitat and deer range appraisal, trends such as changes in ecosystem health, deer stocking levels, etc. have been based mostly on forestry data such as FIA.
    - Emphasis has been on deer impacts on forests, which certainly is warranted, but there has been no consideration of forest management impacts on deer herd productivity and health.

- In regard to data collection, we found a lack of basic information needed to manage deer, especially at the DMU and landowner levels. We concluded:

    - The current check station and paper forms used for reporting deer should be modernized.
    - We heard complaints about having to check in deer at stations represented by bars and convenience stores, as well as dealing with unknowledgeable individuals.
    - The lag-time and effort needed to transfer these data is too long. Many states use electronic means such as Telecheck to accomplish this task.
    - We were surprised to see that "sublegal" spiked bucks were recorded as antlerless deer. We understand the thinking possibly behind this, but do not support it.
    - Important activities such as herd health checks performed by local biologists, range assessments, morphometric studies related to physical condition are notably absent.
    - We also were surprised, in spite of being a recognized "big buck" state, Wisconsin does not have a big buck record book. On the surface this may appear to favor "trophy management," when in reality it fosters information gathering, and provides yet another way for biologists and citizens to interact.

- From the aspect of human dimensions, there has been an obvious disconnect between stakeholders and the WDNR.

    - Although there have been considerable efforts toward public hearings, these have been poorly attended, primarily due to lack of confidence by the public their input is considered.
    - The WDNR has certainly used other public information media, which appears to be useful to non-hunting landowners.
    - The vast majority of both forestlands (>60% of area) and farmlands (>90% of farms) have no formal agreement with WDNR to provide public access for deer hunting. This implies that access to most (likely >70%) deer habitat, deer populations and hunting/management opportunities is controlled by private landowners.
    - The private landowner (in spite of controlling the majority of deer habitat) has not been given adequate consideration, and we found no evidence of technical guidance activities by wildlife personnel, in spite of there being over 100 biologist and technician positions for 72 counties.
      We also searched the WDNR website as a "landowner" and could not find any contact information or link to "our" biologist. This stems from an inherent mind set that the function of WDNR is regulation, not facilitation of deer management by landowners or organizations. Many states have Deer Management Assistance Programs (DMAPs) which generally foster higher credibility.
    - Harvest regulations formulated by WDNR focus on antlerless harvest goals at the DMU level with no consideration for public/private ownership or variation in deer abundance within a DMU.
    - WDNR needs to find ways to involve landowners and hunters in the management process at a level with a finer scale than the DMU that is relevant to the land that they own or hunt.
    - Online input such as the Deer Hunter Wildlife Survey and Operation Deer Watch may be the beginning of such a communication process, but more emphasis should be directed at on-the-ground contact between WDNR staff and landowners/hunters in determination of local deer population trends.
    - Creating such a monitoring program would provide a sense of ownership for landowners and hunters and provide opportunities to educate and inform them about various aspects of deer management. More importantly, it would build grass-roots relationships between WDNR and individuals that can create trust, understanding of values, and definition of shared goals.
    - Erosion of public confidence has not occurred over-night, and re-building this confidence also will not happen quickly. There is a need for a long-term plan to do so.
    - We were surprised to discover weak cooperative programs across departments, state/federal agencies and NGOs. We did not find significant cooperative relationships between the WDNR and the Wisconsin Agricultural Extension Service to produce educational materials, field days, workshops and result demonstrations to promote deer and deer habitat management by landowners and hunter groups. Unfortunately, this often is the case for many states.
    - In order to solve these problems the WDNR must redefine its role, particularly in regard to public services as they relate to societal needs. There is a need for a

bottom-up, rather than top-down approach. Involving private landowners will be pivotal in solutions, as will ways to involve public hunters.
  - Lastly, in all of the printed and electronic media materials provided, we only found one reference in a CWD publication concerning the economic value and impact of deer to Wisconsin.

- Concerns by landowners, hunters and non-hunters about predators have grown over the last decade. Our review produced the following conclusions:

  - The current wolf population is at least three times higher than the goal.
  - As with the deer herd, there are questions regarding precision of wolf population estimates.
  - This has not been due to inaction by the WDNR, rather federal regulations providing protection to wolves.
  - Impacts of predators on deer populations have not been adequately studied, and there are few data related to the role of predators in the deer ecosystem.
  - The recently initiated mortality and recruitment study will provide much needed information, but it is limited to only two study areas; understandably due to cost of such studies.
  - There was a significant delay between identification of key needs and actually starting this study.
  - Particularly absent are data on impacts of bobcats, coyotes and bears on deer recruitment, especially in relation to habitat quality.

- In regards to research activities, the WDNR contains a Science Services Division, whose responsibilities include planning, conducting and supervising of research. Our review produced the following conclusions:

  - WDNR personnel produced or contributed to about 50 peer-reviewed publications (based on bibliography submitted by WDNR) in the last decade, most of which were senior-authored by outside individuals. This is not unusual, in that many state wildlife agencies rely on outside scientists for support, and we see no real problems with this observation.
  - An analysis of contents of these publications revealed the majority dealt with CWD, and a smaller percentage on matters dealing with deer biology, habitat management and predation.
  - It also was obvious research efforts have been, for the most part, reactive rather than proactive. There does not appear to be any working process for establishment of long-term goals that anticipate management needs.
  - The strongest research capability and productivity has been in the area of human dimensions, with excellent productivity.
  - Technical publications have not been updated in some time, most notably those related to deer management. Some date to the late 1990s, with the most recent being 2001. There is a significant need for making such publications current.
  - We were quite surprised at the gap in technologies needed to provide critical services and effectively manage natural resources. In discussions with the State

Cartographer's office and WDNR forestry and technology staff, we learned these individuals are keenly aware of these deficiencies and eager to address them. Our specific observations are: The State's geospatial database system is woefully inadequate to support, not only for wildlife and deer management, but also for many critical services. This is particularly true for economic development and critical services for citizens.

- Although the WDNR does have a GIS program, there is no statewide, seamless geographic information system (GIS), with layers (land cover, natural resources, critical infrastructure, public safety, etc.) of up-to-date information, which provides universal two-way access to Wisconsin's agencies, particularly in this case the WDNR.
- It is our opinion, Wisconsin once was viewed as an innovator for geospatial information services, but has fallen behind. This primarily has been caused by lack of a coordinated program, and adequate funding. The economic benefits of such programs are well-established, and certainly would figure in current attempts to strengthen Wisconsin's economy.

- The process currently in use to establish annual seasons and bag limits is unpopular and much too complex. As a result, WDNR staff spend an inordinate amount of time "feeding" information demanded by the short time frame afforded for decisions. There is a clear need for simplification. Eliminating or reducing the use of the SAK model certainly would give staff more time for collecting data and evaluating information. We conclude:

    - The SAK model and its data needs seem to drive the entire management system.
    - The current season structure is unpopular and has contributed to erosion of hunter numbers and the quality of the hunting experience.
    - There is a need for changes in season structure that produces an "Opening Day Effect," spoken fondly of by most Wisconsin hunters.
    - Current bag limits and harvest strategies have reduced deer in some cases (especially the CWD Zone) to a pest level perception, rather than the State's most sociologically and economically important game animal.
    - Given adequate harvest and herd health data, keeping seasons and bag limits consistent for longer periods of time would allow better assessment of management progress. Changing seasons and bag limits often produces confusion and does not support sound decision-making.

SUMMARY

Public confidence in the Wisconsin Department of Natural Resources in regard to deer management issues has seriously eroded over the last few decades. The reasons are complex and not easily solved, but revolve primarily around two key issues— the current use of the SAK Population Model and the ineffectiveness of the CWD eradication program. However, lack of public involvement, particularly by landowners, in goal setting and decision-making regarding deer management lie at the heart of the problem. As we noted above, these problems did not arise overnight and hence the solutions will also take time. **The predation issue also should be addressed immediately as should the development of an overall plan for deer management in Wisconsin.** People, deer, predators and habitats should be considered as components of an ecosystem approach to management, not independent elements.

The next step in this process will be to present our findings to the public through several media outlets, as well as at the Town Hall meetings, to solicit solutions and strategies to develop a citizen-based, team effort toward developing a White-tailed Deer Management Model for the 21st Century.

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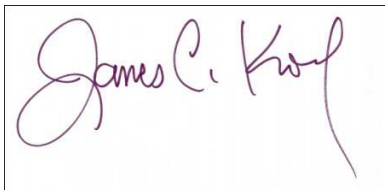
Submitted by:



Dr. James C. Kroll, White-tailed Deer Trustee

26 March, 2012

APPENDIX 1: BIOGRAPHICAL INFORMATION

Dr. James C. Kroll

Henry M. Rockwell Chair of Forest Wildlife,

Arthur Temple College of Forestry & Agriculture

Stephen F. Austin State University,

Nacogdoches, Texas

Biographical Sketch

Dr. James C. Kroll, known nationally as "Dr. Deer," is a distinguished graduate of both Baylor and Texas A&M Universities. James has been working professionally with whitetails for 40 years. His depth of knowledge has come from working in almost every state and province from Mexico to Canada. He hunts deer, he studies deer, he lives with deer; and, most importantly he loves deer. Over his career, James has published over 300 technical and popular articles, contributed to 35 magazines, appeared on TV programs on Sportsman Channel and four other outdoor networks, winning two awards. James has monthly columns in North American WHITETAIL Magazine and the Journal of the Texas Trophy Hunters Magazine. He also has published 8 books (two of which are best-sellers), and contributed to two more. Currently, he is completing a new book with his colleague and research partner, Ben Koerth, entitled: *Forage Management for Whitetails, The Dr. Deer System*. He also co-founded the Texas Deer Association, which is the fastest growing conservation organization in the Lone Star State. His research is far reaching, including behavior, habitat management, deer biology, genetics, hunting economics and tactics. For the last 36 years, he has been director of the Institute for White-tailed Deer Management & Research at Stephen F. Austin State University.

Over the last four decades, Dr. Kroll has taught numerous courses in wildlife biology, management, zoology and research methods. His teaching excellence has been acknowledge many times through awards and recognitions.

Significant Institute accomplishments have been:

- ✓ ***First work with infrared-triggered cameras.***
- ✓ ***First research on food plots, including plant protection patents.***
- ✓ ***Development of common use terms: sanctuaries, travel corridors, staging areas, sign posts, funneling features, etc.***
- ✓ ***Landscaping techniques for whitetails.***
- ✓ ***Developed production level semen collection and AI techniques for whitetails used in genetics studies.***
- ✓ ***First development of operational DNA markers for parent certification.***
- ✓ ***Electric fence technologies for whitetails.***
- ✓ ***Intensive management strategies for whitetails.***

During the last nine seasons, James has been a co-star of the award-winning TV program, *North American WHITETAIL Television*; where he appears each week in a special segment, "*Dr. Deer's Whitetail World*." James now co-stars with North American Whitetail executive editor Gordon Whittington in a new show, "*Winchester presents Dr. Deer*" on the Sportsman Channel, now in its second season. Along with Ben Koerth, Kroll is finishing up a 14-year, landmark study on antler development in free-ranging deer, results of which were recently published in the Journal of Wildlife Management. This work also led to a new DVD entitled, *Antlers*, co-produced by NAWT magazine and Intermedia Outdoors. He is married to Susie, and has two children: Cody, a sculptor in New York and Sydney, a Doctor of Psychology at the Veterans Administration. He is a Distinguished Graduate of Texas A&M University, a distinguished alumnus of Baylor University and Waco Independent School District; was recently elected to the Muy Grande Hall of Fame, Nacogdoches County Agricultural Pioneer and currently occupies the Henry M. Rockwell Chair in Forest Wildlife at Stephen F. Austin State University, Arthur Temple College of Forestry & Agriculture.

Academic Summary

Ph.D.	1973	Texas A&M University (Distinguished Graduate)
M.S.	1970	Baylor University
B.S.	1969	Baylor University

Professional Experience

2008-Present:	Henry M. Rockwell Chair in Forest Wildlife Management
2004-2008:	Director, Columbia Regional Geospatial Service Center.
2006-Present	Co-Director with Dr. David Creech, Pineywoods Native Plant Center
1997-2008:	Director, Forest Resources Institute, College of Forestry, Stephen F. Austin State University.
1981-present:	Professor of Forest Wildlife and Director, Institute for White-tailed Deer Management and Research, College of Forestry, Stephen F. Austin State University. Now teach courses in wildlife habitat management, wildlife management techniques, wildlife ecology, land management planning, white-tailed deer ecology and management, introduction to forestry, and research methods. Also, direct a large on-going research project in white-tailed deer biology.
1975-present:	Director, Institute for White-tailed Deer Management and Research, College of Forestry, Stephen F. Austin State University. Directs large research and management institute

with one million dollar budget. Nationally known for excellence in research in deer biology, management and economics.

1973-1981: Assistant and Associate Professor of Forest Wildlife, School of Forestry, Stephen F. Austin State University. Taught the following courses: wildlife management techniques, wildlife habitat management, natural history, advanced wildlife ecology and population dynamics, research methods, non-game management and wildlife photography.

When I came to SFASU, the wildlife curriculum consisted of two courses taught on a part-time basis by U.S. Forest Service personnel. I developed the curriculum to eight courses relating directly to wildlife, and organized the Student Chapter of the Wildlife Society.

1972 Assistant Professor of Biology, Salem College, West Virginia. Taught undergraduate courses in the following: comparative anatomy, physiology, evolution, physiological ecology, histology and desert ecology.

1971 Laboratory instructor in ecology, herpetology and ichthyology, Texas A&M University. Taught laboratories to undergraduate majors in wildlife and fisheries. Also, worked with students in field ecological studies. Immediate supervisors: Drs. J. R. Dixon, R. J. Baldauf and D. R. Clark Jr.

1970 Instructor in Zoology, McLennan Community College. Taught freshman zoology at junior college level.

1970 Instructor in herpetology and taxidermy, Strecker Museum. Taught introductory courses in herpetology and taxidermy to elementary aged children. Immediate supervisor: Dr. Bryce C. Brown.

1970 Laboratory instructor for anatomy and physiology, Baylor University. Taught human anatomy and physiology to nursing students. Immediate supervisor: Dr. Eugene Crowder.

1968 Laboratory assistant in zoology, Baylor University. Taught laboratories in introductory zoology. Immediate supervisor: Dr. J. F. Watkins II.

1967 Research assistant in predator-prey studies, Baylor University. Conducted research on the predator-prey interactions of blind snakes and army ants. Immediate supervisor: Dr. J. F. Watkins II.

