

Wyoming Game and Fish Department

Limited-Quota Licensing System

December 1997

Management Audit Committee

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Executive Summary

***Chapter 1* Background and Description**

In 1997, the Game and Fish Department issued about 100,000 limited-quota, big-game licenses, reflecting the popularity of this pursuit in Wyoming. Hunting and fishing licenses accounted for nearly 60 percent of Department revenue in FY 97, the majority of which is derived from big-game licenses.

The Department uses an intricate system to regulate, process, and issue big-game licenses. Adding to the complexity of the system are the nearly 600 different area and type permutations and the large number of applicant classifications, including residents, nonresidents, landowners, youth, special applicants, and pioneer designations. Central to the Department's process is a computerized, random draw to issue licenses.

In our evaluation of the limited-quota draw, we found a system undermined by public mistrust stemming from previous mishaps and associated rumors. We also reviewed the newly

implemented preference point system which involves its own unique challenges. In this report, we identify options which may improve overall Department operations from the application through the drawing phase. While we recognize previous Department improvements associated with the limited-quota license process, further actions could help restore the public's confidence in the limited-quota license process.

Chapter 2 Preference Point Draw System

Finding 1: Preference Points Favor Consistent Applicants Over Others

Proponents designed the preference point system in 1995 to eliminate, or at least reduce, the opportunity for one applicant to receive two moose or bighorn sheep licenses before another applicant receives one in the same area. While this system generally meets its original expectations, it also results in other implications, not all of which have been received positively. Even with the implementation of a preference point system, our estimates show an extended wait of more than a decade in selected moose and bighorn sheep areas before all consistent applicants who applied in 1995 either drop out of the system or receive a license.

Our research identified a number of alternative license allocation mechanisms the Department could use to issue licenses. Each of these systems also has specific advantages and disadvantages. However, previous considerations of some of these alternatives have not included an objective analysis. In addition, this type of analysis often requires specific expertise in order to accurately describe the likely outcomes and subtle implications.

Since there are defined constraints on the allocation of moose and bighorn sheep licenses, such as the limited number of licenses available, no system is a panacea.

Recommendation: The Legislature may wish to modify the preference point system in light of known results and likely consequences.

If the results and consequences of the preference point system are acceptable, the Legislature may wish to let this system continue. On the other hand, if the results of the preference point system have not proven to be desirable, the Legislature should clearly identify the public policy goals of a preferable license allocation mechanism. Once an intended course is determined,

specialized advice is necessary to accurately describe the statistical implication of various systems. Under either course of action, the Legislature should require the Department to report periodically on the actual and expected results of the system.

Recommendation: The Department should obtain needed statistical expertise.

To date, discussion of the impacts of license allocation mechanisms has been largely opinion-based and imprecise, lacking the benefit of statistical modeling. Just as trained biologists and wildlife professionals are needed in game management, statistical expertise should be incorporated into decisions made about complex license allocation systems. The Department should acquire the necessary expertise or appoint an ongoing advisory board which can describe the implications and subtle consequences of various license allocation mechanisms.

***Chapter 3* Administration of the License Draw Process**

Finding 2: Application Processing Could Benefit From Key Changes

The most labor-intensive part of the license draw system is reviewing applications, contacting applicants who have made mistakes on applications, and entering applications in the system. We found that the Department could more effectively and efficiently process the applications, thus reducing the resources dedicated to application processing.

The Department could modify its application packet to make it easier to understand. Such action should reduce the number of mistakes applicants make on applications, and thereby reduce staff time spent correcting applications with mistakes.

We also found that the Department relies on an outmoded manual system to process limited-quota hunting applications. The Department is faced with additional time and cost to process applications because it uses an application form that must be manually entered by temporary data entry staff. As a result, it takes longer to process these applications than it would if the Department used technology to assist in processing.

Recommendation: The Department should develop ways to more effectively and efficiently process applications.

The Department noted that customer service is an important agency goal. Yet, we found that the Department's approach to customer service has been largely reactive. The Department could provide better customer service to applicants if it simplifies the application packet and uses technology to aid in processing.

Finding 3: The Public Lacks Assurances the License Draw System is Sound

We found that the Department issues most of its licenses without incident, but the agency still suffers from a pervasive image problem relating to the draw process. The Department has not been able to reassure its critics that the draw system produces valid and reliable results. We believe the Department can take more steps to reassure the hunting public that the draw system is sound.

We identified three areas in which the Department is at risk and needs stronger controls over the license draw system. First, there was insufficient time to test the draw system prior to implementation. Second, the controls over the system have not been independently reviewed. Finally, two agencies are involved in the draw process and their responsibilities have not been clearly defined.

Recommendation: The Department should strengthen its draw procedures.

The Department needs to ensure that the mainframe-based license draw system provides reliable results and has sufficient controls in place to support those results. We recommend that the Department contract for an independent system audit of the computerized draw system.

Once an initial review is conducted, the Department also needs to establish ongoing review procedures. Oversight of system changes could be fulfilled through a periodic review by an advisory panel of technical experts, or through an ongoing contract. The Department should

also develop a memorandum of understanding with ITD to formally establish roles and responsibilities for the draw system.

Conclusion

We found the Department processes the majority of hunting applications each year without incident, yet it suffers from a pervasive image problem. We believe that implementation of our recommendations could reduce some of the criticisms leveled against the license draw process.

The Department can more effectively and efficiently process applications, and it also needs to take steps to strengthen and establish controls over the draw system. In addition, the preference point system has been in place for three years, and the Legislature has an opportunity to assess the results of this new method of license allocation.

Introduction

A. Scope

W.S. 28-8-107(b) authorizes the Legislative Service Office to conduct program evaluations and performance audits. Generally, the purpose of such research is to provide a base of knowledge from which policy makers can make informed decisions.

In May 1997, the Management Audit Committee selected the topic of the Wyoming Game and Fish Department's license draw system. The Committee requested an analysis of the preference point system used to allocate bighorn sheep and moose licenses, as well as a general review of the Department's procedures to process and draw all limited-quota, big-game licenses.

Our research centered around the following questions:

- What are the effects of the preference point license draw system for bighorn sheep and moose? What alternative allocation systems have other wildlife agencies implemented?*
- What is Wyoming's system for processing hunting license applications? What level of technology is used to process those applications? Do other states use technology to provide efficiencies or cost savings?*

- *Does the Wyoming Game and Fish Department have sufficient controls to ensure the statistical accuracy and reliability of the draw system?*

Some licenses are available in an unlimited quantity, while others are limited in quantity. We did not evaluate the Department's procedures for issuing unlimited general hunting licenses. Our review focused on the Department's limited-quota licensing processes, specifically on big-game licenses. As defined in statute, big-game includes pronghorn antelope, elk, mule deer, white-tailed deer, moose, bighorn sheep, and mountain goat. The Department also processes limited-quota applications for turkey and bison hunts, but we did not review agency practices associated with the issuance of these licenses.

This evaluation does not provide an assessment or recommendations regarding access issues on private lands, nor did we evaluate allocation issues such as outfitter set-asides or complimentary licenses. We evaluated the general controls in place to draw licenses, but we did not conduct a technical systems audit of the computer program used to draw licenses.

B. Methodology

This evaluation was conducted according to statutory requirements and professional standards and methods for governmental audits. The research was conducted during September and October 1997.

In order to compile basic information regarding the Department's limited-quota licensing process, we reviewed relevant statutes, rules, policies, annual reports, budget documents, professional literature, as well as other internal reports and studies. We also contacted other states and professional organizations to gather information about alternative methods of providing limited-quota hunting licenses and innovative, cost-effective measures to process license applications.

We interviewed key personnel and Commissioners from the Wyoming Game and Fish Department, as well as public interest groups and hunters to gather information about the license draw. To assist with our analysis of several license allocation alternatives, we consulted with a professor of statistics. In addition, we contracted with a linguist to provide an independent assessment of Wyoming's hunting applications and sent mail surveys to resident and nonresident hunters to determine satisfaction levels with the current process.

C. Acknowledgments

The Legislative Service Office would like to express appreciation to those who assisted in this research, especially to the Wyoming Game and Fish Department, members of the Commission, and staff at the Information Technology Division in the Department of Administration and Information. We also thank the many state officials, hunters, and public interest groups who provided their insights for this report.

Chapter 1

Background and Description

Big-game hunting is a popular pursuit in Wyoming for both residents and nonresidents. Because there is greater demand for many licenses than supply, limited-quota licenses are issued through a draw system. For many hunters, successfully drawing a license in a favorite area for a preferred species can generate a great sense of excitement. In contrast, repeated failures in the draw system can bring about discontent, indignation, or even suspicions of inequity.

The Wyoming Game and Fish Commission (the Commission), under W.S. 23-1-302, fixes season and bag limits, shortens or closes seasons, and prescribes the requirements and form for the licenses and tags provided throughout statute. The Wyoming Game and Fish Department (the Department), under the direction of the Commission, is charged with control, propagation, management, protection, and regulation of all Wyoming wildlife.

Classifications of Big-Game License Draws

Hunters apply for limited-quota licenses through an application process, and licenses are allocated through competitive draws. There is a finite number of limited-quota licenses, and they are valid in specified hunt areas or portions of a hunt area, for a specified sex, age class, or species during specified season dates.

When the number of applicants exceeds the quota, the Department uses random computer draws to award licenses. The Department initially awards licenses through "regular draws," with a separate draw for each big-game species. Licenses not issued in the regular draws for antelope,

deer, and elk are offered through "leftover draws." The Department calls licenses available after the leftover draws "issue-after" licenses, and these are allocated on an as-processed basis.

Each draw has specific applicant characteristics and unique hunt area restrictions. The classifications are described below, while a glossary, located on page 3 of the report, defines many of the unique terms associated with the license draw system.

By Restrictions: Both general and limited-quota licenses are valid only in certain geographic sections of the state. The wildlife division uses these sections, called hunt areas, in its complex system of big-game herd management. The numbering systems and boundaries of hunt areas vary across species.

Within many of the hunt areas, licenses for these species are further restricted by "type." A type is a limitation in a hunt area. The main restrictions that the type designates are: a sex limitation (i.e. the license is good only for a male animal); a weapon limitation (i.e. the license is limited to archery hunters); a geographic limitation (i.e. the license is limited to a certain drainage within a broad hunt area); or a time limitation (i.e. the license is only valid during one week of a broader season in the hunt area).

Some types may include a combination of restrictions; some hunt areas may only contain one type, while others may contain several. Table 1 shows the number of limited-quota areas and the types within those areas for each of the big-game species we reviewed. The complexity of area and type designations is further discussed in Chapter 3.

Table 1: Summary of Hunt Areas and Types		
Species	Number of Areas	Number of Types
Antelope	112	189
Deer	70	97
Elk	104	227
Bighorn Sheep	15	15

Moose	34	57
Mountain Goat	1	1
TOTALS	336	586
Source: LSO analysis of big-game regulations.		

By Applicants: *There are distinctions as to who can apply for licenses, the broadest being between Wyoming residents and nonresidents. Unlimited general licenses are not available to nonresidents. All licenses available to nonresidents are limited. Furthermore, by statute and Commission rules, limited-quota licenses are divided in certain percentages between residents and nonresidents. Within the resident and nonresident categories, landowner licenses are available to property owners within the hunt area where they own property. These licenses are drawn before the regular resident and nonresident license draws but cost the same as regular licenses.*

By Price: *There are also different fees associated with certain licenses and the individuals who can apply for them. Fees differ between resident and nonresident licenses. Special licenses cost nonresidents an additional fee above the regular nonresident fees to be considered in competitive draws for elk, deer, and antelope. Applicants who paid the special license price are allocated a certain percentage of the licenses available to nonresidents, after the landowner licenses are drawn.*

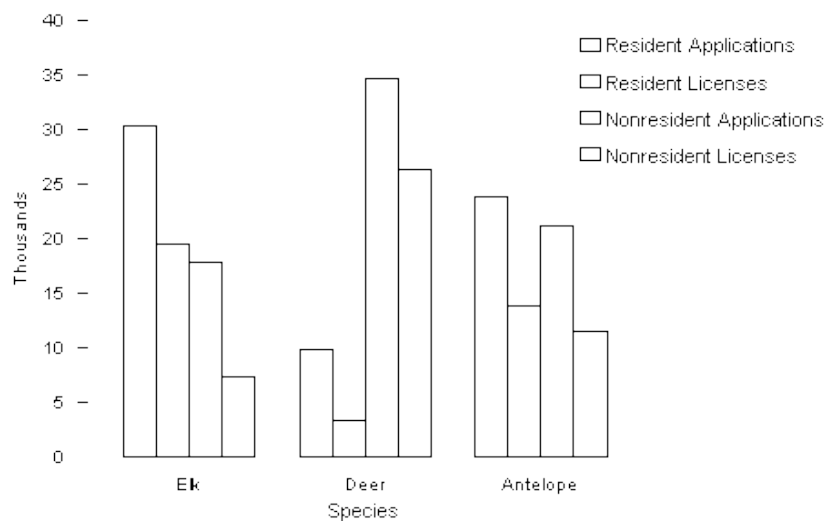
Youth licenses for elk, deer, and antelope are available at a reduced price to both resident and nonresident applicants between the ages of 11 and 18. Youth licenses are granted a different license price, but are drawn in the regular resident and nonresident draws. Finally, pioneer license prices are available to residents who have attained age 70 or older and have continuously resided in Wyoming for 40 years for elk, deer, and antelope. These applicants are also drawn in the regular resident draws.

Limited-Quota License Regular Draws

In 1997, the Department received 92,106 resident and 76,536 nonresident applications for limited-quota big-game licenses in the regular draws. The Department issued 83,046 licenses in

these draws. Figure 1 shows the number of limited-quota applications and licenses issued for elk, deer, and antelope.

**Figure 1: 1997 Elk, Deer, and Antelope
Regular Draw Results**



Source: LSO analysis of Department data.

Licenses for moose, bighorn sheep, and mountain goat are even more limited in supply. Table 2 shows the number of 1997 resident and nonresident applications and licenses allocated for each of these three species.

Table 2: 1997 Moose, Sheep, and Goat Results

Table 2: 1997 Moose, Sheep, and Goat Results				
	Resident Applications	Resident Licenses	Nonresident Applications	Nonresident Licenses

Moose	18,405	1,043	1,157	177
Bighorn Sheep	7,078	192	1,721	64
Mountain Goat	2,649	9	93	3
Source: LSO analysis of Department data.				

Final License Allocation Outcomes

Commission regulations require 80 percent of the total available limited-quota antelope and deer licenses to initially be offered to residents. Further, regulations require 16 percent of the total available limited-quota elk licenses, not to exceed 7,250, to initially be offered to nonresidents in the regular draw. Statute requires the Commission to reserve 80 percent of moose and 75 percent of bighorn sheep licenses in any one year for resident hunters. In practice, however, many of the licenses offered in the regular draws are undersubscribed, meaning that there are fewer applicants than the number of licenses available in certain hunt areas. The Department offers these available licenses to other applicants.

After all draws are complete, the final percentages of licenses allocated to residents and nonresidents do not resemble the percentages outlined in statute and rules for the regular draws. Statutes and regulations limit only the availability of licenses initially offered in the regular draws, and many license types are undersubscribed. Thus, the actual percentages awarded do not mirror the statutory percentages for antelope, deer, and elk.

Table 3 shows the results of licenses allocated as of October 23, 1997. The results include leftover and issue-after licenses, but do not include resident general or nonresident region general licenses.

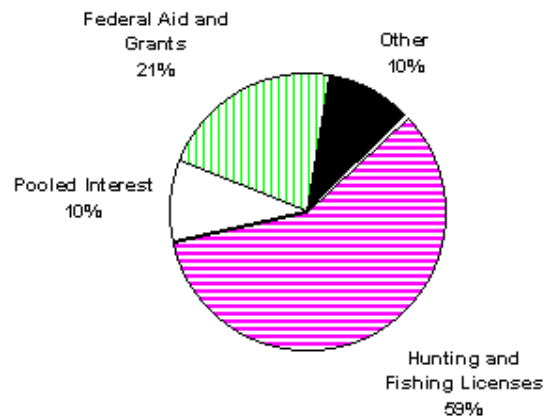
**Table 3: 1997 Antelope, Deer, and Elk
(Non-General) Licenses Issued**

	Resident Licenses	Nonresident Licenses	Resident Percentage	Nonresident Percentage
Antelope	15,761	17,608	47%	53%
Deer	4,512	3,410	57%	43%
Elk	21,762	5,270	81%	19%
Source: LSO analysis of Department data.				

License Revenue

Hunting and fishing licenses account for 59 percent of the Department's revenue. In FY 97, hunting and fishing licenses generated \$18,205,010. General and limited-quota big-game licenses accounted for more than \$13.5 million, or 75 percent of total license revenue. Figure 2 illustrates Department revenues received during FY 97.

Figure 2: FY 97 Department Revenue



Source: LSO analysis of Department data.

The "Pooled Interest" category includes interest generated from license fees, which are deposited until processing and the draws have occurred. We estimate that license fees earned at least \$298,000 in interest during the 1997 license issuance process. These interest earnings range from one cent for some resident applications, to \$8.65 for individual, nonresident bighorn sheep or mountain goat applications.

Included in the "Other" category are nonresident application fees. W.S. 23-2-101 (e) provides for a \$10 application fee beginning on January 1, 1997. This nonrefundable application fee generated \$804,700 in FY 97. Statute does not require residents to pay an application fee.

Processing Applications

The Department's fiscal division is responsible for selling and accounting for all licenses, while its license draw section is principally responsible for limited-quota draws. The section maintains five full-time employees and contracts with a temporary service for 2 to 14 data entry employees during periods of the year when processing license applications. Appendix B shows dates of the licensing cycle.

Application Information Distribution. *The cycle for allocating limited-quota licenses begins in late November, when the Department distributes application packets to license agents and Department regional offices. The Department also mails application "packets" to nonresident*

hunters who applied for a license the previous year. This packet contains the forms necessary to apply for limited-quota licenses, as well as tentative season information, application instructions, and general hunting information.

The application packet provides a telephone number if applicants need assistance when applying for a license. Contract staff in the customer service section are responsible for answering questions. According to agency officials, the phone lines receive over 100,000 phone calls a year, and the majority of those relate to hunting license questions.

Season-Setting Process. The wildlife division sets minimum license quotas and season opening dates, but does not finalize seasons until the spring, after mortality and harvest data is available. Thus, the application packet, which is issued before then, contains tentative information based on Department game wardens' and biologists' estimates of worst-case scenario. To refine the initial estimates, the wildlife division uses the mortality and harvest data as well as comments from a series of public meetings held around the state. The Commission meets in late April or early May to finalize its regulations setting the seasons and quotas for the year.

License Processing. Several sections and numerous staff are involved in license processing. The mail room and front counter receive applications, after which license draw section staff assign control numbers to applications and fees. Fiscal division employees enter receipts for the fees and deposit the funds. Temporary data entry staff enter applications into the computer and run a number of edit checks against the applications to ensure that the applications are valid. If an application contains a mistake, a permanent Department employee researches the problem and may contact the applicant for clarification or additional information.

Drawing Licenses. Since 1973, the Department has used a computerized random license draw system operated by the Information Technology Division (ITD) of the Department of Administration and Information. The system to draw limited-quota licenses is housed on the mainframe computer at ITD.

Issuing Licenses and Refunds. When the draws are finished, information is printed on blank license stock specific to each type of license. The Department mails successful applicants their licenses and the final regulations. The State Auditor's Office processes refunds of the license fee for unsuccessful applicants.

The Department estimates costs of the license draw process were \$515,341 for FY 97. These expenditures include all permanent employee and contract data entry costs, ITD processing charges, application and form printing, as well as other draw-related charges. The cost of postage for applications, refunds, or licenses is not included, as all agency postage is paid from a separate budget.

The Computerized Draw Process

The actual drawing procedure is similar for all the species in the limited-quota license draws we reviewed. For each, the license draw section staff load the total quotas for each area into the computer prior to the draw. These quotas determine the percent of licenses that will be available for residents and nonresidents, and for the nonresident special and the nonresident regular draws for elk, deer, and antelope.

ITD's mainframe computer has an internal random number generator. This copyrighted generator creates a nine-digit random number for each applicant included in a particular draw. Each random number is between 0 and 1 (i.e. 0.362598731), and each number assigned has an equal chance of occurring. The computer assigns the random numbers immediately prior to conducting a draw.

The computer sorts the random numbers from lowest to highest for the applicants queried. The computer then selects the application with the lowest random number and reviews an applicant's first choice for area and type. It assigns the license if sufficient quota is available for the desired area. Antelope, deer, and elk applicants are allowed to enter up to five choices on an application, in case licenses in some areas and types have already been awarded. Beginning in 1998, these applicants will only have three choices, while moose applicants will have two.

The computer initially processes all first choices on all applications. If an area and type is full, and an applicant's first choice cannot be fulfilled, that application is suspended in a temporary file until the computer has reviewed and assigned licenses to all available first choices. The computer retrieves the applications held in the temporary file and goes through the same process, using the application's same random number, for second, third, fourth, and fifth queries.

Antelope, Deer, and Elk Draws. *Generally, the Department conducts a drawing in the following order. It divides the quotas between the resident and nonresident draws. For antelope and deer, the resident draws are conducted first, and any licenses unissued from this draw are added, or "rolled" over, to the nonresident quotas. Landowner licenses in both the resident and nonresident draws are selected first. The Department issues licenses to landowners without participating in a competitive draw unless the number of landowner applications exceeds the number of licenses authorized for the hunt area. Licenses remaining after the landowner draws are then available for other draws. For the nonresident draws, the Department divides the remaining quota between the special nonresident licenses and the regular nonresident licenses. The special licenses are drawn before the nonresident regular licenses.*

Bighorn Sheep and Moose Draws. *There are no landowner or special licenses available for bighorn sheep and moose draws. Instead, a preference point system is used to allocate licenses. Chapter 2 describes this system. Based on the resident and nonresident quotas for bighorn sheep*

and moose licenses, the resident draws are conducted first. If there are any licenses remaining after the nonresident draws, the nonresident remaining quota is queried against the remaining unsuccessful residents.