Awards and Honors

2012 Nacogdoches County Agriculture Pioneer

2011 Muy Grande Hall of Fame

2009 Baylor University Outstanding Alumni Award

2008 Lifetime Achievement Award, Exotic Wildlife Assocation

2007 *Whitetail Country*, ESPN2: Career Biography

2007 Research Contributions in Deer Management, ANGADI

2004 Golden Moose Award, Outdoor Channel (North American WHITETAILTelevision)

2003 Honors Award, NASA- Shuttle Columbia Disaster

2002 Golden Moose Award, Outdoor Channel, Journal of the Texas Trophy Hunters

2000 Distinguished Alumni – Waco Independent School District

2000 Past-Presidents Award, Texas Deer Association

1997 Teaching Excellence Award

1995 Distinguished Professor Award

1995 Award for Excellence, Texas Outdoor Writers Association: Whitetail Video Management Series; Magazine Articles

1994 Texas Chapter, The Wildlife Society, Publication Award

1993 Educator of the Year, Lone Star Bowhunters

1993 Regents Professor, Research (SFASU

1992 Distinguished Professor Award

1989 Buckhorn Hunting Club's Conservationist of the Year

1985 Texas Forestry Association's Forestry Research Award

1980 Who's Who in the South and Southwest

1978 Best Book Publication, The Wildlife Society, for *Role of Insectivorous Birds in the Forest*

1977 Appreciation Award, National Rifle Association

1975 Elected to Xi Sigma Pi

1974 Outstanding Educators in America

1973 Distinguished Doctoral Graduate, Texas A&M University.

1971 Environmental Defense Fund

1971 Elected to Phi Sigma Society

1971 President, The Association of Graduate Wildlife and Fisheries Scientists. Organized first graduate organization in wildlife at TAMU. The Association grown to be an integral part of student-faculty relationships.

1971 Editor of ENVIRON

1971 Graduate teaching assistantship, Texas A&M University.

1970 NSF Trainee, Texas A&M University. I was awarded this traineeship based on academic and research record. I conducted research under NSF funding and published a number of papers.

1970 Graduate teaching assistantship, Baylor University.

1970 Elected to Sigma Xi

1969 Featured in *Iscani* Magazine, acknowledging research in pheromones.

1969 Elected to Beta Beta Beta

1969 NSF graduate research assistant to Drs. Watkins and Gehlbach, Baylor University. Conducted independent research and published papers with senior researchers. Major accomplishments include discovery of repellent compound (3-methyl indole) for ants, termites and snakes.

1968 Vice-president of Lamda Sigma Chi.

1967 NSF undergraduate research assistant to Drs. J. F. Watkins II and F. R. Gehlbach, Baylor University: Predator-prey interactions of army ants and blind snakes. Published as an undergraduate.

1965 Biology Award, Regional Science Fair. Sound communication in honey bees.

1964 President of University High School Science Club

Grants

To date, approximately $20 million in funding has been acquired while at SFASU. Grantors include the U.S. Congress, USDoD, USFWS, USFS, Texas Parks & Wildlife, Timber Companies, and various landowner groups.

Publications, Books

Solving the Mysteries of Deer Movement, College of Forestry, 178 pp., (Co-author).

Aging and Judging Trophy Whitetails, 204 pp. (best-seller status), 3

eds. *Center for Applied Studies in Forestry,* College of Forestry, Stephen F. Austin State University

Quality Whitetails, Chapter 2 (co-authored), QDMA, Stackpole Books, Harrisburg, PA

Amazing Whitetails,(Introduction), Biggs Publishing, Ft. Worth, TX

Deer, Stackpole Books, (3 chapters) Harrisburg, PA

The Art and Science of Patterning Whitetails, 2nd Edition, *Center for Applied Studies in Forestry,* College of Forestry, Stephen F. Austin State University. 224 pp.

The Southern Food Plot Manual, *Center for Applied Studies in Forestry,* College of Forestry, Stephen F. Austin State University, 138 pp

The Role of Insectivorous Birds in Forest Ecosystems. Academic Press, N.Y. (Co-edited and co-authored chapters).

A Practical Guide to Producing and Harvesting White-tailed Deer. Center for Applied Studies in Forestry, Arthur Temple College of Forestry Publ. 591 pp. (best-seller status) 6 eds.

A Dictionary of Science. Hammond-Barnhart Publ., New York, N.Y. 1983 .740 p.p. (Co-authored)

Publications, Television Programs

2011- present	Winchester Presents, Dr. Deer, Sportsmans Channel
2004-Present:	North American Whitetail Television. Outdoor Channel, now Sportsmans Channel.
2007	Journal of the Texas Trophy Hunters. Outdoor Channel
2007	The Cattle Channel. RFD Television.
2010	Journal of the Texas Trophy Hunters. Outdoor Channel. Golden Moose Award (Chronic Wasting Disease).
1978	Outdoor Magazine (PBS), Outstanding Television Program Award
1975-76	KTRE Television, Wildlife Heritage weekly program.

Publications, videos

Winchester Presents Dr. Deer, 3 DVD series, 13 shows

Whitetail Antlers. Intermedia, Inc. 70 minute DVD.

Dr. Deer's Whitetail World, DeerChannel.com. DVD (Vols. 1-4)

A Practical Guide to Producing and Harvesting White-tailed Deer: Vol. 4, Scoring Trophy Whitetails. Produced by Institute for White-tailed Deer Management and Research. 1995.

A Practical Guide to Producing and Harvesting White-tailed Deer: Vol. 3, Record-Keeping. Produced by Institute for White-tailed Deer Management and Research. 1994.

A Practical Guide to Producing and Harvesting White-tailed Deer: Vol. 2, Aging and Judging Trophy Whitetails. Produced by Institute for White-tailed Deer Management and Research. 1993.

A Practical Guide to Producing and Harvesting White-tailed Deer: Vol. 1, Food Plots and Supplemental Feeding. Produced by Institute for White-tailed Deer Management and Research. 1993.

Managing Trophy White-tailed Deer. P.B.S.' Outdoor Magazine Series. (Note: this program won the best television program of the year by the Outdoor Writers of America). (co-authored).

Theses and Dissertations, directed

Factors affecting use of man-made water structures by white-tailed deer. M. S. Thesis, Ryan Cantrell (2012 completion)

Deer use of gut piles in northeastern Michigan forest habitats. M.S. Thesis. John Varnell (2012 completion)

Economic analysis of private white-tailed deer management and breeding. M.S. Thesis. James Hudiburgh (2012 completion)

Using animal-mounted video cameras to study whitetail behavior. M.S. Thesis. Andy McCrady (2012 completion)

Using infrared-triggered cameras to census bobcat (*Lynx rufus*) in east Texas. M.S. Thesis. 2006, Matthew Symmank (co-major professor).

Landscape Level Analysis of Rutting Behavior in White-tailed Deer. M.S. Thesis. 2004. Charles Anderson.

Monitoring Changes in Landscape Patterns of the Angelina National Forest, East Texas. Doc Dissert. 2000. Qingzhou Li

Estrus Synchronization and Timed Artificial Insemination in Captive White-tailed Deer. M.S. Thesis. J. D. Sellers, 1998

Effects of Estrus Synchronization on Breeding of Captive White-tailed Deer. M.S. Thesis). A. J. Smalling, 1998.

Prediction of Diet Quality Parameters of White-tailed Deer via Near Infrared Reflectance Spectroscopy (NIRS) Fecal Profiling. M. S Thesis). Scott E. Showers, Co-Operative with Texas A&M. 1997.

Infrared-Triggered Cameras for Censusing White-Tailed Deer. M. S. Thesis. R. W. Browning, 1995

A Computerized Data Collection System For Studying Activity of White-tailed Deer. M. S. Thesis. R. G. Skinner. 1994.

Movement and activity patterns of white-tailed deer on East Texas. M. S. Thesis. D. E. Evans. 1992.

Response of native vegetation to fertilization in East Texas pine plantations. M. S. Thesis. R. J. Bane. 1992.

Evaluation of supplemental forages for the white-tailed deer (*Odocoileus virginianus*) in East Texas. Doc. Dissert.. 1991. B. J. Higginbotham.

Analysis of an optimum sustained yield management program for white-tailed deer in the southern mixed pine-hardwood forest. M. S. Thesis. W. B. Goodrum. 1990.

Genetic implications of intensive white-tailed deer management. Doc. Dissert. 1989. W. A. Wall.

The hunting club as a management unit. M. S. Thesis. C. Evans. 1989.

Seasonal shifts in home range utilization by white-tailed deer. M. S. Thesis. W. R. Green. 1988.

The potential for interspecific resource competition between white-tailed deer and feral hogs in the Post Oak Savannah Region of Texas. Doc. Dissert. G. K. Yarrow. 1987.

Habitat structure and bird species diversity in seedtree and clear-cut regeneration areas in East Texas. M. S. Thesis. S. B. Hall. 1987.

Wood duck nest site selection in East Texas. M. S. Thesis. M. E. May. 1986

Foraging activity of white-tailed deer in East Texas. Doc. Dissert. 1984. R.L. Rayburn.

A freshwater inventory of wetland plant communities on Sam Rayburn Reservoir using remote sensing. M. S. Thesis.1981. S. G. Head.

Invertebrate abundance and diversity in young southern pine-hardwood forests. M. S. Thesis.1980. R. S. Bounds.

Colony site selection by red-cockaded woodpeckers in East Texas. M. S. Thesis. 1980. B. A. Locke.

Avian diversity in various age pine forests in East Texas. Doc. Dissert. 1978. R. M. Whiting.

Factors affecting summer activity of white-tailed deer, with consideration of track and spotlight counts. M. S. Thesis. 1978. R. G. Braden.

Operational characteristics of commercial exotic big game hunting ranches in the U.S. M. S. Thesis. 1975. J. R. Attebury.

Thermal ecology of the plains pocket gopher (*Geomys bursarius*) in East Texas, with consideration of evolutionary trends in Geomyidae. M. S. Thesis. 1975. R. D. Montgomery.

Selected Publications, journals and symposia:

Symmank, M, C. Comer and J. C. Kroll. Using infrared-triggered cameras to census bobcat (*Lynx rufus*) in east Texas. SEAGFA Proc. (in press).

Symmank, M, C. Comer and J. C. Kroll. Using infrared-triggered cameras to monitor activity of forest carnivores. Southeastern Naturalist. in press, (accepted 7-28-2011).

Koerth, B. H. and J. C. Kroll. 2010. Juvenile-to-adult antler development in white-tailed deer in South Texas. J. Wildlife Management 72:1109-1113.

Koerth, B. H., J. C. Kroll. 2010. White-tailed deer antler research: A response to Demarais and Strickland. J. Wildlife Manage. 74(2):198-202.

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Hung, I., Williams, J. M., Kroll, J. C., and Unger, D. R. 2004. Forest landscape changes in east Texas from 1974 to 2002. in Proc. 4th Southern For. & Natur. Res. GIS Conference, Athens, GA 16-17 Dec., 2004.

Koerth, B. H., and J. C. Kroll. 2000. Bait type and timing for infrared-triggered camera counts of deer. Wildlife Society Bulletin 28:630-635.

Koerth, B. H. and J. C. Kroll. 1999. Harvest management strategies for white-tailed deer. Pages 79-87 in N. Wilkins, ed., Deer 101: Deer Management from the Ground Up. Texas Agricultural Extension Service and Texas A&M University Department of Wildlife & Fisheries Sciences. College Station, Texas.

Kroll, J. C., and B. H. Koerth. 1998. To cull or not to cull: A really good question! Pages 72-79 in D. Rollins, editor, The Role of Genetics in White-tailed Deer Management Symposium. Texas A&M University and the Texas Chapter, The Wildlife Society. College Station, Texas.

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Kroll, J.C. and J.W. Albert, 1977. A telemetry system for measuring stomach PH in free ranging animals. p. 77-84 in F.M. Long (ed.) Proc. 1st Int. Conf. Biotelemet. (Laramie, WY).

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Clark, D. R., Jr. and J. C. Kroll. 1973. Litter size and parturition behavior in Sistrurus miliarus streckeri. Herp. Rev. 9(1):11.

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Kroll, J. C. 1973. Book Review: Amphibians and Reptiles of Texas. G. O. Raun and F. R. Gehlbach. Southwest. Natur. 17(2): 217-219.

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Watkins, J. F., II, F. R. Gehlbach, and J. C. Kroll. 1971. Pheromone trail-following studies of typhlopid, letotyphlopid, and colubrid snakes. Behavior (1971): 283-294.

Kroll, J. C. 1971. Observations of male combat among Great Plains ground snakes (*Sonora episcopa*). Tex. J. Sci. 23(2): 300.

Kroll, J. C., and H. W. Reno. 1971. A re-examination of the cloacal gland and sacs of *Leptotyphlops dulcis*. J. Morph. 133(3): 273-281.

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Watkins, J. F., II, F. R. Gehlbach, and J. C. Kroll. 1969.Observations of carabid beetles, *Helluomorphoides texanus*, in army ant columns and laboratory observations of their behavior. J. Kans. Entomol. Soc. 42(4): 452-456.

CURRICULUM VITAE

DAVID C. GUYNN, JR.

EDUCATION

B. S. Virginia Polytechnic Institute and State University 1968

M. S. Virginia Polytechnic Institute and State University 1973

Ph. D. Virginia Polytechnic Institute and State University 1975

PROFESSIONAL EXPERIENCE

Graduate Research Assistant, Virginia Polytechnic Institute & State University, 1970-74.

Instructor of Statistics, Virginia Polytechnic Institute & State University, 1974.

Assistant Professor of Wildlife and Fisheries, Mississippi State University, 1974-1979.

Associate Professor of Wildlife and Fisheries, Mississippi State University, 1979-80, Granted Tenure 1980.

Associate Professor of Forestry, Clemson University, 1980-84, Granted Tenure 1983.

Professor of Forestry and Natural Resources, Clemson University, 1984-2008.

Centennial Professor, Clemson University, 2008-2010.

Professor Emeritus of Forestry and Natural Resources, Clemson University, 2010- Present.

MAJOR ACCOMPLISHMENTS and AWARDS

1. Developed Deer Management Assistance Program model for state agencies to work cooperatively with landowners and hunters to manage deer populations to provide quality recreational opportunities, reduce nuisance problems and sustain biodiversity

2. Greatly increased the understanding of how forest management practices affect wildlife habitats through significant research findings with numerous species

3. Established Clemson as a leader in developing management strategies for maintaining biodiversity in managed forests

4. Created primary information base on forest industry hunt lease programs in the Southeast
5. Authored or co-authored 300+ publications (92 refereed, 70 technical, 101 abstracts, 43 popular)
6. Obtained $3 million in extramural research support
7. Directed and graduated 70 graduate students (42MS, 11MFR, 17 PhD)
8. Directed 10 Ph.D. students that now serve in tenure-track faculty positions (8 at major land-grant universities)
9. Received four research publication awards from the Southeast Section, The Wildlife Society
10. Received the 1999 Deer Management Achievement Award (SE TWS)
11. Received the 2004 Godley-Snell Award for Excellence in Agricultural Research, Clemson University
12. Named Fellow, The Wildlife Society, 2007
13. Named Centennial Professor, Clemson University, 2008
14. Received the Joe Hamilton Career Achievement Award, QDMA, 2010.

TEACHING EXPERIENCE

Forestry Statistics (junior; Virginia Polytechnic Institute and State University)

Forest Resources Survey (freshman; Mississippi State University)

Workshop in Education: Environmental Education (graduate; Mississippi State University)

Wildlife Population Dynamics (graduate; Mississippi State University)

Forest Wildlife Management (senior/graduate; Clemson University)

Biodiversity in Managed Forests (graduate; Clemson University)

Quality Deer Management (senior/graduate; Clemson University)

SELECTED PUBLICATIONS

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Guynn, D. C., Jr., W. A. Flick and M. Reynolds. 1976. Mathematical modeling and wildlife management: a critical review. Proc. Ann. Conf. S.E. Assoc. Fish and Wildl. Agencies 30:569-574.

Guynn, D. C., Jr., H. A. Jacobson, S. P. Owens, E. Cliburn and W. D. Cotton. 1978. Involving sportsmen in deer management on private lands in Mississippi. Proc. Ann. Conf. S.E. Assoc. Fish and Wildl. Agencies 32:765-770.

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Hurst, G. A., D. C. Guynn, Jr. and B. A. Leopold. 1979. Correlation of forest characteristics with white-tailed deer forage. Proc. Ann. Conf. S.E. Assoc. Fish and Wildl. Agencies 33:48-57.

Jacobson, H. A., D. C. Guynn, Jr. and E. J. Hackett. 1979. Impact of the botfly on squirrel harvests in Mississippi. Wildl. Soc.Bull. 7:1(46-48).

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Guynn, D. C., Jr., C. E. Mason, E. J. Hackett and J. S. DuBose. 1980. Trapping satisfactions of Mississippi trappers. Proc. Ann. Conf. S.E. Assoc. Fish and Wildl. Agencies 34:503-507.

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Davis, J. R., A. F. Von Recum, D. D. Smith, and D. C. Guynn, Jr. 1984. Implantable telemetry in beaver. Wildl. Soc. Bull. 12:322-324.

Gruver, B. J., D. C. Guynn, Jr. and H. A. Jacobson. 1984. Simulated effects of harvest strategy on reproduction in white-tailed deer. J. Wildl. Manage. 48:535-541.

Downing, R. L. and D. C. Guynn, Jr. 1985. A generalized sustained-yield table for white-tailed deer. Pages 95-104 *in* S. L. Beasom and S. F. Roberson (eds.). Game Harvest Manage. Caesar Kleberg Wildlife Research Institute. Kingsville, TX.

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Harlow, Richard F. and D. C. Guynn, Jr. 1994. Whitetail habitats and ranges. Pages 169-173 *in* D. Gerlach, S. Atwater and J. Schnell (eds.). *Deer*. Stackpole Books. Mechanicsburg, PA. 384 pp.

Harlow, Richard F. and D. C. Guynn, Jr. 1994. Population change and loss of habitat. Pages 218-223 *in* D. Gerlach, S. Atwater and J. Schnell (eds.). *Deer*. Stackpole Books. Mechanicsburg, PA. 384 pp.

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Bullock, J. F., Jr., D. C. Guynn, Jr. and H. A. Jacobson. 1995. Evaluating the plan. Pages 66-77 *in* K. V. Miller and R. L. Marchinton (eds). Quality Whitetails. Stackpole Books, Inc. Harrisburg, PA.

Hamilton, R. J., W. M. Knox, and D. C. Guynn, Jr. 1995. How quality deer management works. Pages 7-18 *in* K. V. Miller and R. L. Marchinton (eds.). Quality whitetails. Stackpole Books, Inc. Harrisburg, PA.

Hamilton, R. J., W. M. Knox and D. C. Guynn, Jr. 1995. Guidelines for a successful hunting club. Pages 24-25 *in* K. V. Miller and R. L. Marchinton (eds.). Quality whitetails. Stackpole Books, Inc. Harrisburg, PA.

Hamilton, R. J., W. M. Knox, and D. C. Guynn, Jr. 1995. Harvest strategies. Pages 47-57 *in* K. V. Miller and R. L. Marchinton (eds.). Quality whitetails. Stackpole Books, Inc. Harrisburg, PA.

Jacobson, H. A. and D. C. Guynn, Jr. 1995. A primer. Pages 81-102 *in* K. V. Miller and R. L. Marchinton (eds.). Quality whitetails. Stackpole Books, Inc. Harrisburg, PA.

Patterson, M. E., D. E. Guynn and D. C. Guynn, Jr. 2000. Human dimensions and conflict resolution. Pages 214-230 *in* S. Demarias and P. Kransman (eds.). Ecology and Management of Big Game in North America. Prentice-Hall, Inc. Upper Saddle River, NJ.

Guynn, D.C., Jr. and A.P.C. Marsinko. 2003. Trends in hunt leases on forest industry lands in the southeastern United States. Pages 68-74 *in* Miller, J. E., and J. M. Midtbo (eds.). National Symp. on Sustainable Natural Resource-Based Enterprises. Mississippi State University Forest and Wildlife Center. Starkville, MS.

GARY L. ALT, Ph.D.
Biologist/Principal Scientist

Dr. Alt has over 30 years experience as a wildlife biologist overseeing statewide research and management programs. During his tenure, Gary was responsible for launching some of the largest field studies in the country on black bears and white-tailed deer and made some of the most sweeping changes to bear and deer management policies in the history of Pennsylvania.

He has extensive experience coordinating research and management activities with state and federal government agencies, universities, and non-profit organizations.

Dr. Alt has coordinated and authored results from terrestrial ecological field studies and rare, threatened or endangered species reports for nuclear power and wind energy projects.

Dr. Alt has testified as an expert witness on numerous occasions in state and federal court cases and in legislative hearings dealing with wildlife issues. Gary has also designed and implemented monitoring programs for a variety of wildlife species and written reports and published results in numerous professional journals.

Dr. Alt has extensive experience in public relations, education, and the use of mass media to win support for conservation programs. He has presented over 1,500 public lectures and scripted, narrated, and hosted an award-winning documentary. In addition, his work has been featured nationally in a variety of venues such as Good Morning America, CBS Sunday Morning News, Time Magazine, Sports Illustrated, People Magazine, and publications and television sponsored by the National Geographic Society.

SELECTED PROJECT EXPERIENCE

HMM/National Fuel Gas Company - Overbeck to Leidy Pipeline: Elk, Cameron, and Clinton Counties, PA (2010-2011) - Project Scientist coordinating habitat assessments for Allegheny woodrat, timber rattlesnake, and eastern small-footed myotis.

AREVA NP (2008-2010) – Wrote the Terrestrial Fauna Surveys Report and Engineering Information Records (EIR's) for terrestrial ecology sections of the proposed Bell Bend Nuclear Power Plant, Luzerne County, Pennsylvania.

EDUCATION

Ph.D.,	1989, Forest Resources Science, West Virginia University
M.S.,	1977. Wildlife Management, Pennsylvania State University
B. S.,	1974, Wildlife Science, Utah State University
A.A.S.,	1972. Wildlife Technology, Pennsylvania State University

PROFESSIONAL EXPERIENCE

2008-Present	Principal Scientist, Normandeau Associates
2005-2008	Freelance Wildlife Management Consultant
1999-2004	Chief Biologist, Deer Research & Management Section, Pennsylvania Game Commission
1977-1999	Wildlife Biologist, Pennsylvania Game Commission

SELECTED AWARDS

Honorary Doctor of Public Service, Clarion University, Clarion, PA. 2008.
Honorary Doctor of Science, Wilkes University, Wilkes-Barre, PA, 1996.
Honored in Time Magazine as a Conservation Innovator, October 3, 2005, Pg. 64.
2006 President's Award, Pennsylvania Veterinary Medical Association.
2005 Pennsylvania Association of Environmental Professionals Karl Mason Award.
2003 International Conservationist of the Year, Safari Club International, Reno NV.
2002 Conservationist of the Year, Outdoor Life Magazine, Orlando, FL.
2001 Pennsylvania Fish and Boat Commission, Wildlife Federation, and Pennsylvania Audubon Conservation Educator Award.
2001 Pennsylvania Forestry Association Natural Resource Education Award.
2000 Pennsylvania State University Lifetime Achievement Alumni Fellow Award.

PROFESSIONAL AFFILIATIONS

The Wildlife Society
Society for Conservation biology
International Association for Bear Research and Management
Pennsylvania Outdoor Writers Association
Professional Association of Diving Instructors

Federal Highway Administration (2009-2011) - Wrote the work plan and literature review for a national deer-vehicle collision study looking at ecological, economic and safety impacts of reduced roadside mowing policies. Designed and implemented a survey, using Survey Monkey, to gather information on roadside vegetation management programs currently in use in 24 states.

Safari Club International (2010) – Reviewed black bear research and management documents, reports, and opinions regarding New Jersey's proposed 2010 black bear hunt.

Confidential Wind Energy Development Company (2010) – Reviewed black bear research reports, regulatory documents, testimony, and provided recommendations for potential research and mitigation actions for siting a wind farm in a northeastern state.

Gamesa Energy USA, LLC (2010) - Wrote a Pre-construction Bat Acoustic Monitoring Survey report for a proposed Wind Farm in Pennsylvania. The report summarized species composition, seasonal and daily activity patterns, weather impacts and monitoring success rates for bats acoustically detected at the proposed wind farm location and was submitted to the Pennsylvania Game Commission as part of their regulatory compliance requirements.

Dyer Quarry, Birdsboro, Berks County, PA (2009) - Wrote an Indiana Bat Mist Net Survey report summarizing results of field surveys for regulatory compliance with the Pennsylvania Game Commission on a proposed eastern expansion of the Dyer Quarry.

Confidential Client (2009) - Co-authored a Critical Issues Analysis for a wind energy facility in West Virginia. The report identified key issues and potential "fatal flaws" associated with the proposed project including identification of possible rare, threatened and endangered species, land use, wetlands issues, required permits and regulatory approvals for local, state, and federal agencies, and a list of required or recommended studies that would likely need to be completed.

Reading Anthracite Company (2008) – Wrote the Rare, Threatened, or Endangered Species Report for the Butler Wind Energy Project Area, Schuylkill County, Pennsylvania.

PGC - Evaluation of Impacts of Antler Restriction Regulation Changes (2002-2004) - Coordinated and supervised activities of research teams resulting in the capture and marking of over 2,000 deer, including over 550 bucks that were radio-instrumented and monitored for movements and survival. Coordinated activities between the Pennsylvania Cooperative Wildlife Research Unit at Pennsylvania State University and the Pennsylvania Game Commission.

PGC - Antler Measurement Study (2002-2004) - Coordinated and supervised activities of field crews that measured antlers on >75,000 harvested bucks to determine antler characteristics by age and location (county and township) to determine what type of antler restrictions would be most appropriate, by wildlife management unit, throughout Pennsylvania.

PGC - White-tailed Deer Management Public Outreach Program (2000-2004) - Presented >225 public lectures attended by >100,000 people during the public comment periods (January-April) for seasons and bag limits to win support for proposed policy changes. Lectures were given within 20 miles of every Pennsylvanian. Created and distributed >35,000 videos to attendees to educate and win support for proposed deer management policy changes. Virtually every policy recommended by my research and management team was successfully adopted between 2000 and 2004.

PGC - Pregnancy Rates and Timing of Breeding and Parturition in the Pennsylvania White-tailed Deer Herd Study (2000-2004) - Coordinated and supervised activities of Wildlife Conservation Officers and

biologists that resulted in the determination of pregnancy rates and documentation of timing of breeding and parturition based on uteri examination, embryo counts and measurements of embryos from more than 2,000 road-killed female deer.

PGC - White-tailed Deer Research and Management Program (1999-2004) - Evaluated, redesigned and marketed all white-tailed deer research and management activities in Pennsylvania. Coordinated the collection and entry of statewide capture and harvest deer data. Made recommendations for annual hunting season regulations to staff and the board of commissioners. Prepared annual and final reports on research activities. Testified and made presentations at commission meetings, legislative hearings, and sportsmen's meetings and conventions.

PGC - White-tailed Deer Fawn Survival Study PGC - Wildlife Management Unit Conversion (2002) - Coordinated the conversion of statewide wildlife management units from political boundaries (counties) to more ecologically relevant units based on GIS data. Variables of interest included habitat cover type (forested, agriculture, developed), public verses private ownership, road and human densities.

PGC - White-tailed Deer Fawn Survival Study (2000-2002) - Coordinated and supervised research teams that captured, radio-instrumented and monitored the movements and survival of 212 white-tailed deer fawns during their first year of life. Cause of death was identified in most cases. Comparisons were made between two study areas; one representing a primarily forested landscape, and one in a more agricultural landscape.

PGC - Bear Research and Management Program (1977-1999) - Coordinated all black bear research and management activities in Pennsylvania. Trained and supplied materials to biologists, technicians, conservation officers, and other cooperating personnel to capture, anesthetize, and tag bears. Coordinate the collection and entry of capture and harvest data. Analyze capture and harvest results to determine geographic distribution, sex and age characteristics of the harvest, harvest rates and population estimates. Recommend hunting season regulations to staff. Evaluated research and management procedures and programs on a variety of game species. Prepared annual and final reports on research activities. Testified and made presentations at commission meetings, legislative hearings, court cases, and sportsmen's meetings and conventions.

PGC - Black Bear Cub Adoption Program (1977-1999) - Documented the lack of natural cub adoption and developed techniques to adopt orphan cubs back into the wild using foster mothers and/or captive centers. Published results in the Journal of Mammalogy and the Wildlife Society Bulletin. Also collaborated with Dr. John Beecham of Idaho Fish and Game and coauthored our pooled results in the Wildlife Society Bulletin.

PGC/Pennsylvania Cooperative Wildlife Research Unit Bear Tag Loss Study (1998) - Collaborated with Dr. Diefenbach at the Wildlife Research Unit to model the rate of tag loss occurring in black bears, by sex and age, based on over 3,000 bears we had tagged for population modeling purposes.

PGC/University of Pennsylvania Trichinosis Study (1983-88) - Coordinated the collection and data flow for thousands of tissue samples from harvested bears to be tested for trichinosis with Dr. Shad of the University of Pennsylvania, Philadelphia.

PGC/Smithsonian Institute & National Zoo, Washington D.C. (1984-1987) - Coordinated a study of Pennsylvania black bear milk composition and growth rates of newborn cubs during their mother's winter dormancy with Dr. Oftedal. This required the capture and radio-tracking of scores of pregnant female bears to their dens where we anesthetized them, extracted milk samples and treated their cubs with isotopes. Measurements were taken during 2-week intervals throughout the winter denning

period to determine growth rates, changes in milk composition and quantities of milk consumed. Results were published in the British Journal of Nutrition.

United States Fish & Wildlife Service and University of Montana (1984) - Organized and presented a proposal in Montana on recommendations for cross-fostering orphaned (captive) grizzly bear cubs with foster mother black bears in an effort to augment grizzly populations in the Montana area.

Snowshoe Hare Aging Study, Utah State University (1973-1974) - Conducted an undergraduate research project on comparative techniques (dried eye lens weight, closure of the epiphyseal groove of the humerus, and examination of external genitalia) for aging snowshoe hares.

SPECIAL TRAINING

Titley/Livengood Consulting, Anabat Acoustic Monitoring Techniques Workshop, Warsaw, IL, 2010.

Allegheny Woodrat and Timber Rattlesnake Workshop, Yellow Creek State Park, PA, 2009.

American Wind Energy Association, Fundamentals of Wind Energy Symposium, Jacksonville, FL 2009.

The Wildlife Society, Avian Interactions with Power Lines Workshop, Monterey, CA, 2009.

American Wind Energy Association, Wind Energy 101, Chicago, IL, 2009.

Professional Association of Diving Instructors (PADI) Advanced Open Water Scuba Diver Certification, 2005.

American Red Cross CPR and First Aid Training, 2004.

U.S. Fish and Wildlife Service, Habitat Evaluation Procedures (HEP), Harrisburg , PA 1988.