Image Problems Plague the Department

The process to issue big-game, limited-quota hunting licenses is complex. The Department has routinely processed and issued thousands of hunting licenses each year under an intricate game management system. Officials point out that because the Department closely manages wildlife resources and has developed a draw system compatible with management objectives, the quality of the hunting experience is better in Wyoming than in surrounding states.

Yet some high profile mishaps have harmed the Department's credibility over the past few years. While the mistakes involved relatively low percentages compared to the volume of licenses processed (205 "lost" applications in 1996, and 100 hunters receiving both moose and sheep licenses in 1997), the negative impact of these mistakes continues to hound the agency.

In addition to actual mishaps, we found the Department suffers from a pervasive image problem with regard to its licensing system. Department literature, newspaper articles, and numerous interviews with agency personnel, hunters, and interest groups acknowledged this theme. Allegations of wrongdoing continue to color the public's impressions of the agency. For example, rumors still circulate to the effect that the Department used to run draws until certain applicants, including its own employees, were drawn for licenses.

A study of the integrity of the computerized system was undertaken by the Wildlife Management Institute in 1988, and it found no evidence of wrongdoing. In addition, a Division of Criminal Investigation study was undertaken in 1989 and the investigators found no evidence of wrongdoing.

Nevertheless, in some quarters, distrust of the license draw procedures remains. Part of that distrust likely stems from the fact that licenses are limited in number, and demand exceeds supply. Many hunters who did not draw licenses became leery of the system, especially when other hunters appeared to draw regularly. In 1995, aware of discontent, the Legislature changed drawing procedures for high-demand moose and bighorn sheep licenses from a lottery draw to a preference point system.

However, changing the allocation method involves its own challenges. License allocation systems are based on complex statistical principles, and the probable outcomes associated with the various alternatives are not always obvious to the casual observer. The Department and the Legislature have several challenges in selecting and operating an appropriate system: They need to ensure that the hunting public has faith in the integrity of the allocation method, and also that the method produces the intended results.

The next two chapters provide a framework for better understanding of the licensing process. Chapter 2 analyzes the results of the recently-implemented preference point system and describes alternatives to that system. Chapter 3 analyzes issues surrounding the administration of the licensing process, from the application to the drawing phase. Our findings and recommendations point to some changes that the Department can make, and others that the Legislature may wish to consider, to improve overall operations. Such actions can help restore the public's confidence in the big-game license process.

Chapter 2

Preference Point Draw System

Finding 1: Preference Points Favor Consistent Applicants Over Others

Proponents designed the preference point system to eliminate, or at least reduce, the opportunity for one applicant to receive two moose or bighorn sheep licenses before another applicant receives one. Under the current preference point system, in most cases, there is no chance for a first-time applicant to draw a license.

While this license allocation system generally meets original expectations, it also has consequences that are negative to those applicant groups that do not have the opportunity to apply or do not apply consistently. In addition, this system may have created a false expectation that consistent applicants are guaranteed a license. No allocation system, including the preference point system, can guarantee a limited number of licenses to an extraordinary number of applicants.

Impact and Reactions to the Preference Point System

In 1995, the Legislature amended W.S. 23-1-703 (b) to provide for a preference point system for moose and bighorn sheep. Other limited-quota licenses continued to be selected by "lottery" draws. The preference point system awards one point per year for the number of years in which an applicant unsuccessfully applies for a moose or bighorn sheep license. Available licenses are first randomly allocated to the group of applicants with the largest number of points. When the group with the largest number of points is exhausted, any remaining licenses are randomly

allocated to the applicants with the next highest number of points. This process continues until all licenses are drawn.

Proponents appear to be satisfied with the current preference point system. A Department official stated, "If the intention was to introduce bias into the system to help those who apply for 20 years without success, it works as intended." Based on our research and interviews, it appears that those currently vested in the system are becoming protective of their investment and thus, resistant to change.

Critics of the preference point system express concern for those not vested in the system. In particular, the concern is for young hunters who are behind in the required number of points because they must wait until age 11 before applying. Some suggest that the system makes it difficult to cultivate the interest of a would-be-hunter, especially in light of the declining recruitment of new hunters nationwide. One Department official stated, "The Department should avoid any impediment that pushes applicants to other forms of recreation."

Regardless of proponents' and critics' opinions of the merits of the system, we found that the preference point system is producing the following outcomes:

- It gives a guaranteed advantage to those applicants who have the maximum number of points and apply consistently.*
- The number of points required for applicants to have a chance of drawing a license is dependent on the demand in each hunt area, and on residency. As a result, if two applicants are applying in different areas, one applicant could conceivably draw two licenses before the other draws one. Similarly, a nonresident might draw two licenses before a resident draws one in the same area.*
- It provides an additional layer of protection against manipulations that could occur in a lottery draw.*
- In hunt areas where the odds are reasonable, it ensures that applicants will not have continual runs of successes and failures.*
- In areas where the odds are exceedingly difficult, most applicants will likely drop out of the system or apply in a different area before drawing in their preferred area. Even so, those with fewer points who choose to apply in such areas will have no chance for many years.*

The First Three Years Under the Preference Point System

Our analysis of the system's first three years shows that preference points give an advantage to those applicants, both resident and nonresident, who have been consistently unsuccessful in

obtaining a bighorn sheep or moose license. Our analysis also shows that generally, nonresidents are not applying as consistently as residents.

Hunters who applied in 1995 and continued to apply consistently for the next two years generally improved their odds of drawing a license. Nevertheless, a large number of applicants dropped out of the system. After accounting for successful resident and nonresident applicants, 20 to 34 percent of those with the maximum number of points did not reapply in the second year and another 16 to 30 percent did not reapply in the third year. In addition, at least 31 to 52 percent of applicants who applied for the first time in 1996 did not reapply in 1997. The range of percentages for attrition account for different species and residencies. Table 4 provides a summary of the past three years' data, including the probability of successfully drawing a license for maximum point holders.

Table 4: 1995 - 1997 Preference Point Results

Resident Bighorn Sheep

Year	Licenses Issued	Total Applicants	Max. Point Holders	Success Range	
				Minimum	Maximum
1995	216	6,547	6,547	1.5%	7.6%
1996	199	7,535	5,029	1.6%	14.3%
1997	192	7,078	4,080	1.9%	23.1%

Resident Moose

Year	Licenses Issued	Total Applicants	Max. Point Holders	Success Range	
				Minimum	Maximum
1995	1,037	19,137	19,137	1.0%	38%
1996	1,057	20,387	13,365	0.7%	77%
1997	1,043	18,405	9,913	1.0%	guaranteed

Nonresident Bighorn Sheep

Year	Licenses Issued	Total Applicants	Max. Point Holders	Success Range	
				Minimum	Maximum
1995	72	1,422	1,422	2.5%	16.7%
1996	67	2,101	1,086	2.8%	50%
1997	64	1,721	850	3.3%	50%

Nonresident Moose

Year	Licenses Issued	Total Applicants	Max. Point Holders	Success Range	
				Minimum	Maximum
1995	209	1,122	1,122	2.9%	guaranteed
1996	178	1,641	603	4.8%	guaranteed
1997	177	1,157	318	5.9%	guaranteed

Source: LSO analysis of Department data.

Projections Reflect the Long Wait Ahead

Even applicants with the maximum number of preference points possible are likely to have a substantial wait for premium licenses. Using assumptions based on the past three years of Department data, we estimate the expected wait in a typical resident bighorn sheep area is 11 years, before all maximum point holders are satisfied. Similarly, the wait for the typical resident moose area is 7 years.

While these estimates hold true for typical hunt areas, some areas will require a much shorter wait (i.e. for antlerless moose areas), while others will require a much longer wait for a license. A resident bull moose license in the Bighorns is the worst-case scenario. Competition for these licenses could require more than 35 years for the "top" group of point-holders to be satisfied, given an attrition rate of five percent.

Since the average age for resident moose applicants currently is 40, many of the maximum point holders may choose to drop out of the system or switch from this area before drawing a license. Appendix C contains more examples of projections under the preference point system.

Little Analysis of Alternatives Provided

When initially considering the preference point system in 1995, and when considering creation of a bonus point system in 1997, the Legislature did not require detailed analysis by the Department. The Legislature also did not benefit from external, expert analysis.

In the months before preference point legislation was passed, the Commission and Department were considering a number of license allocation systems. However, we found no evidence that the Department offered a comprehensive, objective assessment of these alternatives to the Legislature. Determining the subtleties and the implications of different license allocation mechanisms likely requires statistical expertise. While Department employees demonstrate a range of specialized competencies, they may not be able to provide this type of sophisticated analysis.

As this report was being prepared, Department staff presented an analysis of the results of the preference point system to the Commission. We believe some aspects of the Department's analysis could be incomplete. For example, the analysis did not take into account the variations in demand in different hunt areas. It stated, "A preference point system will ultimately guarantee an applicant a license." This statement is accurate in those areas where the demand is moderately larger than the supply of licenses. However, in areas where demand greatly exceeds supply, there can be no such guarantee. Overly general assertions can create a false expectation on the part of applicants.

No License Allocation System is a Panacea

Any system that allocates a small number of licenses to a very large number of applicants is likely to leave many applicants disgruntled. Regardless of the system chosen, three basic factors apply:

- *The odds of drawing success can be universally improved only if either the Department increases the quotas or the numbers of applicants decrease.*
- *Given a fixed number of applicants and licenses, the chance of success for some applicants cannot improve without reducing others' chances.*
- *When introducing an element of random chance, actual results of any single draw may fall within a wide range of the expected results.*

Fundamentally, as a Utah Department of Natural Resource official stated, the overall intent should be to manage the wildlife populations well in order to increase the total available permits.

Numerous Allocation Alternatives Exist

Assuming the Department cannot increase quotas, a variety of different allocation options could be implemented instead of, or in conjunction with, the preference point system. Our research identified many different mechanisms, some of which are in use in other states, that manage the allocation of licenses in high demand. They fall into two broad categories: demand-reducing schemes and alternative draw mechanisms. The first group limits demand for licenses, while the second group influences the odds and provides varying levels of advantage to certain groups. The following discussion illustrates the expected outcomes and likely consequences under each alternative.

➤ Demand-Reducing Schemes

Extended Waiting Period: *In addition to the current preference point system, once an applicant has drawn a moose or bighorn sheep license, W.S. 23-1-703 (b) requires a five-year waiting period prior to reapplication. An extended waiting period may further reduce the demand for premium licenses. Taken to the extreme, a once-in-a-lifetime hunt such as enacted in W.S. 23-1-703 (c) for mountain goat, is an option when the odds are exceedingly poor. Idaho offers a related strategy for selected species: a once-in-a-lifetime harvest.*

However, extended waiting periods do not take into account the widely varying odds among different areas. Also, our analysis indicates substantial waiting periods would be necessary to satisfy all of the demand. We estimate that required waiting periods would have to be at least 10, 20, 25, and 33 years for nonresident moose, resident moose, nonresident bighorn sheep, and resident bighorn sheep, respectively. We applied an expansion of Department methodology originally used in 1992 to arrive at these estimates. The analysis assumes the magnitude of applicants and total licenses allocated over the past eight years will continue into the future.