SELECTED PRESENTATIONS

Alt, G., R. Blye, S. Allen, Kent Snyder, Jeffrey Simmons. 2011. Regulatory Requirements for Wildlife Studies at Wind Energy Sites in Ten Northeastern and Three Western States. PowerPoint presentation at the Energy, Utility & Environment Conference, Phoenix, AZ. February 2, 2011.

Alt, G., R. Blye, S. Allen, S. Barnum, A. Pembroke and J. Simmons. 2009. Development Patterns and Wildlife Study Requirements for Wind Energy in the Northeastern United States. Normandeau Associates Marketing Publication.

Alt, G., R. Blye, S. Allen, S. Barnum, A. Pembroke and J. Simmons. 2009. Wind Energy Development Patterns and Regulatory Requirements for Wildlife Studies in 13 Northeastern States. Poster presented at American Wind Energy Association, Chicago, IL. May 3-7, 2009.

Alt, G. L., R.W. Blye, and J. B. Schaeffer. 2009. Trends, Guidelines, and Impacts of Wind Energy on Wildlife in the Northeastern United States. Northeast Fish and Wildlife Conference, Lancaster, PA. April 28, 2009.

Alt, G. L., M. D. Grund, and B. P. Shissler. 2006. The Challenge of White-tailed Deer Management. North American Wildlife Conference. March 22, 2006.

Alt, G. L. 2007. The Role of Wildlife Management in the Maintenance of Ecosystems. Keynote address for Mid Atlantic Ecology Society, York College, York, PA, March 17, 2007.

Alt, G. L. 2007. Theories, Perceptions, and Realities of a Career in Natural Resource Management. Department of Natural Resources, Cornell University, February 21, 2007.

Alt, G. L. 2006. Foreword for book entitled "Deer Wars: Science, Tradition, and the Battle Over Managing Whitetails in Pennsylvania" by Bob Frye. The Pennsylvania State University Press, University Park, PA 310pp.

Alt, G. L. 2006. Challenges of Deer Management from an Ecosystem Perspective. United States Forest Service Coordination Meeting, Snowshoe, WV, October 11, 2006.

Alt, G. L. 2006. Challenges to the Future of Deer and Deer Hunting. Quality Deer Management Association National Convention, Fort Washington, PA. June 23, 2006. (Keynote Address)

Alt, G. L. 2006. The Future of Deer and Deer Hunting. Outdoor Writers of America Ass. National Convention, June 19, 2006, Lake Charles, Louisiana.

Alt, G. L. 2005. Challenges of Deer Management from an Ecosystem Perspective. Society of American Foresters Conference, Michigan Chapter, June 9-10, 2005. (Keynote Address).

Alt, G. L. 2005. Strategies in Changing Deer Management Policy in Pennsylvania, 1999-2004. Society of American Foresters Conference, Michigan Chapter, June 9-10, 2005.

Alt, G. L. 2005. Hunting Focus Hurts Deer Management. Philadelphia Inquirer. Invited Editorial. June 3, 2005.

Alt, G. L. and M. Grund. 2004. Diving in Headfirst: Trying to Change the Deer Hunting Culture in Pennsylvania. The Wildlife Society 11th Annual National Conference. Sep. 18-22, 2004, Calgary, Alberta, Canada (Invited Paper).

Alt, G. L. 1993. Foreword for a book entitled "Bears: Monarchs of the Northern World." Written by Wayne Lynch. Greystone Books, Vancouver/Toronto. 242 pp.

Alt, G. L. 1989. Reproductive Biology of Female Black Bears and Early Growth and Development of Cubs in Northeastern Pennsylvania. Ph.D. Dissertation. West Virginia University, Morgantown.

Alt, G. L. 1982. Reproductive Biology of Pennsylvania's Black Bears. Pennsylvania Game News 53: 9-15.

Alt, G. L. 1980. Rate of Growth and Size of Pennsylvania Black Bears. Pennsylvania Game News 51(12): 7-17.

Alt, G. L. 1978. Dispersal Patterns of Black Bears in Northeastern Pennsylvania—A Preliminary Report. Proceedings of Eastern Workshop on Black Bear Management and Research 4: 186-199.

Alt, G. L. 1977. Home Range, Annual Activity Patterns, and Movements of Black Bears in Northeastern Pennsylvania. M. S. Thesis. Pennsylvania State University, University Park. 67pp.

SELECTED PEER-REVIEWED ARTICLES AND PUBLICATIONS

Diefenbach, D. R. and G. L. Alt. 1998. Modeling and Evaluation of Ear Tag Loss in Black Bears. Journal of Wildlife Management 62(4): 1281-1291.

Harshyne, W. A., D. R. Diefenbach, G. L. Alt, and G. M. Matson. 1998. Analysis of Error From Cementum-Annuli Age Estimates of Known-Age Pennsylvania Black Bears. Journal of Wildlife Management 62(4): 1281-1291.

Oftedal, O. T., G. L. Alt, E. M. Widdowson, and M. R. Jakubasz. 1993. Nutrition and growth of suckling black bears (Ursus americanus) during their mother's winter fast. British Journal of Nutrition 70: 59-79.

Storm, G. L., G. L. Alt, G. J. Matula, Jr., and R. A. Nelson. 1988. Blood Chemistry of Black Bears from Pennsylvania During Winter Dormancy. Journal of Wildlife Diseases 24(3): 512-521.

Alt, G. L., C. R. McLaughlin, and K. H. Pollock. 1985. Ear Tag Loss by Black Bears in Pennsylvania. Journal of Wildlife Management 49(2): 316-320.

Alt, G. L. and J. J. Beecham. 1984. Reintroduction of Orphaned Black Bear Cubs into the Wild. Wildlife Society Bulletin 12:169-174.

Alt, G. L. 1984. Cub Adoption in the Black Bear. Journal of Mammalogy 65: 511-512.

Alt, G. L. 1984. Black Bear Cub Mortality Due to Flooding of Dens. Journal of Wildlife Management 48(1): 236-239.

Alt, G. L. 1983. Timing of Parturition of Black Bears (Ursus americanus) in Northeastern Pennsylvania. Journal of Mammalogy 64: 305-307.

Alt, G. L., G. J. Matula Jr., F. W. Alt, and J. S. Lindzey. 1977. Dynamics of Home Range and Movements of Adult Black Bears in Northeastern Pennsylvania. International Conference on Bear Research and Management 5: 129-136.

APPENDIX 2

Appendix 2: Topics for DNR Review Meeting

Submitted by:

Drs. James C. Kroll, Gary Alt and David Guynn

Note: We will bring storage devices for this information if you wish to provide in digital form, as well.

1. What incentive programs are available to private landowners for deer management; viz., habitat improvement, forestry and herd management?
2. Detailed information on all state wildlife management areas in which deer hunting is allowed, along with the following:
    a. Acreages and locations.
    b. Goals.
    c. Hunting process and access.
3. Administrative structure in regard to white-tailed deer programs. This would include both state administration and field personnel.
4. How is research organized, prioritized and administered?
5. What projects have you funded with outside parties on deer, habitat and disease issues?
6. Where do funds originate for research projects?
7. What is your process for public input and participation?
8. What programs do you have in place for determining the health of Wisconsin deer herds?
9. How do you work with other agencies such as extension, NRCS, etc.?
10. Detailed presentation on the decision-making process in arriving at regulations, bag limits, etc. Please present flow of activities and decision authority assignments.
11. What are the goals for the Wisconsin deer management program? What we are interested in would include harvest goals, population goals, demographics, etc.
12. Can you provide us with a copy of the Whitetails 2000 and Beyond Project Report, and which goals have been completed, adopted, etc.?
13. What is the Deer Committee, who belongs to it and how are they selected?
14. What data are collected related to your goals?
15. Copies of data typically collected by DNR for the last 5 years.
16. How do you assess progress in achieving goals?
17. Do you census your deer and by what means?
18. How much emphasis do you place on population density estimates?
19. How much time/effort is expended annually by staff in public appearances, meetings, etc.
20. Please provide us with a working copy of the SAK model, including the equations that are in it. How was this model developed and has it been validated? How?
21. Copies of all white-tailed deer data bases by management unit and county.
22. Copies or links to all materials produced for public education.

23. Are there any result demonstration areas for any aspect of deer population/habitat management?

24. Do you have any data or results on your "Earn-a-Buck" program, in regard to effectiveness in achieving population and demographic goals? **Van Deelen paper.**

25. What is the relationship between the DNR and the following:

- **a.** Agricultural Extension.
- **b.** Federal and State forestry agencies.
- **c.** Environmental departments (state and federal).
- **d.** Universities.

26. How does the DNR Division of Forestry policies relate to the U.S. Forest Service National Forest management policies?

27. Discuss how Pittman-Robertson funds are used, including accounting for them.

28. Income-expense breakdown for deer hunting and management.

29. Have you completed projects on the following:

- **a.** Studies related to antler restrictions.
- **b.** Impacts of wolves, bears, etc. on your deer population.
- **c.** Impacts of hound training on deer and other animals.
- **d.** Forest impacts of deer herds.
- **e.** Baiting relationships to disease and harvest.
- **f.** Antler development affected by age, nutrition, etc.
- **g.** Productivity of deer in the CWD Core and Zone.

30. Do you have data on the number of dead deer found in the CWD Core area and Zones and the cause of death?

31. Copies of all CWD reports produced to date, public and in-house.

32. Can you provide us with a copy of the Staples Marketing Report.

33. Do you have a cover type map or spatial distribution study on habitats in Wisconsin?

34. How does the department define "deer habitat?"

35. We would appreciate a list of stakeholders and contact information for our next meeting.

36. We would like to obtain and review the minutes, notes, meeting summaries, and reports by the Health & Science Team.

37. We request a list and contact information for past professional employees whose work related to deer or wildlife diseases. This extends as far as reasonable to request.

APPENDIX 3

APPENDIX 3

INVENTORY OF MATERIALS PROVIDED INITIALLY BY,

THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES

IN RESPONSE TO,

LIST OF 37 REQUESTS (APPENDIX 2) ABOUT DEER MANAGEMENT IN WISCONSIN

Q1- Private Land Management

1. Links to State Programs for Landowners
2. Captive Deer
3. Deer Shooting Permit Summary, 2010
4. Wildlife Damage Program Brief
5. Wildlife Damage Program Summary 2010
6. Federal Programs with Implications for Deer in Wisconsin
7. Link to VPA Program.
8. Chapter 77 Subchapter VI- MFL
9. Link to Forest Crop Law
10. WFLGP Fact Sheet 03_07

Q2- Public Land Management

1. Acreage of Public Land Open for Hunting
2. Goals for Wildlife Areas
3. Hunting Process and Access Wildlife Areas
4. Link to County Forest Lands
5. Links to FS and FWS Properties for Hunting
6. Topic 26- USFS & DNR Interaction
7. Chapter 28 WI Statistics
8. Link to State Land Mapping
9. Links to State Properties
10. Public Conservation Lands & DNR Facilities Map
11. Public Hunting- Cover Types 10-11
12. Public Hunting- Long term Harvest Goals 10-31-11
13. Public Hunting- TS Establishment 10-31-11
14. State Lands- All Long term Harvest Goals 10-31-11
15. State Lands- All TS Establishment 10-31-11
16. State Lands- All Cover Types 10-11
17. Topics for DNR Review Meeting Loomans

Qs3,7,10,11,12,13,14,16,17,18,19,22,23,24,27,28,33,34,35,37

1. Administrative Structure

2. 2010 WI DNR FWHMP Update Final
3. CMS Narrative July 2011
4. PR Apportionments FY10-12
5. PR Deer Expenditures SFY10-12
6. PR-All Est Expen SFY12
7. PR-All SFY10
8. PR-All SFY11
9. Answer to Q27
10. SS Activity Codes
11. WM Activity Code Descriptions
12. Past Professional Employees
13. Rule Promulgation Loomans
14. WI DNR Fiscal Years 2006-10 Report- Car Killed Deer
15. Deerfacts
16. CM Summary
17. Deer Forest Impacts
18. Forester_AmMidNat_2008
19. Tolerable Damage Indicators (01-07)
20. Tolerable Levels of Deer Damage
21. Agricultural Deer Damage Shooting Pemits (2006-2010)
22. Wildlife Damage Abatement and Claims Program (2006-2010)
23. Deer 2000 Recommendations
24. Administrative Structure
25. Est-DeerRange (1-82) Green
26. Estimated Deer Range (1,10,11,12) Green
27. Deer Range Landcover (1-82)
28. Deer Range- Landcover_ MCC
29. Deer Range
30. Item 26 Landcover_deerrange readme
31. Wiscland Powerpoint
32. 2008-10 Harvests by Type
33. Deer Harvest Reports, 2006-2010
34. Trophy Record Book Powerpoint
35. US Records
36. 1960-2010 harvest
37. 1966-2010 Harvest
38. Buck harvest Age Composition, Eastern Farmland
39. State Compare
40. Farm
41. Final 2007 Nine Deer Gun Season Report
42. Final 2008 Deer Season Report
43. Final 2009 Law Enforcement Deer Season Report
44. Final 2010 Law Enforcement Deer Season Report

45. Final Nine Deer Gun Season Report
46. 2001-2010 License Sales
47. Male Hunters
48. Participation
49. Demonstration Areas- Bayfield C. Deer Fence
50. Deer and Alternative Management in Northern Hardwood Stands
51. Deer Exclosure Powerpoint
52. Deer Impacts Literature from a Bowsite Blogger
53. Item 23- Deer Demonstration Areas
54. WI_Exclosures
55. Buckfawn
56. Deer News Releases
57. Deer Notebook
58. Deerexsign
59. Forecast
60. Herd Story
61. Kovach Deer Impacts 0306
62. Randall Walters_Deer Density Vegetation Effects Aspen MI-FEM 2010 in press
63. Sakcd
64. WDD10 TransTeamInfo
65. WDD11_11x17poster
66. Wolvesdeer2009
67. Public Input
68. Public Participant, Loomans
69. Timeline 2011 Deer Season
70. Deer Habitat, Red Book
71. DeerBook
72. DeerRedBook.zip
73. Deer Management Goals, Loomans
74. Program Goals
75. Item 24 Earn-a-buck effectiveness
76. Van Deelen et al JWM 2010 Earn a buck in WI
77. 2010 Buck Harvest sq mile of DR
78. 2010 Buck Harvest sq mile total
79. 2010 Deer Range
80. 2010 Fall Pop sq mile DR
81. 2010 Fall pop
82. 2010 Overwinter pop
83. 2010 Overwinter sq mile DR
84. 2010 _Season_Structure (final)
85. DMU Regions
86. Abungoals
87. Chapter 4

88. Post_Hunt_Goal
89. 2011 SAK estimates
90. Prehunt, posthunt, goal
91. SAK Explanation for Secretary
92. SAK Report
93. 2011 Large Block Landowner Contact List
94. Deer Hunting Stakeholders
95. Deer Population Stakeholders
96. External_Liaisons- Contacts_Div Forestry
97. Interagency Health and Science Team Distribution List
98. Stakeholder Groups Invited_Deer
99. Stakeholders to DNR 10_27_11_Div Forestry
100. WDD10 Trans Team Info
101. WDD11_11x17 poster
102. Summer Deer Observations (2006-2010)
103. APL_Hunter_Brief_Final
104. APL_Hunters2011-print
105. Archery Deer Questionnaire, 2005
106. Archery Deer Questionnaire, 2009
107. Deer Hunter Wildlife Survey Summary 2009
108. Deer Hunter Wildlife Survey Summary 2010
109. Gun Deer Hunting Questionnaire (2006-2010)
110. Summary Wildlife Inquiry (2006-2010)
111. Hunter Days
112. AllKillsCty (2006-2010)
113. Buck Harvest Density 2009 Midwest Powerpoint
114. Chronic Wasting Disease in Wisconsin Deer (2005-2010)
115. Hunter_Days_9_Day_November_Firearm_Season.ppt
116. Item 15- Data Collected
117. QDMA Record Book Buck Harvest Map and 2009 Chart
118. Regional Antlered and Antlerless Harvests (1990-2010)
119. Regional Buck Harvest Age Composition 1960-2010ppt
120. Buck Faawn_Doe_Ratios_1990-2010ppt
121. Regional Yearling Antler Development Powerpoint
122. Winter Severity Indices (2006-2011)
123. DeerStubOpeningDayWeatherdeerSeen2009vs2010
124. History2010

Qs5,8,9,11,14,15,21,22,25,30,31,32,36

1. 2011 Ectoparasite manuscript (Piette) Final
2. CWD Tissue Sharing
3. Health Section for Question 5
4. Near Final CERANR RFP for 2011

5. External Review
6. SAG Report
7. WCC Brochure (trifold) 09-11
8. WCC
9. Agency Partnerships Health Section
10. Escaped Captive Deer Policy Revised 6-15-10
11. Final Signed MOU
12. IAHST
13. IAHST_WHAC
14. MAFWA 2010 Report
15. MAFWA Letter for CWD Funding
16. MAFWA Report
17. MAFWA Report 10
18. Partnership with WVDL
19. CWD Code References
20. CWD Response Plan Goal
21. 2008_CWD_Brochure
22. CWD Web Pages Links
23. CWD Report
24. CWD Book
25. Wildlife Health Section Relationships
26. Number of Dead Deer Found in CWD Core Area and Cause of Death
27. Sick Deer Calls Guidance Flow Chart
28. Bishop 2004 Economic Impacts of CWD in WI
29. Blanchong et al 2007- Landscape Genetics
30. Blanchong et al. WSB 2006_Deer Removal Effect
31. Cooney and Holsman 2010_Hunter Support
32. CWD Publications Item 31
33. Grear et al. 2010 Linking process to pattern CWD
34. Grear et al. 2006 Demographic patterns
35. Heisey et al 2010 Linking process to pattern CWD
36. Holsman and Patchenik 2006 Hunter Behavior in DEZ
37. Holsman et al 2010 After the Fire
38. Jennelle et al 2009 JWM Deer Carcass Decomposition
39. Johnson et al 2006 prion protein polymorphs
40. Joly et al 2009 Wisconsin Surveillance
41. Joly et al 2003 Emerging Infection Disease CWD in WI
42. Keane et al 2008 J Vet Diagn Invest Hall Farm
43. Keane et al 2008 J Vet Diagn Invest Lymph node v obex
44. Keane et al 2009 J Clinical Microbiology_RAMALT
45. Osnas et al 2009 Mapping CWD prevalence in WI Ecol Applications
46. Oyer et al 2007 Long distance movement
47. Petchenik 2006 Landowner Response to Incentives

48. Skultdt elt al 2008 Deer Movements in CWD area_JWM
49. Vaske et al 2006 information sources and knowledge
50. Wasserberg et al 2009 Host Culling Adaptive Management
51. CWD Reports-Annual PR reports Item 31
52. PR Annual Report SSEH 9.15.08
53. PR.Annual.Report.Study SSEH.9.1.10
54. PR.annual.Report.StudySSEH.09.09
55. CWDREP 1.Doc
56. MIDWGP Status Reports (2002-5)
57. Wisconsin Deer Status Reports (2006-11)
58. USDA Grant Report 9655-020CA
59. USDA Grant Report 9655-0381-CA
60. USDA Grant Report 9655-0224-CA
61. USDA Grant Report 9655-0381-CA
62. USDA Grant Report 9655-0224-CA
63. USDA Grant Report 9655-0381-CA
64. USDA Grant Report 9655-0224-CA
65. Assembly Natural Resources committee
66. Bimonthly report April 11
67. Bimonthly report August 2011
68. Bimonthly report Jan 11
69. Bimonthly report June 2011
70. Bimonthly report October 2011 Final
71. MAFWA Report 2011
72. MAFWAReport10
73. October 2010 bi-monthly
74. Chronic Wasting Disease in Wisconsin Deer (2005-10)
75. Staples Marketing Reports, CWD- Billboards, brochure, bumper sticker, Focus Group Research, HHH Logo Images, HHH Talking Points, Media Aids, Post-Implementation Testing, Presentations & Timelines, Videos, Web Visits Reports
76. Health Data
77. 2300280 (2008-10)
78. Deer Harvest Reports (2006-10)
79. Program Summary
80. Shooting Permit Summary 2010
81. CWD Data Model 20070912
82. WDACP Main1.1
83. WHDB CORE
84. WHDB PEOPLE
85. WHDB STORAGE
86. WHDB SUPPORT
87. Deer Vehicle Accident Issue Brief
88. DNR Deer Vehicle Accident Data 1951-2011

89. Dot Accidents and Traffic 1987-2010
90. DVC memo June 14 Final
91. Item 21 Deer Data Bases, DVCs
92. Summer
93. Variable list for summer data set
94. County
95. Forest
96. History 2010
97. Variable list for county data set
98. Variable list for forest data set
99. Item 21 Deer Data Bases WSI
100. WSI by Station 1960
101. WSI1960-2011
102. CWD Test Results
103. AFWA CWD Working Group
104. CWD Samples by County
105. EHD report April 2005 No. 2
106. Health Section for Question 8
107. Herd Health Monitoring
108. Sick Deer Calls Guidance Flow Chart
109. WSI by Station 1960-2010
110. Science and Health Team notes (2002-2011)
111. CWD Rule Memo 06
112. IHST Statement of Concern
113. CWD White Paper KJM 2 27 09
114. Health and Science Team Discussion of Refuges
115. Interagency Comments on SAG Recommendations
116. Rules Team Question, Response
117. Testing For CWD
118. The Role and Function of the CWD Interagency Health and Science Team

Tribal Relations Q10

1. Voight Stipulations for Tech. Man. and other Updates
2. Chip Thresholds 2011

Presentations

1. 2011 Deer Review Powerpoint (ppt)
2. 2011 Bill V Trustee Meeting ppt
3. Aminrulesdeertrustee ppt
4. Deer in WI Present 11-07 Forestry ppt
5. Deer Trustee CWD 2010 Surveillance ppt
6. Deer Trustee Deer Health ppt

7. Deer Trustee meeting Nov 8, 2011 ppt
8. Deer Trustee Petchenik ppt
9. Deer Trustee Research update ppt
10. Deer Survey and Data ppt

Research Q29

1. Item 29 Completed projects, Baiting
2. Thompson et al. JWM 2008
3. VanDeelen et al 2006 bait
4. Walrath et al WSB 2011
5. Walrath, Ryan Masters Thesis
6. Completed projects Item 29
7. Deer Repellent Study material list
8. Predation white paper
9. Sedgek ppt
10. Repellent trial
11. Sciences Services Answers to Deer Trustee
12. Deer Population Status Rep (2006-10)
13. Final 2010 Deer Population estimates
14. Item 20 SAK Model
15. SAK Audit Final Report
16. Dissertation Summary

APPENDIX 4

Appendix 4

Deer 2000 Recommendations -

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
1. Restrict deer hunting on lands enrolled in the Wisconsin Damage Abatement and Claims Program (WDACP) to antlerless only unless authorized by the landowner.	✓		Per Administrative Code NR12.16(7), only deer without antlers or with an antler less than 3”in length may be killed on Agriculture Damage Deer Shooting Permits unless otherwise exempted by the Department. The Department does issue several exemptions each year due to bucks causing damage by rubbing on trees

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			at orchards and tree nurseries. Landowners that are enrolled in the WDACP and are required to allow public access for deer hunting cannot place restrictions on the sex of deer hunters can harvest when using their state issued deer hunting license(s). Hunters using their own tags must

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			follow the state deer hunting regulations regarding the sex of deer that can be harvested in the respective deer management unit.
2. Allow farmers enrolled in the WDACP the option to restrict hunting access to Master Hunter Program graduates.	✓		This statutory change was never made or implemented.
3. Neighbor liability- Any person who owns, leases or occupies land within ½mile of a property for which a permit to remove deer causing damage has been issued and where the previous year crop damage appraisal exceeded	✓		This statutory change was never made or implemented.

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
$5,000 and who fails or refuses to give consent to deer damage shooting permit participants within ½ mile of the property is liable for any damage caused by the deer to the property of others. Landowners could relieve themselves of this liability by 1) granting hunting access to a person holding a permit to remove deer causing damage, 2) harvesting a prescribed quota of antlerless deer themselves, or 3) allowing people, without guns, to drive deer from their land toward hunters on adjacent land.			
4. Wildlife Damage Tier Program - • Tier 1: Shooting permits with harvest quota issued, no hunting access	✓		This statutory change was never made or implemented. Act 82 did

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
requirements, no claims can be filed, no enrollment in the WDACP required, no fee hunting restrictions imposed. • Tier 2: Payment of 33% of damage claims to a maximum of $5,000, with a $250 deductible; hunting access requirement of 1 hunter per 60 acres of land suitable for hunting; must implement recommended abatement, no fee hunting allowed. • Tier 3: 100% payment of wildlife damage claims to a maximum of $15,000, with a $250 deductible; full hunting access requirement of 2 hunters per 40 acres of land suitable for hunting; must implement required abatement; no fee hunting allowed.			create deer shooting permits that do not require public access and the landowners are not eligible for compensation.

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Deer 2000 Recommendations -

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
5. Farmers enrolled in the WDACP in a given year who experience $1,000 or more damage in that year would automatically be issued a shooting permit by January 31of the following year, with a required harvest objective of 80% of the harvest quota by September 15 in order to qualify for the benefits of the WDACP for the current year.		✓	NR 12.37(4)(a)5. **Amended effective 2002** to require farmers enrolled in WDACP in a given year who experiences $1,000 or more damage in that year be automatically issued a shooting permit **by February 15** of the following year, with the required harvest objective of 80% of the harvest quota by September 15 in

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			order to qualify for the benefits of the WDACP for the current year. Under Rule order WM-40-00 as Clearinghouse rule 00-154 http://docs.legis.wisconsin.gov/code/chr/2000/cr_00_154
6. We recommend using a standardized, simplified and consistent method of issuing and implementing deer damage shooting permits across the state.			Requirements for issuing shooting permits are listed in Administrative

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Partially Completed


Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			Code NR12.10(2)(b): -damage is likely to exceed $1,000 -White-tailed deer are causing damage within a permanent barrier fence -damage will result in loss of plants or animals listed as threatened or

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			endangered, or -Extraordinary damage it occurring or is likely to occur. In addition the Department has implemented a policy which determines how many tags to issue with Agriculture Damage Deer

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			Shooting Permits.
7. Creation of an "X" tag program where the department may issue special agricultural damage deer hunting permits for use by hunters, during established deer hunting seasons, to harvest antlerless deer only within 1/2mile of land where deer damage shooting permits have been issued.	✓		This statutory change was never made or implemented.
8.Allow trained sharp shooters authorized by the department to use infrared illuminators or other projected artificial light to remove deer, at night, where damage exceeds $5,000 on the person's land, where shooting permit abatement during normal shooting hours has failed and where it is not	✓		This statutory change was never made or implemented.

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
feasible or cost-effective to install woven wire fence.			
9. Develop guidelines to spend a specific portion of WDACP funds for educating the general public and persons participating in or administering the WDACP on issues relating to the WDACP and on the occurrence and importance of agricultural deer damage in Wisconsin.	✓		A specific statutory change to require funds by used for education was never made. Wis. Statute s. 29.889(2) Department powers and duties. (a) Assistance. The department shall assist counties in developing and

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			administering the wildlife damage abatement and wildlife damage claim programs. The department shall provide this assistance through technical aid, program guidance, research, demonstration, funding, plan review, audit and evaluation services.

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			(b) Eligibility and funding requirements; rules. The department shall promulgate rules for eligibility and funding requirements for the wildlife damage abatement program and the wildlife damage claim program in order to maximize the cost-effectiveness of these programs. The department shall also promulgate rules to establish all of

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			the following: 1. Authorized wildlife damage abatement measures and methods for implementing and paying for these abatement measures. 2. Forms and procedures for payment and processing of statement of claims and applications

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			for abatement assistance. 3. Procedures and standards for determining the amount of wildlife damage. 4. A methodology for proration of wildlife damage claim payments. 5. Procedures for record keeping,

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			audits and inspections. NR 12.33 WDACP technical manual. The department's WDACP technical manual (Wildlife Damage Abatement and Claims Program Technical Manual, Volume 1/Reference Handbook/134pp., Volume 2/Field Handbook/153pp., Wis. Dept. of

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			Natural Resources, July 1, 1998) shall specify WDACP procedures and requirements including the following: (1) Authorized wildlife damage abatement measures and methods for implementing and paying for these abatement measures.

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			(2) Forms and procedures for payment and processing of statement of claims and applications for abatement assistance. (3) Procedures and standards for determining the amount of wildlife

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			damage. (4) Procedures for record keeping, audits and inspections.
10. Develop guidelines to spend a specific portion of WDACP funds for research related to the occurrence of wildlife damage in Wisconsin.	✓		This statute change was never made or implemented.
11. Define tolerable levels of deer damage. We recommend that damage in a		✓	Under Rule order WM-40-00 as

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
DMU exceeds tolerable levels when damage rises above 2.5 times the median in 2 of 4 indicators, where the indicators used are: 1) appraised losses per 100 overwinter deer, 2) appraised losses per square mile of land in the DMU, **3)** appraised losses per square mile of agricultural land in the DMU, and 4) number of claims per 100 square miles of total land in the DMU. If damage in a DMU is above the tolerable limit in two of three years, the DNR should review the population goal in that DMU and consider reducing the goal if intolerable levels of damage are likely when the herd is at goal. If damage in a DMU is above the tolerable limit when the herd is at goal in two of three years, the DNR should reduce the population goal in			Clearinghouse rule 00-154 Effective in 2002. NR 1.15(2)(am) *Tolerable levels of deer damage to crops*. Deer damage to crops in a deer management unit exceeds tolerable levels when the crop damage is greater than 2.5 times the median in 2 of the following 4 indicators: 1. Appraised deer damage losses determined through the wildlife damage program under s. 29.889, Stats., per 100 overwinter deer.