Pick-A-Species: *There are two variations of the pick-a-species mechanism. Under the first system, applicants may apply for only one species in a group in a given year. For example, one group could be mountain goat, bighorn sheep, and moose. Under the second system, applicants can receive a license for only one species in a group. In this case, an applicant who receives a moose license would be ineligible in the draws for elk, antelope, and deer group for that year. Utah uses both systems to reduce demand.*

Theoretically, pick-a-species would reduce the demand for premium licenses among applicants. However, only 10 percent of respondents to a 1994 Department survey who supported a change in the license system preferred this option.

Raise the fees: *Another method is to raise the fees for resident moose and bighorn sheep licenses. Similarly, a non-refundable application fee could be required for these species. Raising the fees would again, theoretically, reduce the demand for premium licenses. However, one opponent commented, "Hunting then becomes a rich man's sport."*

➤ **Alternative Draw Mechanisms**

Lottery System: *With a lottery draw, each applicant has an equal chance of drawing a license. In Wyoming, the Department conducts lottery draws for all limited-quota big-game species other than moose and bighorn sheep. Idaho and Montana, on the other hand, base their systems on lottery draws for all species.*

A lottery draw is the simplest allocation system to administer. While some we interviewed also felt this was the fairest system, many others expressed discontent because of perceived inequities in the results. They said certain individuals are routinely successful, while others are consistently unsuccessful.

Given the large number of applicants, it is possible that, in a lottery system, some applicants will be regularly successful while others may never be successful. We analyzed a hunt area with a success rate of 10 percent, and our analysis confirmed the possibility that such results could occur. The chance of unsuccessfully applying in this area for 10 consecutive years is 35 percent. Alternatively, there is a 1 percent likelihood that an applicant will be successful in two consecutive draws in this area.

Bonus system: *In 1997, the Legislature considered but did not pass a bill to create a bonus point system. The intention of the bill was to provide first-time applicants an opportunity in the draws. Like the preference point system, applicant chances under the bonus system are based on points awarded for the number of years the applicant has unsuccessfully applied for a license. However, unlike preference points, all applicants have a chance in the draw.*

With bonus points, the Department would treat each respective year's application as the equivalent of one additional point in that year's draw. Each applicant's points represent the number of times they enter the draw.⁶ The Department could also guarantee the expected number of licenses to each group with the same number of points. This guarantees the proportionate licenses to each group with the same number of points and reduces the importance of random chance.

The implications of the bonus point system can easily be misunderstood. We reviewed information which the Department provided to the Commission regarding the potential effects of a bonus point system. In this information, the Department understates the chance of success for individual applicants under a bonus point system. It also understates the impact additional points will have on expected success. This analysis could perpetuate misconceptions about bonus points.

According to an expert statistician with whom we consulted, "Doubling chances for a group of hunters will about double their chances relative to other hunters." However, "It is impractical to predict exact individual chances under the bonus point system. The exact chance for an individual to get a license is NOT easy to express, and actual probabilities of getting a license in the bonus system vary with circumstances." Actual results in Utah, which has used the bonus point system since 1993, verify that it provides a definite advantage to consistently unsuccessful applicants.

Since the bonus system gives all applicants a chance of drawing, it will take longer to satisfy those with the maximum number of points than preference points would. For example, using the same assumptions as used for the preference point illustration, we calculated it would take more than 24 years to satisfy the "top" group of resident bighorn sheep applicants. In comparison, under the preference point system, the expected time was just 11 years.

Finally, two issues for the bonus point system are central to any consideration. First, it may be difficult to allocate licenses to the last few applicants with the maximum number of points. This occurs because over time there may be more applicants with a low number of points than applicants with a high number of points. Therefore, licenses are likely to be allocated to the groups with fewer points but more participants. Second, the probabilities do give a clear, significant advantage to consistently unsuccessful applicants. Policy makers must decide whether that advantage is important.

Weighted system: *If the advantages of bonus points are judged too small to be important, the Department could apply an increasing number of points to consistently unsuccessful applicants. For example, rather than accumulating points in the series: one, two, three, four, five; the points could be accumulated in a different progression such as: one, two, four, eight, sixteen for each unsuccessful application.⁷ It is more difficult to precisely estimate future odds under the weighted system than the bonus system. Nevertheless, the weights can be set at such a level to give nearly the same result as the preference point system or to more closely mirror the results of the bonus point system. A weighted system might also help solve the problem of allocating licenses to the last few maximum point holders as encountered in the bonus system. We found no*

state currently using such a weighted system, and the chief opposition appears to be its complexity.

Hybrid systems: *Arizona implemented a hybrid preference/bonus system in 1997, and Utah plans to implement one next year. Under a hybrid system, a specified percentage of licenses is initially allocated under the rules of the preference point system. The remaining licenses are allocated under the bonus system. The chief benefit of this system is that it gives a sizable advantage to consistently unsuccessful applicants, while still allowing first time applicants a chance.*

In Arizona, 10 percent of the licenses are allocated under a preference system and the remaining 90 percent are under a bonus system. In Utah, the ratio will likely be 50 percent allocated to each. This mechanism is not unlike the current licenses reserved for landowner, resident, or special nonresident licenses in Wyoming.

Finally, Utah is a good example of melding numerous systems together in order to improve the odds for certain applicant groups. Utah established several waiting periods ranging from two years to a lifetime, instituted a "pick-a-species" application process and license issuance process, and is currently moving from a bonus system to a hybrid system for premium hunts. While Utah officials have predicted likely outcomes under a hybrid system, no data is yet available to make judgments on actual results of their system.

Recommendation: The Legislature may wish to modify the preference point system in light of known results and likely consequences.

If the results and consequences of the preference point system are acceptable, the Legislature may wish to let this system stand. Even so, it should require the Department to report periodically on the actual and expected results of the system. In this way, the Legislature and the public will be able to monitor and assess the ongoing results, and there will be better information on which to base policy decisions.

If the results of the preference point system have not proven to be desirable, the Legislature should clearly identify the public policy goals of a desired license allocation mechanism, beginning with consideration of the alternatives described in this finding. Once an intended course is determined, specialized advice is necessary to accurately describe the statistical implication of various systems.

Recommendation: The Department should obtain needed statistical expertise.

Just as trained biologists and wildlife professionals are needed in game management, statistical expertise should be incorporated into decisions made about complex license allocation mechanisms. Selecting such a system requires analysis by someone with credentialed statistical skills. To date, discussion of the impacts of license allocation mechanisms have been largely opinion-based and imprecise and have lacked the benefit of statistical modeling.

The Department needs to contract for, or otherwise acquire, the specialized expertise that can accurately describe the implications and subtle consequences of various license allocation systems. As an alternative, it could appoint an ongoing advisory board with the requisite skills to provide such analysis. The Department should report this information to the Legislature's Travel, Recreation, Wildlife, and Cultural Resources Committee, so policymakers can incorporate it into the policy debate.

Chapter 3

Administration of License Draw Process

Finding 2: Application Processing Could Benefit from Key Changes

Department literature notes that the most labor-intensive part of the license system is reviewing applications, contacting applicants, and entering applications in the system. We found the Department could more effectively and efficiently process applications in two distinct ways. First, the Department could improve its application packet, thereby reducing staff time spent correcting applications with mistakes. Second, the Department could use technology to process applications. Currently, the Department relies on an outmoded manual system to process limited-quota hunting applications. As a result, processing applications takes more Department resources than necessary.

Agency Practices Unnecessarily Divert Resources

We found that some information in the big-game hunting license packets is unclear, and this causes agency resources to be diverted to application correction. We also found that the Department requests more information than may be necessary from repeat applicants, which similarly requires staff time.

Packet Contents. *Packet contents, including the application, are not always easily understood. The instructions are complex and lengthy, as agency officials acknowledge. One official stated, "Wall to wall words can be very intimidating. We end up confusing a lot of people to clarify issues for a few. We add more and more words to try to explain an issue." Another official said, "The biggest complaint that I hear is that it is difficult to read."*

In addition, the wildlife division does not use consistent codes for the types of licenses available. For example, in the 1997 elk regulations, in Hunt Area 1, a Type 1 license is valid for any elk. However, in Hunt Area 9, a Type 1 license is valid only for antlerless elk. Some Department officials, recognizing that the inconsistent license types can confuse applicants, noted that the current system is not customer friendly. As a result, the Department has taken some steps to provide for a more uniform numbering system. Beginning in 1998, all archery licenses will be Type 9 licenses.

The wildlife division also has an inconsistent process for numbering hunt areas. Hunt Area 57 for deer is in the southeast corner of the state, while the elk Hunt Area 57 is in the northwest corner of the state. The wildlife division justifies its numbering process as being necessary for biological reasons. Division officials add that hunters are traditionalists and would not want types and areas to be modified.

We agree there are biological reasons for specialized wildlife management, different license types fulfill different biological objectives, and different species may have different habitat requirements. However, it also appears that these goals could be met with logical modifications to the numbering systems, and such changes might reduce some of the problems associated with the packet.

Applicant Errors. *During our research, we contacted four other state wildlife agencies and found that Montana, Idaho, and Colorado do not routinely correct applications. Arizona corrects applications, if received in the first 10 days of the application period. According to Department officials, Wyoming is one of the few states that, time permitting, contacts applicants who have made errors on their applications to correct mistakes.*

This customer service approach requires additional staff time. License draw section staff made over 4,000 phone calls and received 2,700 faxes to address applicant errors during processing in 1997. Agency officials noted that the Department could conduct draws earlier if they did not have to correct applications. Additionally, corrections account for much of the overtime required during license processing.

The Department has not developed explicit written policies to determine which applications staff will correct. The Department needs standards so that applicants will be treated uniformly. Without standards, the level of error correction can vary from applicant to applicant. Officials showed us two applications, one that included all the information needed, but was not on an official application form. The Department disqualified this individual from the draw. Another individual sent in an incomplete application form, omitting most of the information required. The Department contacted this individual, allowing an opportunity to provide additional information.

Repeat Information. *Department staff spend unnecessary time verifying information already in the agency's database. The Department maintains physical characteristics of past applicants on its database. However, it requires the same information to be included on current applications, even if the information requested has not changed. If it is omitted, the Department calls applicants to verify the existing information. Department officials indicated that it is necessary to include this information for law enforcement purposes. We question whether law enforcement efforts would be impeded if the information from repeat applicants has not changed.*

Views of Complexity Mixed. *We conducted a survey of resident and nonresident hunters⁸ to gauge their reactions to the complexity of the hunting application. Three-quarters of the hunters we surveyed reported that they found the application packet and the application itself either very or somewhat easy to understand. Only one-quarter of the hunters found the application instructions and the forms difficult.*

While these hunters appear to be largely satisfied with the packet, Department documents indicate that the agency itself found that improvements were needed. In 1994, the Department's Wildlife 2010 Report stated that the hunting information provided to the public was complicated, confusing, and did not meet the needs of hunters. The Department believed that the packet was difficult to use and was not providing the needed information in a usable format. They reasoned that the packet could cause many applicant errors, which lead to problems for the licensing section and for applicants.