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
that DMU.			2. Appraised deer damage losses determined through the wildlife damage program under s. 29.889, Stats., per square mile of land in the deer management unit. 3. Appraised deer damage losses determined through the wildlife damage program under s. 29.889, Stats., per square mile of agricultural land in the deer management unit. 4. Number of claims for deer damage submitted through the wildlife damage program under s. 29.889, Stats., per 100 square miles of total land. **Note:** The crop damage data used for these evaluations are adjusted to omit damage losses to high valued crops such as cranberry,

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			orchard, Christmas tree, truck farm crops, etc. where low deer numbers can still cause high losses, and where effective abatement is available in the form of 8 foot high deer barrier, high tensile woven wire fences. The focus of the "tolerable levels" criteria is on chronic damage losses caused by high deer populations. (at) If crop damage in a deer management unit is above the tolerable limit in 2 years out of a 3 year period prior to a current unit review under s. NR 10.104(3), the department shall consider reducing the goal if intolerable levels of damage are likely when the herd is at

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
			goal. If damage in a deer management unit exceeds tolerable levels when the herd is at goal in 2 years out of a 3 year period prior to a current unit review under s. NR 10.104(3), the department shall reduce the population goal in that unit, unless a goal reduction is not expected to alleviate intolerable levels of deer damage.
12. All deer management units should be managed at or below goal. Overwinter goals should be viewed as a ceiling and not a floor. (See Herd			Deer populations in many units throughout the state have been above overwinter goals during

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
Size – Season Recommendations for details)			many years. See Section 10.104(1) below Under Rule order WM-40-00 as Clearinghouse rule 00-154 Effective in 2002.

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			NR 1.15(2)(a) *Deer population goals*. The department shall seek to maintain a deer herd in balance with its range and at deer population goals reasonably compatible with social, economic and ecosystem management objectives for each deer management unit. Deer population goals are to be based on: 1. Carrying capacity as determined by unit population responses to habitat quality and historical records of winter severity. 2. The demand for deer hunting Hunter success in harvesting and seeing deer and public deer viewing opportunities. 3. Ecological and economic impacts of deer

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			browsing. 4. Disease transmission. 5. Concern for deer-vehicle collisions. 6. Chippewa treaty harvest. 7. Hunter access to land in a deer management unit. 8. Ability to keep the deer herd in a deer management unit at goal. 9. Tolerable levels of deer damage as described in par. (am).

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			NR 10.104(1) (d) Establishing deer hunting seasons and annual harvest quotas with the objective of maintaining deer populations at the established deer population goals for each deer management unit.

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			NR 10.104(4) (b) Unit goals. The deer population goals for each deer management unit described in s. NR 10.28 shall be expressed as the number of deer per square mile of deer range in January

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
13. Establish dedicated funding (voluntary $1 minimum donation, when purchasing a hunting license) for venison processing and food pantry donation programs in units where the deer population is over goal.	✓		2001 WISCONSIN ACT 16 Effective 9-1-01 29.565 Voluntary contributions; venison processing and grant program. (1) Any applicant for a hunting license

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			listed under s. 29.563 (2) (a) or (b) may, in addition to paying any fee charged for the license, elect to make a voluntary contribution of at least $1 to be used for the venison processing and donation program under s. 29.89. In the last several years the amount donated has ranged from $10,773 in

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Completed


Partially Completed


Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			2011 to $13,294 in 2009.
Private Lands (14-17)			
14. Create a Master Hunter Program which is a program designed to improve relationships between Hunters and Private Landowners and to increase public hunting access to private lands. It is an advanced hunter education program designed to help hunters increase their knowledge of the sport, and particularly help them understand the concerns of private landowners.	✓	✓	No movement toward implementation

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
15. Initiate a Private Land Access Program in order to increase hunting access to private lands, by compensating landowners with new license surcharge revenue for allowing deer hunting access.	✓	✓	No progress but did secure federal Voluntary Public Access funding in 2011 to increase hunting access to private land
16. Create a tags to landowners program. In those management units that require or allow the issuance of bonus permits, 50% of the permits would initially be set aside for the landowners. These permits could then be purchased by the landowners in numbers corresponding to the percent of the private land in that unit which they control access to. These permits	✓	✓	No progress

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
could be used by the landowner; given free to other hunters, or sold along with the right to hunt their land for whatever the market will bear.			
17. Create season extensions. 1) The weekend following the regular firearms season would be open for antlerless hunting by all firearms. 2) The muzzleloader season would be extended to close concurrent with archery season.		✓	4-day antlerless-only season implemented 2nd Thursday following Thanksgiving; Extended muzzleloader season 3 days; Extended bow season to January 3
Baiting for Deer Hunting (18 – 28)			

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
18. Allow baiting with six-gallon limit per hunting site • Restricted to three sites per forty acres or less on private lands • Bait shall be spread over and restricted to a 10-foot by 10-foot area or 100 sq. foot site • Baiting season runs from September 1 through the end of deer season • Bait must be placed at least fifty yards from a dwelling • Bait must be placed at least 100 yards from a road posted 45 miles per hour or higher • Baiting regulations will be the same on private and public lands	✓	✓	Baiting is generally allowed for deer hunting purposes in any county were CWD or TB has not been found with a two-gallon limit per baiting site. 1. Each person restricted to 2 gallons per area forty acres or less in size, 2. Each bait site must be at least 100 yards from other hunters bait sites.

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			3. Spreading bait over an area is not required. 4. Baiting is only allowed during the deer season and one day before it begins. 5. There is no requirement that bait be located away from a dwelling. 6. Bait must be at least 100 yards from a roadway with a posted speed of 45 MPH and

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Partially Completed


Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			50 yards from trails, campsites and other roads. 7. Regulations are the same on public and private lands. 8. Animal parts & byproducts may not be used as bait. These restrictions were put in place by the legislature effective 4-28-04 under 2003 WI Act 240 pursuant to s. 29.337, Wis. Stats., after a complete statewide ban on baiting and feeding of deer in 2002 after CWD was first discovered. After the legislature created s. 29.337,

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			Wis. Stats., the DNR adopted rules to implement and enforce those laws. Total ban on baiting and feeding deer still in effect in 28 of Wisconsin's 72 counties.
19. We recommend that baiting rules adopted will remain constant through all deer seasons.	✓	✓	Baiting rules for the purposes of hunting deer are constant through all deer seasons.
20. During deer hunting seasons bait cannot be hauled by an ATV or snowmobile on public land except for those roads on official map open to	✓		True on most DNR managed and other public lands because of

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Completed

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
ATV trails from October 1st through the end of deer hunting. Exception: persons holding a DNR disabled hunting permit.			rule/ordinances that generally prohibit off road operation of vehicles. No restriction on use of vehicles to place bait on private lands.
21. Substantial increase of fines and one year revocation for violation of baiting regulations.	✓		No statutory change was made in penalties regarding baiting violations, which already had a maximumForfeiture of $1,000 + costs

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			& surcharges totaling over $2,000 and the option for the courts to revoke all hunting, fishing & trapping licenses and privileges for up to 3 years (just not mandatory).However, the DNR did propose to the States Judicial Conference to increase the normal penalty imposed on a citation for a baiting violations from under $300 (regardless of amount of bait),

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
			to a graduate scale depending upon the amount of illegal bait. The minimum is currently $343.50 if under 5 gallons of bait and $754.50 if over 25 gallons.
22. All types of feeders for baiting of deer are illegal.			This is in place except that bait may be placed in hollow logs or stumps.
23. The baiting and feeding group recommends Department of Agriculture Trade and Consumer Protection (DATCP) and DNR should continue and			1.) This recommendation was outside the jurisdiction of DATCP. TB

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
intensify surveillance and control programs for TB and other emerging disease in captive deer and elk. Specifically we encourage: 1. DATCP to develop a faster more effective system for TB testing, preferably in state 2. DATCP and DNR to more effectively enforce any farm fencing requirements 3. DATCP and DNR to consider limiting importation to Wisconsin farms			testing requirements are developed by the USDA. TB testing requirements in WI are consistent with the USDA UMR for cervids (http://www.aphis.usda.gov/animal_health/animal_diseases/tuberculosis/downloads/bovtbumr.pdf). Tests cannot be used that are not approved by the USDA. The current regulation for ante-mortem testing in

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
of deer/elk from states/areas with significant type of disease.			WI requires a WI certified veterinarian accredited by the USDA or a federal veterinarian to perform the single cervical tuberculosis test (SCT). Initial readings are taken 72hrs after the test is administered. In reactors, a comparative cervical test is performed with authorization from DATCP. There are currently no serologic tests for BTB in cervids that

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
			are approved by the USDA, though they have been working on a blood test for Elk & Red Deer that has not yet been approved and therefore cannot be used by DATCP. For post-mortem examination of suspect lymph nodes from hunters, game farms,or at slaughter, lymph

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
			node samples are submitted to the National Veterinary Services Laboratory in Ames, Iowa. 2. Farm raised deer farms are registered by DATCP. Once a cervid escape occurs, DATCP only assists with evaluating the disease status and leaves it up to the DNR to deal

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			with escaped animals. Fences for farm raised deer that are not white-tailed deer are not inspected prior to registration. Fence standards for these deer can be found in s. 90.20, Wis. Stats. Any subsequent problems with such fences is regulated under ch.90,

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
			Wis. Stats., and it is currently the responsibility of the township chairman and the township fence committee. Fences for farm raised white-tailed deer that are required to obtain a fence inspection certificate from DNR prior to applying for

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Completed

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			registration with DATCP. Fence standards for these deer can be found in ch.NR 16, Wis. Adm. Code. Any subsequent problems with the fences is regulated under s. 90.21, Wis. Stats., and falls under the authority of the DNR. Escaped farm-raised deer can put Wisconsin's ecosystems, domestic agricultural animals and native

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
			populations of deer and elk at risk by (1) transmitting significant infectious diseases such as bovine tuberculosis or chronic wasting disease, (2) establishing a feral population of a non-native species of cervid, or (3) interbreeding with native cervids (for example, elk/red deer). Therefore, monitoring and developing action plans for dealing

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			with escaped cervids are a high priority. It is imperative that DNR staff expedite evaluation of the potential impacts of all escaped cervids and initiate appropriate responses including destruction of the animals as authorized under s. 29.875, Wis. Stats.

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Completed

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			VI. REFERENCES *(i.e., Statutes, Administrative Codes, Manual Codes)* ch.NR 16, Wis. Adm. Code - Farm-raised white-tailed deer fence specifications, reporting of fence failures and escapes of

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			farm raised white-tailed deer. s. 29.875, Wis. Stats. - Disposal of escaped deer or elk. s. 29.924(5), Wis. Stats. - Department authority to access to priva land for addressing disease issues. s. 66.0119, Wis. Stats. - Special Inspection Warrants (Needed to

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Completed

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			protect animal & human health) s. 90.20, Wis. Stats. - Fencing of farm-raise deer that are not white-taile deer. s. 90.21, Wis. Stats. - Fencing of farm-raise deer that are white-tailed de s. 95.55, Wis. Stats. - Registration (DATCP) requirements for farm-raised

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Deer 2000 Recommendations -

Statutory and/or Administrative Action Required

Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			deer. s.http://folio.legis.state.wi.us/cgi-bin/om_isapi.dll?clientID=82929&obase=stats.nfo&j1=895.46%281%&jump=895.46%281%29&softpagrowse_Frame_Pg169.37(3), Wis. Stats. - Illegal to prohibit inspectio of white-tailed deer farm records related to fence certification.

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Deer 2000 Recommendations -

Statutory and/or Administrative Action Required

Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			s. 169.38(1), Wis. Stats - Inspection Authority for white-tailed deer farm fences and related records. MC 9432.11 - White-tailed deer farm fence inspection and certification LE Handbook Policy OPS 24 - Escaped Captive Deer.

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Deer 2000 Recommendations -

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			Wildlife Management Operations Handbook, 2310.5 - Capturing Escaped Wild Animals 3. Current law authorizes DATCP to prohibit or regulate the importing of animals into this state and the movement of animals within the state if necessary to prevent the

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Deer 2000 Recommendations -

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			introduction or spread of disease. Current law also gives DATCP specific authority to promulgate rules concerning testing animals, including farm-raised deer, for diseases such as TB and CWD. DATCP has very specific requirements for the importation of cervids. A full description of which can be found here:http://datcp.wi.gov/Animals/An

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			imal_Movement/Deer_Elk/index.aspx#importing
24. The Feeding and Baiting Group recommends that the DNR continue and intensify monitoring of Wisconsin's wild deer and other sentinel species for TB and other emerging diseases.			Wisconsin wild deer have been monitored for TB since 2000. Once testing for CWD began in 2001/2002 all deer tested for CWD have been visually screened for TB and tested if abnormalities are identified. Wild elk are tested similarly. For deer not

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			submitted for CWD testing, wildlife staff are provided a sick deer call sheet to assist hunters when they note abnormalities in a deer carcass. Based on the lesions noted, TB or other testing is performed on these deer where warranted. Further, visual inspection is routine in mammalian necropsy & if lesions consistent with TB or if there are

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Deer 2000 Recommendations -

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Completed


Partially Completed


Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			findings consistent with other diseases of concern, the appropriate testing follows. To date, BTB has not been identified in wild deer, elk, or any other free-ranging mammals in WI.
25. We recommend that the DNR distribute a color brochure to all deer hunters that describes and illustrates signs of TB in deer to prevent a population disease problem.			A color brochure was developed for TB, CAS, and HD and this information has also been posted on our agency

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Deer 2000 Recommendations -

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			website on the Wildlife Health web pages. http://dnr.wi.gov/org/land/wildlife/whealth/issues/deerhealth.htm
26. The DNR should have the legal authority to increase control of baiting and feeding in the disease affected area and in a reasonable buffer zone ifa	✓	✓	This authority is in place and being used in response to CWD and TB in

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Deer 2000 Recommendations -

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
significant disease is found in Wisconsin wild deer.			wild and captive deer. Put in place by the legislature effective 4-28-04 under 2003 WI Act 240 pursuant to s. 29.337, Wis. Stats., and under DNR rules in s. NR 10.07.
27. If disease is found we recommend that the Isotope Strontium test be performed to determine where the affected animal came from.			
28. It is illegal to place food, salt, mineral blocks or other products that could be used as an attractant to deer within 50 yards of a dwelling used for occupancy from September 1st to the end of deer seasons with the	✓		This proposal has not been adopted and feeding remains legal during hunting seasons. Legislation has

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
exception of bird food that would be 4 feet off ground.			been introduced but never acted upon. Under 2003 WI Act 240 adopted by the legislature and which took effect 4-28-04, pursuant to s. 29.337, Wis. Stats., the DNR may not prohibit feeding of deer within 50 yards of a dwelling, provided: 1. The feeding site is not less than 100 yards from a roadway having a posted speed limit of 45 miles per hour or more.

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			2. There is not more than 2 gallons of material are at the feeding site. 3. It does not contain any animal part or animal byproduct.
Recreational Feeding (29 – 33)			
29. We recommend that recreational feeding be allowed from May 1 through August 31, with the same quantity as baiting (six gallons) within one hundred yards of a dwelling or habitable residence, with the exception of an	✓		Feeding is allowed year round with a 2 gallon limit that must be within 50 yards of a dwelling.

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
area where the discharge of a firearm is prohibited.			
30. Baiting quantities apply. One 6-gallon site per forty acres under the same ownership or one site per dwelling.	✓		One baiting site with up to 2 gallons of material is allowed per hunter for each area 40 acres or less during the open season, and one feeding site total per dwelling or business for non-hunting purposes year if located within 50 yards of dwelling or business.

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Deer 2000 Recommendations -

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
31. No feeding within 100 yards from a county state or federal highway or any hard surface road posted at 45 miles per hour or more.	✓		This regulation is in place.
32. Spin cast feeders or hand spread only. Feeding sites should be rotated to prevent disease.			Effective 5-1-05, under NR 19.60(1)(d), no person may place feed in a feeder designed to deposit or replenish the feed automatically, mechanically or by gravity. This rule thereby prohibits the use of spin cast or other automatic feeding

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			devices.
33. Feed should be spread over and restricted to a10 feet by 10 feet area.	✓		Spreading bait over an area is not required and no longer encouraged.
Supplemental Feeding (34 - 41)			
34. The committee recommends that supplemental feeding should be allowed. The allowable amount is three ten-gallon sites per forty acres or less.	✓		Only baiting for hunting purposes during the open deer hunting season,

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
35. Feed must be placed 300 yards from a county, state, or federal highway or hard surface road posted at 45 miles per hour or more.	✓		and recreational feeding for non-hunting purposes within 50 yds. of a dwelling or business open to the public is allowed. Supplemental feeding, which could be any feeding done outside of the hunting season and not near a residence or business open to the
36. Supplemental feeding should be allowed from the end of deer hunting season through April 30.	✓		
37. The DNR should have the legal authority to increase control of baiting and feeding in a disease affected area and in a reasonable buffer zone if a significant disease is found in Wisconsin wild deer.	✓		

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Deer 2000 Recommendations -

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
38. Feeding should be spread over and restricted to a 10 foot by 10 foot area of 10 or less gallons.	✓		public, is prohibited. Under 2003 WI Act 240, the legislature provided DNR with the authority to prohibit feeding of deer for any purpose in any of the following counties: 29.336(2) (a) A county in which the county or a portion of the county is in a chronic wasting disease control zone designated by the department by rule. (b) A county in which a positive test for chronic wasting disease or bovine tuberculosis has been
39. Spin cast type feeders or hand spread only. Feeding sites should be rotated.	✓		
40. Supplemental feed should be 300 yards from road and no feeding within 50 yards of public trails. Public trails on private land are exempt from supplemental feeding regulations.	✓		
41. We recommend that emergency feeding be allowed and be regulated by	✓		

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Deer 2000 Recommendations -

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Completed


Partially Completed


Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
the D.N.R.			confirmed in any captive or free-roaming domestic or wild animal after December 31, 1997. (c) A county in which the county or a portion of the county is within a 10-mile radius of the known location of a captive or free-roaming domestic or wild animal that has been tested andconfirmed to be positive for chronic wasting disease or bovine tuberculosis after December 31, 1997.

Believability of DNR Population Estimates (42 – 48)

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Deer 2000 Recommendations -

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
42. The Wisconsin Department of Natural Resources should continue to use the Sex- Age-Kill (SAK) population modeling method for estimating white-tailed deer population size. It is the consensus of this study group that the SAK is the best method for white-tailed deer population estimation available at this time.			We continue to use SAK calculations as our primary method for deer population estimation. We augment SAK with accounting models for units that had earn-a-buck regulations during the mid-2000 and use helicopter and fixed-wing aerial surveys for units in the CWD Management Zone due to frequent changes in hunting season

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			frameworks and unit boundaries.
43. An outside audit of the scientific methods of the SAK population estimation model should be completed. Recommendations for improvement of the SAK method should be implemented by the WDNR.			An independent review of the SAK population estimation method was conducted during 2005-06. The final report has been provided. A number of recommendations from the review have been implemented and research recommended has been initiated.

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Deer 2000 Recommendations -

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
44. To increase public confidence in deer population estimates studies must be conducted to evaluate the effectiveness, efficiency, reliability, and viability of alternative herd estimation methods including, but not limited to, helicopter surveys (visual and infrared / video), trail counts, hunter surveys, landowner surveys and deer-vehicle accident data indices. • Those methods that satisfy the criteria above should be implemented as verification to the SAK population model. • Alternative surveys should be conducted annually in selected management units within each deer management region as an ongoing verification of the SAK.			A helicopter survey of DMU 54A was conducted in 2001. Fixed-wing FLIR surveys were compared to helicopter quadrat surveys. An evaluation of distance sampling was initiated. An evaluation of the utility of deer-vehicle accident data for monitoring deer population changes is underway.

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Deer 2000 Recommendations -

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
• Verification surveys should be conducted periodically in management units where there is significant uncertainty about the accuracy of SAK estimates.			
45. Establish a method of measuring changes in public confidence in deer population estimates over time by utilizing the services of a professional firm specializing in survey design to: • Review the current DNR Hunter Survey. • Make recommendations for improvement of this survey. • Explore the value of enlisting the services of a research/survey firm to conduct future surveys.			The Gun Deer Hunter Survey included a question on the level of confidence hunters had in DNR's deer population estimates in Wisconsin during 1996-2001. During 2005-2011 the questionnaire included the question "the DNR's

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
• Expand surveys beyond September Open House attendees and DNR Gun Hunter Surveys to include other resource users and non-users.			population estimate for the deer herd in your area is: too low, about right, too high, don't know". Dr. Bob Holsman at UW Stevens Point conducted a survey in 2006 on what deer hunters think about SAK, and DNR credibility. He conducted a follow-up survey of deer hunters in 2008 on DNR credibility and deer

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			management.
46. WDNR should contract with a public relations / marketing organization to develop programs to educate the public regarding deer population estimating methods in Wisconsin. Program development should include: • Evaluation of past education initiatives including messages and methods of delivery. • Recommendations to produce the most understandable, unbiased, and comprehensive educational messages and effective delivery methods to reach adults, youths, and special interest groups.			Initial conversations were held with D.J. Case and Associates and UW Wildlife Extension regarding a marketing campaign related to deer population estimation. Further implication was deferred after the discovery of CWD in 2002. The independent review of the SAK deer

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
• Communication methods explored should include, but not be limited to, local meetings, distributed printed materials, videos, CD-ROM's, sports shows, expansion of the current "Deer Box" educational supplement effort, radio, TV, newspapers, billboards, the DNR and other websites, articles in sporting and other magazines and the Wisconsin hunter education program.			population estimation method was featured on the Deer Hunt TV show. A Wisconsin Natural Resource magazine article was published. Video segments explaining SAK and discussing the independent review are posted on the web site. *Investing in Wisconsin's Whitetails* was published in 2010 to increase awareness of DNR's actions for

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			improving deer population monitoring systems. Annual deer herd status meetings are held in March where managers explain deer population estimation and discuss estimates with the public. Staff have attended countless public meetings where SAK was explained and questions were answered about the model to further public

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			understanding. We also gave lectures at university courses.
47. The WDNR should review, enhance, and expand their efforts to educate DNR staff regarding deer population estimation in order for better, more consistent communication with the public.			All new wildlife biologist hires are given detailed training to understand and use SAK and the inputs and outputs. They also receive training in use of alternative population models. Since 2008 regional meeting have been held annually in February with

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
			wildlife managers to review and discuss deer population estimates. We annually developed speaking points for biologists and included the WI NR Mag article as reference material.
48. We recommend that the Wisconsin Conservation Congress monitor the DNR's implementation of recommendations from the Deer 2000 study groups, especially the contracting and financing of outside agencies,			The Conservation Congress was represented on the steering committee that coordinated the

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
organizations or firms referred to in the previous recommendations.			independent review of the SAK deer population estimation method. The Conservation Congress Big Game Study committee conducts at least three meetings a year where they were updated on progress and information was shared to educate on the use of SAK and alternative population models.

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Deer 2000 Recommendations -

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Completed


Partially Completed


Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
Herd Size Recommendations (49 - 64)			
49. Unit Goal Setting Criteria: We recommend that the administrative code be changed to add the following two factors to the criteria for setting deer population goals: first, hunter access to land in the unit; and second, ability to keep the herd at goal. We also recommend modifying the administrative code by changing "demand for hunting…" to "hunter success (harvesting and seeing deer)". Finally, we recommend keeping the following criteria in the code: deer viewing opportunities; crop damage; forest management impacts; vehicle-deer collisions; average winter severity; habitat conditions		✓	A rule was promulgated to incorporate these criteria in administrative code. We have used these criteria to consider goal changes in subsequent deer unit reviews. Done.

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
and carrying capacity; ecological impacts; transmission of disease; and Chippewa treaty harvest.			
50. Unit Boundary Setting Criteria: We recommend that the current boundary setting criteria continue to be used. This criteria includes: 1) boundaries shall be readily identifiable features such as roads and rivers; 2) boundaries shall encompass areas of similar land use, soils and vegetative cover; and 3) boundaries shall be large enough to permit accurate monitoring of herds. We recommend that boundary changes only be made where the above criteria are met and where a change is expected to solve a significant,			These criteria continue to be used to evaluate proposed unit boundary changes in deer unit reviews. Done.

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Deer 2000 Recommendations -

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
demonstrated problem.			
51. Deer Range Calculation: We recommend that deer range continue to be calculated using the current definition: all woodlands and wetlands in blocks of at least 10 acres plus a 330-foot buffer into adjoining croplands. We recommend that the 330- foot buffer strip be retained in the calculation, because dropping it would cause too much confusion and affect believability of numbers. We recommend that Conservation Reserve Program (CRP) fields only be included in deer range where they have sufficient brush, trees, or wetlands to meet the above definition (i.e. planted trees of density and			Deer range calculation continues to be done using this formula. Done.

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
maturity to be considered a woodland which is at least 10 acres in size by itself or with adjoining woodland).			
52. Expression of Deer Population Goals: We recommend that deer management unit (DMU) goals continue to be expressed as the number of deer per square mile of deer range. However, we also recommend that any communication with the public on goals also include the total over-winter and pre-hunt deer populations for units when at goal.			We continue to express deer population goals as densities but also include unit-wide total numbers when communicating with stakeholders. Done.
53. Local Deer Management Unit Reviews for Goals and Boundaries: We recommend that local unit reviews include goal discussions for 52 units: 1, 3,			The deer unit review that occurred during Deer 2000 did include local

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Completed

Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
5, 6, 7, 10, 11, 13, 14,15,28,29A, 29B, 30, 31, 32, 34, 39, 40, 41, 44, 45, 50, 53, 54A, 56, 57A, 57C, 59A, 62A, 62B, 63A, 65A, 65B, 66,67A, 67B, 68A, 68B, 69A, 69B, 70,70B, 70E, 70G, 71,73E, 74B, 76A, 77B, 77C, and 78. We recommend that local unit reviews include boundary discussions for 9 units: 1,7, 13,45, 59C, 67A/B, and 69A/B. These units are recommended for review based on a Herd Size Group analysis. This analysis considered ecological, socio-economic, and management capability concerns. It considered concerns expressed by the public, professional wildlife managers, various experts, and the tribes. By placing units on this list, the Herd Size Group does not necessarily endorse changes in unit goals or boundaries, but believes			reviews with stakeholders of the listed units. Done.

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
there is enough concern to justify a local review.			
54. 2000 Deer Management Unit Review Process: We recommend that the unit review process include the following: 1) Public meeting held for 2-4 adjacent units at a site near these units; 2) 2 hours scheduled for each unit; 3) publicity to get good attendance by a diversity of stakeholders; 4) facilitator leads each meeting; 5) Conservation Congress registers participants; 6) supporting information on goal and boundary criteria provided in large graphic format on walls with first half-hour being open house style for public review of this information; 7) wildlife managerreviews local unit data and			The deer unit review that occurred during Deer 2000 was administered exactly as suggested. Done.

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
issues; 8) public testimony; facilitator leads group toward a compromise recommendation that most interest groups can live with; 9) group self-evaluation of preliminary recommendation including impacts on ecology, socio-economic issues, and management effectiveness; 10) final recommendation developed by group and forwarded to Herd Size Group; and 11) Herd Size Group forwards local recommendations to Natural Resources Board along with comments on the recommendations.			
55. Deer Management Unit Goal and Boundary Recommendations: We recommend that deer population goals be increased in units 3, 5, 69A, 71,		✓	The recommendations for goal increases and decreases were

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
74B, 76A, 77B, and 77C. We recommend goal reductions in units 10, 15, 41, 50, 53, 54A, 56, 57A, 62A, 62B, 63A, 65A, 65B, 66, 67A, 67B, 68A, 68B, 70, 70B, 70E, 70G, 73E, and 78. We recommend that the urban deer issues in and around Superior be addressed with a subunit or metro unit. We recommend that the urban issues in a portion of 69B be addressed by adding this area to metro unit 77M; the remainder would be added to 69A.			considered and some made it through Natural Resources Board approval in a rule order. A metro unit was formed around Superior, and unit 69B was incorporated into metro unit 77M. Done.
56. Deer Management Unit Goal and Boundary Recommendations: We recommend that deer population goals be increased in units 3,5,69A, 71,74B, 76A, 77B, and 77C. We recommend goal reductions in units 10,		✓	Duplicate of 55.

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
15,41,50,53,54A, 56, 57A, 62A, 62B, 63A, 65A, 65B, 66,67A, 67B, 68A, 68B, 70,70B, 70E, 70G, 73E, and 78. We recommend that the urban deer issues in and around Superior be addressed with a subunit or metro unit. We recommend that the urban issues in a portion of 698 be addressed by adding this area to metro unit 77M; the remainder would beadded to 69A.			
57. Future Deer Management Unit Reviews: We recommend that deer management unit reviews continue to be held on a 3-year interval. We recommend that all units have a local review meeting every 3years. We suggest that the same criteria be used to evaluate the need for goal and		✓	Administrative code continues to require unit reviews every 3 years. The next unit review was initiated 3 years after the Deer 2000 review was

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
boundary changes as were used in the 2000 review. We support use of the same local public meeting format as for 2000. We also recommend that a diverse review committee be appointed to study relevant data and make recommendations to the Natural Resources Board on needed goal and boundary modifications. The Natural Resources Board would then consider local public input, review committee input, and Department recommendations in making their decisions.			completed. However, it was an abbreviated review evaluating only units that stakeholders expressed a desire to change, due to the "all hands on deck" approach to the response to CWD discovery. We used the same criteria for evaluating goal and boundary changes. In the unit review after that, we did put together a diverse review committee

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
			to make recommendations to the Natural Resources Board. Done.
58.Hunting Season Framework: We recommend the following season framework to optimize hunting opportunities for a diversity of hunting interest groups and to control herds that cannot be brought down to goal with a normal hunting season framework. The regular season offers consistency and flexibility, because herd control recommendations can be applied during the season structure offered in the regular season for those units and years where additional herd control is needed.		✓	These hunting season recommendations were implemented through promulgation of an administrative rule soon after Deer 2000, except that the final outcome for the archery season was a shorter expansion into January, and

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
Regular Statewide Season **Gun** • Traditional 9-day season (buck plus quota). • 4-day, Thursday-Sunday, antlerless only by permit (Hunters Choice, Bonus tag, etc.), beginning 2 weeks after Thanksgiving. **Muzzleloader** • Beginning day after the 9-day gun season for 10 consecutive days.			the use of archery equipment during gun season was only recently promulgated as a rule. Done.