In interviews, Department officials acknowledged that the packet is difficult to understand. One official stated, "You really almost need a college degree to fill out this application. I wouldn't really expect that someone with less education level could fill it out easily." In addition, officials indicated that Department employees sometimes have difficulty filling out the application.

Manual Application Processing May Not be the Most Effective Use of Agency Resources

The Department is faced with additional time and cost to process applications because it uses an application form that must be manually entered by temporary data entry staff. As a result, it takes longer to process these applications than it would if the Department used technology to assist in processing, and applicants do not receive refunds or licenses as quickly as possible. Furthermore, if the time it takes to enter applications could be reduced, the Department would have more flexibility to adjust its processing schedules around other factors the draws are dependent on, such as Commission season-setting. The Department may be able to set later application deadlines if they use technology to speed up application processing.

Inevitably, there is error associated with a manual system. Processing personnel handle applications several times, and the more times handled, the greater the likelihood of problems. This fact was evident in the Department's 1996 inexplicable "loss" of 205 applications. Further, because data entry operators manually key the applications into the database, there is risk that employees will not enter the information accurately, or may make arbitrary decisions about how to enter questionable information.

Application Information Should be Easy to Use

We contracted with a linguist to review the Wyoming application packet and provide an independent assessment of the readability of its instructions and general information. This consultant noted that efforts are being made throughout government to improve the readability of various documents and to make the reader do less work. Such improvements usually involve changing the format or layout to accommodate the reader.

The consultant pointed out a number of areas where Wyoming's application packet should be improved. For example, applicants should have to read only the information they need to fill out an application, since they are unlikely to read through long sections of solid text such as Wyoming's application packet contains. Our consultant concluded that a revision of the current packet is necessary. Revisions would make it easier for the applicant to read and use. Furthermore, such action would reduce the amount of staff time now spent correcting and answering questions about the applications.

We reviewed other state application information to determine if Wyoming could adopt different strategies to use in the application booklet. While none of the application booklets we reviewed from other states was ideal, each offered elements that aided the reader. Reader-friendly strategies included:

- *Arizona, Colorado, Idaho, and Montana include a table of contents to guide the reader through the document. Arizona provides explicit directions at the front of the booklet for filling out the application. This information is separated from regulations and general hunting information. Colorado also provides step-by-step directions, including a sample form coded to the instructions.*

- *Colorado and Idaho request only a limited amount of information from repeat applicants. Colorado reduced the information required of a repeat applicant by 60 percent and requires more only if the applicant's demographic data (i.e. address, weight) has changed.*
- *Montana and Idaho use the same area numbers for several species. Arizona, Idaho, and Colorado also use sequential numbering of hunt areas to indicate the limitations within hunt areas. Colorado provides an easy-to-use key to explain the hunt areas and the limitations included in the packet's season information.*

Technology Aids in Processing

We found several states that have made successful use of technology to process hunting applications. In addition, the University of Wyoming's automated data-processing procedures for grading student tests offers an alternative processing system model.

The technological processes we reviewed range from rather simple devices that would eliminate manual data entry, but not paper applications, to sophisticated systems that would eliminate paper applications altogether. The following subsections offer alternatives we found being used successfully by other entities.

Bubble Sheet Scanning. *Bubble sheet forms have ovals that are filled in to indicate responses to questions. These answers can be scanned electronically. The University of Wyoming uses two bubble sheet scanners to grade tests and to score teaching evaluations. The forms can accommodate up to 200 total questions, printed on both sides of a document. The administrator of the scanning system indicated that there have not been any problems with the machines reading properly. The machines are programmed not to accept certain errors, and these forms can be manually reviewed and entered. One provider of this equipment indicated that the scanners can read up to 58 forms a minute. This data can be stored and maintained in a database.*

Optical Character Scanning. *The Colorado Division of Wildlife uses an optical character recognition scanner to process 310,000 limited-quota hunting applications per year. The system has been operational for three years. Colorado officials noted that the system has all but eliminated the need for manual data entry. Only an estimated 2 out of 100 applications cannot be processed through the scanner and must be hand-entered, but optically-scanned documents must still be reviewed to ensure that they scanned correctly.*

Colorado officials stated that they have been pleased with the system, as it has allowed them to conduct draws more quickly and refund money to unsuccessful applicants in a more timely manner. They have also processed a 32 percent increase in applications since implementing the system, with no additional resources. They estimate that they process data through the scanner at about one-third the cost of keypunching. Initial cost of the system was \$340,000; ongoing

costs are about 28 cents per document, as opposed to 45 cents per document with manual processing.

Point of Sale Licensing. *Idaho's wildlife agency installed a statewide point of sale system two years ago. These systems allow an applicant to walk into a vendor anywhere in the state and apply for a limited-quota license over the computer. The computer has a dedicated line networked to the Department to process the applications. The only paper applications within this system are for nonresident applicants who do not have access to an in-state vendor and do not wish to apply for a license over the telephone.*

Applicants can pay with a credit card, and for several species, Idaho does not require the presubmission of the license fee. Instead, applicants pay a nonrefundable application fee, and if they are successful in the draw, they purchase their tag for the species from a vendor. Officials noted that they have had few problems with the system, and it has far exceeded their expectations. The on-line application has built-in checks that will not allow an applicant to fill out the application incorrectly. For example, it will not allow an applicant to enter a hunt area that does not exist or is closed. Officials indicated that they have reduced the errors associated with manual data entry and applicant mistakes by 85 percent.

The system had installation costs of \$850,000 and has annual maintenance costs of roughly \$1.2 million. Officials note that while the system does not provide cost savings, it does provide advantages for both the agency and the customer that have been worth the costs.

Future Internet Capabilities. *A number of the states also mentioned the promise of the internet to provide on-line licensing services in the future. The internet currently provides a source of information in many states, including Wyoming, especially for nonresident hunters who do not have ready access to information. The information can be loaded onto the host website at a low cost, saving the cost of mailing thousands of documents to nonresident hunters. According to ITD, the mainframe currently used to store hunter information could be designed to allow an applicant to apply for a license over the internet.*

The Department Has Been Reluctant to Modify Procedures and Implement Technology

Based on our interviews and observation, we believe the Department needs to take a fresh look at ways in which technological and other changes can help the licensing process. The Department's 1992 License Issuance Task Force recommended a progressive strategy to improve the application process. Since then, the Department has modified its application packet

and forms and has explored some technological alternatives. However, we believe the Department can take additional steps to more effectively process applications.

The Application Packet Needs Further Changes. *In 1995, the Department revised the application packet, reducing its length by 16 pages. Several application forms were consolidated and some information was removed, but the application packet was not fundamentally reworked. We believe the agency can make further improvements to the format and layout, for example by including a table of contents and a filled-out sample application, and can find ways to simplify the instruction material.*

Prior to our evaluation, the Department contracted with an official in Colorado's Division of Wildlife to review Wyoming's application packet and make suggestions for improvement. The consultant reported that the packet is complicated because it reflects a complicated structure. The Department appears to have accepted this logic as justification for the current packet. One agency official stated "We know that this is a difficult application, but it is no more difficult than the structure that underlies it."

Department Finds Justification For Manual Processing. *The Department uses technology throughout the agency to manage fish and wildlife, yet applications are processed manually. Department officials indicated that they have investigated the viability of using technology in Wyoming, but are hesitant to change the current system. Agency officials told us they have not automated license processing because they believe such systems are costly and unproven in other states that have tried them. However, other state wildlife agencies we contacted say they have employed technology to achieve greater efficiencies, and they report few drawbacks.*

While such systems are not without their own challenges, certain systems could save the Department money and could offer other advantages. For example, we investigated the costs of a bubble sheet scanning system and compared those costs to the Department's data entry costs. If the Department moved to a bubble sheet application, we estimate it could save up to \$16,000 in the year the hardware is purchased. Subsequently, such a process could save the Department more than \$50,000 per year by reducing the need for temporary staff.

Recommendation: The Department should develop ways to more effectively and efficiently process applications.

We found that the Department strives to provide excellent customer service to applicants. However, the Department could reduce the resources now dedicated to resolving customer problems by addressing application processing problems upfront. The Department noted during

our evaluation that customer service is an important agency goal. As it applies to processing applications, we believe the Department's approach to customer service has been largely reactive. The Department can give better customer service to applicants if it simplifies the application packet and uses technology to aid in processing.

Modifying the Application Packet. Improving the packet information could help the Department reduce time and costs associated with answering applicant questions and correcting applications. While customer service should still be important during processing, the Department can better serve more of its customers by shifting focus to reducing problems and making materials easier for customers to understand and use.

We recognize there is no way to improve the application packet to the point where applicants would not have any questions or make any mistakes on the applications. Nevertheless, the Department can improve its efforts to minimize these occurrences. Simplifying the packet would also reduce the chance that applicants will be disqualified from the draws due to having misunderstood the material.

Using Technology to Aid in Processing. The Department could more efficiently process applications by installing some form of automated data processing, thereby reducing or eliminating the need for manual data entry. The Department can establish a timetable to implement an automated data processing system, such as bubble sheet scanners, and may also wish to more seriously consider moving to a paperless system.

Finding 3: The Public Lacks Assurances the License Draw System is Sound

While the Department routinely issues thousands of licenses through the limited-quota draw system without incident, it also suffers from a pervasive image problem relating to the draw process. Questions endure about the equity and even the integrity of the draw system. Although some will always be suspicious of the system, we found that the Department can take more steps to reassure the hunting public that the license draw system provides reliable results.

The Draw System Mirrors a Complicated Process to Allocate Limited-Quota Licenses

The limited-quota license draw system is a complicated, multi-faceted process involving two agencies, and this complexity can potentially have adverse impacts on the results of the draw system. Under such circumstances, the Department is at risk, because the more complex a process, the greater the potential for error. The Department cannot be expected to operate an error-free system, but we found it has not taken sufficient steps to decrease the potential for errors. It is critical to have solid procedures in place to effectively administer the system.

A high-profile error occurred in 1997 when ITD programmers used the same random number for both the moose and the bighorn sheep draws. A different random number should have been used for each draw, but the agency did not review ITD results in order to detect this error, and consequently, 100 applicants received both of these coveted licenses, as opposed to 19 individuals in 1996.

Ultimately, the Department is responsible for the reliability of the draws. While it is unrealistic to expect the Department and ITD to anticipate every problem that may arise, we found that the Department may not have adequate systems to prevent potential problems. Department officials told us that they assumed ITD programmers had tested changes associated with the random numbers prior to implementation, but admitted that they did not verify this assumption.

It appears the Department has minimized this error, explaining it as an oversight. The 1997 application packet stated that all draws are mutually exclusive. However, the statistical expert we consulted with stated the technical meaning of the term "mutually exclusive" is that no person could receive both a moose and bighorn sheep license. Department officials claim the results of one draw have no effect on other draws. In this case, the results of one draw did have an effect on the other, and 100 people received both licenses. We believe the Department is using this term incorrectly, and also violated its own definition when the draws were conducted.

Underlying Assumptions Affect Draws. Wyoming statutes are silent regarding how the Department should conduct the draws. As a matter of necessity, the Department has made a number of assumptions about the order in which the Department and ITD will conduct the draws, and many of these assumptions are documented in Department regulations. These underlying assumptions are important for two reasons. First, the order in which things are done can impact who receives a license and who does not. Second, because the assumptions affect the outcomes of the draws, it is essential that controls be in place to ensure that the draws cannot be altered inadvertently.

While there is no right or wrong way to order the draws, they could be conducted in many different ways, and the selection of methods leads to different outcomes. An example is useful to explain what kind of assumptions are inherent in the system. When hunters apply for antelope, deer, or elk licenses, the application form allows them to rank their first five choices of hunt area. During the draw, the computer system queries all applicant first choices before going to their second, third, fourth, and fifth choices.

As a result, an applicant with a relatively good random number may not get his or her first choice, if the quota for the desired hunt area has already been filled by applicants with better random numbers. In fact, he or she may not receive any license. This could occur when

subsequent applicants with worse random numbers fill quotas with their first choices. Those choices may have included all the less desired choices of the applicant who had a relatively good number.

The system is designed so that it is dependent not only on the random number assigned to an applicant, but also other applicants' choices. There are trade-offs to this design, as there would be to any design, but this example demonstrates that the order in which system events take place can change the outcomes.

In a different example having to do with underlying assumptions, we encountered problems with some of the data provided during our research. We received information prepared by ITD about the number of elk licenses issued during the 1997 regular draws. The licenses granted in the nonresident draw above the allotted quota should have no effect on the resident draw quota. Instead, in the report ITD prepared, these licenses were mistakenly subtracted from the available quota counted in the resident draw report. While this was a reporting error and did not occur during the draws, it demonstrates how programming assumptions can change outcomes.

Suspicion has Undermined the Credibility of the Agency

The Department has not been able to reassure or pacify its critics that the draw system is sound. During our research, we heard allegations ranging from minor to serious. Some individuals we interviewed simply believe the Department is unresponsive to concerns of the public and to the serious nature of recent problems. We interviewed others, familiar with the draw system, who suggested that years ago, draws were run repeatedly until they generated licenses for specific applicants, including Department employees. Whether true or not, such allegations have become embedded in the agency's history.

Based on our review, it does not appear that the Department manipulates the draws to produce specific outcomes. Similarly, the Division of Criminal Investigation conducted an investigation in 1989 to determine if a highly placed Department official had interfered with the draws, and found no evidence of malfeasance.

Nevertheless, in interviews with Department employees, hunters, outfitters, public interest groups and others, we found an undercurrent of distrust for the agency. The distrust does not appear to stem from overwhelming concerns that the system is "rigged," but rather, from a lack of confidence in the draw system. One individual stated, "The overall view of Game and Fish has

been deteriorating because of the series of management glitches." Such beliefs make it difficult for the Department to defend the integrity of its system.

Sufficient Controls are Necessary to Ensure System Reliability

According to the General Accounting Office's (GAO) report Assessing the Reliability of Computer-Processed Data, it is important to ensure that computer-processed data are valid and reliable. According to the GAO, adequate controls over computer-processed data will diminish the risks associated with computer systems:

- General controls include effective supervision with a clear communication of duties and responsibilities.*
- Data processing controls ensure that unauthorized additions, removals, or alterations of data do not occur during processing.*
- Maintenance controls assure that data is processed consistently and accurately, and that system content will be modified only with proper authorization.*
- A comprehensive review after the system has been implemented assures that it meets user needs.*

The Department Needs to Establish a Stronger Control Environment

Department officials indicate they have established a number of controls over the draw system. While we found the Department has established some controls, such as a review process for system modifications, we believe it needs a more comprehensive control system to protect itself against risks inherent in the draw process.

We identified three areas in which the Department is at risk and needs stronger controls over the license draw system. First, Department officials indicated there was insufficient time to test the draw system prior to implementation. Second, Department controls over the draw system have not been independently validated. Third, responsibilities for drawing have been divided between two agencies, but details of that arrangement have not been formalized.

Insufficient Time to Implement Draw System. The computerized draw system in place prior to 1996 could not accommodate a database to manage the new preference point system. The Department brought a new system on-line in 1996.

Department and ITD officials noted there was insufficient time to implement the system. According to both, the system was being implemented at the same time code was being written for it. A Department manager acknowledged "We did not do any formal testing. The testing was done during production, and yes, it caused problems." GAO notes that time pressures are often the reasons for bypassing or overriding needed controls.

Assurances That Controls are Sufficient. The computer draw system has not been independently reviewed by an entity with the expertise to comment on needed system controls. According to GAO, assessing and testing system functions and products requires a specialist, not a generalist.

Ten years ago, a Governor's Blue Ribbon Task Force requested an independent review to determine whether the computer programs used to allocate big game licenses were fair and equitable. The task force noted that the question was quite technical in nature and therefore it would be necessary contract the work.

The Wildlife Management Institute (WMI), an authority in wildlife consulting, conducted this review. They concluded there was no evidence to indicate that the selection of successful license applications was unfair or biased. They stated that any claims that the selection process was unfair were without foundation.

We do not question WMI's expertise in wildlife management, nor their view that the system is free of malfeasance. However, it appears that their expertise relates to population modeling and wildlife management techniques, not providing technical reviews of computer systems. As a consequence, WMI may not have provided the necessary depth of systems analysis, and therefore the assurances, the task force was seeking.

Two Agencies Play Roles in the Draws. Responsibilities for the license draws are split between the Department and ITD, and the relationship between the two agencies is fairly informal. Department officials told us that historically, the draws have been conducted at ITD to ensure that Department employees cannot influence draw results. Other states we interviewed conduct their draws "in-house," rather than separating this responsibility.

We found that the two entities' roles have not been clearly defined through protocols, such as a memorandum of understanding (MOU) formally delineating responsibilities. When the 1997 problem with the draws for moose and the bighorn sheep licenses surfaced, questions of responsibility arose. One Department official stated in a news article that the Department's responsibility was to receive and process the license applications, but the development and maintenance of the computer program was the responsibility of ITD. However, another agency

official stated that ultimately it was the responsibility of the Department to ensure that the draws were conducted correctly.

Recommendation: The Department should strengthen its draw procedures.

Department officials rightfully point out that they successfully run draws for several species with hundreds of permutations, without incident. We acknowledge that the Department successfully provides thousands of licenses through its draw system. At the same time, we believe the Department can do more to provide assurance that the underlying system and the processes surrounding that system have integrity. The Department needs to ensure that the mainframe-based license draw system provides reliable results and has sufficient controls in place to support those results.

To obtain such assurance, we recommend that the Department contract for an independent system audit of the computerized draw system. A professional systems audit, conducted by computer systems specialists, can provide specific recommendations on actions the Department should take to minimize risks.

Because the draw system is dynamic, once an initial review is completed, the Department needs to establish an ongoing review process. The process should ensure that sufficient controls exist, and that all system modifications are independently tested and reviewed prior to implementation. Oversight of system changes could be fulfilled through a periodic review by an advisory panel of technical experts, or perhaps through an ongoing consultant contract.

In addition, the Department should develop a memorandum of understanding with ITD to formally establish roles and responsibilities for the draw system. Actions such as these can help put doubts and suspicions about the integrity of the system to rest.

Conclusion

Limited-Quota Licensing System

The Wyoming Game and Fish Department issues about 100,000 big-game licenses and processes roughly 162,000 physical applications each year. The vast majority of these applications are processed and licenses are allocated without incident and at a reasonable cost to hunters.

Nevertheless, when processing applications, the Department can improve both efficiencies and customer service. The Department has been praised as a leader in wildlife management, and it should strive to be the leader in processing applications as well. The Department should also take steps to strengthen and establish controls over the draw system. Such steps will reduce the risk of future errors that could further erode the Department's integrity and credibility.

In addition, three years of information about the preference point system are now available. The Legislature has an opportunity to assess results of this new method of license allocation. It may wish to look at whether preference points are resulting in the desired outcomes. If not, there is a wide range of other options, and the merits and pitfalls of each should be carefully considered.

APPENDIX A: SELECTED STATUTES

TITLE 23

GAME AND FISH

Chapter 1: Administration

Article 7: Licenses and Tags

23-1-701. Selling agents; administration of oaths; game tags.

(a) The commission with the advice of the director shall appoint agents to sell game, bird and fish licenses and tags. Any vendor engaged in the commercial sale of sporting goods and equipment who holds a valid sales tax license issued by the department of revenue under W.S. 39-6-403 may apply to the commission and shall be appointed as an agent to sell game, bird and fish licenses and tags. At the end of each year, the commission shall renew the appointment of agents who had combined game, bird and fish license sales during that year of not less than one thousand dollars (\$1,000.00). Renewal of the appointment of agents selling fish licenses only or agents serving remote locations shall not be subject to the one thousand dollar (\$1,000.00) minimum sales requirement. The commission shall provide bonding for agents for the purpose of selling game, bird and fish licenses, stamps and tags. Bonding shall be provided upon receipt of a nonrefundable annual fee of fifty dollars (\$50.00). The fees shall be deposited in a bond pool fund except in any month when the bond pool fund contains one hundred thousand dollars (\$100,000.00) or more the fees shall be deposited in the game and fish fund. The fee shall be paid to the commission before December 1 preceding the year for which the bond shall be in effect. Newly appointed agents shall pay the same fee immediately upon appointment by the commission to receive bonding for the remainder of the

calendar year in which the agent was appointed. All claims against an agent's bond shall be paid from the bond pool account.

(b) Each selling agent shall retain fifty cents (\$.50) for each license and twenty-five cents (\$.25) for each conservation stamp under W.S. 23-2-306 he sells. For failure to comply with this section, selling agents shall not be entitled to fifty cents (\$.50) per license and twenty-five cents (\$.25) for each conservation stamp sold and shall be liable on their bond. No employee of the commission shall receive any commission on licenses or tags sold.

(c) On or before the 10th of each month every selling agent shall file a report for the preceding month with the commission on forms approved by the commission. Selling agents shall also remit all money collected during the previous month less commission, and shall account for and deliver all surplus, unused and damaged licenses, tags, and stubs of licenses received by the selling agent to the commission.

(d) Every person authorized by the commission or by law to sell and issue licenses is authorized to administer oaths.

(e) The department shall supply sufficient numbers of self-locking tags stamped with the words "Wyoming game tag" or "Wyoming interstate game tag". Game tags shall be furnished through the chief game warden for distribution to the game wardens, and such selling agents as the commission may designate. Game wardens and selling agents shall collect and remit to the department the proper fee for each Wyoming game tag or Wyoming interstate game tag.

(f) Repealed by Laws 1987, ch. 156, § 2.

23-1-702. Duplicate license upon loss or destruction of original; purchase and fees.

When any license issued under this act has been lost or destroyed, the licensee may secure a duplicate of the original license from any district office or any authorized personnel of the department upon payment of three dollars (\$3.00) and the presentation of satisfactory proof that the original license was lost or destroyed. Duplicate licenses shall be issued in accordance with procedure established by commission order.