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Partially Completed


Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
• Gun license back tag for buck plus antlerless permits by quota. • Same weapons restrictions as apply now. **Archery** • Start early season on Saturday closest to September 15th. • End early season on the Thursday before the regular 9-day gun season. • Start late season the day after the regular gun season. • End the late season on the Sunday closest to January 15th. • Antlerless only during the 4-day, Thursday-Sunday, December gun season. • Archery equipment to be legal weapon during 9-day gun season using			

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Partially Completed

Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
gun license. • Either-sex back tag plus additional antlerless deer by bonus permit.			
59. Herd-Control Season: Zone T Rules A DMU shall have a Zone T Herd-Control Season if it is expected that the unit deer herd cannot be brought to within 20% of goal in one year with the regular season framework. Harvest quotas needed to reduce the herd to that level will be compared to historic maximum harvests to make that determination. The regular season format, proposed above, would still apply to provide		✓	This recommendation was promulgated in a rule and continued to be in use until the legislature adopted a statute prohibiting an October antlerless hunt in 2011. However, the criteria are still used to determine which units should be labeled herd control units. Antlerless

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
consistency and predictability. However, additional opportunity to harvest deer by gun would be provided to reduce the chance that a unit would need to have Zone T rules for multiple years. • Regular season framework continues as described above. • 4-day, Thursday-Sunday, late-October, antlerless deer gun season • 3free tags issued per license • additional bonus tags can be purchased at normal price • gun back tag would be valid for either sex • applies to Metro DMUs if they meet the criteria			deer tags were made available at $2 each with no limit in herd control units. Tagging confusion resulted in separate tags for bucks and antlerless deer. Done.

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
60.Herd-Control Season: Earn-A-Buck Rules A DMU shall have an Earn-A-Buck Herd Control Season if it is expected that the herd cannot be brought to within 20%of goal with a third consecutive year of Zone T Herd- Control Seasons (i.e. had T-Zone past 2years). In addition, a DMU shall have an Eam- A-Buck herd control season if it is expected that the herd cannot be brought to within 20% of goal with 3 years of T-Zone regulations		✓	This earn-a-buck recommendation was promulgated in a rule, which was used several years after first giving herd control seasons and low cost tags to work for 2 years. Hunter angst resulted in suspension of use of this herd control tool in recent years. The legislature adopted a bill to

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
based on past history (i.e. not in T-zone past 2years, but known that T-zone won't do the job). This is a regulation of last resort because it forces changes in hunter behavior and it violates assumptions in the Sex-Age- Kill model, making herd size estimation and quota determination difficult for several years following. Earn-A-Buck Rules: • Same season framework as for Zone T herd-control season			prohibit use of this tool in 2011. Done.

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
• Same permit incentives as for Zone T herd-control season • A hunter would have to harvest and tag an antlerless deer prior to harvesting a buck. Either of the following would be allowed: 1) both an antlerless deer and a buck could be harvested and brought in together to a registration station, or 2) an antlerless deer can be registered, where the hunter's back tag would be validated to allow for subsequent harvest of a buck. • Can validate a buck tag on any deer license by shooting an antlerless deer with any weapon.			
61. Other Hunting Regulations	✓	✓	Subunit herd reduction areas were not established, but agriculture

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
We SUPPORT: Subunit Herd Reduction Areas with special tags to address local problem areas; a landowner liability law to require hunting access or liability in certain situations; 1-day Saturday youth gun deer hunt; continuing use of shooting permits to abate deer damage to crops; deer baiting prohibition; statutory authority to regulate supplemental feeding in case of disease or ecological impact; supplemental feeding restriction September 15 to December 1; group buck bagging prohibition; party permits in units that typically have less Hunters Choice permits than applicants; and reduced price bonus permits after the first is purchased at full price.			damage shooting permits continued to be made available to deal with agricultural damage. A 2-day youth gun deer hunt was established. Supplemental baiting and feeding were limited through statute adoption. The recommended prohibition on group bagging of bucks was not adopted. The hunters' choice system was abandoned in

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
We OPPOSE: making antlerless deer permits specific to private or public lands; dropping the Hunters Choice permit system; one antlerless deer quota for all weapons; disabled hunter pistol season concurrent with the muzzleloader season; one buck limit per hunter per year; muzzleloader deer hunting license required for muzzleloader hunting and entitling holder to one antlerless deer; bonus permit price break late in the season; lower price for all bonus permits; separate buck and antlerless deer licenses with lower price for antlerless deer license; gun license for antlerless deer with buck harvest limited by lottery permit; and either-sex muzzleloader			favor of a buck tag with a license plus purchase of antlerless tags, except in herd control units where a free antlerless tag came with the license and additional antlerless tags could be purchased for $2 each. Partially done.

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
in October season.			
62. Deer Management Funding Source: We recommend that deer management no longer be funded only by hunter license fees and excise taxes on their equipment. A broad-based public funding mechanism is needed to help pay for deer management, deer population monitoring, deer research, deer venison processing for food pantries, enforcement, and deer impact monitoring. Our primary recommendation is for greater allocation of sales and income tax revenue for wildlife management, research, and enforcement.	✓		The department advanced a decision item for legislative consideration as part of the 2001-03 biennial budget, but it was not approved. Ideas for broad-based public funding for deer or wildlife management

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
			have not been adopted by the legislature, except for the Stewardship Fund for land acquisition. Not done.
63. Funding and Positions Needed to Implement Recommendations: We recommend that each county have a minimum of 1 wildlife manager and 1 technician; increasing the warden force and the number of researchers working on deer management issues; a position be created in the central office of DNR to help handle the incredibly large deer management	✓		The number of wildlife manager, technician, warden and research positions was not increased. Food pantry costs are covered in the animal damage program funding that

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
workload (this person would focus on public outreach and involvement); a position be created to coordinate and develop partnerships to boost funds and labor available for wildlife, and particularly, deer management; more funds be made available to run deer surveys, including new surveys on ecological and socio-economic impacts; and more funds be available for venison processing costs for food pantry donations. We specifically recommend allocating $1 million in general tax revenue annually for deer research and deer impacts monitoring, food pantry venison processing costs, and establishing routine programs for public involvement in deer management decisions. We recommend that additional general tax revenue			comes from surcharges on hunting licenses and bonus deer tag sales. No GPR was allocated to deer research, monitoring, etc. Wildlife Restoration Act (PR) funds are now being used to do some of the suggested deer research. Mostly not done.

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
be allocated to support the increased number of positions mentioned above.			
64. Needed Research and Data Collection: We recommend research or surveys on: winter severity impacts; northern forest carrying capacity; deer impacts on the forest industry; role of deer in oak regeneration problems; Conservation Reserve Program acreage by Deer Management Unit; vehicle/deer collision rates by Deer Management Unit; browse index to monitor deer impacts on trees, shrubs and herbaceous plants; deer impacts on other mammals and birds; total agricultural damage by deer	✓		Vehicle/deer collision data has been analyzed and a final report is being prepared. A deer browse index has been added to the Wisconsin's Continuous Forest Inventory which is conducted on state forests. Research on how different deer densities

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
management unit; effects of the 330-foot cropland buffer included in the deer range formula; effects of feeding on carrying capacity and local ecological impacts; effect of reducing a unit deer herd on vehicle/deer collision rates; Sex-Age-Kill model validation; economic feasibility of alternative deer herd control methods; transmission of tuberculosis and chronic wasting disease; sociology of hunter number maintenance; relative value of hunter incentives for increasing deer harvest; effects of penned wildlife on wild deer diseases; effectiveness of current testing programs on penned wildlife disease management; and effectiveness of natural predators			impact Wisconsin's forest ecosystems is underway. Two large predator projects are also underway.

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
on deer herd control.			
Sex and Age Structure of the Herd (65 - 67)			
65. One buck per hunter per year. (State-wide, by DNR region or by DMU) This restriction means that only one buck per hunter per year may be harvested, regardless of weapon/season choice.		✓	Not implemented for lack of support to limiting hunters to only one buck
66. Eliminate group bagging for bucks. (State-wide, by DNR region or by DMU) Group hunting will still be allowed for gun-antlerless. Currently, no group	✓		Not implemented for lack of support.

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
hunting is allowed for how. This would not change.			
67. Antler point restrictions. (State-wide, by DNR region or by DMU) A. North of Highway 64, restrict bucks harvested to only those with at least 3 points on one side. B. South of Highway 64, restrict bucks harvested to only those with at least 4 points on one side.		✓	There was not public support for doing this at the time of Deer 2000. Concept not supported in statewide CC question in 2010, with 58 counties rejecting, 10 approving, and 4 tied.

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
Forestry (68 - 75)			
68. Reduce the current herd size down to the existing sex-age-kill (SAK) goals for each DMU within the next 1-2 years by: • See Herd Size Season Structure Above • Establish a system that allows flexibility to change the hunting season in response to other factors such as natural cycles.		✓	Herd size has remained above goals for many units in many years.

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
69. Begin research projects that will assess the ecological impacts of the herd size. This research should continue once the herd reaches the existing SAK goals and is maintained at those goals for an extended period of time. Research would include: • Ecological research • Baiting and Feeding impacts on the environment • Survey/Harvest Data			Research is underway to investigate the relationships between deer densities, habitat, deer physiological responses, and forest ecology. Some small studies on the impact of baiting and feeding have been conducted in relation to CWD. Weather cycles are followed with our winter severity index in northern

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
• Impacts of long- and short-term weather cycles			Wisconsin where weather is a limiting factor. Research is being conducted to improve our understanding of buck and fawn mortality and how that related to harvest/survey data we use to manage our deer population.
70. Develop an informational and outreach program for the general public that describes the ecological impacts of the herd size. These programs should			Ecological impacts are usually raised by a small minority of attendees at

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
lead to and encourage actions that protect the social, economic, and ecological values for all of Wisconsin's natural resources.			deer meetings, but there has not been an outreach program developed. The one exception is Bayfield County who built large deer exclosures to improve forest regeneration and to use them as demonstration areas.
71. Baiting and Feeding • The results from the June questionnaire do not support a ban on baiting			There has not been research conducted to assess the ecological

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
and feeding. However, results of the June Survey do show that 44% of respondents believe that baiting should be eliminated. Further 67% believe baiting should be limited to not more than 5 gallons. In addition, the results clearly do support conducting research to evaluate the forestry and ecological impacts of baiting and feeding (Sixty-six percent of respondents supported this concept whereas 19% did not). If research does determine that baiting and feeding impacts are detrimental to forest health and sustaining ecosystems, the study group recommends that those conclusions be applied to the development of management practices and regulations that minimize their impacts. A strong public information and outreach program should also be developed from the results of this			impact of baiting and feeding.

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
research.			
72. Hunter Ethics and Sportsmanship • Increased education of the hunting public and the general public. Several avenues to meet this objective include the development of property management plans, magazine articles, outreach to involve schools and community groups in trail policing, improvements, and cleanups. • The Forestry and Ecological damage group suggests creating of an atmosphere where non-ethical behavior is curtailed by peer pressure. This can be accomplished by encouraging a land ethic, more emphasis on hunter ethics in hunter safety courses, and challenging those who are not			

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 Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
ethical. • Lastly we recommend enhancing enforcement to help deter this type of conduct. This may be accomplished by hiring more enforcement personnel, raising fines for offenses, and forfeiture of hunting privileges for violators.			
73. Hunter Access to Private Lands • The Forest and Ecological Issues study group recommends continued support for maintaining the forest tax law programs (currently the Managed Forest Law). The study group encourages landowners to exercise their right to designate their land as "open" for public hunting due to the	✓	Managed Forest Law Admin. Code	Beginning with MFL entries effective January 1, 2005 a new tax rate formula has been in effect to calculate MFL rates. The rates will be calculated initially for 2005, and then

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
potential impact of high deer populations. Also within the Managed Forest Law, consider increasing the tax fee for closing acreage to hunting. • Provide additional landowner incentive programs to pay for public hunting access to private lands. The idea of incentive programs for private land access was supported by 51% of June survey respondents, while 23% opposed the idea. • Gather additional information from hunters to determine where deer are harvested. Deer harvest registration stubs should include a check-box indicating if the deer was harvested from public or private land. Develop information/education materials on the impact of deer on forests and ecological impacts for the private non-industrial landowners. These		updated to reflect rate changes.	recalculated for 2008 and every 5th year thereafter. The new formula sets the acreage share tax at 5% of the average statewide tax on forestland and the closed acreage fee at 20% of this average. Lands designated as *open* to public access pay the acreage share tax and lands designated as *closed* pay the acreage

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Recommendation	Statute change required	Admin Code change required	Status of Implementation
information materials and education efforts could be targeted initially for private non-industrial landowners in the tax law programs and small rural landowners living in the forest.			share tax plus the closed acreage fee. For MFL lands entered into the program during Deer 2000, the tax rates were $.74 per acre if *open* to hunting, $1.74 per acre if *closed* to hunting. For new MFL entries beginning in 2005, the rates were $1.46 for *open* vs.$7.28 for *closed*. In

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			the recalculation in 2008 the rates were $1.67 for *open* vs. $8.34 for *closed*.
74. Deer Damage Claims and Impacts • The Forestry and Ecological Issues Study Group recommends that damage caused ' by deer to forest vegetation and ecology be included in Wisconsin's Wildlife Damage Programs. Currently, under the *Agricultural Deer Damage Shooting Permit Program,*Department of Natural Resources staff have the discretion to issue shooting permits for nuisance situations	✓		This statutory change was never made or implemented.

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
caused by deer. We recommend that the Department promote the issuance of deer shooting permits in situations where deer damage forest vegetation and ecology and interpret these situations as a "nuisance". Information on shooting permit availability must be provided to the public. Due to societal demand for high deer numbers, we recommend the following modifications to the *Wildlife Damage and Abatement Claims Program:* 1)compensation for deer damage caused to commercial trees and other forest vegetation in areas where deer populations are 20% or more above established goals; 2) require lands enrolled to provide open access for hunters; 3)require the implementation of both lethal and non-			

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
lethal damage abatement measures prior to receiving compensation; and 4) compensate landowners for replanting costs. • Information on lands enrolled for deer damage to forest vegetation and ecology must be made available to the public. • The Department of Natural Resources must provide the necessary resources for staff to assess deer damage to forest vegetation and ecology. This may include, but is not limited to, training opportunities for staff and/or contracting with skilled forestry/environmental consultants. Expedient action must be made to address this recommendation to prevent further deer damage in forest ecosystems.			

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
75. Deer Ecology and Land Use • The Deer 2000 Forest &Ecology Study Committee recommends that several short term studies of the impacts of concentrated deer on the plant ecology be made as soon as possible. The study areas need to be located in each of the ecoregions of the state to identify impacts on each system. It is suggested that areas in the northern forest and central forest be chosen that are known for deer feeding, baiting, and related car and landscape damage. At least three areas in the farmland area need to be assessed that are known areas of agricultural crop damage (T-zones). These farmland areas should represent each of the three farmland ecoregions.			

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
• This committee recommends that an informational agenda be set to inform landowners and planners of the problem associated with feeding deer to include those mentioned in the assessment above. Native landscape plantings that draw wildlife without increasing survivability should be included in the informational agenda. Urban planners should be informed of the need for deer management in their planning. Roadside management adjacent to forested areas, and their subsequent attractiveness to deer, should also be addressed. If the above study indicates there is any impact to the successional plant communities in each ecoregion, then management alternatives to stop the practice of feeding and baiting, and to further increase harvest shall be			

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Not Completed

Recommendation	Statute change required	Admin Code change required	Status of Implementation
initiated immediately.			