23-1-703. Limitation of number of big or trophy game animal licenses; reservation of certain licenses; reservation of certain unused licenses.

(a) The commission may limit the number of resident or nonresident big or trophy game animal licenses to be sold in any calendar year and may designate dates after which one (1) or more classes of licenses will not be sold except as authorized by the commission.

(b) Except as specifically provided under this subsection, subsection (f) of this section or W.S. 23-1-705(a), no person may apply for and receive more than one (1) moose or one (1) bighorn sheep license in any consecutive five (5) year period. Effective for the 1995 hunting season and each hunting season thereafter, licenses issued under this subsection shall be based upon the number of points assigned to each applicant for a particular species. The department shall assign points to each license applicant for a specific species by multiplying the number of years the applicant has unsuccessfully applied for a license times one (1). License applicants within each hunt area for a species shall be grouped according to the number of assigned points for that species. Available licenses within any hunt area shall be randomly selected from among the group of applicants with the largest number of assigned points and shall continue until all applicants within that group have been exhausted or until all available licenses have been issued, whichever first occurs. If any applicant grouping has been exhausted and licenses remain available within that hunt area, selection shall continue from among the group of applicants with the next largest number of assigned points. For purposes of assigning points under this subsection, any unsuccessful license applicant failing to apply for a license during the second calendar year shall be considered to be a first year applicant for any subsequent calendar year in which the applicant submits license application for that particular species.

(c) For the 1995 hunting season and each hunting season thereafter, except as specifically provided under subsection (f) of this section, no person who is issued a hunting license for a grizzly bear or for a mountain goat shall be eligible to apply for or receive a hunting license for that particular species in any future year.

(d) Repealed By Laws 1997, ch. 24, § 2.

(e) The commission shall reserve eighty percent (80%) of the moose and seventy-five percent (75%) of the bighorn sheep, mountain goat and grizzly bear licenses to be issued in any one (1) year for resident hunters.

(f) Notwithstanding W.S. 23-1-704 and 23-2-101(b), any person who is issued and purchases a big or trophy game animal license for any species specified under subsections (b) and (c) of this section and is unable to use for good cause as provided by regulations that license for the year in which issued, may reserve a license for the particular species designated on the unused license for use during the immediately succeeding calendar year by applying to the commission before the opening date of the season for the designated species during the year for which the initial license is issued. The initial big or trophy game animal license shall accompany the application. Upon receipt, the commission shall cancel the initial license and prior to the season opening date for the designated species during the immediately succeeding calendar year, issue at no cost to the applicant a license for the designated big or trophy game animal valid for that year.

(g) Rules and regulations shall be promulgated by the game and fish commission to carry out this section.

23-1-704. Licenses; expiration.

All licenses expire on the last day of the year in which issued except as otherwise provided.

23-1-705. Complimentary licenses; one-shot antelope hunt licenses; gunpowder and buckskin hunt licenses; gratuitous licenses.

(a) At the request of the governor, the commission shall annually issue up to twenty (20) complimentary hunting and twenty (20) complimentary fishing licenses. Not more than five (5) big horn sheep and five (5) moose licenses shall be issued under this subsection. The five (5) year restriction imposed on the receipt of a moose or big horn sheep license by W.S. 23-1-703(b) shall not be applicable in any manner to a license issued pursuant to this subsection. Except as provided under subsection (g) of this section, no complimentary licenses may be issued at the request of the appointed commissioners. Immediately upon issuance of any of these licenses, the commission shall submit to the secretary of state for maintenance as a public record, the name and address of each licensee and the type of license issued.

(b) In addition the commission may, upon payment of proper fees, issue up to eighty (80) licenses each year for the exclusive use of not more than a single one-shot antelope hunt.

(c) In addition the commission may, upon payment of deer license fees, issue up to twenty-five (25) licenses each year for the exclusive use of gunpowder and buckskin hunts.

(d) The department shall issue without charge lifetime bird, small game and fish licenses to any resident who is over sixty-five (65) years and who has continuously resided in Wyoming for at least thirty (30) years. The license is valid so long as the licensee remains a Wyoming resident.

(e) The department shall issue for a fee of two dollars (\$2.00) a resident deer or antelope license and for a fee of five dollars (\$5.00) an elk license to any resident who is at least seventy (70) years of age, who has continuously resided in Wyoming for at least forty (40) years, and who is physically able to personally hunt and pursue his own game.

(f) Applicants for licenses specified in subsections (b) and (c) shall apply in person to any authorized department personnel.

(g) In addition to complimentary licenses under subsection (a) of this section, each appointed commissioner may cause to be issued at cost not more than a total of eight (8) elk, deer or antelope designated licenses per year. All licenses issued under this subsection shall be designated to nonprofit charitable organizations. As a condition of accepting the license, the organization shall agree to auction or otherwise bid the license to the highest bidder or to raffle the license to members of the public.

Chapter 2: Licenses; Fees

Article 1: Game Animals and Game Birds

23-2-101. Fees; restrictions; nonresident application fee; nonresident licenses; verification of residency required.

(a) Any qualified person may purchase a hunting license from the department or its authorized selling agents except as otherwise provided. Purchase of a license entitles the licensee to take any animal, bird or fish provided on the license within Wyoming at the time, in a place, in a manner and in an amount as provided by law and the orders of the commission. At the time of application for a resident license under this section, the applicant shall provide a valid Wyoming driver's license or a copy thereof, or other proof of residency. The commission shall promulgate reasonable rules and regulations stating what proof of residency is required so that only bona fide Wyoming residents, as defined in W.S. 23-1-102(a)(ix), receive resident licenses. For purposes of purchasing a lifetime resident license under W.S. 23-2-108, an applicant shall have been a resident as defined in W.S. 23-1-102(a)(ix) continuously for a ten (10) year period immediately preceding the application date.

(b) Omitted from Appendix.

(c) The resident's or nonresident's license must bear the signature of the landowner, lessee, or agent of the owner on whose private property he is hunting or the legitimate proof as evidence that permission to hunt has been granted.

(d) The commission may issue deer or antelope licenses in areas in which all licenses initially authorized were not purchased or in which additional harvest is desired, allowing a licensee to take a deer or antelope of such sex or age as designated by the commission. The fee for the license may be reduced by the commission to the level necessary to achieve the desired management objectives, but in no case shall a resident or nonresident license fee be less than the landowner's coupon fee.

(e) Nonresidents shall pay an application fee of five dollars (\$5.00) upon submission of an application for purchase of any big or trophy game license or wild bison license. Effective January 1, 1997, the nonresident application fee shall be ten dollars (\$10.00). The application fee is in addition to the fees prescribed by subsections (b) and (f) of this section and by W.S. 23-2-107 and shall be payable to the department either directly or through an authorized selling agent of the department. At the beginning of each month, the commission shall set aside all of the fees

collected during calendar year 1980 and not to exceed twenty-five percent (25%) of the fees collected thereafter pursuant to this subsection to establish and maintain a working balance of five hundred thousand dollars (\$500,000.00), to compensate owners or lessees of property damaged by game animals and game birds.

(f) Forty percent (40%) of available nonresident elk licenses, twenty percent (20%) of available nonresident deer licenses and thirty percent (30%) of available nonresident antelope licenses for any one (1) calendar year shall as established by the commission, be offered to nonresident applicants upon receipt of the fee prescribed by this subsection. Seventy-five (75) of the nonresident deer licenses set aside pursuant to this subsection shall be used for a national bow hunt for deer. The licenses authorized by this subsection shall be offered by drawing to nonresident applicants prior to the drawing for the remaining nonresident licenses issued. The licenses offered under this subsection shall be issued in a manner prescribed by rules and regulations promulgated by the commission. Nothing in this subsection shall prohibit any unsuccessful applicant for a nonresident license pursuant to this subsection from submitting an application for any licenses remaining after the drawing during the calendar year in which the application under this subsection was submitted. The following fees shall be collected by the department and are in addition to the nonresident license fee for the appropriate big game species imposed under subsection (b) of this section and the application fee imposed under subsection (e) of this section:

(i) Nonresident elk license.....\$200.00 in addition to the license fee imposed under paragraph (b)(iv) [(b)(vi)] of this section;

(ii) Nonresident deer license.....\$100.00 in addition to the license fee imposed under paragraph (b)(ii) of this section;

(iii) Nonresident antelope license.....\$100.00 in addition to the license fee imposed under paragraph (b)(xvi) [(b)(xx)] of this section.

(g) In promulgating rules and regulations for the taking of bighorn sheep and moose, the commission shall not discriminate between residents and nonresidents regarding the maturity, horn size or sex of the animals which may be taken. Nothing in this subsection shall be construed as prohibiting the commission from issuing a different number of licenses for residents and nonresidents.

(h) In addition to other fees under this section, persons applying for a license or tag under this section may pay one dollar (\$1.00) to fund search and rescue activities in the state. The department shall provide information on the license or tag application form that the applicant may pay the fee under this subsection. Any fees collected under this subsection shall be deposited in the search and rescue account created by W.S. 19-5-301(a).

23-2-102. Age restrictions; game animals; game birds.

(a) The minimum age to take any big or trophy game animal is twelve (12) years. Any person authorized by this subsection under the age of fourteen (14) years shall at all times when hunting be accompanied by a person over the age of majority who possesses and can exhibit a certificate of competency and safety as specified in W.S. 23-2-106 or who currently holds, or has been issued a Wyoming big game hunting license within the last five (5) years. If the person accompanying the hunter under the age of fourteen (14) years is not the parent or guardian of the hunter, the hunter shall have in his possession a permission slip signed by his parent or guardian allowing him to hunt under supervision. Each accompanying adult shall supervise not more than one (1) hunter under the age of fourteen (14) years. Any person under the age of fourteen (14) years applying for a license to hunt big or trophy game animals under this subsection shall have the application for the license co-signed by his parent or legal guardian.

(b) No person fourteen (14) years or older nor any nonresident person less than fourteen (14) years shall take any small game animal without first obtaining the proper license. A nonresident person less than fourteen (14) years need not obtain a small game animal license if accompanied by an adult possessing a valid unexpired Wyoming small game animal license in which case the nonresident person's bag limit as established by law or by commission orders shall be applied to and limited by the small game hunting license held by the adult person in his company.

(c) No person fourteen (14) years of age or older shall take any game bird without obtaining the proper license. A resident person under fourteen (14) years of age may take any game bird in this state except wild turkey without a license if accompanied by an adult. A resident or nonresident person under fourteen (14) years of age may take a wild turkey with the proper license if accompanied by an adult. The taking of any game bird by a nonresident person less than fourteen (14) years of age accompanied by an adult person possessing a valid game bird license shall, as established by law and commission order, be applied to and limited by the bag limit under the license held by the adult in company.

23-2-103. Repealed By Laws 1996, ch. 121, § 3.

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23-2-104. Archery licenses; special seasons; prohibition against firearms; equipment.

(a) Bow and arrow or crossbow are permissible equipment to take game animals, nongame animals, game birds and nongame fish. No license is required to take nongame animals and nongame fish with bow and arrow or crossbow.

(b) The commission may establish special hunting seasons for the taking of big game or trophy game animals by bow and arrow or crossbow in such areas as it may establish by order.

(c) No person shall hunt big game or trophy game with bow and arrow or crossbow during a special archery hunting season without first obtaining an archery license and the appropriate hunting license.

(d) No person holding an archery license shall take big game or trophy game animals during a special hunting season while in possession of any type of firearm.

(e) When hunting antelope, bighorn sheep, black bear, deer, mountain goat or mountain lion the longbow hunter must be equipped with a longbow of not less than forty (40) pounds draw weight or possessing the ability to cast a hunting arrow of four hundred (400) grain weight at least one hundred sixty (160) yards. When hunting elk, grizzly bear or moose, the longbow hunter must be equipped with a longbow of not less than fifty (50) pounds draw weight or possessing the ability to cast a hunting arrow of five hundred (500) grain weight at least one hundred sixty (160) yards. The crossbow hunter must be equipped with a crossbow of not less than ninety (90) pounds draw weight which has a minimum draw length of fourteen (14) inches (from front of bow to back of string in the cocked position), a positive safety mechanism, and, except as provided in subsection (f) of this section, which must be cocked by hand without the aid of leverage-gaining devices. Crossbow bolts must be at least sixteen (16) inches long. The broadhead of arrows or bolts shall be of sharp steel with a minimum cutting width of one (1) inch.

(f) The commission by rule and regulation may authorize a person to use a leverage-gaining device for cocking a crossbow if the person is unable to manually cock a crossbow as the result of a permanent or temporary physical handicap or impairment.

(g) Except as otherwise provided, violation of this section constitutes a tenth degree misdemeanor.

23-2-108. Temporary fees; hunting; fishing; miscellaneous.

(a) Notwithstanding the provisions of W.S. 23-2-101(b) for the period July 1, 1996 through December 31, 1999 and subject to W.S. 23-2-101(f), the following hunting licenses may be purchased for the fee indicated and subject to the limitations provided:

<i>(i) Resident black bear license; one (1) black bear</i>	<i>\$ 30.00</i>
<i>(ii) Nonresident black bear license; one (1) black bear</i>	<i>250.00</i>
<i>(iii) Resident mountain lion license; one (1) mountain lion</i>	<i>30.00</i>
<i>(iv) Nonresident mountain lion license; one (1) mountain lion</i>	<i>250.00</i>

(v) *Resident daily game bird/small game license; all game birds except wild turkey* 5.00

(vi) *Nonresident daily game/small game license; all game birds except wild turkey* 10.00

(vii) *Resident lifetime game bird/small game and fishing license; all game birds except wild turkey* 400.00

(viii) *Resident game bird/small game license; all game birds except wild turkey*
15.00

(ix) *Nonresident game bird/small game license; all game birds except wild turkey*
50.00

(x) *Nonresident youth game bird/small game license; all game birds except wild turkey* 40.00

(xi) *Resident archery license* 10.00

(xii) *Nonresident archery license* 20.00

(b) Notwithstanding the provisions of W.S. 23-2-101(b) for the period January 1, 1997 through December 31, 1999 and subject to W.S. 23-2-101(f), the following hunting licenses may be purchased for the fee indicated and subject to the limitations provided:

(i) *Resident deer license; one (1) deer* \$ 22.00

(ii) *Nonresident deer license; one (1) deer* 185.00

<i>(iii) Resident youth deer license; one (1) deer</i>	<i>15.00</i>
<i>(iv) Nonresident youth deer license; one (1) deer</i>	<i>110.00</i>
<i>(v) Resident elk license; one (1) elk</i>	<i>35.00</i>
<i>(vi) Nonresident elk license; one (1) elk, fishing privileges</i>	<i>400.00</i>
<i>(vii) Resident youth elk license; one (1) elk</i>	<i>25.00</i>
<i>(viii) Nonresident youth elk license; one (1) elk, fishing privileges</i>	<i>275.00</i>
<i>(ix) Resident bighorn sheep license; one (1) bighorn sheep</i>	<i>75.00</i>
<i>(x) Nonresident bighorn sheep license; one (1) bighorn sheep</i>	<i>1,500.00</i>
<i>(xi) Resident mountain goat license; one (1) mountain goat</i>	<i>75.00</i>
<i>(xii) Nonresident mountain goat license; one (1) mountain goat</i>	<i>1,500.00</i>
<i>(xiii) Resident moose license; one (1) moose</i>	<i>75.00</i>
<i>(xiv) Nonresident moose license; one (1) moose</i>	<i>1,000.00</i>
<i>(xv) Resident grizzly bear license; one (1) grizzly bear</i>	<i>1,750.00</i>

<i>(xvi) Nonresident grizzly bear license; one (1) grizzly bear</i>	<i>17,500.00</i>
<i>(xvii) Resident antelope license; one (1) antelope</i>	<i>22.00</i>
<i>(xviii) Nonresident antelope license; one (1) antelope</i>	<i>185.00</i>
<i>(xix) Resident youth antelope license; one (1) antelope</i>	<i>15.00</i>
<i>(xx) Nonresident youth antelope license; one (1) antelope</i>	<i>110.00</i>
<i>(xxi) Resident license to capture falcons for falconry purposes</i>	<i>25.00</i>
<i>(xxii) Nonresident license to capture falcons for falconry purposes</i>	<i>170.00</i>
<i>(xxiii) License to hunt with falcon; game birds, small game animals</i>	<i>10.00</i>
<i>(xxiv) Special bird license (use on game bird farms only)</i>	<i>15.00</i>
<i>(xxv) Resident turkey license</i>	<i>10.00</i>
<i>(xxvi) Nonresident turkey license</i>	<i>50.00</i>

(c) Omitted from Appendix.

(d) Omitted from Appendix.

23-2-109. Multiple applications for limited licenses prohibited; penalty.

Except as otherwise authorized by law or rule of the commission, no person shall submit more than one (1) application for a license for the same big or trophy game species or for wild turkey, if the issuance of the license has been limited by the commission. A violation of this subsection shall be punishable as a 5th degree misdemeanor, by the loss of all points then assigned to the person pursuant to W.S. 23-1-703(b), and disqualification in the year of submission for any license for the species for which the multiple applications were submitted.

Appendix B: 1997 Timeline of Department Limited-Quota Regular Drawing Process

Licensing Activities	Dates
Application period begins for nonresident antelope, deer, and elk. Application period begins for nonresident and resident bighorn sheep and moose.	January 1st
Application deadline for nonresident elk.	January 31st
Wildlife Division develops nonresident elk quotas.	January 26th -31st
License Draw Section conducts nonresident elk drawing.	February 14th
Wildlife Division receives preliminary 1996 big-game harvest statistics used to set quotas for the 1997 hunting season.	February 16th - 22nd
Application deadline for nonresident antelope and deer.	February 28th
Application deadline for nonresident and resident bighorn sheep and moose.	March 31st
Wildlife Division holds internal meetings to establish draft regulations for the 1997 big-game seasons.	April 1st -5th
Wildlife Division holds seven public meetings to take public input on the 1997 big-game seasons.	April 13th - 19th

License Draw Section conducts nonresident and resident bighorn sheep and moose drawings.	April 28th
Commission meets to finalize 1997 big-game seasons.	April 28th
Application period begins for resident antelope, deer, and elk.	May 1st
Distribution of 1997 big-game summary maps to license agents. (This information is a distillation of the regulations.)	May 11th - 17th
Deadline for resident landowner applications to game wardens for antelope, deer, and elk.	May 15th
Application period ends for resident antelope, deer, and elk.	May 31st
Group of Department employees meet to develop initial draft of 1998 application packet.	June 1st - 30th
License Draw Section conducts resident and nonresident antelope and deer, and resident elk drawings.	June 20th
Distribution of 1997 big-game final regulations to license agents.	July 8th - 12th
Department working group prepares final draft of 1998 application packet and submits to printer.	August 13th - October 1st
Distribution of 1998 application packet to license agents	November 17th -22nd

Source: LSO summary of agency-provided data.

Appendix C: Projections Under the Preference Point System

As with any projection, estimating future outcomes under the preference point system requires certain assumptions. First, our analysis assumes the quotas in existence over the past three years will continue into the future. Second, we assume an attrition rate of 10 percent for the typical areas. The attrition rates and new applicants were determined with consideration of impact on total applications received each year, as well. The first three years shown (1995 - 1997) reflect actual applicants in each point band.

Our illustration uses typical areas that have characteristics that closely represent the mean and median values in terms of probabilities of success, number of applicants, and quotas for all areas. The expected wait is calculated from 1995, the year of inception. To determine the number

of point holders in a specific band for subsequent years, the previous year's unsuccessful applicants in the respective point band are multiplied by 90 percent.

The typical nonresident moose area is already approaching or quickly moving through the point bands under the preference point system and offers little in the manner of additional insight. In fact, since antlerless moose licenses were undersubscribed by nonresidents, between 41 and 68 licenses reverted to residents in each of the past three years.

Example 1: Resident Bighorn Sheep Area 1 (Typical Resident Bighorn Sheep Area)

Assumptions:

1) Permits per year 15

2) Attrition rate 10%

3) Number of new applicants 55

						Year						
Points	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
0	370	157	67	55	55	55	55	55	55	55	55	55
1		243	111	60	50	50	50	50	50	50	50	50
2			182	100	54	45	45	45	45	45	45	45
3				150	90	49	40	40	40	40	40	40
4					122	81	44	36	36	36	36	36
5						96	73	40	32	32	32	32
6							73	66	36	29	29	29
7								52	59	32	26	26
8									33	53	29	24
9										17	48	26
10											1	29
11												0
Total Applicants	370	400	360	366	370	375	379	383	386	389	391	392

Example 2: Nonresident Bighorn Sheep Area 1 (Typical Nonresident Bighorn Sheep Area)

Assumptions:

- 1) Permits per year 5
- 2) Attrition rate 10%
- 3) Number of new applicants 20

					Year				
Points	1995	1996	1997	1998	1999	2000	2001	2002	2003
0	58	64	13	20	20	20	20	20	20
1		58	33	12	18	18	18	18	18
2			36	30	11	16	16	16	16
3				28	27	9	15	15	15
4					21	24	9	13	13
5						14	22	8	12
6							8	19	7
7								3	16
8									0
Total Applicants	58	122	82	89	96	102	107	112	117

Example 3: Resident Moose Area 27, Type 1 (Typical Resident Moose Area)

Assumptions:

- 1) Permits per year 20
- 2) Attrition rate 10%
- 3) Number of new applicants 50

				Year				
Points	1995	1996	1997	1998	1999	2000	2001	2002
0	248	93	46	50	50	50	50	50
1		176	68	41	45	45	45	45
2			116	61	37	41	41	41
3				86	55	34	36	36
4					60	50	30	33
5						36	45	27
6							14	33
7								0
Total Applicants	248	269	230	239	247	254	261	265

Agency Response

(Note: The Game and Fish Department response is available with the report, which is on file at the Legislative Service Office.)